World Health Organization

Biennial technical report 2007–2008
Department of Reproductive Health and Research,
including UNDP/UNFPA/WHO/World Bank Special
Programme of Research, Development and
Research Training in Human Reproduction

Biennial Technical Report
2007–2008

Department of Reproductive Health and Research

including

UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction

Biennial Technical Report 2007–2008

World Health Organization

WHO Library Cataloguing-in-Publication Data

Biennial technical report 2007–2008 / Department of Reproductive Health and Research, including UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction.

1.Reproductive medicine. 2.Reproduction. 3.Family planning services. 4.Contraception. 5.Research. I.UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction. II.World Health Organization. Dept. of Reproductive Health and Research.

ISBN 978 92 4 159830 9 (NLM classification: WP 630)

Printed by the WHO Document Production Services, Geneva, Switzerland.

Contents

Preface

This second biennial technical report of the WHO Department of Reproductive Health and Research covers the activities of both the UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP), and the Programme Development in Reproductive Health (PDRH) component of the Department.

The work detailed within this report was carried out under the leadership of Dr Paul Van Look who retired from his post as Director of the Department in January 2009. We thank him for his hard work and sustained efforts to ensure the Department's success in working towards its mission to help people lead healthy sexual and reproductive lives.

The Department has continued to address the various areas of sexual and reproductive health as elaborated within the WHO Global Reproductive Health Strategy. It is taking into account the contribution of sexual and reproductive health to the achievement of the Millennium Development Goals (MDGs). An external evaluation of HRP for the period 2003–2007 concluded that HRP remains a global leader in sexual and reproductive health research and research capacity strengthening, with particular relevance to the needs of populations in resource-poor settings.

It is with pleasure that I introduce this second Biennial Technical Report, 2007–2008, which provides scientific and technical details on the full range of activities undertaken by the Department in 2007 and 2008. This report is intended to be a key tool for disseminating information on the work of the Department to scientists, researchers, programme managers and other partners. Additional information is available on the Department's web site: http://www.who.int/reproductivehealth/

Dr Mike Mbizvo
Director *a.i.*
Department of Reproductive Health
and Research

June 2009

Department of Reproductive Health and Research Highlights

ABOUT THE DEPARTMENT

The mission of the WHO Department of Reproductive Health and Research (RHR) is to help people to lead healthy sexual and reproductive lives. In pursuit of this mission the Department endeavours to strengthen the capacity of countries to enable people to promote and protect their own sexual and reproductive health and that of their partners, and to have access to, and receive, high-quality sexual and reproductive health services when needed. RHR was established in November 1998 by bringing together the UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP) and the former WHO Division of Reproductive Health (Technical Support) (RHT). The purpose of joining these two entities was to facilitate integration of research and policy and programme development in sexual and reproductive health within WHO.

ABOUT THE UNDP/UNFPA/WHO/WORLD BANK SPECIAL PROGRAMME OF RESEARCH, DEVELOPMENT AND RESEARCH TRAINING IN HUMAN REPRODUCTION (HRP)

HRP was established in 1972 by WHO. In 1988, the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA), and The World Bank joined WHO as the Programme's cosponsors. The four cosponsoring agencies, together with the major financial contributors and other interested parties, make up the Programme's governing body, the Policy and Coordination Committee (PCC), which sets policy, assesses progress, and reviews and approves the Programme's budget and programme of work. Broad strategic technical advice on the Programme's work is provided by the Scientific and Technical Advisory Group (STAG). In 1999, STAG assumed the responsibility for reviewing, and advising on, the work of the whole Department. The Scientific and Ethical Review Group (SERG) Panel reviews all HRP projects involving human subjects and research in animals and contributes to ethical debate on matters relating to sexual and reproductive health. The Toxicology Panel is a complementary review body to the SERG Panel. It provides expertise in the evaluation of pharmacokinetic, metabolic, endocrinological, toxicological, teratogenicity, carcinogenicity and mutagenicity studies of drugs or devices developed or studied by HRP or referred to it for advice. In addition, the Programme has several specialist and regional advisory panels that provide guidance on detailed research and research capacity building strategies.

HIGHLIGHTS OF 2007

Promoting family planning

- Family planning: a global handbook for providers – the fourth and final "cornerstone"[1] of evidence-based guidance for family planning – was published and distributed widely (40 000 copies). This handbook, which is being translated into 11 languages, was developed in partnership with the INFO Project at Johns Hopkins University/Center for Communication Programs (JHU/CCP), with the collaboration of nearly 50 other agencies.

[1] The three other cornerstones are: *Medical eligibility criteria for contraceptive use, third edition; Selected practice recommendations for contraceptive use, second edition*; and *The decision-making tool for family planning clients and providers.*

- Two information briefs for health-care providers were developed *(Does hormonal contraception modify the risk of STI acquisition*? and *Hormonal contraception and bone health)* and published on the Department's Internet web site.

- In Cape Town, South Africa, a clinic-based survey of providers and clients of HIV services (involving 285 women and 140 men) found that 81% of women and 70% of men were sexually active. About half of the respondents said that they did not wish to have another child. About 19% of the women reported experiencing a pregnancy since knowing their HIV status: 61% of those pregnancies were unplanned. As a result of this research, local health-care policy-makers are exploring ways of providing integrated family planning and HIV services.

- A Phase III trial of testosterone undecanoate as a male hormonal contraceptive was completed in 2007. This study involved over 1000 Chinese couples who used testosterone undecanoate as their contraceptive method for two years. The failure rate – defined as the percentage of men whose sperm concentrations did not adequately suppress plus those who caused a pregnancy or whose sperm concentrations rebounded – was calculated at 7.05 per 100 couple–years. The method was considered acceptable; its use did not lead to any serious adverse events.

- A training and job aid entitled *Reproductive choices and family planning for people with HIV* was finalized and published in partnership with the INFO Project and the WHO Department of HIV/AIDS. An adaptation guide was also developed by the Department and will be published on CD-ROM along with the training materials and electronic files for adaptation.

Improving maternal and perinatal health

- Oxidative stress has been implicated as a potential cause of pre-eclampsia. To test whether pre-eclampsia could be prevented by taking antioxidants, such as vitamins C and E, a randomized controlled trial involving 1400 women, was conducted in India, Peru, South Africa and Viet Nam. The results showed that vitamins C and E supplementation is unlikely to decrease the risk of pre-eclampsia.

- A paper entitled "Blood pressure dynamics during pregnancy and spontaneous preterm birth" based on the data from the WHO calcium supplementation trial for the prevention of pre-eclampsia in pregnant women with low dietary intake of calcium was published in the *American Journal of Obstetrics and Gynecology.* This paper reports that a rise in either systolic pressure of over 30 mm Hg, or in diastolic pressure of over 15 mm Hg, from early pregnancy to the mid-third trimester is associated with spontaneous preterm birth in a dose–response pattern.

- A systematic review of maternal infection and risk of pre-eclampsia was published. This review concluded that there were no associations between pre-eclampsia and the presence of antibodies to *Chlamydia pneumoniae, Helicobacter pylori*, and cytomegalovirus, treated and non-treated HIV infection, and malaria. Similarly, infection with herpes simplex virus type 2, bacterial vaginosis, and *Mycoplasma hominis* was not associated with pre-eclampsia. However, urinary tract infection and periodontal disease in pregnancy were associated with an increased risk of pre-eclampsia.

- A second systematic review on theories of pre-eclampsia and the role of angiogenic factors, published in the journal *Obstetrics and Gynecology*, concluded that elevation of soluble Fms-like tyrosine kinase-1 receptor (sFlt-1) and fall in placental growth factor during the third trimester are associated with pre-eclampsia.

Controlling sexually transmitted infections (STIs) and reproductive tract infections (RTIs)

- In 2006, the World Health Assembly adopted the *Global strategy for the prevention and control of sexually transmitted infections: 2006–2015*. In June 2007, a meeting of experts was held in Geneva, Switzerland, to develop a global action plan for implementation of the Strategy. Based on this plan, and with technical assistance from the Department, the WHO Regional Offices have developed (Regional Offices for the Eastern Mediterranean, South-East Asia and the Western Pacific), or are in the process of developing (Regional Offices for Africa, the Americas, and Europe), their respective regional plans for the implementation of the Strategy.

- *Comprehensive cervical cancer control: a guide to essential practice* was published in 2006. In 2007, this comprehensive guide to the prevention, screening, treatment and palliation of cervical cancer was translated into all six official languages of WHO.

- The Programme is conducting a large randomized controlled trial (the Kesho Bora study) to optimize the use of antiretroviral treatment during pregnancy to preserve the health of the mother, minimize side-effects and reduce the risk of vertical transmission of HIV. In 2007, recruitment of study participants was initiated in two new sites in South Africa (Durban and KwaMsane), in addition to Bobo Dioulasso in Burkina Faso and Mombasa and Nairobi in Kenya, bringing the total number of study sites to five. By the end of November 2007, the study had recruited a total of 645 HIV-positive pregnant women, 75% of whom have indicated that they wish to breastfeed their baby.

- During the "Women Deliver" Conference, held in London, United Kingdom, on 18–20 October 2007, Ministers of Health from Mongolia and Nigeria and Directors of the WHO Departments of Making Pregnancy Safer and of Reproductive Health and Research launched an initiative for the global elimination of congenital syphilis. A statement of commitment to the initiative prepared by the United Nations Population Fund (UNFPA) and WHO was endorsed by several countries and governmental and nongovernmental organizations.

- Meetings were convened in the WHO South-East Asia, Western Pacific and European Regions to develop action plans for the strengthening of cervical cancer prevention programmes, taking into account the newly licensed HPV vaccines. A new "Community of Practice" on HPV vaccines was established as an online, global network of stakeholders for the prevention of HPV-related diseases (http://hpv-vaccines.net/home/default.ashx?returnurl=%2f).

- Collaboration between the Department and the Department of HIV/AIDS on the use of male circumcision to prevent HIV transmission was strengthened. In addition, a United Nations agencies strategic planning meeting was held in Geneva, Switzerland, to agree on the plans and roles of each agency in this area, including specific responsibilities of the Department.

- Work on a technical manual on male circumcision under local anaesthesia was completed. A meeting of experts was held to define quality standards for male circumcision services, and a guide on enhancing the quality of male circumcision services was developed. A review entitled "*Male circumcision: global trends and determinants of prevalence, safety and acceptability*" was published in collaboration with UNAIDS.

Preventing unsafe abortion

- In collaboration with the Guttmacher Institute, global and regional incidence rates of safe and unsafe abortion were estimated for 2003 and a paper was published in *The Lancet*. The Programme also published a new document entitled *Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2003 (Fifth edition)*.

- The new estimates show that 42 million abortions took place in 2003, down from 46 million in 1995, with nearly half of them (20 million) having been terminated unsafely. Some 67 000 women worldwide die each year due to complications of unsafe abortion. Up to 97% of all unsafe abortions occurred in developing countries. These findings were presented at a press conference organised by *The Lancet* as well as during the "Women Deliver" Conference in October 2007 and were widely disseminated by the mass media.

- A randomized controlled trial involving 2181 women compared two doses of mifepristone (200 mg versus 100 mg) and two intervals (24 hours versus 48 hours) between the administration of mifepristone and misoprostol. The study found that the 100 mg dose of mifepristone followed 24 hours later by 0.8 mg vaginal misoprostol achieved complete abortion in 93% of women with pregnancy of up to 63 days. Efficacy of the two doses of mifepristone was similar.

- The Programme collaborated with Ipas to conduct a regional workshop on applying the Strategic Approach[2] to reducing unsafe abortion and strengthening sexual and reproductive health services in sub-Saharan Africa. Among others, the workshop participants included country teams from Malawi, Nigeria, Uganda, and Zambia. These teams developed action plans for conducting strategic assessments and related activities to reduce unsafe abortion, to which Ipas and the Programme will provide financial and technical support.

- A set of papers was published in a supplement to the *International Journal of Gynecology and Obstetrics* on the use of misoprostol for various indications in obstetrics and gynaecology. Based on a meeting of experts organized by the Programme in February 2007 at the Bellagio Study and Conference Centre in Italy, these papers provide the available evidence and guidance on how to use misoprostol for nine clinical indications.

- A booklet entitled *Frequently asked clinical questions about medical abortion* was published in 2006. Since then, over 30 000 copies have been distributed. In 2007, the booklet was translated into Spanish, and in 2008 French and Russian versions were also published.

Gender, reproductive rights, sexual health and adolescence

- With the ultimate aim of generating information on best practices related to sexuality counselling, four programmes were studied in Brazil, India, Kenya and Uganda in which sexuality counselling has been integrated successfully into some aspect of reproductive health services. Initial data show that key factors in the success of such integration are the existence of trained dedicated counsellors and an organizational culture that fosters respect of human rights and recognizes that discussions and counselling on sex and sexuality are an important dimension of high-quality sexual and reproductive health services.

- Data collection was completed for the quantitative phase of a four-country (Indonesia, Mozambique, South Africa

[2] The Strategic Approach is a three-stage process to assist countries to assess sexual and reproductive health needs and priorities, test interventions to increase access to and the quality of sexual and reproductive health services, and then scale up successful models for wider implementation.

and Thailand) study on gender, sexuality and vaginal practices. Conducted as household survey to estimate the prevalence rates of vaginal practices in those countries, the study suggests that a significant number of women use products to effect changes in their vagina, particularly in relation to menstruation. In Mozambique and South Africa, women engage in the more abrasive practices of vaginal cleansing and insertion of substances. Findings from the earlier qualitative phase of the study had revealed that women use a variety of vaginal practices for the purposes of both personal hygiene and sexual performance.

- The Programme's social science and operations research initiative on adolescent sexual and reproductive health, involving 50 projects in 28 countries, continued to yield important information for policy-formulation, broadening the provision of quality services, and increasing access to services for those who are most in need. Results from the following studies became available: (i) violence and non-consensual sex (Nigeria); (ii) knowledge, attitudes and risk-taking behaviour with regard to sexual and reproductive health (Islamic Republic of Iran); (iii) poverty and social vulnerability during pregnancy among adolescents (Bangladesh, Brazil); (iv) gender and sexual and reproductive health (Paraguay); (v) providers' perspectives on family planning and abortion among adolescents (Argentina); (vi) parent-child communication on sexual and reproductive matters (China); and (vii) the impact of community-based interventions for sexual and reproductive health (China).

- Field tests of the tool, *Using human rights for maternal and neonatal health: a tool for strengthening laws and policies,* were conducted during the period 2005–2007 in Brazil, Indonesia and Mozambique. Key recommendations from the field tests have been implemented in all three countries. Currently, the tool is being revised to focus on the five core components of sexual and reproductive health as outlined in the WHO Global Reproductive Health Strategy.

- The Department has worked with three international networks of people living with HIV to develop policy and programmatic guidance for health systems on the needs and rights of people living with HIV for sexual and reproductive health care. Six papers reviewing evidence to date on different aspects of the issue were published in 2007 as a special issue of the journal *Reproductive Health Matters*, and a draft document on guidance for health systems was prepared. An international consultation on people living with HIV was held in Amsterdam, The Netherlands, in December 2007 at which the key issues for health systems, as well as for laws, policies and advocacy, were debated and recommendations made. These recommendations will be used for finalizing the health systems guidance in the first part of 2008.

- A joint WHO/UNFPA technical consultation in March 2007 identified indicators for monitoring progress towards the goal of universal access to sexual and reproductive health at country level. However, gaps in the indicators were identified in the area of promoting sexual health. A further working group meeting on sexual health indicators took place in September 2007 to elaborate and refine a set of proposed indicators on sexual health and sexuality, sexual violence and female genital mutilation.

- The Department continued to prepare reports on the sexual and reproductive health situation in selected countries for the various Treaty Monitoring Bodies. To provide practical guidance to WHO staff involved in this process, a handbook entitled *Women's health and human rights: monitoring the implementation of CEDAW* on the Committee on the Elimination of All Forms of Discrimination Against Women (CEDAW) was published in collaboration with the WHO Department of Gender, Women and Health.

- A new inter-agency statement on the elimination of female genital mutilation was prepared in collaboration with various United Nations agencies and other partners. The statement will be appended to a resolution on female genital mutilation to be discussed by the WHO Executive Board in January 2008 and possibly forwarded for adoption to the World Health Assembly in May 2008.

- Results of the study on female genital mutilation and obstetric outcome were published in 2006 and received much media coverage. During 2007, the findings were presented in many international forums, including the United Nations Conference on the Status of Women (New York, USA) and the "Women Deliver" Conference (London, United Kingdom). One key recommendation to emerge from these meetings has been that WHO should assist the affected countries by making available to health-care personnel training materials on how to deal with complications of female genital mutilation.

Technical cooperation with countries

Inter-regional activities

- An external evaluation was carried out of the WHO-UNFPA Strategic Partnership Programme (SPP) before finalizing plans for the second stage of SPP. The evaluation found that the concept of SPP had met with practically universal approval, especially in the countries where it was implemented, and the programme itself was viewed favourably within both UNFPA and WHO. The programme had helped to foster much-needed linkages between reproductive health and STIs, usually handled separately at country level.

- The third global SPP implementation review workshop was held in Geneva, Switzerland, in May 2007. Achievements of SPP, lessons learnt, and future implementation needs at regional and country levels were discussed and recommendations made for global and regional plans for future collaboration.

- SPP funds have been used to translate into French a full set of guidelines of the Department, covering maternal and newborn health, family planning and STIs. To introduce these guidelines to policy-makers and programme managers in French-speaking African countries, a regional SPP workshop was held in Cotonou, Benin, in December 2007. The workshop participants were also informed about the process used in the systematic introduction, adaptation and implementation of the guidelines in countries, along with examples and lessons learnt from the Department's experience with introduction of the guidelines in Benin and Cameroon.

- A global meeting of WHO Regional Reproductive Health and STI Advisers was held in Geneva, Switzerland, in April 2007. This event was used as a platform for promoting synergy within the components of the process from primary research to improved health-care services: i.e. generation of research-based knowledge, synthesis of research findings, development of best practices and normative guidance tools, provision of technical support to countries to effect policy changes, and strengthening of programmes to improve service delivery.

- In February and August 2007, two technical meetings were held in Geneva, Switzerland, to formulate prequalification guidelines for the production of CuT380A IUDs and male latex condoms in conformity with the requirements established by the WHO Prequalification of Medicines Programme. These guidelines were reviewed by the WHO Expert Committee on Specifications for Pharmaceutical Preparations in October 2007 and are undergoing further external review.

- Two meetings were convened in August and October 2007 to update the specifications for the CuT380A IUD and to inform the work of the Working Group within the International Organization for Standardization that is responsible for setting international standards for IUDs.

Africa and Eastern Mediterranean

- The document *Turning research into practice: suggested actions from case-studies of sexual and reproductive health research* was published by the Department in 2006. In 2007, the framework for turning research into practice contained in it was presented to a subregional meeting of directors of research institutions and sexual and reproductive health programme managers from 10 African countries. The participants also discussed the WHO Global reproductive health strategy and the framework for implementing the Strategy, along with the African Health Ministers Plan of Action for achieving universal access to comprehensive sexual and reproductive health in the region. Following these deliberations, each country team developed an action plan for accelerating progress towards achieving universal access to reproductive health, and submitted its plan to the WHO Regional Office for Africa for support.

- An intercountry meeting on the implementation of the WHO *Global reproductive health strategy and the Global strategy for the prevention and control of sexually transmitted infections: 2006–2015* in nine countries of the WHO Eastern Mediterranean Region was held in Marrakech, Morocco. The participants recommended that countries should review available information and identify priority areas for research in order to develop action-oriented and cost-effective interventions. They should also raise awareness of sexual and reproductive health issues among the community to reduce stigma and broaden access to services.

- Research capacity strengthening grants were awarded to 11 centres in Afghanistan, Ethiopia, Guinea, Kenya, Malawi, Nigeria, South Africa, Sudan, United Republic of Tanzania, Uganda, and Zimbabwe. Grants were also awarded to nine centres to organize research courses, workshops and seminars. Financial and/or technical support was provided for the conduct of five courses dealing with gender and reproductive rights and health systems reform.

- Four workshops on ethical issues in sexual and reproductive health research were held in Ouagadougou, Burkina Faso; Khartoum, Sudan; and Tunis and Monastir, Tunisia. The Tunis and Ouagadougou workshops were regional workshops for French-speaking countries. They brought together 120 researchers, clinicians and members of ethical committees from 13 countries.

- The Centre de Recherche en Reproduction Humaine et en Démographie (CERRHUD) in Cotonou, Benin, and the London School of Hygiene and Tropical Medicine in London, United Kingdom, conducted a study that compared the incidence of physical and psychiatric ill-health at six and 12 months postpartum among three groups of women, those with a near-miss complication and live birth; a near-miss complication and a stillbirth or perinatal infant death; and a normal childbirth. The study found that for babies of women who had experienced a near-miss complication and who survived until discharge from hospital, the risk of the baby dying was more than 17 times greater compared with that for babies born to women in a normal childbirth.

The Americas

- The introduction and implementation of WHO guidelines and tools as well as the development and updating of national norms continued in Honduras, Paraguay and Peru, under SPP. In 2007, Bolivia, Cuba and Guatemala were included in SPP activities.

- A regional initiative was launched to assess the feasibility of using the indicators recommended in the Department's document entitled *Implementation framework of the global WHO reproductive health strategy*. Collaborating institutions in Argentina, Brazil, Guatemala, Panama and Peru, in collaboration with the respective local and/or national health authorities, began evaluating to what extent it was possible to obtain data for the indicators included under each of the sexual and reproductive health thematic areas contained in the document, taking into account the level and quality of health statistics and other sources of information available at country level. The findings from these assessments will be available in 2008.

- With a grant from the Department, the Centre for Epidemiologic Research in Reproductive Health (CIESAR) in Guatemala City, Guatemala, organized a subregional workshop for Central American countries to help them to develop policies for the prevention of unsafe abortion and postabortion care. Participants included policy-makers, health-care managers and local health professionals from Ministries of Health of all Central American countries. The workshop yielded an extensive list of concrete steps to strengthen postabortion care programmes.

- Eleven six-months grants were awarded to individual scientists for training in biomedical (10) and social science aspects (1) of human reproduction research. Four training grants were awarded to sexual and reproductive health programme officers to attend two-week courses in quality of care and in utilization of research findings. Of the four re-entry grant projects submitted for support, three were approved and funded in 2007. A small grant was awarded to the Institute for Nutritional Studies in Lima, Peru, to help the institute disseminate the local research findings of the Global Survey on Maternal and Perinatal Health.

Asia and Western Pacific

- China, Indonesia, Mongolia, Myanmar, Nepal, Solomon Islands, Tonga, Vanuatu and Viet Nam were selected as countries of intensified focus to recieve support from the WHO-UNFPA SPP for the implementation of guidelines on family planning, maternal and neonatal health and RTIs/STIs. The *Medical eligibility criteria wheel for contraceptive use* was translated into Chinese and Mongolian and the *Global handbook for family planning providers* was also translated into Chinese. *The WHO Reproductive health library* No.9 was translated into Chinese and Vietnamese. Lao People's Democratic Republic, Maldives and Thailand translated into local languages the *Decision-making tool for family planning clients and providers*.

- A workshop to identify regional and national sexual and reproductive health research priorities was held in Yangon, Myanmar. The participants – representatives from 11 countries of the two regions and the International Medical Centre of Japan, staff from WHO Country and Regional Offices and UNFPA Country Technical Services Team and members of the Asia and Western Pacific Regional Advisory Panel – placed emphasis on research to improve quality of care and access to services and to develop linkages between sexual and reproductive health and RTIs/STIs and HIV.

- Mongolia, Myanmar and Sri Lanka conducted national workshops to identify research priorities in sexual and reproductive health. Myanmar chose to focus on reducing maternal mortality and morbidity.

- Fifteen research capacity strengthening grants – either resource maintenance grants or small grants – were awarded to institutions in the two regions. Research training grants for Master's degree courses in epidemiology or population and reproductive health were awarded to researchers from Cambodia, Lao People's Democratic Republic and Myanmar. Support for short-term training in advanced epidemiology was provided to three researchers from Sri Lanka. Two investigators from Indonesia and Viet Nam attended the training course in reproductive health/sexual health research organized by the Geneva Foundation for Medical Education and Research and the Programme, in Geneva, Switzerland.

- An inter-regional workshop on operations research in sexual and reproductive health was held in Bangkok, Thailand. National workshops on ethics in sexual and reproductive health research were conducted in Indonesia and Mongolia, and a workshop on ethical issues in assisted reproduction technology was organized for the ethics committees of medical faculties in Sri Lanka. A scientific writing workshop for mid-level researchers was held in Viet Nam, and a training-of-trainers workshop in scientific writing was conducted in China. Workshops on research methodology were organized in Indonesia, Mongolia and Myanmar.

Eastern Europe and Central Asian Republics

- Under the WHO-UNFPA SPP, a series of introductory workshops was conducted in Uzbekistan to introduce various health-care providers to newly adapted national

guidelines on integration of reproductive health, family planning and STI services. In Turkmenistan, activities focused on the wider adoption of national family planning and STI guidelines developed and piloted in one region in 2006. The guidelines *Medical eligibility criteria wheel for contraceptive use, Decision-making tool for family planning clients and providers,* and *Sexually transmitted and other reproductive tract infections: a guide to essential practice* were translated into Russian.

Implementing best practices (IBP) in reproductive health

- To disseminate widely the publication *Family planning: a global handbook for providers*, a series of monthly online virtual discussion forums was launched focusing on each section of the handbook.

- To reposition family planning in Africa, the IBP Partnership prepared, in collaboration with the WHO Regional Office for Africa, a "Family Planning Advocacy Kit" which provides advocacy material on family planning for different audiences. This kit was introduced to policy-makers and programme managers at a workshop in Benin.

- In support of the new Convention on the Rights of Persons with Disabilities, the IBP Secretariat, working with UNFPA, held a virtual global discussion forum on the challenges faced by individuals with disabilities in accessing sexual and reproductive health services. The outcome of this discussion will inform the development of a manual for use by international organizations and agencies.

- The IBP Knowledge Gateway is a unique system designed by the IBP Partnership for use in technically challenged countries to support collaborative learning and knowledge-sharing through virtual "communities of practice". The Gateway now supports over 10 000 members from 193 countries with over 400 virtual, topic-specific communities of practice. The Gateway has been used to organize and manage seven virtual global discussion forums on topics such as "Client–provider interaction in family planning and HIV integration" and "Strategic communication for behaviour change globally: the power of the media" .

- A conference entitled "Scaling-up high impact family planning and maternal, newborn and child health best practices: achieving the Millennium Development Goals in Asia and the Near East – technical meeting," held in Bangkok, Thailand, hosted 490 participants from Afghanistan, Bangladesh, Cambodia, East Timor, Egypt, India, Indonesia, Iraq, Jordan, Lao People's Democratic Republic, Nepal, Pakistan, Philippines, Thailand, Vie Nam, West Bank and Gaza Strip and Yemen. At this conference, the IBP Secretariat organized 150 technical mini-university sessions, a technology café, management skill-building sessions, and working group sessions to prepare country plans. Each country/territory identified the best practices they wanted to scale up and formulated initial plans.

Policy and programmatic issues in sexual and reproductive health

- The Paris Declaration, endorsed by over 100 governments and United Nations and other organizations on 2 March 2005, is an international agreement to harmonize and manage aid in line with a set of monitorable actions and indicators. UNFPA and the Department developed a comprehensive work plan for 2008–2010 to increase the capacity of UNFPA and WHO Country Offices to work in the new aid environment following the Paris Declaration and to strengthen their respective linkages with civil society organizations. Under this work plan, a joint UNFPA and WHO capacity building workshop on the new aid environment in Africa was held in December 2007 in Addis Ababa, Ethiopia.

- Strengthening management capacity at the subnational level to implement public–private partnerships in sexual and reproductive health care is a pressing challenge in most countries. A report summarizing three case-studies of how district-level officials in India have managed contracting out of reproductive and child health-care services was published in 2007.

- A study in Egypt investigated the effect of a performance-based payment scheme on the performance of reproductive health-care service providers. The study found statistically significant improvements in the quality of care provided related to family planning, antenatal care and child care. The Ministry of Health in Egypt is using these findings as evidence for the need to scale up the implementation of the performance-based payment scheme in the country.

- The Programme led an external evaluation of a 10-year health project conducted in 97 rural counties in China with funding support from the World Bank and the United Kingdom Department for International Development (DFID). The evaluation concluded that the project had helped to improve the performance of the health system which helped to accelerate improvements in maternal health outcomes at a faster pace compared with non-project sites.

- Using the Strategic Approach, a strategic assessment addressing the prevention of unsafe abortion was conducted in Macedonia, while a strategic assessment on the prevention and treatment of reproductive tract and sexually transmitted infections was conducted in Viet Nam. In Peru, Reprolatina (a Brazil-based nongovernmental organization) helped the School of Public Health

of the Cayetano Heredia Peruvian University in Lima to develop and implement a course on the Strategic Approach.

- A Stage II operations research study was conducted in Yunnan, China, to develop and evaluate interventions to increase access to better quality family planning and related sexual and reproductive health services for urban migrants in both the public and private sectors. The study was completed in 2007 and the final report was disseminated at a meeting sponsored by the Yunnan provincial government. Subsequently, the Secretariat together with ExpandNet colleagues, worked with the Yunnan team to develop a strategy for scaling up the project.

- In Zambia, the Department, in collaboration with the United States Agency for International Development (USAID) and the Population Council, is assisting the Copperbelt Provincial Health District in scaling-up of interventions to improve the method mix available at family planning clinics, train health-care workers, and link district communities with the health sector. Following a national dissemination workshop in 2007, scaling up activities in other provinces were started, with health-care staff from the Copperbelt province providing technical support to other provinces.

- The Programme, together with the network ExpandNet, published a book presenting a literature review, theoretical framework and seven country case studies analysing experience with scaling up. In addition, guidance documents and a process intended to assist policy-makers and programme managers to develop successful strategies for scaling up of pilot and demonstration projects were developed and successfully field-tested in Kyrgyzstan, Peru, Sierra Leone and Yunnan, China.

Monitoring and evaluating sexual and reproductive health

- In collaboration with the United Nations Children's Fund (UNICEF), UNFPA and The World Bank, the Department developed global, regional and country estimates for maternal mortality in 2005 as well as global and regional trends between 1990 and 2005. The findings show that, in 2005, 536 000 women died of maternal causes, compared to 576 000 in 1990. Ninety-nine per cent of these deaths occurred in developing countries, mostly (86%) in sub-Saharan Africa and South Asia. The decline in global maternal mortality ratio was estimated at less than 1% per year between 1990 and 2005. No region achieved the 5.5% annual decline required to achieve Millennium Development Goal (MDG) 5, although East Asia came closest to the target with a 4.2% annual decline. Northern Africa, South-east Asia and Latin America and the Caribbean experienced relatively faster declines than sub-Saharan Africa, where the annual decline was only 0.1%.

- The 2007 updates of the proportion of births attended by a skilled health worker were developed and disseminated widely. Worldwide, 63% of births were attended by a skilled health-care worker. Although virtually all births were attended by skilled health-care personnel in the more developed countries, the corresponding figure was 59% in developing countries and only 34% in the least developed countries.

- In response to the addition of antenatal care coverage as a new MDG indicator, a database for antenatal care coverage (at least four visits) was developed in collaboration with UNICEF.

- The Department continued to participate in the Inter-agency and Expert Group (IAEG) on MDG indicators. In 2007, the IAEG reviewed the operational implications of the modifications made to the MDG monitoring framework on the basis of the World Summit 2005. The IAEG decided to base the MDG reporting and all related products on the new framework which was presented to the UN General Assembly in October 2007. In addition to other modifications, the monitoring framework now includes a new target under MDG 5: "to achieve, by 2015, universal access to reproductive health" and four new indicators: contraceptive prevalence, adolescent birth rate, antenatal care coverage, and unmet need for family planning.

- In collaboration with UNFPA, a technical consultation was convened in Geneva, Switzerland, on 13–15 March 2007 to elaborate the concept of universal access to sexual and reproductive health and provide guidance in measuring various aspects of universal access at the country level. The report of the consultation will be published in early 2008.

- A workshop to increase awareness about the methods of measuring maternal mortality and findings and limitations of the 2005 global maternal mortality estimates was held for 11 English-speaking and 12 French-speaking countries in Africa in collaboration with The World Bank and UNFPA in Dakar, Senegal.

- Technical assistance was provided in monitoring and evaluation as part of the ongoing project of the Family and Community Health Cluster to support the Kenyan Ministry of Health in strengthening its sexual and reproductive health programme.Technical assistance was provided also to the development of a project to test the feasibility of data collection for a range of sexual and reproductive health indicators in Latin American countries.

Mapping and implementing best practices in reproductive health

- *The WHO Reproductive Health Library* (RHL) No. 10 was updated with 21 new Cochrane reviews and a video on "Active management of the third stage of labour." RHL was issued in Vietnamese, in addition to the other four language versions (Chinese, English, French and Spanish).

- An international scientific meeting was held in Khon Kaen, Thailand, to mark the 10th anniversary of RHL. Apart from discussing new developments in sexual and reproductive health and evidence-based medicine, the participants focused on ways of improving RHL in its second decade. In a survey conducted during the meeting, the participants agreed that: the current focus on predominantly maternal and perinatal health and fertility regulation topics was acceptable; the contents should be expanded to include guidelines; and the current practice of publishing RHL on the Internet and on CD-ROM should continue.

- New systematic reviews on high-priority topics in maternal/perinatal health and fertility regulation were published (10) and existing reviews were updated (2) by the Department and its collaborating institutions.

- An e-learning curriculum developed by the European Union Leonardo da Vinci programme for teaching evidence-based clinical decision-making in reproductive health was adapted by incorporating RHL content as the primary source of evidence-based sexual and reproductive health information. As a second step, a research project was launched in collaboration with Birmingham University, Birmingham, United Kingdom, and the Geneva Foundation for Medical Education and Research, Geneva, Switzerland, to test the effectiveness of the adapted curriculum.

- A training workshop on evidence-based decision-making in sexual and reproductive health was conducted in the United Republic of Tanzania. Six dissemination workshops on RHL/evidence-based medicine were conducted in China (3) and Viet Nam (3).

Communication, advocacy and information

- A total of 82 information materials were produced and distributed widely in 2007. Of these, nearly half were in languages other than English, illustrating the Department's commitment to ensuring that its important publications are accessible to as wide an audience as possible.

- During the period 1 January to 1 December 2007, the Internet site of the Department had an estimated 2.7 million visitors (number of sessions) who made approximately 1.4 million document downloads. Significant progress was made in making the site more multilingual – the site now hosts 127 documents in languages other than English. Also, the entire contents of the web site were published twice on CD-ROM, allowing those without good Internet access to obtain materials from the Department in searchable electronic form.

- In 2007, four scientific writing workshops for biomedical researchers were conducted in China, Nigeria, South Africa and Viet Nam. The workshop in China was a training-of-trainers workshop in which seven researchers were trained as facilitators for scientific writing workshops. In addition, in collaboration with FRONTIERS/ Population Council, a scientific writing workshop for social science researchers was held in Bangladesh.

Statistics and informatics support

- Data management was decentralized or outsourced for an increasing number of projects, with the Programme providing general oversight of the work.

HIGHLIGHTS OF 2008

Sexual and reproductive health - general

- In 2005, HRP started funding research on quality of care in sexual and reproductive health services. As of 2008, 24 studies have been completed and more are ongoing. The completed studies examined various aspects of quality of care in the provision of services for family planning, maternal health, safe abortion, and sexually transmitted infections and HIV. Most studies involved provision of services through clinical settings, although a number of studies have also included outreach or community-based services. Taken together, these studies suggest that quality improvement strategies should: (i) seek to empower clients, especially marginalized groups; (ii) improve client–provider interactions; (iii) monitor equity in provision of quality care and test approaches that reduce disparities in health-care provision; and (iv) seek to optimize care, setting minimum essential standards. A synthesis of the findings from these studies will be published in 2009.

Promoting family planning

- A randomized, double-blind multicentre trial carried out in Nigeria compared the efficacy and side-effects of levonorgestrel when administered in two doses of 0.75 mg given 12 hours apart and when administered in a single dose of 1.5 mg up to 120 hours (5 days) after unprotected intercourse. In both groups, women treated later than 72 hours following unprotected intercourse had higher pregnancy rates than those treated within 72 hours. There were no significant differences in side-effects reported between the two groups. This study con-

firms the results from an earlier WHO multicentre trial showing that a single dose of 1.5 mg of levonorgestrel is effective for emergency contraception.

- A study was conducted in China to establish, among other things, the efficacy and side-effects of the TCu380A IUD as a method of emergency contraception among parous and nulliparous women. Overall, study results demonstrated that IUD insertion is safe and effective for emergency contraception in both groups of women.

- Insertion of quinacrine hydrochloride pellets into the uterus has been used to achieve sterilization. In the early 1990s, HRP's Toxicology Panel had recommended against conducting clinical research on quinacrine owing to lack of pre-clinical safety data. Prompted by the recent availability of pre-clinical toxicology and other safety data on quinacrine, HRP convened a technical consultation in 2008, in collaboration with Family Health International, to assess the relationship between quinacrine, when used for non-surgical sterilization in women, and safety endpoints, with an emphasis on cancer risk. The consultation recommended, inter alia, that until all safety, effectiveness and epidemiological data have been reviewed, quinacrine should not be used for non-surgical sterilization of women in either clinical or research settings. A final WHO statement on the safety of quinacrine for use in women for non-surgical sterilization will be developed in 2009 following a thorough review of human safety data.

- In April 2008, the Department convened an expert working group to revise the third edition of the *Medical eligibility criteria for contraceptive use* and the second edition of the Selected practice recommendations for contraceptive use in response to newly published evidence and feedback from users of the guidelines. Summaries of the changes in the recommendations were published and work was under way to publish the revised guidelines.

- In 2007, the *four cornerstones* of evidence-based guidance for family planning were completed with the publication of *Family planning: a global handbook for providers. In 2008, the h*andbook was updated and reprinted with the new recommendations from the WHO family planning guideline expert working group meetings. The handbook is being translated into 12 languages.

- In 2008, the momentum for developing better linkages between sexual and reproductive health and HIV programmes and activities was sustained. A publication entitled *Reproductive choices and family planning for people living with HIV*, which is designed to serve as a training tool and a job aid for provision of family planning in HIV/AIDS services was finalized and published in partnership with the INFO Project and WHO's HIV Department. In addition, the Department developed and published the *Rapid assessment tool for sexual and reproductive health and HIV linkages: a generic guide,* in collaboration with the WHO Regional Office for Africa and partners.

Improving maternal and perinatal health

- A multicentre observational study entitled "Screening for pre-eclampsia: evaluation of the predictive ability of angiogenic factors" is being conducted to verify whether changes in serum and urinary angiogenic proteins during pregnancy, detected with an easy-to-apply screening test, can be used as an effective method for identifying women at high risk of developing pre-eclampsia. This study is under way in eight countries (Argentina, Colombia, India, Italy, Kenya, Peru, Switzerland, Thailand) with a total recruitment target of more than 12 000 women. Approximately 5000 subjects were recruited by December 2008.

- The results of the trial entitled "Vitamins in pre-eclampsia study" conducted in India, Peru, South Africa and Viet Nam were presented at several international congresses. The study showed that despite promising preliminary results, antioxidant supplementation during pregnancy with vitamins C and E does not reduce the risk of pre-eclampsia. These findings are in agreement with other large studies conducted at the same time.

- Collaboration was started with the University of British Columbia in Vancouver, Canada, to expand a study conducted in Australia, Canada, New Zealand and the United Kingdom to three developing countries (Fiji, South Africa and Uganda) in order to validate the universal applicability of a model consisting of maternal and fetal clinical variables that predict adverse maternal and perinatal outcomes in women with pre-eclampsia. This model aims at improving the definition of the clinical picture of women with pregnancy-related hypertensive disorders relative to existing classification systems.

- A large systematic review was conducted to evaluate the safety of human intrauterine exposure to ultrasonography. The electronic search identified 6716 citations and 63 were selected for full-text evaluation. Additionally, 19 citations were identified from secondary sources. A total of 58 references reporting data from 38 different studies were included. The results of the systematic review show that ultrasonography in pregnancy is not associated with adverse maternal effects, impaired physical or neurological development or increased risk for malignancies in childhood.

- The Programme conducted a multicentre, randomized, placebo controlled double-blind trial designed to compare the effectiveness of one-day versus seven-day nitro-

furantoin treatment to eliminate asymptomatic bacteriuria during pregnancy. The rationale of the study was that, if proven effective, a one-day treatment would be more feasible and acceptable to women. The trial included centres in Argentina, the Philippines, Thailand and Viet Nam. Results showed that one-day nitrofurantoin treatment is significantly less effective than the seven-day regimen.

- In June 2008, 38 paintings from the project Art for Health were sold at an auction organized by Christie's Auction House and the nongovernmental organization IMAGINE in Rome, Italy. The auction – which was attended by political and cultural celebrities, renowned journalists, diplomats, art collectors and gallery owners – raised Euro 37 400. These funds are being used to improve the health and sanitary conditions of local communities in La Mosquitia, Honduras, with particular attention to pregnant women and young children.

- Collaboration was initiated between HRP and the Perinatal Research Branch of the National Institute of Child Health and Human Development (PRB/NICHD), USA. Under this long-term agreement, HRP will collect biological samples and information from large cohorts of women and their infants worldwide according to well-defined methodological protocols and PRB/NICHD will analyse the samples according to pre-established research plans. This collaboration will allow HRP and PRB/NICHD to test rapidly new research hypotheses.

Controlling sexually transmitted infections (STIs) and reproductive tract infections (RTIs)

- In 2006, the World Health Assembly adopted the *Global strategy for the prevention and control of sexually transmitted infections: 2006–2015*. At the regional level, the *Regional strategy for the prevention and control of sexually transmitted infections, 2007–2015* for the WHO South-East Asia region and the *Regional strategic action plan for the prevention and control of sexually transmitted infections 2008–2012* for the WHO Western Pacific region were published. *The Asia – Pacific operational framework for linking HIV/STI services with reproductive, adolescent, maternal, newborn and child health services* was also published in 2008. *The Regional strategy for the prevention and control of sexually transmitted infections, 2009-2015* was endorsed by the Regional Committee for the Eastern Mediterranean in October 2008.

- A symposium on "Scientific, regulatory and public health aspects of microbicide research and development" was held in Nanjing, China, in November 2008. It was attended by 10 international faculty and over 80 scientists and policy-makers from China. It was an opportunity to share the latest developments in microbicide research and development and conduct of clinical research, and to stimulate research on new leads, product development and manufacturing of future microbicide products in China.

- In collaboration with UNFPA and the International Agency for Research on Cancer (IARC), Lyon, France, the Department is supporting the implementation of pilot programmes on cervical cancer prevention in Madagascar, Malawi, Nigeria, United Republic of Tanzania, Uganda and Zambia with the objective of assessing the acceptability and feasibility of implementing a programme with "see and treat" approach based on visual inspection with acetic acid (VIA) and cryotherapy. Interim results of a pilot study, conducted between 2006 and 2008 indicate that, of the 11 313 women screened, 1291 (11.4%) were VIA positive, but not all of them were eligible for cryotherapy.

- HRP is conducting a large randomized controlled trial (the Kesho Bora study) to optimize the use of antiretroviral treatment during pregnancy to preserve the health of the mother, minimize side-effects and reduce the risk of vertical transmission of HIV. In 2007 recruitment was initiated in two new sites in South Africa (Durban and KwaMsane), and continued in Burkina Faso (Bobo-Dioulasso) and Kenya (Mombasa and Nairobi). Recruitment in all sites was completed in July 2008, with 826 women having been enrolled. First results are expected to be published in 2009.

Preventing unsafe abortion

- Using data from various sources, an analysis was undertaken to examine the relationship between contraceptive use and induced abortion. The analysis compared regional prevalence of use of reversible and terminal modern and traditional family planning methods with estimated unsafe abortion and all induced abortions rates. Among other findings, the analysis concluded that the lowest induced abortion rates are associated both with high contraceptive prevalence and with liberal abortion laws.

- A qualitative study in South Africa examined the role of health-care providers in improving access to safe abortion. The study concluded that, despite liberalization of abortion legislation in South Africa in 1996, barriers to safe abortion services still exist, including provider opposition to abortions and a shortage of trained and willing abortion-care providers.

- The optimal dose of misoprostol in the combined mifepristone–misoprostol regimen for abortions up to nine weeks' gestation was investigated in a trial launched in late 2006. In addition to comparing two misoprostol doses (0.4 mg and 0.8 mg), this trial also compared two routes of administration (sublingual and vaginal). Involving 3007 women, this trial was conducted in 15 centres in 11 countries. Two interim analyses suggest high effi-

cacy for the sublingual administration. The final analysis is planned for 2009.

- A trial was conducted in seven countries to identify an effective misoprostol-only regimen for the termination of second-trimester pregnancy. Women requesting medical abortion at 13–20 weeks' gestation were randomly assigned to a vaginal or a sublingual treatment group, with both groups receiving 0.4 mg of misoprostol every 3 hours up to five doses. At 24 hours, the success rate was 85.9% in the vaginal group and 79.8% in the sublingual group. Misoprostol-alone regimens are clearly less effective compared with the combination of mifepristone followed by misoprostol.

- In 2008, HRP collaborated with Ipas to conduct a subregional workshop in French-speaking Africa on using the WHO Strategic Approach to address issues related to the provision of safe abortion. HRP also collaborated with Ipas to provide technical support to strategic assessments addressing unwanted pregnancy and unsafe abortion in Malawi and Zambia. In addition, HRP supported strategic assessments in the Russian Federation and Ukraine, and follow-up activities to strategic assessments in Bangladesh, The former Yugoslav Republic of Macedonia, Republic of Moldova and Mongolia.

Gender, reproductive rights, sexual health and adolescence

- A set of indicators for promoting sexual health was developed as a complement to those developed to assist countries in monitoring the achievement of universal access to sexual and reproductive health. The indicators cover positive aspects of sexual health and sexuality, as well as sexual violence and female genital mutilation, and include indicators on law and policy, on health services and on health outcomes.

- Between 2005 and 2007, HRP had supported assessments of four programmes in Brazil, India, Kenya and Uganda where sexuality counselling has been integrated successfully into some aspect of reproductive health services. A comparative analysis of the findings at the four sites, conducted in 2008, found that the key factors for integrating sexuality counselling into services were: the existence of dedicated counsellors who have been trained by the organization, and an organizational culture that fosters respect of human rights and recognizes that discussions and counselling on sex and sexuality are an important dimension of quality sexual and reproductive health services.

- HRP launched a project to document and analyse how human rights standards are being applied specifically to sexual health issues in international, regional and national laws and jurisprudence. In 2008, a consultation was held with representatives of international and regional nongovernmental organizations, academics and public health experts to elaborate the scope, design and content of this project. As a result of this consultation, several experts were contracted to conduct legal and jurisprudential research at the international and regional levels and in selected countries.

- *The WHO Multi-country Study on Women's Health and Domestic Violence against Women* has generated a database with information from over 24 000 women from 15 sites in 10 countries. In 2007–2008, the study team generated 16 published papers. In 2008, a meeting was convened of the multi-country study team to document how researchers have turned their findings into policy and programmatic actions in their respective countries. Some successes highlighted at the meeting included, inter alia, advocating for the creation of policies or expansion of existing laws to reduce violence against women and implementing programmes in the health sector to educate providers about violence against women.

- Several activities are under way to improve the measurement of various forms of violence against women in high-risk populations and to build capacity of researchers in developing countries in the methodological and ethical dimensions of research on violence against women.

- *Eliminating female genital mutilation: an interagency statement* was launched in February 2008. The statement summarizes the latest data on female genital mutilation, its human rights dimensions and what has worked in terms of its abandonment. Following the publication of the statement, the Department provided technical support to WHO Member States in the drafting of a resolution on female genital mutilation, which was adopted by the World Health Assembly in May 2008. The resolution commits Member States to take the necessary political, educational and legal steps to promote the elimination of female genital mutilation in their countries.

- A study on female genital mutilation in the Gambia and Senegal confirmed that 70% of mothers felt they had little influence on the final decision taken for their daughters to be subjected to the practice. Grandmothers and paternal aunts had the most say in the decision. Factors contributing to abandonment of female genital mutilation were fear of HIV, fear of legal prosecution and personal experience with adverse outcomes.

- A synthesis of findings of studies supported under HRP's social science and operations research initiative on adolescent sexual and reproductive health was completed. This overview documents the perspectives and behaviour of adolescents on sexual and reproductive health

and identifies policy and programmatic implications for promoting adolescent sexual and reproductive health.

- Nineteen papers were published in peer-reviewed national and international journals on adolescent sexual and reproductive health. In addition, two policy briefs (*Misperceptions among boys in the Islamic Republic of Iran about sexual and reproductive health* and *Perspectives on sexual violence during early years of marriage in Nepal: findings from a qualitative study*) were published by HRP.

Technical cooperation with countries

Inter-regional activities

- Under the UNFPA/WHO Strategic Partnership Programme (SPP), a series of six regional and subregional capacity strengthening workshops were organized in which 39 countries from the African, South-East Asia, and Western Pacific Regions, were introduced to the SPP process for systematic introduction, adaptation, and adoption of evidence-based guidelines as well as to the expanded focus on the Millennium Development Goals target on universal access to reproductive health by 2015.

- The Department continues to work in collaboration with the WHO Department of Essential Medicines and Standards, Program for Appropriate Technology in Health (PATH) and UNFPA to manage and implement the Reproductive Health Essential Medicines and Commodities Project. This work led to the inclusion of six essential reproductive health medicines in the WHO Essential Medicines Prequalification Scheme.

- In 2008, the Department and the Department of Making Pregnancy Safer co-facilitated a training of trainers' course on the "Minimum initial services package for reproductive health in crisis situations" in Kabul, Afghanistan. In addition, the two departments also conducted two global pre-deployment courses for public health professionals in Tunis, Tunisia, and Toronto, Canada.

Africa and Eastern Mediterranean Region

- During 2007–2008, 14 centres were supported with long-term institutional development (LID) and service guidance centre or resource maintenance grants, and eight centres were involved in projects that addressed regional and national reproductive health priorities. Out of 41 studies, the highest number of projects were on maternal and newborn health and family planning. Most of the projects were implemented with support from national sources or from agencies other than WHO.

- In 2008, HRP supported 30 researchers from seven collaborating institutions in Nigeria to make presentations at the 42nd Scientific Conference of the Society of Gynaecology & Obstetrics of Nigeria (SOGON). The themes of the conference were reproductive cancers; prevention of mother-to-child transmission of HIV; and family planning and its contribution to the Millennium Development Goals 4 and 5. Some of the scientific papers presented at this meeting were based on the research results of projects that received financial support from HRP.

- In 2008, two subregional workshops were supported through the UNFPA/WHO Strategic Partnership Programme. The meetings were held in Abuja, Nigeria, and Lusaka, Zambia. The main objective of the workshops was to assist countries in improving the quality of services and achieving universal access to reproductive health – a target recently integrated into the Millennium Development Goals framework.

- The Department supported a multi-disciplinary training course in Alexandria University, Alexandria, Egypt, designed to provide students with both the theory and practical skills in the methodology of evaluating potential reproductive health risks associated with environmental exposures. The project is building bridges between critical teaching and research skills within the University.

- A new way of disseminating information on reproductive health issues to health professionals in French-speaking Africa was initiated by the Department in June 2006 through the telemedicine network "Réseau d'Afrique francophone en télémedicine" (RAFT), which was created, and is operated, by the Geneva University Hospital in Switzerland through the Internet (raft.hcuge.ch). Over 30 sessions were broadcast live on priority sexual and reproductive health issues during 2007–2008.

The Americas

- Activities to build country-level capacity in research ethics took place in Paraguay. More than 40 investigators, non-scientific personnel and members of ethical review committees of research and academic institutions in the country active in the area of health research participated; out of these, some 18 fellows also participated in a full two-day technical meeting to discuss the most important elements of the operational guidelines of the soon-to be-established National Health Research Ethics Committee. The first draft of these guidelines was presented to the HRP Secretariat in September 2008.

- A regional initiative to assess the feasibility of measuring indicators recommended in the implementation framework of *WHO's Global reproductive health strategy* was completed in 2008. Research groups from Argentina, Brazil, Guatemala, Panama and Peru, in coordination with their respective ministries of health, participated in this initiative. One of the case-studies showed that out of the 83 indicators recommended in the implementation framework, 51 could be calculated.

- Grants to strengthen research capacity and programme capacity were awarded to 15 countries in the Americas Region to support national sexual and reproductive health research, group learning activities for researchers and programme officers and to implement specific programmatic activities in the area of sexual and reproductive health.

- A regional workshop for ministry of health programme officers on WHO family planning guidelines and tools was held in Panama on 27–30 April 2008. The event included a discussion of family planning within the overall framework of the Millennium Development Goals (MDGs) and in particular the new target of universal access to reproductive health. The four WHO family planning guidelines were introduced, though most of the presentations, group discussions and practical work dealt with the *Decision-making tool for family planning clients and providers and the Family planning: a global handbook for providers*.

Asia and Western Pacific

- Nine centres in the South-East Asia Region and 13 centres in the Western Pacific Region received research capacity strengthening grants. Three research project mentoring grants were awarded in 2008.

- A regional workshop on ethical issues in reproductive health research was held in Ho Chi Minh City, Viet Nam, in 2008 for 24 participants from nine countries who were chairpersons, secretaries and/or members of national ethics committees.

- In 2007–2008, 12 workshops on research methodology, ethical issues in reproductive health and scientific writing were supported at the national level.

- The *WHO/UNFPA framework of indicators for monitoring universal access to reproductive health at country level* was introduced to national participants at two regional meetings jointly organized by the WHO Regional Offices and the Department: in September 2008, for ten countries from the South-East Asia Region, and in October 2008, for nine countries from the Western Pacific Region.

Eastern Europe and Central Asian Republics

- In its new capacity as regional training centre, the School of Public Health at the Kaunas University of Medicine, Kaunas, Lithuania, organized its first course on operations/health services research, in Russian, in November 2008.

- Implementation of activities supported by the UNFPA/WHO Strategic Partnership Programme (SPP) continued in four countries (Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan), mostly at the primary health-care level.

Mapping best practices in reproductive health

- Evidence-based guidelines on the prevention of postpartum haemorrhage, and on the management of postpartum haemorrhage and retained placenta were developed.

- The number of Cochrane reviews included in *The WHO Reproductive Health Library* (RHL) reached 137 in 2008. Two new educational videos “Umbilical vein injection for retained placenta: why and how?” and “No-scalpel vasectomy technique” were added to RHL in 2008.

- A revamped version of RHL was published on the WHO web site (http://www.who.int/rhl). Monitoring of the Internet access showed that the number of sessions on the RHL web site increased from around 800 per day to 1400 per day between April 2008 and December 2008. Of the 212 WHO unique web addresses, RHL ranked 39th in terms of number of sessions per week. RHL is currently translated into Chinese, French, Spanish and Vietnamese. The first Russian translation of RHL was completed in 2008, and Russian Internet and CD publications are planned for the first half of 2009.

- A national training workshop on ‘Evidence-based decision-making in reproductive health’ was conducted in Monrovia, Liberia on 4–6 February 2008 with the participation of 15 health workers, most of whom were midwives.

- A workshop was conducted in Khon Kaen, Thailand, on how to write a commentary for RHL. The participants were academic staff from the University. The overarching aim of this workshop was to make health-care practitioners aware about evidence-based medicine (in particular RHL) and to provide them skills for analysing systematic reviews and writing commentaries on clinical interventions evaluated in Cochrane reviews.

Implementing Best Practices in Reproductive Health

- To scale up effective practices, programme managers need the ability to manage the change process required to support the implementation of best practices. Hence, a guide entitled *Guide to fostering change to scale-up effective health services* was published and widely introduced into countries by the partner agencies of the Implementing Best Practices (IBP) initiative throughout 2007 and 2008. A French version of the guide was prepared in 2008.

- The IBP Knowledge Gateway, launched by the Department in 2004, is a global electronic communication tool that supports virtual networking and dialogue between members of various communities of practice. In 2008, an estimated 11 550 users from 190 countries were using the Gateway.

- In 2007–2008, the IBP partners supported nine global discussion forums on specific family planning interventions including one that asked the community to identify effective practices and challenges in family planning. The evaluation of this discussion forum was used by the John Hopkins Bloomberg School of Public Health/Center for Communication Programs (JHU/CCP) as a basis for creating an interactive Internet web site that identifies and highlights successful family planning practices.

Policy and programmatic issues in sexual and reproductive health

- HRP supported research in the Philippines on the adaptation of "Benchmarks of Fairness" – an evidence-based analytical process for assessing fairness of health sector reforms in the context of equity, efficiency and accountability based on nine indicator groups. The study found that the overall reform actions taken to improve equity were showing impact, but there were still shortcomings in the coverage of health services. The study concluded that the Philippines Department of Health needed to collect more information on how the health sector is working in order to promote conditions of transparency and accountability.

- Four key resource materials to support scaling up of health innovations were developed during 2007–2008. The first, *Scaling up health service delivery: from pilot interventions to policies and programmes,* presents a literature review and conceptual framework, as well as case-studies from Africa, Asia and Latin America. The second, *Practical guidance for scaling up health service innovations* is intended to assist policy-makers, programme managers and technical support staff in the design and management of scaling up initiatives.The third is a shorter guide entitled *Nine steps for developing a scaling-up strategy.* The fourth, developed by the ExpandNet in collaboration with Management Systems International, is a guide for writing case-studies of scaling up experiences.

- As part of a collaboration with the Institute for Reproductive Health, Georgetown University, Washington, DC, USA, ExpandNet and the Department supported the Ministry of Health in both Madagascar and Mali in their efforts to scale up the integration of the Standard Days Method (SDM) into their national family planning programmes.

Monitoring and evaluating sexual and reproductive health

- A factsheet entitled *Proportion of births attended by a skilled health worker: 2008 updates* was published. Globally, 65.7% of births are attended by a skilled health-care worker. Although nearly all births are attended by skilled health-care personnel in developed countries, this proportion is 61.9% in less developed countries and only 35.3% in the least developed ones.

- A document entitled *National-level monitoring of the achievement of universal access to reproductive health: conceptual and practical considerations and related indicators* was published. This document is a report of a technical consultation jointly organized by the Department and UNFPA in 2007. It assesses progress towards national-level monitoring of the achievement of universal access to sexual and reproductive health.

Communication, advocacy and information

- In 2008, 77 information materials were produced and distributed widely. Out of these, four were translated into Arabic, two into Chinese, 10 into French, nine into Spanish and five into Russian.

- During the period 1 January 2008 to 4 December 2008, some 1 640 000 downloads were made from the Department's web site – some 264 000 more than in 2007. This increase was largely due to an increased availability of publications in languages other than English on the web site.

Statistics and informatics support

- Decentralization or outsourcing of data management was further expanded in 2008, with HRP providing general oversight of the work.

- A new opensource data management system was adopted and used for three new projects and a software tool was developed for automated processing of electronic questionnaires.

Annex 1

SCIENTIFIC AND TECHNIAL ADVISORY GROUP

Members

Salim S. Abdool Karim	University of Kwazulu-Natal, Durban 4041, South Africa
Ra'eda Al-Qutob	Department of Family and Community Medicine, University of Jordan Faculty of Medicine, Amman, Jordan
Ruth Dixon-Mueller	Consultant in Population and Reproductive Health, Grecia, Costa Rica
Enrique Curt Gadow	Center for Medical Education and Clinical Research (CEMIC), Buenos Aires University Buenos Aires, Argentina
Sharad Iyengar	Action Research & training for Health (ARTH), Udaipur, India
Patricia Jannet Garcia	School of Public Health, Universidad Peruana Cayetano Heredia, Lima, Peru
Anna Glasier	NHS Lothian and University of Edinburgh, Edinburgh, United Kingdom
Sioban Harlow	University of Michigan, Ann Arbor, MI, USA
Ellen Hodnett	University of Toronto, Toronto, Canada
Abdul Bun Hatib N'Jie	Banjul, The Gambia
Jung Han Park	Catholic University of Daegu, School of Medicine, Taegu, Republic of Korea
Gaston Sorgho	Arlington, VA, USA
Zhenzhe Zheng	Institute of Population and Labour Economics, Chinese Academy of Social Sciences, Beijing, China

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	5	38			1	8	6
Women	4	31			3	23	7
WHO Region:							
Africa	3	23					3
The Americas	3	23			2	16	5
South-East Asia	1	8					1
Europe					1	8	1
Eastern Mediterranean	1	8					1
Western Pacific	1	8			1	8	2

Total = 13

Annex 2

SCIENTIFIC AND ETHICAL REVIEW GROUP

Members

Gordon Ada	John Curtin School of Medical Research, Canberra, Australia
Abdul-Aziz Al Meshari	King Saud University, Riyadh, Saudi Arabia
Karen Beattie	EngenderHealth, New York, NY, USA
Iain Cameron	University of Southampton, United Kingdom
Podhisita Chai	Institute for Population and Social Research, Mahidol University, Nakhon Pathom, Thailand
Jean Cohen	Centre de stérilité, Hôpital de Sevres, Paris, France
Korrie de Koning	Royal Tropical Institute, Amsterdam, the Netherlands
Kitayaporn Dwip	Bumrungrad International Clinical Research Center, Bangkok, Thailand
Andrea Genazzani	Department of Obstetrics and Gynaecology, University of Pisa, Pisa, Italy
Ronald Gray	Johns Hopkins University, Baltimore, MD, USA
Kerstin Hagenfeldt	Retired from Karolinska Hospital, Stockholm, Sweden
Timothy Hargreave	BUPA Murrayfield Hospital, Edinburgh, United Kingdom
Fernando Larrea	Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Mexico
Ruth Macklin	Albert Einstein College of Medicine, Bronx, NY, USA
Oscar Mateo de Acosta	National Institute of Endocrinology, Havana, Cuba
Marvellous Mhloyi	Population Studies Centre, Harare, Zimbabwe
Yuji Murata	Osaka, Japan
Ngeow Yun Fong,	National Public Health Laboratory, Kuala Lumpur, Malaysia
Charles Ngwena,	University of the Free State, Bloemfontein, South Africa
Edith Pantelides,	Population Studies Centre, Buenos Aires, Argentina
Manee Piya-Anant	Siriraj Hospital, Bangkok, Thailand
Kazuo Satoh	Nihon University School of Medicine, Tokyo, Japan
John Sciarra	Northwestern University Medical School, Chicago, IL, USA
Carmel Shalev	Gertner Institute for Health Policy, Tel Hashomer, Israel
Carlos Simón	IVI Foundation, Valencia, Spain
Sonia Tabacova	The National Institute of Environmental Health Sciences, Rockville, MD, USA
Godfrey Tangwa	University of Yaoundé, Yaoundé, Cameroon
Zhao Baige	State Family Planning Commission, Beijing, China

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	
Men	6	21			9	32	15
Women	7	25	1	4	5	18	13
WHO Region:							
Africa	3	11					3
The Americas	3	11			5	18	8
South-East Asia	3	11					3
Europe			1	4	7	25	8
Eastern Mediterranean	1	4					1
Western Pacific	2	7			3	11	5

Total = 28

Annex 3

TOXICOLOGY PANEL

Members

Colin L. Berry	London Hospital Medical College, London, United Kingdom
Ranjit R. Chaudhury	National Institute of Immunology, New Delhi, India
Ralph Heywood	The Larches, The Lanes, Huntingdon, United Kingdom
Alex Jordan	Division of Reproductive and Urologic Drug Products, Food and Drug Administration, Rockville, MD, USA
Shirley Price	University of Surrey, Guildford, United Kingdom
Sonia Tabacova	National Centre of Hygiene, Ecology and Nutrition, Sofia, Bulgaria

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	
Men	1	17			3	50	4
Women			1	17	1	17	2
WHO Region:							
Africa							
The Americas					1	17	1
South-East Asia	1	17					1
Europe			1	17	3	50	4
Eastern Mediterranean							
Western Pacific							

Total = 6

Chapter 1
Promoting family planning

1. INTRODUCTION

Family planning (FP) programmes have had measurable success globally over the past few decades, in reaching couples for the purpose of increasing contraceptive prevalence rates. However, levels of unmet need for family planning remain high, and demand for infertility services is increasing worldwide. In order to meet the goals set out in the Programme of Action adopted at the International Conference on Population and Development (ICPD) (Cairo, 1994), the Department of Reproductive Health and Research (RHR) is implementing a programme of work aimed at improving the quality of family planning as part of sexual and reproductive health (SRH) care globally.

This programme includes the development and dissemination of evidence-based FP guidelines and tools, research into users' and providers' perspectives on FP and SRH services and technologies, the development of improved or new methods of fertility regulation, the evaluation of the long-term safety and efficacy of existing methods, and technical assistance to country FP and SRH programmes in the adaptation and implementation of technical and managerial guidance.

During 2007–2008 the Promoting Family Planning (PFP) Team has responded to new trends that are shaping the context of family planning services, including the increasing rates of HIV/STI transmission worldwide, the changing patterns of adolescent sexuality, and the growing number of people living in poverty and other vulnerable situations. There has also been a greater awareness of the importance of family planning in the context of promoting SRH more broadly. In addition, the team is poised to address the growing demand for services to prevent, diagnose, and treat infertile couples. New areas of work include increased efforts to strengthen linkages between FP and other SRH (notably HIV/AIDS and infertility) services. This report summarizes research results and significant accomplishments during 2007–2008.

2. GUIDELINE DEVELOPMENT

Family planning programmes still face the challenge of finding better ways to deliver high-quality services to the millions of individuals and couples who would use contraception if they had access to it. However, many FP programmes need to make substantial progress towards improving quality of care. Through the creation of the four cornerstones (see Figure 1) of evidence-based and consensus-driven guidance, the Department is contributing to these efforts. Further, through a continuous and systematic process of identifying, critically appraising, and synthesizing new evidence, the Department assures that such guidance is as up to date as possible.

Couples who postpone, delay, or widely space their pregnancies seek to be assured that appropriate access to infertility care will be provided if and when required. Revision and adaptation of existing WHO guidelines on infertility – and creation of new guidelines, as appropriate – in an evidence-based and consensus-driven manner, complements the work related to guideline development for traditional family planning services and programmes.

The creation of evidence-based guidelines and tools alone, while important, is insufficient to assure that family planning services are improved. The ultimate impact of the Department's norms and tools will be contingent on the development and utilization of successful strategies for implementation in countries.

2.1 Progress

2.1.1Family planning: a global handbook for providers

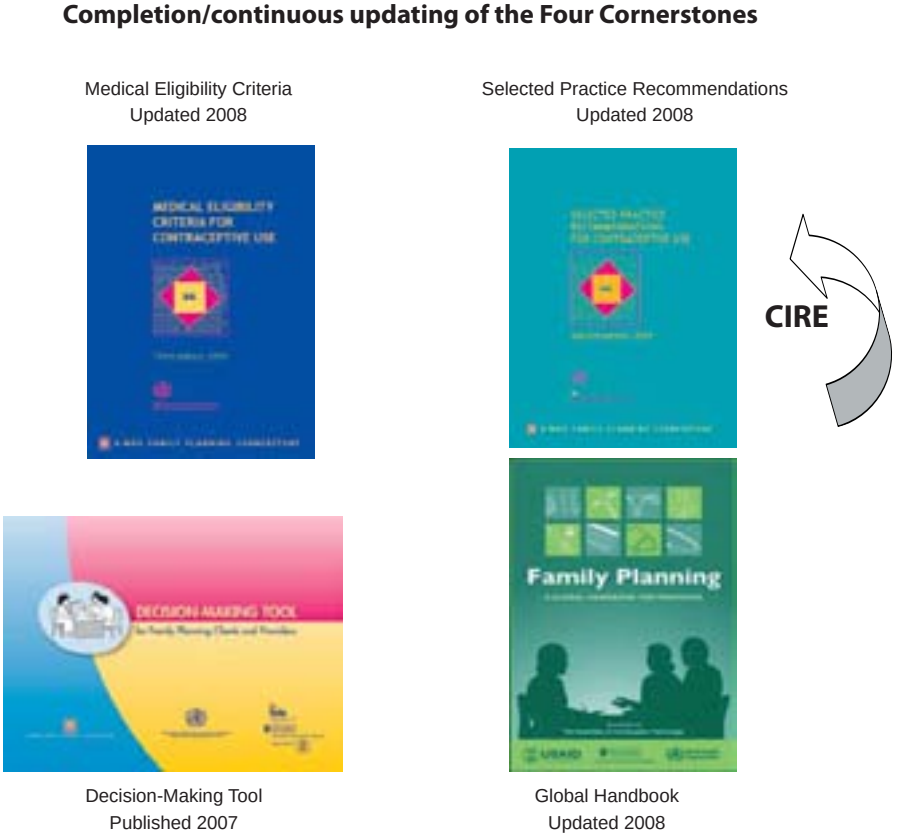
The four cornerstones of evidence-based guidance for FP were completed in 2007 with the publication of *Family planning: a global handbook for providers* (see Figure 1). The handbook was developed in partnership with the INFO Project at Johns Hopkins University/Center for Communication Programs (JHU/CCP) in Baltimore, Maryland, USA, with the collaboration of nearly 50 other agencies. Over 100 000 copies in English were disseminated. In 2008, the handbook was updated with the new recommendations from the WHO FP guideline expert working group meetings (see below) and reprinted. The handbook was the focus of a global forum through the Implementing Best Practices (IBP) Knowledge Gateway that continued from October 2007 to June 2008 to discuss contraceptive methods and service-delivery issues. The handbook is being translated into 12 languages (see Annex 3).

2.1.2 Continuous Identification of Research Evidence (CIRE) system

The Continuous Identification of Research Evidence (CIRE) system is an Internet-based system which the Department uses to identify, appraise critically, and maintain evidence relevant to WHO FP guidance, on an ongoing basis. The system operates in partnership with JHU/CCP and the United States Centers for Disease Control and Prevention (CDC)/WHO Collaborating Centre for Reproductive Health in Atlanta, Georgia, USA. It has been described in detail in various reports of the Scientific and Technical Advisory Group (STAG) and elsewhere (Mohllajee AP et al., *American Journal of Preventive Medicine*, 2005).

During 2007–2008, CIRE identified evidence to update the third edition of the *Medical eligibility criteria for contraceptive use* (MEC) and the second edition of the *Selected practice recommendations for contraceptive use* (SPR), two of the four cornerstones of evidence-based guidance for FP. The MEC provides evidence-based recommendations on whether an individual with a certain condition can safely use a given contraceptive method and the SPR provides evidence-based recommendations on how to safely and effectively use contraceptive methods once they are deemed medically appropriate for an individual. Recommendations include instructions for providers on when and how to initiate contraceptive method use and what to do in problem situations. Both guidelines are intended for use by policy-makers, family planning/sexual and reproductive health programme managers, and the scientific community in the preparation of national family planning/sexual and reproductive health guidelines for service delivery.

Figure 1. Developing and updating WHO evidence-based family planning guidance



Also during 2007–2008, new evidence was identified in connection with 32 medical conditions and eight practice recommendations. Systematic reviews for these topics were updated and submitted to the FP Guidelines Steering Group (GSG) for their appraisal, prior to discussion by the expert working group which met in April 2008 to revise the MEC and SPR. The preparation of 11 systematic reviews is ongoing, based upon new evidence identified through CIRE following the Expert Working Group meeting.

2.1.3 Technical consultation on hormonal contraception and liver metabolism/disorders and drug interaction

In January 2008, WHO convened a technical consultation to evaluate all available scientific evidence pertaining both to the effects of hormonal contraception on liver metabolism and liver disorders, and to drugs that interact with hormonal contraception. The consultation brought together the GSG, the WHO secretariat, and three technical experts on these topics.

In light of the reassuring evidence presented, the GSG determined that the WHO recommendations that pertain to the safety of hormonal contraception for women with viral hepatitis or liver tumours should be reconsidered. The GSG suggested that the evidence should be presented to the larger expert working group charged with revising the existing WHO FP guidelines in April 2008 (see below). In addition, the GSG recommended that an annex devoted to drug interactions should be included in the next edition of the MEC. The consultation highlighted future areas for research, as well as the need to identify evidence on liver function among women using progestogen-only contraception. A provider brief summarizing the final conclusions has been developed for publication in the journal *Contraception* and on the RHR web site, and includes the following recommendations.

- In women with mild, compensated cirrhosis, or chronic viral hepatitis, or who are carriers of the hepatitis virus, there is no restriction for the use of any hormonal contraceptive method.

- In women with acute hepatitis or a flare of hepatitis, the risks usually outweigh the benefits for initiating the use of combined hormonal contraceptives, and in the case of severe disease, combined hormonal contraceptives should not be used. For women who had begun using combined hormonal methods before being diagnosed with acute hepatitis or a flare of hepatitis, the benefits of continuing contraception usually outweigh the risks. Progestogen-only contraception, however, may be used in these conditions without restriction.

- In women with severe, decompensated cirrhosis, the risks usually outweigh the benefits for progestogen-only and combined injectable use, while all other methods of hormonal contraception (pills, patch, and vaginal ring) are an unacceptable risk to health and should not be used.

2.1.4 Update of the Medical eligibility criteria for contraceptive use (MEC) and the Selected practice recommendations for contraceptive use (SPR)

In April 2008, in response to newly published evidence, WHO convened an expert working group in Geneva to revise the third edition of the MEC as well as to provide recommendations for additional medical conditions. The group was also tasked with revising the second edition of the SPR, both in response to newly published evidence and to requests for clarification of specific recommendations from users of the guidelines.

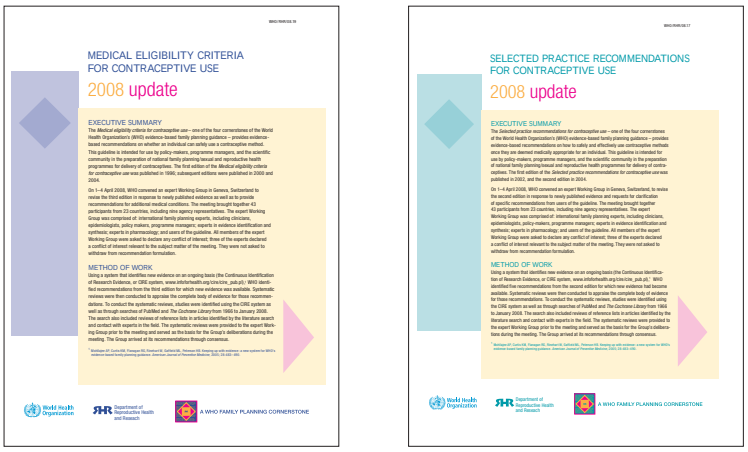
The expert working group meeting brought together 43 participants from 23 countries, including nine agency representatives. The group comprised international family planning experts, including clinicians, epidemiologists, policy-makers and programme managers; experts in evidence identification and synthesis; experts in pharmacology; and users of the guidelines.

The group developed 86 new recommendations and revised 165 existing recommendations for the fourth edition of the MEC. These additions and revisions include the medical condition systemic lupus erythematosus (SLE) and 12 new subconditions added to medical conditions already existing in the third edition. The 12 subconditions are obesity and less than 18 years of age; deep venous thrombosis/pulmonary embolism (DVT/PE) and established on anticoagulant therapy; acute or flare for viral hepatitis; focal nodular hyperplasia of the liver; use of three classes of antiretroviral therapies (nucleoside reverse transcriptase inhibitors [NRTIs], non-nucleoside reverse transcriptase inhibitors [NNRTIs], and ritonavir-boosted protease inhibitors [PIs]); use of Lamotrigine (an anticonvulsant); and use of four classes of antimicrobials (broad-spectrum antibiotics, antifungals, antiparasitics, and rifabutin with rifampicin). In addition, recommendations for the following existing conditions were updated: postpartum, obesity, carrier or chronic for viral hepatitis; cirrhosis and use of certain anticonvulsants.

No changes were recommended in response to reviews of new evidence on the following conditions: use of antibiotics; age; post-abortion; at risk for HIV; HIV-infected; at risk for STIs; endometriosis; gestational trophoblastic disease; depression; known thrombogenic mutations; headaches; vaginal bleeding patterns; hypertension; family history of breast cancer; diabetes; and gestational diabetes.

Until preparations for the fourth edition of the MEC have been finalized, a summary of changes that will appear in this revised edition has been published on the RHR web site: http://www.who.int/reproductivehealth/publications (see Figure 2).

Figure 2. Summaries of changes to the MEC and SPR, as published on the Department's web site



A 2008 update to the SPR, summarizing the changes made by the expert working group to recommendations related to five questions in the second edition, has been published as a supplement to the current edition of the SPR on the RHR web site at: http://www.who.int/reproductive-health/publications/spr/spr_2008_update.pdf (see Figure 2). The supplement has been downloaded over 9500 times between the time of its publication in late August 2008 and the end of December 2008. The update includes extending the grace period for repeat depot medroxyprogesterone acetate (DMPA) injections from two to four weeks; clearly defining the timing for insertion of a copper-bearing or levonorgestrel-bearing intrauterine device (IUD) in postpartum women; clarifying the language of the recommendations related to missed combined oral contraceptives; adding 75 µg desogestrel-containing pills to the recommendation related to missed progestogen-only pills; and treatment for women who experience menstrual abnormalities when using progestogen-only injectables. The revised recommendations will appear in the third edition of the SPR when it is published.

2.1.5 Technical consultation on hormonal contraceptive use during lactation and effects on the neonate

During the expert working group meeting in April 2008, it was determined that WHO should reconsider its recommendations on the use of progestogen-only contraception during lactation, but that additional expertise was necessary to inform such a decision. A technical consultation to thoroughly evaluate the evidence surrounding hormonal contraceptive use by breastfeeding women and its effects on the neonate was convened by the Department in October 2008. The consultation brought together international family planning experts –including clinicians and epidemiologists, neurologists, paediatricians, and neuroscientists – to address the unique challenge of considering the safety of contraceptive use in both the mother and her breastfed child.

Discussions focused on the importance of balancing the benefits of a mother's use of contraception with any potential risks to her infant – particularly to brain and neural development, where the theoretical risks to the child are the greatest. Two systematic reviews of the direct evidence obtained from primary research studies in breastfeeding women – as well as expert reviews of the basic science of the neural effects of estrogens, progesterone, and progestogens – were presented to the group. In view of the lack of data on the impact of progestogens on human neonatal metabolism and brain development, it was determined that the current WHO recommendations for progestogen-only contraceptive use should remain unchanged, namely that:

- use of progestogen-only methods, with the exception of the levonorgestrel-bearing IUD, is not usually recommended for women who are less than six weeks postpartum and breastfeeding, unless other more appropriate methods are unavailable or unacceptable;
- beyond six weeks postpartum, there is no restriction for the use of progestogen-only contraceptive methods among breastfeeding women;
- the levonorgestrel-bearing IUD is not usually recommended for the first four postpartum weeks, unless other more appropriate methods are unavailable or unacceptable. Beyond four weeks postpartum, there is no restriction on its use.

In settings where pregnancy morbidity and mortality risks are high and access to services is limited, progestogen-only contraception may be one of the few types of methods available and accessible to breastfeeding women immediately postpartum. Given the importance of making these methods available to women who desire them, and the outstanding theoretical effects on the newborn and the lack of data on this subject, WHO encourages further research in this area.

The summary findings have been submitted for publication in a medical journal.

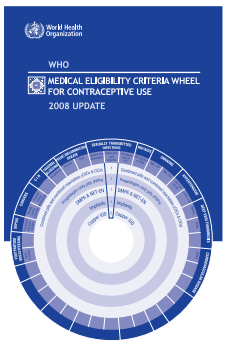
2.1.6 Survey of users of the MEC and the SPR

In 2007, the Department surveyed end-users of FP guidance, including nationally and internationally-known and respected programme managers, trainers, academicians, and FP providers. One-hundred-and-twenty-one experts, from all regions, responded. The survey responses indicated that the MEC and the SPR are being used and carefully followed by this group of FP opinion-leaders and offered suggestions for improving the guidance. This feedback was presented to and thoughtfully considered by the members of the expert working group at their April 2008 meeting. While the working group did not incorporate all proposed improvements, several were considered to be feasible. The revised guidance reflects these suggestions to the extent possible and as supported by available evidence.

This feedback resulted in the following revisions. Additional recommendations are now provided for drug interactions – specifically, new categories have been introduced for antiretroviral therapies, antimicrobials, and anticonvulsants. Clarifications on how to interpret conditions classified as a Category 2 or 3 have been added to the overview section. In the SPR, the recommendation concerning cases of missed combined pills, has been clarified. New up-to-date evidence statements are provided with updated references. The formatting of the document has been simplified (e.g. there is now a chapter for combined hormonal methods, rather than separate ones for combined oral contraceptives and combined injectable contraceptives). These suggestions should result in making the guidance clearer and easier to use.

2.1.7 Medical eligibility criteria wheel

The *Medical eligibility criteria (MEC) wheel* has proved to be one of the most popular family planning tools developed, and has therefore been in great demand. Over 50 000 English-language copies of the wheel were disseminated in 2007–2008. It is an easy-to-use job aid that helps providers quickly identify medical eligibility criteria relevant to their individual clients. It has now been translated into 10 languages.



2.1.8 Provider briefs

To broaden the dissemination of guidance, information briefs for providers entitled *Does hormonal contraception modify the risk of STI acquisition?* and *Hormonal contraception and bone health* were developed and published on the Department's web site in 2007. These briefs were developed from the recommendations that emerged from technical consultations on these specialized topics convened by the Department in previous years. As mentioned above (Section 2.1.3), a provider brief on hormonal contraception and liver metabolism/disorders and drug interaction based on the January 2008 technical consultation has been developed for publication.

2.1.9 WHO laboratory manual for the examination and processing of human semen

Semen analysis may be useful for investigating male fertility status as well as monitoring spermatogenesis during and following male fertility regulation. The *WHO laboratory manual for the examination and processing of human semen* (fifth edition) will be published in 2009. The methods described in the manual are intended as guidelines for standard laboratory methods to be used to improve the quality of semen analysis and comparability of results among various laboratories. The previous edition was published in 1999.

For the fifth edition, the laboratory procedures were updated according to the best available evidence and new sections, such as cryopreservation of semen, were added. Numerous high-quality photographic plates were incorporated in order to provide better guidance for the assessment of sperm morphology. The format was also improved in order to make the manual more detailed and easier to use. Cambridge University Press published the second, third and fourth editions; however, WHO Press will publish the fifth edition of the laboratory manual for both commercial distribution and dissemination free of charge, as appropriate. The manual will also be available electronically, through the Department's web site. Collaborators in Argentina, China, and Germany have expressed an interest in translating the manual; additional translations will be considered.

The laboratory manual for semen analysis includes, for the first time, evidence-based reference distributions and reference values (5th centile of the overall distributions) for various semen characteristics to provide additional perspective in the interpretation of semen analysis results. A combined analysis of all available data was commissioned to define normal reference distributions for semen characteristics in fertile men (recent fathers). The manuscript describing the methods and results of this analysis was submitted for publication in 2008 and will appear in the peer-reviewed literature in 2009.

2.1.10 WHO tools on the diagnosis and management of infertility

In response to a request from the International Federation for Fertility Societies (IFFS), a nongovernmental organization in an official relationship with WHO, a consultation was convened in December 2008 to address the status of existing WHO tools for infertility prevention, diagnosis, and management. Participants included eight external technical experts who are academic clinicians actively involved in infertility diagnosis and management in low-resource settings.

The *WHO manual for the standardized investigation and diagnosis of the infertile couple* (1993) as well as the *WHO manual for the standardized investigation, diagnosis and management of the infertile male* (2000) were discussed and evaluated for clarity and application at various levels of care in settings within developed and developing countries. A review of the guidance concerning infertility within the current WHO FP guidelines was presented and discussed. Furthermore, two draft WHO documents from 2005, which include an infertility algorithm and a document on guidance for infertility management for health-care workers, were evaluated for applicability in primary health-care settings within developed and developing countries.

Recommendations from the consultation are provided in Box 1.

2.1.11 Guideline dissemination activities

The various FP guidelines were disseminated at a number of scientific meetings during the period 2007–2008. These included the Women Deliver Conference (18–20 October 2007, London, United Kingdom); the Congrès de la Société francophone de Contraception (1–2 June 2008, Fes, Morocco); and the Second Congress of the Asia-Pacific Council on Contraception (4–5 December 2008, Macao, Special Administrative Region, China).

The guidelines were also presented during a web session attended by over 20 institutions in francophone African countries, via the Réseau d'Afrique francophone de télémédecine (RAFT). They were also introduced into national FP programmes, as discussed below in Section 5.

2.2 Planned activities

Increasingly, the Department is receiving requests for simplified guidance. Beginning with the meeting in Ethiopia involving the Health Extension Programme and partners in December 2008, the Department will develop an adaptation of the *Decision-making tool for family planning clients and providers* aimed at community health workers. The adapted tools will also include a simplified version of the *MEC wheel*. The Department will publish and disseminate the fourth edition of the MEC in 2009.

Box 1. Recommendations from the consultation on the review of WHO infertility diagnosis and management tools

Tool: WHO manual for the standardized investigation and diagnosis of the infertile couple (1993)
Rewrite the manual for the infertile couple by incorporating within it the *WHO manual for the standardized investigation, diagnosis and management of the infertile male* (2000). WHO should not develop separate tools for the man and the woman – infertility should address the couple. Rewrite in a simplified manner, targeting tertiary care providers in various settings. Incorporate evidence-based medicine into the tool. Position this new tool as a companion to the *WHO laboratory manual for the examination and processing of human semen*, which is often used for male fertility assessment.
Tool: Infertility algorithm
Generate algorithms for midwives and medical students, especially within low-resource settings. Generate a document for physicians, which would include more complex algorithms following explanatory text.
Tool: Primary health care management of infertility
Utilize this existing and quality guidance document as a starting point to generate a template to provide national societies with a guide for adaptation. Urge national societies to share their country-level adaptations.
General comments
On the RHR website, links to independent infertility tools should be placed within the RHR tools for family planning (FP), maternal and perinatal health (MPH), and STI, as countries position infertility differently in their health services. For example, In the Middle East, infertility diagnosis and care is commonly performed within maternal health/antenatal care services; however, in South Africa, the infertility assessment would more likely be done within a FP or STI clinic. Two infertility guidelines should be considered for development – on diagnosis and management, and on prevention.

Continued use of the CIRE system will ensure that WHO FP guidance remains up to date. Recommendations from peer reviewers are discussed during quarterly conference calls between WHO secretariat and CDC collaborators. Consensus statements from peer reviewers and the Guideline Steering Group will be published on the RHR web site. Published systematic reviews will be included in *The WHO reproductive health library*.

The Department will initiate an evaluation of the CIRE system. The evaluation will examine the process that CIRE uses to identify evidence and investigate whether the methodology captures the evidence needed to keep the FP guidelines up to date.

Given the increased availability of various formulations of androgens and their provision to men, the Department will initiate work to revise the *Guidelines for the use of androgens in men*. The Department will initiate work to revise, simplify, update, and adapt the existing WHO tools which address infertility diagnosis and management in low-resource settings.

3. QUALITY OF CARE IN SEXUAL AND REPRODUCTIVE HEALTH SERVICES

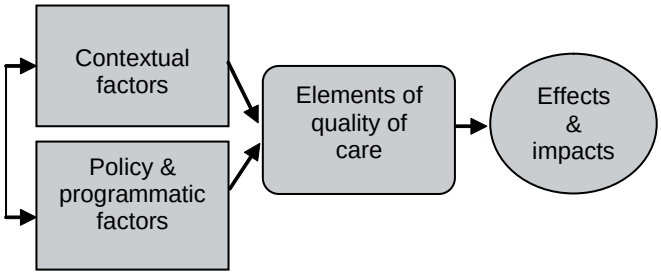
Quality of care in sexual and reproductive health services has been identified as a priority area of research for the Programme. Accordingly, in 2005 the Social Science and Operations Research on Sexual and Reproductive Health Group started funding projects on this topic with the aim of expanding the evidence base in this area. This Section presents the most recent synthesis of findings in this specific area of research.

3.1 Progress

By 2008, 24 studies supported under this initiative have been completed and additional studies are ongoing. The completed studies examined various issues related to quality of care in provision of services for family planning, maternal health, induced abortion, and STIs and HIV. Most involved provision of services through clinic settings; a number of studies included outreach or community-based services. The main findings from these studies are being synthesized in a report which will be available in 2009.

A general framework applied towards generating the evidence base is in Figure 3. The various studies focused on particular components of the framework, and only a few were intended to examine all of the components and dimensions.

Figure 3. A general framework applied towards generating the evidence base in quality of care in sexual and reproductive health



3.1.1 Importance of understanding the context from different perspectives

Overall, the studies underscored and confirmed the importance of considering the sociocultural context in which services are situated and in which clients seek care. Some research focused on consumer perceptions of services. In Brazil, women perceived hospital delivery to be superior to and more modern than home births. As a result, almost all births in the study community took place in a hospital, despite common knowledge that patients were treated with disrespect by hospital staff. In India, treatment-seeking among women reporting high fever during pregnancy was significantly higher than care-seeking for more serious morbidities. Turkish men and women mentioned fear of side-effects as a main concern inhibiting use of oral contraception or other modern methods and a reason for using withdrawal.

Other studies examined the perspectives of providers and how they influence SRH services. Providers in Argentina and Uganda reported ideological constraints to the provision of certain contraceptive methods. Providers in South Africa reported struggling with ethical dilemmas related to the provision of services and information to individuals infected with HIV, fearing that pregnancy would accelerate disease progression and contribute to the number of orphans. In a separate study, South African providers expressed reluctance to counselling pregnant women on their right to access a safe induced abortion. In Uganda, providers reported that many women hid contraceptive use and often discontinued use when they experienced side-effects, rather than switch to another method and risk detection.

In highly restrictive environments, support from influential family members was often a determinant of service use. Contraceptive users in Pakistan were more than twice as likely as non-users to perceive that their mothers-in-law agreed with their fertility preferences. In contrast, women in Turkey reported that lack of support from husbands and family members was a key factor in low use of oral contraceptives. A study in Pakistan documented the effect of women's perceived control over financial resources on their ability to access services. Contraceptive users were more

than twice as likely to work or to perceive that they could work if the need arose.

As care-seeking behaviour is facilitated by support from influential family members and community leaders, it is important to explore alternative channels of communication and counselling and to expand the target audience for information.

3.1.2 Influence of policy and programmatic factors

Studies examining policy and programmatic factors revealed numerous shortcomings. Family planning providers in Peru and Uganda mentioned that politicians and the media propagated misperceptions at times. Such misperceptions were seen to be a significant barrier to contraceptive use and a cause of high rates of contraceptive discontinuation. Participants of focus-group discussions in Turkey mentioned obtaining misinformation from physicians concerning the hazards of oral contraception.

At times, the legal ambiguity of providing certain services placed physicians in the position of law enforcement, overriding the client's right to confidential care. In Argentina, providers explained that notifying police when a woman is hospitalized for postabortion care is a means of protecting themselves against lawsuits.

In the vast majority of studies, providers cited lack of time – created by staff shortages and overloaded work schedules – as the predominant barrier to provision of quality services. In more than one study, labour and delivery facilities were overburdened or had to turn clients away due to the large number of patients. In one case, investigators in Turkey reported that women sometimes had to share beds, and practices to speed delivery (such as early amniotomy and augmentation with oxytocin) were common. In Sri Lanka, 73% of mothers in one study did not receive adequate postnatal care due to the burden placed on the system to provide antenatal care services. In Turkey, 58% of pregnant women reported receiving care from more than one source during their most recent pregnancy, making it difficult for providers to determine the amount of care already received.

Providers often cited lack of supplies, physical infrastructure, institutional policies and constraints, and weak health systems as barriers to adopting new practices. For example, providers in Brazil and Turkey were unsupportive of the practice of the client being accompanied during visits, due to space limitations, disruption of privacy, and lack of time to deal with accompanying persons.

Providers and investigators also identified lack of training or clinical knowledge as a common issue limiting the adoption of evidence-based clinical practices. Nearly half of family planning providers interviewed in Uganda reported receiving no formal training in contraceptive provision. Investigators in Turkey found that providers were unaware of the benefits of active management of the third stage of labour in improving labour and delivery outcomes, and in Cameroon providers had limited knowledge about screening for high-risk pregnancies. In South Africa, health professionals involved in HIV care and support expressed concern that they lacked policy guidelines and training for contraceptive provision to HIV-infected individuals, and abortion providers reported difficulty in accessing training, and a limited understanding of legal policies related to abortion services.

Financial benefits and institutional pressure were also cited as obstacles to adoption of new clinical practices. For example, family planning providers in Egypt and Uganda reported recognition and financial incentives as significant factors for motivating performance of work.

3.1.3 Elements of quality of care and services

3.1.3.1 Choice

In an evaluation of differential contraceptive use among various clinics in Chile, availability of methods had the greatest effect on the use of a method over other aspects of quality. Family planning supplies and essential antenatal equipment were lacking in many settings.

A study in Turkey found that, when given the choice, women seek services where they are likely to be respected and feel comfortable over other aspects of convenience or efficiency. Women in India who experienced a problem during pregnancy were more likely to seek care at a private facility, even while receiving routine care through the public sector; when faced with a crisis, women perceived the care of private practitioners as superior to that of government workers. In Sri Lanka, only those expectant mothers from a village served by an auxiliary nurse midwife (ANM) – who was perceived to provide high-quality care – planned to deliver with the assistance of the ANM.

3.1.3.2 Information given to clients

Counselling sessions are an essential component of SRH services. Results of studies undertaken as part of this initiative revealed numerous missed opportunities to provide critical information to clients during counselling sessions. In four of five research sites, few women received general SRH information or specific information regarding important warning signs of complications of pregnancy.

Many providers selectively avoided subjects that were deemed potentially embarrassing or likely to cause discomfort for themselves or the client. In several studies, clients reported receiving little or no information about condoms, for example. In counselling sessions with post-abortion-care clients, most information was relayed in technical rather than simple language.

Interviews with providers showed that they face many challenges in the provision of quality counselling, including lack

of time and their own disinterest. Some providers described attempts to educate clients as ineffective due to the clients' perceived inability to understand or utilize technical information.

3.1.3.3 Technical competence

Several studies documented current clinical practices, including both recommended and non-evidence-based procedures. Overall, the evidence suggested unequal implementation of evidence-based clinical protocols and in some cases substandard care. In similar settings, the use of evidence-based clinical practices varied by type of facilities (public and private), by provider (physician and nurse) and by client characteristics.

In addition, the overuse of potentially harmful procedures (such as routine episiotomy and speeding delivery with use of oxytocin) and the low utilization rates of essential diagnostic technologies (such as routine blood pressure checks and tetanus vaccination) were not uncommon. Interviews with providers identified a number of potential causes for substandard clinical practices. These included lack of knowledge or training (see above), provider attitudes, insufficiencies in infrastructure, financial and institutional incentives, and lack of client demand for some services.

3.1.3.4 Interpersonal relations

Women who sought services in the public sector frequently reported – and even expected – mistreatment, disrespect, and physical abuse. Observers noted that clinic-based and outreach providers gave differential treatment to clients based on age, social class, and/or cultural or economic status. For example, in Uganda, providers did not refer a client for treatment or contraceptives if they felt the client could not pay for such services. In Sri Lanka, women of low socioeconomic status (SES) were less likely to receive adequate home-based postnatal care than women of high SES (60% versus 79%).

3.1.3.5 Mechanisms to encourage continuity

A key component to provision of comprehensive sexual and reproductive health care is identifying appropriate linkages among services and maintaining reliable referral systems. Evidence showed substantial missed opportunities for provision of contraceptive counselling within relevant SRH services.

3.1.3.6 Appropriate constellation of services

While there are many aspects of service organization which influence the perceived quality of services, the studies conducted to explore this aspect of quality highlighted the importance of two factors: financial cost and availability of female providers. In Turkey, cost was noted as a barrier to use of oral contraception and was mentioned in a separate study as a motivator for users of withdrawal. Clients seeking treatment for STIs reported reluctance to pay for all required tests; therefore, doctors often eliminated some diagnostic tests. On the other hand, the availability of free products and services was noted as a significant draw in accessing services in many settings.

Financial considerations appeared to play a significant role in the decision as to where women sought care. Inability or unwillingness to pay for services led some individuals to turn to more traditional and usually less effective – even unsafe – means of treatment. This was particularly true for younger and unmarried women, and women seeking termination of pregnancy. Availability of female providers was also highlighted as an important issue for women. Reasons given for the preference of home-delivery in India were the absence of a female doctor at the public health centre and the high cost of hospital delivery.

3.1.4 Effects and impacts of improved quality of services

A few of the studies supported by this initiative documented the effects of investments in quality improvement on contraceptive uptake. In Guatemala, Mali, and Senegal, providers had refused to provide contraceptives to women not menstruating, as they could not rule out pregnancy. After introduction of a simple checklist to assess pregnancy, the number of women who were denied contraception was significantly reduced in two of the three settings. In Argentina, investigators introduced training sessions to raise providers' awareness of the impact of unsafe abortion on women's health. The training focused on technical and counselling skills. In follow-up, the percentage of post-abortion clients receiving information on contraception and the percentage of clients leaving with a contraceptive method increased significantly.

3.1.5 Summary and conclusions

When taken together, the results of the completed studies suggest that quality improvement strategies should:

- seek to empower clients, especially those from marginalized groups such as the poor;
- monitor equity in provision of quality care and test approaches that reduce disparities in health-care provision;
- seek to rationalize care, setting minimum standards to ensure clients receive essential services as well as developing tracking systems to reduce duplicative care.

The results of this body of work reinforced the notion that programme managers, with the involvement of providers and community leaders, should seek to facilitate the acceptance of new evidence and encourage the adoption of normative care-seeking behaviour. Triangulation of data from quantita-

tive and qualitative research components was useful in providing comprehensive results and allowed for development of an informed approach to programme improvement.

A major strength of the 24 studies involved their representation of diverse geographical and service-delivery settings. On the other hand, these studies were often small, localized, and descriptive – making comparative analysis difficult. Only two studies involved a quasi-experimental design to test the impact of quality improvements. Additional studies designed to evaluate the impact of quality improvement inputs on programme output and client health are needed to inform policy decision and guide investments in programme improvement. Future studies need to focus on costing and cost-effectiveness aspects of the improvement in quality of care in SRH.

3.1.6 Additional accomplishments during the years 2007–2008

In addition to the synthesis of the work on quality of care, three new studies were approved or initiated under the guidance of the Group on social science and operations research. These studies involved:

- understanding the family planning needs of HIV-discordant couples, to be conducted in Kenya;
- sexual and reproductive health needs of people living with HIV, to be conducted in the United Republic of Tanzania;
- postpartum family planning, to be conducted in the United Republic of Tanzania.

In collaboration with the Population Council's Frontiers project, and jointly with the United Nations Population Fund (UNFPA) and the United States Agency for International Development (USAID), the Department organized a workshop in improving community-based reproductive health-service delivery. The goal of the workshop was to expand and improve access to FP services in the participating countries (Cameroon, Ethiopia, Ghana, Madagascar, and Mali).

3.2 Planned activities

The Group supporting social science and operations research on users' perspectives will continue to pursue policy-relevant questions related to expanding quality services for SRH, including FP. In the short term, these efforts will focus on support to studies on the FP needs of people living with HIV/AIDS and of HIV-discordant couples, expanding access to injectable contraceptives, linking or integrating FP services with HIV/AIDS services and with postpartum and post-abortion care, and addressing the demand and unmet need for FP services.

4. CONTRACEPTIVE TECHNOLOGY

Since its inception, UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP) has played a significant role in the development and testing of various contraceptives. As the needs of couples for reliable and acceptable methods of fertility control increase and involvement of the private sector diminishes, the role of WHO and its public sector and academic partners becomes increasingly relevant.

4.1 Progress

The Programme has made significant progress on several approaches to fertility control during the period 2007–2008. From innovations in emergency contraception, to research on new methods, to epidemiological studies of existing methods, the research portfolio in this area has been rich and diverse.

4.1.1 Emergency contraception

HRP's research related to emergency contraception (EC) continues to have influence and impact on services worldwide. Recently-completed activities ranged from basic science studies of the mechanism of action of a progestogen-only regimen, to defining the probability of conception on the days on and around the time of ovulation, to clinical trials of the efficacy and safety of different known regimens of EC, to identifying novel products that offer promise as more acceptable or more effective methods of EC. All of the work completed in 2007–2008 is described here; reports of all completed studies will be submitted for publication in early 2009.

A study was carried out to investigate the effects of levonorgestrel (LNG) and mifepristone on attachment of human embryos (surplus embryos from assisted reproduction facilities, and those cryopreserved for five or more years) to an in vitro endometrial construct. Expression of endometrial receptivity markers was examined by immunohistochemistry and the effects of LNG and mifepristone on viability and attachment of human blastocysts were investigated. None of the 15 embryos cultured with mifepristone attached to the endometrial construct whereas 10 of 17 in the control group and 6 of 14 in the LNG group attached. Attachment was confirmed by the positive expression of cytokeratin 7 at the attachment site. The results of this study contribute to the data from previous studies suggesting that LNG does not affect implantation while mifepristone seems to prevent it.

The efficacy of a regimen used for EC is calculated by comparing the pregnancy rate after treatment to the expected pregnancy rate, based on the probability of conception on different days of the naturally-occurring ovulatory cycle. A study was undertaken to investigate the probability of conception

on days around ovulation in young Chinese women. Five hundred and thirty-one couples were eligible and agreed to participate in the study. Women used a computerized fertility monitor and performed urine tests to identify the day of ovulation, but were not aware of the test results and were therefore blinded regarding the exact day of ovulation. Couples were randomly assigned to a day of the cycle to have unprotected intercourse. In all, 376 women contributed complete data and 85 of the women became pregnant, giving a pregnancy rate of 22.6%. The probability of conception was highest (30–35%) during the four days before ovulation.

A randomized, double-blind multicentre trial carried out in Nigeria compared the efficacy and side-effects of LNG when administered in two doses of 0.75 mg given 12 hours apart and when administered in a single dose of 1.5 mg up to 120 hours (five days) after unprotected intercourse. Women were enrolled at family planning clinics and were randomized to receive either a two-dose or single dose LNG regimen. Baseline characteristics of all enrolled participants were similar. Notably, 29% had used emergency contraception in the past, more than two thirds of participants had been pregnant in the past, and approximately one third had had a previous induced abortion. Approximately 75% of the participants in each group requested emergency contraception because they had not used any contraceptive method at coitus.

Of the 2823 women included in the efficacy analysis, 17 became pregnant (see Table 1). The number of expected pregnancies if no treatment had been given, and the proportion prevented by treatment, are also shown in the table. For both groups, participants treated later than 72 hours following unprotected intercourse had higher pregnancy rates than those treated within 72 hours. There were no significant differences in side-effects reported between the two groups. The most common adverse effect was nausea, which occurred in 22% of participants in each group. This study confirms the results from an earlier WHO multicentre trial showing that a single dose of 1.5 mg of LNG is effective for emergency contraception.

Insertion of a copper IUD shortly after unprotected intercourse provides an alternative, highly-effective method for EC, with a failure rate of around 0.2% (approximately 20 times lower than that reported for hormonal EC pills in non-comparative trials). While the failure rate of EC pills increases with treatment delay, study results suggest that the copper IUD for EC remains just as effective when placed up to five days after unprotected intercourse. An important additional benefit of using the IUD as a method of EC is that it may be left in place for continuous contraceptive protection for up to 12 years.

A study was conducted in China to establish the efficacy and side-effects of the TCu380A IUD as a method of EC among parous and nulliparous women; the complication and infection rates up to one year after insertion; and the continuation rate for up to one year of use.

Overall, study results demonstrated that IUD insertion with the TCu380A is safe and an effective method for EC in parous and nulliparous women. A total of 1963 women (1868 parous and 95 nulliparous) were recruited at 18 medical centres in China and received the IUD for EC within five days after unprotected intercourse. No pregnancies were presented prior to or at the first follow-up visit, making the EC failure rate zero. There were 1459 women with 12-month outcome information and four pregnancies with IUD in situ occurred within 60 and 360 days after insertion, making the overall 12-month pregnancy rate 0.2 per 100 women.

The most significant complication following IUD insertion was expulsion. Four complete and 38 partial expulsions occurred during the year-long trial period. All of the complete expulsions and most of the partial expulsions (34 of 38) occurred in women who were parous. Only 1.5% of cases encountered some difficulties during the IUD insertion, and although 17% of women received antibiotic treatment at insertion, no infections were reported throughout the study period. Complaints, if any, appeared to decrease with continued use of the method.

The 12-month discontinuation rate for IUD use was 6.5 per 100 woman years, with only 111 women discontinuing from the trial (see Table 2 for reasons for discontinuation). Fewer than 2% of all women discontinued within the first month of use; at 12-months post-insertion, the probability of continuation was 94.3% for parous women and 88.2% for nulliparous women.

Table 1. Pregnancy rates and prevented fractions following administration of LNG for emergency contraception

	N	Pregnancies (rate)	Expected pregnancies	Prevented fraction (95% CI)	Relative risk (95% CI)
Two-dose LNG	1409	8 (0.57%)	165.8	95.2% (90.5–97.9)	1
Single-dose LNG	1414	9 (0.64%)	169.1	94.7% (89.9–97.6)	1.12 (0.43–2.90)

Table 2. Reasons for discontinuation/request for removal of IUD during first year of use

Reason	Parous (*n*=1868)		Nulliparous (*n*=95)		Total (*n*=1963)	
	n	%	n	%	n	%
Complete expulsion	4	0.21	0	0.0	4	0.20
Partial expulsion	34	1.82	4	4.21	38	1.94
Pregnancy with IUD in situ	4	0.21	0	0.0	4	0.20
Perforation	0	0.0	0	0.0	0	0.0
Removal for pain	7	0.37	3	3.16	7	0.36
Removal for bleeding	37	2.00	3	3.16	40	2.04
Removal for pain and bleeding	7	0.37	0	0.0	10	0.51
Pelvic inflammatory disease	0	0.0	0	0.0	0	0.0
Removal for other medical reasons	3	0.16	0	0.0	3	0.15
Removal, desire for further pregnancy	1	0.05	0	0.0	1	0.05
Removal for other personal reasons	4	0.21	0	0.0	4	0.20
TOTAL	**101**	**5.40**	**10**	**1.05**	**111**	**5.65**

Although LNG is an inexpensive compound, considerations including special packing, marketing costs, and commercial profit margin increase the price of dedicated EC pills so that these pills are often too expensive for individual women to purchase or for family planning clinics to stock. Providers have asked for guidance on whether mini-pills containing LNG could be used instead of dedicated 0.75 mg or 1.5 mg tablets. A study was undertaken to compare the pharmacokinetics of two tablets of 0.75 mg of LNG (1.5 mg dose) and 50 mini-pills each containing 0.03 mg of LNG (1.5 mg dose), packed in capsules for the study. Plasma levels were similar following oral administration of either regimen, suggesting that LNG-containing mini-pills can be considered as an alternative to standard LNG tablets for use in EC.

Gestrinone is a long-acting progestogen that is used to treat endometriosis. A multicentre clinical trial was undertaken in China to compare gestrinone to mifepristone for EC. Eligible women (*n*=998) requesting EC within 72 hours of unprotected sex were randomized to receive a single dose of either 10 mg gestrinone or 10 mg mifepristone and followed for one cycle. In the gestrinone group, 2.4% (12/498) of women became pregnant compared with 1.8% (9 of 498) of women in the mifepristone group ($p>0.05$). The efficacy of gestrinone appeared to decline with treatment delay. There was no difference in reported side-effects between the two groups. The results from this small study suggest that gestrinone does not have any advantage over a low dose of mifepristone for emergency contraception.

4.1.2 New methods of fertility regulation for women

In order to widen the choice of contraceptive methods for women, particularly methods that do not require daily interventions and that are under the user's control, the Population Council has developed a combined contraceptive vaginal ring that releases 150 µg of Nestorone and 15 µg of ethinyl estradiol daily. Compared with the combined vaginal ring currently available on the market, Nuvaring (which has to be replaced each month and which is too costly for many potential users), this new device can be used for the duration of one year.

In 2005, the Population Council undertook studies evaluating the effects of ring use on clotting factors and liver proteins; they demonstrated that this ring mimics a third-generation combined oral contraceptive pill with respect to hepatic effects. As the original manufacturer of the ring decided to stop contract manufacturing, the Population Council identified a replacement company and initiated the technology transfer for the ring production.

In 2006, the Population Council conducted a pharmacokinetic study to confirm equivalence of the new rings with those used in previous clinical trials and launched two Phase III clinical trials. One was conducted in centres in the United States of America, with a recruitment target of 1200 women. The other aimed to enrol 1000 women in 10 centres worldwide, including two (Helsinki, Finland and Szeged, Hungary) which are supported by the Programme. In the course of the study, several cases of thromboembolic disease led to a

decision to exclude from the study women with a body mass index greater than 29, as had been done in clinical trials of Nuvaring.

This revision to the exclusion criteria led to a number of discontinuations in the USA centres in particular, where one-year continuation rates are about 55%, lower than those of Latin American, European, and Australian centres (70–75%). Enrolment was completed in the summer of 2008. By mid-October 2008, 2271 volunteers were included in the study, providing close to 18 000 cycles of experience. The trial ended on 31 December 2008, when it was expected that the 20 000 cycles needed to register a New Drug Application with the United States Food and Drug Administration would be met. Preliminary results demonstrate an excellent acceptability of this method in the populations under study. Final data analysis will be completed in 2009.

Long-acting progestogens are safe and effective methods of contraception; however, the compounds that are currently marketed do have drawbacks in terms of side-effects (primarily bleeding irregularities) and use of depot medroxyprogesterone, in particular, has a negative impact on bone mineral density. The Programme has been working in collaboration with CONRAD and the United States National Institute of Child Health and Human Development (NICHD) to develop an alternative injectable progestogen formulation for use in regimens of fertility regulation for women and men.

Early studies of levonorgestrel butanoate (LNG-B) demonstrated that administration of an injectable suspension of the compound produces excellent pharmacokinetics; interest was renewed several years ago. In 2007–2008, CONRAD (with funding from NICHD) identified several contract laboratories and manufacturers who could formulate the bulk LNG-B that was manufactured under good manufacturing practices (GMP) and procured by the Programme in 2006.

The process for sterile filtration and micronization was refined using non-GMP material. The GMP grade LNG-B was sterile filtered and micronized in mid-December 2008. In parallel with the formulation development, stability evaluations of several dosage concentrations have been ongoing at a research laboratory. This laboratory will continue to perform optimization studies and stability evaluation of the formulated GMP product. Manufacturing of the final product is scheduled to begin in 2009. Clinical testing will begin in 2009, using protocols developed by the NICHD.

4.1.3 New methods of fertility regulation for men

Globally, men are aware of the benefits of family planning and support the use of methods to limit childbearing. International surveys consistently demonstrate men's interest in and willingness to use a safe and effective method of male fertility regulation. Men's choices are currently limited to methods that are generally characterized by low efficacy and/or low acceptance: condoms, vasectomy, or withdrawal. By developing and making available a safe, effective, acceptable, and reversible method to regulate male fertility, the unmet needs of many individuals and couples could be fulfilled. The Programme has emphasized clinical research on hormonal regimens of male fertility control in recent years, as this approach is currently estimated to be the most promising in terms of developing a marketable product in the near term.

The Programme's Phase III trial of the safety and contraceptive efficacy of a regimen of injectable testosterone undecanoate (TU) administration as a method of male fertility regulation was completed in 2007. The world's first – and, to date, only – Phase III trial of a hormonal method of male fertility regulation, this study recruited over 1000 couples from 10 research centres in China. The couples relied on monthly clinic-provided injections of 500 mg of TU as their only contraceptive method throughout a two-year efficacy phase. The injections were effective at reversibly reducing spermatogenesis to levels considered compatible with contraception (≤1 million sperm per ml semen) in this population (Figure 4).

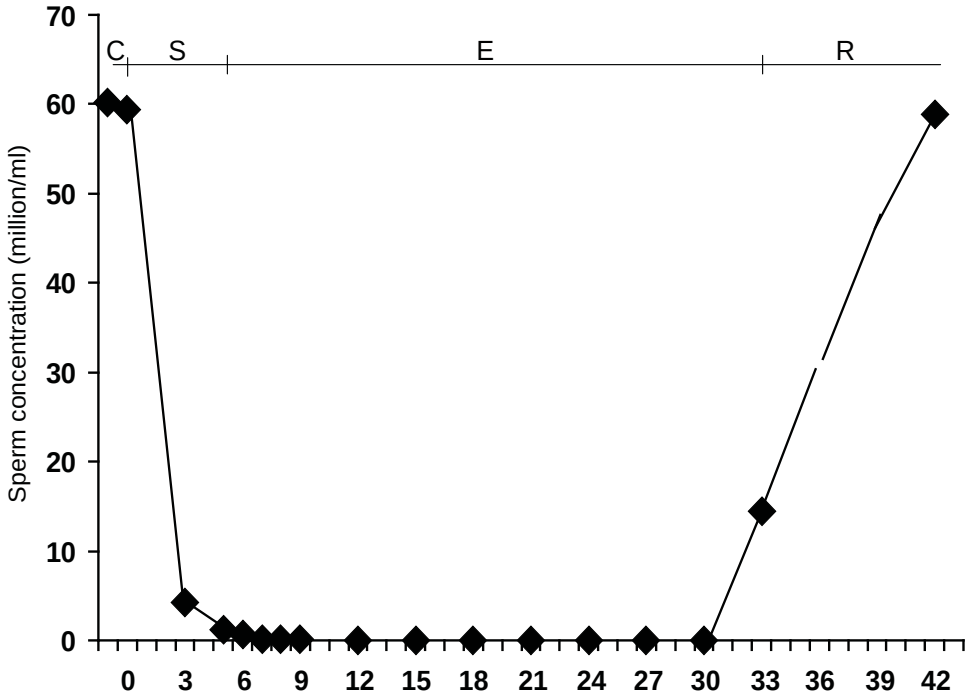
The method failure rate was defined as the percentage of men whose sperm concentrations did not adequately suppress, plus those who caused a pregnancy or whose sperm concentrations rebounded during the efficacy phase of the study; this was calculated at 7.1 per 100 couple-years. The method was considered acceptable and its use did not lead to any significant changes in safety parameters or serious adverse events. A manuscript of the safety and efficacy component has been accepted for publication and a companion manuscript on predictors for partial suppression of spermatogenesis in the study was published in 2008.

The suppression of spermatogenesis resulting from the administration of an androgen-alone regimen is less effective in Caucasian men than in Asian men. Results of small, primarily exploratory studies have demonstrated improved effectiveness in all populations of men when a progestogen is combined with an androgen. This approach also allows for administration of lower doses of androgens and lower overall drug load, improving safety and acceptability.

In 2008, a study of the safety and clinical efficacy of a combined hormonal regimen for male fertiltiy control was initiated in collaboration with CONRAD. In this Phase IIb trial, 400 couples were recruited from eight sites to rely on bimonthly (every eight weeks) injections of 200 mg norethisterone enantate (Net-En) and 1000 mg TU as their only means of contraception for one year. This combination was demonstrated to be very acceptable and highly effective in suppressing spermatogenesis in earlier studies; the current trial will be the second contraceptive efficacy study of a combined hormonal method for men, and will enrol more than four times as many couples as the previous trial of such a method.

By the end of 2008, two centres in Chile and Italy were actively recruiting and screening study participants; three centres (two in Australia and one in Germany) will initiate

Figure 4. Sperm concentration in men receiving monthly injections of TU for contraception



Note: The bar across the top indicates the various phases of the study (C – Control; S – Suppression; E – Efficacy; R – Recovery)

active recruitment in January 2009; and it is anticipated that the last three centres (in India, Indonesia, and the United Kingdom) will be enrolling participants during the first half of 2009. A research organization contracted by CONRAD is responsible for regulatory submissions, data management, and trial monitoring according to the International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use and WHO Good Clinical Practice standards.

4.1.4 Long-term safety and efficacy of existing methods of fertility regulation

The effects of hormonal contraception on the course of HIV disease are not well documented. In 2000, the Programme initiated a prospective study of women in Brazil, Kenya, Thailand, and Zimbabwe who were using hormonal and other contraceptive methods. Results from earlier studies had suggested that hormonal contraceptive users might have a greater genetic diversity of HIV at the time of infection, a higher viral set point, and faster disease progression. The study enrolled women with early stage disease (CD4 cell counts more than 500 cells per mm^3) and using combined oral contraceptives, progestogen-only injectables, or non-hormonal methods of contraception; follow-up was for a maximum of four years.

Results from the study show that, among the 498 women followed, CD4 cell decline from baseline was approximately 70 cells per mm^3 per year over the first two years, and stabilized at an average of 530 cells/mm^3 for the remaining period of follow-up, in all three study groups. Similarly, viral load increased from an average of 4800 copies per ml to 14 000 copies per ml over the first three years of follow up and stabilized at approximately 15 000 copies per ml in all three study groups. These results are reassuring, and do not suggest that there are large differences in disease progression according to type of contraceptive method used. There is no reason to advise women with HIV infection to avoid use of hormonal contraception. A manuscript summarizing the findings will be submitted for publication in 2009.

In 2003, a randomized clinical trial to assess the clinical performance and contraceptive efficacy of two contraceptive implants, Jadelle and Implanon, was initiated in seven countries: Brazil, Chile, the Dominican Republic, Hungary, Thailand, Turkey, and Zimbabwe. Recruitment for this study is now complete, as the final participant was recruited in January 2008. A total of 2008 women have been randomized to receive one of the two implants, and an age-matched cohort of 973 women who elected to use the TCu380A IUD was enrolled in parallel to the randomized trial. The main objectives of the randomized trial are to compare:

- the annual and three-year cumulative rates of method continuation of Jadelle and Implanon;
- the contraceptive effectiveness of Jadelle and Implanon;
- the incidence of adverse effects between women using implant contraceptives and women using a non-hormonal contraceptive method (copper IUD).

In 2006, the study was extended to investigate the efficacy of Implanon beyond three years (up to five years) in addition to continuation of the study objectives of the first three years (above). The first part of the cohort completed their fifth year of use in 2008. Data analysis for the first results of admission and events at the time of insertion should be complete in early 2009, with publication of the first results to follow. Table 3 resents the number of women enrolled at each centre, by method, and the number of Implanon users who have agreed to date to continue into the extended follow-up phase of the study.

Quinacrine hydrochloride (quinacrine), when formulated into pellets and inserted into the uterus of women, causes scarring and closure of the fallopian tubes. It is estimated that at least 140 000 women in 34 countries have undergone this procedure as a method of non-surgical sterilization, although the drug is not currently approved by any regulatory authority for this route of administration or for this indication. In the early 1990s, the Programme's Toxicology Panel and, separately, a technical advisory panel on female sterilization convened by the Programme recommended against WHO conducting clinical research on quinacrine, due to lack of pre-clinical safety data.

Prompted by the recent availability of pre-clinical toxicology and other safety data, WHO convened a technical consultation in October 2008 in collaboration with Family Health International in order to assess the relationship between quinacrine (when used for non-surgical sterilization in women) and safety end-points, with an emphasis on cancer risk.

Table 3. Number of women enrolled, by method and by centre, and (for Implanon) number who completed the third year of the study and consented to continue into the extension phase follow-up (data current as of July 2008)

Centre	Implanon	Jadelle	IUD
Campinas, Brazil			
Enrolled Continuing in extension phase, to date	130 29	130	130
Santiago, Chile			
Enrolled Continuing in extension phase, to date	160 36	160	160
Santo Domingo, Dominican Republic			
Enrolled Continuing in extension phase, to date	209 23	208	209
Szeged, Hungary			
Enrolled Continuing in extension phase, to date	96 0	97	77
Bangkok, Thailand			
Enrolled Continuing in extension phase, to date	169 52	169	162
Ankara, Turkey			
Enrolled Continuing in extension phase, to date	100 10	100	95
Harare, Zimbabwe			
Enrolled Continuing in extension phase, to date	140 59	140	140
Total **Enrolled** **Continuing in extension phase, to date**	 **1004** **209**	 **1004**	 **973**

The consultation considered data from animals and humans as related to cancer risk, particularly gynaecological cancer risk. The panel concluded that currently available data are sufficient to support the conclusion that quinacrine is genotoxic in vitro. While no increased incidence of malignant tumours was noted in a neonatal mouse assay, a dose-related increased incidence of benign and malignant tumours of the vagina, cervix and uterus was observed in a long-term (two-year) study in rats. The panel could not distinguish between a direct genotoxic effect of quinacrine, a secondary effect of inflammation and tissue regeneration, or a combination of the two, in the genesis of observed tumours in the rat.

The epidemiological studies reviewed at the consultation were well conducted. They showed no excess risk of cancers of the uterus, other female genital tract, or any other site, but had limited statistical power. The panellists did not review safety data related to outcomes other than cancer during the meeing.

The panel was made aware of ongoing analyses of epidemiological data and made the following recommendations.

- When the additional epidemiological data become available, a thorough review of all human safety data should be conducted.
- If the epidemiological data cannot exclude an association between quinacrine exposure and cancer, the molecular mechanisms of cancer induction should be investigated.
- There should be continued surveillance of women who have received quinacrine sterilization in the past for risk of gynaecological cancer and other health complications.
- Until the totality of safety, effectiveness and epidemiological data has been reviewed, quinacrine should not be used for non-surgical sterilization of women in either clinical or research settings.

Together with the meeting report, these recommendations will be made available on the Department's web site and will inform the final WHO statement and recommendations on the safety of quinacrine for use in women for non-surgical sterilization, to be developed following a thorough review of human safety data (anticipated for 2009).

4.2 Planned activities

In the short-term, no new initiatives in the area of new contraceptive methods will be launched; however, additional progress across the range of all approaches currently under investigation is expected. A study on the impact of use of hormonal contraception on bone health in adolescent women will be initiated, if resources allow.

4.2.1 New methods of fertility regulation

Reports of completed studies related to emergency contraception will be submitted for publication and will be available in the scientific literature in 2009.

Data analysis for the Population Council's one-year combined hormonal contraceptive vaginal ring study will be ongoing in 2009; manuscripts describing the safety, efficacy, and acceptability of this device will be drafted and submitted for publication.

A contract laboratory will perform validation and manufacturing of LNG-B in 2009. An initial pharmacokinetic clinical study of two doses of the steroid will be conducted in women, to be followed by a larger clinical study testing several dosage strengths in both women and men.

A thorough review of all human safety data related to the use of quinacrine as a method of non-surgical sterilization in women will be conducted when ongoing analyses have been completed and data are made available. A statement on the safety of quinacrine for this application will be developed and published on the Department's web site.

Recruitment and enrolment of couples into the Phase IIb study of the safety and contraceptive efficacy of NetEn + TU for male contraception will be completed at all sites by December 2009. The study will continue to follow enrolled couples, with a projected end to data collection in late 2011. The final study report will be available in 2012.

4.2.2 Long-term safety and efficacy of existing methods of fertility regulation

The results of the study on the effects of hormonal contraception on the course of HIV disease will be published in 2009.

A prospective, multi-centre cohort study will be initiated to evaluate the effect of the combined injectable contraceptive Cyclofem compared with progestogen-only injectable formulations and non-hormonal contraceptive use on adolescent women's bone health during the period of peak bone mass acquisition in various populations. Long-term follow-up will provide data on bone density in early adulthood in those women who discontinue use of these methods during the trial.

5. SUPPORT TO COUNTRIES

5.1 Progress

The PFP team has led an initiative to define essential sexual and reproductive health services and match provider competencies at the primary health care (PHC) level. A WHO working group produced the plan of action for moving forward with this initiative, and a group of experts from within and external to

WHO produced a draft list of provider competencies in 2007. In 2008, this project was confirmed as an important cross-departmental initiative and efforts increased towards the goal of producing a guideline describing the essential package of SRH services to be provided at PHC level, the competencies needed, and a comprehensive analysis of the enabling factors and barriers for the proper implementation of the package. The document will also incorporate guidance on the implementation process and the resources needed to implement this package. The Department has been strengthening coordination with other WHO departments that are now defining their roles in the context of the renewed emphasis on PHC. The challenge is to confirm and prove the fundamental and central role that SRH services serve within PHC efforts to improve the health of individuals, families, and communities.

RHR is working in collaboration with Family Health International and IntraHealth to produce the *Family planning resource package*. This package will provide up-to-date training materials based on the publication *Family planning: a global handbook for providers*. These materials will be published on CD-ROM and will include visual aids and materials for presentations, speaker notes, discussion questions, case-studies, and interactive exercises. The materials could be used independently or incorporated into existing family planning curricula to replace outdated training materials currently being used in pre-service or in-service training.

The WHO/UNFPA Strategic Partnership Programme (SPP), first established between RHR and UNFPA, has moved to a second stage in which the partnership has been extended to include other WHO Departments. There have been efforts to apply lessons learnt and successful models developed through the Partnership in additional countries. Five subregional workshops have been held in southern and western Africa, where representatives from countries of intensified focus shared country experiences with countries new to the Partnership. Countries made plans for adaptation and adoption of guidelines in each country. Subregional workshops were also held in the South-East Asia and Western Pacific Regions.

5.2 Planned activities

The PFP team will continue to respond to countries' requests for technical support to strengthen family planning programmes and their linkages to other reproductive health services, including those for HIV/AIDS.

The document to identify essential sexual and reproductive health services and match provider competencies at the PHC level will be developed throughout 2009, with the goal of disseminating the materials in 2010.

6. LINKAGES BETWEEN SEXUAL AND REPRODUCTIVE HEALTH AND SEXUALLY TRANSMITTED INFECTIONS, INCLUDING HIV/AIDS

6.1 Progress

It is well acknowledged that the lack of linkages between sexual and reproductive health services and STI or HIV/AIDS services represents a missed opportunity for providing quality care. The Department is working to help address this issue. In addition, the PFP team is developing tools to help countries assess their situations and implement linked or integrated programmes to provide appropriate services.

The training and job aid *Reproductive choices and family planning for people with HIV* was finalized and published, in partnership with the INFO Project at JHU/CCP and the WHO Department of HIV/AIDS. An adaptation guide was developed by the Department (RHR) and will be published on CD-ROM with training materials and files for adaptation.

An adaptation of the *Decision-making tool for family planning clients and providers*, intended for countries with high HIV prevalence, is under development. The adaptation includes a new module on provider-initiated HIV testing and counselling, which was developed in collaboration with the Department of HIV/AIDS and is being field tested.

In collaboration with the WHO Regional Office for Africa and UNFPA, the Department developed and published the *Rapid assessment tool for sexual & reproductive health and HIV linkages: a generic guide*. The tool was published in partnership with the International Planned Parenthood Federation, UNFPA, the Joint United Nations Programme on HIV/AIDS, the Global Network of People Living with HIV/AIDS, the International Community of Women Living with HIV/AIDS, and Young Positives. This tool aims to help countries assess the current situation regarding sexual and reproductive health and HIV integration activities and to plan for future activities. It was tested in Botswana in July 2008.

Additional work includes:

- collaboration with the WHO Department of HIV/AIDS to advocate for due emphasis on family planning needs as one of the four prongs of prevention of mother-to-child transmission (PMTCT) of HIV; and

- contributing to the development of technical briefs on HIV and SRH as well as PMTCT as a resource for technical staff preparing proposals for submission to the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM).

With respect to the linkages between STIs and infertility, effective implementation of STI prevention and treatment

strategies should reduce infertility prevalence, particularly the prevalence of secondary or acquired infertility. Secondary infertility is the major cause of infertility in the developing world and may be one of the major causes of unexplained infertility worldwide. Studies conducted in collaboration with the RHR Infertility Task Force (1979–1984) included over 33 countries and 5800 couples, and the results causally linked STIs and/or reproductive tract infections with infertility. In 2008, a working group was convened within the Department and a recommendation was made to systematically review the current literature on this link, in light of improvements in the sensitivity and specificity of assays to detect infectious and other agents that may compromise fertility.

6.2 Planned activities

In 2009, the Department will continue to work with Botswana on the follow-up to the implementation of the *Rapid assessment tool for sexual & reproductive health and HIV linkages.* Further implementation is also planned in a series of countries, in collaboration with UNFPA. The Department also plans to develop an adaptation guide to help countries in using the rapid assessment tool, in collaboration with the WHO Department of Making Pregnancy Safer.

The Department will initiate a systematic review of all current literature on the causal relationship of STIs and other infectious agents with long-term sequelae, specifically infertility.

7. INTERVENTIONS FOR MEDICALLY ASSISTED REPRODUCTION IN LOW-RESOURCE SETTINGS

7.1 Progress

In 2006, the International Committee Monitoring Assisted Reproductive Technologies (ICMART) requested that WHO convene a meeting to revise the 2001 glossary on infertility. In 2007, the International Federation of Fertility Societies (IFFS) and the Low Cost In Vitro Fertilization Foundation (LCIVFF) responded with a recommendation that such a meeting also address low-cost options for assisted reproductive technologies (ART).

Infertility treatments represent one of the most actively growing areas of medicine. However, current practices for the treatment of infertility or low fertility in low-resource settings appear to be woefully inequitable when compared to higher-resource settings where advanced technologies such as an in vitro fertilization (IVF) procedure of intracytoplasmic sperm injection are available (albeit expensive).

There is an unmet need for access to information and interventions to help couples avoid preventable infertility. There is also a paucity of evidence for the development of any guidance for ART interventions suitable for low-resource settings. Additional research efforts are required before evidence-based best practices for lower-cost options and for full infertility packages (education, training, laboratory services, and monitoring) can be established or recommended for low-resource settings

In December 2008, the Department convened a meeting of technical experts with the support of ICMART, IFFS, and LCIVFF, in order to address various issues related to infertility prevention, diagnosis, and management in low-resource settings worldwide. Participants included infertility experts from public and private practice, academicians, editors-in-chief of two key journals in the field, and key representatives from 20 infertility societies whose membership covered countries from all WHO regions.

A revised glossary was developed at the meeting, with consensus on terminology by all participants. The glossary was expanded from 53 terms to 88 terms which include laboratory and patient outcome definitions. The glossary will be published in both *Fertility and Sterility* and *Human Reproduction* in late 2009.

The strategy developed at the meeting to identify appropriate interventions in low-resource settings begins with pilot studies of early intervention and diagnosis at the community primary health-care level and progresses through to the implementation of adapted ART therapies. An agreement was made to define the key data required for building evidence on diagnostic tools, patient eligibility, and best practice, as registries and clinical trials move forward. The ultimate long-term goal of the strategy is that evidence will be generated in low-resource settings in both developed and developing countries, to lead to guideline development for low-cost, high-quality ART for public and private sector SRH services.

Recommendations covered the areas of infertility education; prevention, prevalence and burden of infertility conditions; management of infertility in national programmes, public policy, and advocacy; medically assisted reproduction (MAR) data governance and surveillance; service development; and integration within low-resource settings. These recommendations are summarized in Box 2.

7.2 Planned activities

As noted above, several recommendations from the experts were specific to WHO, as based on the Organization's technical capacities and comparative advantages. The planned activities follow these recommendations.

Together with ICMART, WHO will write the introduction and present the glossary for publication in *Fertility and Sterility* and *Human Reproduction*, with an expected publication date in late 2009. Together with ICMART, IFFS and LCIVFF, WHO will generate a meeting report for publication in 2009.

A working group will be established with the WHO team on the global burden of disease, to identify the relative impact of

infertility. This work has been initiated and is expected to be completed by 2010. Infertility prevalence data will be collected and compared with STI surveillance data using mathematical modelling; this longer-term activity is planned to take place during 2010–2015.

The Department has a significant role to play in the development of guidelines related to infertility. In 2009, a template for guidance on infertility education for providers at the primary health-care level will be developed. Tools for primary, secondary, and tertiary level providers, including appropriate infertility algorithms and evidence-based guidance, will be prepared during the next few years.

The Department is also committed to supporting further consultations in this area during the next several years, and plans to convene an expert meeting on ethics to address donor gametes and surrogacy (and perhaps specific methods of ART) as well as a meeting of the alliance for infertility within low-resource settings to discuss the results of completed pilot studies.

Box 2. Summary of recommendations from meeting of technical experts on infertility

Topic	Draft recommendations
Infertility education	1. RHR to continue to counter misinformation that prevails about FP methods, including that use of certain methods of fertility regulation lead to permanent infertility. 2. Public programmes relating to an understanding of infertility, MAR care and access to relevant services should be developed as part of SRH education. (To include: recognition of infertility (or sub-fertility) as a result of obesity, smoking, delayed childbirth (men and women), increased sexual activity/partners without use of barrier methods, early menopause due to family history, cancer before or during reproductive years, and other factors.) 3. Support for development of an infertility tool for providers. Assistance of NGOs including IFFS in conducting training workshops for providers.
Prevention, prevalence and burden of disease	1. Prevention of infertility should continue to be one of the major objectives of STI programmes. 2. Cross-cultural epidemiological and social science research, using standard definitions of infertility, should be conducted, in order to better understand the levels of prevalence; the need and demand for, and the access to, fertility diagnosis; and treatment services. 3. Social science research should be used to develop a better assessment of the quality of life as affected by infertility. The social burden of infertility in various regions should be evaluated in various cultural contexts and resource settings, using comparable methodologies.
Management of infertility by governments, public policy, and advocacy	1. Infertility services covering a comprehensive range of fertility strategies should be complementary to population policies and programmes of maternal and child health and SRH. 2. Equitable access to affordable, high-quality MAR care should contribute to public health and become government policy in all countries, with summary data – as a minimal standard – to be regularly published. 3. When MAR in low-resource environments is established, selected clinics should develop a facility for managing HIV-positive patients. 4. Infertile-patient organizations should be involved in patient education, publicity, and advocacy. Advocacy of reproductive rights in the area of infertility is essential to gain community, professional, and government support.
MAR data governance and surveillance	1. Quality control is needed in the delivery of ART. 2. All international and national data collection for ART should use the ICMART glossary definitions. 3. The glossary should be made available for translation. 4. Surveillance of ART should be ongoing. 5. A capacity for national reporting of all MAR data should be developed to monitor MAR treatment and outcome in each country performing MAR care. 6. ICMART should be the principal organization to develop and promote global surveillance of ART and should be the global repository of those data.

Topic	Draft recommendations
Recommendations directed to WHO. Service development and integration into low-resource settings.	1. Support should be given to the Global Burden of Disease (GBD) group in the development of the envelope for infertility, which will determine the relative impact of infertility on society. 2. WHO should develop an infertility subgroup for the International Classification of Diseases ICD-11 Topic Advisory Group in SRH. 3. A WHO simplified protocol for semen analysis, appropriate for use in selection of candidates for intrauterine insemination and IVF, should be developed. 4. WHO, as a neutral party, should form an expert group with a mandate to suggest and formulate studies, and to accumulate data systematically so as to produce the evidence base for future practice of MAR in low-resource settings. 5. A memorandum of understanding (MoU) should be written between involved organizations* to form an Alliance for the development and promotion of a programme for fertility care in low-resource settings. WHO should play a neutral role in the Alliance, interacting with participants and stimulating adherence to timelines to achieve the MoU objective. *ICMART, IFFS, LCIVFF, the American Society of Reproductive Medicine (ASRM), the European Society of Human Reproduction and Embryology (ESHRE) Infertility Task Force, Alpha Scientists for Reproductive Medicine. 6. Two years following the signing of the MoU, a meeting should be held at WHO to review the data from the fulfilled objectives and formulate plans to scale up these activities. 7. Policy briefs and clinical and ethical guidelines on issues such as IVF, other ART services, and surrogacy should be produced. 8. In light of evidence-informed experience, WHO manuals for interventions/management of the infertile couple should be developed to address low-cost treatment options. 9. In light of evidence-informed experience, a WHO template for establishing and maintaining an ART clinic in a low-resource economy should be developed. 10. WHO should convene an ethics advisory panel meeting to review and develop ethical guidance on issues such as IVF, ICSI, and other MAR technology services including but not limited to surrogacy.

Annex 1

MEDICAL ELIGIBILITY CRITERIA FOR CONTRACEPTIVE USE

GUIDELINE STEERING GROUP

Maria del Carmen Cravioto	Salvador Zubiran National Institute of Nutrition, Mexico City, Mexico
Kate Curtis	Centers for Disease Control and Prevention, Atlanta, GA, USA
Anna Glasier	Family Planning and Well Woman Services, Edinburgh, United Kingdom
Kerstin Hagenfeldt	Karolinska Institute, Stockholm, Sweden
Phil Hannaford	University of Aberdeen, Foresterhill Health Centre, Aberdeen, United Kingdom
Olav Meirik	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Herbert Peterson	School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	1	14			2	28	3
Women	1	14			3	42	4
WHO Region:							
Africa							
The Americas	2	28			2	28	4
South-East Asia							
Europe					3	42	3
Eastern Mediterranean							
Western Pacific							

Total = 7

REVIEWERS FOR THE CIRE SYSTEM

Yasmin H. Ahmed	Marie Stopes Clinic Society, Dhaka, Bangladesh
Tsungai Chipato	University of Zimbabwe, Harare, Zimbabwe
Juan Diaz	The Population Council, Sao Paulo, Brazil
Soledad Diaz	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Ezzeldin O. Hassan	The National Egyptian Fertility Care Society, Cairo, Egypt
Robert Hatcher	Emory University, Atlanta, GA, USA
Mihai Horga	UNFPA Office, Bucharest, Romania
Roy Jacobstein	Engender Health, New York, NY, USA
Victoria Jennings	Georgetown University Medical Center, Georgetown,Washington, DC, USA
Enriquito Lu	Sustaining Technical Achievements in Reproductive Health/Family Planning, Jakarta, Indonesia
Pisake Lumbiganon	Khon Kaen University, Khon Kaen, Thailand
Pamela Lynam	Johns Hopkins Program for International Education in Gynecology and Obstetrics, Nairobi, Kenya
Trent MacKay	National Institutes of Health, Bethesda, MD, USA
Polly Marchbanks	Centers for Disease Control and Prevention, Atlanta, GA, USA
Suneeta Mittal	All India Institute of Medical Sciences, New Delhi, India
Charles Morrison	Family Health International, Research Triangle Park, NC, USA
Kavita Nanda	Family Health International, Research Triangle Park, NC, USA
Emmanuel Otolorin	Makerere University, Kampala, Uganda
Helen Rees	Baragwanath Hospital, Johannesburg, South Africa
Roberto Rivera	Family Health International, Research Triangle Park, NC, USA
James Shelton	United States Agency for International Development, Washington, DC, USA
Nothemba Simelela	International Planned Parenthood Federation, London, United Kingdom
Connie Smith	St Charles Hospital, London, United Kingdom
Bulbul Sood	The Centre for Development and Population Activities (CEDPA), New Delhi, India
Marcel Vekemans	nternational Planned Parenthood Federation, London, United Kingdom
Edith Weisberg	Sydney Centre for Reproductive Health Research, Sydney, Australia
Wu Shang-chun	National Research Institute for Family Planning, Beijing, China

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	6	22	1	4	7	26	14
Women	7	26			6	22	13
WHO Region:							
Africa	4	15					4
The Americas	2	7			9	30	11
South-East Asia	5	18					5
Europe			1	4	3	11	4
Eastern Mediterranean	1	4					1
Western Pacific	1	4			1	4	2

Total = 27

RESEARCH GROUP ON METHODS FOR THE REGULATION OF MALE FERTILITY

Members

Richard Anderson	Medical Research Council Human Reproductive Sciences Unit, Edinburgh, United Kingdom
Kiagus Arsyad	Sriwijaya University, Palembang, Indonesia
Hermann Behre	Martin Luther University, Halle, Germany
William Bremner	University of Washington, Seattle, WA, USA
Gu Yi-Qun	National Research Institute for Family Planning, Beijing, China
Ilpo Huhtaniemi	University of Turku, Turku, Finland
Robert McLachlan	Prince Henry's Institute of Medical Research, Victoria, Australia
Cristina Meriggiola	University of Bologna, Bologna, Italy
Nukman Moeloek	University of Indonesia, Jakarta, Indonesia
Eberhard Nieschlag	Institute of Reproductive Medicine, Münster, Germany
Christina Wang	Harbor University of California at Los Angeles Medical Center, Torrance, CA, USA
Frederick Wu	University of Manchester, Manchester, United Kingdom

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	3	25			7	58	10
Women					2	17	2
WHO Region:							
Africa							
The Americas					2	17	2
South-East Asia	2	17					2
Europe					6	50	6
Eastern Mediterranean							
Western Pacific	1	8			1	8	2

Total = 12

Collaborating agency scientists

Diana Blithe	National Institute of Child Health and Human Development, Bethesda, MD, USA
Douglas Colvard	CONRAD, Arlington, VA, USA
Henry Gabelnick	CONRAD, Arlington, VA, USA
Regine Sitruk-Ware	The Population Council, New York, USA

SOCIAL SCIENCE RESEARCH

SCIENTISTS IN 2007–2008

Principal investigators

Francisco Inacio Bastos	Oswaldo Cruz Foundation, Rio de Janeiro, Brazil
Di Cooper	University of Cape Town, Observatory, South Africa
Le Huu Tho	Khanh Hoa Provincial Health Service, Nha Trang, Viet Nam
Asha Kilaru	Belaku Trust, Bangalore, India
Pranitha Maharaj	University of KwaZulu-Natal, Durban, South Africa
Frank Mugisha	Makerere University, Kampala, Uganda
Stella Neema	Makerere Institute for Social Research, Kampala, Uganda
Edith Pantelides	Centro de Estudios de Población – CENEP, Buenos Aires, Argentina
Lilian Ramirez	Centro de Investigación Epidemiológica en Salud Sexual y Reproductiva, Guatemala City, Guatemala
Chi-Chi Undie	African Population and Health Research Centre, Nairobi, Kenya
Mark Urassa	National Institute for Medical Research (NIMR), Mwanza, Tanzania
Jennifer Wagman	Rakai Health Sciences Program, Uganda Virus Research Institute, Entebbe, Uganda
Huang Yingying	Institute of Sexuality and Gender, Renmin University of China, Beijing, China
Wang Yubao	Shanghai Institute of Planned Parenthood Research, Shanghai, China
Wu Junqing	Shanghai Institute of Planned Parenthood Research, Shanghai, China
Wu Shi-Zhong	Chengdu Donghua Reproductive Health Research Institute, Chengdu, China

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	7	44					7
Women	9	56					9
WHO Region:							
Africa	7	44					7
The Americas	3	19					3
South-East Asia	1	6					1
Europe							
Eastern Mediterranean							
Western Pacific	5	31					5

Total = 16

Other scientists

John Cleland London School of Hygiene and Tropical Medicine, London, United Kingdom

EMERGENCY CONTRACEPTION RESEARCH

SCIENTISTS IN 2007–2008

Principal investigators

Cheng Linan	Shanghai Institute of Family Planning, Shanghai, China
Cheng Wei-yu	Tianjin Municipal Research Institute for Family Planning, Tianjin, China
Horacio Croxatto	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Olukayode A Dada	Centre for Research in Reproductive Health, Sagamu, Nigeria
Kristina Gemzell-Danielsson	Department of Women and Child Health, Karolinska Institute, Stockholm, Sweden
Luigio Devoto	Instituto de Investigaciones Materno Infantil, Santiago, Chile
Maria E. Ortiz	Catholic University of Chile, Santiago, Chile
Wu Chang-chun	National Research Institute for Family Planning, Beijing, China

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	3	38					3
Women	4	50			1	12	5
WHO Region:							
Africa	1	12					1
The Americas	3	38					3
South-East Asia							
Europe					1	12	1
Eastern Mediterranean							
Western Pacific	3	38					3

Total = 38

Other scientists

Emily Godfrey	University of Illinois College of Medicine, Chicago, IL, USA
Elizabeth Wesley	International Consortium for Emergency Contraception, New York, NY, USA
Elizabeth Raymond	Family Health International, Research Triangle Park, NC, USA

RESEARCH ON METHODS FOR THE REGULATION OF MALE FERTILITY

SCIENTISTS IN 2007–2008

Principal investigators

Gu Yi-Qun	National Research Institute for Family Planning, Beijing, China
David Handelsman	University of Sydney, Sydney, Australia
Robert McLachlan	Prince Henry's Institute of Medical Research, Clayton, Australia
Cristina Meriggiola	University of Bologna, Bologna, Italy
Nukman Moeloek	University of Indonesia, Jakarta, Indonesia
Gabriela Noé	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Manuela Simoni	Institute of Reproductive Medicine, Münster, Germany
Michael Zitzmann	Institute of Reproductive Medicine/Centre of Reproductive Medicine and Andrology, Münster, Germany

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	2	26			3	38	5
Women	1	13			2	25	3
WHO Region:							
Africa							
The Americas	1	13					1
South-East Asia	1	13					1
Europe					3	38	3
Eastern Mediterranean							
Western Pacific	1	13			2	25	3

Total = 8

Other scientists

Giovanna Amoriello	University of Bologna, Bologna, Italy
Marta Berra	University of Bologna, Bologna, Italy
Bo Li-Wei	Henan Family Planning Research Institute, Henan, China
Sabine Borchert	Institute of Reproductive Medicine/Centre of Reproductive Medicine and Andrology, Münster, Germany
Cheng Li-Fa	Henan Family Planning Research Institute, Henan, China
Silvia Cerpolini	University of Bologna, Bologna, Italy
Ann Conway	University of Sydney, Sydney, Australia
Antonietta Costantino	University of Bologna, Bologna, Italy
Trevor Cooper	Institute of Reproductive Medicine/Centre of Reproductive Medicine and Andrology, Münster, Germany
Joachim Esselmann	Institute of Reproductive Medicine/Centre of Reproductive Medicine and Andrology, Münster, Germany
Carolyn Fennell	University of Sydney, Sydney, Australia
Elise Forbes	Prince Henry's Institute of Medical Research, Clayton, Australia
Cristián Jesam	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Werdhy Lestari	University of Indonesia, Jakarta, Indonesia
Li Han-Min	Birth-Control Institution, Guizhou, China
Liang Xiaowei	National Research Institute for Family Planning, Beijing, China
Lin Peng	Yunnan Family Planning Research Institute, Yunnan, China
Peter Liu	University of Sydney, Sydney, Australia
Liu Xiao-Zhang	Sichuan Family Planning Research Institute, Sichuan, China
Ximena Luengo	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Kati Matthiesson	Prince Henry's Institute of Medical Research, Clayton, Australia
Gabriela Morales	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Carly Moseley	University of Manchester, Manchester, United Kingdom
Laraine Murray	University of Manchester, Manchester, United Kingdom
Eberhard Nieschlag	Institute for Reproductive Medicine/Centre of Reproductive Medicine and Andrology, Münster, Germany
Daryl O'Connor	Institute of Psychological Sciences, University of Leeds, United Kingdom
Cristian Palma	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Veronica Reyes	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Song Shu-Xiu	Hebei Family Planning Research Institute, Hebei, China
Tong Jian-Sun	Jiangsu Family Planning Institute, Jiangsu, China
Leo Turner	Australia and New Zealand Army Corps (ANZAC) Research Institute, Concord Hospital, Sydney, Australia
Elena Vorona	Centre of Reproductive Medicine and Andrology, Münster, Germany
Wu Wei-Xiong	Family Planning Research Institute, Guangzhou, China
Xiong Cheng-Liang	Institute of Family Planning, Tongji Medical University, Hubei, China
Yao Kang-Shou	Zhejiang Institute of Planned Parenthood Research, Zhejiang, China
Zhao Heng	National Research Institute for Family Planning, Beijing, China

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	12	33			6	17	18
Women	6	17			12	33	18
WHO Region:							
Africa							
The Americas	5	14					5
South-East Asia	1	3					1
Europe					12	33	12
Eastern Mediterranean							
Western Pacific	12	33			6	17	18

Total = 36

LONG ACTING SYSTEMIC AGENTS FOR FERTILITY REGULATION

SCIENTISTS IN 2007–2008

Principal investigators

Ayşe Akin	Hacettepe University, Ankara, Turkey
Eliana Amaral	UNICAMP, Campinas, Brazil
Dan Apter	Sexual Health Clinic Väestöliito, The Family Federation of Finland, Kalevankatu, Helsinki, Finland
Luis Bahamondes	UNICAMP, Campinas, Brazil
Georgy Bártfai	Department of Obstetrics and Gynaecology, Albert Szent-Gorgyi Medical University, Szeged, Hungary
Mags Beksinska	Baragwanath Hospital, University of the Witwatersrand, Johannesburg, South Africa
Craig Cohen	University of Nairobi Health Science Campus, Nairobi, Kenya
Horacio Croxatto	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Anibal Faundes	Centre for Research and Control of Maternal and Infant Disease, Campinas, Brazil
Jonathan Kasule	University of Zimbabwe, Avondale, Harare
Orawan Kiriwat	Siriraj Family Health Research Centre, Bangkok, Thailand
László Kovács	Albert Szent-Gyorgyi Medical University, Szeged, Hungary
Alexio Mashu	University of Zimbabwe School of Medicine, Harare, Zimbabwe
Rebeca Massai	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Juan Carlos Montero de Celis	Instituto Chileno de Medicina Reproductiva, Santiago, Chile
Christina Mwachari	Kenya Medical Research Institute, Nairobi, Kenya
Attila Pal	Albert Szent-Gyorgyi Medical University, Szeged, Hungary
Peter Rogers	Monash Medical Centre, Clayton, Australia
Jaisamrarn Unnop	Chulalongkorn University, Bangkok, Thailand
Claudio Villarroel	Instituto Chileno de Medicina Reproductiva, Santiago, Chile

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	9	45	3	15	2	10	14
Women	6	30					6
WHO Region:							
Africa	5	25					5
The Americas	7	35					7
South-East Asia	2	10					2
Europe	1	5	3	15	2	10	6
Eastern Mediterranean							
Western Pacific							

Total = 20

Other scientists

Valéria Bahamondes	UNICAMP, Campinas, Brazil
Tsungai Chipato	University of Zimbabwe, Avondale, Harare
Soledad Diaz	Chilean Institute of Reproductive Medicine, Santiago, Chile
Nüket Paksoy Erbaydar	Hacettepe University, Ankara, Turkey
Silvia Franceschi	International Agency for Research on Cancer, Lyon, France
Marie-Louise Hammarström	Umeå University, Umeå, Sweden
Sini Innilä	Sexual health clinic Väestöliito, The Family Federation of Finland, Kalevankatu, Helsinki, Finland
Helena Kannisto	Sexual Health Clinic Väestöliito, The Family Federation of Finland, Kalevankatu, Helsinki, Finland
Sándor Koloszár	Albert Szent-Gyorgyi Medical University, Szeged, Hungary
Zsolt Kormányos	Department of Obstetrics and Gynaecology, Albert Szent-Gorgyi Medical University, Szeged, Hungary

Elsebeth Lynge — Institute of Public Health, University of Copenhagen, Denmark
Charles Morrison — Family Health International, Durham, NC, USA
Carlo La Vecchia — Instituto di Ricerche Farmacologiche, Milan, Italy
Olav Meirik — Ave Luis Thayer Ojeda, Santiago, Chile
Inga Sjöberg — Umeå University, Umeå, Sweden

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	2	13	2	13	2	13	6
Women	3	20			6	40	9
WHO Region:							
Africa	1	7					1
The Americas	3	20			1	7	4
South-East Asia							
Europe	1	7	2	13	7	35	10
Eastern Mediterranean							
Western Pacific							

Total = 15

Annex 2

PUBLICATIONS IN 2007–2008

System for the continuous identification of research evidence (CIRE)

Culwell KR, Curtis KM. Use of contraceptive methods by women with current venous thrombosis on anti-coagulant therapy: a systematic review. (submitted)

Curtis KM, Peterson HB. Editorial on the World Health Organization's global guidance for family planning. (submitted)

Curtis KM, Ravi A, Gaffield ME. Progestogen-only contraceptive use in obese women. (submitted)

Gaffield ME, Culwell KR, Ravi A. Oral contraceptives and family history of breast cancer. (submitted)

Gaffield ME, Kapp N, Curtis KM. Combined oral contraceptive and intrauterine device use among women with gestational trophoblastic disease. (submitted)

Gaffield ME, Kapp N, Ravi A. Use of combined oral contraceptives post-abortion. (submitted)

Kapp N, Curtis KM. Hormonal contraceptive use among women with liver tumors: a systematic review. (submitted)

Kapp N, Tilley IB, Curtis KM. The effects of hormonal contraceptive use among women with viral hepatitis or cirrhosis of the liver: a systematic review. (submitted)

Paulen ME, Curtis KM. When can a woman have repeat progestogen-only injectables (POIs) – depot medroxyprogesterone acetate (DMPA) or norethisterone enantate (NET-EN)? (submitted)

Peterson HB, Curtis KM, Glasier A, Hagenfeldt K. Use of evidence in WHO recommendations. *Lancet* 2007; 370(9590):825.

World Health Organization, Department of Reproductive Health and Research. WHO provider brief on hormonal contraception and liver disease. (submitted)

Social science

Bastos FI, Barradas Barata R de C, Aquino E de L, Latorre M do RDO. Sexual behavior and perceptions of the Brazilian population regarding HIV/AIDS. *Rev Saude Publica* 2008; 42 (Suppl.1):1-4.

Cooper D, Harries J, Myer L, Orner P, Bracken H, Zweigenthal V. "Life is still going on": reproductive intentions among HIV-positive women and men in South Africa. *Soc Sci Med* 2007; 65:274-83.

Cooper D, Moodley J, Zweigenthal V, Bekker L-G, Shah I, Meyer L. Fertility aspirations and reproductive health care needs of people living with HIV in Cape Town, South Africa: implications for shaping reproductive health HIV care. (submitted)

Harries J, Cooper D, Myer L, Bracken H, Zweigenthal V, Orner P. Policy maker and health care provider perspectives on reproductive decision-making amongst HIV-infected individuals in South Africa. *BMC Public Health* 2007; 7:282, available at: www.biomedcentral.com/1471-2458/7/282.

Maharaj P, Munthree C. Coerced first sexual intercourse and selected reproductive health outcomes among young women in Kwazulu-Natal, South Africa. *J Biosoc Sci* 2007; 39(2):231-44.

Mugisha JF. Provider perspectives on barriers to family planning quality in Uganda: a qualitative study. *J Fam Plann Reprod Health Care* 2008; 34(1):37-41.

Orner P, Cooper D, Myer L, Zweigenthal V, Bekker LG, Moodley J. Clients' perspectives on HIV/AIDS care and treatment and reproductive health services in South Africa. *AIDS Care*, 2008, 1-7.

Rwenge M. Statut de la femme, planification familiale et fécondité à Mbalmayo et Bafoussam, Cameroun [Woman's status, family planning and fertility in Mbalmayo and Bafoussam, Cameroon]. *Etude Popul Afr* 2007; 22(1):57-85.

Rwenge M. La qualité des soins obstétricaux au Cameroun. *Les Cahiers de l'IFORD,* N° 29. Yaoundé, Institut de Formation et de Recherche Démographiques (IFORD), 2007.

Rwenge M. La qualité des soins prénatals selon la perspective des prestataires au Cameroun. (Districts de santé de Nkongsamba, Bafang et Mfou). *Etude Popul Afr* 2007; 22(2):23-46.

Rwenge M. La qualité des soins prénatals selon la perspective des clientes au Cameroun. (Districts de santé de Nkongsamba, Bafang et Mfou). (submitted)

Rwenge M. La qualité des soins à l'accouchement selon la perspective des clientes au Cameroun. (Districts de santé de Nkongsamba, Bafang et Mfou). (submitted)

Shah IH, Chandra-Mouli V. Inequity and unwanted fertility in developing countries. *Bull World Health Organ* 2007; 85(2):86-7.

Shah IH. Family planning and reproductive health. In Zhang Y, ed. *Encyclopedia on life support system (EOLSS)*. Paris: United Nations Scientific and Educational Organization (UNESCO) (in press).

Shah IH. Addressing sexual and reproductive health needs: appropriate and timely use of qualitative research methods. In: *Women, AIDS and access to health care in Sub-Saharan Africa: approaches from the social sciences*. Barcelona: Medicus Mundi, Catalunya; 2007:117-25.

Post-ovulatory methods for fertility regulation

Devoto L, Espinoza A, Muñoz A, Fuentes A, von Hertzen H. Pharmacokinetics of a single oral dose of 1.5-mg levonorgestrel when administered as 750-µg tablets or as 30-µg minipills. *Fertil Steril* 2007; 88(4):976-7.

Lalitkumar PG, Lalitkumar S, Meng CX, Stavreus-Evers A, Hambiliki F, Bentin-Ley U, et al. Mifepristone, but not levonorgestrel, inhibits human blastocyst attachment to an in vitro endometrial three-dimensional cell culture model. *Human Reprod* 2007; 22:3031-7.

von Hertzen H, Godfrey E. Emergency contraception: the state of the art. *Reprod Biomed Online.* 2009;18 Suppl 1:28-31.

Westley E, von Hertzen H, Faundes A. Expanding access to emergency contraception. *Int J Gynaecol Obstet* 2007; 97(3):235-7.

Long-acting methods of fertility regulation

Abdel-Aleem H, d'Arcangues C, Vogelsong K, Gülmezoglu AM. Treatment of vaginal bleeding irregularities induced by progestin only contraceptives. *Cochrane Database Syst Rev* 2007; 4:CD003449.

d'Arcangues C. Worldwide use of intrauterine devices for contraception. *Contraception* 2007; 75:S2-S7.

Beksinska ME, Kleinschmidt I, Smit JA, Farley TM. Bone mineral density in adolescents using norethisterone enanthate, depot-medroxyprogesterone acetate or combined oral contraceptives for contraception. *Contraception* 2007; 75(6):438-43.

ESHRE Capri Workshop Group. Intrauterine devices and intrauterine systems. *Hum Reprod Update* 2008; 14(3):197-208.

Girling JE, Rogers PAW. Endometrial angiogenesis, arteriogenesis, and lymphangiogenesis. In: Aplin JD et al., eds. *The endometrium molecular, cellular and clinical perspectives,* 2nd edition. London: Informa Healthcare; 2008:76-92.

Kapp N, Curtis K, Borgatta L. Study design to evaluate the safety and effectiveness of hormonal contraception for women. *Clin Obstet Gynecol* 2007; 50(4):850-67.

Kulier R, O'Brien PA, Helmerhorst FM, Usher-Pater M, d'Arcangues C. Copper containing, frame intrauterine devices for contraception. *Cochrane Database Syst Rev* 2007; 4:CD005347.

Meirik O, Farley TM. Risk of cancer and the oral contraceptive pill. *BMJ* 2007; 335:621-2.

O'Brien PA, Kulier R, Helmerhorst FM, Usher-Patel M, d'Arcangues C. Copper containing, framed intra-uterine devices for contraception: a systematic review of randomized controlled trials. *Contraception* 2008; 77(5):318-27.

Serfaty D, d'Arcangues C. Contraception du futur. In: Serfaty D. *Contraception*. Paris : Masson ; 2007:503-29.

Schwingl PJ, Meirik O, Kapp N, Farley TMM. Prostate cancer and vasectomy: a hospital-based case–control study in China, Nepal and the Republic of Korea. *Contraception* 2009 May; 79(5):363-8.

Immunocontraception

Cui C, Stevens VC, Schwendeman SP. Injectable polymer microspheres enhance immuno-genicity of a contraceptive vaccine. *Vaccine* 2007; 25(3): 500-9.

WHO/Rockefeller initiative on implantation research

Catalano RD, Critchley HO, Heikinheimo O, Baird DT, Hapangama D, Sherwin JR, et al. Mifepristone induced progesterone withdrawal reveals novel regulatory pathways in human endometrium. *Mol Hum Reprod* 2007; 13(9):641-54.

Sengupta J, Lalitkumar PG, Najwa AR, Charnock-Jones DS, Evans AL, Sharkey AM, et al. Immunoneutralization of vascular endothelial growth factor inhibits pregnancy establishment in the rhesus monkey (*Macaca mulatta*). *Reproduction* 2007; 133(6):1199-211.

Stouffer RL, Xu F, Duffy DM. Molecular control of ovulation and luteinization in the primate follicle. *Front Biosci*. 2007 Jan 1;12:297-307

Yuan JX, Xiao LJ, Lu CY, Zhang XS, Liu T, et al. Increased expression of heat shock protein 105 in rat uterus of early pregnancy and its significance in embryo implantation. *Reprod Biol Endocrinol*. 2009; 7:23.

Methods for the regulation of male fertility

Almog T, Lazar S, Reiss N, Ektovitz N, Milch E, Rahamim N, et al. Identification of extracellular signal-regulated kinase 1/2 and p38 MAPK as regulators of human sperm motility and acrosome reaction and as predictors of poor spermatozoan quality. *J Biol Chem* 2008; 283:14479-89.

Cooper TG, Noonan E, von Eckardstein S, Auger J, Baker HWG, Behre HM, et al. World Health Organization reference values of human semen characteristics. (submitted)

Gu YQ. Large scale clinical trial of hormonal male contraception in China using testosterone undecanoate in tea seed oil. *Arq Bras Endocrinol Metabol* 2008; 52 (Suppl. 6):S695.

Gu YQ, Liang XW, Wu WX, Liu ML, Song SX, Cheng LF, et al. Multicenter contraceptive efficacy trial of injectable testosterone undecanoate in healthy Chinese men. *J Clin Endocrinol Metab* 2009 Mar 17

Li JW, Gu YQ. Predictors for partial suppression of spermatogenesis of hormonal male contraception. *Asian J Androl* 2008; 10:723-30.

Liu PY, Swerdloff RS, Anawalt BD, Anderson RA, Bremner WJ, Elliesen J, et al. Determinants of the rate and extent of spermatogenic suppression during hormonal male contraception: an integrated analysis. *J Clin Endocrinol Metab* 2008; 93:1774-83.

Mendis-Handagama SM, Ariyaratne HB, Mrkonjich L, Ivell R. Expression of Insulin-like peptide-3 in the postnatal rat Leydig cell lineage: timing and effects of triiodothyronine treatment. *Reproduction* 2007; 133:479-85.

Mendis-Handagama SM, Ariyaratne HB, Fecteau KA, Mrkonjich L. Antispermatogenic effect of thyroxin in adult rats. *Androl update* 2007; 1:174-85.

Vogelsong KM, Gabelnick HL, Nieschlag E. Partnerships offer promise in developing systemic methods of male fertility regulation. In: Gehner M et al., eds. *Global forum update on research for health, Volume 4. Equitable access: research challenges for health in developing countries*. London: Pro-Brook Publishing Limited; 2007:128-30

Other

De Francisco A, Dixon-Mueller R, d'Arcangues C. Research issues in sexual and reproductive health for low- and middle-income countries. Global Forum for Health Research publication, 2007. http://www.who.int/reproductivehealth/publications/research/index.htm

Policy and technical briefs

Does hormonal contraception modify the risk of STI acquisition? Policy brief, available at: http://www.who.int/reproductivehealth/publications

Hormonal contraception and bone health. Policy brief, available at: http://www.who.int/reproductivehealth/publications

Hormonal contraception and liver disease. Technical brief.

Strengthening linkages between family planning and HIV: reproductive choices and family planning for people living with HIV. Technical brief, available at: http://www.who.int/reproductivehealth/hiv

Annex 3

GUIDELINES AND TOOLS 2007–2008

Guideline	Versions available	Versions completed in 2007–2008	Translations ongoing or planned
Medical eligibility criteria for contraceptive use, 3rd edition, 2004	Arabic, Chinese, English, French, Laotian, Mongolian, Portuguese (African & Brazilian), Romanian, Russian, Spanish, Vietnamese	Ukrainian	
Medical eligibility criteria for contraceptive use, 2008 update		English	French, Spanish
Selected practice recommendations for contraceptive use, 2nd edition, 2005	Arabic, Chinese, English, French, Portuguese (African and Brazilian), Romanian, Russian, Spanish, Vietnamese		
Selected practice recommendations for contraceptive use, 2008 update		English, French	Spanish
Family planning: A global handbook for providers, 2007		Arabic, English, French, Portuguese, Russian, Spanish	Chinese, Farsi, Hindi, Swahili, Urdu
Family planning: A global handbook for providers, 2008 update		English, Lithuanian Romanian	
Decision-making tool for family planning clients and providers	Arabic, Bahasa Indonesia, Bengali, Burmese, Chinese, Dari, Farsi, French, Hindi, Kosovar, Nepali, Pashtu, Romanian, Spanish, Turkish, Vietnamese	Divehi, Laotian, Mongolian, Thai, Uzbek	Korean
Medical eligibility criteria wheel	Arabic, Burmese, Chinese, English, French, Lithuanian, Mongolian, Portuguese, Romanian, Russian, Spanish, Uzbek		
Implementation tools for the decision-making tool (CD-ROM)		English, French, Romanian, Spanish	
Reproductive choices and family planning for people with HIV: counselling tool		English, French, Spanish	

Chapter 2
Improving maternal and perinatal health

1. INTRODUCTION

"Of all the inequality, injustice in health care is the most shocking and inhumane".

Dr Martin Luther King, Jr (1966)

Global disparities in women's reproductive health continue to represent one of the starkest health inequities of our times. Each year, approximately 530 000 women die due to complications related to pregnancy and childbirth; 99% of these deaths occur within the most disadvantaged population groups living in the poorest countries of the world. Recent analyses also show that these deaths are increasingly concentrated in Asia and sub-Saharan Africa, where 45% and 50%, respectively, of all maternal deaths occur.

These figures indicate that while women in developed countries can generally expect to experience safe pregnancies and positive birth outcomes, women in low-resource nations still face a high risk of dying during pregnancy, delivery, or the postpartum period. This unacceptable discrepancy must be addressed if the world is to achieve Millennium Development Goal 5 (MDG 5), which calls for a 75% reduction in 1990 maternal mortality levels by 2015. Importantly, the gap in maternal and newborn health indicators between rich and poor nations is so vast that it can be considered a major social injustice which is long overdue for international attention.

Despite the disappointing lack of progress in reducing global maternal mortality since the launch of the Safe Motherhood initiative over 20 years ago, strides in the reduction of maternal deaths have been achieved in three regions (Latin America, south-eastern and eastern Asia, northern Africa). Notable declines occurred in several developing countries (including Bangladesh, Chile, China, Egypt, Honduras, Malaysia, Mongolia, and Sri Lanka). The *Countdown 2008 Report* also shows that 12 of the 68 countries in the world with the highest burdens of maternal and child mortality are now categorized as making good progress towards MDG 5 (Azerbaijan, Bolivia (Plurinational States of), Brazil, China, Egypt, Guatemala, Mexico, Morocco, Peru, the Philippines, Tajikistan, and Turkmenistan). These achievements indicate that attaining MDG 5 is not out of reach. Moreover, they suggest that greater emphasis on research – including determining how to translate these success stories into other contexts, and developing universally applicable interventions and delivery strategies targeted at reaching the most marginalized population groups – could put the world on track for MDG 5.

Although research in maternal and perinatal health has advanced significantly in recent years, most of these advancements have been driven by the needs of health systems in the richest countries. This bias has resulted in the production of pregnancy- and childbirth-related interventions which translate poorly into low-resource settings, exacerbating the gaps in women's reproductive health conditions around the world. The paucity of research efforts targeted at conditions disproportionately affecting women in the developing world has prevented the simultaneous development of effective, affordable, and feasible preventive and treatment strategies with wide applications. Such an approach could potentially narrow the existing disparities in maternal and newborn health.

The Improving Maternal and Perinatal Health (MPH) Team aims to implement a broad-based research programme designed to promote an equitable approach to the improvement of maternal and perinatal health, taking full advantage

of WHO's convening power. Through collaborations with prestigious institutions and individuals worldwide, the MPH Team has been able to achieve the following set of objectives:

- define lines of research that will benefit health systems globally;
- coordinate and implement research efforts that involve the application of findings from the laboratory to health systems;
- make research accessible to researchers from low-income countries and institutions; and
- stimulate new thinking.

The work of HRP in the area of maternal and perinatal health is conducted in the context of the activities specified under "Organization-wide expected result 4.2" of the WHO Medium Term Strategic Plan. This result involves:

> National research capacity strengthened as necessary and new evidence, products, technologies, interventions and delivery approaches of global and/or national relevance available to improve maternal, newborn, child and adolescent health, to promote active and healthy ageing, and to improve sexual and reproductive health.

In accordance with current global research priorities identified by the international scientific community and further operationalized at a meeting of WHO collaborating centres in June 2008, the MPH Team's research activities in 2007–2008 were structured along seven main thematic areas:

- hypertensive disorders of pregnancy;
- improving perinatal health;
- antenatal care;
- labour, delivery and postpartum care;
- nutrition;
- country focus;
- advocacy.

All ongoing and planned activities address maternal and perinatal health issues according to the principle of the continuum of care which takes a holistic approach to the pregnancy, childbirth, and postnatal periods. The programme of work is based on a multidisciplinary framework that emphasizes collaborative efforts and research with wide-scale application that will benefit women and children around the world.

2. HYPERTENSIVE DISORDERS OF PREGNANCY

For several years, HRP has been conducting research initiatives focusing on hypertensive disorders of pregnancy. It continues to foster productive collaborations on this topic with the most prestigious institutions worldwide.

2.1 Progress

HRP's research programme on hypertensive disorders of pregnancy is based on a multidisciplinary approach aimed at generating knowledge to improve the public health and clinical management of these conditions through screening, prevention, and treatment interventions. HRP is committed to developing strategies for translating research results on hypertensive disorders of pregnancy into clinical and public health practice. This commitment reflects a major focus for future research, which was identified in June 2008 during a meeting of WHO collaborators from a wide variety of countries held to outline HRP's 2010–2015 programme of work for research in maternal and perinatal health.

2.1.1 Screening

Because the causes of hypertensive disorders of pregnancy are still largely unknown, research focused on identifying these causes and determining risk factors is critical. Importantly, the severe complications of hypertensive disorders of pregnancy are responsible for a significant proportion of maternal and newborn mortality and morbidity around the world. These complications can only be managed within health facilities. Therefore, the immediate development of accurate screening tools which can be used to identify women at risk of developing major complications from hypertensive disorders is crucial, so that they can access appropriate obstetric care in a timely manner. Such tools are particularly needed in low-resource settings where availability of emergency obstetric care is still not universal.

To address this research gap, HRP is presently conducting a multicentre observational study entitled "Screening for pre-eclampsia: evaluation of the predictive ability of angiogenic factors". The study, developed on the basis of the findings of a systematic literature review (*Mapping the theories of pre-eclampsia and the role of angiogenic factors: a systematic review*), aims to verify if changes in serum and urinary angiogenic proteins during pregnancy (detected with an easy-to-apply screening test) can be used as an effective method for identifying women at high risk of developing preeclampsia. This study is presently ongoing in eight countries (Argentina, Colombia, India, Italy, Kenya, Peru, Switzerland, and Thailand), with a total recruitment target of more than 12 000 women. Approximately 5000 subjects were recruited by December 2008.

Acting upon the concern expressed by the Scientific and Technical Advisory Group (STAG) in 2007 concerning the cost and wide-scale applicability of angiogenic factors as

screening markers, HRP initiated a collaboration with the Perinatal Research Branch of the National Institute of Child Health and Development (PRB/NICHD) to expand the scope of the study at no cost to the Programme. In the context of the agreement, PRB/NICHD will assume the costs of performing laboratory analyses on collected samples to test the efficacy of several other biomarkers beyond angiogenic factors, which might provide the biological basis for more feasible screening tests.

This agreement envisages a long-term collaboration between HRP and PRB/NICHD that represents an unprecedented interagency research effort with far-reaching implications in terms of its potential for new discoveries and advancement of knowledge. As stipulated in the agreement, HRP's role will be to collect biological samples and information from large cohorts of women and their infants worldwide according to well-defined methodological protocols. PRB/NICHD will analyse the samples according to research plans defined in collaboration with HRP and approved by WHO's Research Ethics Review Committee. This collaboration will allow HRP and PRB/NICHD to react immediately to updated research hypotheses without having to establish new ad hoc research protocols and infrastructures for each update. The network of collaborating centres will be progressively expanded to assure generalizability of the results and geographical representation, as well as to promote capacity-building at new centres.

2.1.2 Treatment and prevention

Continuing an established line of research, HRP is maintaining its commitment to generating new evidence on the best management options for hypertensive disorders of pregnancy.

The results of the trial "Vitamins in pre-eclampsia study" were presented at the 28th Annual Meeting of the Society for Maternal and Fetal Medicine held in Dallas, Texas, USA in January 2008, and at the 16th World Congress of the International Society for the Study of Hypertension held in Washington, DC, USA in September 2008. The study showed that despite promising preliminary results, antioxidant supplementation during pregnancy with vitamins C and E does not reduce the risk of pre-eclampsia. These findings are in agreement with other large studies conducted at the same time. The study was conducted in India, Peru, South Africa and Viet Nam and recruited and followed-up more than 1300 pregnant women from high risk populations.

A new multicentre clinical trial, "Treatment of mild to moderate hypertension to prevent pre-eclampsia", is currently being implemented in Argentina. The purpose of the trial is to compare labetalol to placebo, with a target total enrolment of 2000 women. Treatment of mild to moderate hypertension has been proposed as a strategy to delay progression to more severe disease, thereby prolonging pregnancy and improving maternal and perinatal outcomes. Reliable data supporting this strategy are scarce, and there is concern that antihypertensive drugs may impair fetal growth. Labetalol is considered safe to use during pregnancy, and there is promising evidence that it may prevent pre-eclampsia.

The specific aims of the study are twofold. First, the study seeks to determine whether treating pregnant women with mild to moderate de novo hypertension with the antihypertensive agent labetalol (from 300 to 1200 mg/day) will reduce the incidence of:

- pre-eclampsia, eclampsia, and other severe maternal complications;
- the HELLP syndrome (haemolytic anaemia, elevated liver enzymes, and low platelet count) and death;
- preterm delivery;
- perinatal mortality;
- low birth weight;
- admission to intensive neonatal care unit for more than seven days.

The second aim of the study is to determine whether treatment with labetalol reduces the risk of intrauterine growth restriction.

In addition, the Programme started a collaboration with the University of British Columbia in Vancouver, Canada, to expand a study previously conducted in Australia, Canada, New Zealand and the United Kingdom, to three developing countries (Fiji, South Africa, and Uganda) in order to validate the universal applicability of a model consisting of maternal and fetal clinical variables that predict adverse maternal and perinatal outcomes in women with pre-eclampsia. This model seeks to improve the definition of the clinical picture of women with pregnancy-related hypertensive disorders relative to existing classification systems.

This study represents an important step forward in the ability to classify and sub-classify women according to true risk, and the findings will have direct relevance for modifying patient care (e.g. timing of delivery, place of care) in industrialized and developing country settings. The model developed in the study will also potentially function as a standard research tool to be incorporated into the development of future randomized controlled trials and basic biomedical investigations in the field of pre-eclampsia. Depending upon the availability of funds, a guideline document based on the study results will be produced.

2.2 Planned activities

HRP is strongly committed to contributing as much as possible to the process of translating research results into clini-

cal practice. Accordingly, future plans include participating in the design and implementation of programmes focused on scaling up or introducing at the population-level interventions which have been shown to be effective in randomized clinical trials. Extension of HRP activities into the next phase of research is now considered a top priority within the public health community. This next phase includes testing the impact on populations of interventions found to be beneficial under the controlled conditions of research settings.

2.2.1 Scaling-up interventions

Plans for scaling-up interventions in particular locations could be better designed if evidenced-based information concerning potential barriers and constraints were readily available. HRP is contributing significantly to efforts to identify the factors facilitating and detracting from the successful implementation of interventions in specific settings by developing new methodologies for assessing the impact of interventions which are implemented at population-level. This work is presently being conducted at the departmental level as a cross-cutting activity involving the Statistics and Information Services (SIS) and the MPH Team, in collaboration with the Global Network for Maternal and Perinatal Health Research of the United States National Institutes of Health (NIH), and the Canadian Institute for Health Research in Ottawa, Canada.

Activities will begin in 2009 with a planning meeting in Ottawa, Canada, to design a population-based intervention targeting the prevention and treatment of hypertensive disorders of pregnancy. The intervention will be based on two strategies which have proven effective in randomized clinical trials: calcium supplementation/fortification, for prevention of hypertensive disorders of pregnancy; and magnesium sulphate, for the treatment of pre-eclampsia. The process of site selection is presently ongoing.

3. PERINATAL HEALTH

The Millennium Development Goal 4 calls for a two thirds reduction by 2015 of the 1990 levels of mortality rates among children under five years of age. Mortality in children under five years of age has decreased substantially worldwide in the last few decades. However, the newborn component of under-five mortality rates has remained static. Consequently, the contribution of newborn mortality to under-five mortality has progressively increased and now represents approximately 40% of all child deaths. Therefore, global progress in achieving MDG 4 is contingent upon improvements in newborn health.

Among the causes of newborn mortality, preterm birth and birth asphyxia account for two thirds of the four million neonatal deaths occurring every year. Intrauterine growth restriction is an underlying factor in approximately 60% of newborn deaths. Because these three conditions develop during pregnancy and are associated with maternal complications, they should be addressed by means of a continuum of care perspective that views maternal and newborn health as highly interrelated. In view of this, HRP's preferred approach to improving perinatal health involves integrating research efforts which are designed to accelerate progress in the achievement of both MDGs 4 and 5.

3.1 Progress

HRP's work has focused on:

- identifying and examining sociodemographic, as well as genetic determinants, of preterm birth; and
- the development and introduction of standards for assessing fetal growth.

In 2007–2008, HRP maintained and extended its commitment to both topics and is continuing research on the detection, prevention, and treatment of preterm birth and fetal growth abnormalities.

3.1.1 Preterm birth

To address the problem of preterm birth – using a research strategy similar to that described above for hypertensive disorders of pregnancy – HRP acquired a major role in the Preterm Birth International Collaborative (PREBIC). The purpose of the collaboration is to support and enhance international networking among researchers investigating preterm birth and to establish multinational research projects, emphasizing open multidisciplinary dialogue and active contribution of all participants. Since 2006, the annual PREBIC meetings have been organized in Geneva by HRP. Each year, these meetings have drawn more than fifty researchers, representing most of the advanced research teams currently focusing on preterm birth. Since 2007, PREBIC and HRP have been invited to organize a symposium focused on emerging and public health issues related to preterm birth at the annual meeting of the Society of Gynaecologic Investigation.

PREBIC-oriented collaborative projects involving the participation of HRP include the preparation of five systematic reviews of the literature. These reviews describe the global and regional estimates for preterm birth rates, current knowledge on the risk of preterm birth associated with carrier status of specific gene variants, the role of biomarkers in predicting the risk of delivering prematurely, the association between body mass index and the risk of preterm birth, and the effectiveness of presently available management and treatment options.

Most of the above-mentioned systematic reviews are nearly completed, and the *WHO systematic review on maternal mortality and morbidity: the global burden of preterm birth* has been submitted for publication. This review of published and unpublished data reported between 1997 and 2007 esti-

mated that globally 12.9 million births are preterm every year, representing an incidence of preterm birth of 9.6%. Approximately 85% of these births are concentrated in Africa and Asia, where almost 11 million births are preterm. This study represents the first effort to estimate global and regional preterm birth rates and provides important data to increase awareness and promote action towards reducing the associated burden of disease.

As a successful example of WHO's convening power, HRP was able to bring together researchers from prestigious institutions in order to pool extant samples of genetic materials from mother and infants with and without preterm birth, and conduct a case–control genetic–association study using the latest technological developments (Genome wide scan analysis). This initiative, the Preterm Birth Genome Project, represents the largest international collaboration, including industrialized and developing countries in the field. Samples from Australia, Canada, Denmark, Mexico, and the Republic of Korea are presently analysed in the context of this collaboration. The study would not have been possible without the brokering role of HRP and their ability to secure significant funding for the project from March of Dimes and the Government of Mexico in response to an article entitled "A call for an international consortium on the genetics of preterm birth", published in 2007.

HRP's research efforts in this area are not limited to basic sciences and research syntheses. Considerable resources are also being earmarked for implementation research with the objective of facilitating the translation of research results into public health policies and clinical practice. To accomplish this objective, HRP is collaborating with the NIH Global Network for Women's and Children's Health Research to implement the "Clinical trial to increase the use of antenatal corticosteroids in developing countries" aimed at increasing the use of maternal preventive administration of corticosteroids to decrease mortality due to preterm delivery. Randomized clinical trials of corticosteroids administration before a preterm delivery have consistently shown that this intervention decreases infant mortality significantly.

However, the implementation rate of this intervention in developing countries is below 10%. In 2007, HRP supported and organized the first investigators' meeting of the above-mentioned randomized trial in Geneva. Participants represented research teams and ministries of health from Argentina, the Democratic Republic of the Congo, Guatemala, India, and Pakistan, who were committed to laying the foundations for effective collaboration between researchers and policy-makers. The establishment of partnerships between governments and research institutions is a priority for HRP, consistent with the international agenda set out by the Global Forum for Health Research.

3.1.2 Abnormal fetal growth

In order to develop universally applicable fetal growth standards to enable accurate assessment of intrauterine growth restriction, HRP is implementing the "WHO multicentre study for the development of growth standards from fetal life to childhood: the fetal component" which extends the scope of the "WHO multicentre growth reference study" to fetal life. The study has the objective of constructing a set of growth standards (curves and tables) from conception to delivery, to be adopted as an international framework for assessing fetal and newborn growth (including preterm infants) and related levels of neonatal morbidity and mortality.

The study design incorporates the recommendations of the 1995 WHO Expert Committee on Physical Status, the 2002 WHO Meeting of Experts on Life Course and Health, and the 2002 WHO Meeting of Experts on Birth Weight. The international standards produced by the study will improve assessment of fetal and newborn growth at individual and population levels, contribute to an understanding of the role of various determinants of fetal growth, and ultimately improve the clinical management of fetuses and pregnant women. The study will start at the research centre in Campinas, Brazil in 2009 and has a recruitment target of 1875 women.

Importantly, the study is being conducted in close collaboration with the NICHD study "The national standard for normal fetal growth", which is intended to establish fetal growth standards for the population of the United States. The two studies will be implemented simultaneously, allowing for the merging of study findings and the production of a single fetal growth standard.

As a preliminary step and following a recommendation of the WHO Scientific and Ethical Review Group, the MPH Team conducted the largest systematic review and meta-analysis in the literature, to evaluate the safety of human intrauterine exposure to ultrasonography. The systematic review was presented at the 18th World Congress of Ultrasound in Obstetrics and Gynecology held in August 2008 in Chicago, USA, and was accepted for publication.

The electronic search identified 6716 citations, of which 63 were selected for full text evaluation. Additionally, 19 citations were identified from secondary sources. A total of 58 references reporting data from 38 different studies (16 clinical trials, 11 cohorts, and 11 case controls) were included.

The results of the systematic review show that ultrasonography in pregnancy is not associated with adverse maternal effects, impaired physical or neurological development, or increased risk for malignancies in childhood.

3.1.3 Birth asphyxia

The thematic area "improving perinatal health" also includes a study designed to develop a community-level diagnostic tool for birth asphyxia. This two-phased study addresses the major difficulty in collecting accurate epidemiological data on birth asphyxia (one of the three major causes of newborn mortality), which is the lack of a common definition for birth

asphyxia that can be utilized in low-resource settings. This limitation has impeded efforts to map the burden of disease of birth asphyxia at the community level in developing countries.

The first phase of the study involves the validation of a new diagnostic tool being used in health-care facilities in Pakistan. In the second phase, the validated diagnostic tool will be applied at the community level, to estimate the prevalence of birth-asphyxia-related morbidity and mortality. The key outcome of this study – the availability of a valid diagnostic instrument which is able to correctly detect birth-asphyxia-related morbidity and mortality – will form the basis for future community-based research. This future research will examine determinants and risk factors of birth asphyxia and will facilitate randomized trials to test preventive and therapeutic interventions.

In order to address the concern expressed by the 2007 STAG concerning the potential difficulties of collecting data on birth asphyxia at the community level in low-resource settings, HRP is collaborating with the Aga Khan University in Karachi, Pakistan and Bristol University in the United Kingdom to revise and update the study protocol. The study is expected to begin in late 2009 with a recruitment target of approximately 2000 pregnancies.

3.1.4 Stillbirths

Worldwide, possibly three million stillbirths occur each year. The issue of stillbirth has been relatively neglected by the international community. However, there is now renewed interest in assessing the burden of stillbirth worldwide, and in developing effective preventive interventions. HRP is actively involved in two international alliances on stillbirth: the International Stillbirth Alliance and the Global Alliance for the Prevention of Prematurity and Stillbirth. In addition, HRP actively participated in the development and publication of a position paper advocating for more research efforts at the international and national level on stillbirths (article entitled "International issues in stillbirth," published in the *Journal of Maternal–Fetal and Neonatal Medicine*).

3.2 Planned activities

During the past few years, HRP has positioned itself as a major convener of collaborative research projects in perinatal health. Importantly, the involvement of HRP in collaborative projects has substantially increased the geographical representation and expertise of investigators in WHO-sponsored protocols. This collaboration has also enabled HRP to significantly contribute to the setting of research agendas focused on the health needs of populations in low-resource settings and the achievement of both MDGs 4 and 5. HRP's comprehensive research agenda in this area is now established for several years ahead.

4. ANTENATAL CARE

Antenatal care reduces maternal mortality through the detection and treatment of pregnancy-related conditions (direct causes). In addition, the antenatal period is an opportune time for reaching pregnant women with a number of additional interventions that may be vital to their health and well-being, as well as to the health of their unborn child (such as detection and appropriate treatment of HIV/AIDS, malaria, and anaemia, and appropriate identification and response to cases of violence against women).

Traditionally, antenatal care (ANC) has been featured prominently in the work of HRP; recently, the impact of research in this area has been the subject of a component of the external evaluation of HRP. HRP was particularly pleased to learn that the implementation at national level of the WHO ANC model by the Ministry of Public Health of Thailand has been awarded the distinction of "Outstanding research work of the year 2008" by the Thailand Research Fund.

4.1 Progress

The work of HRP in the area of antenatal care has progressively attracted the interest of researchers and donors. As a consequence, this is an area in which several activities have recently been initiated. These activities are categorized into implementation/operation research tied to strengthening of health systems, and clinical trials evaluating the effectiveness of prenatal interventions. The WHO Antenatal Care Model is also being widely disseminated, and HRP is taking a role in related training efforts. HRP is in the process of developing new training and dissemination approaches that take advantage of popular Internet-based platforms.

4.1.1 Antenatal care in southern Africa and linkages with HIV/AIDS services and violence against women programmes

Falling within HRP's scope of research on antenatal care and concerted efforts to promote the translation of research into practice, HRP is implementing an intervention to assist three southern African countries (Malawi, Mozambique, and South Africa) in their efforts to improve maternal and newborn health (MDGs 4 and 5) and to strengthen their health systems through the integration of related vertical services with antenatal care packages based on the WHO Antenatal Care Model.

The proposed intervention seeks to determine whether the implementation of an adapted version of the basic WHO Antenatal Care Model that integrates antenatal care services with other health-care programmes in antenatal clinics in each of the three target countries will improve health outcomes for women and infants, and increase the capacity of these clinics to detect, treat, and prevent major health-related conditions (e.g. violence against women, and diseases such as HIV/AIDS, malaria, and anaemia).

The proposed intervention will be implemented in three stages.

- In the first stage of this initiative, a specific technique for needs assessment which has been developed by WHO – the WHO Strategic Approach – will be used to adapt the WHO Antenatal Care Model to the local conditions and specific needs of the health systems in Malawi, Mozambique, and South Africa.

- During the second stage, the country-specific antenatal care models will be implemented at antenatal care clinics and a 'before/after' evaluation will be conducted to gather data on changes in the quality of antenatal care services and maternal and newborn health outcomes. This stage will lay the foundation for the future scaling-up of these new models of integrated-service delivery that will constitute the third stage of the proposal.

The study will be conducted in collaboration with both the Mapping Best Practices Unit and the Gender, Reproductive Rights, Adolescence and Sexual Health (GRR) Team. It is anticipated that the first stage will be initiated in Mozambique during the second half of 2009.

4.1.2 Birth plans

Increasing women's utilization of life-saving obstetric services in low-resource settings requires overcoming the 'three delays' to receipt of needed care: delay in seeking care; delay in reaching care; and delay in receiving appropriate care, particularly when complications arise. These delays are rooted in both the supply and demand sides of health provision, and can therefore be fully addressed only through interventions targeted at both the community and health-sector levels.

One such proposed intervention is the development of birth plans during the antenatal period. The birth plan (a tool to help women prepare for birth and potential complications during labour and delivery) is an intervention promoted as a shared responsibility between health-care providers and pregnant women. Although predictions about whether a pregnant woman will develop a life-threatening condition cannot be reliably made during antenatal-care visits, these visits constitute the only time women in many resource-poor settings seek care for their own health. Thus, antenatal care visits represent an important opportunity to help women best prepare for labour and delivery.

Studies indicate that in many parts of the world, women who attend antenatal visits are more likely to seek skilled delivery care. However, other reports show that large proportions of women who receive antenatal care still do not use skilled attendants during childbirth, especially in sub-Saharan Africa and south Asia. Research is needed to understand this discrepancy, and to examine the appropriateness of implementing birth plans during routine antenatal care as a strategy for increasing uptake of skilled attendance at delivery in these two regions.

To date, most studies evaluating the effectiveness of birth plans as an aspect of safe motherhood have been flawed due to study designs and sample sizes. Several studies conducted in sub-Saharan Africa, however, have found that women who developed birth plans were approximately twice as likely to receive skilled delivery care than those who did not. These findings suggest that the wide-scale introduction of birth plans in sub-Saharan Africa could prove to be an important strategy for increasing usage of skilled delivery care and decreasing maternal and perinatal mortality and morbidity.

HRP is collaborating with the London School of Hygiene and Tropical Medicine in the United Kingdom on a birth-plan study involving the use of qualitative and quantitative methods in northern Tanzania (where approximately 90% of all women receive at least one antenatal care visit but only 7% deliver in available health units). This collaboration affords a means of developing robust empirical evidence to support the effectiveness of birth plans in increasing coverage rates of skilled delivery and immediate postpartum care in sub-Saharan Africa and other low-resource settings.

The formative research phase is designed to uncover the structural and sociocultural barriers contributing to women's patterns of low usage of skilled delivery care. Next, a cluster randomized controlled trial will be conducted in 18 health units involving at least 760 women in the Ngorongoro district of rural Tanzania. This phase will seek to determine the effectiveness of birth plans in increasing skilled care at delivery and immediately after delivery. The health units will be randomly assigned to provide antenatal care with renewed emphasis on birth plans (intervention) provided by care providers, or to be included in a control group which will continue antenatal care as currently provided. Variables to be collected will include sociodemographic characteristics, obstetric history (past and present), components of antenatal care provided, barriers to utilization of skilled delivery care, and satisfaction with care.

The primary outcome will be the proportion of women who seek delivery at the available health units. The proportion of women who seek immediate post-delivery care (within 48 hours) and satisfaction with care (as measured on a five point Likert's scale) will be secondary outcomes.

The formative research phase of the study, entitled, "The effectiveness of antenatal birth plans in increasing skilled care at delivery and after delivery in rural Tanzania" has been completed, and the results have been written up and submitted for publication. A main finding of the formative research is the imperative need to better incorporate men into routine ANC visits and the preparation of birth plans. The training of health-care providers is currently under way, and the

implementation phase of the clinical trial will begin in January 2009.

4.1.3 Screening for and treating urinary tract infections

Detection and treatment of urinary tract infections is an important component of antenatal care. Asymptomatic bacteriuria (ASB) is a potentially serious medical condition when present during pregnancy. If untreated, 20–30% of women will develop pyelonephritis which carries significant risks for the mother and her baby. Of additional concern is the association of untreated bacteriuria with both low birth weight and preterm delivery. HRP is committed to generating evidence that could improve both the effectiveness and acceptability of treatment services for ASB during routine antenatal care.

Therefore, HRP conducted a multicentre, randomized, placebo-controlled double-blind trial designed to compare the effectiveness of one-day versus seven-day nitrofurantoin treatment to eliminate ASB during pregnancy. The rationale of the study was that a one-day treatment would be more feasible and acceptable to women, if that approach were to be proven effective.

The trial included centres in Argentina, the Philippines, Thailand, and Viet Nam. The trial was completed in March 2007. Results showed that one-day nitrofurantoin treatment is significantly less effective than the seven-day regimen. These results were presented in two papers that were accepted for publication in the journal *Obstetrics & Gynecology*. In addition, the results were presented at the symposium entitled "Infection in pregnancy", organized by the European Society for Infectious Diseases in Obstetrics and Gynecology and convened in Rome, Italy, in November 2008.

4.1.4 Detection and referral of severe anaemia in pregnancy

In collaboration with the Mapping Best Practices Unit and the Department of Essential Health Technologies, the MPH Team is conducting a study in five developing countries (Afghanistan, the Lao People's Democratic Republic, Mongolia, Myanmar, and Uganda) to determine the benefit of introducing the haemoglobin-colour-scale package for the purpose of increasing the capacity of health-care workers to identify anaemia and to provide appropriate case management and referral. The study is being conducted in two referral hospitals and 10 clinics in each country, and data collection in the Asia region is expected to be completed by mid-2009.

4.1.5 ANC training module on Second Life

HRP is the first WHO programme to implement activities in *Second Life*, a virtual world than can be accessed through the Internet. *Second Life* was launched in 2003, and rapidly attracted the attention of the general public as well as that of companies and institutions interested in effectively accessing large audiences in affordable ways. Users are able to interact in the virtual world by acquiring the appearance of virtual characters (avatars) who can explore locations, watch movies and PowerPoint presentations, consult documents and posters, organize and attend seminars and meetings, and interact by voice or text communications. Almost all elements needed to conduct real-life meetings and teaching activities are available in *Second Life*.

Most importantly, the virtual environment stimulates curiosity, exploration, and interaction by recreating the conditions typical of real-life situations. In collaboration with the University of Boston, MA, USA, HRP has acquired an island on *Second Life* on which an antenatal clinic has been built. The antenatal clinic includes four rooms. After accessing each room, the avatar can observe the interaction between a pregnant woman and her care provider, which recreates the type of dialogue that should take place during each of the four visits of the WHO Antenatal Care Model. The virtual world environment has been successfully tested with two WHO collaborating centres in Rosario, Argentina and Khon Kaen, Thailand.

The MacArthur Foundation requested HRP to submit a proposal for a project aimed at reducing the 'knowledge gap' in maternal health by using *Second Life* as an innovative, universally applicable strategy to improve the translation of evidence into clinical and public health practice. While the proposed project focuses on antenatal care, it will enable the participating institutions to develop virtual-world environments and activities that could easily be expanded to other maternal-health issues. The close interaction between the WHO collaborating centres will ensure that the technical requirements of the system (e.g. processor speed, band width, memory) are suitable for applications in low-resource settings. Another feature of the system, which is particularly important for low-resource settings, is its low cost, compared to organizing ordinary meetings and workshops.

The major advantages of virtual-world teaching environments over other available options are their stimulating and creative-learning approach, the ability of people from all over the world to come together and interact on a regular basis, a balance between the sharing of content and active discovery, the use of role play, the power of visualization and sensory experience, and the ease of monitoring use of the applications.

4.2 Planned activities

Concerning infections in pregnancy, the MPH Team is planning to link the data-set of the multicentre ASB trial with the study subjects' medical records in order to determine the risk of developing hypertensive disorders of pregnancy and preterm birth in women who developed ASB.

Most of the activities in relation to *Second Life* and other internet-based platforms have only recently started, and are expected to be placed high on HRP's agenda in future years. The interactivity offered by these platforms for teaching and

dissemination efforts is attractive. The platforms also offer the possibility of decreasing the need for face-to-face meetings, which might prove to be a particularly cost-effective strategy.

5. LABOUR, DELIVERY, AND POSTPARTUM

A large proportion of maternal, fetal, and newborn deaths occur around the time of labour, delivery, and the immediate postpartum period. Therefore, a significant portion of HRP's programme of work in maternal and perinatal health research focuses on the peripartum period. In addition, childbirth – like nutrition – is an area of health which is highly charged with psychological and sociocultural meanings. Beliefs about childbirth function as critical determinants of health-seeking behaviour patterns and attitudes towards obstetric care. Therefore, a comprehensive health-research approach to childbirth should ideally include a component targeted at understanding how social perceptions of labour and delivery have evolved over time, and how these changing viewpoints have impacted women's usage patterns of obstetric care and of maternal and perinatal health outcomes.

5.1 Progress

Activities in this area of work focus on the use and misuse of caesarean section, prolonged labour and its consequences, prevention and treatment of postpartum haemorrhage, and appropriate spacing between deliveries.

5.1.1 Caesarean section

In recent years, HRP has produced several publications documenting the alarming increase in caesarean section (CS) rates in many countries of the world and the potentially negative consequences of this increase for maternal and newborn health. Signficantly, these publications have consistently emphasized that the rise in caesarean section rates observed in many countries contrasts sharply with the continued lack of access to emergency obstetric care in numerous low-resource settings. This discrepancy in access to emergency obstetric care across countries, and between urban and rural areas within developing countries, represents a major health inequity. HRP is committed to investigating the issues related to both the over- and under-utilization of CS.

HRP is playing a centre-stage role as one of the conveners of an international task force – together with CDC; NICHD; the National Institute for Health and Clinical Excellence (NICE) in London, United Kingdom; and the University of Bologna, Italy. This task force is focused on building a common research methodology to allow researchers, policy-makers, and clinicians to measure, monitor, and analyse caesarean section utilization patterns as well as maternal and infant outcomes following surgical deliveries.

The first meeting of the task force was held in Bologna, Italy in May 2008, and several international projects identified as critical have been initiated and are being supported by HRP. In order to catalyse greater interest among major international health organizations and institutions in controversies concerning CS delivery, HRP participated in the drafting of a manuscript (reviewed at the Bologna meeting) which discusses critical issues and presents recommendations for action. This manuscript has been submitted for publication.

A systematic review of trials of planned CS versus planned vaginal deliveries is also under preparation. The objective of this review is to systematically evaluate the consequences and benefits of planned CS versus planned vaginal delivery. The review will critically assess and synthesize the results of the 12 trials which have been published to date on this topic.

5.1.1.1 Caesarean section classification

In addition, the international task force recommended auditing and monitoring CS rates as an important strategy for capturing information concerning the characteristics of women delivering by CS and the underlying reasons CS rates are escalating worldwide. The current lack of standardized methodologies for international application has precluded adequate monitoring and evaluation of CS rates.

Importantly, as CS rates are usually presented in an aggregate form, it is impossible to determine how rates might vary across time, location, and between and within specific subgroups of women, e.g. nulliparas versus multiparas. This information is critical for understanding the dynamics associated with variations in CS rates and could easily be obtained by applying the 10-group classification proposed in 2001. This classification provides a framework for monitoring, auditing, and analysing caesarean section rates at facility level in various groups of women, in a clinically relevant and action-oriented manner, and it can be applied consistently worldwide.

Following the task force recommendation, HRP prepared a paper applying the 10-group classification to the data collected on mode of delivery in eight countries in Latin America (with CS rates ranging between 30.8% in Nicaragua and 40.3% in Ecuador) through the WHO Global Survey of Maternal and Perinatal Health – which included nearly 100 000 women recruited from 120 institutions. The result of this analysis showed that group 1 (nulliparous with single cephalic pregnancy, ≥37 weeks gestation without previous CS who entered into labour spontaneously) and group 3 (multiparous with single cephalic pregnancy, ≥37 weeks gestation without previous CS who entered into labour spontaneously) together form the largest group – representing 60% of the obstetric population. The next largest is group 5 (women with single cephalic pregnancy, ≥37 weeks gestation who have already undergone at least one CS), which

represented 11.4% of the obstetric population. CS rates in these groups are 23.2% (group 1), 9.9% (group 3), and 83% (group 5).

These are very high rates when compared, for example, with the National Maternity Hospital in Dublin, Ireland where the rates for groups 1, 3, and 5 in 2006 were 6.6%, 1%, and 58%, respectively. Although the increased use of CS is a global phenomenon, investigation and analysis of data from Latin American countries are important – given that the highest rates of CS worldwide are recorded in this region.

HRP is also facilitating the use of the 10-group classification in several countries. HRP seeks to encourage local investigators and health authorities to use data on CS rates to develop innovative approaches for planning service needs and for reducing CS rates when and where appropriate. Countries particularly involved in this process are those included in the WHO Global Survey of Maternal and Perinatal Health.

Results of these efforts will be presented at the next meeting of the task force, which is planned for 2009. At this meeting, research gaps and the next steps in the implementation of task force recommendations will be identified.

HRP is conducting a systematic review of CS classifications, to create an index and comparative analysis of CS classification systems proposed in the literature and currently in use. The importance of this review is rooted in the need for the development of a standardized and internationally accepted methodological framework for monitoring, auditing, analysing, and comparing CS rates at clinical and higher levels of the health care system. Each CS classification system identified by the review will be critically appraised according to a set of characteristics proposed by an international panel of experts. This review is expected to be completed by mid-2009.

5.1.1.2 Women's preferences for delivery

As globalization processes continue, sociocultural factors are becoming increasingly recognized as central determinants of health-care choices and preferences. Therefore HRP, in collaboration with the Institute for Clinical Effectiveness and Health Policy in Buenos Aires, Argentina is developing, testing, and implementing a questionnaire to assess women's opinions towards mode of delivery. This instrument will assess women's preferences for mode of delivery, perceptions of delivery options, and overall satisfaction with their delivery decisions and services received. The instrument will also allow for evaluating and analysing differences between preferred and actual mode of delivery, and differences between private and public sectors (including variances in the frequency of CS versus vaginal delivery, and in women's delivery preferences). Results from surveys using this instrument will contribute to understanding the reasons underlying rising rates of CS, including CS on demand, and provide information useful for the design of interventions targeted at women's empowerment.

5.1.1.3 Influence of the media

In order to better understand women's changing attitudes towards childbirth, and how these changes are impacting delivery choices, HRP has initiated a study of the representation and information on childbirth in women's top-selling magazines. Research has shown that the media (including women's magazines), represents an important source of information on reproductive and sexual health-related issues (including pregnancy and childbirth).

Given the potential role of the media in influencing women's beliefs and behaviours regarding childbirth, the MPH Team is performing a content analysis of articles published in top-selling women's magazines on the topic of pregnancy and delivery in several countries where CS rates have escalated in recent decades (with a particular emphasis on examining articles that contrast the benefits of CS versus vaginal delivery). This review will include a number of countries in North America, South America, Europe and Oceania.

This first research strategy will focus on collecting and assessing articles published in the past 20 years – mainly focusing on articles written approximately 20 years ago (before CS rates began to dramatically increase) and comparing the content of these articles with those written around 2005–2007. This strategy will concentrate on the 10–15 magazines with the largest national distribution in each of the countries in this review.

This research will enhance understanding of the type of information concerning childbirth that women are obtaining through media sources and specifically from women's magazines, including the scientific accuracy of the information presented and how caesarean section and vaginal modes of delivery are compared and described. Gaining insight into the information circulated to women through media outlets can inform clinical practice by alerting health-care providers about the type of information their clients are receiving prior to entering into their care. This research can also serve as a first step to understanding sociocultural and other contextual determinants underlying the trend of increasing CS rates – including CS on demand.

As a future development, the network of country-specific teams working on the article search will be able to generate information on a regular basis through both prospective and retrospective searches. These searches could provide valuable insight into pervasive social attitudes concerning a vast range of additional topics relevant for sexual and reproductive health.

5.1.1.4 Caesarean section techniques

Besides involvement with the task force, the MPH Team is part of another international collaboration on caesarean section, the Coronis Study, an international study of caesarean section surgical techniques. The MPH team is part of the trial steering committee and partly supports logistics of implementation at country level.

The objectives of the trial are to determine whether there are any differences in maternal morbidity when comparing the following five pairs of alternative surgical techniques used during caesarean sections:

- blunt versus sharp abdominal entry
- exteriorization of the uterus for repair versus intra-abdominal repair
- single- versus double-layer closure of the uterus
- closure versus non-closure of the peritoneum (pelvic and parietal)
- chromic catgut versus Polyglactin-910 for uterine repair.

The study, coordinated by the National Perinatal Epidemiology Unit of Oxford University in the United Kingdom, is a multicentre, fractional factorial, randomized controlled trial. The study will be conducted in centres in the following six countries: Argentina, Ghana, India, Kenya, Pakistan, and the Sudan. The study is presently ongoing, and has a target sample size of 15 000 women. In addition, the study includes a three-year follow-up of infants born from mothers participating in the study.

5.1.2 Obstetric fistula

It is conservatively estimated that more than two million women are currently living with obstetric fistula, almost all of whom reside exclusively in Africa, south-east Asia, and the Middle East. However, the accuracy of this estimate is unknown, given that there are almost no reliable data on the magnitude of obstetric fistula at country level. Obstetric fistula has been neglected for many years, because it is a condition typically affecting the most marginalized women with the least visibility and voice.

Obstetric fistula, which develops after a difficult childbirth, leads to continuous urinary and faecal incontinence, and causes devastating physical and mental suffering for millions of women in developing countries**.** Although surgical treatment options are available, little is known about the long-term prognosis of such procedures and the vast majority of women suffering from fistula do not have access to surgical repairs.

The MPH Team is strongly committed to counteracting this appalling situation and is actively involved in the "Global campaign to end fistula", initiated by the United Nations Population Fund (UNFPA), in 2003. HRP is collaborating in a study with UNFPA, the Johns Hopkins Bloomberg School of Public Health in Baltimore, Maryland, USA, and institutions in countries of high prevalence (including Bangladesh, Benin, Ethiopia, Mali, Niger, Nigeria, the Sudan, and the United Republic of Tanzania. This study is aimed at developing a standardized fistula classification system and understanding the factors detracting from and those facilitating women's re-integration into society post-repair. The specific objectives of this multicountry study include examining post-operative prognosis, improvement in quality of life, social integration, and rehabilitation of fistula patients after surgical treatments.

Current fistula classification systems are based on anatomical descriptions, and have never been validated for prognostic outcomes. The study data will be used to develop a standardized classification system that enables the predictability of prognosis. A standardized classification of fistula would help in describing epidemiology according to severity, devising type-specific treatment protocols, assessing training needs for surgeons, and allocating medical resources for the optimal care of fistula patients in resource-poor settings.

The first investigators' meeting was organized by HRP in Geneva, Switzerland in April 2008. Data collection is scheduled to begin during the second half of 2009.

In addition HRP, together with UNFPA and the nongovernmental organization EngenderHealth, is convening a consortium to establish and approve an international classification for obstetric fistula. The consortium will meet at WHO headquarters for the first time in March 2009 and will involve all the major agencies, organizations, professional associations, and research and health-care institutions with an interest in reducing the burden of disease due to obstetric fistula.

Another collaboration – which is more limited in scope, but still significant – has been established with the University of Michigan in Ann Arbor, Michigan, USA to analyse qualitative data obtained from interviews conducted in Uganda with fistula patients and their sisters. The objective of this work is to identify and describe perceptions of fistula and its associated health and social problems, especially with a view to developing tools to assess fistula prevalence at community level.

5.1.3 Postpartum haemorrhage

One of the most dangerous complications of the postpartum period is postpartum haemorrhage, a potentially fatal condition that affects 1% to 3% of all deliveries and requires prompt medical intervention or referral. In recent years, HRP has coordinated clinical trials testing the effectiveness of preventive and treatment interventions for postpartum haemorrhage. In 2008, STAG recommended that the Team maintain this commitment in the future.

The MPH team is collaborating with the Safe Motherhood Program at the University of California at San Francisco, USA to implement a cluster-randomized trial to test the effectiveness of a non-pneumatic anti-shock garment to reduce the risk of hypovolaemic shock during referral to tertiary care of women with postpartum haemorrhage. The trial is presently being implemented in Zambia and Zimbabwe with a target total sample size of 2400 women.

In addition, the MPH Team and the Mapping Best Practices Unit are collaborating with USAID to implement the "Trial of active management of third stage of labour". The active management of the third stage of labour (AMTSL) includes a series of interventions aimed at reducing the risk of postpartum haemorrhage. The relative contribution of each is unknown. Controlled cord traction is one of the components that requires training in manual skill for it to be performed appropriately. If it is possible to dispense with controlled cord traction without losing efficacy, this would have major implications for effective management of the third stage of labour at peripheral health-care levels.

The objective of the trial is to determine whether the simplified package of oxytocin 10 IU IM/IV, without controlled cord traction, is not less effective than the full AMTSL package with regard to reducing blood loss ≥1000 ml in the third stage of labour. Centres in Argentina, Egypt, India, Kenya, the Philippines, South Africa, Thailand, and Uganda will participate. Recruitment will start in March 2009. This activity is conducted in close collaboration with the Mapping Best Practices Unit, as part of a vast effort to develop guidelines for the prevention and treatment of postpartum haemorrhage.

Consistent with HRP's long tradition of evaluating the effectiveness of drugs for the prevention and treatment of postpartum haemorrhage, the Programme recently completed the randomized clinical trial "Misoprostol to treat postpartum haemorrhage: a randomized controlled trial". The trial was conducted in Argentina, Egypt, South Africa, Thailand, and Viet Nam, with the objective of comparing the effectiveness of misoprostol and injectable oxytocics to treat postpartum haemorrhage. The results show no difference in effectiveness between misoprostol and oxytocin.

Late cord clamping after delivery may have beneficial effects for the newborn. Accordingly, a clinical trial is planned to test the impact of cord clamping at the third minute after delivery on rates of neonatal anaemia as well as other maternal and perinatal outcomes.

5.1.4 The Odon device – a promising invention to facilitate delivery

The MPH Team is collaborating with Des Moines University, Iowa, USA; Centro de Educación Médica e Investigaciones Clínicas (CEMIC), Argentina, and The Rotarian Action Group for Population Growth & Sustainable Development (RFPD), located in Germany, to test and develop a new device that could facilitate childbirth in cases of prolonged labour. The device, invented by the Argentinean Rotarian Jorge Ernesto Odon, is a simple plastic bag that, when positioned around the head of the fetus, may facilitate delivery by applying a gentle traction and decreasing the coefficient of friction with the walls of the birth channel.

Several experts from Argentina, Germany, Norway, South Africa and the United States are collaborating with RFDP and WHO to further test and develop the device. The device underwent preliminary testing at the Simulation Centre at Des Moines University in October 2008. The outcome of the preliminary tests was successful and new studies on the safety and efficacy of the device are planned for 2009. Mr Odon's invention could potentially prevent fetal and maternal trauma and damage due to prolonged labour, and decrease the risk of infections (including HIV) acquired by the fetus during delivery. The low cost and simplicity of use makes the Odon device particularly suited for use in low-resource settings. In addition, it could represent a less traumatic alternative to forceps and vacuum extractor in hospitals in developed countries.

5.1.5 Birth spacing

With support from USAID, WHO undertook in 2004 a review of evidence on the relationship between various birth spacing intervals and maternal, infant, and child health outcomes. In 2005, 37 international experts participated in a meeting to analyse such evidence. The experts noted the limitations of the studies and suggested further analyses on certain outcomes.

Currently, HRP is continuing this work using new WHO guidelines introduced in January 2008 as an analytical framework. The new analysis will include updated evidence available since 2004, as well as additional multicountry data-sets. It is expected that the process could be concluded in 2009. A WHO publication is expected to be prepared in 2010 with the results and recommendations for birth-spacing intervals.

5.2 Planned activities

The MPH Team will maintain its commitment to the international task force for caesarean section and the "Global campaign to end fistula". In relation to obstetric fistula, the MPH Team is planning to build on current activities by designing and implementing studies of the sociocultural factors which place women at risk for developing fistula and impact their ability to access treatment services and successfully reintegrate into society post-surgical repair.

Such studies will be critical to:

- identify familial and community enabling and detracting factors that affect women in their reintegration efforts after treatment;

- assess – from the perspectives of affected women, community members, and health-care personnel – the types of reintegration services that should be made available to fistula patients, to best help them reassimilate into their communities and reduce the chance of repeat fistula occurrence;

- evaluate – from the viewpoints of affected women, community members, and health-care personnel – existing treatment and reintegration strategies. This evaluation includes investigating women's interactions (and their impressions of these interactions) with health-care personnel, and assessing the gap between reintegration services currently available and women's expressed service needs.

6. NUTRITION

Maternal nutrition is increasingly recognized as a determinant of pregnancy and childbirth outcomes. HRP's work in the past has focused on nutritional supplementation studies to prevent the potential negative effects of micronutrient deficiencies. While micronutrient deficiencies might play a role in the pathophysiology of specific conditions (e.g. calcium nutritional status and risk of hypertensive disorders of pregnancy), both excessive and insufficient protein and energy intake are likely to be major determinants of adverse pregnancy outcomes. This association is of particular concern, given that several middle- and low-resource countries are undergoing the epidemiological transition associated with increases in prevalence of overweight and obesity.

6.1 Progress

In 2008, STAG recommended giving more attention to the importance of maternal nutrition to maternal and neonatal health. Therefore, the MPH Team welcomed the offer to participate in a multinational study aimed at determining the risk of negative maternal and perinatal outcomes associated with overweight and obesity. In addition, a systematic review of the literature on body mass index (BMI) and the risk of gestational diabetes has been published.

6.1.1 Body mass index and diabetes

The MPH Team conducted a systematic review of the literature to examine the association between maternal BMI at the beginning of pregnancy and the risk of gestational diabetes mellitus, and then to quantify the change in risk with increased BMI. This systematic review included data from 70 studies involving 671 945 women.

Results showed that gestational diabetes mellitus is positively associated with initial BMI with either unadjusted pooled or for overweight, moderately obese, and morbidly obese women of 2.04 (95% CI 1.94–2.15), 3.11 (95% CI 2.67–3.61) and 5.18 (95% CI 4.43–6.06), respectively. These results support the importance of counselling concerning this issue for women planning a pregnancy. This review will appear in *Obesity Reviews* in 2009.

6.1.2 Obesity and maternal and perinatal outcomes

While there are multiple studies reporting the association between obesity and maternal and perinatal outcomes, little is known about the influence of social, behavioural, and environmental factors on obese pregnancies. HRP is supporting and collaborating in an international effort led by researchers at the University of Barcelona, Spain to explore the interaction between obesity and sociodemographic, behavioural, and environmental factors, as determinants for major causes of maternal and perinatal morbidity: GLOBE (Gestation Linked to Obesity and Environment). This will be an observational, prospective cohort study recruiting women in antenatal care clinics in ten countries in Africa, Latin America, North America, Asia, and Europe. The protocol is under development, and recruitment is expected to begin in 2009 in some centres.

6.2 Planned activities

Nutrition in pregnancy will continue to feature prominently on the Programme's agenda. The MPH Team is planning to collaborate with the WHO Department of Nutrition and Development to develop guidelines on nutritional supplementation in pregnancy with vitamin A and zinc. This work will be based on a systematic review of the literature, the grading of evidence, and expert consultations, according to the WHO development policy for guidelines. In addition, the MPH Team will collaborate with Des Moines University to organize a symposium on nutrition and reproductive health to be held in October 2009 at the World Food Prize Award Ceremony in Des Moines, Iowa, USA.

7. COUNTRY FOCUS

Active collaboration with ministries of health and professional associations at country level is considered critical – for both identifying and showcasing successful policies to improve maternal and perinatal health. Such collaboration is also critical in the collection of data and information on the epidemiology of disease, clinical and public health practices, quality of care, and health-system performance.

7.1 Progress

In recent years, the MPH Team assisted countries (Chile and Mongolia) in collating and publishing national statistics on maternal and perinatal health, and participated in the establishment of networks – including other agencies and researchers and a wide variety of countries – with the goal of improving maternal and newborn health. Building on this successful experience, STAG recommended extension of this work to other countries – in particular the central Asian

republics – involving them in the Global Survey on Maternal and Perinatal Health.

To comply with these recommendations, the MPH Team extended the scope of collaboration with Chile and Mongolia and analysed data from Afghanistan and Colombia. The Global Survey on Maternal and Perinatal Health evolved into a more ambitious initiative – to include 450 health facilities from 25 countries, including countries in central Asia. Activities are being conducted in close collaboration with the Mapping Best Practices Unit and WHO regional and country offices.

Importantly, the MPH Team is actively contributing – through collaboration with the Partnership for Maternal, Newborn and Child Health (PMNCH) – to the "Countdown to 2015" effort. This effort involves tracking progress in coverage levels of proven interventions to reduce maternal, newborn, and child mortality in the 68 countries in the world that account for 97% of maternal and child deaths.

7.1.1 Countdown 2015

The MPH Team is participating in the "Countdown to 2015" initiative, which brings together the United Nations (UNICEF, WHO, UNFPA) and the World Bank, bilateral and multilateral development agencies, nongovernmental organizations, academic institutions, and countries, in an effort to monitor coverage of high-impact interventions that can improve maternal, newborn, and child survival in the 68 countries that account for 97% of deaths among mothers and under-five-year-old children worldwide.

This initiative also examines the equitable delivery of proven interventions, and tracks key health policy and health systems indicators as well as the flow of financial resources to these 68 countries. The *Countdown 2008 report* and the *Lancet* "Countdown Special Series" were launched in April 2008, and were followed by the Countdown conference in Cape Town, South Africa the same month. MPH Team members were among the lead authors of the report, together with authors of the *Lancet* articles and conference participants. Publications with involvement of MPH Team members included the *Countdown 2008 report: tracking progress in maternal, newborn and child survival*. Members of the team were also acknowledged in "Parliamentarians: leading the change for maternal, newborn and child survival?" and "Making the Countdown count".

HRP is continuing its involvement in the next Countdown cycle (the initiative produces a report and hosts a conference every two to three years), and has participated in the development of a grant for independent funding.

7.1.2 Multicountry study on maternal and perinatal health

Lack of reliable, accurate, and up-to-date data is a recurrent problem for public health practice – especially in low-resource settings. Data on maternal and perinatal-health-related conditions and practices are often not available at country level. When available, those data are likely to be estimates, extrapolated statistically from data collected in other geographical settings or time periods. Therefore, the question faced by many researchers is whether it is possible to collect valid, accurate, and up-to-date data on maternal and perinatal health in low-resource settings. This question was positively answered by the WHO Global Survey of Maternal and Perinatal Health, which between 2005 and 2007 collected data on approximately 250 000 deliveries in Africa, Latin America, and Asia to study the association between mode of delivery (caesarean section versus vaginal delivery) and maternal and perinatal outcomes.

The basic concept of the WHO Global Survey, using Internet-based data-collection surveys targeted at rapidly collecting information on specific questions of interest, was applied to the design of the "Multicountry study on maternal and perinatal health: a global approach to severe maternal complications and preterm birth".

This study, conducted in collaboration with the Mapping Best Practices Unit, will be implemented in 420 health facilities from 27 countries. A total of 360 health facilities from 23 countries have already participated in the Global survey. In addition to these countries, Afghanistan, Pakistan, and Tajikistan were added to the network. The objective of the study is to determine the worldwide incidence of major maternal complications, maternal 'near-misses', and preterm birth. The study also seeks to explore the relationship of these conditions with the availability and use of preventive and therapeutic interventions. Data collection is expected to be completed by the end of 2010.

Notably, a system for data collection at community level will be piloted within the context of the study. This system will establish the foundation for expanding the study to community level in the near future.

7.1.3 Chile

HRP, in collaboration with the Chilean Ministry of Health, developed the article "Tackling health inequities in Chile: reduction in maternal, newborn, and child mortality between 1990 and 2004", which was accepted for publication in the *American Journal of Public Health*. A principal aim of this collaboration was to document and disseminate Chile's success story, so that other countries could learn from that example and make similar strides towards achieving MDGs 4 and 5.

In that article, the MPH Team analysed the declining trends in maternal, newborn, and child mortality in Chile between 1990 and 2004 and the variances in mortality trends across district quintiles to determine whether and how these inequities changed. The authors explored reasons for the downward mortality trends and changes in the mortality differentials between district quintiles, such as national-level interven-

tions and changes in key demographic indicators known to influence pregnancy outcomes. During the study period, the maternal mortality ratio decreased from 42.1 to 18.5 per 100 000 live births. The mortality rate for neonates decreased from 9.0 to 5.7 per 1000 live births, for infants (>28 days and <1 year) from 7.8 to 3.1, and for children from 3.1 to 1.7. The stillbirth rate declined from 6.0 to 5.0 per 1000 births.

Disparities in these mortality statistics between the poorest and richest district quintiles also decreased, and the largest mortality reductions were achieved in the poorest quintile. These declines occurred during a period of sustained economic development in Chile and followed the introduction of several key national-level interventions in the areas of neonatal, child, and women and adolescent health.

Given the growing global interest in combating health disparities, this assessment represents a first step towards identifying coverage gaps across the continuum of care, as well as successful strategies in reducing inequities. This information may inform efforts in other countries to implement integrated maternal and child health-service packages and achieve Millennium Development Goals 4 and 5.

7.1.4 Mongolia

The MPH Team collaborated with colleagues at the Ministry of Health of Mongolia, to analyse the contextual factors and health-system reforms likely contributing to Mongolia's significant maternal mortality declines between 1992 and 2007. This collaboration resulted in the preparation of the document, "Together it is possible: how a collaborative strategy reduced maternal mortality in Mongolia between 2001 and 2007" which has been submitted for publication.

Disparities in maternal mortality (MMR) ratios represent one of the major persisting health inequities between low- and high-resource countries. There are few success stories of resource-poor nations which have been able to significantly decrease maternal mortality. Given the recent passage of the mid-point between 2000 – when the MDGs were ratified by 189 countries – and the target date of 2015, it is increasingly urgent that these few country success stories are analysed and widely disseminated so they can be replicated elsewhere.

Mongolia – with a population of about 2.6 million and approximately 50 000 births per year – represents a successful example of a lower-middle-income Asian country that reduced maternal mortality by implementing a collaborative approach involving local governments, health-care professionals, national and international agencies and donors, NGOs, the media, and the general public. Signficantly, the interventions which have been introduced in Mongolia comply with current recommendations on addressing maternal mortality through a prioritization of intrapartum care, and the introduction of a comprehensive horizontal strategy.

In this article, the authors present Mongolia's maternal mortality ratios from 1992 to 2007, discuss the contextual factors responsible for the mortality declines between 1993 and 2000, highlight the decreasing mortality trend evident between 2001 and 2007, and discuss the main features of the Maternal Mortality Reduction Strategy (MMRS) 2001–2004 and 2005–2010 likely to have substantially contributed to this decline. They explore in particular the productive partnerships that were formed between the Ministry of Health and other reproductive health stakeholders during this time period, and the role these partnerships played in the successful implementation of the MMRS. They also emphasize the importance of political commitment to Mongolia's achieved MMR reductions.

The documentation of Mongolia's ability to significantly reduce maternal mortality through a collaborative and comprehensive approach is highly relevant, given the global commitment to improve maternal health and the growing concentration of maternal deaths in the Asian region. This approach may prove useful for other Asian and non-Asian countries to adopt as they work towards meeting MDG 5.

7.1.5 Afghanistan

The scarcity of maternal and perinatal data and information in developing countries, and the lack of quality assurance processes, are critical impediments to establishing priorities for action and improving maternal and newborn health. The MPH Team has been collaborating with the Ministry of Health in Afghanistan and the Collaborating Centre in Reproductive Health at CDC in Atlanta, Georgia, USA, to document the development of a facility-based maternal and newborn surveillance system for use in maternity hospitals in Kabul with the ultimate aim of improving the quality of care at the institutional level.

Two manuscripts have been prepared and accepted for publication: in the *Journal of Maternal-Fetal & Neonatal Medicine* ("Monitoring perinatal outcomes in hospitals in Kabul, Afghanistan: the first step of a quality assurance process") and in the *International Journal of Gynecology & Obstetrics* ("Caesarean delivery surveillance system at a maternity hospital in Kabul, Afghanistan"). The first manuscript presents perinatal outcomes in four hospitals in Kabul during 2005 including more than 53 000 women. The second manuscript presents an in-depth analysis of these data, focusing on caesarean section practices and outcomes during a four-month period. These manuscripts intend to disseminate a method of monitoring and improvement that will be useful in other resource-poor settings.

7.1.6 Colombia

HRP participated in an analysis of selected intrapartum obstetric practices and of the factors associated with their use in the city of Cali, Colombia. The study was conducted as a quantitative analysis of women's clinical charts for measur-

ing the rates of obstetric practices. It also included a qualitative analysis of audiotaped, semi-structured interviews with intrapartum care providers. The investigators concluded that intrapartum care in Colombia is not guided by the best available evidence. Effective strategies for change should be undertaken, to encourage the adoption of obstetric practices which have been clearly demonstrated as effective and to discard those that are ineffective.

7.2 Planned activities

The Pan American Health Organization (PAHO) welcomed the publication of the articles showcasing the successful public health programmes and policies that led to the significant reduction of maternal, newborn, and child mortality in Chile. The Partnership for Maternal Newborn and Child Health has agreed to provide funding for extending this analysis to other countries in Latin America. Therefore, new country analyses in Latin America are planned for the coming years. These analyses will be conducted in collaboration with PAHO, the Centro Latino Americano de Perínatologia in Montevideo, Uruguay, and WHO country offices.

In relation to the "Multicountry study of maternal and perinatal health", HRP is progressively extending data collection to community settings. This activity represents a logical evolution of the project and is consistent with recommendations made by STAG in previous years. As a pilot phase, community-based data-collection activities are planned to begin in Nepal.

8. ADVOCACY

Indicators of sexual and reproductive health continue to show wide differences between developed and developing countries. These indicators also suggest that many developing countries are not on track to achieve MDG 5 (to "reduce by 2015, the 1990 maternal mortality ratio figures by three quarters, and achieve universal access to reproductive health"). Hence, the world faces a huge public-health challenge and there is an urgent need to develop innovative strategies for attracting new resources for improving women's sexual and reproductive health.

8.1 Progress

Advocacy efforts targeted at global sexual and reproductive health issues (particularly maternal and perinatal health) are needed because this area has been largely neglected by the general public, the media, and politicians (who historically have paid more attention to the health and social implications of HIV/AIDS, malaria, and tuberculosis). Fortunately, reproductive health is beginning to surface as a major priority as high-level politicians become progressively more interested in accelerating efforts to achieve MDGs 4 and 5. The MPH Team is developing innovative advocacy activities to encourage this trend towards increased awareness of and interest in improving maternal and newborn health. While some activities target the public-health community, most are designed to reach a wider audience including politicians and the general public.

8.1.1 Postgraduate course and internships

For several years the Programme has organized, in collaboration with the Geneva Foundation for Medical Education and Research, the "Postgraduate course on research methodology in sexual and reproductive health" in Geneva, Switzerland. Besides representing a successful capacity-building initiative, the course offers the possibility of stimulating colleagues from various countries to acquire a strong interest in the activities promoted by the Programme. Every year, some of the course participants make a commitment to establish collaborative ties with HRP and successfully implement research and programmatic activities.

Since 2007, the MPH Team has also received interns from various universities. To date, four interns have spent periods of time in Geneva contributing to the write-up of five scientific papers. Two of these papers have already been published, and the remaining three have been submitted for publication. The MPH Team is also facilitating internships of residents and students at collaborating centres.

8.1.2 Art for health

As a step towards addressing the stark imbalance between women's reproductive and sexual health in developed and developing countries, the Programme launched a project entitled "Art for health" ("A4H") in 2006. The goal of this project is to use contemporary art to increase awareness about and promote action towards improving sexual and reproductive health – especially the health of women and children – around the world.

The art commissioned for A4H is designed as a call to action, encouraging the viewer to participate in a unified effort to improve the lives of women of present and future generations. The art work also aims to replace the stereotypical representation of underprivileged women as passive victims of circumstances, with an image that shows these women as willing and capable partners in the advancement of women's health.

In 2006, the artist Elisabetta Farina was commissioned to produce the first series of paintings. Using a style originally developed during the Pop Art movement, she produced a set of paintings portraying positive images of women from diverse ethnic and social backgrounds. HRP owns the paintings and makes them available for display at exhibitions, congresses, and other meetings and events. Other examples of their potential applications include use in campaigns (for printing on posters, calendars, cards, handbags, etc.), and in workshops and discussion groups related to the promotion of women's and children's health.

To date, 16 exhibits have been organized in Brazil, Chile, France, Ireland, Italy, Malaysia, South Africa, Switzerland, the United Kingdom, the United Republic of Tanzania, and the USA. Exhibit venues included art and cultural centres, scientific meetings and conferences, shopping malls, embassies, and even a presidential palace.

In June 2008, 38 paintings were sold at an auction (organized by Christie's Auction House and the NGO IMAGINE in Rome, Italy) which was attended by political and cultural celebrities, renowned journalist, diplomats, art collectors, and gallery owners. The successful auction raised 37 400 euros, and these proceeds are being used to improve the health and sanitary conditions of local communities in La Mosquitia, Honduras, through the development of a mobile health clinic (on a boat), with particular attention to pregnant women and young children. After the auction, the Italian Minister of Equal Opportunities (who holds the mandate for sexual and reproductive health) contacted HRP and offered to endorse the project for a communication campaign focusing on women's health.

Future exhibitions are planned in 2009 and 2010 in Brazil, France, India, Namibia, South Africa, Spain, and the USA. Also envisioned are other activities and auctions which will help to fund specific activities in the area of sexual and reproductive health in developing countries.

8.1.3 Politics

During the past few years, an increasing number of high-level politicians have expressed a strong commitment to maternal and child health worldwide and have taken action to assist countries in their efforts to reach MDGs 4 and 5. Exemplary examples include the current and previous Prime Minister of Norway, the Prime Minister of the United Kingdom, and the President of Chile. HRP has actively followed this encouraging development, and has engaged in several activities in keeping with the priorities outlined in the "Global Leaders' Initiatives for MDGs 4 and 5", which was launched by Prime Minister Stoltenberg of Norway. Specific activities include HRP's contribution to the "Countdown to 2015" effort and participation in the Latin American component ("Actuamos Ya") of the "Deliver Now" campaign, which was launched in September 2008 in Santiago, Chile by Mr Stoltenberg and Dr Michelle Bachelet, President of Chile.

Because the next G8 summit will be held in Italy, targeted efforts have been made to approach key Italian political leaders. (The G8 Summit is an annual informal meeting of the heads of government of Canada, France, Germany, Italy, Japan, the Russian Federation, the United Kingdom, and the United States.) At the summit a wide variety of international economic, political, and social issues are discussed. International health has often featured on the G8 agenda. For example, the G8 leaders established the Global Fund to Fight HIV/AIDS, Malaria and Tuberculosis at the summit held in Italy in 2001.

At the 2007 G8 meeting in Japan, maternal, newborn, and child health received considerable attention. To maintain this level of awareness from one summit to the next, it is critical that the maternal, newborn, and child health community act in a coordinated way to positively influence the governmental commissions in charge of preparing the agendas. HRP and the PMNCH are closely collaborating with the Italian Health Commission that will prepare the health agenda for the 2009 summit, and with Canadian colleagues involved in preparing the health agenda for the 2010 G8 summit in Canada.

Several Italian politicians – including the President of the Lower Chamber of Parliament, the Mayor of Rome, and the Minister of Equal Opportunities – have shown interest in supporting initiatives aimed at increasing awareness about reproductive health issues in Italy and globally. One concrete development is the establishment of the Annual Meeting of Italian Parliamentarians for Reproductive Health, which will be held every year at WHO headquarters. The 2009 meeting was held on 23 January, and focused on the use/misuse of caesarean section and the need to promote universal access to reproductive health in Italy and in the world.

8.1.4 Faith-based organizations

Working in collaboration with faith-based organizations can potentially motivate large audiences and stimulate action towards the improvement of maternal and perinatal health in particular, and sexual and reproductive health in general – both in developed and developing countries. Several years ago, UNFPA initiated a dialogue with faith-based organizations, and WHO is progressively becoming more involved with this constituency.

Faith-based entities have a long history of contributing to the struggle for health and well-being throughout the world. Today, and particularly in developing countries, faith-based organizations are an important and irreplaceable source of health care. Such organizations are highly involved in fighting against pandemics and have the potential to increase their value as partners in public health, committed to the effective recovery and resilience of individuals, families, and communities. However, the work conducted by faith-based organizations often remains unknown, and is seldom acknowledged by policy-makers. This situation is most likely because such organizations tend not to be integrated into the formal network of health-care stakeholders.

In this context, the MPH Team has started a review of the available evidence in order to identify, map, and assess faith-based health assets (hospitals and human resources) that currently offer health care for pregnant women and their neonates in developing countries. The outcome of the study will be a document providing information by country, and quantifying the contribution of faith-based organizations to maternal and neonatal health. The study will provide information on the location, assets, population served, and the number of deliveries attended. These findings will potentially

strengthen the dialogue between faith-based organizations and the MPH Team, in order to mobilize current capacities, align resources, fill critical gaps, and develop targeted interventions.

In October 2008, the MPH Team participated in the "Global forum of faith-based organizations on population and development", organized by UNFPA in Istanbul, Turkey. More than 75 religious leaders participated in the forum and formed a global interfaith network to strengthen cooperation to confront urgent global issues such as maternal mortality, AIDS, and poverty. Participation in the meeting offered the MPH Team the opportunity to expand its contacts with faith-based organizations working on maternal health issues.

8.1.5 Global initiatives

Both the Policy and Coordination Committee (PCC) and the Gender Advisory Panel (GAP) have encouraged HRP to actively participate in ongoing global initiatives. The MPH Team acted on this recommendation by becoming an active member of some of the most significant global initiatives. As previously mentioned, the Team is involved in the "Global campaign to end fistula", the "Countdown to 2015" effort, the "Global Leaders Initiative for MDGs 4 and 5", and the "Deliver Now" campaign (and its Latin America component "Actuamos Ya"). In addition, HRP was asked by UNICEF to write a paper on new directions in maternal health for inclusion in their flagship publication, *The state of the world's children 2009*.

Other active contributions include the organization of a session on the role of research in the achievement of MDGs 4 and 5 at the "Global ministerial forum for research for health" held in Bamako, Mali in October 2008. Another contribution involves a chapter on maternal and newborn health in the report *Summary of the evidence on patient safety: implications for research*, which summarizes the work of the Global Alliance for Patient Safety.

8.2 Planned activities

The MPH Team is planning to expand its advocacy activities to engage larger and more diversified audiences, in an effort to improve sexual and reproductive health worldwide. Several activities initiated in the past few years have begun to produce concrete results, including functioning as catalysts for new initiatives.

Several organizations and initiatives have expressed their appreciation for HRP's innovative and diversified approach to advocacy, and have asked to collaborate on planned activities. These activities include the publication of a special issue on sexual and reproductive health and "Art for health" for *Abaton*, the literary magazine of Des Moines University; an exhibit in Seattle, Washington, USA which will include A4H portraits and art work from Native American artists hosted in conjunction with the meeting of the Global Alliance to Prevent Prematurity and Stillbirth in May 2009; and an exhibit organized at the World Meeting of the Tobacco Free Initiative to be held in Mumbai, India, in March 2009.

In addition, the Mothers and Babies Research Centre in Newcastle, Australia, has proposed the organization of an event to address the social and reproductive health needs of women from disadvantaged populations in Australia and elsewhere in the world. The MPH Team looks very positively on all the above-mentioned proposed initiatives and others which will be planned in the future. The Team is pleased to have contributed through its advocacy work to efforts to bring a social-justice perspective to maternal and newborn health.

Annex 1

SCIENTISTS IN 2007–2008

Principal investigators

Hany Abdel Aleem	Assiut University Hospital, Assiut, Egypt
Idrissa Abdoulaye	National Hospital of Niamey, Niamey, Niger
Saifuddin Ahmed	Johns Hopkins University, Baltimore, MD, USA
Sayeba Akhter	Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh
Kohinoor Begum	Dhaka Medical College, Dhaka, Bangladesh
José M. Belizan	Institute for Clinical Effectiveness and Health Policy, Buenos Aires, Argentina
Gervais Beninguisse	Institut de Formation et de Recherche Démographiques, Yaounde, Cameroon
Marce Bokingo Lomangal	Ministry of Heath, Kinshasa, Democratic Republic of Congo
Carl Bose	University of North Carolina, Chapel Hill, NC, USA
Pierre Buekens	Tulane School of Public Health and Tropical Medicine, New Orleans, LA, USA
Jose Guilherme Cacetti	State University of Campinas, Campinas, São Paulo, Brazil
Wally Carlo	University of Alabama at Birmingham, Birmingham, AL, USA
Guillermo Carroli	Centro Rosarino de Estudios Perinatales, Rosario, Argentina
Elwyn Chomba	University Teaching Hospital, Lusaka, Zambia
Agustin Conde-Agudelo	Univerity of Cali, Cali, Colombia
Richard J. Derman	Jefferson Medical College, Newark, DE, USA
Ali Djibo	Direction Générale de la Sécurité et de la Prévention (DGSP), Niamey, Niger
Eltayeb Elfaki A Rahman Ali	Khartoum Teaching Hospital, Khartoum, Sudan
Mario R. Festin	University of Philippines, Manila, Philippines
Veronique Filippi	London School of Hygiene and Tropical Medicine, London, United Kingdom
Tiziana Frusca	Brescia University, Brescia, Italy
Ana Garcés	Instituto Multidisciplinario para la Salud, Guatemala City, Guatemala
Rene Genadry	Johns Hopkins University, Baltimore, MD, USA
Robert Goldenberg	Drexel University College of Medicine, Philadelphia, PA, USA
Shivaprasad Goudar	KLE Society's Jawaharlal Nehru Medical College, Belgaum, Karnataka, India
Ha Eunhee	Ewha Women's University, Seoul, Republic of Korea
Justus Hofmeyr	University of the Witwatersrand, East London, Eastern Cape, South Africa
Harou Issoufa	Zinder Fistula Center, Zallenge, Niger
Synnøve Lian Johnsen	Haukeland University Hospital, Bergen, Norway
Torvid Kiserud	Haukeland University Hospital, Bergen, Norway
Bhalchandra S. Kodkany	Jawaharlal Nehru Medical College, Belgaum, Karnataka, India
Olav Lapaire	Women's University Hospital Basel, Basel, Switzerland
Pisake Lumbiganon	Khon Kaen University, Khon Kaen, Thailand
Moke Mogama	National Institute for Medical Research, Dar es Salaam, United Republic of Tanzania
Rintaro Mori	Osaka Medical Center and Research, Institute for Maternal & Child Health, Osaka, Japan
Mulu Muleta	Addis Ababa Fistula Hospital, Addis Ababa, Ethiopia
Pius Okong	St. Francis Hospital Nsambya, Kampala, Uganda
Kalilou Ouattara	Hôpital du Point G, Bamako, Mali
Grahman Parry	Centre for Clinical Research and Effective Practice, South Auckland, New Zealand
Omrana Pasha	Aga Khan University, Karachi, Pakistan
Cristina G. Pelàez-Crisologo	University of Philippines, Manila, Philippines
Craig Pennell	The University of Western Australia, Crawley, Western Australia
Rajara M. Manapa Powar	Government Medical College & Hospital, Nagpur, India
Frère Florent G. B. Priuli	Hôpital Saint Jean de Dieu, Tanguieta, Benin
Manorama Purwar	Government Medical College & Hospital, Nagpur, India
Md. Abdul Quaiyum	International Centre for Diarrhoeal Disease Research (ICDDR,B), Dhaka, Bangladesh
Zahida Qureshi	University of Nairobi, Nairobi, Kenya
Evan Sequeira	Aga Khan University Hospital, Nairobi, Kenya
Ann Tabor	Rigshospitalet, Copenhagen, Denmark
Poul Thorsen	University of Aarhus, Aarhus, Denmark
Antoinette Tshefu	University of Kinshasa, Kinshasa, Democratic Republic of Congo
Felipe Vadillo-Ortega	Instituto Nacional de Perinatologia, Mexico DF, Mexico
Kees Waaldijk	Babbar Ruga Hospital, Katsina, Nigeria
Scott M. Williams	Vanderbilt University, Nashville, TN, USA
Gordon Williams	St Paul's Hospital Millennium Medical School, Addis Ababa, Ethiopia
Nelly Zavaleta	Instituto de Investigación Nutricional, Lima, Peru

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	28	51			14	25	42
Women	9	16			4	8	13
WHO Region:							
Africa	19	35					19
The Americas	7	13			8	14	15
South-East Asia	9	16					9
Europe					7	13	7
Eastern Mediterranean							
Western Pacific	2	4			3	5	5

Total = 55

Members of research groups

Frank Anderson	University of Michigan, Ann Harbor, Michigan, MI, USA
Deborah Armbruster	PATH, Washington, DC, USA
B. Anthony Armson	Izaak Walton Killam (IWK) Health Centre, Nova Scotia, Canada
Steve Arrowsmith	Worldwide Fistula Fund, Gallup, St. Louis, MO, USA
Leiv Bakketeig	Norwegian Institute of Public Health, Oslo, Norway
Bassery Ballo Mamadou	Ministry of Health, Bamako, Mali
Mark Barone	EngenderHealth, New York, NY, USA
Jon Barrett	University of Toronto, Toronto, Canada
Ariela Benigni	Mario Negri Institute for Pharmacological Research, Bergamo, Italia
Lluis Cabero i Roura	Hospital Materno-Infantil, Barcelona, Spain
Chariya Chomvarin	Khon Kaen University, Khon Kaen, Thailand
Bonnie Dattel	Eastern Virginia Medical School, Norfolk, VA, USA
Mamadou P. Diallo	United Nations Population Fund (UNFPA), Bamako, Mali
Gustavo Dip	Centro Rosarino de Estudios Perinatales, Rosario, Argentina
Siobhan Dolan	Albert Einstein College of Medicine, New York, NY, USA
Macaya Douoguih	National Institute of Child Health and Human Development, Rockville, MD, USA
Adrián Pablo Durán	Ministry of Heath, Buenos Aires, Argentina
Diana Elbourne	London School of Hygiene and Tropical Medicine, London, United Kingdom
Vincent Fauveau	United Nations Population Fund (UNFPA), Geneva, Switzerland
Stefania Fieni	University of Parma, Parma, Italy
Katie Gifford	United Nations Population Fund (UNFPA), New York, NY, USA
Daniel Giordano	Centro Rosarino de Estudios Perinatales, Rosario, Argentina
Keith Godfrey	University of Southampton, Southampton, United Kingdom
Rogelio González	Ministry of Health, Santiago, Chile
Richard Guidotti	Geneva, Switzerland
Michael Hambidge	University of Colorado Health Sciences Center, Denver, CO, USA
Mark Hanson	University of Southampton, Southampton, United Kingdom
Tyler Hartwell	Research Triangle Institute (RTI) International, Durham, NC, USA
Calvin J. Hobel	Cedars Sinai Medical Center, Los Angeles, CA, USA
Christopher Howson	The March of Dimes Birth Foundation, White Plains, NY, USA
M.L.Huayalinos Bustamante	Instituto de Investigación Nutricional, Lima, Peru
S. Ananth Karumanchi	Harvard Medical School, Boston, MA, USA
Michael Katz	March of Dimes Foundation, White Plains, NY, USA
Helen Kay	University of Chicago, Chicago, IL, USA
Nancy Krebs	University of Colorado Health Sciences Center, Denver, CO, USA
Malinee Laopaiboon	Khon Kaen University, Khon Kaen, Thailand
Wesley Lee	William Beaumont Hospital, Detroit, MI, USA
Marshall Lindheimer	University of Chicago, Chicago, IL, USA
Manolo Mazariegos	Center for Studies of Sensory Impairment, Aging and Metabolism, Guatemala City, Guatemala
Elizabeth McClure	Research Triangle Institute (RTI) International, Durham, NC, USA
Nawal Nour	Brigham and Women's Hospital, Boston, MA, USA
N. Pezzarossi de Calderón	Ministerio de Salud Publica y Asistencia Social, Santa Rosa, Guatemala
Arletty Pinel	Sur Global, Panama City, Panama
Larry Platt	Women's Health Centre, Los Angeles, CA, USA

M Yamile Puerto Becerra	Universidad Industrial de Santander (UIS), Cali, Colombia
Kate Ramsey	United Nations Population Fund, New York, NY, USA
Holly Richter	Women's Pelvic Medicine & Reconstructive Surgery, Birmingham, AL, USA
Charles Henry Rochat	Geneva Foundation for Medical Education and Research, Geneva, Switzerland
Craig Rubens	Global Alliance for Prevention of Prematurity and Stillbirth, Seattle Children's Hospital Research Institute, Seattle, WA, USA
Sarah Saleem	Aga Khan University, Karachi, Pakistan
Mandisa Singata	University of the Witwatersrand, East London Eastern Cape, South Africa
George Davey Smith	University of Bristol, Bristol, United Kingdom
Edward J. Stanford	Center for Advanced Pelvic Surgery, Centralia, IL, USA
Cynthia Stanton	Johns Hopkins University, Baltimore, MD, USA
Mary Ellen Stanton	United States Agency for International Development (USAID), Washington, DC, USA.
Jadsada Thinkhamrop	Khon Kaen University, Khon Kaen, Thailand
Khisa Weston Wakasiaka	African Medical and Research Foundation (AMREF), Nairobi, Kenya
John Wiecha	University of Boston, Boston, MA, USA
Gordon Williams	St. Paul's Hospital Millennium Medical School, Addis Ababa, Ethiopia
Daniel M. Wojdyla	Centro Rosarino de Estudios Perinatales (CREP), Rosario, Argentina
Linda Wright	National Institutes of Health, Rockville, MD, USA
Khlaid Yunis	American University of Beirut, Beirut, Lebanon

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	10	16			26	42	36
Women	10	16			16	26	26
WHO Region:							
Africa	5	8					5
The Americas	10	16			32	52	42
South-East Asia	3	5					3
Europe					10	16	10
Eastern Mediterranean	2	3					2
Western Pacific							

Total = 62

Consultants

Jennifer Harris-Requejo	University of Texas, Austin, TX, USA
Ramkumar Menon	The Perinatal Research Center, Nashville, TN, USA
Juan Manuel Nardin	Centro Rosarino de Estudios Perinatales, Rosario, Argentina
Maria Regina Torloni	São Paulo Federal University, São Paulo, Brazil
Effy Vayena	Basel, Switzerland

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	1	20			1	20	2
Women	1	20			2	40	3
WHO Region:							
Africa							
The Americas	2	40			2	40	4
South-East Asia							
Europe					1	20	1
Eastern Mediterranean							
Western Pacific							

Total = 5

Annex 2

PUBLICATIONS IN 2007–2008

Abdel-Aleem H, Merialdi M, Elsonosy E, Abdel-Aleem M, Elsedfy G, Villar J. The Effect of calcium supplementation during pregnancy on fetal and infant growth: a nested randomized controlled trial within WHO calcium supplementation trial. *J Matern Fetal Neonatal Med* 2009 22(2):94-100.

AbouZahr C, Cleland J, Coullare F, Macfarlane SB, Notzon FC, Setel P, et al. The way forward. *Lancet* 2007;370:1791-9.

Bacci A, Lewis G, Baltag V, Betran AP. The introduction of confidential enquiries into maternal deaths and near-miss case reviews in the WHO European Region. *Reprod Health Matters* 2007;15:145-52.

Betran AP, Merialdi M, Lauer JA, Bing-Shun W, Thomas J, Van Look P, et al. Rates of caesarean section: analysis of global, regional and national estimates. *Paediatr Perinat Epidemiol* 2007**;**21:98-113.

Biggio J, Christiaens I, Katz M, Menon R, Merialdi M, Morken NH, et al. A call for an international consortium on the genetics of preterm birth. *Am J Obstet Gynecol* 2008;199:95-7. Bryce J, Requejo JH, and the 2008 Countdown Working Group. Tracking progress in maternal, newborn, and child survival: the 2008 report. Available at: http://www.countdown2015mnch.org.

Caulfield LE, Donangelo CM, Chen P, Junco J, Merialdi M, Zavaleta N. Red blood cell metallothionein as an indicator of zinc status during pregnancy. *Nutrition* 2008;24:1081-7.

Conde-Agudelo A, Villar J, Lindheimer M. Maternal infection and risk of preeclampsia: systematic review and metaanalysis. *Am J Obstet Gynecol* 2008;198:7-22.

Conde-Agudelo A, Rosas-Bermudez A, Gulmezoglu A. Evidence-based intrapartum care in Cali, Colombia: a quantitative and qualitative study. *BJOG* 2008;115:1547-56. Countdown Coverage Writing Group on behalf of the Countdown to 2015 Core Group. Countdown to 2015 for maternal, newborn, and child survival: the 2008 report on tracking intervention coverage. *Lancet* 2008;371:1247-58.

Facchinetti F, Reddy U, Stray-Pedersen B, Baronciani D, Requejo JH. International issues in stillbirth. *J Matern Fetal Neonatal Med* 2008;21:425-8.

Gonzalez R, Harris-Requejo J, Nien JK, Merialdi M, Bustreo F, Betrán AP, et al. Tackling health inequities in Chile: reduction in maternal, newborn, and child mortality between 1990 and 2004. *Am J Public Health* 2009. (in press)

Guidotti RJ, Kandasamy T, Betran AP, Merialdi M, Hakimi F, Van Look P, et al. Monitoring perinatal outcomes in hospitals in Kabul, Afghanistan: the first step of a quality assurance process. *J Matern Fetal Neonatal Med* 2009 Apr;22(4):285-92.

Health Care Professional Association Writing Group. Delivering services and influencing policy: health care professionals join together to improve maternal, newborn, and child health. *Int J Gynaecol Obstet* 2009 Mar 30.

Hofmeyr GJ, Mlokoti Z, Nikodem VC, Mangesi L, Ferreira S, Singata M, et al. Calcium supplementation during pregnancy for preventing hypertensive disorders is not associated with changes in platelet count, urate, and urinary protein: a randomized control trial. *Hypertens Pregnancy* 2008;27:299-304.

Kandasamy T, Merialdi M, Guidotti RJ, Betran AP, Harris-Requejo J, Hakimi F, et al. Cesarean delivery surveillance system at a maternity hospital in Kabul, Afghanistan. *Int J Gynaecol Obstet* 2008 Oct 14.

Lauer JA, Betran AP. Decision aids for women with a previous caesarean section. *BMJ* 2007;334:1281-2.

Lumbiganon P, Villar J, Laopaiboon M, Widmer M, Thinkhamrop J, Carroli G, et al. One-day compared with 7-day nitrofurantoin for asymptomatic bacteriuria in pregnancy: a randomized controlled trial. *Obstet Gynecol* 2009; 113(2): 339-345.

Merialdi M, Murray JC. The changing face of preterm birth. *Pediatrics* 2007;120:1133-4.

Merialdi M, Bhutta Z. Summary of the evidence on patient safety: implications for research. In: *Safety of pregnant women and newborn*. Geneva: World Health Organization; 2008:35-40.

Merialdi M, Harris-Requejo JA. New directions in maternal health. In: *The state of the world's children 2009*. New York: United Nations Children Fund; 2008. Available from: http://www.unicef.org/sowc09/docs/SOWC09-FullReport-EN.pdf

Mignini LE, Carroli G, Abalos E, Widmer M, Lumbiganon P, Amigot S, et al. Diagnostic accuracy of screening tests to detect asymptomatic bacteriuria during pregnancy. *Obstet Gynecol* 2009; 13 (issue 2 Pt 1): 346-52.

Mudie NY, Gusev BI, Pivina LM, Schoemaker MJ, Rijinkova ON, Apsalikov KN, et al. Sex ratio in the offspring of parents with chronic radiation exposure from nuclear testing in Kazakhstan. *Radiat Res* 2007;168:600-7.

Requejo JH, Bustreo F. Global perspectives on child well-being: response. In: Worthman C, Plotsky P, Shechter DS, Cummings C, eds. *Formative experiences: the interaction of caregiving, culture, and developmental psychobiology*,

Cambridge: Cambridge University Press; 2008.

Torloni MR, Betran AP, Lessa Horta B, Uchiyama Nakamura M, Najib Atallah A, Fernandes Moron A, et al. Maternal BMI and the risk of gestational diabetes: a systematic review of the literature with meta-analysis. *Obes Rev* 2009 Mar;10(2):194-203.

Torloni MR, Vedmedovska N, Merialdi M, Betran AP, Allen T, Gonzalez R, et al. Safety of ultrasonography in pregnancy: WHO systematic review of the literature and meta-analysis. *Ultrasound Obstet Gynecol* 2009 May;33(5):599-608.

Villar J, Carroli G, Zavaleta N, Donner A, Wojdyla D, Faundes A, et al. Maternal and neonatal individual risks and benefits associated with caesarean delivery: multicentre prospective study. *BMJ* 2007;335:1025.

Widmer M, Villar J, Benigni A, Conde-Agudelo A, Karumanchi SA, Lindheimer M. Mapping the theories of preeclampsia and the role of angiogenic factors: a systematic review. *Obstet Gynecol* 2007;109:168-80.

Zhang J, Villar J, Sun W, Merialdi M, Abdel-Aleem H, Mathai M, et al. Blood pressure dynamics during pregnancy and spontaneous preterm birth. *Am J Obstet Gynecol* 2007;197:162-6.

Chapter 3

Controlling sexually transmitted and reproductive tract infections

1. INTRODUCTION

The work of the Team on Controlling Sexually Transmitted and Reproductive Tract Infections includes the development of strategies, guidelines, and tools for the prevention and management of sexually transmitted infections (STIs) and reproductive tract infections (RTIs); the development of technical manuals and guides on enhancing safe male circumcision; research on the prevention of mother-to-child transmission (PMTCT) of HIV and other STIs; and advocacy for and conducting research on the development and deployment of safe and effective microbicides.

2. CONTROL OF SEXUALLY TRANSMITTED INFECTIONS

2.1 Progress

The development of the Global Action Plan for the implementation of the Global Strategy for the Prevention and Control of Sexually Transmitted Infections has been catalytic in the elaboration of regional strategies, action plans, frameworks and other activities at global and national levels to respond to the burden of STIs and RTIs.

2.1.1 Implementation of the Global Strategy for the Prevention and Controlof STIs

At the regional level, the *Regional strategy for the prevention and control of sexually transmitted infections, 2007–2015* for the South-East Asia Region and the *Regional strategic action plan for the prevention and control of sexually transmitted infections 2008–2012* for the Western Pacific Region were published. *The Asia–Pacific operational framework for linking HIV/STI services with reproductive, adolescent, maternal, newborn and child health services* was published in 2008. The *Regional strategy for the prevention and control of sexually transmitted infections 2009–2015* was presented to the Regional Committee for the Eastern Mediterranean in October 2008, and endorsed by all the Member States of the region. The Pan American Health Organization (PAHO) *Regional strategy and plan of action for cervical cancer prevention and control* was presented to the Regional Committee for the Americas in September 2008 and endorsed. Regional action plans for prevention and control of STIs for the European and African Regions are in preparation.

2.1.2 STI surveillance and epidemiology

In January 2008, a WHO consultation on "Strategies for improving STI surveillance and laboratory support" was convened in Geneva, bringing together stakeholders with interest in surveillance of STIs (including HIV). Key partners who participated in this meeting were from the Joint United Nations Programme on HIV/AIDS (UNAIDS), the Centers for Disease Control and Prevention (CDC), Atlanta, GA, USA and representatives from all WHO regional offices. An updated, comprehensive surveillance guide is under development.

In acknowledgment of the importance of STI surveillance, CDC has provided RHR with financial resources to recruit a full-time WHO staff member to coordinate STI surveillance work at the global level. In addition, CDC has availed its technical support to work with WHO to enhance STI surveillance at the global level. Resources have also been identified to strengthen the monitoring of the menacing multi-drug resistance of *Neisseria gonorrhoeae*, which, if not checked, will soon become resistant to all common effective drugs against it. RHR has taken steps to strengthen the WHO Gonococ-

cal Antimicrobial Surveillance Programme (GASP) to bring together networks of laboratories in the Africa, South-East Asia, and Western Pacific,Regions, with co-financing from CDC. Plans are under way for similar activities in the Americas. This should enable the Department to build a comprehensive picture of antimicrobial resistance to *Neisseria gonorrhoeae*.

The last global estimates of STIs were developed for 1999, with the recommendation that revised estimates should be generated after five years. Estimates for 2005 have been developed in collaboration with the Department of HIV/AIDS. In November 2008, a small group of experts reviewed the estimates and the methods used to generate them. Minor revisions to the methods were recommended, and key messages were drafted in preparation for the publication and dissemination of the revised global estimates in the first half of 2009.

2.1.3 STI and RTI guidelines

The guide *Sexually transmitted and other reproductive tract infections: a guide to essential practice* (GEP) was developed by a core team of experts led by RHR, Frontiers in Reproductive Health (FRONTIERS), and Family Health International (FHI), with the purpose of providing standardized guidance for the prevention, detection, and management of reproductive tract infections in reproductive-health clinic settings. Operational research to support the adaptation and integration of the GEP into national reproductive health guidelines at country level began in 2003. The purpose of this research is to document the process and to share the lessons learnt with other countries. Evaluation of the integration process was completed, and documentation is being prepared for dissemination of the experience and lessons learnt.

The *Reproductive tract and sexually transmitted infections programme guidance tool* (PGT) was finalized and is currently undergoing layout in preparation for printing. The guide *Comprehensive cervical cancer control: a guide to essential practice* was translated into all six United Nations official languages.

2.1.4 Other activities to strengthen the control of STIs at country level

In April 2008, the STI Team convened a consultation in Montreux, Switzerland, to review recent data and make recommendations for a new and revised version of the guidelines for the management of STIs. This version took into account new data which have become available since the guidelines were published in 2003, particularly in the areas of controlling HSV-2 infection for reducing the incidence of HIV; *Neisseria gonorrhoeae* antimicrobial resistance; rapid STI diagnostic tests; and ano-rectal infections.

In September 2008, the WHO Department of HIV/AIDS – in collaboration with other relevant United Nations agencies and the STI Team – convened an international consultation in Geneva, Switzerland on “Men who have sex with men and the prevention and treatment of HIV and other sexually transmitted infections”. The consultation concluded that there was an urgent need to address the emerging and re-emerging epidemics of HIV and other STIs among men who have sex with men, and transgender populations. The consultation also concluded that strengthening surveillance and implementing interventions for the prevention and treatment of HIV and other STIs should be considered priority activities for all countries and regions as part of a comprehensive effort to ensure universal access to HIV prevention, care, and treatment.

In February 2007, the STI Team provided technical support to Malawi in the form of a consultant for a two week-mission to review the findings of a situation analysis in that country (which had been recently conducted in collaboration with other international partners), and to convene a stakeholders’ meeting for the revision of the national guidelines for the syndromic management of sexually transmitted infections.

In September 2008, WHO provided technical support to Namibia in the form of a consultant to assess the etiologies of STI syndromes, assess the antimicrobial resistance in *Neisseria gonorrhoea,* and update the national guidelines for the management of STIs accordingly.

Following provision of support to procure rapid diagnostic tests for syphilis, a joint mission to Madagascar was undertaken in September 2008. The mission included the STI Team, staff of the WHO Regional Office for Africa, and CDC. Its purpose was to plan the scale-up of interventions for syphilis control, including strategies to scale up screening for syphilis in pregnant women.

During 2008, the WHO corporate web site health-topic page for sexually transmitted diseases was updated and a set of Fact Files on STIs was inserted.

2.1.5 Technical networks of excellence

In the WHO Eastern Mediterranean Region, the recently established technical network of excellence known as the Eastern Mediterranean Network for STI Control (EMNOSTIC) launched its web site (www.emnostic.org). Between January and June 2008, Network members conducted a situation analysis of STIs in countries of the region, namely, Egypt, Iran, Jordan, Lebanon, Oman, Pakistan, Sudan, Tunisia, and Yemen. The data were presented for comment at a regional meeting convened by the WHO Regional Office for the Eastern Mediterranean joined by two members of the STI Team.

In Latin America and the Caribbean, the new STI network La Asociación Latinoamericana y Caribeña para el control de las Infecciones de Transmisión Sexual (ALAC–ITS), organized its first regional meeting in Lima, Peru in March

2008, with support from RHR. The meeting reviewed the situation of STI national programmes in Latin American and Caribbean countries following responses of 19 countries to a questionnaire sent out by the network. Action plans were drawn up for STI surveillance, training, and the elimination of congenital syphilis.

2.2 Planned activities

2.2.1 Control of sexually transmitted infections

In order to accelerate the implementation of interventions for the prevention and control of sexually transmitted infections, coalitions need to be built. These coalitions support the development and implementation of the global strategy within the campaigns for universal access to sexual and reproductive health services, for making pregnancy safer, and for HIV prevention and care. Stronger collaboration is also needed with other partner agencies to secure funds to strengthen access to STI/RTI medicines and commodities and condoms. To facilitate implementation of the work, a request has been made by countries and partners to develop and update tools for implementation.

The following tools are a priority and will be updated or developed for dissemination.

- The documents to guide the implementation of the global strategy for the prevention and control of STIs will be finalized and used as tools for advocacy, resource mobilization, and technical support to countries – including the *Action Plan for the implementation of the Global Strategy for the Prevention and Control of STIs* and the *Handbook for adaptation and implementation of WHO guidelines for the management of STIs.*

- *The STI prevention and care package: tools and instruments for implementing STI prevention and control interventions and for data collection* will be published.

- The *Guidelines for the management of STIs* will be updated to strengthen the components on the control of herpes simplex virus type 2 (HSV-2) infections, the role of rapid STI diagnostic tests, and the management of STI-related rectal infections.

- STI surveillance guidelines will be updated, following up the January 2008 technical consultation meeting in Geneva, Switzerland.

- A literature review, which has been commissioned on STI-related stigma, will be elaborated to inform strategies to reduce STI-related stigmatization and discrimination at the individual, provider, and societal levels.

- The new 2005 global STI estimates will be published in 2009.

3. GLOBAL ELIMINATION OF CONGENITAL SYPHILIS INITIATIVE

3.1 Progress

Considerable progress has been made in highlighting the problem of congenital syphilis at the global and national levels. Initiatives and plans for interventions towards the elimination of congenital syphilis have been put in place both at regional and national levels.

3.1.1 Launch of the global elimination of congenital syphilis initiative

A technical consultation was held in Geneva in July 2007, where the document *Global elimination of congenital syphilis: rationale and strategy for action* was endorsed. The document was published and translated into the six official languages of the United Nations.

The "Global elimination of congenital syphilis" initiative was launched in October 2007 by the Ministers of Health of Mongolia and Nigeria and the Directors of the WHO Departments of Making Pregnancy Safer and of Reproductive Health and Research during the "Women Deliver" Conference in London, United Kingdom. A joint Statement of Commitment by WHO and UNFPA, endorsed by several countries, government organizations, and nongovernmental organizations, was released at the same event. This Statement underscored the initiative as a global concern – leveraging it on the global public health agenda.

3.1.2 Development of the investment case for the elimination of congenital syphilis

In close collaboration with CDC and other partners, WHO is developing the document *Investment case for improving access to and quality of integrated antenatal care: a vision to eliminate congenital syphilis*. This is an advocacy instrument for resources to reduce by 80% over five years the burden of stillbirths and infant deaths caused by congenital syphilis, and will target ten of the most highly burdened countries. The investment case for congenital syphilis will be launched as a partnership consortium to raise US$ 46 million for the "Global elimination of congenital syphilis" initiative. Implementation partners include ministries of health, nongovernmental organizations, leading research institutions, and medical professionals within the countries involved.

The development of the investment case for the elimination of congenital syphilis was a result of two advocacy meetings. The first meeting was hosted by CDC in December 2007 in Atlanta, GA, USA, for stakeholders and other partners to discuss the development of the document. The second meeting was organized by the STI Team in June 2008 in Ferney-Voltaire, France, where the outline of the *Investment case for improving access to and quality of integrated antenatal care:*

a vision to eliminate congenital syphilis was endorsed. More detailed information can be accessed on the RHR web site.

3.1.3 Country-level activities

Adequate resources are needed to bring about the global elimination of congenital syphilis. Accordingly, a regional meeting was held in New Delhi, India in August 2008, to discuss – and adapt future proposals to – the Global Fund to Fight AIDS, Tuberculosis and Malaria from countries in the South-East Asia and Western Pacific Regions to encompass a comprehensive maternal, newborn, and child health framework, which also included the elimination of congenital syphilis. Ten countries participated: Bangladesh, Cambodia, China, India, Indonesia, Mongolia, Myanmar, Papua New Guinea, Sri Lanka and Viet Nam. It was noted at the meeting that Mongolia had received approval in Round 7 of the Fund for its proposal on prevention of mother-to-child transmission of both HIV and syphilis. Viet Nam indicated that the country had developed a proposal for PMTCT of HIV and syphilis for submission to the President's Emergency Plan for AIDS Relief (PEPFAR) of the USA.

Following these meetings at the regional level in Asia (as well in Africa), activities are under way to scale up screening for syphilis in pregnant women in Haiti, Indonesia, Madagascar, Mozambique, Myanmar, and Sri Lanka, using the recently evaluated rapid diagnostic tests for syphilis. These countries have used the WHO bulk procurement facility to purchase the tests.

3.2 Planned activities

Regional meetings will be conducted in the WHO Africa Region, the Region of the Americas, the South-East Asia Region, and the Western Pacific Region to discuss regional epidemiological peculiarities and situations and to develop regional action plans and targets for the elimination of congenital syphilis.

The investment case document will be finalized and technical support will be provided to countries, in coordination with the regional offices, in the implementation of their plans for the elimination of congenital syphilis as part of maternal, newborn, and child health within the context of health services strengthening.

4. PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV – THE KESHO BORA PROJECT

This multicentre randomized controlled trial is designed to determine the optimum regimen of antiretrovirals (ARV) used in late pregnancy and during the first six months of breastfeeding to preserve the health of the mother, minimize side-effects, and reduce the risk of mother-to-child transmission of HIV. The trial compares a fully suppressive triple-drug regimen (initiated during pregnancy and continued up to six months or for as long as breastfeeding continues) with the WHO-recommended dual-drug short-course regimen. Only women with intermediate stage HIV disease (i.e. with CD4 cell counts in the range 200–500 cells/mm^3) were enrolled. Because women with advanced disease (CD4 cell counts below 200 cells/mm^3) require treatment for their own health, it was not considered appropriate to randomize women with early stage disease (CD4 cell counts above 500 cells/mm^3) who are at low risk of transmitting HIV to their infants if they receive the WHO-recommended dual-drug short-course regimen.

4.1 Progress

In 2007, recruitment was initiated in two new sites in KwaZulu Natal, South Africa (Durban and KwaMsane), and continued in Burkina Faso (Bobo-Dioulasso) and Kenya (Mombasa and Nairobi). Recruitment in all sites was completed in July 2008, and the last delivery occurred in October 2008. A total of 824 women were enrolled in the randomized controlled trial (251 Bobo-Dioulasso, 185 Durban, 99 KwaMsane, 245 Mombasa, 44 Nairobi) and over 75% of mothers initiated breastfeeding. All infants will reach their first birthday in October 2009. The results of the main study end-points (HIV-free survival of infants and health of the mothers one year after delivery) will be released shortly thereafter. The study results will inform WHO recommendations on optimal selection of ARV regimen to prevent mother-to-child transmission of HIV, while preserving the health of the mother.

In parallel with recruitment to the randomized controlled trial in Bobo-Dioulasso, Mombasa, and Nairobi, women not eligible for the trial were enrolled in observational cohorts and followed in the same way as those in the trial. This was not done in the two South African sites, where activities began later because the care services for pregnant women with HIV infection were adequate to provide these women with high-quality care. These two observational cohorts involve 119 women with CD4 count of fewer than 200 cells/mm^3 and 130 women with CD4 count of more than 500 cells/mm^3, and the data will be published separately.

The Data and Safety Monitoring Board (DSMB) met in December 2008 and expressed no safety concerns.

4.2 Planned activities

Follow-up of women and infants in the Kesho Bora project will be completed and key results published rapidly. Analysis will start on secondary study objectives.

5. MICROBICIDES

5.1 Progress

Research was supported in Mozambique, involving the prevalence and nature of vaginal practices in selected high HIV-risk populations and their potential impact on microbicide acceptability and effectiveness. This research was conducted in collaboration with the Gender, Reproductive Rights, Sexual Health and Adolescence Team (GRR) of RHR.

The Department supported a technical review of progress in research on vaginal practices during the International Society for Sexually Transmitted Diseases Research (ISSTDR) meeting in Seattle, WA, USA in August 2007. Meetings of the Microbicides Access Forum were held in Nairobi, Kenya in July 2007, and in Mexico City, Mexico, in August 2008, in collaboration with the International Partnership for Microbicides. A regional meeting concerning "Regulatory issues in microbicide research and registration" was convened in New Delhi, India in October 2007.

A symposium concerning "Scientific, regulatory and public health aspects of microbicide research and development" was held in Nanjing, China, in November 2008. This symposium was attended by 10 international faculty and over 80 scientists and policy-makers from China, providing them with an opportunity to share the latest developments in microbicide research and development, and conduct of clinical research, with the Chinese participants who have not been very active in this area of research. It is anticipated that a microbicide community will be developed in China that can contribute to new leads, product development and manufacturing of future microbicide products.

The Department has supported the Mintaka Foundation, University of Geneva, Switzerland in the further development and evaluation of their novel HIV-entry inhibitor 5P12-RANTES. The purpose of this support is to accelerate production of sufficient quantities for clinical testing, as well as resolving technical problems associated with future large-scale production.

5.2 Planned activities

- The STI Team will continue to support the gender and vaginal practices study in Kenya, specifically in the consolidation and dissemination of cross-country comparisons. RHR will also support utilization of the tools and methodology developed by the study team in assessing vaginal practices relevant to the acceptability and effectiveness of product introduction. Vaginal practices associated with HIV acquisition will be evaluated through a meta-analysis of completed studies.

- Technical support will be provided for the development of a microbicide research community in China.

- The Team will assist with development and implementation of plans and programmes to make safe and effective microbicide products available to trial participants and trial communities after completion of effectiveness trials, and to facilitate product registration and introduction in countries.

6. HUMAN PAPILLOMAVIRUS VACCINES AND CERVICAL CANCER

6.1 Progress

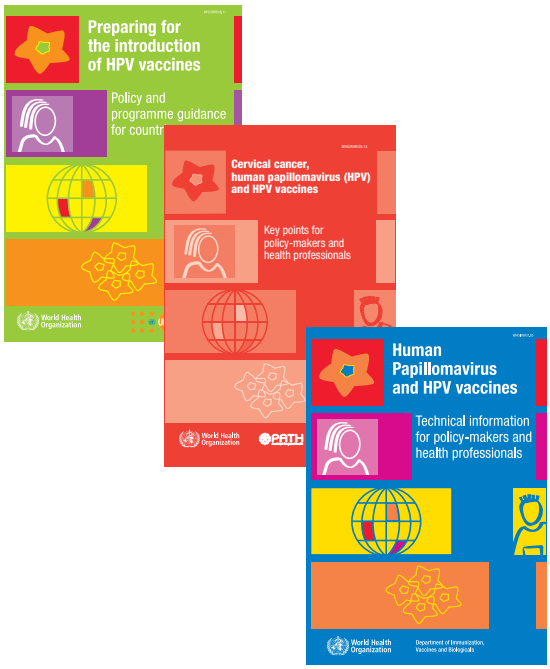
The advent of vaccines against the human papillomavirus (HPV) has renewed interest in screening for and controlling infections with the oncogenic HPV types. This interest has necessitated the development of information on HPV vaccines and guidelines for the introduction HPV vaccines into national immunization programmes. The STI Team has been working in collaboration with other WHO departments and international partners to compile evidence and formulate evidence-based guidelines for use at country level.

6.1.1 Guidelines

The guide entitled *Comprehensive cervical cancer control: a guide to essential practice* was translated into all six official United Nations languages and can be accessed at: http://www.who.int/reproductive-health/publications/cancers.html The guide has been adopted and adapted in Bhutan, Cambodia, China, Maldives, Sri Lanka, Thailand, Viet Nam, and in the six African countries undertaking cervical cancer prevention projects described in Section 6.1.2 below (Madagascar, Malawi, Nigeria, Uganda, the United Republic of Tanzania, and Zambia). The guide has increased awareness about cervical cancer prevention among the public and the staff of NGOs.

The WHO Intercluster Working Group on Cervical Cancer and HPV Vaccines includes the Departments of Child and Adolescent Health and Development (CAH); Chronic Diseases and Health Promotion (CHP); Immunization, Vaccines and Biologicals (IVB); and RHR. The group gathered evidence on vaccine efficacy, effectiveness, and country perspectives. Draft recommendations for the use of HPV vaccines were developed following discussion and agreement during meetings of the HPV Vaccines Advisory Committee (HVAC) in 2007 and 2008. These conclusions and recommendations were endorsed at the meeting of the Strategic Advisory Group of Experts (SAGE) on immunization in November 2008. The report of this meeting is available on the WHO web site at: http://www.who.int/wer/2009/wer8401_02.pdf.

The STI Team published the third guide in the series on HPV vaccines and cervical cancer, entitled *Cervical cancer, human papillomavirus, and HPV vaccines – key points for policy-makers and health professionals*.



6.1.2 Strengthening cervical cancer prevention programmes

WHO, UNFPA, and the International Agency for Research on Cancer (IARC) are supporting implementation of pilot programmes on cervical cancer prevention in Madagascar, Malawi, Nigeria, Uganda, the United Republic of Tanzania, and Zambia. The objective of these programmes is to assess the acceptability and feasibility of implementing a programme with the 'see and treat' approach, based on visual inspection with acetic acid (VIA) and cryotherapy.

The pilot study was conducted between December 2006 and May 2008. Interim results indicate that of the 11 313 women screened 1291 (11.4%) were VIA positive, but not all of them were eligible for cryotherapy. Of the 651 women eligible for cryotherapy, 626 were treated. Therefore, approximately 49% of women in need of treatment for VIA-positive cervical lesions had access to immediate treatment with cryotherapy. The women found the procedures acceptable.

The problems to consider in scaling up the intervention include cryotherapy equipment failures which interrupt the work. Another problem involves the loss to follow-up activities of a significant proportion of women with lesions that were not eligible for cryotherapy because of the size of the lesions or for other reasons.

In collaboration with PATH and UNFPA, the Department has undertaken a market survey of cryotherapy equipment. The purpose of this survey is to create an inventory of available equipment, to better inform and advise countries.

The market survey was completed in January 2009. The survey will be followed by a preparation of specifications for cryotherapy equipment, and negotiations to reduce the cost of the equipment. There will be need also to train health-care workers to administer VIA and cryotherapy.

In 2003, the Program for Appropriate Technology in Health (PATH) launched the project "Screening technologies to advance rapid testing (START)" with support from the Bill and Melinda Gates Foundation. The goal of START is to develop biochemical screening tests which are suitable for use in low-resource settings by virtue of their being simple, rapid, accurate, affordable, and acceptable to women and health-care providers.

One of the tests, developed in partnership with Digene as a rapid batch assay to detect DNA of oncogenic types of HPV, is based on Digene's hybrid capture2 technology and can be performed in less than two hours with minimal training and equipment. The test, originally known as FastHPV (now called CareHPV), detects at least 13 oncogenic HPV types and 24 to 46 samples can be examined at the same time. As part of its partnership agreement with PATH, Digene (which has now become Qiagen) has agreed to target their selling price to public-sector customers in developing countries at less than US$ 5.00 per test. The test was developed at the end of 2007, and is expected to be on the market in 2009.

Studies to validate the rapid test are being conducted by PATH. Through these validation studies, the sensitivity and the specificity of the test have been measured against a gold standard. The study shows the performance of the CareHPV to be only slightly lower than that of hybrid capture2, and CareHPV to be much better than VIA. This performance makes it a promising tool as an affordable primary-screening method for public health cervical cancer prevention programmes in low-resource settings.

6.1.3 HPV vaccines

HPV vaccines became available in 2007, generating debate regarding their place in cervical cancer prevention programmes and the cost and means of introducing them in countries. The WHO Intercluster Working Group on Cervical Cancer developed a joint WHO/UNFPA work plan for research to inform global policy and to guide country-level HPV vaccine introduction.

6.1.4 The HPV vaccine community of practice

WHO, in collaboration with UNFPA and the Children's Hospital in Cincinnati, Ohio, USA, established an online HPV Vaccine Global Community of Practice (COP) in June 2008. Its primary purpose is to link health professionals, policy-makers, and individuals to share knowledge and experience in order to prevent cervical cancer. The online discussion topics include integration of HPV vaccination into current or planned cancer-control programmes; prioritizing various cervical cancer control strategies in which budgets are limited; social, cultural, and political issues surrounding access to

HPV vaccines; and modes of delivering the vaccines (see: http://hpv-vaccines.net).

6.1.5 HPV vaccines research

The WHO Intercluster Working Group on Cervical Cancer, developed a joint WHO/UNFPA workplan in which some areas of research were highlighted. One of the research objectives is under the responsibility of the STI Team, in collaboration with other WHO departments. Other research activities, which are linked to surveillance of safety and effectiveness trials, fall under the responsibility of IVB. The STI Team will be responsible for the research to inform global policy and to guide country-level HPV vaccine introduction. Details of the study are summarized below.

6.1.5.1 Rationale

Adolescents typically have insufficient contact with health services. New HPV vaccines, which are currently targeted to adolescent girls between the ages of 9 and 14 years, may provide an opportunity for adolescents to have further engagement with health services. HPV vaccines generate adolescent interaction with vaccine-delivery teams, health educators and other health-care providers, and may offer opportunities to provide additional targeted services and health commodities with a vaccination programme.

6.1.5.2 Objectives

The introduction of HPV vaccine into a national public-health system has implications for three programmes: cervical cancer control, immunizations, and reproductive health (specifically, adolescent reproductive health). As such, the proposed study addresses three key policy issues related to each programme in question.

- What is the added value of using HPV vaccine delivery as an opportunity to deliver additional adolescent-specific health interventions, including sexual health services?

- What is the impact of delivering HPV vaccine together with an adolescent health package on HPV immunization programmes (uptake, coverage, etc)?

- What is the added value of including HPV vaccines for the national cervical cancer control programme?

This study will be conducted in three phases. Phase I will be the development of a minimum information component and a comprehensive adolescent health package. Phase II will use formative research methods, assess the feasibility, acceptability, modalities, monitoring, and cost of delivering an adolescent health package together with HPV vaccines in an adolescent-friendly manner. Phase III will determine the impact of delivering HPV vaccination with minimum vaccine information only – as compared with delivering HPV vaccine with a comprehensive adolescent health package.

Phase I has been concluded, and the review of evidence-based adolescent health interventions that could be included in the adolescent health package has been completed. A menu of interventions that could be included in the adolescent health package has been elaborated. The menu and the messages will be adapted to country context and sociocultural norms during phase II. Following meetings with PAHO and national partners, it was agreed that four Latin American countries (Colombia, Mexico, Panama, and Peru) will participate in this project. Discussions have also started to explore the possibility of conducting a similar study in South Africa.

6.2 Planned activities

6.2.1 Update the comprehensive cervical cancer control guide

There are sufficient new data and information to update the *Comprehensive cervical cancer control: a guide to essential practice (C4-GEP)*. Since the C4-GEP was published in 2006, research in the field of cervical cancer prevention and control has advanced, HPV vaccines that have the potential to prevent 70% of cervical cancers are available, results of long-term trials which evaluated the 'see-and-treat' approach based on VIA and cryotherapy are now published. In addition, a new HPV DNA-based rapid diagnostic test should be available in 2009, and new data are available on the prevention and management of pre-cervical cancer lesions in patients living with HIV.

6.2.2 Development of decision-making tools on HPV vaccine implementation

One of the activities of the WHO Intercluster Working Group on Cervical Cancer and HPV vaccines will be the development of guidelines to help countries decide whether, and how, to introduce HPV vaccines. Cost-effectiveness guidelines are in preparation. These guidelines will take into consideration existing adolescent immunization programmes, cervical cancer prevention, and adolescent health programmes.

6.2.3 Training on surgical management of cervical lesions

For purposes of strengthening cervical cancer prevention programmes, a regional training programme has been planned for January 2009 in the United Republic of Tanzania to strengthen capacity for the surgical management of women with advanced pre-cancer lesions. In April 2009, a meeting involving country coordinators, ministry of health representatives, WHO, and UNFPA, will be convened to discuss lessons learnt from cervical cancer prevention interventions in six African countries and plans for scaling up (see Section 6.1.2).

6.2.4 Maintenance of community-of-practice online discussion

The COP online discussion will continue to ensure that key stakeholders have access to the latest information about HPV vaccines and the tools needed to implement successful vaccination programmes.

6.2.5 Feasibility studies to deliver HPV vaccines

A meeting involving WHO headquarters and PAHO with representatives from Colombia, Mexico, Panama, and Peru, as well as research institutions, has been scheduled for February 2009. The purpose of this meeting is to discuss the implementation of a comparison study of delivery of HPV vaccines (with and without a package of adolescent services focusing on sexual and reproductive health). A similar meeting will be organized in South Africa. Following these meetings, formative research will be conducted in countries to adapt the package and assess the feasibility of delivering such a package to adolescents.

6.2.6 Utility studies for HPV DNA-based diagnostic tests

Utility studies for HPV DNA-based diagnostic tests will be developed and conducted in selected countries of the WHO Region of the Americas. The possibility of these tests being included in the WHO prequalification scheme will be considered. The feasibility of using the same protocol to evaluate the utility of HPV rapid tests in VIA-cryotherapy-based programmes is being explored in African countries where cervical cancer prevention programmes are being strengthened.

6.2.7 Minimum cryotherapy requirements

A meeting has been scheduled in Seattle, Washington, USA, in March 2009 to discuss market survey and strategies to agree on minimum requirements for cryotherapy. These requirements will inform a second meeting with key cryotherapy manufacturers. Efforts will be made to get cryotherapy equipment included in the WHO list of essential medicines and commodities.

7. MALE CIRCUMCISION

7.1 Progress

Collaboration between the Departments of HIV/AIDS and RHR on the role of male circumcision in the prevention of HIV transmission has been strengthened. A review of the scientific evidence on male circumcision and HIV prevention was undertaken and the STI Team, in partnership with the Departments of HIV/AIDS and UNAIDS, contributed to the development of WHO/UNAIDS policy recommendations that were released in early 2007.

A United Nations agencies strategic planning meeting was held in Harare, Zimbabwe in September 2007, to agree on plans to develop male-circumcision guidelines and the roles of each agency – including the responsibilities of RHR. The "Second United Nations Work Plan on Male Circumcision and HIV Prevention" has been funded by the Bill and Melinda Gates Foundation and is being implemented in collaboration with the WHO Departments of HIV/AIDS and CAH, other United Nations agencies (UNFPA, UNICEF), and the UNAIDS Secretariat.

A meeting to review the implications for women of expansion of male-circumcision programmes was held in Mombasa, Kenya in June 2008. Following this meeting, a policy brief on implications for women and women's health programmes was developed and released in November 2008.

Progress was made in the development of a number of guidelines.

- A *Technical manual on male circumcision under local anaesthesia* was developed. This manual has been adapted by the Kenya National Task Force on Male Circumcision, which launched its national policy and programme in November 2008. A training course based on the manual was developed in collaboration with Jhpiego and pilot-tested in Zambia. The course is being adopted in Kenya and Uganda to support national roll-out of their circumcision programmes, as well as to train core teams of providers from other countries in the region. Sites in Kenya, Uganda, and Zambia have been assessed with a view to being designated as "Male-circumcision reference training centres" to support expansion of quality circumcision services to other countries in the region.

- *Male-circumcision quality assurance: a guide to enhancing the safety and quality of services* was developed and a meeting was held in Montreux, Switzerland in November 2007 to review the guide and obtain consensus on standards for male circumcision services. The guide has been further developed following pilot testing in Kenya, South Africa, Swaziland, Uganda, and Zambia.

- The *Male-circumcision situation analysis toolkit* was developed and has been used in Botswana, Lesotho, Namibia, and Swaziland to assist with development and implementation of their national strategies for promoting male circumcision for HIV prevention.

- Review papers of Jewish traditional circumcisers (Mohalim) and male-circumcision policy, practices, and services were commissioned.

- A review of *Male circumcision: global trends and determinants of prevalence, safety and acceptability* was published. A review of neonatal and young boy circumcision in resource-limited settings has been initiated. Practices in the formal and traditional sectors in Ghana and Nigeria have been reviewed. A review of research priorities in male-circumcision programming was initiated in partner-

ship with the Department of HIV/AIDS and a consensus meeting held in Kenya in June 2007.

A meeting on the role of medical devices to facilitate training and expansion of circumcision services to mid-level providers was convened in Kampala, Uganda in March 2008, in partnership with the Bill and Melinda Gates Foundation and the Collaborative Forum for HIV Research. This meeting has led to an initiative to develop guidelines on the clinical evaluation and introduction of male-circumcision devices in resource-limited settings.

7.2 Planned activities

Adaptation and expansion of the WHO/Jhpiego training course on male circumcision will be supported, and resources provided to countries to develop core teams of trainers. Video and other visual materials to support the training courses will be developed.

Technical support will be given to monitor the quality and acceptability of male-circumcision services as these expand in the African region.

Guidance will be issued to countries, national research teams, and product developers, concerning the essential steps in the evaluation of medical devices for circumcision in resource-limited settings. Research will be initiated to assess the safety, effectiveness, and acceptability of medical devices to facilitate expansion of male-circumcision services.

Technical support will be provided to country-stakeholder meetings in three sub-Saharan African countries, to review practical implications of the WHO/UNAIDS policy guidance and to accelerate country implementation. A second review of research initiatives will be carried out to identify gaps and priorities for further research to be supported by bilateral agencies and foundations. A technical and scientific review of the evidence on benefits and harms of circumcision to health outcomes – other than reduction in risk of HIV acquisition – will be carried out.

8. CONDOMS

8.1 Progress

RHR has undertaken the following activities, as part of the Reproductive Health Essential Medicine Project to support programming activities for male and female condoms.

8.1.1 Male condoms

In collaboration with UNFPA and PATH, RHR convened three regional workshops in Beijing, China (January 2008); Bangkok, Thailand (January 2008); and New Delhi, India (February 2008) to introduce the new WHO/UNFPA prequalification scheme and guidelines for applying the scheme. Over 150 representatives from the male latex condom manufacturing industry, national regulatory authorities, national regulatory laboratories, and local bulk procurement agencies attended the workshops. Participant feedback was used to finalize the WHO/UNFPA guidelines on prequalification.

RHR reviewed the evidence and prepared technical-basis papers to support two technical consultations held in December 2006 and August 2007, to prepare guidelines for a WHO/UNFPA system to prequalify manufacturing sites for male latex condoms. These guidelines were harmonized with the WHO Essential Medicines Prequalification Scheme, and approved for publication by the WHO Expert Committee on Specifications for Pharmaceutical Preparations in October 2007. The final document, entitled *Procedure for assessing the acceptability, in principle, of male latex condoms for purchase by United Nations and other agencies* was published in May 2008.

RHR undertook a review of the evidence and convened a WHO/UNFPA/FHI Technical Review Committee Meeting in July 2008 to update the WHO/UNFPA/UNAIDS publication *Male latex condom: specification and guidelines for procurement, 2003*. The technical review process has resulted in a revision of this document, which is now under external review. All major bulk procurement agencies will approve and use this document for the procurement of male latex condoms.

RHR worked with partners to support the preparation of training materials for three regional workshops for programme managers on procurement in Senegal (December 2007), Nicaragua (January 2008), and Denmark (March 2008).

In collaboration with UNFPA, RHR convened the UNFPA Interagency Task Team on Condom Programming in May 2008. This meeting engaged representatives from 25 international agencies in identifying key activities that they will support, for the purpose of promoting various aspects of condom programming. RHR leads the sub-working group on condom quality continuum, which met in July 2008 to define the group's terms of reference and to agree upon a collaborative plan of work.

RHR, in collaboration with UNFPA/FHI/PATH, organized and co-hosted the 25th Annual Meeting of the International Standardization Organization, Technical Committee 157 (ISO/TC/157) in Montreux, Switzerland in October 2008. A special session involving all delegates was held, to review the revised specifications and the prequalification and procurement guidelines to support the revision of international standards for male condoms (latex and synthetic) and female condoms. RHR is currently preparing *Male latex condom: specifications, prequalification and procurement* for publication in 2009.

RHR, in collaboration with Johns Hopkins Bloomberg University, Center of Communications Program (JHU/CCP), Family

Health International (FHI), and John Snow International (JSI), has developed the Your Questions Answered (YQA) electronic resource centre on male and female condoms. The resource centre provides concise, evidence-based answers to frequently-asked questions on male and female condoms collected from programme managers around the world. The YQA resource centre is currently under external review and its launch is planned for 2009.

8.1.2 Female condoms

A review to determine which female condoms can be recommended for bulk procurement approved only one product: the FC2, produced by the Female Health Company. RHR developed the terms of reference and supported experts to undertake factory assessments on the Female Health Company to substantiate the quality of production of FC2 to support the recommendation for bulk procurement.

8.2 Planned activities

All activities will be undertaken in collaboration with UNFPA, and will support the dissemination and use of resource materials designed to improve access to and use of quality condoms to prevent unwanted pregnancy and the transmission of STIs. These activities include plans to:

- publish and disseminate the *Male latex condom specification, prequalification and procurement guidelines*;
- co-facilitate and manage three WHO/UNFPA workshops to strengthen the capacity of national regulatory authorities, procurement offices, and local manufacturing industries to apply the prequalification and procurement process for the production and distribution of quality male latex condoms in Botswana, Indonesia, South Africa, and Viet Nam;
- co-host two WHO/UNFPA/PATH/FHI regional workshops in the WHO Africa and South-East Asia Regions to enhance capacity to support the condom quality continuum;
- convene a WHO/UNFPA technical review committee to review the product dossier of new female condom products coming onto the market, to determine if sufficient evidence exists to recommend them for bulk procurement; and
- support the preparation and implementation of research to determine a new methodology to access the longer-term stability of condoms.

Annex 1

KESHO BORA PROJECT: DATA AND SAFETY MONITORING BOARD

Members

Nomampondo Barnabas	Centre for the AIDS Programme of Research in South Africa (CAPRISA), Durban, South Africa
François Dabis	Agence nationale de recherche sur le SIDA/Institut national de la Santé et de la Recherche médicale (ANRS/INSERM) U.330, Bordeaux, France
Michael Hughes	Harvard School of Public Health, Boston, MA, USA
Philippe Lepage	Hôpital Universitaire des Enfants Reine Fabiola, Brussels, Belgium
James McIntyre	University of the Witwatersrand, Chris Hani Baragwanath Hospital, Johannesburg, South Africa
Paula Munderi	Medical Research Council/Uganda Virus Research Institute (MRC/UVRI), Uganda Research Unit on AIDS, Entebbe, Uganda

Sponsors

Brigitte Bazin	Agence nationale de recherche sur le SIDA (ANRS), Paris, France
Jennifer Read	National Institutes of Health (NIH), Bethesda, MD, USA
Claire Rekacewikz	Service “Recherches dans les pays en développement” Agence nationale de recherche sur le SIDA (ANRS), Paris, France
Allan Taylor	Centers for Disease Control and Prevention, Atlanta, GA, USA

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	2	20			4	40	6
Women	1	10			3	30	4
WHO Region:							
Africa	3	30					3
The Americas						3 30	3
South-East Asia							
Europe						4 40	4
Eastern Mediterranean							
Western Pacific							

Total = 10

Annex 2

PUBLICATIONS IN 2007–2008

Beksinska M, Kleinschmidt I, Smit JA, Farley TMM. Bone mineral density in adolescents using norethisterone enanthate, depot-medroxyprogesterone acetate, or combined oral contraceptives for contraception. *Contraception* 2007;75(6)**:**438-43.

Broutet N, Edouard L. Sexually transmitted infections: key issues for clinical practice. *Int J Gynaecol Obstet* 2007;97(3): 229-31.

De Vuyst H, Lillo F, Broutet N, Smith JS. HIV, human papillomavirus, and cervical neoplasia and cancer in the era of highly active antiretroviral therapy. *Eur J Cancer Prev* 2008; 17(6): 545-54.

Franceschi S, Smith JS, van den Brule A, Herrero R, Arslan A, Anh PT, et al. Cervical infection with *Chlamydia trachomatis* and *Neisseria gonorrhoeae* in women from ten areas in four continents. a cross-sectional study. *Sex Transm Dis* 2007;34(8)**:**563-9.

Hossain M, Broutet N, Hawkes S. The elimination of congenital syphilis: a comparison of the proposed World Health Organization action plan for the elimination of congenital syphilis with existing national maternal and congenital syphilis policies. *Sex Transm Dis* 2007;34(7 Suppl.):S22-30.

International Collaboration of Epidemiological Studies of Cervical Cancer. Cervical cancer and hormonal contraceptives: collaborative reanalysis of individual data on 16 573 women with cervical cancer and 35 509 women without cervical cancer from 24 epidemiological studies. *Lancet* 2007;370:1609-21.

International Collaboration of Epidemiological Studies of Cervical Cancer. Comparison of risk factors for invasive squamous cell carcinoma and adenocarcinoma of the cervix: collaborative reanalysis of individual data on 8097 women with squamous cell carcinoma and 1374 women adenocarcinoma of the cervix from 12 epidemiological studies. *Int J Cancer* 2007;120(4)**:**885-91.

Kesho Bora Study Group. *HIV-free survival at 12 months among children born to HIV-infected women receiving antiretrovirals (ARVs) from 34-36 weeks of pregnancy*. 15th Conference on Retroviruses and Opportunistic Infections (CROI) 2008, Boston, MA, USA (Abstract No. S-112).

Kourtis AP, Jamieson DJ, de Vincenzi I, Taylor A, Thigpen MC, Dao H, et al. Prevention of human immunodeficiency virus-1 transmission to the infant through breastfeeding: new developments. *Am J Obstet Gynecol* 2007;197(3 Suppl.):S113-22.

Meirik O, Farley TMM. Risk of cancer and the oral contraceptive pill. *BMJ* 2007;335:621-2.

Pollack AE, Balkin M, Edouard L, Cutts F, Broutet N. Ensuring access to HPV vaccines through integrated services: a reproductive health perspective. *Bull World Health Organ* 2007;85(1):57-63.

Rouet F, Foulongne V, Steegen K, Becquart P, Valéa D, Mandaliya K, et al. *Assessment of three commercial assays for HIV-1 RNA quantification of non-B subtypes in plasma samples: the Kesho Bora preparatory study*. 15th Conference on Retroviruses and Opportunistic Infections (CROI) 2008, Boston, MA, USA (Abstract No. C-119).

Schmid GP, Stoner BP, Hawkes S, Broutet N. The need and plan for global elimination of congenital syphilis. *Sex Transm Dis* 2007;34 (7 Suppl.):S5-10.

Simms I, Broutet N. Congenital syphilis re-emerging. *J Dtsch Dermatol Ges* 2008;269-72.

Annex 3

GUIDELINES

	Versions available
The global elimination of congenital syphilis: rationale and strategy for action. Geneva: World Health Organization; 2007.	English
Comprehensive cervical cancer control: a guide to essential practice. Geneva: World Health Organization; 2006.	Arabic, Chinese, English, French, Portuguese, Russian, Spanish
Guidelines for the management of sexually transmitted infections: Geneva, World Health Organization; 2005.	Arabic, Bahasa Indonesia, English, French, Portuguese, Spanish, Vietnamese.
Sexually transmitted and other reproductive tract infections: a guide to essential practice. Geneva: World Health Organization; 2005. (World Health Organization, Family Health International, Population Council.)	Albanian, Arabic, Bahasa Indonesia, Chinese, French, Mongolian, Portuguese, Russian, Serb-Croat, Spanish, Turkmen, Vietnamese
Training modules for the syndromic management of sexually transmitted infections (2nd edition). Geneva: World Health Organization; 2007.	English, French, Spanish
Human papillomavirus and HPV vaccines: technical information for policy-makers and health professionals. Geneva: World Health Organization; 2007.	English
Periodic presumptive treatment for sexually transmitted infections: experience from the field and recommendations for research. Geneva: World Health Organization; 2008. (London School of Hygiene and Tropical Medicine, Population Council, World Health Organization.)	English
Male circumcision: global trends and determinants of prevalence, safety and acceptability. Geneva: World Health Organization and Joint United Nations Programme on HIV/AIDS; 2007.	English

Chapter 4
Preventing unsafe abortion

1. INTRODUCTION

Among the estimated 205 million pregnancies that occur each year, 80 million are unplanned and 42 million of them end through induced abortion. Nearly half of all induced abortions (20 million) are unsafe. Induced abortion continues to be one of the most controversial and emotive issues today, overshadowing the public-health implications of unsafe abortion. In addition to 65 000–70 000 deaths, nearly five million women are estimated to suffer temporary or permanent disability every year due to unsafe abortion. While unsafe abortions account for 13% of maternal deaths globally, they account for 20% of the total mortality and disability burden due to pregnancy and childbirth.

The economic impact of unsafe abortion is equally devastating, especially for poor countries. It is estimated that the global cost to health systems for treating complications arising from unsafe abortions ranges from US$ 677 million to US$ one billion each year. Africa sustains 42% of the total global cost. In fact, nearly all unsafe abortions and related deaths and disability occur in developing countries.

There is growing recognition that preventing unsafe abortion is critical for achieving Millennium Development Goal 5 to improve maternal health and for attaining Target 5B of universal access to reproductive health. While the number of safe, legal abortions has declined in recent years, the high incidence of unsafe abortion and its related mortality and morbidity continue unabated.

With the objective of preventing unsafe abortion, HRP conducts and supports research to map and generate policy-relevant evidence, tests interventions and their impact, and improves technologies for safe abortion and post-abortion care. Research evidence is translated into norms, tools, and guidelines. Both the research evidence and the guidelines are then used to support countries in their efforts to develop programmes and interventions for the prevention of unsafe abortion. For the sake of brevity, only the main highlights of the work and significant accomplishments in 2007–2008 are reported below.

2. MAPPING AND GENERATING POLICY-RELEVANT EVIDENCE

Mapping and generating policy-relevant evidence are the core functions of HRP in the area of preventing unsafe abortion. Activities include providing the estimated magnitude of the incidence of unsafe abortion and related mortality and morbidity, addressing gaps in knowledge, and making available the information required to make informed decisions for programmes and interventions to prevent unsafe abortion.

2.1 Progress

2.1.1 Induced abortion: levels and trends

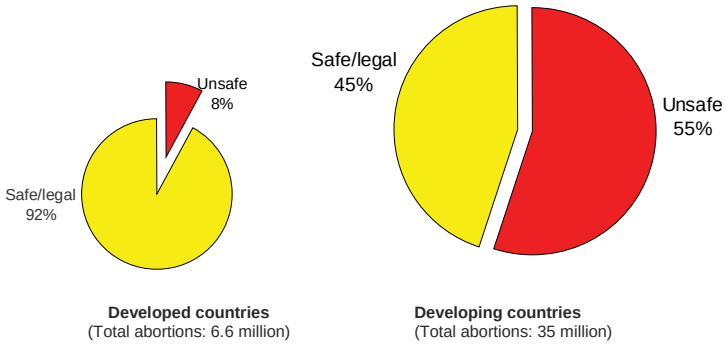
The global and regional incidence of safe and unsafe abortion was estimated for the year 2003 and reported in a paper that was published in the October 2007 special issue of the Lancet concerning maternal health. HRP collaborated with the Guttmacher Institute, in estimating the worldwide incidence of abortion.

The new estimates show that 42 million abortions took place in 2003, down from 46 million in 1995. The induced abortion rate also declined from 35 abortions per 1000 women aged 15–44 years in 1995, to 29 per 1000 in 2003. Much of the

decline occurred in safe and legal abortions and in countries of the former Soviet Union and in eastern Europe, where contraceptive use has risen significantly. Other key highlights of the new estimates were that:

- induced abortion rates were similar in developed and developing regions; the difference was in its safety – abortion was safe and generally available on request in the former, while it was mostly unsafe in developing regions where abortion is highly restricted by law (Figure 1);
- nearly half of all induced abortions (47%) in 2003 were terminated unsafely, totalling nearly 20 million unsafe abortions; and
- 97% of all unsafe abortions occurred in developing regions.

Figure 1. Number of estimated total abortions and percentage by safety of abortion and region, 2003



The availability of abortion on broad grounds or on request, as is the case in developed regions, does not lead to high induced abortion rates. When modern contraceptives are widely available, induced abortion rates are low (western Europe) or declining (eastern Europe).

Findings on abortion levels and trends were presented at a press conference organized by the Lancet on 11 October 2007 in London, United Kingdom, and a press kit was developed containing key findings. The findings were widely quoted in the press, radio, and television. In addition, a session was organized jointly with the Guttmacher Institute, at the "Women Deliver" conference held in London, United Kingdom, from 18 to 20 October 2007.

WHO published the fifth edition of the unsafe abortion estimates, entitled *Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2003*. This update showed no major decline in the global incidence of unsafe abortion. The unsafe abortion rate per 1000 women aged 15–44 years was the highest in eastern Africa (39), followed by South America (33) (see Figure 2). This edition also indicated that about 67 000 women die each year due to complications resulting from unsafe abortion.

Over half of all unsafe abortion-related deaths occurred in sub-Saharan Africa (34 900), in spite of a smaller percentage (11%) of the world's 1.7 billion women of reproductive age (15–49 years) living there in 2005. Unsafe abortion deaths by legal grounds under which abortion is legally permitted (according to The World Health Report 2008) show fewer deaths in countries with less or no restrictions on access to safe abortion (Figure 3).

2.1.2 Contraceptive prevalence, unmet need, and induced abortion: global and regional pattern

Intuitively, one expects an increase in contraceptive prevalence to be directly linked to a reduction in the unmet need for family planning – and, consequently, fewer unplanned pregnancies and induced abortions. However, such relationships are complex. Using data from the United Nations, WHO and the Guttmacher Institute, a paper was developed comparing regional levels of reversible and terminal modern and traditional family planning methods with the latest estimates of unsafe abortion and of all induced abortions.

Several patterns of relationships emerged. Induced abortion rates are low in developed regions where abortions are legal and contraceptive prevalence is above 65%. High rates of unplanned pregnancies and induced abortion coexist with high contraceptive prevalence in some low fertility regions – especially where much of contraceptive use is dominated by traditional methods (eastern Europe), or by sterilization (Latin America and south-central Asia). In these regions, reliance on spacing methods is inadequate, and unsafe abortion may be relied upon to space births. Rates of induced abortion are generally lower when abortion is legal than when it is restricted; the lowest induced abortion rates are associated both with high contraceptive prevalence and with liberal abortion laws.

2.1.3 Health care providers' attitudes towards termination of pregnancy: a qualitative study in South Africa

Removing restrictions on access to safe abortion is essential, but often insufficient in preventing unsafe abortion. A qualitative study in South Africa examined the role of health-care providers in access to safe abortion. Despite changes to the abortion legislation in South Africa in 1996, the study notes that barriers to women accessing abortion services still exist – including provider opposition to abortions and a shortage of trained and willing abortion-care providers. The dearth of abortion providers undermines the availability of safe legal abortion, and has serious implications for women's access to abortion services and health-service planning.

In South Africa (where little is known about the personal and professional attitudes of individuals who are currently working in abortion service provision) the investigators conducted

34 in-depth interviews and one focus-group discussion with health-care providers who were involved in a range of abortion provision in Western Cape Province, South Africa. Almost all providers were concerned about the numerous difficulties women faced in seeking an abortion and their general quality of care. An overriding concern was poor pre- and post-abortion counselling, including contraceptive counselling. Respondents spoke about how often those who were providing abortion services felt stigmatized. Service providers experienced 'burnout' and left the service because "they could not endure the comments or the attitudes of their colleagues". The study concluded that complex patterns of service delivery were prevalent throughout many of the health-care facilities, and fragmented levels of service provision seemed to operate in order to accommodate health-care providers' willingness to be involved in various aspects of abortion provision.

Figure 2. Estimated annual incidence of unsafe abortions per 1000 women, aged 15–44 years, by region, 2003

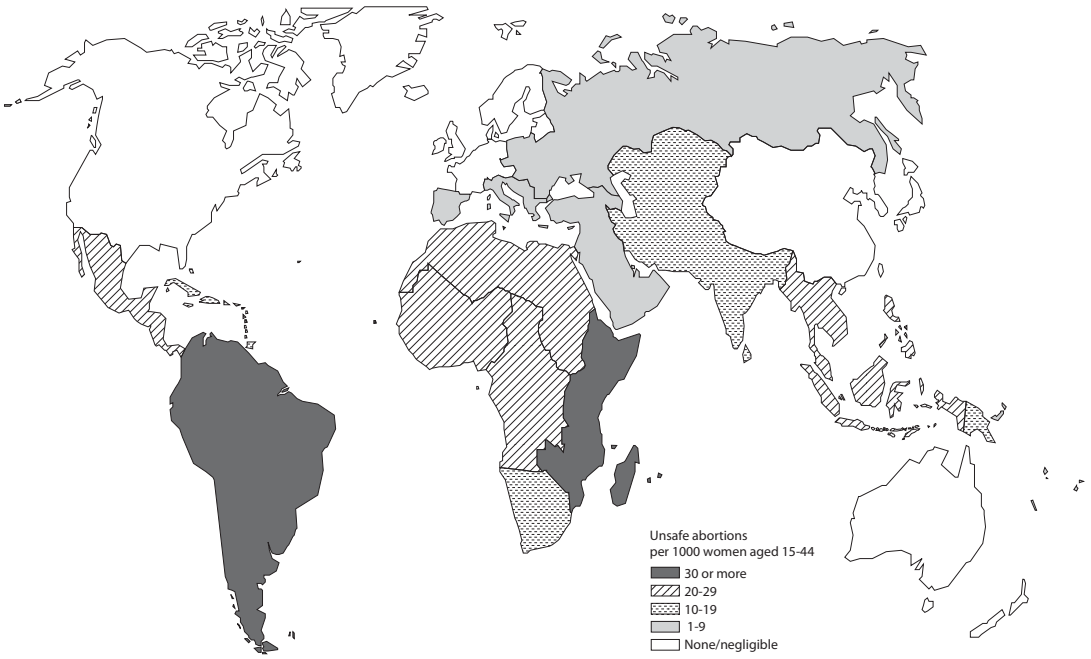
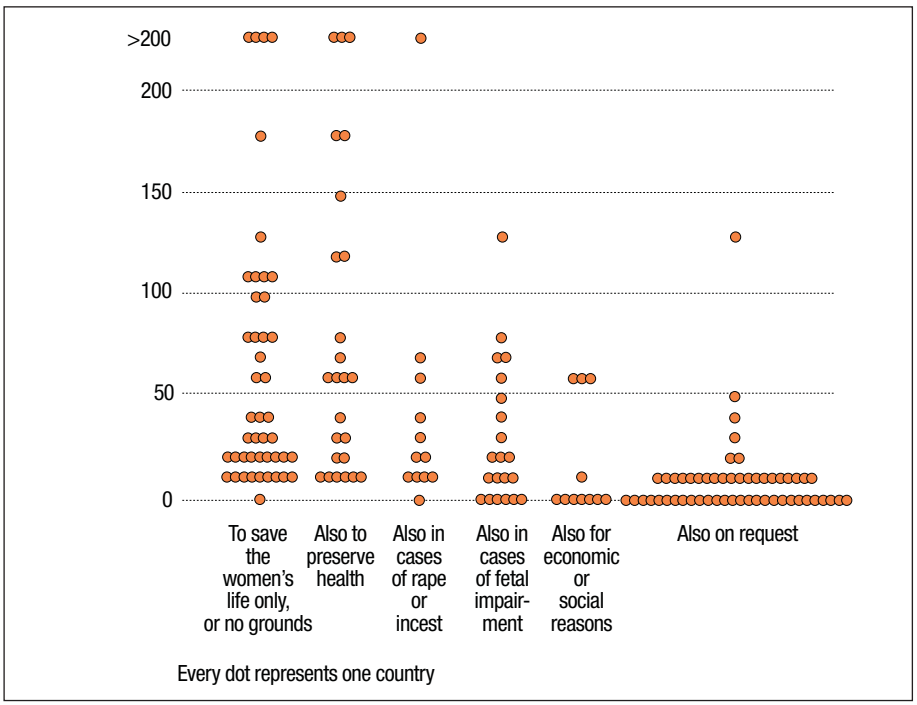


Figure 3. Deaths attributable to unsafe abortion per 100 000 live births, by legal grounds for abortion



The study recommended:

- strengthening contraceptive counselling, including post-abortion contraceptive counselling;
- an emphasis on quality of care, encompassing all aspects of abortion provision and care;
- addressing the psychosocial needs of providers, including counselling and support.

There was also a need to improve the knowledge and understanding of the 1996 'Choice on Termination of Pregnancy Act' and to address conscientious objection. Support programmes which both attract prospective abortion-care providers and retain existing providers need to be developed.

2.2 Planned activities

2.2.1 Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008

HRP will update the database on the incidence of unsafe abortion and related mortality to provide estimates for 2008. Discussions are ongoing with the Guttmacher Institute to generate worldwide estimates of induced abortion, covering both safe/legal and unsafe abortion.

2.2.2 Improving access to medical abortion: a social science and operations research initiative

Much progress has been made in developing effective and acceptable medical abortion regimens, and in the registration and affordability of drugs – all of which contribute to making medical abortion a safe and viable alternative to surgical abortion. Despite these significant advances, medical abortion remains underutilized and inaccessible for many women, particularly in developing countries. Gaps remain in understanding and overcoming the social, behavioural, financial, legal, policy, and programmatic obstacles that would make medical abortion available to those women who need it and want to use it.

Recognizing these gaps in knowledge, HRP launched a new research initiative specifically focusing on expanding access to medical abortion to the full extent of the law. The overall aim of this initiative is to reduce the incidence of unwanted pregnancy and unsafe abortion. The main objective is to generate evidence relevant for programmes and policies in developing countries to expand equitable access to medical abortion. More specifically, the initiative will:

- provide evidence on users', potential users', and providers' perspectives on medical abortion;
- test interventions for expanding access to medical abortion by training physicians and mid-level health-care providers;
- provide scientific information on the health impact of increased access to medical abortion and on such related issues as the impact on post-abortion contraception.

Following a call for proposals and concept papers, a research workshop and the review of submissions, 11 research projects in nine developing countries will be initiated in 2009.

3. TESTING INTERVENTIONS FOR IMPROVING QUALITY OF CARE AND EXPANDING SERVICES

One critical focus of research by HRP is to test interventions and their impact on improving quality of care and expanding access to safe abortion. HRP-supported research during the last biennium established the safety of the provision of manual vacuum aspiration (MVA), by trained health-care providers.

3.1 Progress

3.1.1 Improving quality of post-abortion care in Argentina

A study in Buenos Aires, Argentina, sought to test an intervention package to improve the quality of post-abortion care in a public hospital. Specifically, investigators documented pre- and post-intervention levels of professional competence, user satisfaction, and availability of technical resources. The project developed, implemented and evaluated an intervention package to train health professionals in manual vacuum aspiration (MVA), pain management, diagnosis and treatment of complications, use of antibiotics, post-MVA care, post-abortion contraceptive counselling, and the ethical, psychological, and social aspects of the doctor–patient relationship.

The study noted barriers to quality care – such as inadequate provider–client communication, deficiencies in technical competency, misperceptions among midwives regarding hormonal contraception, and inefficiencies in the organization of work. Post-intervention evaluation documented significant improvements in the quality of care. Most significant was the increase in clients receiving information – from 45% at baseline to 78% post-intervention – on contraceptive methods. In addition, the number of women receiving a contraceptive method prior to discharge increased from 40% to 65%. Results and recommendations derived from this study were discussed as part of a plan to develop national guidelines for post-abortion care and the Ministry of Health of Argentina recruited the project team to carry out a nationwide training programme on post-abortion care.

3.1.2 Expanding access to medical abortion by comparing the safety, efficacy, and feasibility of providing medical abortion by non-physicians and physicians

To assess the safety, efficacy, and feasibility of mid-level providers administering medical abortion with the strongest evidence possible, HRP is supporting a randomized, controlled-equivalence trial in Nepal. The trial will compare the safety, efficacy, and feasibility of medical abortions provided exclusively by mid-level providers with a referral system in place – as compared to traditional medical abortion teams which include a physician.

This study is the first to assess rigourously the provision and safety of medical abortion by trained non-physicians (compared to physicians) in developing countries by assessing differences in clinical outcomes, case-management, decision-making, and acceptability. No previous studies have comparatively assessed the safety and effectiveness of these types of providers using a randomized, controlled, experimental trial protocol. If the results are equivalent, policy-makers would have evidence to expand service-delivery units to include mid-level provider-led teams with a referral system where there is no doctor on site. The Ministry of Health is closely involved with the study, and will be assessing the results in terms of potential policy changes. The findings from Nepal will also be valuable for other countries seeking to expand access to medical abortion through increased training of nurses and midwives.

3.2 Planned activities

In 2009 and beyond, additional countries will be considered for implementation of the comparative trial to assess the safety, efficacy, and feasibility of providing medical abortion by non-physicians. On the basis of the results from the trial in Nepal, additional possibilities (such as home-use of misoprostol following mifepristone given at the clinic) will be considered.

4. IMPROVING TECHNOLOGIES FOR SAFE ABORTION

Improving abortion technologies and expanding the choice of safe and effective methods are critical in reducing the incidence of unsafe abortion. HRP's clinical research is directed at simplifying and improving regimens for medical abortion (including the development of misoprostol-only regimens), assessing the benefits of routine cervical priming prior to vacuum aspiration in reducing complications, and identifying the best treatment for a non-viable pregnancy.

The impact of HRP's research in medical abortion was the subject of a case-study for an external evaluation in 2008. The study concluded that HRP played a catalytic role in the advent and improvement of medical abortion regimens. The reviewers concluded that "the major success of HRP's work in this area is the good clinical practice standard clinical trials, which have provided an important knowledge base for medical abortion practice and enabled registration of a low-cost formulation".

4.1 Progress

4.1.1 An optimal sequential regimen (mifepristone, misoprostol) for first-trimester abortion

As a lower dose of mifepristone would reduce the costs of treatment, and a shorter interval between mifepristone and misoprostol would be more practical and acceptable to women and providers, a randomized multicentre trial was conducted. The twofold purpose of the trial was to investigate whether the dose of mifepristone could be lowered from 200 mg to 100 mg, and whether the interval between mifepristone and misoprostol could be shortened from 48 hours to 24 hours without compromising the efficacy when a 0.8 mg dose of misoprostol was administered vaginally. The dose of mifepristone was blinded. The study included 2181 women from 13 clinics in nine countries (China, Hungary, India, Mongolia, Romania, Serbia, Slovenia, South Africa and Viet Nam).

Efficacy outcome was analysed for 2126 women (97.5% of the total), excluding 55 lost to follow-up. Both mifepristone doses were found to be similar in efficacy. The rate of complete abortion was 92% for women who were given 100 mg mifepristone and 93.2% for women given 200 mg of mifepristone (difference 1.2%, 95% CI: –1.0 to 3.5). Equivalence was also evident for the two intervals for misoprostol administration: the rate of complete abortion was 93.5% for the 24-hour interval and 91.7% for the 48-hour interval (difference –1.8%, 95% CI: –4.0 to 0.5). Adverse effects related to treatments did not differ between the two groups. The study concluded that both the 100 and 200 mg doses of mifepristone and the 24- and 48-hour intervals have a similar efficacy to achieve complete abortion in early pregnancy, when mifepristone is followed by 0.8 mg of vaginally administered misoprostol.

4.1.2 Optimal misoprostol dose after mifepristone pretreatment for early abortion

The optimal dose of misoprostol in the combined mifepristone–misoprostol regimen for abortions up to nine weeks' gestation was investigated in the trial launched in late 2006. The current recommendation is to use the dose of 0.8 mg when misoprostol is administered vaginally. There are no studies on the optimal dose or on investigating whether a lower dose could be used. Most side-effects of the medical abortion regimen are related to misoprostol and, therefore, a lower dose, e.g. 0.4 mg, is likely to be associated with fewer side-effects as compared to the recommended dose of 0.8 mg.

In addition to comparing two misoprostol doses, 0.4 and 0.8 mg, this trial also compared two routes of its administration – sublingual and vaginal routes. This four-arm, randomized, double-blind study included 3007 women in 15 centres in 11 countries (China, Cuba, Georgia, Hungary, India, Mongolia, Romania, Slovenia, Sweden, Thailand, and Viet Nam). Two interim analyses were carried out during the trial, which suggested high efficacy for the sublingual administration. The final analysis is planned to be carried out in February 2009. The results of this study will be shared with the Concept Foundation to amend the registration dossier of Medabon (the two-drug product with a preferential price for the public sector in developing countries) to include an option to administer the two drugs at 24-hour interval and to add the sublingual route of administration as an option to the vaginal route.

4.1.3 An optimal misoprostol-only regimen for second-trimester abortion

To identify an effective misoprostol-only regimen for the termination of second-trimester pregnancy, HRP compared sublingual and vaginal administration of multiple doses of misoprostol in a randomized, placebo-controlled equivalence trial. A total of 681 women requesting medical abortion at 13–20 weeks' gestation within 11 gynaecological centres in seven countries (Armenia, Georgia, Hungary, India, Slovenia, South Africa, and Viet Nam) were randomly assigned to two treatment groups: 0.4 mg of misoprostol administered either sublingually or vaginally every 3-hours up to five doses, followed by sublingual administration of 0.4 mg misoprostol every 3-hours up to five doses if abortion had not occurred 24 hours after the start of treatment. The margin of equivalence was 10% and the primary end-point was the efficacy of the treatments to terminate pregnancy within 24 hours. Successful abortion within 48 hours was also considered as an outcome as were the induction-to-abortion interval, side-effects, and women's perceptions of these treatments.

At 24 hours, the success rate was 85.9% in the vaginal group and 79.8% in the sublingual group (difference 6.1%, 95% CI: 0.5 to 11.8). Thus, equivalence could not be concluded overall. The difference, however, was primarily associated with the nulliparous women, among whom vaginal administration was clearly superior to sublingual administration (87.3% versus 68.5%), whereas no significant difference was observed between vaginal and sublingual treatments among parous women. The rates of side-effects were similar in both groups (except for fever, which was more common in the vaginal group). About 70% of women in both groups preferred sublingual administration.

Misoprostol-alone regimens are clearly less effective when compared to the combination of mifepristone followed by misoprostol. However, in countries where mifepristone is not available and where surgical techniques are not preferred, the misoprostol-alone regimen gives a safe alternative to the intra-and extra-amniotic methods which have been used until now in many developing countries.

4.1.4 Routine priming of the cervix with misoprostol

Vacuum aspiration is generally safe when performed by trained abortion providers. Complications (cervical injury, uterine perforation, severe haemorrhage, incomplete evacuation, pelvic infection) occur in less than 5% of cases. The WHO Scientific Group on Termination of Pregnancy, which met in 1994, recommended cervical priming before surgical abortion for women with cervical anomalies, previous surgery, women below 18 years of age, and women with advanced pregnancy (i.e. in nulliparous women >9 weeks gestation and in parous women >12 weeks gestation).

At that time, osmotic dilators (which require trained providers and a lengthy waiting period) were most commonly used for this purpose. Despite advantages of cervical preparation, this recommendation has not been put into practice in many settings because cervical preparation increases the cost and time needed for abortion. When misoprostol became available, HRP first tested its effects on priming in small trials and a few years ago launched a large randomized, double-blind multicentre trial to test whether routine preoperative treatment with 0.4 mg of vaginally administered misoprostol three hours prior to vacuum aspiration to all women at 12 weeks or less gestation would reduce complications.

The trial on cervical priming randomly assigned 4792 women requesting pregnancy termination up to 12 weeks' gestation in 14 gynaecological centres in nine countries (Armenia, China, Cuba, Hungary, India, Mongolia, Romania, Slovenia, and Viet Nam) to receive either two tablets of 0.2 mg misoprostol or two placebo tablets vaginally three hours prior to vacuum aspiration. The main outcome measures consisted of all complications associated with vacuum aspiration that were clinically detected in the time period from misoprostol administration to the scheduled follow-up visit 5–10 days after vacuum aspiration. The trial also studied cervical dilation, time to completion of the procedure, blood loss, infections, pain, and women's perceptions of the procedure.

The results show that in the misoprostol group there was increased baseline dilation of the cervix and less need for further dilation before evacuation. The vacuum aspiration procedure was quicker and reduced risk of cervical injuries and re-evacuation (because evacuation was complete in 99.2% of cases, compared to 97.7% in the placebo group). However, while 20% of women in the placebo group reported pain before evacuation, the percentage was 55% in the women in misoprostol group. Secondary analyses are being carried out to see whether routine priming was beneficial to all women or just to certain groups of women such as those with more advanced pregnancy. If the study results show a reduction in complications, WHO recommendations will need to be revised to reflect the benefits of using misoprostol, a drug that is cheap and easy to administer, for all women at 12 weeks or less gestation.

4.2 Planned activities

Having established the safety of medical abortion regimens in early first trimester, HRP will focus on medical abortion regimens in the second trimester. During the coming years, HRP plans to launch:

- a multicentre trial on reducing bleeding after medical abortion;
- a comparative study of medical abortion regimens in the second trimester;
- a comparative study of medical abortion regimens in the late first trimester;
- a comparative study of regimens for treatment of non-viable pregnancy.

In addition, HRP will focus on pain alleviation during medical and surgical abortion.

5. DEVELOPING NORMS, TOOLS, AND GUIDELINES

Research evidence generated by HRP or elsewhere is used in developing norms, tools and guidelines.

5.1 Progress

No new guidelines were developed in 2007–2008. However, work has recently begun on revising the HRP booklet entitled *Safe abortion: technical and policy guidance for health systems*. Demand for this guideline has been strong since its publication in 2003. More than 20 000 copies have been distributed globally, and the English edition has been recently reprinted. However, a number of recommendations in the document need to be updated.

HRP has also initiated work on new clinical guidelines for comprehensive abortion care. In addition, clinical-practice recommendations concerning the use of misoprostol for obstetric conditions (including abortion) will be issued. Increasingly, a priority recommendation in countries where strategic assessments on abortion are conducted involves the development of national guidelines for provision of comprehensive abortion care. The new clinical guidelines will provide a WHO model (which countries can either adopt outright or adapt) based on their particular legal and health-system contexts.

5.2 Planned activities

Planned activities include updating Safe abortion: technical and policy guidance for health systems; developing clinical guidelines for the provision of comprehensive abortion care; and developing selected practice recommendations on the use of misoprostol for obstetric conditions (including abortion).

6. SUPPORTING COUNTRIES IN ASSESSING AND IMPROVING ABORTION CARE

At the request of national authorities, technical support is provided by HRP to strengthen policies, programmes and health services, and/or research related to the provision of safe abortion. The key methodology utilized is the WHO Strategic Approach to strengthening sexual and reproductive health policies and programmes. During 2007–2008, five countries – The former Yugoslav Republic of Macedonia (2007), Malawi (2008), the Russian Federation (2008), Ukraine (2008), and Zambia (2008) – have initiated use of the Strategic Approach. The key resources used to guide country-level work on safe abortion include the WHO safe abortion: technical and policy guidance for health systems (WHO, 2003); *Frequently asked questions about medical abortion* (WHO, 2006); and *Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2003* (WHO, 2007).

In 2007–2008, HRP collaborated with Ipas to conduct two subregional workshops in Africa. In addition, HRP supported activities to follow up strategic assessments conducted in Bangladesh, Moldova, Mongolia, and The former Yugoslav Republic of Macedonia, and preparations were made for upcoming strategic assessments on issues related to abortion in Guinea and Senegal – all planned for 2009.

6.1 Progress

Two subregional workshops were co-organized by HRP and Ipas. The first workshop was for four anglophone African countries (Malawi, Nigeria, Uganda and Zambia) held in Nairobi, Kenya in April 2007 and a second workshop was for five francophone African countries (Benin, Burkina Faso, Guinea, Mali and Senegal) held in Dakar, Senegal in March 2008.

The twofold purpose of the workshops was to introduce the WHO Strategic Approach and the WHO safe abortion: technical and policy guidance for health systems and to work with participating country teams to generate proposals for conducting strategic assessments concerning issues related to prevention of unsafe abortion. Strategic assessment proposals from Malawi and Zambia were funded by Ipas, with technical support from HRP. A strategic assessment proposal from The former Yugoslav Republic of Macedonia was funded by the UNFPA, with technical support from HRP.

6.1.1 Zambia

Key findings from the assessment conducted by the Ministry of Health in Zambia include widespread ignorance about the Termination of Pregnancy Act (1972) among both the health-care community and the general population; practical barriers to implementing the law, such as a requirement for three medical practitioners' signatures and a narrow interpretation of the cadre of "registered medical practitioners" allowed to perform abortions; strong opposition by the Catholic Church,

which has a powerful community and political presence in Zambia; a critical shortage of trained and willing staff to perform abortions outside the major urban centres; and opposition to providing sex education and condoms in schools.

Priority recommendations include sensitizing communities and health-care providers about the Termination of Pregnancy Act and facilitating its implementation through use of government statutory procedures; improving young peoples' access to sexual and reproductive health information and contraceptive methods; developing and implementing national standards and guidelines for comprehensive abortion care; and establishing use of MVA and mifepristone-misoprostol for induced abortion at primary-health-care level through midlevel providers.

6.1.2 Malawi

In October 2008, technical support was provided to the Ministry of Health and the WHO Country Office in Malawi to conduct the national planning workshop and team training for a strategic assessment on prevention of unsafe abortion. The strategic assessment (scheduled for June 2009) will focus on issues related to reform of the country's restrictive laws on abortion. Plans are being developed to use HRP's Human rights tool to better examine the legal and regulatory situation from a human rights perspective and for the team to make recommendations in this regard. This, in addition to a study planned by Ipas and the Guttmacher Institute on the magnitude of unsafe abortion in Malawi will be used to inform the strategic assessment.

6.1.3 Ukraine

A strategic assessment on issues related to abortion was conducted in Ukraine in February 2008. The dissemination workshop was held in December 2008.

6.1.4 The former Yugoslav Republic of Macedonia

In November through December 2007, technical support was provided to the Macedonian Ministry of Health and the UNFPA Country Office to conduct a strategic assessment on issues related to induced abortion. Initial follow-up to the assessment involved HRP staff, who provided an expert opinion on a new draft law on termination of pregnancy at the request of the Ministry of Health. Some of the barriers to safe services identified in the draft law included: unjustified requirements for service providers to warn clients of the 'health consequences' of abortion; lack of authorization for termination of pregnancy in outpatient clinics and in the private sector; restrictions on the number of abortions allowed; requirements for special authorization by medical committees; requirements for official documentation of sexual violence; requirements for parental and spousal consent; and limits on the cadre of medical practitioner allowed to perform abortions.

6.1.5 Russian Federation

Team training for a strategic assessment on issues related to abortion in the Russian Federation was conducted in mid–December 2008, and fieldwork is planned for the first half of 2009. The planned strategic assessment in the Russian Federation has been repeatedly delayed due to unforeseen changes in the Ministry of Health and in the lead implementing institution, the Research Centre of Obstetrics, Gynaecology and Perinatology of the Federal Agency of High Technology Medical Aid.

6.1.6 Moldova

Following a national dissemination workshop in January 2006, HRP funded a proposal from the Moldovan Ministry of Health and the Reproductive Health Training Centre to support the development of national standards and guidelines for comprehensive abortion care and to test a comprehensive abortion-care outpatient service-delivery intervention in two perinatal centres (one in the northern city of Bălți and one in the capital, Chişinău). Following a national stakeholder meeting held in October 2007 to launch the project, a pre-intervention baseline study was conducted and outpatient services were established in both centres.

Key interventions included training and equipping for provision of manual vacuum aspiration and medical abortion, post-abortion counselling, and contraceptive provision. Monitoring visits conducted by team members found high levels of provider satisfaction in the two sites; and client statistics showed that the services are being utilized by increasing numbers of women.

6.1.7 Mongolia

In 2007, the WHO Country Office continued scaling up improvements in two new regional diagnostic and treatment centres in Mongolia. Following upgrading of the Central Regional Diagnostic and Treatment Centre in Uvurkhangai in 2006, facility assessments were conducted and staff training and infrastructure improvements were initiated in the Western and Eastern Regional Centres (in Khovd and Dornod respectively) in 2007–2008. In addition, the Mongolian Family Welfare Association (MFWA), an affiliate of the International Planned Parenthood Federation (IPPF), has budgeted US$ 1.7 million for facility upgrading and provider training in comprehensive abortion care in three centres. MFWA plans to increase the number of abortion clients served in these centres from 450 in 2008 to 10 000 by 2013. They also expect to provide post-abortion contraception to 90% of clients.

6.1.8 Bangladesh

In December 2007, the Government of the Netherlands provided approximately US$ 3.9 million to the WHO Country Office in Dhaka, Bangladesh to strengthen the Bangladesh National Menstrual Regulation Programme. In 2008, HRP provided technical support to the WHO Country Office for

development of a call for proposals and subsequently for review and revision of the proposals received. The WHO Country Office has provisionally selected nine proposals for funding, from over 50 proposals and concept notes that were submitted. The funded proposals focus on strengthening and scaling up service delivery, enhancing rights-based demand for high-quality menstrual regulation services, and research on abortion-related morbidity, mortality, and stigma.

6.2 Planned activities

Fieldwork for a strategic assessment of issues related to abortion in the Russian Federation is planned for the first quarter of 2009, and fieldwork for a strategic assessment on issues related to abortion in Malawi is planned for June 2009. Strategic assessments on issues related to prevention of unsafe abortion are also planned for Guinea and Senegal in 2009.

Relatively longer-term plans include:

- developing new technical support capacity through collaborations with WHO regional/country offices and partner organizations;
- conducting strategic assessments in additional countries (at least one complemented with use of the *Human rights tool*);
- launching follow-up interventions in selected countries;
- scaling up comprehensive abortion care in selected countries;
- providing support to the WHO Country Office in Bangladesh on the initiative for ”Improving quality of menstrual regulation in Bangladesh”.

7. COLLABORATION

In addition to collaborating with WHO country and regional offices, HRP actively works with a number of organizations. During 2007–2008, HRP collaborated with:

- the Concept Foundation in activities related to the registration of Medabon;
- FIGO on the situational analysis and action plans for preventing unsafe abortion;
- the Guttmacher Institute in measuring the worldwide incidence of abortion;
- Gynuity for work on medical abortion, especially on the trial assessing the safety and feasibility of non-physicians providing medical abortion;
- the International Consortium of Medical Abortion in activities related to medical abortion;
- Ipas on strategic assessments and follow-up;
- the United Nations Treaty Monitoring Bodies on issues related to sexual and reproductive health in general and preventing unsafe abortion in particular.

These collaborations will continue and be further strengthened in the coming years.

Annex 1

RESEARCH GROUP ON POST-OVULATORY METHODS

FOR FERTILITY REGULATION

Members

Cheng Linan	Shanghai Institute of Family Planning Technical Instruction, Shanghai, China
Luigi Devoto	Institute for Maternal and Child Research, University of Chile, Santiago, Chile
Kristina Gemzell-Danielsson	Karolinska University Hospital, Stockholm, Sweden
Suneeta Mittal	All India Institute of Medical Sciences, New Delhi, India
Pak Chung Ho	University of Hong Kong, China, Hong Kong Special Administrative Region (Hong Kong SAR)

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	3	60					3
Women	1	20			1	20	2
WHO Region:							
Africa							
The Americas	1	20					1
South-East Asia	1	20					1
Europe					1	20	1
Eastern Mediterranean							
Western Pacific	2	40					2

Total = 5

Collaborating agency scientist

Regine Sitruk-Ware	The Population Council, New York, NY, USA

SCIENTISTS IN 2007–2008

Principal investigators

Ageyman B Akosa	Ghana Health Services, Accra, Ghana
Karine Arustamian	Armenian Research Centre of Maternal and Child Health Protection, Yerevan, Armenia
György Bártfai	Albert Szent-Györgyi Medical University, Szeged, Hungary
Artur Bjelica	Clinical Center Novi Sad, Novi Sad, Serbia
Marc Bygdeman	Karolinska University Hospital, Stockholm, Sweden
Ionela Cozos	Center for Public Health Targu-Mures, Targu-Mures, Romania
Evelio Cabezas Cruz	Hospital Docente Gineco-Obstetrico “Eusebio Hernandez”, Havana, Cuba
Carina Chi Wai Chan	University of Hong Kong, Hong Kong SAR, China
Kamheang Chaturachinda	Ramathibodi Hospital, Bangkok, Thailand
Horacio Croxatto	Chilean Institute for Reproductive Medicine, Santiago, Chile
Erdenetungalag Radnaabazar	State Research Centre on Human Reproduction and Maternal and Child Health, Ulaanbaatar, Mongolia
Fang Aihua	International Peace Maternity and Child Health Hospital, Shanghai, China
Robert Garfield	University of Texas Medical Branch, Galveston, TX, USA
Manuel Gomez Alzugaray	National Institute of Endocrinology, Hospital “Cmdte. Fajardo”, Havana, Cuba
Jafar Ahmed Hakim	Ministry of Health, Dhaka, Bangladesh
Jane Harries	University of Cape Town, Observatory, South Africa
Oskari Heikinheimo	Clinical Research Institute HUCH Ltd., Helsinki, Finland
Hoang Thi Diem Tuyet	Tu Du Hospital, Ho Chi Minh City, Viet Nam
Margaret Hoffman	Medical School, University of Cape Town, Observatory, South Africa
Hong Qing Qing	The University of Hong Kong, Hong Kong SAR, China

Mihai Horga	East European Institute for Reproductive Health, Targu- Mures, Romania
Jiejie Dai	Medical Primate Research Center for China, Kunming, China
Aleksandra Kapamadzija	Clinical Center Novi Sad, Novi Sad, Serbia
Archil Khomassuridze	Zhordania Institute of Human Reproduction, Tbilisi, Georgia
Laszlo Kovacs	Albert Szent-Györgyi Medical University, Szeged, Hungary
Le Thanh Thuy	Hanoi Obstetric and Gynecology Hospital, Hanoi, Viet Nam
Bayalag Munkhuu	State Research Centre on MCH and Human Reproduction, Ulaanbaatar, Mongolia
Louisa Ndunyu	University of KwaZulu-Natal, Durban, South Africa
Ngo Van Tai	National Gynecology and Obstetrics Hospital, Hanoi, Viet Nam
Nguyen Duc Hinh	National Gynecology and Obstetrics Hospital, Hanoi, Viet Nam
Nguyen Duc Vy	National Gynecology and Obstetrics Hospital, Hanoi, Viet Nam
Nguyen Duy Anh	Hanoi Obstetric and Gynecology Hospital, Hanoi, Viet Nam
Nguyen Duy Khe	Maternal and Child Health/Family Planning, Ministry of Health, Viet Nam
Nguyen Huy Bao	Hanoi Obstetric and Gynecology Hospital, Hanoi, Viet Nam
Nguyen Thi Ngoc Phuong	Tu Du Hospital, Ho Chi Minh City, Viet Nam
Nguyen Thi Nhu Ngoc	Hung Vuong Hospital, Ho Chi Minh City, Viet Nam
George Okeov	Armenian Research Centre of Maternal and Child Health Protection, Yerevan, Armenia
Mihuaela Zoe Peonariu	East European Institute of Reproductive Health, Targu-Mures, Romania
Pham Viet Thanh	Tu Du Hospital, Ho Chi Minh City, Viet Nam
Alenka Pretnar-Darovec	University Medical Centre, Ljubljana, Slovenia
Lucian Puscasiu	East European Institute of Reproductive Health, Targu-Mures, Romania
Janette Rodriguez	Hospital Docente Gineco-Obstetrico “Eusebio Hernandez”, Havana, Cuba
Mariana Romero	Center for the Study of State and Society, Buenos Aires, Argentina
Augustin Rosca	East European Institute of Reproductive Health, Cluj Napoca, Romania
Lalita Shankar Savardekar	Indian Council of Medical Research, Mumbai, India
Rashmi Shah	Institute for Research in Reproduction, Mumbai, India
Shi Shao-Qing	University of Texas Medical Branch, Galveston, TX, USA
P. Sobhana	S.A.T. Hospital, Trivandrum, India
Ts Sodnompil	Ministry of Health, Ulaanbaatar, Mongolia
Oi-shan Tang	University of Hong Kong, Hong Kong SAR, China
Maria Tarus	Department of Mother and Child Health, Ministry of Health and Social Protection, Chişinău, Moldova
Tang Dong Hong	Medical Primate Research Center of China, Kunming, China
To Minh Huong	Hanoi Obstetric and Gynecology Hospital, Hanoi, Viet Nam
Sheela Shenoy Trivikram	S.A.T. Hospital Medical College, Trivandrum, India
George Tsertsvadze	Zhordania Institute of Human Reproduction, Tbilissi, Georgia
Alejandro Velasco Boaz	Hospital América Arias, Havana, Cuba
Claire von Mollendorf	Chris Hani Baragwanath Hospital, Johannesburg, South Africa
Wu Shang-chun	National Research Institute for Family Planning, Beijing, China
Yan Che	Shanghai Institute of Planned Parenthood Research, Shanghai, China

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	16	27	10	17	3	5	29
Women	24	41	5	8	1	2	30
WHO Region:							
Africa	5	8					5
The Americas	6	10			2	3	8
South-East Asia	9	15					9
Europe			15	25	2	3	17
Eastern Mediterranean							
Western Pacific	20	34					20

Total = 59

Other scientists

Elisabeth Åhman	Crassier, Switzerland
Zarko Alfirevic	Liverpool Women's Hospital, Liverpool, United Kingdom
Gloria Quansah Asare	Reproductive and Child Health Unit, Ghana Health Services, Accra, Ghana
Thanh Cong Bui	Yale University, New Haven, CT, USA
David Baird	University of Edinburgh, Edinburgh, Scotland
Mauro Bernardi	Mauro Bernardi Graphisme et Communication, Geneva, Switzerland
Jennifer Blum	Gynuity Health Projects, New York, NY, USA
Laura Castleman	Ipas, Troy, MI, USA
Rodica Comendant	Reproductive Health Training Centre, State Medical University, Chişinău, Moldova
Kurus Coyaji	K.E.M. Hospital, Pune, India
Ishriyan Davaadorj	Ministry of Health, Ulaanbaatar, Mongolia
S. Demberelsuren	Maternal and Child Health Research Centre, Ulaanbaatar, Mongolia
Dominique de Ziegler	Hôpital Cantonal, Geneva, Switzerland
Do Thi Hong Nga	Ipas, Hanoi, Viet Nam
Duong Lan Dung	National Gynecology and Obstetrics Hospital, Hanoi, Viet Nam
Diana Elbourne	London School of Hygiene and Tropical Medicine, London, United Kingdom
Constantin Enciulescu	Center of Public Health Targu-Mures, Targu-Mures, Romania
Anibal Faundes	CEMICAMP, Campinas, Brazil
Christian Fiala	Fédération internationale des Associés Professionnels de l'Avortement et de la Contraception (FIAPAC), Vienna, Austria
Rodolfo Gomez Ponce de Leon	Ipas, Chapel Hill, NC, USA
David Grimes	Family Health International, Research Triangle Park, NC, USA
Selma Hajri	National Office of the Family and Population, Tunis, Tunisia
Justus Hofmeyr	East London Hospital Complex, East London, South Africa
Wallada Im-Amornphong	Concept Foundation, Bangkok, Thailand
Heidi Johnston	Centre for Health and Population Research, ICDDRB, Dhaka, Bangladesh
S. Khishgee	Maternal and Child Health Research Centre, Ulaanbaatar, Mongolia
Lena Marions	Karolinska University Hospital, Stockholm, Sweden
Olav Meirik	Santiago, Chile
Etienne Nguekeng	Chris Hani Baragwanath Hospital, Johannesburg, South Africa
Nguyen Thi Hong Minh	National Gynecology and Obstetrics Hospital, Hanoi, Viet Nam
Joachim Oehler	The Concept Foundation, Pathumthani, Thailand
Gillian Penney	Aberdeen Maternity Hospital, Aberdeen, Scotland
Pham Dinh Dung	National Gynecology and Obstetrics Hospital, Hanoi, Viet Nam
Pham Phuong Lan	National Gynecology and Obstetrics Hospital, Hanoi, Viet Nam
Phan Bich Thuy	Ipas, Hanoi, Viet Nam
Phan Van Quy	National Gynecology and Obstetrics Hospital, Hanoi,Viet Nam
Viet Nam	Mojca Pirc University Medical Centre, Ljubljana, Slovenia
Helen Rees	Chris Hani Baragwanath Hospital, Johannesburg, South Africa
Peter Safar	Humanis Klinikum Korneuburg, Korneuburg, Austria
Eric Schaff	University of Rochester, School of Medicine, Rochester, NY, USA
Raffaela Schiavon	Ipas Mexico, Mexico City, Mexico
Armando Seuc	Instituto Nacional de Angiologia y Cirugia Vascular, Havana, Cuba
Susheela Singh	The Alan Guttmacher Institute, New York, NY, USA
Andreja Stolfa	University Medical Centre, Ljubljana, Slovenia
Mihail Stratila	National Centre of Reproductive Health and Medical Genetics, Chişinău, Moldova
Shyam Thapa	Family Health International, Arlington, VA, USA
Davaaderj Uranchimeg	Public Health Institute, Ulaanbaatar, Mongolia
Jelka Vukelic	Clinical Center Novi Sad, Novi Sad, Serbia
Gijs Walraven	Secretariat de Son Altesse l'Aga Khan, Aiglemont, Gouvieux, France
Andrew Weeks	University of Liverpool, Liverpool, United Kingdom
Deborah Wing	UCI Medical Centre, Orange, CA, USA
Beverly Winikoff	Gynuity Health Projects, New York, NY, USA

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	9	17	2	4	12	23	23
Women	15	29	4	8	10	19	29
WHO Region:							
Africa	4						4
The Americas	4	8			10	19	14
South-East Asia	4	8					4
Europe			6	12	12	23	18
Eastern Mediterranean	1	2					1
Western Pacific	11	21					11

Total = 52

Annex 2

Publications in 2007–2008

Åhman E, Shah I. Improving national unsafe abortion estimates: gaps and possibilities, 2007. Available at: http://www.iussp.org.

Åhman E, Shah I. Contraceptive prevalence, unmet need, and induced abortion: global and regional patterns 2008. Available at: http://www.iussp.org.

Alfirevic Z, Blum J, Walraven G, Weeks A, Winikoff B. Prevention of postpartum hemorrhage with misoprostol. *Suppl Int J Gynecol Obstet* 2007; 99(2):S198-201.

Ali M, Shah I. Does induced abortion influence the subsequent uptake and continuation of contraceptive method use: insights from surveys in Armenia, 2008. Available at: http://www.iussp.org.

Bazarragchaa T, Khishgee S, Johnson BR, Strategic Assessment Team. Applying the WHO Strategic Approach to strengthening first and second trimester abortion services in Mongolia. *Reprod Health Matters* 2008; 16(31 Suppl.):127-34.

Blum J, Alfirevic Z, Walraven G, Weeks A, Winikoff B. Treatment of postpartum hemorrhage with misoprostol. *Suppl Int J Gynecol Obstet* 2007; 99(2):S202-5.

Blum J, Winikoff B, Gemzell-Danielsson K, Ho PC, Schiavon R, Weeks A. Treatment of incomplete abortion and miscarriage with misoprostol. *Suppl Int J Gynecol Obstet* 2007; 99(2):S186-9.

Che Y, Li M, Ding Y, Han Y, Li Y, Zhang Y, et al. Situation and evaluation of quality of abortion care in health institutions of Meishan, China. *Reproduction & Contraception*, 2008, 28(4):240-4.

Faundes A, Fiala C, Tang O, Velasco A. Misoprostol for the termination of pregnancy up to 12 completed weeks of pregnancy. *Suppl Int J Gynecol Obstet* 2007; 99(2):S172-7.

Fiala C, Gemzell K, Tang OS, von Hertzen H. Cervical priming with misoprostol prior to transcervical procedures. *Suppl Int J Gynecol Obstet* 2007; 99(2):S168-71.

Gemzell-Danielsson K, Ho PC, Gomez Ponce de Leon R, Weeks A, Winikoff B. Misoprostol to treat missed abortion in the first trimester. *Suppl Int J Gynecol Obstet* 2007; 99(2):S182-5.

Gomez Ponce de Leon R, Wing D, Fiala C. Misoprostol for intrauterine fetal death. *Suppl Int J Gynecol Obstet* 2007; 99(2):S190-3.

Harris J, Stinson K, Orner P. Health care providers' attitudes towards termination of pregnancy: a qualitative study in South Africa. (submitted)

Kapp N, von Hertzen H. Medical methods to induce abortion in the second trimester, In: Paul M, Lichtenberg S, Borgatta L, Grimes D, Stubblefield P, Creinin M, eds. *A clinician's guide to medical and surgical abortion*. Philadelphia, Churchill Livingstone. (in press)

Lalitkumar PGL, Lalitkumar S, Meng CX, Stavreus-Evers A, Hambiliki F, Bentin-Ley U, et al. Mifepristone, but not levonorgestrel, inhibits human blastocyst attachment to an in vitro endometrial three-dimensional cell culture model. *Human Reprod* 2007; 22:3031-7.

Meng CX, Andersson KL, Bentin-Ley U, Gemzell-Danielsson K, Lalitkumar PGL. Effect of levonorgestrel and mifepristone on endometrial receptivity markers in a three-dimensional human endometrial cell culture model. *Fertil Steril* 2009; 91(1):256-64.

Nduny L. Induced abortion amongst women in Kenya. *Loyola Journal of Social Science* 2007; 21(1):9-28.

Say L, Shah I. Maternal mortality and unsafe abortion: preventable yet persistent. *IPPF Med Bull* 2008; 42 (3): 1-3.

Sedgh G, Henshaw S, Singh S, Ahman E, Shah IH. Induced abortion: estimated rates and trends worldwide. *Lancet* 2007; 370:1338-45.

Shah IH. Saving women's lives: calling for a giant leap in international abortion policy. *Id21 Health Focus* 2007; 3.

Shah IH, Ahman E. Unsafe abortion: the global public health challenge, In: Paul M, Lichtenberg S, Borgatta L, Grimes D, Stubblefield P, Creinin M, eds. *A clinician's guide to medical and surgical abortion*. Philadelphia, Churchill Livingstone. (in press)

Shah IH, Say L. Maternal mortality and maternity care from 1990 to 2005: uneven but important gains. *Reprod Health Matters* 2007;15(30):17-27.

Singh S, Shah IH, Standing H. The high cost of unsafe abortion. *Id21 Health Focus*, 2007;1-2.

Tang OS, Vekemans M, von Hertzen H, Ho PC. Termination of pregnancy in the first trimester with misoprostol alone. *IPPF Med Bull,* 2008; 42:3.

von Hertzen H, Piaggio G, Huong NTM, Arustamyan K, Cabezas E, Gomez M, et al. Efficacy of two intervals and two routes of administration of misoprostol for termination of early pregnancy: a randomized controlled equivalence trial. *Lancet* 2007; 369:1938-46.

von Hertzen H, Piaggio G, Wojdyla D, Marions L, Tang OS, Fang A, et al. Two mifepristone doses and two intervals of misoprostol administration for termination of early pregnancy: a randomized controlled equivalence trial. *BJOG* 2009 Feb;116(3):381-9.

von Hertzen H, Piaggio G, Marions L. Comparison of two doses and two routes of administration of misoprostol after pre-treatment with mifepristone for early pregnancy termination. *Reprod Health*, 2008;5:2.

von Hertzen H, Piaggio G, Wojdyla D, Nguyen TM, Marions L, Okoev G, et al. Comparison of vaginal and sublingual misoprostol for second trimester abortion: randomized controlled equivalence trial. *Hum Reprod* 2009; 24 (1):106-12.

Weeks A, Faundes A. Misoprostol in obstetrics and gynecology. *Suppl Int J Gynecol Obstet* 2007; 99(2):S156-9.

Weeks A, Alfirevic Z, Faundes A, Hofmeyr GJ, Safar P, Wing D. Misoprostol for induction of labour with a live fetus. *Suppl Int J Gynecol Obstet* 2007; 99(2):S194-7.

World Health Organization. *Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2003*. Geneva: World Health Organization; 2007.

World Health Organization. *Mid-level health-care providers are a safe alternative to doctors for first-trimester abortions in developing countries*. Social Science Policy Brief, Department of Reproductive Health and Research, Geneva: World Health Organization; 2008.

Chapter 5

Gender, reproductive rights, sexual health, and adolescence

1. INTRODUCTION

The overall goal of the Team on Gender, Reproductive Rights, Sexual Health, and Adolescence (GRR) is to ensure that research, policy, and programmes in sexual and reproductive health protect and promote human rights and foster health equity and equality between women and men, both adolescents and adults. Many of the health issues related to sex and sexuality depend on the nature of women's and men's relationships with each other, which are shaped and influenced by socially-assigned gender roles and the value ascribed to them. This is particularly marked during adolescence, when people start to mature and become interested in sexuality. Gender norms and inequalities, as well as laws and policies affecting women's and men's access to information and services, can all have an important impact on people's sexual and reproductive health and their related human rights.

GRR contributes to building evidence on adolescent sexual and reproductive health, gender-based violence, female genital mutilation, and positive aspects of sexuality, by supporting research which is highly relevant to policy and programmes. GRR works with WHO regional and country offices to:

- develop tools and processes for examining the extent to which national laws and policies support universal access to reproductive health information and services;
- develop tools for and increase capacity of health programme managers to address violence against women;
- integrate gender rights dimensions into reproductive health policies and programmes;
- use international partnerships and the international human rights machinery for the promotion of sexual and reproductive health.

2. HUMAN RIGHTS AND SEXUAL AND REPRODUCTIVE HEALTH

The objective in this area of work is to contribute to equipping health programme managers and policy-makers with the analytical tools and skills to integrate the promotion of gender equality and reproductive rights into their sexual and reproductive health policies and programmes.

2.1 Human rights tools for advancing sexual and reproductive health

Despite government efforts to improve access to sexual and reproductive health services, legal, regulatory and policy barriers continue to exist and impede progress in achieving the highest attainable standard of health. The 2004 *WHO Global Reproductive Health Strategy* calls for creating supportive legislative and regulatory frameworks as part of the effort towards achieving the Millennium Development Goals and targets (especially universal access to reproductive health) and for setting human rights as the guiding principles for implementation of the strategy.

Therefore, RHR has developed a *Human rights tool* for assessing laws, regulations, and policies related to maternal and newborn health. From 2002 to 2006 the tool was validated and field-tested, first in Switzerland and then in Brazil, Indonesia, and Mozambique. In two districts and provinces in Indonesia, the tool was used together with a women's health survey coordinated and supported by the German Society for

Technical Cooperation (GTZ) with assistance from the WHO Country Office, HRP, and members of the national project team. The findings and recommendations from this local-level application of the tool were presented to various stakeholders in both provinces as well at to the Federal Ministry of Health in November 2007.

As a result of the evaluation of the field tests at the end of 2006, the *Maternal and newborn health tool* has been revised to focus on the five core components of sexual and reproductive health as outlined in the "WHO Global Reproductive Health Strategy". These components are improving maternal health; promoting family planning; preventing unsafe abortion; reducing sexually transmitted infections (STIs), including HIV/AIDS; and promoting sexual health. A companion tool to the *Maternal and newborn health tool* has also been developed to focus specifically on adolescents' sexual and reproductive health. These two tools consist of a data compilation instrument and a national process of engaging various stakeholders. This process involves the establishment of a national project team, compilation of data from readily-available sources on both health and legal/regulatory aspects of sexual and reproductive health, and an analysis of these data using a human rights framework.

At the end of the process, stakeholders generate recommendations for action, which allocate responsibility for follow-up to specific ministries and/or institutions and organizations. Field-tests of two tools were initiated in 2008 in Moldova (the *Sexual and reproductive health tool*) and in Sri Lanka and Tajikistan (the *Adolescent sexual and reproductive health tool*). They are being applied in collaboration with various government ministries, other United Nations agencies such as UNAIDS; UNFPA; UNICEF; international and national NGOs, such as Ipas and IPPF; and donor agencies, such as GTZ.

Interest in applying such tools has been expressed by a variety of countries, as well as by WHO regional and country offices and partners such as UNFPA, IPPF and GTZ. This product has been given high priority by RHR advisory committees.

Planned activities

Results from the field tests are expected to be available in the first part of 2009, after which the complete documentation for the use of both tools will be made available on the RHR web site as well as in printed form. Relevant aspects of the tools will be used with the "Strategic assessment on abortion" being conducted in Malawi, and this will lead to recommendations on how to use the tools together with the "Strategic Approach". The tool on adolescents' sexual and reproductive health will be introduced to relevant technical officers in PAHO, and will be adapted for regional use. Field tests of this tool will start in one or two countries in the PAHO region. Adaptation of the tool to HIV/AIDS will start in collaboration with the Harvard School of Public Health, Cambridge, MA, USA and tested in two countries with support and collaboration from UNDP and the Open Society Institute.

2.2 Contributing to the United Nations Human Rights Treaty monitoring mechanisms

The United Nations Human Rights Treaty monitoring mechanisms provide an opportunity for WHO to assist countries in complying with their treaty obligations for sexual and reproductive rights, including the elimination of discrimination against women in the area of health care. The framework of the Treaty and country-specific recommendations from the Treaty monitoring bodies can be used to strengthen partnerships between governments and WHO, as well as with other national and international partners, to promote rights-based policies and programmes for sexual and reproductive health at country level. RHR has a unique opportunity to contribute to the United Nations human rights monitoring processes, both by keeping the committees and the Human Rights Council informed about the latest data and developments in policy, and by working with the WHO country and regional offices to provide relevant information to the monitoring bodies and/or assisting governments in the preparation of the State reports. WHO, together with other United Nations agencies, is in a position to work with governments and non-governmental organizations on following up the concluding observations and linking them to ongoing processes for the improvement of sexual and reproductive health and rights.

Reports on the sexual and reproductive health situation in selected countries presenting to the various treaty monitoring bodies were prepared, with special focus on the Committee on the Elimination of All Forms of Discrimination Against Women (CEDAW). To assist in this process, which involves consultation with WHO country and regional offices, a handbook on CEDAW was published in collaboration with the Department of Gender, Women and Health. This provides practical information for WHO staff about how the right to health and other health-related rights are enshrined in the CEDAW Convention, what obligations governments have to implement these rights, and how WHO can both contribute to and use the process in support of its work. The handbook was disseminated in 2008 and has been introduced at number of international and regional meetings. In both 2007 and 2008, briefings were conducted with both the CEDAW Committee and the Human Rights Committee – the body that monitors the implementation of the International Covenant on Civil and Political Rights – on various aspects of sexual and reproductive health.

Planned activities

Briefings will continue to be provided on relevant sexual and reproductive health matters to the United Nations Human Rights Treaty monitoring bodies, particularly to CEDAW, the Human Rights Committee, and the Committee on Economic, Social and Cultural Rights. Support will be provided to WHO regional and country offices in which state party reports are

being discussed by the CEDAW Committee. Contributions will be provided to the universal periodic review process of the United Nations Human Rights Council, and advice will be given to United Nations Special Rapporteurs concerning relevant sexual and reproductive health matters – with special attention to the Rapporteur reporting on the right to the highest attainable standard of health.

2.3 Human rights related to sexual health

In order to foster the respect, protection, and fulfilment of human rights related to sexuality and sexual health, WHO has undertaken a project that seeks to document and analyse how human rights standards have been applied specifically to sexual health issues in international, regional, and national laws and jurisprudence. The project is intended to contribute to States' efforts to improve protection of rights relating to sexual health. It complements other WHO initiatives related to sexual health – particularly through clarifying states' obligations related to sex, sexuality, and sexual health.

The aim of the project is to develop a publication (or series of publications) to contribute to the recognition, understanding, and application of human rights standards related to sexuality and sexual health. It is expected that the document will be useful to a wide variety of organizations and groups and will provide an invaluable tool for those working for the sexual health and rights of socially marginalized populations – in particular, for advocacy and programme purposes.

In February 2008, a consultation was held with representatives from various international and regional NGOs, academics, and public-health experts to elaborate the scope, design, and content of the project. As a result of this consultation, eight human rights experts with NGO and/or academic backgrounds from the various WHO regions and two experts in international and North American law and jurisprudence, were contracted. Their charge was to conduct legal and jurisprudential research at the international and regional levels and in selected countries, and to make an analysis of their findings. A second meeting of the researchers was held in May 2008 to refine the scope of the research and agree on the methodology.

Planned activities

An analysis workshop will be held with the eight researchers and additional experts prior to the 7th Conference of the International Association for the Study of Sexuality, Culture and Society (IASSCS) in April 2009 in Hanoi, Viet Nam. The aim of this workshop is to discuss the findings of the regional research, identify commonalities and differences, design a framework for the analysis for all of the papers, and define the form of the final document(s). A panel session is also planned for the IASSCS Conference in order to provide an opportunity to discuss the findings with a wider audience, including NGOs and other civil society actors.

Based on the discussions at the analysis workshop, a final document will be prepared, pulling together or pooling the findings from the various regional studies. This document will be reviewed by all researchers involved, and the revised version will then be sent for further review by two or three outside experts in the field together with internal WHO review. It is expected to be published in 2010.

2.4 Reproductive rights and choices for women and men living with HIV: policy and programmatic guidance

The provision of sexual and reproductive health services to people living with HIV (PLHIV) is often dogged with discrimination and stigma. In addition, people living with HIV may have some specific needs relating to their sexual and reproductive health – such as information about the possible interaction of hormonal contraceptives with antiretroviral therapy, and counselling about the risks of HIV transmission to the baby during pregnancy and breastfeeding. Guidance to health systems on the provision of evidence-based services, as well as respecting and protecting the rights of PLHIV, is currently lacking at the global level.

For the past three years, the Department has worked with three international networks of people living with HIV – the Global Network of Positive People (GNP+), the International Community of Women Living with HIV (ICW), and Young Positives – and key partners such as EngenderHealth, IPPF, UNAIDS, and UNFPA, to develop policy and programmatic guidance for health systems on the needs of people living with HIV for – and their rights to – sexual and reproductive health care. Reviews of evidence to date were published in 2007 as a special issue of *Reproductive Health Matters*, and a draft document on guidance for health systems was prepared. This document was combined with two others – a review of legal and policy issues related to the sexual and reproductive health of PLHIV, and an advocacy document – to form a draft "guidance package".

The main messages from these documents were discussed at an international consultation of PLHIV held in December 2007 in Amsterdam, the Netherlands. The consultation issued a statement and a series of recommendations which were incorporated into the package and further discussed at the "Living Summit" of PLHIV just prior to the 22nd AIDS Conference in Mexico City, Mexico, August 2008. The package will be finalized before the end of 2008, and published jointly by the eight agencies involved in 2009.

Planned activities

During 2009 and beyond, this activity will be continued through the office of the Director of RHR, as part of the work on linkages between HIV and sexual and reproductive health. Support will be given to dissemination of the package in a variety of ways, including regional workshops and web-based services.

2.5 Training programmes on gender and rights

Rising to the post-ICPD challenge of integrating gender and rights into sexual and reproductive health research, policies, and programmes, WHO brought together in the mid-1990s a group of international experts to elaborate and conduct a training course for health- programme managers. The training initiative was designed to build capacity to offer regionally-appropriate, high-quality training to operationalize the agreements made at the ICPD (Cairo, 1994) and the Fourth World Conference on Women (Beijing, 1995).

First conducted in 1997 in South Africa by the Women's Health Project, the course, called "Transforming health systems: gender and rights in reproductive health", was subsequently adapted, translated into appropriate languages, and conducted in Afghanistan, Argentina, Australia, Burkina Faso, China, Kazakhstan, Kenya, Malaysia, Myanmar, Paraguay, South Africa, Sudan, and Tajikistan. From 1997 to 2007, an estimated 1300 people were trained, and the course is still being offered in a number of the countries mentioned above. The curriculum is also widely used in various settings, including medical and health-professional schools and academic institutions.

In response to a request from the Gender and Rights Advisory Panel (GAP) an evaluation of this training initiative was undertaken during 2007 and 2008. Based on interviews with course developers, course trainers, participants in the course, regional office advisers, and key informants, the evaluation considered how well the core objectives for individuals and training institutions had been met, the key factors that helped to achieve these objectives, and how the course manual had been used and adapted. To the extent possible, the evaluation sought evidence of the impact of the training initiative on the advancement of reproductive health and rights and the transformation of health systems.

The evaluation found that the initiative had achieved, with considerable distinction, the objectives that such a course is reasonably capable of achieving. The evaluation also found that there was great receptivity to the training – because gender continues to be a largely unexplored and misunderstood concept for many health professionals, and because the normative role and sponsorship of WHO was considered vital to the longevity, credibility, and impact of the initiative. The executive summary of the evaluation is available as a separate document, and includes a number of key recommendations to WHO which have been taken from the longer list of recommendations in the full evaluation report.

Planned activities

Through its team on research, capacity-strengthening, and programme development, RHR will continue to give support to participants requesting to attend the course in specific regions. It will also continue to give technical support and encouragement to all WHO regional offices to support the courses run in their regions. It will foster adaptation of the course in initiatives to include the subjects of both gender and rights, and sexual and reproductive health, into medical and other health professionals' curricula. RHR will maintain an updated web site with information about the courses being offered and the various training manuals which are available.

3. SEXUAL HEALTH AND SEXUALITY

In 2002, the Department cosponsored, with the World Association of Sexual Health, an international meeting which resulted in a working definition of sexual health, together with definitions of the closely-allied terms "sex", "sexuality", and "sexual rights". Since then, the Department has focused on

- gathering evidence on how sexuality counselling can be integrated into health systems;
- investigating the role that "vaginal practices" play in either promoting women's and men's sexual well-being or in contributing to ill-health; and
- developing a set of indicators for measuring sexual health.

In addition, nearly all the research conducted on adolescents' sexual and reproductive health (reported in Section 6 below) deals with dimensions of sexual health, sexuality, and gender roles.

3.1 Sexuality counselling: evidence for health services

Evidence from around the world indicates that there continues to be a lack of adequate and appropriate information about sexuality, about ways to protect oneself against disease, violence, and unwanted pregnancy, and about ways to foster sexual health. Experiences in which sexuality counselling has been integrated into health services are relatively few and far between. Thus, from 2005 to 2007 (following a systematic review of relevant programmes) HRP supported assessments of four programmes (in Brazil, India, Kenya, and Uganda) in which sexuality counselling has been integrated successfully into some aspect of reproductive health services. These assessments examined the elements of success (as well as limitations) of these programmes, with the ultimate objective of developing health-systems guidance on good practices.

Findings showed that the programmes were all nongovernmental initiatives operating in a specific and quite limited geographical area, and financed either from outside donor support or from users' fees. Although these were quite particular experiences, lessons can be drawn from them for governmental and public programmes. The comparative analysis of the findings in the four sites, conducted in early 2008, indicates that the key factors for integrating sexuality counselling into services are the existence of dedicated

counsellors who have been trained by the organization, and an organizational culture that fosters respect of human rights and recognizes that discussions and counselling on sex and sexuality are an important dimension of quality sexual and reproductive health services.

Planned activities

Following recommendations from GAP in early 2008, future work will focus on the following activities.

- Testing a model intervention for sexuality counselling in public health services in two different settings. Attention will be paid to the content of the counselling, the skills and attitudes of the providers trained, and the way in which the counselling is provided (including referral services). The ultimate aim will be to provide generic guidance for health systems concerning the provision of sexuality counselling in sexual and reproductive health services.

- Reviewing the content of sexuality education with partner organizations. WHO – represented by both RHR and CAH – will continue to participate in an initiative led by the United Nations Educational, Scientific and Cultural Organization (UNESCO) to elaborate international guidelines on sex, relationships, and HIV education in schools.

- Building on the work of the gender and rights in reproductive health training curriculum and other initiatives, RHR will ensure that sexuality, communication, gender, and human-rights dimensions are incorporated into the definition of health-provider core competencies for primary health care, which will also then be used as a basis for models of pre-service training.

3.2 Generating evidence for health services on vaginal practices and sexual health

The multicountry study on gender, sexuality, and vaginal practices conducted in Indonesia, Mozambique, South Africa, and Thailand, completed its second (quantitative) phase in 2007. Results in Indonesia and Thailand showed that the majority of women interviewed ingest products to effect change in their vaginas, particularly in relation to menstruation. In Mozambique and South Africa, women engage in a variety of practices aimed to enhance hygiene and sexual pleasure – some of which involve cleansing the vagina with potentially harmful and abrasive substances, such as household soaps and detergents (with a prevalence of 92% in Mozambique, 63% in South Africa). A paper comparing the qualitative results across the four countries has been submitted for publication and a paper on the comparative quantitative findings is in preparation. All countries have also conducted local dissemination activities to share findings with the communities involved.

Analysis from the qualitative phase enabled researchers to develop a consolidated typology for the study of vaginal practices. Six types are described: *oral ingestion* of substances believed to affect the vagina and uterus; *external washing* of the external area around the vagina and genitalia; *external application* which involves placing or rubbing various substances or products to the external genitalia and can include the 'steaming' or 'smoking' of the vagina; *intra-vaginal cleansing* which includes douching and other methods of cleaning inside the vagina; *intra-vaginal insertion* of powders, creams, herbs, tablets, sticks, stones, leaves etc.; and *anatomical modification* which includes deliberate surgical procedures to modify the vagina or restore the hymen, as well as traditional scarification and incisions to 'treat' infections or other ailments. In some cultures elongation or pulling of the *labia minora* is practiced from early childhood. All types except for labial elongation were found in different forms across the four countries.

Planned activities

Results from the quantitative studies are expected to be published. Analyses of the data from both phases are of particular interest to the developers of vaginal microbicides for the prevention of sexual transmission of HIV, as they will shed light on the role of vaginal practices in the acceptability of microbicides. The Department will therefore continue to support aspects of the research through the Team on Controlling Sexually Transmitted Infections. To date, this study has been conducted in collaboration with the Australia National University, Ghent University's International Centre for Reproductive Health in Belgium, the University of Bern in Switzerland, and four national country research teams.

3.3 Indicators for monitoring the promotion of sexual health

A joint WHO/UNFPA technical consultation in March 2007 recommended indicators for monitoring progress towards the goal of universal access at the country level to sexual and reproductive health by 2015. However, gaps in indicators were identified in the area of promoting sexual health – which is the fifth core component of the WHO Global Reproductive Health Strategy. While indicators for some of the other components (such as family planning) are well articulated and have been used for years to monitor progress, it is still unclear which indicators are the most appropriate for monitoring progress in sexual health and sexuality.

RHR therefore convened a further working group meeting on sexual health indicators in September 2007, to elaborate and refine a set of proposed indicators for promoting sexual health – including positive aspects of sexual health and sexuality on both sexual violence and female genital mutilation. The indicators include legal and policy indicators; health service indicators (including availability, access, use, and quality of services); and health-outcome indicators. The

report from the meeting was published at the end of 2008, as a companion document to the March 2007 report.

In 2008, RHR began testing some of the indicators. Results of those tests are not yet available, but it is clear that further testing will be required in order to validate the indicators in various settings.

Planned activities

The indicators for promoting sexual health will be further validated through training and application in a variety of settings, ideally in at least one country in each region. This activity will be conducted through WHO collaborating centres and WHO regional and country offices. Based on the results of the validation experiences, and on the findings from the sexual rights research described under Section 2.3, the indicators will then be revised and further disseminated and tested.

Linked to measurement are the definitions of terms. WHO is currently undertaking the eleventh revision of the International Classification of Diseases (ICD11). This revision is a complex process, involving extensive input from a wide range of experts from around the world. Much of this is web-based, but a number of topic advisory groups are being established to guide WHO in specific areas. RHR will convene a group on sexual and reproductive health, with a number of subworking groups (including one on sexual health). This group will examine currently-used terms such as "gender identity disorders", and provide published evidence as well as expert advice on the updating of terms. ICD11 is expected to be published in 2014.

4. VIOLENCE AGAINST WOMEN

Violence against women is an extreme manifestation of gender inequality, and in turn serves to perpetuate that inequality. It constitutes a major obstacle for women's empowerment and their ability to control their fertility and their own bodies. Violence is also a serious health risk for a wide range of sexual and reproductive health problems, such as unwanted pregnancy and unsafe abortion, sexually transmitted infections (including HIV), chronic pelvic pain and inflammatory disease, fistulae, and other gynaecological problems.

Intimate partner violence during pregnancy is also common and is associated with negative maternal, perinatal, and infant health outcomes. It is also associated with miscarriage, early labour, and low birth weight. Despite these factors, reproductive health services have not addressed this issue systematically. Providers often feel they lack the knowledge and skills necessary to address this problem, and indeed solutions are not always evident in settings where limited support for women exists and gender inequality and violence against women are socially sanctioned. Stronger policies and programmes are needed to prevent and respond to violence against women.

In 2008, work on violence against women was transferred from the Department of Gender, Women and Health to RHR/GRR. It is a relatively new area of public health, with scant evidence on the magnitude and nature of the problem and how best to prevent it and identify and address it in health-care services. Sound research on this issue will help inform primary and secondary prevention efforts.

4.1 Research for policy

4.1.1 Multicountry study on women's health and domestic violence (continued analysis)

The *WHO multicountry study on women's health and domestic violence against women* has generated a database with information from over 24 000 women from 15 sites in 10 countries, containing a wealth of information that has been interpreted and applied at the country and international levels. While the individual countries continue their advocacy and programmatic work at the national and community levels, WHO and its partners continue to move forward with cross-country analyses as part of their research-to-action agenda.

To date, the findings of the study have been used to illustrate the extensive burden of intimate partner violence, and its associations with poor physical, mental, and reproductive health. Two papers appeared in the *Lancet*: on prevalence (2006) and on the association of intimate partner violence with physical and mental health consequences (2008) and several others are in preparation. New areas of analysis in final stages of completion include exploring the risk and protective factors for intimate partner violence across study sites (with the London School of Hygiene and Tropical Medicine in London, United Kingdom) and documenting the association of intimate partner violence with several reproductive health outcomes (abortion, miscarriage and stillbirth, and unwanted pregnancy).

4.1.1.1 Intimate partner violence: risk and protective factor analysis

The risk and protective factor analysis explored, through bivariate and multivariate analysis, the effects of the woman's individual characteristics and experiences and her partner's characteristics and experiences, as well as relationship factors. In the bi-variate analyses, the following factors were associated with an increased or decreased risk of a woman being abused by her partner.

- **Female characteristics:** younger age, witnessing abuse of her mother, having children from a previous relationship, having attitudes that justify violence, and problem drinking were found to increase a woman's risk of being abused, while having a secondary education or more decreased her risk.

- **Male partner characteristics and experiences**: having a younger partner, being unemployed, witnessing his mother being abused as a child, being abused as a child, regular alcohol use or problem drinking, fighting with another man, having a relationship with a woman other than his current partner, were found to be risk factors for abuse.

- **Relationship characteristics, experiences, or behaviour**: either one of the partners having witnessed abuse of mother as a child, either one or both of the partners experiencing abuse as a child with the highest risk being when both partners were abused as children, lower socioeconomic status, drinking by one or both partners, cohabitation versus being married, and husband having more than one wife (in polygamous societies) increased a woman's risk of being abused.

Multivariate results showed similar findings to those described above, with the exception of a few variables that showed weaker effects (socioeconomic status, cohabitation) or stronger effects (young age of woman and partner).

4.1.1.2 Intimate partner violence and reproductive health

The cross-country analysis of the reproductive health effects of intimate partner violence among women in the 10 countries (15 sites), found that (in each site) women who had been physically or sexually abused by their husbands or partners reported higher rates of pregnancy loss (including abortion, miscarriage, and stillbirth) than non-abused women (Figure 1). The association is strongest with abortion, and differences were significant in 13 sites even after adjusting for confounding factors.

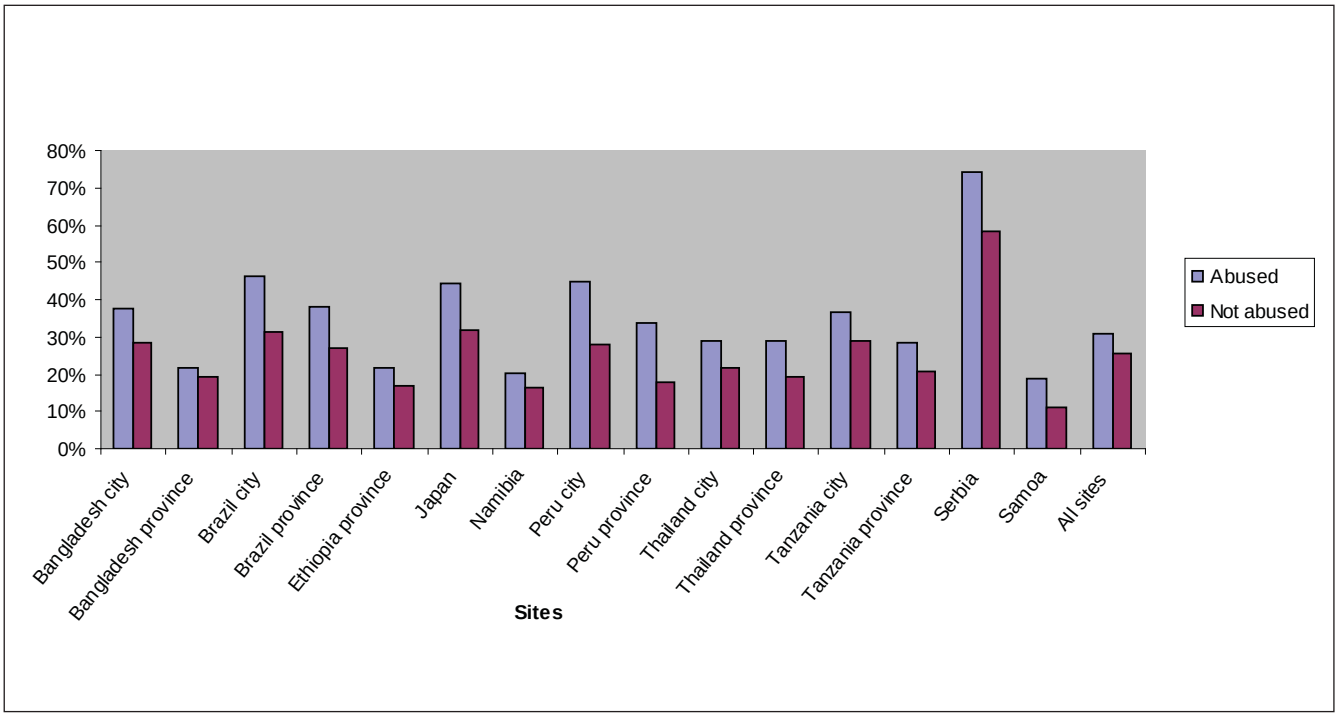
The analysis showed that:

- abused women were significantly more likely to have had at least one abortion than their non-abused peers in 12 of the sites, and they were more likely to have had a miscarriage or stillbirth in most sites (significantly more likely in six sites). Underreporting of abortion is suspected in sites where abortion is illegal and/or highly stigmatized; therefore, it is likely that some of the pregnancy loss characterized as miscarriage or stillbirth is actually due to induced abortions.

- overall, 38% of women with a recent pregnancy reported that the pregnancy was unintended (either unwanted or mis-timed).

- unintended pregnancies were more prevalent among abused women as compared to non-abused women in all sites, and the association remained significant in ten sites after adjusting for confounding factors.

Figure 1. Percentage of ever-pregnant women who have had a pregnancy loss, by abuse status



4.1.1.3 Strengthening collaboration across countries and opening access to the multi-country study database

In September 2008, WHO convened a meeting of the multicountry study team with representatives from 10 countries who presented the results of their research as well as examples of how they have applied their research to implement policy and programmatic actions to address violence against women in their countries. Most of the country study teams span the academic, health, and policy sectors of society, and this helped them to carry out a series of multisectoral responses. Some successes highlighted at the meeting included:

- advocating to create policies or to expand existing laws to reduce violence against women;
- implementing programmes in the health sector to educate providers about violence against women;
- improving collaboration between academic institutions, NGOs, and international organizations to work with survivors and expand networks of services;
- promoting community-based programmes to raise awareness, promote gender equality, and reduce violence against women.

To promote additional analyses of the multi-country study data, a mechanism to open access to the database to researchers and students beyond the study team is being proposed. This will be based on a systematic application and review process. Selected researchers will be given access to the database to answer specific research questions outlined in their proposals. The expanded access to the data will ensure timely analysis of the data and greater knowledge in the field.

Planned activities

During 2009, the findings described above, together with their related public health implications for primary and secondary prevention, will be summarized in peer-reviewed papers. Other papers under preparation include: psychometric assessment of the study instrument, to establish its reliability and validity as an instrument for detecting intimate partner violence; sexual risk associations with abuse; and the unique risks of violence during pregnancy.

Continued cross-country analyses will be promoted through a data-sharing mechanism currently being finalized, and through the publication of a special issue of a journal on the multi-country study. The latter will cover a wide range of topics, which will be authored by teams of researchers from various countries.

4.1.2 Addressing violence against women in the WHO Antenatal Care Model

Intimate partner violence during or around the time of pregnancy has been associated with adverse maternal and perinatal health outcomes due to the direct trauma of abuse to a pregnant woman, as well as the physiological effects of stress on fetal growth and development. Antenatal care visits provide a window of opportunity for identifying women suffering violence during pregnancy and offering them the necessary support and counselling needed to prevent or reduce adverse consequences.

The introduction of the WHO Antenatal Care Model – which aims to improve care to pregnant women in developing countries and reduce global disparities in maternal and newborn health in keeping with MDGs 4 and 5 – will be used to test for the first time a module on detection, treatment, and prevention of violence against women in the antenatal care setting in three countries in southern Africa. Once defined, this intervention can then be integrated into antenatal care in other settings as well.

Planned activities

A small group of experts will be brought together to advise on the development of the screening tool and intervention designed to detect and respond to violence in antenatal care settings. This approach will then be tested using a randomized controlled intervention design in Mozambique and South Africa, as part of the study for the introduction of the WHO antenatal care package in these settings. Capacity will be built in countries included in the study, to develop and expand the response to violence against women – including strengthening existing networks for referral of abused women.

4.1.3 Improving methods for the measurement of violence against women and its consequences

Guidelines for studying femicide

As part of an effort to develop a research protocol for studies of femicide, a meeting was cosponsored with PATH and the South African Medical Research Council in April 2008. It brought together researchers engaged in the collection of femicide data to review (through short presentations and in-depth working groups) the kinds of studies and surveys that have been conducted and methodologies used to study femicide.

Improving measurement of intimate partner violence and sexual violence

Work to improve the existing WHO questionnaire and instrument on violence against women will continue, particularly to improve the collection of data on various forms of sexual violence and on emotional violence by intimate partners. While recognized as an important component of intimate-partner violence, the latter is difficult to measure in a standardized

way. This work will engage other key partners involved in violence against women surveys, namely the Demographic and Health Surveys (DHS), the Centers for Disease Control and Prevention surveys and the International Violence Against Women Surveys (IVAWS – an initiative supported by statistical offices in Canada and Finland) to develop consensus on an instrument/module for measuring violence against women that could be endorsed and promoted by all parties.

Planned activities

Building on the outcomes of the meeting on studying femicide, a module (with guidelines on methodology for the collection of femicide data) will be elaborated to complement the existing WHO/PATH manual for *Researching violence against women: a practical guide for researchers and activists*.

For the measurement of intimate partner and sexual violence, a meeting is planned with key partners to elaborate and develop consensus on an optimal module.

4.1.4 Global estimates of violence against women for the Global Burden of Disease (GBD) Study

The Global Burden of Diseases, Injuries, and Risk Factors Study (the GBD 2005 Study) is led by a consortium including Harvard University, in Cambridge, Massachusetts, USA; the Institute for Health Metrics and Evaluation at the University of Washington in Seattle, Washington, USA; Johns Hopkins University, in Baltimore, Maryland, USA; the University of Queensland, in Brisbane, Australia; and the World Health Organization. Conducted by a group of experts from around the world, it builds on the original 1990 effort to quantify the global burden (morbidity and mortality) of diseases, injuries, and risk factors.

Unlike the previous estimates, the GBD 2005 study will include intimate partner violence as a risk factor for injuries, adverse maternal and perinatal health outcomes, and mental health problems. The intimate partner violence section (co-chaired by WHO/RHR/GRR and the London School of Hygiene and Tropical Medicine (LSHTM) provides global estimates for prevalence of intimate-partner violence, as well as risk estimates for related health problems. The process of conducting systematic reviews of the literature for prevalence – and associations of health outcomes with intimate partner violence – is currently under way, as is the calculation of aggregated, region-specific estimates based on meta-analyses of the prevalence estimates and risk ratios.

Planned activities

Work will continue on the intimate-partner violence estimates. Final GBD estimates will be calculated for each of the relevant diseases, injuries, and risk factors by 2010, when the global effort will conclude.

4.2 Policy and programmatic guidance

4.2.1 Development of guidance on health-sector response to intimate partner and sexual violence

A study was conducted in two Malaysian states where one-stop crisis centres have been in operation for several years to address the needs of women suffering intimate partner and sexual violence. Findings of the study highlighted that – even in tertiary hospitals – care is often fragmented and inadequate. Challenges to providing comprehensive care included both health-care worker deficiencies (such as lack of sensitivity and awareness) as well as organizational and policy barriers within the Malaysian health-care system (such as overloaded timetables, staff rotation, limited collaboration with other agencies, little or no provision of training, no protocols on intimate partner violence, and budget constraints). Results from this research will be published in 2009.

Planned activities

Building on this research and other work carried out by the WHO Department of Gender, Women and Health and the WHO Department of Violence and Injury Prevention (VIP), a meeting of experts is planned for March 2009 to review the evidence and various models of health-sector response to violence. The preparatory work for this meeting was undertaken in 2008 with a background paper, meeting agenda, and potential participants identified.

Based on the outcome of the meeting, WHO will develop guidance for an effective health sector response to violence against women, including minimum standards, a set of principles and key interventions to identify and respond to women suffering from violence. This responds to requests from countries who are struggling to develop their own policies in resource-poor settings. The guidance will be finalized and applied in at least one country in the following biennium. This work is being done in collaboration with the Centre for Gender, Violence and Health at LSHTM.

4.2.2 Guidance on primary prevention of intimate partner violence and sexual violence

Collaboration with the Department of Violence and Injury Prevention in this area started in 2007 with the elaboration of a background paper and a meeting in 2007 that reviewed the existing evidence for primary prevention of intimate partner violence and sexual violence. Building on this, a document to provide guidance for countries concerning primary prevention of intimate partner violence and sexual violence has been commissioned – recognizing that evidence is still scant or lacking.

This guidance document is targeted to country-level policymakers and programme managers, and will be released in the second half of 2009. RHR will continue to work with VIP to finalize the document and to support countries in implement-

ing and assessing promising strategies and interventions. It is particularly important to support operations or implementation research in order to better document the impact and benefits of these interventions. This work complements the work proposed in Section 4.2.1, above.

4.3 Capacity-building and technical support to countries

WHO has frequently been asked to support capacity-building and to provide technical support to countries undertaking surveys concerning violence against women. Supported by the Australian Agency for International Development, technical support and WHO materials for use in such surveys was provided to the Pacific Islands (Cook Islands, Solomon Islands, Tonga, Vanuatu). This support was also provided to Viet Nam for a United Nations-wide project to address violence against women, in response to MDG 3.

Technical input has also been provided to several initiatives for the development of indicators on violence against women, notably those within the United Nations Statistical Commission. These kinds of requests are expected to continue, and the Department will respond both through direct technical support from WHO and its growing network of partners in the regions (promoting south-south collaboration), and through seeding regional courses (starting with South-East Asia – see below).

PATH and the Medical Research Council (MRC) in South Africa have developed a two-week course based on the WHO/PATH publication *Researching violence against women: a practical guide for researchers and activists.* This includes an introduction to gender issues and gender-based violence; data collection, with a focus on both quantitative and qualitative research methods; and the use of data for advocacy and action. This course has been tested and implemented in Kenya and South Africa, and has also been translated into Spanish and tested in Nicaragua.

The WHO Regional Offices for Africa, Europe, and South-East Asia have expressed interest in expanding this course to other countries. Development of a course in Asia is proposed, in collaboration with WHO's Regional Office for South-East Asia and the WHO collaborators in the "Violence against women study" in Bangladesh and Thailand. In Europe, interest has been expressed by Albania, Moldova, and Tajikistan, to develop the capacity of health providers to address violence against women. These activities will be carried out in close collaboration with WHO regional and country offices and with PATH, the Population Council, and other local partners. RHR is also collaborating with the Sexual Violence Research Initiative on capacity-building for research and on improving provision of service for victims of sexual violence in several regions, with a focus on southern Africa.

Planned activities

RHR will continue to:

- provide technical support to Member States for data collection on violence against women;
- provide input to the development of a set of violence-against-women indicators for the United Nations Statistics Commission;
- disseminate a regional training course in capacity-building for collection of data concerning violence against women in at least one regional training institution (in collaboration with PATH and MRC); and
- support training efforts to improve services for sexual violence in sub-Saharan Africa, in collaboration with the Sexual Violence Research Initiative.

4.4 Collaborative efforts on violence against women

4.4.1 Evidence and action on violence against women with HIV/AIDS

WHO (through the Departments of RHR and GWH) has been collaborating with the Joint United Nations Programme on HIV/AIDS (UNAIDS) and the Global Coalition on Women and AIDS, to identify the nature of the associations of violence against women with HIV/AIDS (as a vulnerability/risk factor, as an outcome of a positive diagnosis, and as a barrier to testing and services). This collaboration will also seek to identify interventions which can address these associations, with a focus on those that can be addressed through HIV/AIDS programmes. Clearly, gender inequality (including violence, as one of its most extreme manifestations) is at the heart of the interface between sexual and reproductive health and HIV/AIDS. As such, interventions to address gender inequality and gender-based violence are also at the heart of the linkages between sexual and reproductive health and HIV/AIDS.

A review of interventions to address gender inequality and to prevent gender-based violence, which could be delivered as part of HIV programmes, was carried out in collaboration with the LSHTM for the resource estimates developed by UNAIDS in 2007. Few interventions of demonstrated effectiveness were identified.

Planned activities

An expert consultation is planned during 2009, to bring together individuals and organizations involved in innovative research and interventions. The aim is to review the evidence, identify further promising strategies, and make recommendations on the kinds of interventions that could be developed and tested at this stage – as well as identify gaps and propose new areas of research.

Guidance to and support for research into interventions, with the goal of gaining further knowledge, is envisaged for the next biennium This approach should feed into a more consolidated agenda for the topic of women and AIDS at the next AIDS Conference in 2010. RHR will represent WHO at the Steering Committee of the Global Coalition on Women and AIDS.

4.4.2 Developing a coordinated response to sexual violence in conflict

Sexual violence in conflict and in post-crisis periods is a serious health and human rights issue affecting millions of people (primarily women and girls, although men and boys are also at increased risk) who may also be subject to sexual exploitation by those mandated to assist them. The use of sexual violence during and after conflict is not new, though the changing nature of warfare, increasing media attention, and the growing willingness of survivors to speak out is raising awareness of its pervasiveness and severity. Sexual and other forms of gender-based violence (including intimate-partner violence) usually continue at elevated rates after conflict, due to a breakdown in the rule of law.

RHR works with the Humanitarian Action in Crises (HAC) Cluster providing support to the integration of sexual and reproductive health and gender-based violence into the health response in emergencies. RHR also works with United Nations Action against Sexual Violence in Conflict (UN Action) which brings together 12 United Nations agencies to strengthen the response of the United Nations to this problem and to improve its effectiveness and accountability. UN Action's activities fall under three broad objectives: supporting and enhancing the United Nations system's action at country level, advocacy, and knowledge-building. As the WHO focal point for UN Action, RHR supports knowledge-building in two areas – determining the nature and magnitude of the problem, through surveys and other forms of data collection, and identifying effective interventions.

Planned activities

During 2009, RHR will work with UN Action to organize a meeting to review the extent of knowledge concerning effective interventions and good practices in responding to sexual and other forms of gender-based violence in conflict. RHR and UN Action will provide support to at least one country (the Democratic Republic of the Congo or Liberia) in addressing violence against women in sexual and reproductive health services.

In addition, RHR and UN Action will support a survey in at least one post-conflict country, and continue to provide input to the e-learning tool based on the WHO/UNHCR (United Nations High Commissioner for Refugees) *Guidelines for the clinical management of rape.* Resources permitting, RHR will continue to participate in UN Action and other partnerships to strengthen programming and evidence on responding to sexual violence in emergencies.

4.4.3 Follow-up to the Secretary-General's in-depth "Study on violence against women, its causes and consequences" and the Secretary-General's "Campaign for the Elimination of Violence against Women"

WHO provides technical input and contributes to United Nations activities related to the elimination of violence against women – in particular, to the follow-up to the Secretary General's study. RHR successfully advocated for the inclusion of prevention and health issues in the framework developed for the Secretary General's campaign. RHR is also part of the group that reviews proposals and makes recommendation for the United Nations Trust Fund for the elimination of violence against women, managed by the United Nations Fund for Women (UNIFEM).

Planned activities

RHR will continue to provide technical input to the "Secretary General's Campaign for the Elimination of Violence against Women".

4.4.4 Responding with the International Organization of Migration to the health needs of trafficked persons

The harm caused by human trafficking ranges from physical injury (such as cuts or broken bones) to less visible problems (such as infections, internal injuries, and profound psychological damage). For many trafficked persons, the physical and psychological aftermath of a trafficking experience can be severe and enduring. For health practitioners, diagnosing and treating trafficked persons can be exceptionally challenging.

As part of the broader United Nations Global Initiative to Fight Human Trafficking, the International Organization for Migration (IOM) is leading an effort to bring together experts on health and human trafficking to draft guidelines for health providers. This expert group initiative includes a range of partners from international organizations, universities, and civil society worldwide. WHO is collaborating with IOM in this effort by reviewing the draft guidelines.

Planned activities

WHO will continue to support IOM in finalizing these guidelines, which involve ways of responding to the needs of people who have been trafficked. WHO will also initiate discussions with WHO regional and country offices for field testing the guidelines.

5. FEMALE GENITAL MUTILATION

Despite several decades of advocacy and action to eliminate female genital mutilation (FGM), only a few countries have documented a decline in the practice. Evidence from countries in which laws have been passed banning FGM, shows that legal change on its own is insufficient. The efficacy of health interventions is mixed, and a major development appears to be an increasing trend towards conducting FGM in medical institutions. The Department has been supporting research to elucidate some of the reasons for the persistence of the practice, as well as the elements that make for successful community-based action to abandon it. Building on the data from the multi-country study on the obstetric sequelae of FGM, RHR has also contributed to extensive advocacy activities over the past few years.

5.1 Advocacy for the elimination of FGM

5.1.1 Interagency statement on the elimination of FGM

WHO coordinated the formulation of a new "Interagency statement on the elimination of FGM", launched in February 2008. The statement summarizes the latest data on FGM, its human rights dimensions, and approaches that have succeeded in its abandonment. The statement is co-signed by 10 United Nations agencies: United Nations Office of the High Commissioner for Human Rights (OHRHC), UNAIDS, UNDP, United Nations Economic Commission for Africa (UNECA), UNESCO, UNHCR, UNICEF, UNFPA, and WHO.

Using the opportunity of the new interagency statement, RHR provided technical support to Member States for the drafting of a resolution on FGM that was adopted by the 2008 World Health Assembly. The resolution commits Member States to take the necessary political, educational and legal steps to promote the elimination of FGM in their countries, and the WHO Director-General to support these efforts, including through research, and to report on progress every three years.

5.1.2 FGM Donors' Working Group

The Donors' Working Group on FGM/C (female genital mutilation/cutting) brings together bilateral donors, private foundations, and intergovernmental organizations that are committed to supporting the abandonment of FGM. The mandate of the group is to increase political and financial support to the cause through networking, sharing information, and participation in international meetings. The group has produced a platform for action and a series of fact sheets to assist these efforts. WHO was one of the founding agencies and continues to play an active role in the group.

5.2 Guidance for health systems

5.2.1 Electronic training course for health-care providers

An electronic training course and information programme for health-care providers is being developed. Based on the approach of the *WHO reproductive health library*, this training module will be based on a systematic review of the available evidence, teaching tools, and clinical guidelines, and will use video clips of clinical situations that demonstrate good practices. It is planned to be an easily accessible and user-friendly tool to improve the quality of services for girls and women with FGM-related complications and for birth care. The module will also provide advice on how to counsel and provide information geared to discouraging medicalization of the practice (including re-infibulation after childbirth). The electronic training is expected to be available by the end of 2009.

5.3 Research to support the abandonment of FGM

During the last biennium, HRP has supported research in five areas involving FGM: community interventions, decision-making, sexuality, costs, and prevalence. The first three of these studies are part of a three-year project (funded by the European Union) on ways in which communities act to abandon the practice. The study is being implemented together with HRP's European partner, the International Centre for Reproductive Health at the University of Ghent, Belgium. The project period has been extended to 2009, in order to accommodate the actual time needed to process and carry out the studies.

5.3.1 Community interventions to eradicate FGM

This is an operations-research initiative on community-based interventions, being conducted in Burkina Faso and the Sudan. In Burkina Faso, the project is being implemented by the NGO Mwangaza Action in two regions (Tigba and Yamba), with three villages in each region. In the Sudan, the Al Ahfad University for Women in Khartoum is working in cooperation with local NGOs and community organizations. The project is a two-year intervention study in three sites in Omdurman, Khartoum State.

Burkina Faso

The legal measures taken against FGM in Burkina Faso constituted a methodological challenge. The study found very low support for FGM (5% of the informants), but the researchers seriously doubted the validity of their finding and considered it to be more attributable to respondents' fear of legal prosecution than of actual change in opinion and practice.

Sexual control and sexual pleasure. The idea that FGM reduces sexual desire and hence discourages sexual promiscuity and enhances premarital virginity was most strongly stressed by the men. For women, other concerns such as social recognition and adult female identity were given greater importance. Some men considered that their own sexual pleasure would be improved if their wives had not undergone FGM, whereas women's own sexual pleasure was given little or no attention (except as absence of pain during intercourse).

Health concerns. Communities feared increased risks associated with FGM, if the abandonment of the practice by local circumcisers forced them to rely on travelling circumcisers whose skills and commitment they questioned. The abandonment of the accompanying ritual seclusion (which would leave the care of girls to their mothers, rather than the circumcisers) was also believed to increase the risk of complications, particularly those of infection and accidental infibulation due to the adhesion of the labia minora.

Sudan

Prevalence and type. The baseline study revealed that whereas 100% of the women interviewed claimed to have undergone FGM (88% of them with stitching), only 50% of the men said their wives had undergone FGM.

Sexual control and sexual pleasure. Securing sexual modesty and particularly virginity was considered important. Interestingly, the focus group discussion highlighted virginity and sexual modesty, while responses to the individual questionnaires gave greater emphasis to religion and tradition.

Hygienic and health-related motivation. A reason given for excising girls was to avoid vaginal discharge, itching, and infections that are thought to be due to "worms in the clitoris", and to maintain virginity and limit sexual desire. It was reported that doctors occasionally suggested FGM to cure vaginal discharge.

Changes of type. Most informants said there was a change from infibulation to "modified sunna", described as an infibulation with a less tight opening.

Attitude to the continuation of FGM. Most informants said they wanted FGM to stop. However, 71% of the men said they would circumcise their daughters, while only 34% wanted a wife to have undergone FGM. There was no relationship between intention to continue FGM and educational level (from illiterate to higher university education).

5.3.2 FGM and decision-making

A two-year study was carried out, using theoretical models of behaviour change in order to develop a comprehensive understanding of the process of decision-making surrounding FGM. The research consisted of a qualitative and a quantitative phase, and was conducted in the Gambia and Senegal. Results threw light on a number of key areas.

Decision-makers

In 26% of the cases, the decision to undertake FGM was taken by one person alone. In 74% of the cases, the decision was taken by a group consisting of two to four individuals – mainly the extended family. In these decision-making groups, grandmothers and paternal aunts were considered to exercise the most influence, whereas about 70% of the mothers felt that they had very little or no possibility to influence the outcome of the decision.

Although men were reported to be rarely involved in the decision-making, they participated in both ongoing discussions (38%) and in decisions leading to girls being subjected to FGM during the last three years (18%). FGM also occurs after marriage, typically when women from a non-practising group marry into a practising group (15% of the informants lived in marriages between groups with diverging FGM practices). This was mostly due to pressure from the man's female relatives. When these women had daughters, they also felt social pressure to have their daughters undergo FGM. It was found that some girls spontaneously joined their peers to undergo FGM, but this was less frequent and is apparently declining.

Factors affecting decisions about FGM

Social pressure and social convention were described as strong motivating factors for the continuation of FGM. About 70% of informants said that women who were not circumcised would suffer insults, and agreed that nobody in their family wanted to be the first to stop. Fear of legal prosecution (79%) and fear of HIV/AIDS (34% in Senegal, 18% in the Gambia), and direct experience with adverse effects of FGM were important factors discouraging the practice. Less important were marriageability, urban or rural residence, level of education, or having family abroad.

New theoretical models to measure readiness to change

The primary investigators developed two theoretical models to estimate readiness to change. The first model measures readiness to change in a way that captures individual conviction, perception of social pressure, and ability to act upon one's decision. The model was tested using a set of questions and self-definition. Use of the model revealed five categories of decision-makers:

- supporters of FGM (people who, even when they know about the arguments against FGM, are not contemplating change);
- contemplators (people who still practise FGM, but are ambivalent about certain aspects);

- reluctant practitioners (people who may be personally convinced not to continue with FGM, but who nonetheless practise due to pressure from the social environment);

- willing abandoners (individuals who are motivated to end FGM and who are also able to act upon their intention);

- reluctant abandoners (people who abandon FGM even if they personally favour the continuation, either due to pressure or fear of legal consequences).

The second model measures the motivation to proceed with change through a decision-balance inventory that compares the perceived positive and negative consequences of the practice. This model produces a graph that suggests that as people shift from supporting to opposing the practice of FGM, the perception of advantages and disadvantages changes. For example, it showed that as people withdraw support for FGM, they increasingly internalize the message about adverse health risks.

5.3.3 Local perceptions of female sexuality and their influence on FGM decisions

Three studies in two countries (Egypt and Senegal) are investigating ways in which local perceptions of female sexuality are interlinked with ideas about FGM. Findings to date indicate the following.

Sexual control

FGM was closely associated with sexual control in all three studies, based on the view that the clitoris is a site for sexual urge and hence needs to be cut in order for women to be able to behave according to the local moral standards (including maintaining premarital virginity and ensuring faithfulness and modesty in marriage).

Sexual pleasure

In Egypt, the need for sexual control led to an ambivalence – particularly among educated men, who expressed concern that FGM could reduce women's sexual pleasure and hence mutual enjoyment of sex. On the other hand, some interviews suggested that when women did express sexual desire and pleasure (even if within marriage) it was considered both frightening and inappropriate.

Medical indications for clitoral/genital size

In Egypt, there was a widespread idea that some women were born with enlarged genitalia and hence needed FGM. Several informants suggested that there should be a national guidance and screening system for all girls, in order to be able to identify those in need of FGM, due to what was defined as oversized genitals.

On the other hand, some girls were seen as not needing FGM because they had what was defined as "smooth genitalia". They were said to have been circumcised by the angels (paralleling a category of those supposedly circumcised by the Virgin Mary that has been documented in Ethiopia).

Medical necessity due to infections or worms

In Egypt, FGM was said to occasionally be prescribed by medical professionals as a way of curing vaginal discharge. In Senegal, there was a widespread belief that the clitoris contained worms that could cause itching, infections, and more general diseases and lack of well-being in girls if it was not removed. This belief has also been found in Burkina Faso.

Infibulation

Infibulation, in the form of Type IIIa (in which adhesion is achieved between the labia minora) was found to be both more usual than expected and purposeful rather than caused by accidental healing (as had previously been thought when infibulation was found in western Africa). These findings concur with findings from the decision-making study that documented a prevalence of 15% in women and 13% in their daughters. This type was again closely associated with the requirement for virginity.

5.3.4 Estimating the obstetrical costs of female genital mutilation

A study to estimate the costs of obstetric complications due to FGM was conducted on the basis of the findings of the "WHO multicentre study on FGM and obstetric sequelae". Overall, the study reveals that the 53 million women of reproductive age in the six countries involved in the study would collectively generate $3.7 million in medical costs due to obstetrical complications from FGM. While this amounts to only between 0.1% and 1% of government health spending for the women concerned, the figure is higher than the amount spent on preventive measures.

5.3.5 Numbers of women circumcised in Africa: estimating the total

There have been various estimates of the number of women and girls worldwide who have undergone FGM, but the estimates vary widely. In 1996, when WHO made its first estimate, only a few countries had reliable data. Since then, much more data have become available, especially as a result of DHS surveys.

WHO therefore commissioned Macro International to produce an estimate of girls and women in Africa who had undergone FGM, based on DHS data. Their estimate also included information on type of FGM, as well as a calculated estimate of FGM – not only in the DHS cohort of 15–49 year-old women, but also in the 10–15 year-old cohort, and the cohort aged over 49. The total estimate for this population in the African countries where FGM has been documented was 92.6 million women and girls (Yoder and Khan, 2008).

Planned activities

During 2009 and the following biennia, the Department will focus particularly on launching a research initiative on the psychological consequences of FGM, as well as on the impact of legal measures to prevent FGM. Men's role in decision-making is also being addressed, in part through ongoing studies on FGM and sexuality.

Results of research to date will be used to further advocate, together with partners, for the abandonment of FGM at the international, regional and national levels. This advocacy will include the finalization of an electronic training course for the management of FGM by health-care providers, which will also strongly address the need to condemn any medicalization of the practice.

6. ADOLESCENTS' SEXUAL AND REPRODUCTIVE HEALTH

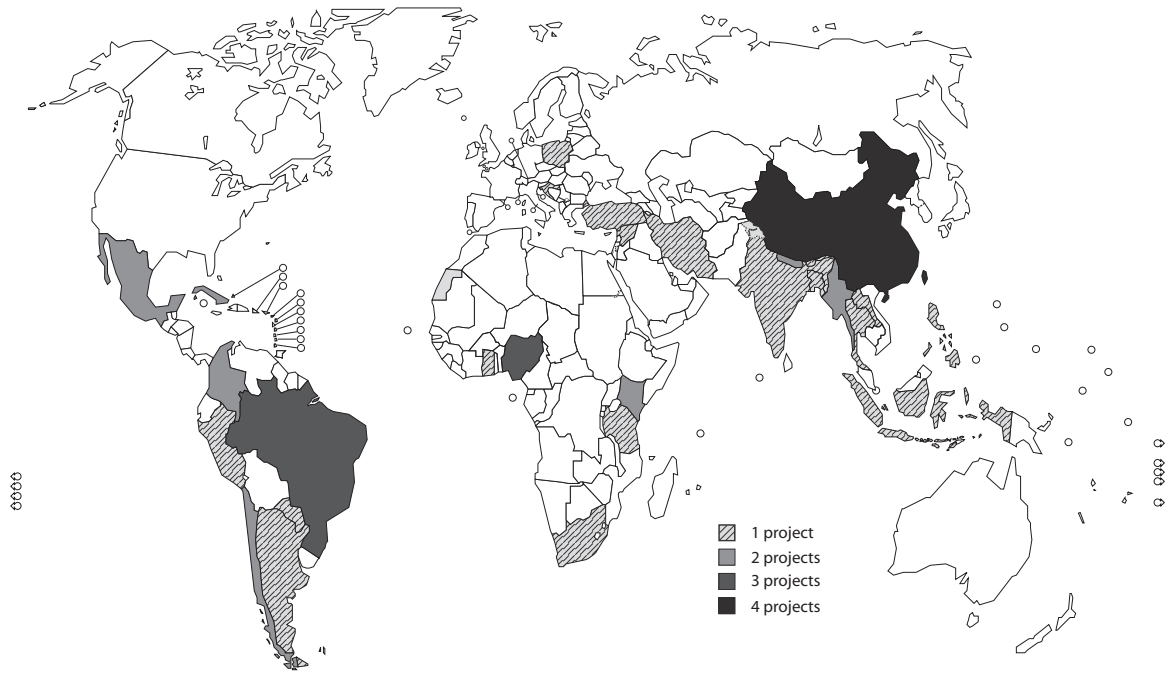
In 2007–2008, HRP continued to address research gaps with the aim of promoting healthy sexual and reproductive development, maturation, and behaviour of adolescents and young people, and of increasing opportunities for them to enter into equitable and responsible sexual relationships. HRP supports research of high policy and programmatic relevance, including testing of interventions for optimal provision of health and information services.

6.1 Research initiative on adolescent sexual and reproductive health

HRP's social science and operations research initiative on adolescent sexual and reproductive health (ASRH) – involving cumulatively 54 projects in 28 countries (see Figure 2) – continued to yield information critical for ASRH programmes and policies designed to broaden the provision of quality services, and for increasing access to services by those who are most in need. Results became available on:

- violence and non-consensual sex (Nepal, Nigeria);
- knowledge, attitudes, and risk-taking behaviour with regard to sexual and reproductive health (Iran);

Figure 2. Distribution of 54 projects on adolescent sexual and reproductive health by country as of end 2008



- poverty and social vulnerability during pregnancy among adolescents (Bangladesh, Brazil);
- gender and sexual and reproductive health (Paraguay);
- providers' perspectives on family planning and induced abortion among adolescents (Argentina);
- parent–child communication on sexual and reproductive matters (China); and
- the impact of community-based interventions on sexual and reproductive health (China).

The projects initiated during 2007–2008 included:

- the perspectives of young people on ASRH (Chile);
- reproductive health risks among unmarried Tibetan and Yi youth (China);
- parents' perspective towards provision of sexual and reproductive health services for unmarried youth (China);
- physical and sexual violence among married and unmarried youth (India);
- fosterage and trafficking of children and adolescents and implications for their reproductive health (Nigeria).

6.1.1 Highlights of completed studies

A number of publications from completed projects have yielded a wealth of policy-relevant information. During 2007–2008, a synthesis of findings was undertaken. Highlights of the findings are as follows.

Adolescents' perspectives and knowledge about sexual and reproductive health

Findings from the studies showed that adolescents consistently demonstrated awareness of the tension between social norms that discourage adolescent sexual activity. Consequently, they downplayed both the need for providing young people with information about sexual and reproductive health, and their own curiosity and need for guidance on safe sexual activity and health services. Fairly high levels of knowledge were consistently reported about basic reproductive health information among most groups of adolescents. However, myths and misinformation were common, and were greatest among the most vulnerable groups of adolescents.

In a study in Kenya, male secondary-school students acknowledged the conflicting pressures of adult norms promoting sexual abstinence and peer group norms that encourage risky sexual behaviour, and they perceived its inevitable consequences (STIs and unwanted pregnancy) as badges of masculinity. Although knowledge of sexual risks was high, the strategies the young men used to reduce this risk were ineffective, e.g. taking showers after unprotected sex and choosing 'healthy-looking' partners.

Among marginalized groups of young people, knowledge levels can be appallingly low. For example, a qualitative study of young unmarried female migrants aged 16–25 years in China found that most of the women lacked basic information about sexual and reproductive health and did not know where to access sexual and reproductive health services.

Risky behaviours

The formation of early sexual partnerships is often accompanied by risk-taking behaviours that increase the odds of unwanted pregnancy and infection. Although all adolescents typically have reduced perceptions of personal risk from unsafe sexual activity, social context is an important marker of the extent of risk-taking. In every social setting studied in the ASRH initiative, adolescents with strong family ties and educational achievement were more likely to have the life skills enabling them to cope better with the challenges of negotiating safe sexual activity. In contrast, vulnerable adolescents – those living in poverty, out-of-school youth, refugees, migrants, those living in the midst of social conflict – faced increased risks to their reproductive health.

Several studies examined the context of risk-taking behaviour among adolescents experiencing social exclusion, resettlement, migration, or structural violence in the community. For example, a study of young refugees in Cape Verde showed that the social exclusion and stigmatization of these young men led to greater risk-taking in their sexual behaviour. In South Africa, adolescents living in poverty, who were experiencing violence and social instability demonstrated a significant inability to link health knowledge and perceptions of risk to their own actions.

Collectively, findings from the studies showed that adolescents in vulnerable situations were less likely to have basic knowledge of contraception and reproduction. They were more likely to experience or initiate risky sexual behaviours (including the inability to negotiate contraceptive use and protection from STI/HIV), might be less able to protect themselves from sexual coercion, and were more vulnerable to transactional sex. Adolescents in general faced difficulties accessing sexual and reproductive health information and care, but these challenges were exacerbated for adolescents in vulnerable populations (whose needs were not being met by available services).

Understanding adolescent perspectives on dual protection

In general, HRP-supported studies showed that the use of condoms with or without other forms of contraception for dual protection from disease and unwanted pregnancy remained poorly understood by adolescents and was infrequently prac-

tised. For example, a community survey of adolescents in China found that awareness of the protective role of condoms was poorly understood by unmarried rural youth. Only 20% of all respondents reported knowing that condoms prevent STIs and HIV, and among the subset of sexually experienced respondents less than half (46%) were aware of the role of condoms in preventing infections.

Condoms were often viewed with suspicion and were regarded as too expensive, too difficult or embarrassing to procure, or ineffective against STI/HIV. When condoms were used, pregnancy prevention was the primary motive. In the study in China mentioned above, few respondents (6% of young women and 10% of young men) reported infection prevention as an additional motivation. Findings from a study of out-of-school adolescents in the United Republic of Tanzania were similar – respondents were aware of condoms, but were relatively unconcerned about the threat of sexually transmitted infection compared with the fear of unwanted pregnancy. Use was reported by only a few respondents and was erratic.

Even when adolescents understood the benefits of dual protection, resistance to condom use was strong. A study among male secondary school students in Kenya found that while the students were aware of the dual protective benefits of condoms, they imbued them with a variety of negative symbolic meanings (e.g. condoms are used only by adults or 'bad' boys) that rendered them difficult – if not impossible – to use in their own intimate relationships.

In other settings, condoms might be used for initial sexual encounters but use faded if the seriousness of the relationship increased; a stronger emotional bond creates the perception that the risk of infection or unwanted pregnancy was reduced. For example, a study in Cuba among adolescents in both urban and rural areas found that condoms were used early in a relationship but that the perceived need for condoms diminished as the relationship solidified.

Gender roles and sexual attitudes

Gender is perhaps the defining factor in the way adolescents experience the transition to adulthood. In the majority of developing countries, traditional values (including gender double standards) remain largely entrenched – to the detriment of sexual and reproductive-health outcomes. Findings from the studies indicated that in almost all settings, adolescent boys were perceived by both males and females to be the initiators and key decision-makers for sexual activity – and yet, they frequently abandoned or rejected these responsibilities in practice. In a study of young men's perspectives in Kenya, for example, the way in which young men understood the concept of masculinity led to both aggressive sexual behaviour and a rejection of contraceptive use and condoms.

There is little evidence from these studies that female adolescents were able to challenge the status quo and successfully negotiate and control the parameters of sexual activity. Rather, the studies showed that young women accepted this script of submission, as it was consistent with widely held norms defining appropriate female sexual behaviour. In a study of adolescents in Thailand, young women typically expressed passive and obedient behaviour regarding contraceptive use and were unwilling to question their partners' decision if it was different from their own wishes.

Such responses were typical in other settings as well. In a study of gender roles in Ghana, investigators compared gender socialization in two communities with contrasting lineage types (patrilineal and matrilineal). They found that differences in attitudes by type of community were less marked than expected, with both boys and girls agreeing that men should take on leadership roles and that women should assume positions of deference.

There was, however, some evidence that sexual norms changed when women achieved economic or educational advantages. A study designed to explore the sexual and reproductive culture of poor refugee adolescents living in Cape Verde found that alongside a fairly standard situation in which young women exchanged sexual favours for money with their informal partners, there was another type of relationship in which young women negotiated sexual relationships with poor young men and may financially support them. In this setting, the disenfranchisement and stigmatization of the refugees led to a reversal of previous social arrangements – in which men were both the sexual predators and the providers – to ones in which women sought partners based on desire and had the economic means to sustain such relationships.

Education also played a potent role in empowering both young men and women. A study of adolescent females in Nyanza, Kenya, found that higher educational attainment was associated with more egalitarian gender-role attitudes among both male and female adolescents.

Open communication

Open communication on safe sexual behaviour is largely absent between parents and adolescents, between teachers and adolescents, and between adolescents in intimate relationships who are largely unable to communicate their reproductive health needs. A study in the United Republic of Tanzania of out-of-school adolescents found that out of 81 adolescents participating in in-depth interviews, not one reported having had an open discussion with their parents about sexual matters and the life skills needed to ensure safe sexual activity. When communication does take place, there is evidence that gender may play a significant role in determining whom adolescents prefer to seek out for discussion. In a study in Ghana, for example, young men were the least likely to feel they could approach parents for counsel on sexual matters, whereas girls were more likely to feel they

could discuss sexual issues with older female family members.

Conclusions and recommendations

The collection of studies that comprise the WHO initiative on adolescent sexual and reproductive health in developing countries provides a rich source of data concerning the challenges young people face as they grow to adulthood and adapt to changing global circumstances. The largely qualitative studies shed light on how, in their own words, adolescents experience sexual initiation and helped to understand how better to meet their reproductive health needs.

Not long ago in most developing countries, menarche, marriage (usually arranged), and sexual debut were closely linked and took place within a fairly narrow time period. Advances in nutrition and health have led to earlier menarche, while the mean age at first marriage is increasingly disconnected from the mean age of sexual debut for both young men and women, who are increasingly pursuing education and employment before marriage. This increased period of exposure to out-of-wedlock sexual activity requires programmes and policies that recognize that young people are sexually active, and that are specifically designed to address the particular needs of adolescents.

Although the review highlights the many adverse events experienced by adolescents and the difficulties they face, it is important to note that in most studies many adolescents did not report negative experiences and some did make appropriate decisions about sexual activity. For example, although the studies showed that contraceptive use was generally low among sexually active adolescents, subgroups of young people were using contraception correctly and consistently. Nonetheless, the deficient or flawed knowledge displayed by some adolescents and the lack of negotiating power experienced by (in many cases) a majority of adolescents indicate a critical need to improve the status of adolescent sexual and reproductive health.

Several preliminary themes emerged from the overview of the studies. Adolescents demonstrated a vexing sense of ambiguity about their expectations for sexual partnerships, reflecting conflicting and gendered social norms about appropriate sexual activity. On the one hand, adult norms continued to promote sexual abstinence among unmarried adolescents and among girls in particular. On the other hand, male peer groups tended to encourage unsafe sexual activity and view its consequences (STIs and pregnancy) as proof of sexual conquest and masculinity.

Adolescents appeared to have mixed opinions about who was responsible for preventing unwanted pregnancy. Young men were often considered nominally 'in charge' of protection from STIs and unwanted pregnancy, yet they frequently did not adopt protective practices. Moreover, if a girl became pregnant they were unwilling to take responsibility and were quick to assert that the responsibility for contraception lay with the young woman. Young women themselves faced social norms that advocate acquiescence and submission should they become sexually active and provide little opportunity or support for negotiating safe sexual activity.

The detrimental practices and gendered norms identified in these studies will remain entrenched until successful communication and dialogue on sexual and reproductive health takes root. There has been significant progress in many parts of the world in developing youth-targeted sexual and reproductive health programmes in response to overwhelming need. In many settings, however, helpful counsel is missing in the lives of young people.

Family-planning programmes must continue to advocate for accessible youth-centred services, to enable adolescents to make safe and informed choices. Programmes should also address the needs of marginalized and vulnerable groups of adolescents, so that information and services reach all young people – including those who may not normally access standard health services. Finally, programmes for young people must also address detrimental gender norms that inhibit open communication about sexual and reproductive desires.

6.1.2 Sexual and reproductive health of young people in Latin America

The January–February 2008 issue of *Salud Pública de México* published a set of four papers based on the studies supported by HRP in Latin America. These papers covered an overview of sexual and reproductive health in Latin America as discerned from WHO case-studies; gender images and sexual and reproductive health conduct in Paraguay; contraception and abortion in Argentina; and users' and providers' perspectives on childbirth in Brazil.

6.1.3 Long-term effects of a community-based programme on contraceptive use among sexually active unmarried youth in Shanghai, China

A study in China explored the long-term post-project impact of community-based interventions among sexually active unmarried youth. In this rather unique study, the investigators revisited the project sites approximately two years and four months after the project ended and conducted a post-intervention survey. The post-intervention survey showed a major impact on condom use and on contraception in general in the study areas, as compared to control areas.

The current research examined whether these differentials were sustained over a longer period of time. It showed that comprehensive community-based interventions appeared to have limited long-term effects on contraceptive use among unmarried youth in suburban Shanghai. This was primarily because the contraceptive use in the study area had already reached high levels following the intervention. In addition, the

family-planning programme in the control area launched a number of activities promoting safe sex and contraceptive use. Therefore, it diminished the differentials between the study and control areas. The study also addressed a number of methodological issues in comparing two areas over time with changing age composition of respondents.

6.1.4 Dissemination of research results and tools

HRP continued to maintain a documentation centre, list-serve, and web site with ASRH material available for public distribution. Core instruments for research were among the materials most downloaded, in both English and French. In addition, 19 papers were published in national or international journals, including two WHO policy briefs.

6.1.5 Collaboration with other departments

The Department worked closely with the Department of Making Pregnancy Safer (MPS) and the Department of Child and Adolescent Health and Development (CAH) on estimates and approaches to reducing maternal morbidity and mortality among young women.

Planned activities

In 2009, the synthesis of ASRH studies – highlighting both the findings and their policy implications – will be published. New studies focusing on sexual and reproductive health of young married women (Yemen), risk-taking behaviours of young men (Viet Nam), non-consensual sex among young married men and women (Nepal), and the barriers to utilizing youth-friendly services (Turkey) will be implemented and monitored. In addition, priority will be given to research on:

- the situation and needs of particularly vulnerable populations of young people;
- building and sustaining ASRH research capacity in developing countries; and
- non-consensual sexual experience and its implications for ASRH.

Collaboration with the Departments of MPS and CAH will continue, on work related to reducing maternal morbidity and mortality among young women.

Annex 1

GENDER ADVISORY PANEL (GAP) IN 2007–2008

Members

Babatunde Ahonsi	The Ford Foundation, Lagos, Nigeria
Luisa Cabal	The Center for Reproductive Rights, New York, NY, USA
Lidia Casas	Universidad Diego Portales, Santiago, Chile
Rosemary Coates	School of Public Health, Curtin University, Perth, Australia
Lester Coutinho	David & Lucile Packard Foundation, New Delhi, India
Soledad Diaz	Chilean Institute of Reproductive Medicine (ICMER), Santiago, Chile
Amani Elkhatim	Al Ahfad University for Women, Khartoum, Sudan
Amal El-Hadi	New Woman Research Center (NWRC), Cairo, Egypt
Sharad Iyengar	Action Research and Training for Health (ARTH), Udaipur, India
June Lopez	College of Medicine, University of the Philippines, Manila, Philippines
Karen Newman	Consultant, London, United Kingdom
Raffaela Schiavon	The Population Council, Mexico DF, Mexico
Rashidah Shuib	Universiti of Sains Malaysia, Kelantan, Malaysia
Anand Tamang	Center for Research on Environment Health and Population Activities (CREHPA), Kathmandu, Nepal
Sheila Tlou	Member of Parliament, Gaborone, Botswana

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	4	27					4
Women	8	53			3	20	11
WHO Region:							
Africa	2	13					2
The Americas	3	20			1	7	4
South-East Asia	4	27					4
Europe					1	7	1
Eastern Mediterranean	2	13					2
Western Pacific	1	7			1	7	2

Total = 15

Temporary adviser

Charles Ngwena	University of the Free State, Bloemfontein, South Africa

SPECIALIST PANEL FOR SOCIAL SCIENCE AND OPERATIONS RESEARCH IN SEXUAL AND REPRODUCTIVE HEALTH

Members

Kofi Awusabo-Asare	University of Cape Coast, Cape Coast, Ghana
John Casterline	Ohio State University, Columbus, OH, USA
Aphichat Chamratrithirong	Mahidol University, Nakhon Pathom, Thailand
Gu Baochang	Renmin University of China, Beijing, China
Shireen Jejeebhoy	The Population Council, New Delhi, India
Vasantha Kandiah	Kuala Lumpur, Malaysia
Marwan Khawaja	American University of Beirut, Beirut, Lebanon
Mike Koenig	Johns Hopkins University, Baltimore, MD, USA
Ondina Fachel Leal	Universidade Federal do Rio Grande do Sol, Porto Alegre,Brazil
Akim Jasper Mturi	Organization for Social Science Research in Eastern and Southern Africa, Addis Ababa, Ethiopia
Naohiro Ogawa	Nihon University Population Research Institute, Tokyo, Japan
Leela Visaria	Gujarat Institute of Development Research, Ahmedabad, India
Mary Beth Weinberger	New York, NY, USA

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	6	46			2	15	8
Women	4	31			1	8	5
WHO Region:							
Africa	2	15					2
The Americas	1	8			3	23	4
South-East Asia	3	23					3
Europe							
Eastern Mediterranean	1	8					1
Western Pacific	2	15			1	8	3

Total = 13

Collaborating agency scientists

Ian Askew	FRONTIERS in Reproductive Health, Nairobi, Kenya
Mario N. Bronfman	Ford Foundation, Mexico City, Mexico
Sarah Harbison	US Agency for International Development, Washington, DC, USA
John Townsend	The Population Council, New York, NY, USA

SCIENTISTS IN 2007–2008

Principal investigators

Ademola J. Ajuwon	African Regional Health Education Centre, University of Ibadan, Ibadan, Nigeria
Ayse Akin	Hacettepe University Medical Faculty, Ankara, Turkey
Malika Alexander	KEM Hospital Research Centre, Pune, India
Babiker Ashraf Badri	Al Afhad University for Women, Khartoum, Sudan
Hossam Bahgat	Egyptian Initiative for Personal Rights, Cairo, Egypt
Yemane Berhane	Addis Ababa University, Addis Ababa, Ethiopia
Kajal Bharadway	Lawyers Collective, Mumbai, India
David Bishai	John Hopkins University, Baltimore, MD, USA
Abebiou Diagne Camara	Network for the Prevention of Maternal Mortality in Senegal (SPMM), Dakar, Senegal
Cui Nian	Sichuan Family Planning Research Institute, Chengdu, China
Ana Flavia Lucas D'Oliveira	University of São Paulo, São Paulo, Brazil
Harendra de Silva	Colombo, Sri Lanka
Vivek Divan	Lawyers Collective, Mumbai, India
Stefano Fabeni	Global Rights, Washington, DC, USA
Ana Güezmes Garcia	Universidad Peruana Cayetano Heredia, Lima, Peru
Laila Garda	KEM Hospital Research Centre, Pune, India
Savitri Goonesekare	Faculty of Law, University of Colombo, Sri Lanka
Ylva Hernlund	University of Washington, Seatle, WA, USA
Eveline January	Ministry of Health and Social Services, Windhoek, Namibia
Savita Kanade	KEM Hospital Research Centre, Pune, India
Churnrurtai Kanchanachitra	Mahidol University, Bangkok, Thailand
Lou Chaohua	Shanghai Institute of Planned Parenthood Research, Shanghai, China
Ximena Luengo	Instituto Chileno de Medicina Reproductiva, Santiago de Chile, Chile
Jessie Mbwambo	Muhimbili College of Medical Sciences, Dar es Salaam, United Republic of Tanzania
Alice Miller	Berkeley School of Law, Berkeley, CA, USA
Mawaheb EL-Mouelhy	Cairo Family Planning Association, Cairo, Egypt
Cheikh Ibrahima Niang	Université Cheikh Anta Diop, Dakar, Senegal
Charles Ngwena	University of the Free State, Bloemfontein, South Africa
Makanjuola Osagbemi	University of Jos, Jos, Nigeria
Stanislava Otasevi	Autonomous Women's Center against Sexual Violence, Belgrade, Serbia
Nancy Palomino Ramirez	Universidad Peruana Cayetano Heredia, Lima, Peru
Sabina Rashid	Bangladesh Rural Advancement Committee, Dhaka, Bangladesh
Esteban Restrepo	Universidad de los Andes, Bogota, Colombia
Mindy Roseman	Harvard Law School, Cambridge, MA, USA

Awa Coulibaly Sal	Association Femmes Initiatives pour le Développement et la Santé (AFIDS), Dakar, Sénégal
Lilia Blima Schraiber	University of São Paulo, São Paulo, Brazil
Lakshmen Senanayake	Colombo, Sri Lanka
Bettina Shell-Duncan	University of Washington, Seattle, WA, USA
Ruchira Tabassum Naved	ICDDR,B: Centre for Health and Population Research, Dhaka, Bangladesh
Tina Tauasosi-Posiulai	Secretariat of the Pacific Community, Apia, Samoa
Roger Thiombiano	Mwangaza Action, Ouagadougou, Burkina Faso
Tu Xiaowen	Shanghai Institute of Planned Parenthood Research, Shanghai, China
Paul Stanley Yoder	Macro International, Baltimore, MD, USA
Mieko Yoshihama	University of Michigan, Ann Arbor, MI, USA
Xiao Yu	Family Planning Research Institute of Sichuan, Chengdu, China

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	14	31			3	7	17
Women	22	49	1	2	5	11	28
WHO Region:							
Africa	10	22					10
The Americas	6	13			8	18	14
South-East Asia	11	24					11
Europe	1	2	1	2			2
Eastern Mediterranean	3	7					3
Western Pacific	5	11					5

Total = 45

Other scientists

Tanya Abramsky	London School of Hygiene and Tropic Medicine, London, United Kingdom
John Cleland	London School of Hygiene and Tropical Medicine, London, United Kingdom
Negussie Deyessa	Addis Ababa University, Addis Ababa, Ethiopia
Bosiljka Djikanovic	Autonomous Women's Center against Sexual Violence, Belgrade, Serbia
Mary Carroll Ellsberg	International Center for Research on Women, Washington, DC, USA
Lori Heise	Program for Appropriate Technology in Health, Washington, DC, USA
Henrica A.F.M. Jansen	General Directorate on the Status of Women, Ankara, Turkey
Ina Warriner	Chicago, IL, USA
Charlotte Watts	London School of Hygiene and Tropic Medicine, London, United Kingdom

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men					1	44	1
Women	2	22	1	11	5	55	8
WHO Region:							
Africa	1	11					1
The Americas					3	33	3
South-East Asia							
Europe	1	11	1	11	3	33	5
Eastern Mediterranean							
Western Pacific							

Total = 9

Annex 2

PUBLICATIONS IN 2007–2008

Adolescent sexual and reproductive health

Mohammad K, Farahani FK, Mohammadi MR, Alikhani S, Zare M, Tehrani FR, et al. Sexual risk-taking behaviors among boys aged 15-18 years in Tehran. *J Adolesc Health* 2007;41:407-14.

Kostrzewa K. The sexual and reproductive health of young people in Latin America: evidence from WHO case studies. *Salud Publica de México* 2008;50(1):10-16.

McCallum C, dos Reis AP. Users' and providers' perspectives on technological procedures for 'normal' childbirth in a public maternity hospital in Salvador, Brazil. *Salud Publica de México* 2008;50(1):40-48.

Puri M, Tamang J. *Exploring the nature and reasons associated with sexual violence within marriage among young couples in Nepal: summary report* 2008. Kathmandu (Nepal): Center for Research on Environment Health and Population Activities (CREHPA); 2008.

Rashid SF. Durbolota (weakness), chinta rog (worry illness), and poverty. *Med Anthropol Q* 2007;21(1):108-32.

Rashid SF. Accessing married adolescent women: the realities of ethnographic research in an urban slums environment in Dhaka, Bangladesh. *Field Methods J* 2007;19:369-83.

Rashid SF. *Kal Dristi, s*tolen babies & 'blocked uteruses': poverty and infertility anxieties among married adolescent women living in a slum in Dhaka, Bangladesh. *Anthropol Med* 2007;14(2):153-66.

Rashid SF. Sexuality and rights: lives of young women in an urban slum in Dhaka, Bangladesh. *In Plainspeak* 2007;Issue 1:14-9.

Shah IH, Leal OF, Bronfman M. Sexual and reproductive health of young people: Introduction 2008. *Salud Publica de México* 2008;50(1):8-9.

Szulik D, Gogna M, Petracci M, Ramos S, Romero M. Anticoncepción y aborto en la Argentina: perspectivas de obstetras y ginecólogos/as. *Salud Publica de México* 2008; 50(1):32-39.

Tu Xiaowen, Lou Chaohua, Gao Ersheng, Shah IH. Long-term effects of a community-based programme on contraceptive use among sexually active unmarried youth in Shanghai, China. *J Adolesc Health* 2008; 42:249-258.

Villa A. *Cuerpo, intervenciones e investigaciones en salud y educación*. Buenos Aires: Ediciones Novedades Educativas; 2007.

Wang Bo, Meier A, Shah I, Li Xiaoming. The impact of a community-based comprehensive sex education program on Chinese adolescents' sex-related knowledge and attitudes. *J HIV/AIDS Prev Child Youth* 2006;7(2):43-64.

Wang B, Xiaoming Li, Stanton B, Kamali V, Naar-King S, Shah I, et al. Sexual attitudes, pattern of communication, and sexual behaviour among unmarried out-of-school youth in China. *BMC Public Health* 2007;7:189.

World Health Organization, Department of Reproductive Health and Research. Misperceptions amongst boys in the Islamic Republic of Iran about sexual and reproductive health. *Social science policy brief*. Geneva: World Health Organization; 2007.

World Health Organization Department of Reproductive Health and Research. Perspectives on sexual violence during early years of marriage in Nepal: findings from a qualitative study. *Social science policy brief*. Geneva: World Health Organization; 2009. http://cdrwww.who.int/reproductive-health/hrp/policy_briefs/sexualviolence_nepal.pdf

Worobiej AM. Imágenes de género y conductas sexual y reproductiva. *Salud Publica de México* 2008;50(1):17-31.

Zhang Liying, Xiaoming Li, Shah IH. Where do Chinese adolescents obtain knowledge of sex? Implications for sex education in China. *Health Educ* 2007;107(4):351-63.

Zhang Liying, Xiaoming Li, Shah IH, Baldwin W, Stanton B. Parent-adolescent sex communication in China. *Eur J Contracept Reprod Health Care* 2007;12(2):138-47.

Female genital mutilation

Bagnol B, Mariano E. Elongation of the labia minora and use of vaginal products to enhance eroticism: can these practices be considered FGM? *Finnish Journal of Ethnicity and Migration* 2008;3(2):42-53.

Hernlund Y, Shell-Duncan B. Are there "stages of change" in the practice of female genital cutting?: Qualitative research findings from Senegal and The Gambia. *Afr J Reprod Health* 2006;10(2):57-71.

Hernlund Y, Shell-Duncan B. Contingency, context, and change: negotiating female genital cutting in The Gambia and Senegal. *Africa Today* 2007;53(4):43-57.

Johansen REB, Bathija H, Khanna J. Work of the World Health Organization on female genital mutilation: ongoing research and policy discussions. *Finnish Journal of Ethnicity and Migration* 2008;3(2):83-89.

OHCHR, UNAIDS, UNDP, UNECA, UNESCO, UNFPA, UNHCR, UNICEF, UNIFEM, WHO. *Eliminating female genital mutilation: an interagency statement.* Geneva: World Health Organization; 2008.

Yoder PS, Khan S. *Numbers of women circumcised in Africa: the production of a total.* Paper prepared for the World Health Organization, 2008. Available at: http://www.measuredhs.com/pubs/pdf/WP39/WP39.pdf (accessed 14 January 2009).

Human rights and sexual and reproductive health

Berer M, ed. Ensuring sexual and reproductive health for people living with HIV. *Reproductive Health Matters*, 2007:15(29 suppl.).

Gruskin S, Cottingham J, Kismodi E, Martin Hilber A, Lincetto O, Roseman MJ. Using human rights to improve maternal and neonatal health: history, connections and a proposed practical approach. *Bull World Health Organ* 2008;86:589-93.

Women's health and human rights: monitoring the implementation of CEDAW. Geneva: World Health Organization; 2007.

Violence against women

Cottingham J, Garcia Moreno C, Reis C. Sexual and reproductive health in conflict areas: the imperative to address violence against women. *Br Med J* 2007; 115(3):301-3.

Bangladesh

Asling Monemi K, Naved RT, Persson LA. Violence against women and the risk of under-five mortality: analysis of community-based data from rural Bangladesh. *Acta Paediatr* 2008;97:226-32.

Naved RT, Persson LA. Factors associated with physical spousal abuse of women during pregnancy in Bangladesh. *Int Fam Plan Perspect* 2008;34(2):71-8Naved RT, Akhtar N. Spousal violence against women and suicidal ideation in Bangladesh. *Women's Health Issues* 2008;18(6):442-52.

Brazil

Julia Garcia Durand, Lilia Blima Schraiber. Violência na gestação entre usuárias de serviços públicos de saúde da Grande São Paulo: prevalência e fatores associados [Violence during pregnancy among public health care users in the Greater Sao Paulo area: prevalence and associated factors]. *Rev Bras Epidemiologia* 2007;10(3):310-22.

Ludermir AB, Schraiber LB, D'Oliveira AFPL, França-Junior I, Jansen HA. Violence against women by their intimate partner and common mental disorders. *Soc Sci Med* 2008;66:1008-18.

Schraiber LB, D'Oliveira AFPL, França-Junior I, Diniz S, Portella AP, Ludermir AB, et al. Prevalence of intimate partner violence against women in regions of Brazil. *Rev Saúde Pública* 2007;41(5):797-807.

Schraiber LB, D'Oliveira AFPL, França-Junior I. Intimate partner sexual violence among men and women in urban Brazil, 2005. *Rev Saúde Pública* 2008;42(Suppl. 1).

Schraiber LB, D'Oliveira AFPL, Couto MT, Hanada H, Kiss LB, Durand JG, et al. Violence against women attending public health services in the metropolitan area of São Paulo, Brazil. *Rev Saúde Pública* 2007;41(3):9.

Japan

Yoshihama M, Horrocks J, Kamano S. The role of emotional abuse in intimate partner violence and health among women in Yokohama, Japan. *Am J Public Health* 2009 Apr;99(4):647-53.

Yoshihama M, Horrocks J, Kamano S. Experiences of intimate partner violence and related injuries among women in Yokohama, Japan. *Am J Public Health* 2007; 97 (2):232-34.

Maldives

Fulu E. *The Maldives study on women's health and life experiences*: *Results on prevalence, health outcomes and women's responses to violence*. Male: Ministry of Gender and Family; 2007.

Fulu E. Domestic violence and women's health in the Maldives. *Public Health Forum* 2007; 11(2):25-32.

New Zealand

Fanslow J, Robinson E, Crengle S, Perese L. Prevalence of child sexual abuse reported by a cross-sectional sample of New Zealand women. *Child Abuse Negl* 2007;31:935-45.

Fanslow, J, Whitehead A, Silva M, Robinson E. Contraceptive use and associations with intimate partner violence among a population-based sample of New Zealand women. *Aust N Z J Public Health* 2008;48:83-9.

Fanslow J, Silva M, Whitehead A, Robinson, E. Pregnancy outcomes and intimate partner violence in New Zealand. *Aust N Z J Obs Gyn* 2008;48:391-7.

Serbia

Ellsberg M, Jansen H, Garcia-Moreno C, Heise L, Watts C. Intimate partner violence and women's physical and mental health in the WHO multi-country study on women's health and domestic violence: an observational study. *Lancet* 2008;371:1165-72.

Chapter 6

Research-capacity strengthening and programme development: interregional activities

1. INTRODUCTION

The interregional work area for strengthening capacity for research and programme development is seen against the background of enhancing synergy between research and programmatic activities. The purpose of this approach is to ensure continuum from the generation and synthesis of evidence, to the transfer of knowledge and technology, the identification of needs, and the implementation of effective interventions for ensuring universal and equitable access to sexual and reproductive health services.

This mechanism has been very effective in strengthening the collaborative work with WHO regional and country offices and other partners. In 2007, the global activities of the UNFPA/WHO Strategic Partnership Programme (SPP) to support regional and country activities constituted the main thrust of this area. These activities focused on the systematic introduction and in-country adaptation of evidence-based guidelines on family planning, maternal and newborn health, and sexually transmitted and other reproductive tract infections, to improve the quality of sexual and reproductive health care. Throughout 2008, this focus was further expanded to increase awareness about the new Millennium Development Goal Target 5B, "to achieve, by 2015, universal access to reproductive health" and to map out ways to incorporate this target into national plans and in-country reporting on progress towards the achievement of MDGs 4 and 5.

2. THE UNFPA/WHO STRATEGIC PARTNERSHIP PROGRAMME FRAMEWORK

In 2003, WHO and UNFPA developed a systematic approach to introduce evidence-based guidelines in countries, and to enhance the advisory role of WHO regional offices and UNFPA country support teams (CSTs) to governments and partners in the development of policies and programmes for improving sexual and reproductive health. The goal of this approach was to improve the quality of and access to sexual and reproductive health, through the Strategic Partnership Programme. The SPP was evaluated in 2007 and continued in 2008, as detailed below.

2.1 Progress

2.1.1 Evaluation of the WHO/UNFPA Strategic Partnership Programme

An external evaluation of its first phase in early 2007 concluded that the SPP concept met with positive appreciation within the two partner organizations and with nearly universal approval in the countries of intensified focus. It reaffirmed the perception that the initial narrow focus on family planning and STI guidelines was very helpful in fostering the much-needed linkages between SRH and STIs, which are usually handled by different organizational units.

The evaluation also confirmed that the SPP process is a good model of collaboration for future joint action at all levels of the partner organizations, and an effective mechanism for leveraging new funds from other sources for other work. The evaluation strongly recommended that the process be continued, consolidated, and possibly replicated in other countries in all regions. The activities reported below constitute a follow-up to this recommendation.

2.1.2 Global implementation review workshop

This third global SPP meeting, held in Geneva, Switzerland from 2 to 4 May 2007, brought together all the reproductive health advisers from the UNFPA CSTs, two UNFPA/CST

directors, relevant WHO regional and headquarters staff, and four senior officials from selected countries of intensified focus (China, Kyrgyzstan, Zambia). As implementers of the SPP, they reviewed the findings and recommendations of the external evaluation and agreed on global and region-specific plans for future collaboration in 2008 and beyond.

Two major challenges for scaling up the SPP work were identified, namely:

- the need to consolidate and expand SPP activities in countries of intensified focus, to ensure that use of the revised national guidelines actually has an impact on changing practices;
- the need for increased resources to respond to new requests to initiate the process in additional countries.

2.1.3 Second-phase series of SPP subregional workshops

A series of regional or subregional capacity-strengthening workshops involving an increasing number of countries was organized between December 2007 and December 2008. Figure 1 shows the level of implementation and expansion of SPP activities, as of January 2009.

2.1.3.1 First subregional SPP workshop for African francophone countries

Since the French versions of all of the SPP-supported guidelines became available, 36 representatives from five francophone countries (Côte d'Ivoire, the Central African Republic, the Democratic Republic of the Congo, Mali, and Niger) have been introduced to this set of guidelines and to the process used for their adaptation and implementation in countries. A workshop for this purpose was convened in Cotonou, Benin from 3 to 7 December 2007.

Experiences and lessons learnt from the use of this process in Benin and Cameroon were also shared. Two new issues (reproductive health commodity security, and introduction of maternal death audits) were also discussed in relation to the achievement of MDG target 5B. Plans of action for initiating the guidelines adaptation process in the Central African Republic, Côte d'Ivoire and Niger were subsequently approved and funded in 2008.

2.1.3.2 Subregional SPP workshops for anglophone countries in southern and western Africa

Two workshops were held in 2008 – in Lusaka, Zambia from 29 July to 1 August for southern Africa, and in Abuja, Nigeria

Figure 1. Countries supported through the SPP framework (2004–2008)

from 27 to 30 October for western Africa. These workshops involved eight new countries – Angola, Botswana, Malawi, and Namibia in southern Africa, and the Gambia, Ghana, Liberia, and Sierra Leone in western Africa. The objectives of the workshops were:

- the systematic introduction of the SPP-supported evidence-based guidelines;
- provision of an update on technical contents and interventions to improve quality of care and strengthening linkages between sexual and reproductive health and HIV services;
- focused discussion on incorporating MDG target 5B in national plans;
- development of action plans to introduce guidelines and operationalization of indicators related to universal access.

The workshops also enabled the sharing of experiences, facilitating factors, and lessons learnt from the use of the SPP process for in-country adaptation and utilization of the evidence-based guidelines in Zambia and Nigeria. For instance, in Zambia, the process entailed assembling a team of obstetricians, gynaecologists, midwives, and paediatricians, as well as the engagement of national professional associations, to ensure adoption of the new guidance.

> *Zambia is proud to be associated with the SPP as it supports the vision of the Ministry of Health, which is to bring health services as close to the family as possible. This process is indeed facilitating increase of access to quality comprehensive health care and strengthening integration of family planning and STI/HIV prevention. … Prior to the SPP, Zambia had not had national guidelines on the management of women in pregnancy.*
>
> Hon. Dr Brian Chituwo,
> Minister of Health, Zambia

> *Implementation of family planning is a strong pillar of safe motherhood and it is key for accelerated progress towards the attainment of MDG 4 and 5.*
>
> Hon. Dr Hassan Muhammad Lawal,
> Minister of Health, Nigeria

As an output of the workshops, each participating country prepared a follow-up action plan for adapting the guidelines. The plans from Botswana and Malawi were approved and funded by December 2008.

2.1.3.3 Regional SPP workshops for South-East Asia and the Western Pacific

Building on the achievement of the first phase of SPP, two workshops were convened, for South-East Asia (in Bekasi, Indonesia from 22 to 25 September 2008) and the Western Pacific (in Beijing, China from 13 to 15 October 2008). These workshops aimed specifically to review the implementation of both family-planning guidelines and the WHO Global Reproductive Health Strategy. Challenges and opportunities for strengthening national family-planning programmes, and strengthening national level monitoring of universal access to reproductive health target indicators, were discussed. Relevant follow-up action plans were also developed. Countries involved in these workshops included the following countries:

- **South-East Asia**: Bangladesh, Bhutan, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, and Timor-Leste;
- **Western Pacific**: Cambodia, China, Fiji, the Lao People's Democratic Republic, Mongolia, Papua New Guinea, the Philippines, Vanuatu, and Viet Nam.

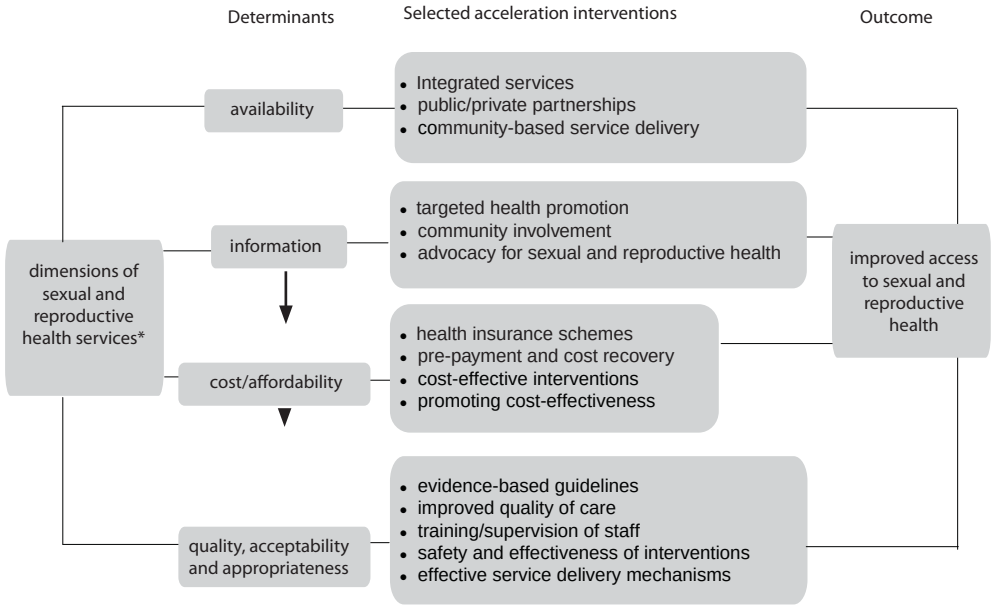
Country teams from South-East Asia worked in small groups to develop country-specific frameworks for strengthening national family-planning programmes. Those from the Western Pacific developed national indicators for the core elements of reproductive health to assess the achievement of universal access, based on identified national or local priorities for reproductive health care.

2.2 Planned activities

In the coming years, there will be a continued emphasis on improving quality of services through the systematic introduction of evidence-based guidelines. Emphasis shall also be placed upon supporting in-country monitoring of progress towards the achievement of MDG targets on universal access to reproductive health by 2015, as outlined by the conceptual framework in

An SPP workshop was convened in Dakar, Senegal from 12 to 16 January 2009, for seven additional African francophone countries: Burkina Faso, Chad, Guinea-Bissau, Guinea, Mauritania, Togo, and Senegal. Resource-persons from Benin were invited to share their experiences with the process of adapting guidelines. The additional emphasis on reproductive health commodity security and on the new MDG Target 5B will be maintained. The latter emphasis will include the monitoring framework for the achievement of this and other MDGs at country level.

Figure 2. Pathways to improving access to sexual and reproductive health



* includes:

1. Promoting family planning (PFP)
2. Controlling sexually transmitted and reproductive tract infections (STI)
3. Maternal and newborn health (MNH)
4. Prevention of unsafe abortion
5. Sexual health and human rights

3. GLOBAL COLLABORATION IN SUPPORT OF SEXUAL AND REPRODUCTIVE HEALTH

3.1 Progress

3.1.1 Strengthening collaboration with regional and country offices to improve sexual and reproductive health

Annual meetings were held in Geneva, Switzerland from 30 April to 1 May 2007 and from 1 to 4 April 2008, to bring together WHO regional reproductive health and STI advisers to share technical updates and to review regional and country progress, and global and regional work plans for sexual and reproductive health programming. Within the context of the implementation of the global strategy for reproductive health, the main focus for 2007 and 2008 was on strengthening capacity to contribute to progress towards the new MDG target 5B.

There was also a new emphasis on linkages of SRH with HIV/AIDS, and a framework was proposed for national-level monitoring of the achievement of Target 5B. An agreement was reached on ways to improve joint planning and collaboration with regions and countries, within the context of the new corporate planning system, including a preliminary consultation on priority issues for the Medium-term Programme of Work in sexual and reproductive health for 2010–2015.

3.1.2 RHR support for sexual and reproductive health in crisis and conflict situations

Inadequate attention to the sexual and reproductive health needs of people affected by crisis and conflict situations continues to be a matter of great concern. The number of countries involved in natural disasters or protracted conflicts has increased (to 110), with 65 million people living as refugees or as displaced persons. The majority are women, children, and young people.

During 2007–2008, the Department collaborated closely with the Department of Making Pregnancy Safer (MPS) and the Cluster of Health Action in Crisis (HAC) to support countries in improving their preparedness for, and effective delivery of, reproductive health care during emergencies through:

- co-facilitating a training of trainers' course on the "Minimum Initial Services Package for reproductive health in crisis situations" (MISP), conducted in Kabul, Afghanistan in May 2008, and of three global pre-deployment courses for public health professionals in Moscow, the Russian Federation in April 2007; Tunis, Tunisia in April 2008; and Toronto, Canada in November 2008; and

- co-hosting the 11th annual meeting of the Interagency Working Group (IAWG) on reproductive health in crises, in collaboration with the WHO Regional Office for the

Eastern Mediterranean (in Cairo from 5 to 7 November 2008) and facilitating the relevant interagency field manual.

3.1.3 Reproductive health essential medicines

RHR works in collaboration with the WHO Department of Essential Medicines and Standards (EMS), PATH, and UNFPA to manage and implement the "Reproductive Health Essential Medicines and Commodities Project". In 2007–2008, key activities were as follows.

- RHR reviewed the evidence and prepared technical basis papers to support two technical consultations held in December 2006 and August 2007, to prepare guidelines for a WHO/UNFPA system to prequalify manufacturing sites for male latex condoms and CuT380A intrauterine devices (IUDs). The guidelines were harmonized with the WHO "Essential Medicines Prequalification Scheme" (EMPS), and were approved by the WHO Expert Committee on Specifications for Pharmaceutical Preparations in October 2007. The final document, entitled *Procedure for assessing the acceptability, in principle, of TCu380A IUDs, for purchase by United Nations and other agencies* was published in May 2008.

- Six essential reproductive health medicines were included in the WHO EMPS and calls for "expression of interest" were issued for the injectable contraceptive depot-medroxyprogesterone acetate (DMPA), oral contraceptives combinations, and single progesterone-containing products. Assessment of manufacturing facilities is currently under way. Oxytocin, magnesium sulfate injection, and misoprostol will be included in the next phase of activities.

- A 2006 systematic review of the evidence on copper-containing framed IUDs for contraception was updated in 2007. This review was used to update the 20-year-old specification for CuT380A IUDs. A Technical Review Committee was convened in August 2007, October 2007, and July 2008, to revise the specifications and procurement procedures for both TCu380A IUDs and male latex condoms. Because the manufacturing processes for the plastic T and sterilization procedures have changed over the years, additional research was required to complete the revision of the specification for the TCu380A. Specifications for both the male latex condom and TCu380A were drafted by December 2008 and were reviewed by all members of the Technical Review Committee, the manufacturing community, and other international organizations supporting the use and procurement of these devices.

- RHR, in collaboration with UNFPA/FHI/PATH, organized and co-hosted the 25th Annual Meeting of the International Standardization Organization, Technical Committee 157 (ISO/TC/157) in Montreux, Switzerland in October 2008. A special session was held with all delegates to review the revised specifications, prequalification, and procurement guidelines to support the revision of international standards for male condoms, and female condoms and IUDs. RHR is currently preparing *CuT380A intra-uterine devices: specifications, prequalification and procurement* for publication in 2009.

- Interagency consultations (by means of virtual and real-time meetings) have been held to plan virtual discussion forums and develop an online resource centre to improve the harmonization, dissemination, and use of information on prequalification, procurement, and logistics management.

- In collaboration with the Reproductive Health Supplies Coalition (RHSC), a Management Committee of international agencies was established. Meetings were co-convened with UNFPA in March and July 2008, to support the revitalization of the Interagency Working Group on Condoms for HIV Prevention. Collaborative activities were identified, and WHO leads the team working on condom quality-assurance issues.

3.1.4 Other interregional activities

RHR co-facilitated the Conference of the Pacific Ministers of Health on achieving universal access to reproductive health services and commodities in Nadi, Fiji from 5 to November 2008. Delegates to this conference discussed development and rights-based strategies – including a review of progress on reproductive health commodity security – for achieving the new MDG target of universal access to reproductive health in participating countries. Data and trends from the region, and tools and guidelines available from WHO, were shared. All fourteen participating countries signed the "Pacific policy framework for achieving universal access to reproductive health services and commodities".

3.2 Planned activities

Activities planned for 2009 and beyond are to:

- finalize and publish all resource materials currently being prepared for publication;

- work with partners to support the dissemination and use of these materials in multiple countries;

- work in collaboration with partners to undertake capacity-building activities with national regulatory authorities, national regulatory laboratories, manufacturers, and programme and procurement managers, to use and apply guidelines to support the effective procurement, distribution, and use of reproductive health essential medicines and commodities;

- prepare specifications and guidelines for procurement of other contraceptive devices;

- use the Knowledge Gateway to launch virtual discussion forums and communities of practices to improve access to and use of reproductive health essential medicines;

- design and develop – in collaboration with partners – the interactive electronic resource centre, to improve access to and the use of information to support the effective production, procurement, distribution, and use of reproductive health essential medicines and commodities.

Chapter 7

Research-capacity strengthening and programme development: African and Eastern Mediterranean Regions

1. INTRODUCTION

The main objective of the team for research capacity strengthening and programme development in the African and Eastern Mediterranean Regions is to strengthen the research-capacity of institutions, in order to enhance their potential to conduct sexual and reproductive health research and programmatic activities relevant to national and regional needs, and to facilitate their participation in global research efforts. An additional objective is to assist in the implementation of programmes to improve sexual and reproductive health in countries.

Various mechanisms were used to identify and support potential new collaborating institutions in least-developed countries. Efforts were made to consolidate the gains from previous investments in strengthening the capacities of institutions already receiving research capacity strengthening (RCS) grants and the skills of individual researchers or networks. In addition, special attention was given to promoting enhanced dissemination and utilization of relevant research results and evidence-based guidelines in reproductive health programmes and services.

In the area of support for policies and programmes, the focus was on providing technical and financial support to additional countries that were not part of the first phase (2005–2007) of the UNFPA/WHO Strategic Partnership Programme. Two sub-regional workshops were held, to familiarize reproductive health managers from the ministries of health of 10 countries with evidence-based guidelines in family planning, maternal and newborn health, and reproductive-tract infections (including sexually transmitted infections). Support was also given to Yemen for the purpose of conducting an assessment of reproductive health needs and quality of reproductive health services.

2. ACTIVITIES IN SUPPORT OF POLICIES AND PROGRAMMES

2.1 Progress

2.1.1 Introduction, adaptation, and implementation of evidence-based guidelines and tools at country level: summary of in-country implementation of activities supported by the UNFPA/WHO Strategic Partnership Programme

In Africa, in-country implementation of activities supported by the UNFPA/WHO SPP were concentrated on the dissemination, adaptation, and utilization of the adoption of guidelines in family planning, maternal and newborn health, and management of STIs and RTIs in the countries of intensified focus (CIF): Benin, Cameroon, Nigeria, South Africa, the United Republic of Tanzania, Zambia, and Zimbabwe. In general, the SPP has been a successful initiative, benefiting from the comparative advantages of both organizations and the leadership of the respective Ministries of Health, especially in the seven CIF.

In 2008, two subregional workshops were held, in Abuja, Nigeria, and Lusaka, Zambia. The main objective of the workshops was to assist countries towards improving the quality of sexual- and reproductive-health care, and achieving universal access to reproductive health – a target recently integrated within the Millennium Development Goals framework. Specific objectives were to:

- familiarize national staff and their counterparts on the technical content of the evidence-based guidelines in family planning, maternal and newborn health, and STIs/RTIs;

- discuss implications of the key aspects of the guidelines for national programmes;

- orient participants on the various steps involved in the systematic approach to the adaptation and adoption of the guidelines;

- discuss the additional MDG target for universal access to reproductive health, and strategies for operationalizing related indicators;

- develop plans of action for mainstreaming the guidelines into national country plans, and identify technical and/or financial assistance needed.

At the Lusaka workshop, participants were from Angola, Botswana, Malawi, Namibia, and Zambia. In Abuja, participants were from the Gambia, Ghana, Liberia, Nigeria, and Sierra Leone. Using the evidence-based guidelines, country teams developed plans of action to improve family planning services, maternal and newborn health, and prevention and management of STIs/RTIs.

In the Eastern Mediterranean Region, seven countries have been actively introducing, adapting, and implementing WHO guidelines. These countries were Afghanistan, Egypt, Morocco, Pakistan, Somalia, the Sudan, and Tunisia.

2.1.2 Reproductive health in crisis situations

During 2007–2008, RHR has been closely collaborating with the Department of Making Pregnancy Safer and the Cluster of Health Action in Crisis to support countries in improving preparedness for provision of reproductive health care during emergencies. Some activities supported by RHR included a training of trainers course on the "Minimum initial services package" in Afghanistan in May 2008, and pre-deployment courses for health professionals from around the world held in the Russian Federation in April 2007, Tunisia in April 2008, and Canada in November 2008.

In collaboration with MPS, HAC, and the WHO Regional Office for the Eastern Mediterranean, RHR organized and facilitated the 11th annual meeting of the Inter-Agency Working Group on reproductive health in crises. As a co-host of this meeting, which was held in Cairo from 5 to 7 November 2008, RHR provided technical and financial support. The Department continues to play an active role in the revisions and updates of the *Interagency field manual on reproductive health in refugee situations*.

2.1.3 Female genital mutilation

Many activities relating to female genital mutilation have been carried out in close collaboration with the Team on Gender, Rights, Adolescence, and Sexual Health. As a follow-up to the multi-country study on FGM and obstetric outcome, the initiative to prepare an electronic teaching tool for health personnel is under way in the Sudan. This tool will include a set of films opposing the practice of FGM on girls, on counselling for de-infibulation, and opposing re-infibulation after delivery.

As part of RHR efforts to disseminate research, a session entitled "Research contributing to elimination of female genital mutilation" was organized at the Global Ministerial Forum on Research for Health in November 2008. The session was characterized by remarkable intersectoral and multi-agency participation. The panellists' presentations all highlighted how research carried out in the past decade has clearly led the way and informed policy-makers and those in charge of programmes, thereby increasing attention as well as commitment. However, the discussion that followed highlighted the methodological difficulties encountered in conducting quality research on FGM.

The session strongly recommended that all concerned countries carry out specific studies to better understand the dynamics of FGM in their specific national contexts, and establish some sort of routine data collection system. Such a system would allow them to monitor and evaluate progress and to report to the United Nations and WHO, as required by the resolutions adopted in 2008 by the United Nations Commission on the Status of Women and the World Health Assembly. The need to strengthen research capacity worldwide on this topic was underlined.

2.1.4 Policy and programme support to Yemen

A joint mission with the Eastern Mediterranean Regional Office was undertaken in Yemen in April 2008. Its purpose was to assist the Ministry of Public Health and Population (MOPHP) in the evaluation and effective integration of reproductive health – with a focus on maternal and neonatal health and family planning – into the mid-term review of the five-year National Health and Poverty Reduction Plan 2006–2010. The mission's recommendations led to a plan of action with MOPHP, which included (among other components) the finalization of the national reproductive health strategy and plan-of-action documents, the development of the governorate reproductive health plans of action, the development of a plan of action to strengthen research capacity, an assessment of the quality of reproductive health care, and a national workshop on gender and human rights relating to reproductive health.

Subsequently, a MOPHP/UNFPA/WHO rapid assessment of reproductive health services in Yemen was conducted in five governorates in July 2008. This assessment involved visits to 12 health-service delivery points – most of them in the public sector, but nongovernmental organizations and private-sec-

tor clinics were also visited. Both quantitative and qualitative assessment approaches were used. In addition, discussions were held with staff of UNICEF, USAID, and the German Agency for Technical Cooperation (GTZ).

The rapid assessment highlighted the various contexts in which reproductive health services are delivered. These contexts included:

- conditions in small villages high in the mountains;
- women's low literacy rate and restricted mobility;
- low age of marriage and early childbearing;
- religious and cultural traditions; and
- security concerns, because of armed conflicts in the northern part of the country.

The following shortcomings were detected:

- in-service training courses were organized by various organizations, and the MOPHP did not have a master curricula for training;
- guidelines were not available at service delivery points;
- few women were in leadership positions at the governorate level;
- the policy of having some reproductive health services free for all did not cover the needs of the poor; and
- the geography was a significant barrier to permitting proper supportive supervision.

The following strengths were identified.

- There were usually no stock-outs for combined pills, intrauterine devices, injectable contraceptives, and male condoms.
- In some health facilities, there were very committed groups of providers who were striving to achieve the best for their clients.
- In the clinics visited, there was no lack of human resources.

Recommendations were formulated for the Ministry of Public Health and Population.

2.2 Planned activities

In Africa, implementation of the UNFPA/WHO SPP will continue during 2009. In most of the six newly participating countries, activities will be concentrated on adapting national guidelines on family planning, maternal and newborn health, and STIs.

The main common activities of the countries' programmes of work for 2009 are:

- conducting orientation/sensitization workshops;
- targeted dissemination of guidelines to policy-makers and service providers at the national, provincial, and district levels;
- establishment of monitoring and supportive supervision mechanisms; and
- development of job aids and updating of training curricula in pre-service training institutions.

Responding jointly with other regional offices to requests by the ministries of health continues to be a high priority in 2009.

3. RESEARCH-CAPACITY STRENGTHENING

3.1 Progress

3.1.1 Research capacity-strengthening at the national level

3.1.1.1 Institutional capacity-strengthening

Collaborative activities continued in 51 institutions in 39 countries in the WHO regions of Africa and the Eastern Mediterranean, through programmatic activities designed to strengthen research capacity. Technical cooperation was initiated with the Afghan Public Health Institute in Kabul, Afghanistan and with the Department of Obstetrics and Gynaecology at the Muhimbili Medical Centre in Dar es Salaam, the United Republic of Tanzania. Details of the grants awarded in 2008 are presented in Table 1.

3.1.1.2 Overall research outputs by area, within reproductive health and by source of funding

The 11 centres supported with LID grants or resource maintenance grants (RMG) are involved in projects which address regional and national reproductive health priorities. From a total number of 41 studies, the highest number of projects involved maternal health and family planning. However, many projects were dealing with several thematic areas at once. Most of the projects were implemented with support from national sources and international agencies other than WHO.

Table 1. Grants to strengthen research-capacity, awarded in 2008

Country	Institutions and grants
Afghanistan	A long-term institutional development (LID) grant was awarded to the Afghan Public Health Institute in Kabul.
Côte d'Ivoire	A LID grant was awarded to the Reproductive Research Health Unit (CRESARCI), hosted in the National Institute of Public Health in Abidjan.
Ethiopia	A LID grant was awarded to the Reproductive Health Research and Training Unit (RHRTU) in the Department of Obstetrics and Gynaecology of the Faculty of Medicine at Addis Ababa University.
Guinea	The Cellule de recherche en santé de la reproduction en Guinée (CERREGUI) received an LID grant.
Kenya	The Department of Obstetrics and Gynaecology of the University of Nairobi, received a service guidance centre grant.
Malawi	The Centre for Reproductive Health in the College of Medicine of the University of Malawi received a LID grant.
Nigeria	The Centre for Research in Reproductive Health (CRRH) in the College of Health Sciences at the University Teaching Hospital, Ogun State received an LID grant.
Senegal	The Centre de formation et de recherche en santé de la reproduction (CEFOREP) received an LID grant.
South Africa	The Effective Care Research Unit (ECRU) of the Department of Obstetrics and Gynaecology, affiliated with the Universities of Witwatersrand and Fort Hare, received an LID grant.
Sudan	A resource-maintenance grant was awarded to the Department of Obstetrics and Gynaecology in the Faculty of Medicine of Khartoum University.
Uganda	The Human Reproduction Research Unit of the Department of Obstetrics and Gynaecology received a Service Guidance Centre grant.
United Republic of Tanzania	An LID grant was awarded to the Kilimanjaro Christian Medical Centre in the Centre for Reproductive Health Research, Moshi.
Zimbabwe	A resource-maintenance grant was awarded to the Department of Obstetrics and Gynaecology of the University of Zimbabwe.

Table 2. Completed studies by centres receiving LID and resource-maintenance, capital, and small supplies grants

Thematic area	Completed studies	Funding		
		National	International	WHO
Maternal health	25	18	2	5
Family planning	6	4	1	1
Infertility	1	0	1	0
HIV/AIDS	2	0	2	0
Other	9	5	4	0

3.1.2 Strengthening of human resources for research and programmatic activities

3.1.2.1 Research training grants and re-entry grants

In 2007, one researcher from the Effective Care Research Unit in South Africa received a research training grant (RTG) to pursue a two-year Master's degree course in public health (MPH) at Witwatersrand University in Johannesburg, South Africa. In 2008, one researcher from the Reproductive Health Research and Training Unit (RHRTU) in Ethiopia completed a Master's degree course in epidemiology in Thailand and returned to RHRTU. In 2007, two physicians from Afghanistan were awarded an RTG for an MPH – one at Tehran University, Iran and the other for distance learning with the Loma Linda University, California, USA. In 2008, a statistician from Benin received a grant for a six-week course in the Department of Demography in the Catholic University of Louvain in Belgium.

3.1.2.2 Training on impact of environment pollutants on reproductive health

RHR supported a multidisciplinary training course at Alexandria University, Egypt, designed to provide the participants with both theoretical bases and practical skills in the methodology of evaluating potential reproductive health risks associated with environmental exposures. This project is building bridges between critical teaching and research skills within the University. The Health Directorate of Alexandria collaborated with the project team by releasing reproductive health data for Alexandria and facilitating access to industrial areas for environmental sampling for the purpose of providing a more realistic field-training course.

The training consisted of three components: a theoretical session, an indoors practical training session, and an outdoors (field) practical training component. Participants included senior undergraduate and graduate students at the University of Alexandria, recruited from academic departments most relevant to the project – such as human health and the environment, community health educators working for health, and occupational work. The goal of establishing such a diverse target audience was twofold: to foster greater awareness, knowledge, and skills offered by personnel of various technical disciplines; and to promote collaboration and communication among the disciplines for the purpose of solving complex public health problems.

Senior students, graduate students, and health and occupational educators were considered the most appropriate participants in this training course, since they are the immediate disseminators of the project outcomes in the community. A total of 28 participants were involved. The data collected during the field training component will be used to develop reports in response to some of the research questions and to help in developing proper research proposals for the future.

3.1.2.3 Training of trainers in social-science research methodology by the Population Council of Pakistan

As part of a quality-assurance mechanism, the Population Council of Pakistan has carried out periodic assessments of the quality of teaching within the universities and medical institutions in Pakistan. One of the consistent recommendations received from the faculty involved the need for improving their research capabilities to enhance the quality of research being currently undertaken.

In order to meet this expressed need, RHR supported the Population Council in organizing a teaching course for trainers in social-science research methodology. The course was held in Islamabad in June 2008. In order to address the regional need for bolstering research capacity, and to encourage 'South to South' collaboration, two participants from Afghanistan were invited. A total of 23 participants attended the workshop; 19 were from medical institutions, while four were sociologists representing three universities. Participants represented all four provinces of Pakistan.

The course objectives were to enable participants to:

- understand and apply basic research principles;
- identify a social-science research problem and develop a research proposal; and
- effectively integrate research methodology into their respective overall teaching programmes.

By the end of the course, participants had prepared four research proposals.

3.1.2.4 Réseau d'Afrique francophone en télémédicine

A new approach to disseminating information concerning reproductive health issues to health professionals in francophone Africa was initiated by RHR in June 2006. This approach was implemented through the telemedicine network "Réseau d'Afrique francophone en télémedicine" (RAFT), which was created and operated by the Geneva University Hospital in Switzerland through the internet (raft.hcuge.ch).

The core activity of RAFT is the web-casting of interactive courses. These sessions place emphasis on knowledge-sharing among health-care professionals, usually in the form of presentations and dialogues between experts in different countries. Over 30 sessions were broadcast live on priority reproductive-health issues during 2007–2008. These sessions have been welcomed enthusiastically; each time they are presented they bring together dozens of participants from countries across francophone Africa. The programme expanded in October 2008 with the introduction of webcasting of sessions in English, and sessions in Arabic will start in January 2009.

3.1.2.5 Regional and national courses and workshops

Regional and national workshops held in 2008 are listed in Table 3.

Table 3. Regional and national workshops, 2008

Topic	Participating countries	Number of participants	
		Male	Female
7th Research Methods and Systematic Reviews Workshop, organized by the Effective Care Research Unit of University of Witwatersrand, East London, South Africa	Cameroon (3), Kenya (3), Nigeria (1), Uganda (2), South Africa (20) and Sudan (1)	25	5
11th International Semenology and Cervical Cytology Workshop organized by the Department of Obstetrics and Gynaecology of Stellenbosch University, Tygerberg Hospital, South Africa	Egypt (1), Nigeria (3), South Africa (3) and Sudan (1)	4	4
2007/2008 academic year MSc course in biostatistics, Department of Epidemiology, Medical Statistics and Environmental Health of the College of Medicine, University of Ibadan, Nigeria	Ghana (1), Kenya (1) and Nigeria (10)	7	5
12th Research methods in sexual and reproductive health and HIV course organized by the Reproductive Health Research Unit, Department of Obstetrics and Gynaecology of Chris Hani Hospital, South Africa	Ghana (1), Namibia (1), Nigeria (6), South Africa (8), the United Republic of Tanzania (2), Uganda (4), Zambia (1) and Zimbabwe (1)	10	14
Total		46	28

3.1.2.6 Other training

Many other training initiatives were undertaken and supported in collaboration with other units. These initiatives included the annual course on "Gender and reproductive rights" (given by the Ahfad University in Khartoum, Sudan) and the training of trainers workshop on using the WHO reproductive health library (held in Bobo Dioulasso, Burkina Faso).

3.1.3 Monitoring and evaluation

3.1.3.1 Regional Advisory Panel meeting

The Regional Advisory Panel (RAP) for the African and Eastern Mediterranean Regions met in Dubai, United Arab Emirates from 1 to 5 November 2008. The meeting was attended by ten RAP members; regional reproductive health advisers from the WHO Regional Offices for Africa and for the Eastern Mediterranean; and officials from the Ministry of Health, United Arab Emirates.

The Panel reviewed the annual reports of each centre, applications for support, and progress reports of the various research initiatives funded as part of the research capacity strengthening activities. The Panel then made recommendations on budgetary allocations for required programmatic and research activities proposed by various collaborating institutions in countries in the African and Eastern Mediterranean Regions.

3.1.3.2 Site visits to collaborating institutions

In 2007 and 2008, members of the staff of the Secretariat – jointly with regional reproductive-health advisers, RAP members, and/or temporary advisers – visited eight centres receiving research capacity-strengthening grants. During these visits, administrative issues and technical and financial reports were reviewed. In addition, travel was undertaken to 20 countries within the context of the SPP or research-capacity-related activities. These activities involved training courses, dissemination of research results, follow-up of ongoing research projects, planning new projects and events, exploring opportunities to increase the number of

WHO collaborating centres, and assessing possibilities for future research-capacity-strengthening support.

A mid-term evaluation of the Effective Care for Research Unit (ECRU) in East London, South Africa was conducted. ECRU was selected because it had completed the first five-year cycle of the LID grant. The evaluation team concluded that ECRU had performed well above average in terms of human-resources development, research, and implementation of effective, affordable care in 2001–2007. The Centre is held in high esteem by the Departments of Health at the provincial and national levels, as well as by other institutions within South Africa and throughout Africa. The team recommended that its application for the second five-year cycle of the LID grant be considered favourably.

3.2 Planned activities

Among the new initiatives for 2009 is operations research training for the Eastern Mediterranean Region. Operations research in reproductive health is essential in order to strengthen the quality of implementation of population and reproductive health programs – especially within the context of the Eastern Mediterranean Region, which continues to suffer from major challenges in reproductive health in spite of a well noted progress.

Consequently, HRP awarded a five-year grant to the Center for Research on Population and Health at the Faculty of Health Sciences of the American University of Beirut, to organize a three-week annual course on operations research in reproductive health. The course is designed to build the capacity of decision-makers, programme-managers and researchers working in ministries, universities, social centres, NGOs, and community-based organizations from countries of the Eastern Mediterranean Region. For the academic year 2008–09, four candidates – one each from Jordan, Lebanon, Syria, and Gaza and West Bank – will be considered for training in the various technical aspects of operations research in reproductive health.

4. RESEARCH

4.1 Progress

4.1.1 Completed projects

4.1.1.1 The Release trial: a randomized trial of umbilical vein oxytocin versus placebo for the treatment of retained placenta

The '"Release trial" began in December 2004, and involved four centres in the United Kingdom, six in Uganda, and three in Pakistan. Recruitment was completed in May 2008. The six centres in Uganda were coordinated by the Department of Obstetrics and Gynaecology at Makerere University (a WHO collaborating institution) and received financial support from HRP.

The overall recruitment target of 572 women was reached. Of these, 190 women were recruited from Uganda.

A "Release study" results meeting was organized in Liverpool, United Kingdom, in September 2008, and all those who contributed to the study were invited. Overall, no difference was seen in the primary outcome of the study, the need for manual removal of placenta or haemorrhage. From these provisional results, it was concluded that umbilical oxytocin has no role in the management of retained placenta. However, the secondary outcomes from the study will require further research (such as treating different types of retained placenta and the precise timing before manual removal).

The study has been successful in establishing a strong collaborative network between the study sites in Pakistan, Uganda, and the United Kingdom. A Maternal Health Research Partnership (MHRP) – a clinical research partnership between the three countries – has been developed. The centres have a wide variety of maternity services in terms of culture, available resources, and tiers within the health system. With an estimated 100 000 deliveries among them, this network represents an exciting opportunity to improve women's maternal health worldwide, and specifically to decrease maternal mortality and morbidity.

4.1.2 Ongoing projects

4.1.2.1 Human papillomavirus prevalence survey In Iran

This study, initiated in 2007, is a community-based survey of human papillomavirus (HPV) infection and cervical lesions among women residing in Tehran, Iran. An age-stratified sample of women from a community in Tehran was invited for free cervical cytology screening at the study clinic. Married women aged 18–59 were invited from community lists held at local clinics, to obtain 1000 study participants. They were offered a gynaecological examination to obtain cervical exfoliated cells for a Papanicolaou (Pap) smear and HPV detection. They responded to a risk-factor questionnaire for determinants of HPV infection, and gave a sample of blood for detection of HPV antibodies.

Cervical HPV infection will be determined by detection of HPV DNA in exfoliated cell samples, with HPV genotyping among HPV-positive women. Cumulative exposure to HPV will be determined by type-specific detection of antibodies to HPV. Age- and type-specific prevalence rates of HPV DNA/antibodies – and the socioeconomic/behavioural determinants thereof – will be estimated in the Tehran population. The resulting data will be compared directly with that obtained from other worldwide populations, using a similar population sampling and HPV testing protocol.

This is the first study to determine the population-based prevalence of HPV in Iran or anywhere in the Middle East. It is also one of the first studies to assess the feasibility of population-based cervical cancer screening in the Middle East. The results will inform future public-health strategies for cervical cancer prevention in Iran, including HPV-based screening and/or HPV vaccination programmes. The project will also serve as an important feasibility model for community-based interventions targeting young and middle-aged women in Iran.

The recruitment phase of the study was completed on 30 November 2008, as targets were sufficiently reached in all age groups. HPV DNA analysis will be carried out in early 2009 in collaboration with the International Agency for Research on Cancer (IARC) in Lyon, France; and at Vrije University in Amsterdam, the Netherlands. The study results are expected to be available during the second half of 2009.

4.1.2.2 Prevention of cervical cancer through screening by visual inspection with acetic acid

This demonstration project was conducted in six African countries: Madagascar, Malawi, Nigeria, Uganda, the United Republic of Tanzania, and Zambia The main purpose of the project is to explore ways to introduce cervical cancer screening by visual inspection with acetic acid (VIA) into existing reproductive health services at district hospitals in seven centres in the six countries. The recruitment of women into the study is progressing well. By May 2008, a total of 11 313 women had been recruited. Of the 11 313 women, 1291 women (11.4 %) had positive VIA tests. Of these 1291 women, however, 626 women (58 %) had cryotherapy, 338 (31 %) women were lost to follow-up, and 117 (11 %) were not treated due to technical problems with the cryotherapy equipment. Preliminary results show that the VIA and cryotherapy procedures are well accepted by women. It is anticipated that the pilot phase of the project will be completed by March 2009. The countries have now developed plans for scaling up the project to other health facilities.

4.1.2.3 Operations research project on prevention of infections in a maternity hospital in Benin

This project, initiated in the last quarter of 2008, will test the impact of various interventions. These interventions include improving the general hygienic conditions in the hospital; training health-care personnel; and behavioural change communication to patients on outcomes, such as the number and seriousness of infections in the hospital.

4.2 Planned activities

Many of the proposals submitted by centres receiving LID grants are in the final stages of scientific and ethical review and are expected to start in 2009. These proposals include a project on male involvement in family planning in Guinea and the strategic assessment of abortion services, also in Guinea.

Among the projects to be initiated in 2009 is a survey of practices related to the management of the third stage of labour in Iran. Iran is a large country with considerable variation in its population, as well as medical and midwifery care models of management. This survey will add substantially to the knowledge applied in establishing the current practices of prevention and management of postpartum haemorrhage. It can ultimately help in developing appropriate policies that impact on maternal and neonatal well-being. Thirty-five cities, covering all geographical regions in Iran, have been identified for this study.

REGIONAL ADVISORY PANEL FOR THE AFRICAN AND EASTERN MEDITERRANEAN REGIONS IN 2008

Members

Asya Al-Riyami	Department of Research and Studies, Ministry of Health, Muscat, Sultanate of Oman
Wagida Anwar	Community, Environmental and Occupational Medicine, Molecular Epidemiology Unit, Faculty of Medicine, Ain Shams University, Cairo, Egypt
Faysal El-Kak	American University of Beirut, Faculty of Health Sciences, Beirut, Lebanon
Osato Giwa-Osagie	College of Medicine, University of Lagos, Lagos, Nigeria
Cheikh Ibrahima Niang	Cheikh Anta Diop University, Dakar, Senegal
Pius Okong	San Raphael of St. Francis Hospital, Kampala, Uganda
Monica Magadi	Department of Sociology, School of Social Sciences, City University, London, United Kingdom
Ghazala Mahmud	Islamabad, Pakistan
Chisale Mhango	Reproductive Health Services, Ministry of Health, Lilongwe, Malawi
Mary Shilalukey Ngoma	School of Medicine, Department of Paediatrics and Child Health, University of Zambia, Lusaka, Zambia
Faozia Hasan Yousef	Sana'a, Yemen
Yacouba Yaro	Center for Research, Studies and Training Support for Economic and Social Development, Ouagadougou, Burkina Faso

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	6	50					6
Women	5	42			1	8	6
WHO Region:							
Africa	6	50					6
The Americas							
South-East Asia							
Europe						1 8	1
Eastern Mediterranean	5	42					5
Western Pacific							

Total = 12

Collaborating agency scientists

Catherine McKaig	ACCESS, Jhpiego, Baltimore, MD, USA
Penda Ndiaye	UNFPA, Dakar, Senegal

SCIENTISTS/DIRECTORS OF COLLABORATING INSTITUTIONS IN 2007–2008

African Region

Adeyemi O. Adekunle	Department of Obstetrics and Gynaecology, University of Ibadan, Ibadan, Nigeria
Ahmed Abdella	Department of Obstetrics and Gynaecology, Addis Ababa University, Faculty of Medicine, Ethiopia
Mamadou D. Baldé	University Hospital of Donka, Conakry, Guinea
Elijah Bamgboye	Department of Epidemiology, Medical Statistics and Environmental Health, University of Ibadan, Nigeria
Christine Biryabarema	Department of Obstetrics and Gynaecology, Makerere University, Kampala, Uganda
Zvavahera Chirenje	Department of Obstetrics and Gynaecology, University of Zimbabwe, Harare, Zimbabwe
Olukayode A. Dada	College of Health Sciences, Ogun State University, Sagamu, Nigeria
Daniel Franken	Department of Obstetrics and Gynaecology, University of Stellenbosch, Tygerberg Hospital, South Africa
Yirgu Gebrehiwot	Department of Obstetrics and Gynaecology, Addis Ababa University, Faculty of Medicine, Ethiopia
Sourou Goufodji	Centre de Recherche en Reproduction Humaine et Démographie (CERRHUD), Cotonou, Benin

Justus Hofmeyr	University of the Witwatersrand, Effective Care Research Unit, Cecilia Makiwane and Frere Hospitals, East London, Eastern Cape, South Africa
Guyo Jaldesa	Kenyatta National Hospital, Nairobi, Kenya
Thomas Kariuki	Institute of Primate Research, National Museums of Kenya, Nairobi, Kenya
Lackson Kasonka	Department of Obstetrics and Gynaecology, University of Zambia, Lusaka, Zambia
Jonathan Kasule	Department of Obstetrics and Gynaecology, University of Zimbabwe, Harare, Zimbabwe
Christine Kigondu	Department of Obstetrics and Gynaecology, University of Nairobi, Kenyatta National Hospital, Nairobi, Kenya
Yusuf Lukman	Department of Obstetrics and Gynaecology, Addis Ababa University, Faculty of Medicine, Ethiopia
M'Imunya Machoki	Department of Obstetrics and Gynaecology, University of Nairobi, Kenyatta National Hospital, Nairobi, Kenya
Florence Mirembe	Department of Obstetrics and Gynaecology, Makerere University, Kampala, Uganda
Jean Charles Moreau	Centre de Formation et de Recherche en Santé de la Reproduction (CEFOREP), Dakar, Senegal
Olola Oneka	Kilimanjaro Reproductive Health Research Centre, Kilimanjaro Christian Medical Centre, Moshi, United Republic of Tanzania
Augustin E. Orhue	Department of Obstetrics and Gynaecology, University of Benin, Benin City, Nigeria
James Oyieke	Department of Obstetrics and Gynaecology, University of Nairobi, Nairobi, Kenya
Helen Rees	Department of Obstetrics and Gynaecology, Witwatersrand University, Johannesburg, South Africa
Jacques Saizonou	Ministry of Health, Cotonou, Benin
John Shao	Kilimanjaro Reproductive Health Research Centre, Kilimanjaro Christian Medical Centre, Moshi, United Republic of Tanzania
Frank Taulo	Department of Obstetrics and Gynaecology, College of Medicine, University of Malawi, Malawi
Marguerite Te Bonle	National Research Cellule of Reproductive Health, National Institute of Public Health, Abidjan, Côte d'Ivoire
Moustapha Toure	Health Centre of Commune IV, Bamako, Mali
Emmanuel O. Wango	Reproductive Biology Unit, University of Nairobi, Nairobi, Kenya

Eastern Mediterranean Region

Mir Ali	Population Council, Islamabad, Pakistan
Amina Farag	Faculty of Agriculture, University of Alexandria, Alexandria, Egypt
Abdulazis S. Gerais	Department of Obstetrics and Gynaecology, University of Khartoum, Khartoum, Sudan
Samina Jalali	Department of Biological Sciences, Quaid-i-Azam, Islamabad, Pakistan
Marwan Khawaja	American University of Beirut, Beirut, Lebanon
Nahid Khodakarami	Shahid Beheshti Medical University, Tehran, Iran
Mustafa Mir Lais	Afghan Public Health Institute (APHI), Kabul, Afghanistan
Bashir Normal	Afghan Public Health Institute (APHI), Kabul, Afghanistan
Khaled Younis	American University of Beirut, Beirut, Lebanon

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	31	81					31
Women	8	19					8
WHO Region:							
Africa	30	79					30
Eastern Mediterranean	9	21					9

Total = 39

Chapter 8

Research-capacity strengthening and programme development: Americas Region

1. INTRODUCTION

The Department's main objectives for the Americas Region are to:

- continue strengthening research capacity in Programme-supported collaborating institutions, by promoting and supporting the implementation of well-designed and ethically sound research projects in topics relevant to national and regional sexual and reproductive health problems; and

- contribute to improving SRH programmes and services by promoting the dissemination and utilization of relevant research findings and evidence-based guidelines in policy-making and planning.

The fundamental strategies selected for attaining this goal are:

- implementation of regional and national SRH research, and participation in the global research effort in accordance with the highest scientific and ethical standards;

- development and strengthening of human resources;

- promoting an enhanced dissemination and utilization of relevant research results and evidence-based guidelines in SRH programmes and services.

Collaboration continued with 22 groups/institutions involved in research, academic, and/or programmatic activities in various areas of SRH in 15 countries in the Americas Region. These activities involved research-capacity-strengthening activities and support to reproductive health programmes.

2. BROADENING THE PROVISION OF QUALITY SERVICES

2.1 Progress

2.1.1 Introduction, adaptation and implementation of WHO evidence-based guidelines and tools at country level

The introduction and implementation of WHO guidelines and tools in countries of the Americas Region continued in 2007–2008, through the UNFPA/WHO Strategic Partnership Programme. Support was provided to national programmes in Bolivia (Plurinational State of), Cuba, Guatemala, Honduras, Paraguay, and Peru, for the introduction, adoption, and adaptation of the four WHO family planning guidelines and tools – as well as for the revision and updating of their own national norms and guidelines.

A regional workshop for ministry of health programme officers on WHO family-planning guidelines and tools was held in Panama from 27 to 30 April 2008. The event was preceded by country visits to the ministries of health of the Spanish-speaking countries in Latin America, to present the WHO family planning guidelines and to request designation of a representative to attend the regional workshop. The latter included a discussion of family planning within the overall framework of the Millennium Development Goals and in particular the new MDG target of universal access to reproductive health.

The four WHO family-planning cornerstones were also introduced – although most of the presentations, group discussions, and practical work dealt with the *Decision-making tool for family planning clients and providers* and *Family planning: a global handbook for providers*. The event was attended by

22 ministry of health representatives from 14 of the 18 Spanish-speaking countries in the region, as well as by staff from the regional and headquarters offices of WHO, UNFPA and IPPF which cosponsored this initiative.

The participants agreed upon the main follow-up activity, whereby each country team would prepare a one-year programme of work dealing with the introduction, dissemination, and utilization of these guidelines and tools – based upon the RHR recommendations for adaptation of guidelines and tools at national level. As of 1 December 2008, 12 of the 14 countries which participated in the workshop submitted proposals for follow-up activities. These proposals were written in a common format, as agreed. After review by the multi-agency team, final approval was given to 10 of these proposals. Five thousand of the WHO tools were distributed in support of these country proposals, and some countries received seed money to facilitate the implementation of their work plan.

Figure 1 illustrates a follow-up activity, showing a picture of the first training workshop held in Guatemala in November 2008. The three agencies which participated in this initiative recommended that efforts be made to organize a similar workshop for English-speaking Caribbean countries.

Figure 1. Discussion of the *Decision-making tool for family planning clients and providers* during a training workshop in Guatemala in November 2008

2.1.2 Country-level implementation of the WHO Global Reproductive Health Strategy

A regional initiative was launched in 2007 and completed in 2008, to assess the feasibility of measuring indicators recommended in *Accelerating progress towards the attainment of international reproductive health goals: a framework for implementing the WHO global reproductive health strategy,* published in 2006, and in *National-level monitoring of the achievement of universal access to reproductive health: conceptual and practical considerations and related indicators (AUA)*, published in 2008. Research groups from Argentina, Brazil, Guatemala, Panama and Peru – in coordination with ministries of health from these countries – participated in this initiative. Results were presented at a meeting of investigators held in Lima, Peru in August 2008. The following were among some of the most important conclusions and recommendations that emerged from this meeting .

- The framework provided an adequate starting point for the implementation of the WHO Reproductive Health Strategy at the national and subnational levels.

- The indicators included in the AUA are clearer than those included in the implementation framework, because they are specifically aimed at highlighting issues dealing with the new MDG target 5B – achieving universal access to reproductive health by 2015. The provision of a hierarchy (core, extended and additional indicators) helps to establish priorities regarding health information systems, policies and programmes.

- A definition of all indicators proposed in these documents should be provided, facts/events to be measured pointed out, numerator and denominator identified, and specific terms related to them clarified.

- The names of the indicators should be short and refer to the concept – not the means of calculation. For example, “Prevalence of caesarean sections” instead of “Caesarean sections as percentage of live births” (this recommendation is from the AUA).

- Some indicators refer to multiple criteria, and should be split into their components when there is no requirement that all criteria are met. For example, the indicator (quoted from the implementation framework) “Percentage of all pregnancies occurring: in women younger than 15 (or 18) years of age, within two years of previous pregnancy, and in women older than 35 years of age” includes up to four different indicators. These indicators measure early adolescence pregnancy (under age 15), adolescent pregnancy (under age 18), short birth intervals, and pregnancy at older ages.

- Consideration should be given to the production of a single document that includes guidance for calculating a limited number of indicators (such as the core indicators included in the AUA document), to avoid potential confusion which would arise from having two separate documents on SRH indicators.

- More emphasis should be placed on collection of serial data.

- Note was taken that the AUA document has few or no indicators on infertility, breast cancer, and other gynaecological morbidities.

- The feasibility of calculating all of the SRH indicators was evaluated in two administrative areas of Argentina. This case-study showed that most indicators included in the implementation framework could be calculated (Table 1). It also noted that different data sources or generation of primary data might be needed in other geographical areas.

In the Americas, the Perinatal Information System (PIS) is a valuable resource for SRH indicators, particularly in the area of maternal and perinatal health; the PIS could also be used to calculate some indicators for other SRH areas.

Table 1. Calculation of indicators in the implementation framework

Area of sexual and reproductive health	Feasibility of calculating the indicators proposed in the implementation framework (number of indicators)		
	Feasible	Non-feasible	Total
Finances	0	2	2
Maternal/perinatal heath	19	6	25
Family planning	13	7	20
Unsafe abortion	3	6	9
STIs/RTIs	9	7	16
Sexual health	7	4	11
Total	**51**	**32**	**83**

Regional and national training activities on the PIS – conducted on a regular basis by the Women's and Reproductive Health Unit of the Latin American Centre for Perinatology – could afford an excellent opportunity to further promote and strengthen the work on SRH indicators at country level.

2.1.3 Provision of technical support for the establishment of a National Women's Health Observatory in Nicaragua

RHR has been involved in the provision of technical support, primarily through site visits and consultant assistance, to facilitate the establishment of a National Women's Health Observatory in Nicaragua. RHR staff interacted extensively with the national team responsible for the elaboration of the Observatory's foundation document; this team includes staff from the personnel from PAHO/WHO and UNFPA country offices, as well as representatives of the two leading universities in the country. The document is expected to be ready in the first trimester of 2009. At its 2008 meeting, the Americas Regional Advisory Panel expressed its willingness to consider continuing support during the next two to three years, contingent on progress made during the first stages of implementation.

2.2 Planned activities

The in-country implementation of the UNFPA/WHO SPP in the Americas will continue during 2009. Unless there is a significant increase in the human and financial resources available, the strategy will be to consolidate the achievements in the six countries designated as countries of intensified focus (Bolivia (Plurinational State of), Cuba, Guatemala, Honduras, Paraguay and Peru), rather than expanding this programme to other countries or including more types and numbers of guidelines. The main common activities of the countries' programmes of work for 2009 were:

- scaling up of training workshops/group learning activities;
- targeted dissemination of guidelines to 'special' audiences (women's and youth groups, vulnerable populations);
- elaboration, pilot-testing and utilization of monitoring and evaluation instruments;
- elaboration of job aids and updating of training curricula for health personnel.

Grants have been awarded to the five countries involved in the "indicators" initiative, to organize country-level dissemination workshops to present and discuss local and regional findings. The workshop in Guatemala, which took place in November 2008, was inaugurated by the Minister of Health and attended by over 150 participants – including many of the relevant national and international stakeholders active in the area of sexual and reproductive health in the country. Similar workshops are planned in Argentina, Brazil, Panama and Peru to take place early in 2009.

The Americas Regional Advisory Panel recommended at its October 2008 meeting the continuation of supporting activities to the Women's Health Observatory in Nicaragua. Progress is being made in the implementation of the plan agreed upon in 2008.

3. BROADENING THE RANGE OF PRODUCTS AND TECHNOLOGIES

3.1 Progress

3.1.1 Research-capacity strengthening at national level

3.1.1.1 Institutional capacity-strengthening

Institutions and groups in the Americas (shown in Table 2) were awarded research-capacity strengthening (RCS) grants, in various forms. Among them were grants for long-term institutional development (LID); resource maintenance (RMG); courses, workshops and seminars (CWS); and competitive intra-regional (CIR) and small grants (SMG); as well as programme capacity strengthening (PCS) grants.

3.1.1.2 Regional, subregional and national research initiatives

The project "Maternal haemoglobin and pregnancy and fetal outcomes at high altitude in Bolivia (Plurinational States of) and in Peru" is the core activity of the CIR grant awarded to the Reproductive Health Institute in Cochabamba, Bolivia (Plurinational State of) and the Institute for Research in Altitude in Lima, Peru. Both institutes have received endorsement and collaboration from national and regional health ministries, subregional organizations and national universities to work on this project, with the Institute in Lima providing important technical support and implementing capacity-strengthening activities for the benefit of the Bolivian counterpart. The protocol was prepared and is undergoing scientific and ethical review in HRP.

Table 2. Grants awarded to institutions in the Americas Region in 2007–2008

Country	Institutions	Type of grant
Argentina	Centro de Estudios de Población (CENEP) Centro Rosarino de Estudios Perinatales (CREP) Instituto de Biología y Medicina Experimental (IBYME)	SMG SMG RMG
Bolivia (Plurinational State of)	Centro de Investigación en Desarrollo (CIDES) Centro de Investigación en Salud Reproductiva (CEISARE) Sociedad Boliviana de Obstetricia y Ginecología	LID CIR PCS
Brazil	Centro de Pesquisas em Saúde reprodutiva de Campinas (CEMICAMP)	SMG
Chile	Instituto Chileno de Medicina Reproductiva (ICMER)	SMG
Cuba	Ministerio de Salud Pública	PCS
Dominican Republic	Universidad Autónoma de Santo Domingo	SMG
El Salvador	Ministerio de Salud Pública	PCS
Guatemala	Centro de Investigación Epidemiológica en Salud Reproductiva (CIESAR) Ministerio de Salud Pública	SMG PCS
Honduras	Ministerio de Salud Pública	PCS
Jamaica	University of the West-Indies at Mona	SMG
Mexico	Programa Latinoamericano de capacitación e investigación en reproducción humana (PLACIRH)	CWS
Nicaragua	Observatorio Nacional de Salud de la Mujer	SMG
Panama	Centro de Investigación en Reproducción Humana (CIRH)	SMG
Paraguay	Centro Paraguayo de Estudios de Población (CEPEP) Ministerio de Salud Pública	LID PCS
Peru	Facultad de Salud Pública, Universidad Cayetano Heredia Ministerio de Salud Pública	SMG PCS

The centres in Bolivia (Plurinational State of) and Paraguay, which were awarded LID grants, each submitted a research proposal, respectively entitled: "Knowledge about medical abortion among women and their social networks in Bolivia" and "Women at risk: detection of target groups of women at higher risk of infection by HIV, unplanned fertility, fetal loss and violence victimization in Paraguay". The proposals successfully underwent the standard scientific and ethical review process established in HRP, and will be initiated in 2009.

3.1.1.3 Research training grants and re-entry grants

CWS grants were awarded to the Latin American Programme for Research and Research Training in Human Reproduction (PLACIRH) in Mexico City, Mexico. PLACIRH is the regional organization that coordinates research training activities funded by the Programme in the region.

Table 3 summarizes the overall number of grants awarded for training in 2007–2008, supported with funds from the regional budget. From the 19 fellows who received grants – mostly for short-term courses or practical training (6 months or less) – 15 (79%) were women, and training took place mostly (18, or 95%, of the fellows) in centres located in Latin America.

With respect to re-entry grants, six projects were submitted and funded in 2007–2008 involving the areas of maternal health (3), sexually transmitted diseases (1), and unsafe abortion (2). In four of the six projects, the principal investigators were women.

3.1.1.4 Capacity-building in research ethics

A research ethics workshop was held in Paraguay in April 2008, inaugurated by the Director for Planning and Evaluation of the Ministry of Public Health and Social Welfare and the PAHO/WHO Representative. This first workshop on the basic concepts of research ethics was attended by 44 local resource people, selected among over 60 applicants. The participants were involved in research and had an interest in research ethics. The group was multidisciplinary, and represented the main national institutions and agencies that conduct health research in the country. A small number of participants were members of institutional research ethics committees.

Table 3. Training grants awarded in 2007–2008

Type of training activity	Female	Male	Total
MSc. course in perinatal epidemiology	–	1	1
Practical training in biomedical sciences (up to 24 wks)	9	–	9
Practical training in the social sciences (up to 24 wks)	1	–	1
Short course (2–6 weeks) in quality of care	1	1	2
Short course (2–6 weeks) in research utilization	2	–	2
Short course (2–6 weeks) in molecular biology	2	2	4
Total	**15**	**4**	**19**

The second event was a meeting with candidate members of a new National Health Research Ethics Committee in Paraguay (approximately 20 persons with varying professional profiles, from various national institutions) who had attended the first training workshop. Discussions focused on the establishment and operational details of such a committee. Notably, the first draft of the Committee's terms of reference and operational guidelines was presented for review in September 2008. It is expected that by July 2009, Paraguay will have an established research-ethics committee with well-defined procedures.

3.1.1.5 Promoting dissemination and utilization of research findings

RHR supported two events (one national, one regional) on relatively novel and important sexual and reproductive health topics: human sexuality and critical obstetric morbidity ('near-miss').

The first event was organized in Santiago, Chile, by the Chilean Institute for Reproductive Medicine as their yearly national seminar on sexual and reproductive health. The main subject of the seminar was "Human sexuality", which was addressed from both a biomedical and a psychosocial perspective. The topic was chosen in consideration of the prevailing cultural barriers that hinder progress towards a healthy sexuality in Chile today. The second reason for choosing this topic was that a high proportion of health professionals in the country recognized that their knowledge on this issue was far from sufficient to provide adequate and necessary care to their patients.

The three-day seminar was divided into seven round tables, four plenary sessions, four conferences, and one session of free contributions. Topics included sexuality throughout life; sexual conduct; sexuality with physical and/or mental disabilities, puberty, and andropause; sexual dysfunctions; sexual

education; ethics, rights and violence; and communication difficulties in the clinic setting.

Attending the seminar were 214 people, including medical doctors (19), nurses/midwives (98), psychologists (15), teachers (3), other professionals (10), medical students (6), obstetrics/gynaecology students (56), and other students (7). Half came from Santiago and half from other regions of the country. Thirty two participants received financial support to attend the meeting from the grant provided by HRP for this event.

The second event (involving critical obstetric morbidity) was a regional workshop organized as a pre-congress event to the biennial meeting of the Latin American Federation of Gyneco-Obstetric Societies (FLASOG) – one of the largest professional congresses in the region. This workshop took place in Mendoza, Argentina from 26 to 31 October, 2008.

The background to this activity is as follows. During the Maternal Mortality Committee workshop held in Lima, Peru from 9 to 10 May 2006, FLASOG proposed and approved a joint activity for the entire Latin American region designed to "promote the monitoring and analysis of critical maternal morbidity at institutional and/or population level, in addition to the monitoring of maternal mortality". A regional research initiative supported by FLASOG and PAHO was launched in 2007, with the purpose of achieving a preliminary estimation of near-miss in the region and eventually harmonizing the criteria used for its monitoring in Latin America.

This research study involved 18 hospitals in nine countries – Argentina, Bolivia (Plurinational State of), Brazil, Colombia, Cuba, the Dominican Republic, Ecuador, Peru and Venezuela. In parallel with this effort and with the support of the Central American Federation of Obstetrical and Gynecological Societies (FECASOG), the central American subregion conducted another research study on near-miss with the same purpose as the initiative supported by FLASOG and PAHO. This study involved 16 hospitals from six countries – Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama.

The workshop on near-miss (supported by HRP) made possible the presentation and discussion of research initiatives recently completed in Latin America, and the elaboration of recommendations which were presented and discussed at the plenary session on maternal mortality organized within the FLASOG Congress.

3.1.2 Support to collaborative activities with other departmental teams/groups

Departmental teams, and other units within the team for research-capacity strengthening and programme development, carried out collaborative activities with institutions in the region. These activities are summarized in Table 4, and further details can be found in the chapters summarizing the work of each thematic group.

3.2 Planned activities

At its 2007 and 2008 meetings, the Americas Regional Advisory Panel recommended that for 2009 and beyond, the two main objectives of the Panel's work should continue to be research-capacity strengthening and programme-capacity strengthening.

The Panel noted that research-capacity strengthening has become a hallmark of HRP's work, and should continue to be the primary focus of RAP funding. As the newer component of the objectives of RAP, however, programme-capacity strengthening was by no means less important and also deserved support. Concerning the proportion of funds which should be invested in each, the ideal response would be to have the RAP and the WHO secretariat review the quantity and type of requests it receives and adjust its funding accordingly. The Group expressed its support for a budgetary division of 70% for RCS and 30% for PCS for 2009 and beyond.

3.2.1 Research-capacity strengthening activities

3.2.1.1 Strengthening institutional research capacity

The Regional Advisory Panel for the Americas has been implementing the selection process it agreed upon, to identify and select new collaborating institutions that could be potential recipients of research-capacity strengthening grants. The new centres which were awarded LID grants in Bolivia (Plurinational State of) and in Paraguay are the result of the policy to incorporate into the network institutions in countries which were not previously recipients of major capacity-strengthening grants from HRP.

The utilization of more mature centres in neighbouring countries as mentors to these new LID grant recipients has also facilitated the successful development of grant applications and research projects. It is anticipated that – given the current level of financial resources – perhaps only one additional institution can be incorporated in the group of those receiving LID grant support in the near future – the duration of the LID grant implies the need to guarantee support to a centre for at least five years, if its performance is satisfactory.

3.2.1.2 Strengthening human resources for research and programmatic activities

The Regional Advisory Panel for the Americas has reiterated its recommendation that a larger portion of funds be awarded to PLACIRH, to offer young research fellows from collaborating institutions six-month grants to develop very specific training objectives. A small amount will also be devoted to well-identified needs for longer, more basic training (MSc. courses). Likewise, support will continue to be provided to courses, workshops, and other group-learning activities

Table 4. Collaborative activities with other RHR groups, by thematic area and country

RHR thematic group	Activity	Participating countries
Preventing unsafe abortion	Comparison of two routes and two intervals of administration of misoprostol for the termination of early pregnancy	Cuba
	Pre-treatment with misoprostol before vacuum aspiration for first trimester induced abortion	Cuba
	Incidence and risk factors for pelvic inflammatory disease following induced abortion: a multicentre nested case-control study	Cuba
Promoting family planning	Randomized-controlled trial of two implantable contraceptives	Brazil, Chile, Dominican Republic
	Phase IIb clinical trial of a combination injectable for male contraception	Chile
	Mechanisms of action of emergency contraception	Chile
Gender, rights and sexual and reproductive health of adolescents	Technical support to centres conducting the WHO course on gender and rights in reproductive health	Paraguay
	Participation in social sciences research initiative on sexual and reproductive health of adolescents	Argentina, Brazil, Chile, Colombia, Cuba, Mexico, Paraguay, Peru
Monitoring and evaluation	Testing the feasibility of sexual and reproductive health indicators in Latin American countries and identification of modalities for effective calculation of indicators	Argentina, Brazil, Guatemala, Panama, Peru
	Providing technical input in Brazilian network of surveillance of maternal severe morbidity	Brazil
Policy and programmatic issues	Phase two action research: strategic approach to reproductive health	Paraguay
	Technical assistance and training on strategic approach and scaling up	Peru
Mapping best practices	*Reproductive health library*-evidence-based medicine clinically integrated e-learning project	Argentina (4 hospitals); Brazil (20 hospitals)
	Clinical trial on the active management of the third stage of labour	Argentina (4 hospitals)
	Treatment guidelines for postpartum haemorrhage	Argentina, Brazil, Chile, Cuba, USA (experts from these countries participated in the Guideline Review Group, i.e. technical consultation)
	Reproductive health library RHL dissemination and use is widespread throughout the region. Specifically, CREP is the institution responsible for translating and editing the Spanish version; in Brazil, the Latin American and Caribbean Center on Health Sciences Information (BIREME) is in the process of including RHL in their Virtual Health Library, and plans are being made for a Portuguese translation; in Colombia an audit of evidence-based practices according to RHL content was conducted; in Guatemala, the WHO focal point conducts regular workshops and training.	Argentina, Brazil, Colombia, Guatemala
	Systematic reviews	Argentina, USA (scientists participating in systematic reviews funded by RHR or collaborating centre)
	Multicountry study on maternal and perinatal health	Argentina, Brazil, Chile, Colombia, Cuba, Mexico, Paraguay, Peru

involving topics such as issues involving basic sciences in SRH, research ethics, gender and rights, and improving communication between researchers and policy-makers.

A new feature in this area, that will be continued, is the award of training grants to SRH programme officers to develop programmatic skills and abilities. This training will be mainly through visits to well-established SRH programmes in countries in the region and/or participation in specific short-duration courses to develop specific skills.

3.2.2 Dissemination and utilization of research findings and evidence-based guidelines

Support will continue to be provided to countries involved in updating their national SRH guidelines or wishing to introduce, disseminate, adapt, and/or scale up relevant WHO guidelines. The successful experience with the introduction of the Spanish version of the *Decision-making tool for family planning clients and providers* will be extended to other materials and situations that deal with the introduction of WHO materials and guidelines. Since the very beginning, this experience involved a multi-agency collaborative approach and representatives from national ministries of health were convened to a regional training activity.

3.2.3 Capacity-strengthening in research ethics

The joint initiative of HRP with Family Health International to build country-level capacity in research ethics will continue in 2009 and beyond. Target countries identified for the following two to three year period are Bolivia (Plurinational State of), Ecuador, Honduras, and Nicaragua. Follow-up visits will also be undertaken to the five countries that have already participated in the initiative – Colombia, Guatemala, Panama, Paraguay, and Peru.

3.2.4 Partnerships and networking

Support will be provided for national-level planning and programming for reproductive health in collaboration with other agencies and partners – particularly with UNFPA.

MEMBERS OF THE REGIONAL ADVISORY PANEL FOR THE AMERICAS IN 2007–2008

Members

Vivian Brache	Profamilia, Santo Domingo, Dominican Republic
Agustin Conde-Agudelo	Palmira-Valle, Colombia
Cristina Grela	Ministry of Health, Montevideo, Uruguay
Federico Leon	Lima, Peru
Rodolfo Rey	Children's Hospital, Buenos Aires, Argentina
Verónica Schiappacasse	Fundación Pro-Salud, Santiago, Chile
Indiana Torres-Escobar	Universidad de Puebla, Puebla, México
Jim Trostle	Trinity College, Hartford, CT, USA

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	3	37			1	13	4
Women	4	50					4
WHO Region:							
The Americas	7	87			1	13	8

Total = 8

Collaborating agency scientists

Sandra Garcia	The Population Council, Mexico City, Mexico
Roberto Rivera	Family Health International, Research Triangle Park, NC, USA

PRINCIPAL INVESTIGATORS OF CENTRES IN THE AMERICAS REGION IN 2007–2008

Amaury Andrade	Center for Biology of Reproduction (CBR), Juiz de Fora, Brazil
Stella Campo	Endocrinology Research Centre (CEDIE), Buenos Aires, Argentina
Guillermo Carroli	Centre for Perinatal Studies (CREP), Rosario, Argentina
Horacio Croxatto	Chilean Institute of Reproductive Medicine (ICMER), Santiago, Chile
Patricia Cuasnicú	Institute for Biology and Experimental Medicine (IBYME), Buenos Aires, Argentina
Luigi Devoto	Institute for Maternal and Child Health Research (IDIMI), Santiago, Chile
Oscar Díaz	National Institute of Endocrinology, Havana, Cuba
Gustavo Gonzales	Peru University Cayetano Heredia, Lima, Peru
Ellen Hardy	Centre for Research and Control of Maternal and Infant Disease (CEMICAMP), Campinas, Brazil
Edgar Kestler	Epidemiologic Research Centre, Guatemala City, Guatemala
Fernando Larrea	National Institute of Nutrition, Mexico City, Mexico Centre for Research in Human Reproduction, Panama
Edith Pantelides	Centre for Population Studies (CENEP), Buenos Aires, Argentina
Cynthia Prieto	Centre for Population Studies (CEPEP), Asuncion, Paraguay
Silvina Ramos	Centre for the Study of the State and Society (CEDES), Buenos Aires, Argentina
Susanna Rance	Post-graduate Centre for Development Studies, University of San Andres, La Paz, Plurinational State of Bolivia
Oscar Rojas	University of Valle, Cali, Colombia

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	9	56					9
Women	7	44					7
WHO Region:							
The Americas	16	100					16

Total = 16

Chapter 9

Research-capacity strengthening and programme development: South-East Asia and the Western Pacific Regions

1. INTRODUCTION

The strategic framework of the Department in supporting countries in the WHO South-East Asian and Western Pacific Regions is to assist them to:

- identify the major issues in reproductive health and areas where research is required to improve reproductive health;
- build their capacity to participate in national and regional research, and facilitate their participation in global research;
- disseminate and utilize research results to inform policies and programmes;
- adopt, adapt, and implement norms, standards, tools and approaches;
- develop strategies to plan, implement, monitor, and evaluate programmes to enhance reproductive health.

Collaborative activities were continued with 27 research and academic institutions in five countries in each of both Regions through research-capacity strengthening activities, and in eight countries in each region through support for reproductive health programmes.

2. STRENGTHENING INSTITUTIONAL CAPACITY FOR RESEARCH

2.1 Progress

2.1.1 Identifying priorities for reproductive health research

A workshop to identify regional reproductive health research priorities was held in conjunction with the Regional Advisory Panel (RAP) meeting in March 2007. There was representation from Cambodia, China, Malaysia, and Viet Nam (Western Pacific Region); Bangladesh, India, Indonesia, Myanmar, Nepal, Sri Lanka, and Thailand (South-East Asia Region); WHO Regional Offices for both regions; UNFPA Country Technical Services Team for East and South-East Asia; the International Medical Centre of Japan; and two WHO country offices.

The priority areas reflected the core elements of reproductive health, as identified in the WHO Global Reproductive Health Strategy, and corresponded to the major thematic areas of the Department (i.e. maternal and perinatal health, promoting family planning, addressing reproductive tract and sexually transmitted infections, preventing unsafe abortion, gender issues in reproductive health, and addressing the needs of vulnerable groups such as adolescents). However, the emphasis was for research on improving quality of care and access to services and developing linkages between sexual and reproductive health and RTI/STI and HIV.

National workshops to identify research priorities in reproductive health were held in Colombo, Sri Lanka; Ulaanbaatar, Mongolia; and Pyin-Oo-Lwin, Myanmar in the same year. The priority areas identified during these workshops were similar – although for Myanmar, the focus was on reducing

maternal mortality and morbidity and for Sri Lanka on continuing use of family planning methods and infertility. Mongolia is currently developing a health-research programme for the next ten years and has recognized that young migrants who are vulnerable to RTI/STI and unwanted pregnancy were issues that needed attention.

2.1.2 Strengthening institutions for research

2.1.2.1 Ongoing institutional research capacity strengthening grants

A total of 16 research-capacity strengthening grants were awarded to institutions in the South-East Asia and Western Pacific Regions (Table 1). China received one resource maintenance grant, executed by the National Coordinating Board, for eight centres. Three institutions in Sri Lanka received a single grant through the National Coordinating Committee for Research on Reproductive Health. These grants were focused more on the strengthening of human resources for research, as described in Section 2.1.3, than on institutional infrastructure.

2.1.2.2 Identifying new recipients for capacity-strengthening grants

In 2008, collaboration was initiated with Bangladesh, Bhutan, and the Democratic People's Republic of Korea to strengthen their research capacity in reproductive health. The Ministry of Health of Bhutan plans to submit an institutional profile and an application for an institutional development grant.

Table 1. Ongoing research-capacity strengthening grants

Country	Institutions and grants
Cambodia	A Long-term Institutional Development (LID) grant, to the National Institute for Public Health and the Maternal and Child Health Centre, Phnom Penh
China	A single grant, awarded to the National Coordinating Board for collaborative activities among eight institutions: Department of Obstetrics and Gynaecology, Peking Union Medical College Hospital, Beijing; Institute of Population Research, Peking University, Beijing; National Research Institute for Family Planning, Beijing; Sichuan Family Planning Research Institute, Chengdu; Family Planning Research Institute of Zhejiang, Hangzhou; Shanghai Institute of Planned Parenthood Research, Shanghai; National Evaluation Centre for the Toxicology of Fertility Regulation Drugs, Shanghai; and Tianjin Municipal Research Institute for Family Planning, Tianjin
India	Three grants, to: Post-Graduate Institute of Medical Education and Research, Chandigarh; National Institute for Research in Reproductive Health, Mumbai; and All India Institute of Medical Sciences, New Delhi
Indonesia	Two grants, to: Western Indonesia Reproductive Health Development Centre, Faculty of Medicine, University of North Sumatra, Medan; and Reproductive Health Research Centre, Airlangga University, Surabaya
Lao People's Democratic Republic	Maternal and Child Health Centre, Ministry of Public Health, Vientiane
Mongolia	State Research Centre on Maternal and Child Health and Human Reproduction, Ulaanbaatar
Myanmar	Department of Medical Research, Lower Myanmar, Yangon Department of Medical Research, Upper Myanmar, Pyin-Oo-Lwin

Country	Institutions and grants
Sri Lanka	A single grant is awarded to the National Coordination Committee for Research on Reproductive Health, Colombo to three institutions: (Task Forces based in Universities of Colombo, Peradeniya and Ruhuna) Small grants to Universities of Kelaniya and Sri Jayawardenepura, Sri Lanka
Viet Nam	National Hospital of Obstetrics and Gynaecology, Hanoi Hung Vuong Hospital, Ho Chi Minh City

2.1.3 Strengthening human resources for research

Several mechanisms were employed to strengthen the research capacity of mid-level researchers from least-developed and developing countries.

2.1.3.1 Research training grants

Research training grants for Master's degree courses in either epidemiology or population and reproductive health within the region were awarded to two mid-level researchers from Cambodia and to one researcher each from the Lao People's Democratic Republic, Mongolia, and Myanmar. Support for short-term training on advanced epidemiology was provided to three researchers from Sri Lanka and one from Myanmar. Partial funding was also provided to three mid-level researchers from WHO-RHR collaborating centres in China and one from Australia to participate in:

- a course entitled "Reproductive health and development: analytic skills for policy and programmes", conducted by the Johns Hopkins University, Baltimore, Maryland, USA;
- regional workshops entitled "Monitoring and evaluation of population, health, and nutrition programmes" organized by the Institute for Population and Social Research (IPSR), Mahidol University, Thailand; and
- the "Frontiers in reproduction course" held by the Marine Biology Laboratory, Woods Hole, Massachusetts, USA.

2.1.3.2 Regional workshops on operations research in reproductive health

Eighteen participants from nine countries took part in an interregional workshop on operations research held from 12 to 17 November 2007 in Bangkok, Thailand. The participants were from the South-East Asia, Western Pacific, Eastern Mediterranean, European and African Regions (Table 2). The meeting brought together senior staff from public health institutes, ministries of health, and researchers from WHO collaborating centres; consultant obstetricians and gynaecologists; and a Programme Officer for Reproductive Health from the WHO Country Office in Malawi.

To meet the needs of many countries which requested technical assistance for conducting operations research, a regional training of trainers workshop on operations research in reproductive health was held from 24 to 29 November 2008 in Bangkok, Thailand. Twenty-two participants from nine countries and a staff member of the WHO Regional Office for South-East Asia participated in this workshop (Table 2). Most of the participants were experienced researchers from academic and research institutions or programme managers from the ministry of health. These workshops were jointly organized by IPSR, the Population Council (Asia and Near-East Regional Office) and HRP.

2.1.3.3 Investigators' meeting on "Evaluation of the haemoglobin colour scale"

In collaboration with the Maternal and Perinatal Research Team, a meeting of investigators conducting a study entitled "Evaluation of the haemoglobin colour scale in improving the treatment and referral of anaemic pregnant women", was held from 30 July to 1 August 2007 in Bangkok, Thailand. Participants from Afghanistan, the Lao People's Democratic Republic, Mongolia, and Myanmar participated in the meeting, and proposals from the Lao People's Democratic Republic, Mongolia, and Myanmar were funded in 2008.

2.1.3.4 Workshops on ethical issues in reproductive health research

National workshops on research ethics were held in Ulaanbaatar, Mongolia, and Surabaya, Indonesia in 2007. A workshop was conducted in September 2007 on ethical issues involved in assisted reproductive technologies (ART) for members of ethics committees of medical faculties, the Sri Lankan Medical Council, and professional organizations in Colombo, Sri Lanka. The deliberations of the workshop served as input to the development of the Human Reproduction and Genetics Act (HURGA) and to the national committee appointed by the Sri Lankan Government. A symposium involving ethics in assisted reproduction was also conducted in September 2007 in Colombo, Sri Lanka for medical and non-medical support staff from public and private sector ART centres. Resource persons from the International Federation for Fertility Societies and local experts facilitated the above-mentioned events in Sri Lanka.

A regional workshop on ethical issues in reproductive health research was held in Ho Chi Minh City, Viet Nam from 26 to 28 May 2008. A total of 24 participants (chairpersons, secretaries and/or members of national ethics committees) from nine countries took part. The workshop was facilitated by a member of HRP's Scientific and Ethical Review Group, a member of the Ethics Review Committee of the Yong Loo Lin School of Medicine of the National University of Singapore, and two RHR staff members.

2.1.3.5 Proposal development workshops for the competitive intraregional grant

An investigators' meeting for the development of a regional research proposal entitled "Improving the quality of sexual and reproductive health services through linking RTI/STI services to reproductive health services at the primary healthcare level" was held in Penang, Malaysia from 21 to 25 January 2008. Representatives from countries that had submitted concept notes (Indonesia, Myanmar, Sri Lanka, and Viet Nam) took part in the meeting. The participants were from the STI/HIV and Reproductive Health Units/Departments of the ministries of health, research institutes, universities, as well as staff from the WHO Country Offices in Indonesia and Viet Nam.

A similar meeting to develop a proposal entitled "Improving sexual and reproductive health issues of young migrants through peer education" was held in Chengdu, China from 24 to 28 March 2008. Participants were researchers from five WHO Collaborating Centres (the Sichuan Family Planning Research Institute, the Family Planning Research Institute of Zhejiang, the Shanghai Institute of Planned Parenthood Research, the Tianjin Municipal Research Institute for Family Planning, and the Institute of Population Research, Peking University) and from the Sociology Institute of the Yunnan Academy of Social Sciences, Kumming.

Programme managers from the provincial population and family-planning bureaux of the same cities also participated in the meeting. Representatives from the National Population and Family Planning Commission, programme officers from WHO and UNFPA Country Offices in China and resource persons from IPSR, Mahidol University, Thailand and from the School of Public Health, Peking University facilitated the discussions. These projects were funded under the competitive intraregional grant, and strengthened the collaboration between reproductive health and STI programmes in the Ministries of Health and researchers.

2.1.3.6 Capacity-building of WHO regional and country-office staff for research

National programme officers (NPOs) from WHO country offices and staff of WHO regional offices participated in regional and national training workshops organized by the Programme. NPOs attended the "Training in sexual and reproductive health research" course jointly organized by the Geneva Foundation for Medical Education and Research (GFMER) and the Department.

Small group-training activities supported by the Programme (which complemented training workshops and meetings organized by the centres) are shown in Table 2.

2.1.4 Support for research projects

The centres receiving grants were funded from national and international sources for research projects involving priority reproductive health issues. In addition, HRP supported 13 national studies in seven countries, six of which were re-entry grants submitted by research training grant recipients (Table 3).

Table 3. Research studies supported by the Programme at the national level

2.1.4.1 Multisite studies

As a follow-up to the formative research conducted in 2005, country proposals involving "Expanding access to sexual and reproductive health information and services for young migrants in the Greater Mekong subregion" were supported for Myanmar and Thailand and those for the Lao People's Democratic Republic and Viet Nam were finalized.

HRP funded studies on the "Evaluation of the haemoglobin colour scale in improving the treatment and referral of anaemic pregnant women" in the Lao People's Democratic Republic, Mongolia, and Myanmar.

The detailed breakdown of studies conducted by institutions receiving support from HRP in South-East Asia and the Western Pacific Regions is shown in Table 4.

2.1.5 Mechanisms to establish linkages between centres

Research-project mentoring grants (RMG) and a competitive intra regional grant (CIR) were employed to establish collaboration between institutions receiving capacity-strengthening grants with expertise available from more established centres in the proposed area of research.

The objectives of the RMGs included provision of mentoring support to selected centres, to strengthen research-proposal development and implementation as part of national capacity-building. Resource persons from the Epidemiology Department of the University of Sydney, Australia and the Department of Community, Occupational and Family Medicine, Yong Loo Lin School of Medicine of the National University of Singapore, provided assistance, together with HRP staff, for national workshops on research ethics and scientific writing. Faculty members of the Epidemiology Department of Prince of Songkla University and from IPSR of Mahidol University, Thailand facilitated research methodology work-

shops and assisted several countries in development of research proposals.

Discussions were initiated with the College of Public Health of Chulalongkorn University in Bangkok, Thailand and the Department of Obstetrics and Gynaecology of the Philippine General Hospital in Manila, the Philippines, for Master's degree courses for research-training grant recipients, and other possibilities for collaboration.

The objectives of the CIR grant were to:

- foster multidisciplinary and/or multi-centre scientific collaboration, to develop evidence-based recommendations for priority regional reproductive-health problems;
- enhance capacity-building in reproductive health, by incorporating research-based training in priority areas;
- promote subregional and intracountry networks which foster linkages to strengthen centres.

Table 2. Regional and national workshops (by topic, countries, and number of participants)

Topic	Participating countries	Number of participants	
		Male	Female
Interregional workshop on operations research in reproductive health (Bangkok, Thailand, November 2007)	Afghanistan, China, India, Lao People's Democratic Republic, Lithuania, Malawi, Sri Lanka, Tanzania, and Thailand	7	11
Training of trainers workshop on operations research in reproductive health (Bangkok, Thailand, November 2008)	Bangladesh, Bhutan, India Indonesia, Myanmar, Singapore, Sri Lanka, Thailand, and Viet Nam	8	14
Proposal development workshops for the competitive intra-regional grant (Penang, Malaysia, January 2008)	Indonesia, Myanmar, Sri Lanka, and Viet Nam	14	12
(Chengdu, China, March 2008)	China (Beijing, Chengdu, Hangzhou, Kumming, Shanghai, and Tianjin)	5	11
Regional workshop on ethical issues in reproductive health research for mid-level researchers (Ho Chi Minh City, Viet Nam, May 2008)	Cambodia, China, Indonesia, Lao People's Democratic Republic, Mongolia, Myanmar, Sri Lanka, Thailand, and Viet Nam	12	9
National workshops on research ethics in 2007	Ulaanbaatar, Mongolia Surabaya, Indonesia Colombo, and Sri Lanka	10 20 10	4 7 6
National workshops on research methodology (2007 and 2008)	Medan, Indonesia Ulaanbaatar, Mongolia Pyon Yang, Democratic People's Republic of Korea Pyin-Oo-Lwin, Myanmar Pyin-Oo-Lwin, Myanmar Colombo, Sri Lanka Ragama, Sri Lanka	18 12 16 11 9 9 13	11 16 7 13 11 12 15
National workshops on scientific writing and on communication skills for scientists and researchers (2007)	Surabaya, Indonesia Hanoi, Viet Nam	5 11	15 8

Following a call for proposals for a CIR grant in 2007, the RAP recommended that two of the concept papers be further developed into proposals. The follow-up workshops for proposal development have been described under Section 2.1.3.

A meeting of WHO collaborating centres on reproductive health and research in China was held in Chengdu, China from 10 to 12 September 2007. These centres include the Sichuan Family Planning Research Institute, Chengdu; the Family Planning Research Institute of Zhejiang, Hangzhou; the National Research Institute for Family Planning, Beijing; the Shanghai Institute of Planned Parenthood Research, Shanghai; the Peking Union Medical College Hospital, Beijing; the Institute of Population Research, Beijing; the Tianjin Municipal Research Institute for Family Planning, Tianjin; and the National Evaluation Centre for the Toxicology of Fertility Regulation Drugs.

Table 3. Research studies supported by the Programme at the national level

Country	Title of research project
Cambodia	Factors related to uptake of HIV testing among women attending antenatal clinics with prevention of maternal to child transmission of HIV services in Cambodia
Indonesia	Prevalence of RTIs in pregnant women in Medan, North Sumatra
Lao People's Democratic Republic	Unsafe abortion in the Lao People's Democratic Republic
Mongolia	Comparison of 'one-stop' versus 'conventional' service for antenatal syphilis screening in Ulaanbaatar Sexual risk behaviour, and knowledge and access to the services related to STIs (including HIV/AIDS) among young internal migrants to Ulaanbaatar
Myanmar	STIs among male highway-drivers in Myanmar A case-control study of ectopic pregnancy in Myanmar: special focus on aetiological factors Promotion of reproductive health knowledge among youth through peer education in a sub-district in Myanmar Barriers to antenatal care and safe delivery among women of reproductive age: a community-based project Promoting antenatal care services in urban health centres of Mandalay, Myanmar, to improve early detection of pre-eclampsia
Sri Lanka	The effectiveness of a patient-education programme and a direct referral system in improving contraceptive uptake in women with medical illnesses
Thailand	Factors influencing delivery care utilization in Songkhla province, southern Thailand: women's perspectives Strengthening cervical cancer screening in a Thai rural community

The directors and staff of these centres, senior personnel from the National Population and Family Planning Commission, and the chairperson and members of the RAP took part in the meeting. The participants recommended:

- an improved coordination role for the National Coordinating Board for the WHO collaborating centres;
- that the centres share experiences among themselves and with regional and international partners, and further develop their expertise to be able to participate in multi-country research initiatives; and
- that the more mature centres act as mentors for the less mature centres.

2.1.6 Dissemination and utilization of research findings

A regional meeting was held in Phnom Penh, Cambodia from 21 to 23 October 2008. This meeting disseminated the results of the "Global Survey on Maternal and Perinatal Health" in Asia, as well as regional and national studies supported by HRP for national research-capacity strengthening.

The study on "Patterns and predictors of caesarean section in Asia", that had been conducted in 14 centres in eight countries, was presented. The presentation focused upon the implementation, the findings, and the use of those findings to improve hospital practice. The results of RTI/STI studies conducted in various reproductive-health service settings were also presented. These settings included:

- rural women in Sichuan province, China;
- the family planning clinic at Central Women's Hospital, Yangon, Myanmar;
- antenatal care clinics in Vientiane, the Lao People's Democratic Republic; and
- prevalence of *Chlamydial trachomatis* in young people in Surabaya, Indonesia.

The process, findings and recommendations of a rapid assessment of RTI/STI policies and programmes in Viet Nam were discussed.

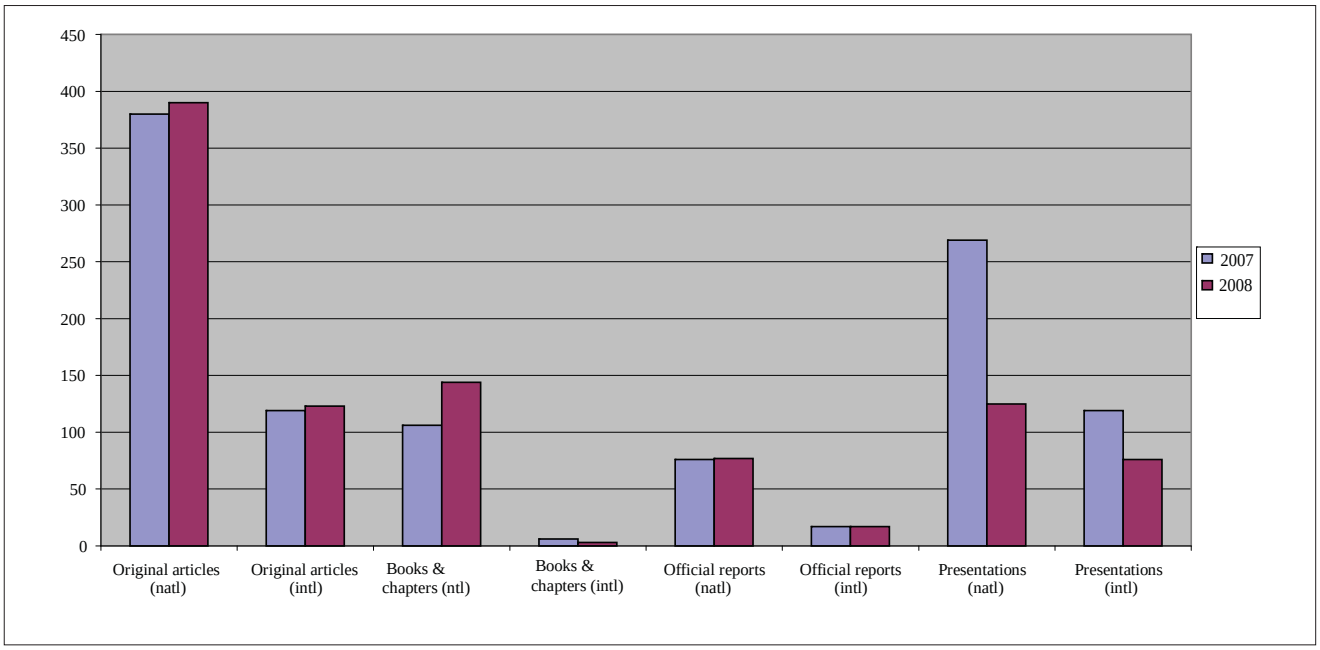
The results of the "Comparison of 'one-stop' versus 'conventional' service on antenatal syphilis screening in Ulaanbaatar, Mongolia" were presented. Based on this proposal, the Mongolian Ministry of Health, the WHO Country Office in Mongolia. and the WHO Regional Office for the Western Pacific are supporting two additional sites in Darkhan and Erdenet (the second and third largest cities in Mongolia) to strengthen antenatal syphilis screening. Mongolia has also secured support for the expansion of this effort throughout the country from the Global Fund to fight AIDS, Tuberculosis and Malaria.

During 2007 and 2008, scientists from these centres published a total of 425 original research articles in national journals and 225 in international journals. Eighty-six books and book chapters were authored by staff from the centres. Three hundred and ninety-four presentations were made at national meetings and195 at regional or international scientific events. Figure 1 shows the distribution of publications and presentations in 2007 and 2008.

Table 4. Research studies supported by centres receiving support from HRP

Thematic area	Year			
	2007		2008	
	Number	%	Number	%
Adolescent reproductive health	38	12	30	7
Family planning	62	19	61	15
Health systems	28	9	15	4
HIV	20	6	84	20
Infertility	30	9	34	8
Maternal and neonatal health	39	12	43	11
Reproductive biology	38	12	53	13
Reproductive cancers	10	3	24	6
RTI/STIs	9	3	13	3
Unsafe abortion	4	1	4	1
Others	50	15	47	11
Total	**328**	**100**	**408**	**100**

Figure 1. Publications in 2007–2008



2.2 Planned activities

The WHO Regions for South-East Asia and for the Western Pacific Region cover a large area, with diverse reproductive health profiles and specific needs. Over the years, HRP's support has resulted in significant strengthening of research capacity. Some institutions in China, India, and Thailand can be regarded as mature centres and the Programme will continue to engage their participation in the global research effort and their role as mentors.

A second group of centres consists of institutions that are still in the process of developing their capacities, and the thrust of their support will be towards research that addresses priority national issues and participation in regional research initiatives. Yet other countries are in the early phases of strengthening research-capacity in the health sector (e.g. Bhutan, Cambodia, the Democratic People's Republic of Korea, and the Lao People's Democratic Republic. The Programme will continue to collaborate with and complement the efforts of other partners who are undertaking capacity-building efforts.

Institutional-development and research-training grants will be awarded to centres in least developed and developing countries and re-entry grants will allow the completion of the training cycle of fellows from institutions in the region who have received research-training grants from the Programme. Assistance will be provided to research teams to finalize the country-specific proposals on "Linking RTI/STI services to reproductive-health services at the primary health-care level" and "Improving sexual and reproductive health issues of young migrants through peer education", submitted for the competitive intraregional grant.

The focus of capacity-building, including training of mid-level researchers, will be on improving programme operations. Intra-regional cooperation will be strengthened, through partnerships and networking among centres for research training and joint research programmes.

A national meeting for policy-makers, researchers, and programme managers from Indonesia will be held in conjunction with the 11th Regional Advisory Panel meeting, Denpasar, Indonesia, 10–11 March 2009. The purpose of this meeting will be to develop an agenda for a national reproductive health research programme and an effective coordinating and networking mechanism.

3. ADAPTATION AND IMPLEMENTATION OF EVIDENCE-BASED GUIDELINES AND TOOLS AT COUNTRY LEVEL

Adaptation and implementation of evidence-based guidelines and tools were accomplished in 2008 through the UNFPA/WHO Strategic Partnership Programme, complemented by efforts from the UNFPA Asia Pacific Regional Office and the Department.

3.1 Progress

Considerable progress was achieved in the countries of intensified focus (CIFs) for the implementation of family planning, RTI/STI, and maternal- and neonatal-health guidelines through the SPP, as follows.

China

- Translation and printing of the *Medical eligibility criteria for contraceptive use* (MEC) *wheel*, the *Decision-making tool for family planning clients and providers* (DMT), and the *Family planning: global handbook for providers.*

- Updating of RTI/STI guidelines and introduction in six counties/districts in five provinces (supported by the Ministry of Health) and in five counties (supported by the UNFPA country programme).

- Development of educational materials on the prevention of RTI/STI, advocacy.

- Meetings to introduce the guidelines, followed by provincial and county-level training and upgrading of laboratories to conduct diagnostic tests for RTI/STIs.

- Translation of the *WHO reproductive health library* (RHL), number 10, and conducting a national training of trainers workshop and four provincial training workshops on evidence-based medicine and on the use of RHL.

Indonesia

- Development of a framework for integration of RTI/STI services within family planning services and conduct of a situation analysis in four districts where the framework will be implemented.

- Training on management and counselling on RTIs/STIs for health centre (puskesmas) staff.

- Training of cadres to use information, education, and communication (IEC) materials on family planning, RTI/STI, and other reproductive health components.

Mongolia

- Translation and adaptation of the DMT, MEC wheel, and RTI/STI guidelines.

- National-level training of trainers and training of service providers in the districts supported by the UNFPA Country Programme in the western part of the country, where the reproductive health needs are the greatest.

Myanmar

- Update of training material on maternal and neonatal health, based on the *Integrated management of pregnancy and childbirth* (IMPAC) guidelines, and training of midwives and auxiliary midwives using the updated materials.

- Development of educational materials on maternal and newborn care for community volunteers, and training of township and village members of the Maternal and Child Welfare Association (a national NGO).

- Development of house-surgeon guidelines and job aids for RTI/STI in obstetrics and gynaecology, updating the undergraduate curriculum for RTI/STI, and conducting a dissemination workshop.

Nepal

- Adaptation of DMT, orientation of health workers on updated family planning, and STI guidelines in three districts.

Solomon Islands

- Printing and launching of the updated national family planning guidelines followed by provincial training workshops.

Tonga

- Implementation of a media campaign on sexual and reproductive health, with messages concerning family planning and prevention of RTIs/STIs, and development of national standard treatment guidelines for RTIs/STIs.

Vanuatu

- Conduct of provincial workshops on the updated national guidelines on family planning, and revision of RTI/STI guidelines. A post-implementation rapid assessment for family planning services (which included a module on pre-implementation assessment for RTI/STI services) was conducted in each island.

Viet Nam

- Preparation of a background paper on RTI/STI control in Viet Nam by the Hanoi School of Public Health, and translation of the *Programme guidance tool for STI/RTI* (PGT). The PGT was used in conducting a rapid assessment on RTI/STI in northern, central, and southern Viet Nam in 2007, followed by a dissemination workshop. The Vietnamese version of the RHL (VHL) was uploaded on the Ministry of Health web site and CD-ROMs were produced. Conduct of national training of trainers – using the VHL, followed by regional training workshops – in northern, central, and southern Viet Nam (Hanoi, Hue, and Ho Chi Minh City).

A service-guidance centre grant was awarded to the Research, Studies and Standards Division of the Department of Family Welfare in the Ministry of Health of India. The purpose of this grant was to update family-planning guidelines and manuals, based on guidelines and research recommendations of WHO and its partners, and to provide training on the revised guidelines.

Countries that had participated in the regional workshops that were held in 2004 (at which the guidelines were presented) also received support to introduce the guidelines and tools nationally. The Lao People's Democratic Republic, Maldives, and Thailand translated the DMT, and Sri Lanka received support to print the guidelines on newborn care.

Following two regional meetings involving "Strengthening family planning programmes" in the South-East Asia and Western Pacific Regions, support was provided to workplans submitted by the the Lao People's Democratic Republic, Myanmar, and Nepal (for adaptation of the DMT) and to China (for a training workshop on gender and rights in reproductive health). The UNFPA Asia Pacific Regional Office funded training activities initiated through SPP in Mongolia, Myanmar, Nepal, and Tonga.

The "WHO/UNFPA framework of indicators for monitoring universal access to reproductive health at country level" was introduced to national participants at two regional meetings. These meetings were jointly organized by the WHO Regional Offices and the Department in September 2008 for 10 countries from the South-East Asia Region and in October 2008 for nine countries from the Western Pacific Region. Following the regional meeting in Beijing, a national workshop was organized for China. Experts from institutions involved in data-collection and statistics, and reproductive-health programmes identified a set of indicators to be used for monitoring progress in reproductive health. The indicator framework and supporting activities will complement the implementation of the National Action Plan for Women's Health and the Programme for Healthy China 2020.

3.2 Planned activities

In collaboration with the Regional Offices of WHO and of UNFPA, the Department will continue to provide support to countries to implement the Global Reproductive Health Strategy and contribute to achieving universal access to reproductive health. These efforts will aim at improving quality of care in reproductive-health programmes, including implementing evidence-based guidelines on family planning, STI/RTI, maternal health, and other elements of reproductive health.

SUMMARY OF TECHNICAL COLLABORATION WITH COUNTRIES FOR RESEARCH-CAPACITY STRENGTHENING AND PROGRAMMATIC ACTIVITIES

Country	Collaborative activities
Bangladesh	A country of intensified focus (CIF) of the UNFPA/WHO SPP: Directorate General of Family Planning and Directorate General of Health Services, Ministry of Health, Dhaka
Cambodia	Long-term institutional development grant to National Institute for Public Health and the Maternal and Child Health Centre, Phnom Penh Support for study on "Factors related to uptake of HIV testing among pregnant women attending ANC clinics with PMTCT services in Cambodia" Participation in the Global Survey on Maternal and Perinatal Health
China	Institutions receiving resource maintenance grants: ● Institute of Population Research (IPR), Peking University, Beijing ● Department of Obstetrics and Gynaecology Peking Union Medical College Hospital (PUMCH), Beijing ● National Research Institute for Family Planning (NRIFP), Beijing ● Sichuan Family Planning Research Institute (SFPRI), Chengdu ● Family Planning Research Institute of Zhejiang, Hangzhou ● Shanghai Institute of Planned Parenthood Research, Shanghai ● National Evaluation Centre for the Toxicology of Fertility Regulation Drugs, Shanghai ● Tianjin Municipal Research Institute for Family Planning (TMRIFP), Tianjin Participation in studies on post-ovulatory methods of fertility regulation: ● National Research Institute of Family Planning (NRIFP), Beijing ● International Peace Maternity and Child Health Hospital, Shanghai ● Department of Obstetrics and Gynaecology, Queen Mary Hospital, Hong Kong SAR Participation in reversible male injectable contraceptive study: ● Family Planning Research Institutes of Henan, Yunnan, Sichuan and Hebei and Jiangsu ● NRIFP; Institute of Family Planning, Tongji Medical University, Hubei ● Zhejiang Institute of Planned Parenthood Research, Zhejiang ● Birth Control Institution, Guizhou Phase III of the Strategic Approach in Yunnan – increasing access and quality of care for a range of reproductive health services for the poorest people of Yunnan: Reproductive Health Research Institute, Kunming Medical University A CIF of the UNFPA/WHO SPP: Department of Maternal and Community Health, Ministry of Health, National Population and Family Planning Commission and SIPPR Participation in the Global Survey on Maternal and Perinatal Health WHO course on gender and rights in reproductive health

Country	Collaborative activities
India	Institutions receiving resource maintenance grant: ● National Institute for Research in Reproductive Health (NIRRH), Mumbai ● All India Institute of Medical Sciences (AIIMS), New Delhi ● Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh Service guidance centre grant: Research, Studies and Standards Division of the Department of Family Welfare, Ministry of Health, New Delhi Participation in studies on post-ovulatory methods of fertility regulation: AIIMS, NIRRH and S.A.T. Hospital, Medical College, Trivandrum Screening for pre-eclampsia: evaluation of the predictive ability of angiogenic factors: Christian Medical College, Vellore; and Department of Obstetrics and Gynaecology, Government Medical College, Nagpur RHL-EBM clinically integrated e-learning project: AIIMS
Indonesia	Institutions receiving resource maintenance grants: ● Western Indonesia Reproductive Health Development Centre (WIRHDC) in the Faculty of Medicine, University of North Sumatra, Medan ● Reproductive Health Research Centre (RHRC), Airlangga University, Surabaya Support for study on "Prevalence of RTIs in pregnant women in Medan, North Sumatra": WIRHDC Field-testing of *Maternal and newborn health and human rights tool:* Ministry of Health and National Family Planning Coordination Board, Jakarta A country of intensified focus of the UNFPA/WHO SPP: Directorates General of Community Health and of Disease Control and Environmental Health, Ministry of Health and National Family Planning Coordination Board, Jakarta
Japan	Participation in the Global Survey on Maternal and Perinatal Health
Lao People's Democratic Republic	Institution receiving resource maintenance grant: Maternal and Child Health Centre (MCHC), Ministry of Public Health, Vientiane Support for studies on: Unsafe abortion in the Lao People's Democratic Republic Phase II of the Strategic Approach – evaluation of the maternity waiting home project in Bolikhamsay and Bokeo: MCHC, Ministry of Public Health, Vientiane Evaluation of the Haemoglobin Colour Scale in improving the treatment and referral of anaemic pregnant women: National Institute for Public Health, Vientiane A country of general focus (CGF) of the UNFPA/WHO SPP: MCHC, Ministry of Public Health, Vientiane
Maldives	A CGF for the UNFPA/WHO SPP: Department of Public Health, Ministry of Health, Malé

Country	Collaborative activities
Mongolia	Institution receiving resource maintenance grant: State Research Centre on Maternal and Child Health and Human Reproduction (MCHR), Ulaanbaatar Re-entry grants for MCHR: Comparison of 'one-stop' versus 'conventional' service on antenatal syphilis screening in Ulaanbaatar Support for studies on: ● post-ovulatory methods for fertility regulation ● evaluation of the Haemoglobin Colour Scale in improving the treatment and referral of anaemic pregnant women ● sexual risk behaviour, and knowledge and access to the services related to STIs including HIV/AIDS among young internal migrants to Ulaanbaatar Phase II of the Strategic Approach for post-abortion care: Ministry of Health and MCHR, Ulaanbaatar A country of intensified focus (CIF) of the UNFPA/WHO SPP: Reproductive Health Department, Ministry of Health, Ulaanbaatar
Myanmar	Institution receiving resource maintenance grant: Department of Medical Research (DMR), Lower Myanmar, Yangon Re-entry grants for DMR, Lower Myanmar: ● Promotion of reproductive health knowledge among youth through peer education in a subdistrict in Myanmar ● Prevalence of RTIs at the family planning clinic at Central Women's Hospital, Yangon ● STIs among male highway-drivers in Myanmar ● A case–control study of ectopic pregnancy in Myanmar: special focus on etiological factors LID grant - Department of Medical Research, Upper Myanmar, Pyin-Oo-Lwin Support for studies on: ● promoting antenatal care services in Urban Health Centres in Mandalay, to improve early detection of pre-eclampsia ● evaluation of the Haemoglobin Colour Scale in improving the treatment and referral of anaemic pregnant women A CIF of the UNFPA/WHO SPP: Departments of Obstetrics and Gynaecology, Universities of Medicine, Mandalay and Magwe; and Department of Health, Ministry of Health, Nay Pyi Taw
Nepal	A CIF of the UNFPA/WHO SPP: Directorate of Health Services, Ministry of Health, Kathmandu Participation in the Global Survey on Maternal and Perinatal health

Country	Collaborative activities
The Philippines	Participation in the Global Survey on Maternal and Perinatal Health RHL-EBM clinically integrated e-learning project: Philippine General Hospital, Manila Participation in study on: "Multicentre randomized trial to evaluate the effectiveness of a one-day versus seven-day regimen of nitrofurantoin for the treatment of asymptomatic bacteriuria in pregnancy": University of the Philippines, Manila and College of Medicine-Philippine General Hospital
Solomon islands	A CIF of the UNFPA/WHO SPP: Reproductive and Child Health Department, Ministry of Health, Honiara
Sri Lanka	Institutions receiving resource maintenance grant: National Coordination Committee for Research on Reproductive Health, Colombo (Task Forces based in Universities of Colombo, Peradeniya and Ruhuna) Small grants: University of Kelaniya, Ragama; and University of Sri Jayawardenepura Support for study on "The effectiveness of a patient education programme and a direct referral system in improving contraceptive uptake by women with medical illnesses": University of Kelaniya, Ragama Participation in the Global Survey on Maternal and Perinatal Health A CGF of the UNFPA/WHO SPP: Family Health Bureau, Ministry of Health, Colombo
Thailand	Research mentoring grants to: Prince of Songkla University, Hatyai; Institute for Population and Social Research, Mahidol University and College of Public Health, Chulalongkorn University Support for studies on: ● factors influencing delivery-care utilization in Songkhla province, southern Thailand: women's perspectives: Prince of Songkla University, Hatyai ● strengthening cervical cancer screening in a Thai rural community: Institute for Population and Social Research, Mahidol University and Health Promotion Centre Region 4, Muang District Participation in study on: "Multicentre randomized trial to evaluate the effectiveness of a one-day versus seven-day regimen of nitrofurantoin for the treatment of asymptomatic bacteriuria in pregnancy": Departments of Obstetrics and Gynaecology, Faculty of Medicine, Khon Kaen University; Chulalongkorn University; Chiang Mai University; and Prince of Songkla University Participation in the Global Survey on Maternal and Perinatal Health RHL-EBM clinically integrated e-learning project: Department of Obstetrics and Gynaecology, Khon Kaen University co-ordinating for eight centres in Thailand A CGF of the UNFPA/WHO SPP: Reproductive Health Division, Department of Health, Ministry of Public Health, Bangkok

Country	Collaborative activities
Tonga	A CIF of the UNFPA/WHO SPP: Reproductive and Child Health Department, Ministry of Health, Nuku Alofa
Vanuatu	A CIF of the UNFPA/WHO SPP: Reproductive Health Department, Ministry of Health, Port Vila
Viet Nam	Institutions receiving resource maintenance grant: ● National Hospital of Obstetrics and Gynaecology, Hanoi ● Hung Vuong Hospital, Ho Chi Minh City Participation in multicentre studies on post-ovulatory methods for fertility regulation: National Hospital of Obstetrics and Gynaecology, Hanoi; Hanoi Obstetrics and Gynaecology Hospital, Hanoi; Tu Du Hospital, Ho Chi Minh City; and Hung Vuong Hospital, Ho Chi Minh City Participation in studies on: ● "Multicentre randomized trial to evaluate the effectiveness of a one-day versus seven-day regimen of nitrofurantoin for the treatment of asymptomatic bacteriuria in pregnancy": National Hospital of Obstetrics and Gynaecology, Hanoi ● "Misoprostol to treat postpartum haemorrhage": Hung Vuong Hospital, Ho Chi Minh City A CIF of the UNFPA/WHO SPP: Ministry of Health, Hanoi; Hung Vuong Hospital, Ho Chi Minh City; National Hospital of Obstetrics and Gynaecology, Hanoi: Tu Du Hospital, Ho Chi Minh City and Hue Medical University, Hue Participation in the Global Survey on Maternal and Perinatal Health

REGIONAL ADVISORY PANEL FOR ASIA AND THE WESTERN PACIFIC REGION IN 2007

Members

Maimunah Bte A. Hamid	Public Health Institute, Ministry of Health, Jalan Bangsar, Kuala Lumpur, Malaysia
Sea-Baick Lee	Planned Parenthood Federation of Korea, Yeongdeungpo, Seoul, Republic of Korea
Than Than Tin	Central Women's Hospital, Yangon, Myanmar
Zheng Xiao Ying	Institute of Population Research, Peking University, Beijing, China
Bencha Yoddymnern-Attig	Institute for Population and Social Research, Mahidol University, Nakhon Pathom, Thailand

Temporary advisers

Azrul Azwar	Community Health, Ministry of Health, Jakarta, Indonesia
Ferdosi Begum	Begum Khaleda Zia Medical College, Dhaka, Bangladesh
Raman Gangakhedkar	National AIDS Research Institute, Bhosari, Pune, India
Tran Thi Phuong Mai	Ministry of Health, Hanoi, Viet Nam

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	4	44					4
Women	5	56					5
WHO Region:							
South-East Asia	5	56					5
Western Pacific	4	44					4

Total = 9

REGIONAL ADVISORY PANEL FOR ASIA AND THE WESTERN PACIFIC REGION IN 2008

Members

Maimunah Bte A. Hamid	Public Health Institute, Ministry of Health, Jalan Bangsar, Kuala Lumpur, Malaysia
Sea-Baick Lee	Planned Parenthood Federation of Korea, Yeongdeungpo, Seoul, Republic of Korea
Than Than Tin	Central Women's Hospital, Yangon, Myanmar
Zheng Xiao Ying	Institute of Population Research, Peking University, Beijing, China
Bencha Yoddymnern-Attig	Institute for Population and Social Research, Mahidol University, Nakhon Pathom, Thailand

Temporary advisers

Sameena Chowdhury	Dhaka Medical College, Dhaka, Bangladesh
Raman Gangakhedkar	National AIDS Research Institute, Bhosari, Pune, India
Triono Soendoro	National Institute for Health Research and Development, Ministry of Health, Jakarta, Indonesia
Surasak Taneepanichskul	College of Public Health Sciences, Chulalongkorn University, Bangkok, Thailand

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	4	44					4
Women	5	56					5
WHO Region:							
South-East Asia	6	67					6
Western Pacific	3	33					3

Total = 9

HEADS OF CENTRES IN ASIA AND THE WESTERN PACIFICREGION IN 2007–2008

Cambodia

Ung Sam An	National Institute for Public Health, Phnom Penh

China

Gao Ershang	Shanghai Institute of Planned Parenthood Research, Shanghai
Ge Qinsheng	Peking Union Medical College Hospital, Beijing
Gu Zhongwei	National Research Institute for Family Planning, Beijing
Hou Qingchang	Tianjin Municipal Research Institute for Family Planning, Tianjin
Liu Xiaozhang	Sichuan Family Planning Research Institute, Chengdu
Sun Zu-Yue	National Evaluation Centre for the Toxicology of Fertility Regulating Drugs, Shanghai
Yang Hua	Family Planning Research Institute of Zhejiang, Hangzhou
Zheng Xiaoying	Institute of Population Research, Peking University, Beijing

India

Lakhbir Dhaliwal	Postgraduate Institute of Medical Education and Research, Chandigarh
Vrinda V Khole	National Institute for Research in Reproductive Health, Mumbai
Suneeta Mittal	All India Institute of Medical Sciences, New Delhi

Indonesia

Aucky Hinting	Reproductive Health Research Centre, Airlangga University, Surabaya
Delfi Lutan	Western Indonesia Reproductive Health Development Centre, Faculty of Medicine, University of North Sumatra, Medan

The Lao People's Democratic Republic

Kaisone Chounlamany	Maternal and Child Health Centre, Ministry of Public Health, Vientiane

Mongolia

Janchiv Radnaabazar	State Research Centre on Maternal and Child Health and Human Reproduction, Ulaanbaatar

Myanmar

Khin Pyone Kyi	Department of Medical Research - Lower Myanmar, Ministry of Health, Yangon
Thein Tun	Department of Medical Research - Upper Myanmar, Ministry of Health, Pyin-Oo-Lwin

Sri Lanka

H.R. Seneviratne	Department of Biochemistry, Faculty of Medicine, University of Colombo, Colombo

Viet Nam

Nguyen Duc Vy	National Hospital of Obstetrics and Gynaecology, Hanoi
Tran Son Thach	Hung Vuong Hospital, Ho Chi Minh City

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	12	57					12
Women	9	43					9
WHO Region							
South-East Asia	8	38					8
Western Pacific	13	62					13

Total = 21

Chapter 10

Research-capacity strengthening and programme development: Eastern Europe and Central Asian Republics

1. INTRODUCTION

The work of the Department in Eastern Europe and the Central Asian Republics is carried out collaboratively with the WHO Regional Office for Europe. This work aims to strengthen in-country programmatic and operational-research capabilities in support of evidence-based policy-setting and programming on regional and country priority issues.

2. PROGRESS IN 2007–2008

2.1 New policy decision on HRP resource allocation to the European Region

Following a recommendation from the RHR Scientific and Technical Advisory Group and RHR's Regional Advisory Panel for Europe on resource allocation to the European Region, the Policy and Coordination Committee endorsed at its 20th Meeting (June 2007) an adjustment in allocation of the Special Programme funds for research-capacity strengthening as follows:

- 50% for the African and the Eastern Mediterranean Regions;
- 20% for the South-East Asia and the Western Pacific Regions;
- 20% for the Region of the Americas;
- 10% for countries in Eastern Europe and Central Asia.

Furthermore, the Policy and Coordination Committee requested that priority be given to Central Asian countries where needs are highest, and encouraged the Department to seek opportunities for resource mobilization from other sources.

2.2 Capacity-strengthening in operations research

2.2.1 Establishment of a host institution for research-capacity strengthening in the European Region

The School of Public Health of the Kaunas University of Medicine, Kaunas, Lithuania is a member of the Association of Schools of Public Health in the European Region (ASPHER). The School was identified by EURO as a potential venue for institutionalizing the regional training course on operations research, with special attention to the needs of Russian-speaking countries. The following steps, agreed with the School during a joint site visit in February 2007, have been successfully implemented.

- Two faculty members chosen to coordinate this initiative took part in an interregional training of trainers workshop (Bangkok, November 2007) to be familiarized with the content of the course and follow-up needs of future trainees. This training was jointly sponsored by RHR and the Population Council FRONTIERS Project.
- One orientation session was organized for 12 additional staff from the School and from the Department of Obstetrics and Gynaecology, to build an interdisciplinary mix of potential facilitators. Half of these participants formed a core group of trainers for facilitating selected sessions of the course, with back-up from one external consultant from Donetsk University in Ukraine.

- The first intercountry workshop, conducted in Russian, was held from 17 to 28 November 2008 and brought together 20 participants from Azerbaijan, Belarus, Kyrgyzstan, Moldova, and Ukraine. The majority were clinical researchers or programme managers, but their previous experience in operations/health systems research was very limited. Some areas of interest for research included:

  – improving quality of perinatal care for mothers and newborns (Azerbaijan, Ukraine);

  – improving access to care for rural/poor communities (Kyrgyzstan);

  – innovative services for menopausal women (Moldova);

  – information and services for young people (Belarus).

Two major challenges yet to be addressed are the need to establish an effective mechanism for tutoring the trainees in their efforts to finalize their proposals; and the limited capacity to undertake the scientific and ethical review of the proposals in Russian.

2.2.2 Fifth meeting of the Regional Advisory Panel for Europe

The WHO Collaborating Centre for Perinatal Medicine and Reproductive Health hosted the fifth meeting of the Regional Advisory Panel for Europe in April 2007 in Prague, Czech Republic. Regional priorities for sexual and reproductive health were identified and realigned with the WHO organization-wide Medium Term Plan for 2008–2013 and the biennial plans for 2008–2009. These included programmatic and research needs for supporting the implementation of the regional as well as global reproductive health strategies, and for strengthening the health-systems approach (with equity and gender as cross-cutting issues) and with due account of the wide diversity between and within countries.

The RAP further stressed the important role that the European Region should play in contributing to ongoing research work on sexual health at the regional and global levels. This role included the evaluation of health-sector interventions which seek to integrate sexuality counselling into the content of different types of services, and the development, refining, and testing of appropriate indicators for measuring sexual health.

2.2.3 Regional meeting of WHO collaborating centres for reproductive health

Twenty-two directors and representatives of 20 WHO collaborating centres for research in human reproduction, research synthesis, maternal and child health, and health promotion in sexual and reproductive health, met in Prague, Czech Republic from 23 to 24 April 2007. The purpose of the meeting was to discuss and agree upon ways to improve communication with WHO and networking among the centres. The participants were also oriented on the changes in the guidelines for designation and re-designation, and on ways that the re-alignment of their terms of reference and work plans with the WHO Medium Term Plan 2008–2013 could be facilitated.

Following this meeting, eight of these centres contributed to the preparation of issue Number 67 (July 2008) *Designing the future: promoting research in sexual and reproductive health* in the European magazine *Entre Nous,* as a channel for information exchange on issues of common interest.

2.3 Programmatic support to the European Region

2.3.1 Systematic introduction and adaptation of WHO guidelines through the UNFPA/WHO Strategic Partnership Programme

During the year 2007, country activities supported by the UNFPA/WHO Strategic Partnership Programme continued as follows.

Kyrgyzstan. Within the context of the integration of sexual and reproductive health in primary healthcare, follow-up training sessions were held for continuous education of health-care providers, with support from the Kyrgyz State Medical Institute. The UNFPA Country Office fully funded these activities from their country budget.

Turkmenistan. National family planning and STI guidelines, which were developed and piloted in one region in 2006, have now been adopted by the Ministry of Health. National teams began the country-wide dissemination of these guidelines, with additional funding from the UNFPA country budget and other sources. The Ministry of Health mobilized additional funds from other sources in 2007, to expand this systematic process and to include two additional guidelines on maternal and newborn health.

Uzbekistan. A series of introductory workshops was conducted in five regions for primary health-care physicians, STI specialist physicians and gynaecologists, and teachers in medical schools and colleges, as well as managerial staff of the health-care system. The purpose of these workshops was to introduce participants to newly adapted national guidelines on integration of services for reproductive health, family planning, and care of sexually transmitted infections, and to provide them with essential knowledge on how to use these guidelines in their practical work.

3. PLANNED ACTIVITIES

Continued support will be provided to the new regional training centre in Kaunas, Lithuania, to organize at least one regional course on operations research annually for the next three years and to establish follow-up mechanisms for the alumni of these courses. The possibility of establishing a regional working group to undertake the scientific and ethical review of proposals written in Russian will be explored. Progress will be monitored through RAP meetings and regular meetings of the WHO collaborating centres.

Annex 1

REGIONAL ADVISORY PANEL FOR THE EUROPEAN REGION IN 2007

Members

Ayse Akin	Hacettepe University, Sihhiye - Ankara, Turkey
Elena Baibariana	Russian Academy of Medical Science, Moscow, Russian Federation
Gian Paolo Chiaffoni	Ospedale Policlinico GB Rossi, Verona, Italy
Jerker Liljestrand	Malmö University Hospital, Malmö, Sweden
Helle Karro (Chair)	University of Tartu, Estonia
Evert Ketting	Netherlands School of Public Health, Utrecht, Netherlands
Saule Nukusheva	School of Public Health, Almaty, Kazakhstan
Babill Stray-Pedersen	National Hospital, University of Oslo, Norway
Petr Velebil	Research Institute for Maternal Health, Prague, Czech Republic

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men					4	44	4
Women			2	22	3	33	5
WHO Region:							
Europe			2	22	7	77	9

Total = 9

Temporary advisers

Inge Baumgarten	Deutsche Gesellshaft für Technische Zussamenarbeit (GTZ), Eschborn, Germany
Soley Bender	University of Iceland, Reykjavik, Iceland

Chapter 11

Technical cooperation with countries: policy and programmatic issues

1. INTRODUCTION

The central objective of the Policy and Programmatic Issues group (PPI) is to build health-system capacity for strategic planning, development, implementation, and evaluation of interventions to improve equitable access to and the quality of reproductive health services. PPI utilizes two broad approaches:

- providing technical assistance and support to research which addresses key gaps in the evidence base on ways to strengthen health systems – through reforms, public–private partnerships, and efforts to strengthen leadership, governance, and reproductive health-care financing; and

- the WHO Strategic Approach for strengthening reproductive health policies and programmes, including the related work on scaling-up experimental, pilot, and demonstration projects.

2. RESOURCE MOBILIZATION FOR REPRODUCTIVE HEALTH IN THE NEW AID ENVIRONMENT

2.1 Progress

During 2007 and 2008, substantial effort was devoted to the development of two related multi-regional projects – both of which are aimed at supporting national-level funding for reproductive health. Both projects began activities in 2008, and will run through 2010.

A third project was undertaken during 2008. This project used the Internet to stimulate discussion groups and hosted a video conference which focused on civil-society engagement in the new aid environment.

2.1.1 Joint UNFPA/WHO country office capacity-building project

During 2007–2008, UNFPA and WHO developed and began joint implementation of a project that builds upon collaborative work undertaken in 2005 and 2006. The project was developed in direct response to calls for such a programme from the heads of both agencies during joint high-level consultations.

Supported by a grant from the United Nations Foundation, the project seeks to build country-office capacity to profile sexual and reproductive health in national development and health-sector planning and budgeting processes. The activity is unique for two reasons. First, it brings together two United Nations agencies for joint training and discussions, and second, it looks at broader planning and budgeting processes from the perspective of reproductive health.

The project is organized around the delivery of four regional workshops, each of which will bring together country-office staff of both agencies from three to four countries. A core curriculum was field-tested in 2006, and refined through a subcontract with a nongovernmental organization, HLSP. The curriculum is consistent with both agencies' policies and related areas of work, and presents contemporary information drawn from each regional context.

The first workshop was held for six countries in the Western Pacific Region in December 2008. In 2009, workshops are

planned for anglophone and francophone African countries, and in late 2009 or early 2010 the fourth workshop will be held in the Eastern Mediterranean Region. Each workshop includes facilitators from UNFPA and WHO headquarters, regional, and country offices.

The objective of each workshop is to develop the skills and knowledge of concerned UNFPA and WHO staff, to improve their ability to navigate their way through the 'new aid environment' and to ensure adequate support to sexual and reproductive health in this changing context. For example, the workshops will examine the implications for sexual and reproductive health of aid modalities such as sector-wide approaches (SWAps) and budget support, and the Paris Principles on Harmonization and Alignment.

The workshops will also provide advice on practical approaches to integrating reproductive health into sector-wide and development plans and national budget processes. As a follow-up to the workshops, technical support grants will be available to selected country offices, based upon action plans produced by the teams of staff from the offices in each country. The secretariat will manage an external evaluation of the project at mid-term and at the end of the project.

2.1.2 Strengthening the capacity of civil society organizations to promote reproductive health in the new aid environment

The context, processes, and financing mechanisms by which donor countries and development agencies (including the United Nations) are working to alleviate global poverty has changed significantly over recent years. International development cooperation policy prioritizes partnerships among governments, donors, the private sector, and civil society to achieve sustainable development.

The involvement of civil society is crucial to this process, as this partner contributes a voice of accountability to the health needs of the communities being served by national programmes. This accountability is an essential element in ensuring universal coverage and equitable access to reproductive health care.

However, many civil society actors in the reproductive health sector do not seek active engagement with government. Some do not have sufficient economic training to influence the economists in the ministries of finance or local level government budget offices, who are often responsible for such planning. Some civil society organizations (CSOs) focus on specific, short-term issues rather than overarching, strategic approaches.

The secretariat began a new three-year project late in 2008 that will build the advocacy capacity of civil society organizations to interact more effectively with government in support of sexual and reproductive health. This project is supported by a grant from the Bill and Melinda Gates Foundation, and is structured in a similar manner to the companion project that targets UNFPA and WHO country office staff. Four regional workshops, each involving two to three CSOs from up to five countries, will be produced in 2009–2010. Small grants will be provided to selected CSOs to support implementation of action plans to influence local government funding for reproductive health. The workshops will take place in the same countries as the UNFPA/WHO country office capacity building project.

A request for proposals issued in 2008 led to a sub-contract with an international CSO for the conduct of the regional workshops and administration of the small grants. The secretariat will conduct impact evaluation research of selected civil society programmes supported by this contract, to better document the effects of CSO support and involvement in the new aid environment processes. That research will be coordinated with the selected contractor. At the close of the project, the secretariat will convene an international consultation to review worldwide experience with civil society engagement in national development and health-sector planning processes to support reproductive health. This review will include the work produced by this contract.

2.1.3 Supporting civil society engagement

In 2008, an Internet-based knowledge-management project, to enhance civil society promotion of reproductive health in Poverty Reduction Strategy Papers (PRSP) and SWAps, was implemented by the German Foundation for World Population (DSW).

This activity produced a global video conference that simultaneously brought together CSO in Ethiopia, Thailand. and Uganda to share experiences and listen to keynote speakers from the Organization for Economic Cooperation and Development (OECD), the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFTAM) and the International Planned Parenthood Federation (IPPF). Moderated online discussion groups stimulated wide-ranging comments and inputs from hundreds of participants in the months preceding the global video forum. Follow-up work in 2009 will lead to the creation of communities of practice that continue this vibrant exchange of civil society actors, government, and donors.

2.2 Planned activities

The secretariat will begin an evaluation research programme that studies the effectiveness of using civil society organizations to promote reproductive health in the new aid environment. This programme is essentially the research element of the work involving civil society (described in Section 2.1.3, above) which is supported by the Bill and Melinda Gates Foundation.

3. WORKING WITH THE PRIVATE SECTOR

3.1 Progress

Two activities launched during 2007–2008 are directly related to ensuring universal access to sexual and reproductive health by making effective use of the private (or non-state) sector for service delivery. Both activities were identified as priority areas for attention by the 2006 international technical consultation concerning "Franchising reproductive health services". That consultation stressed the importance of working to build public-sector capacity to work in partnership with the private sector, as well as the importance of prioritizing research topics that address gaps in the evidence base.

3.1.1 Network for Africa: public–private linkages for health

The secretariat collaborated with the Private Sector Partnerships for Better Health (PSP-*One*) project of USAID to strengthen the capacity of African ministries of health to engage the private health sector to deliver quality essential health services – specifically reproductive health/family planning services and commodities and HIV/AIDS-related services. The centrepiece of the collaboration is the creation of a network of African countries that are interested and engaged in building linkages with the private sector to meet health objectives.

To launch the network, a three-day regional workshop was held in Addis Ababa, Ethiopia in May 2008. This workshop involved senior government officials from six anglophone African countries (three to four director-level officials from Ghana, Kenya, Nigeria, South Africa, Uganda, and the United Republic of Tanzania). The workshop curriculum drew upon the World Bank Institute course on a similar theme, working to update and adapt it with contemporary case examples drawn from Africa. Follow-up work to foster the creation of the network is being supported by Internet-based communities of practice, and support provided to national governments in the selected countries by the USAID PSP-*One* Project.

3.1.2 Impact evaluation of Sun Quality Health Franchise in Myanmar

Chief among the conclusions of the December 2006 technical consultation on franchise programmes was a consensus that social franchises are at a 'proof of concept' stage of development (i.e. social franchises are feasible to start and maintain, given an appropriate set of supportive investments to subsidize services for the poor). Although sufficient evidence exists as a basis for this assessment, there are gaps in the evidence base related to the financing of social franchises, provider retention, and impact on the overall healthcare market.

The secretariat worked with the Sun Quality Health franchise of Population Services International in Myanmar, to launch a study in 2008 to respond directly to the last two gaps in evidence. The study is constructed around three main elements:

- formative research, to develop items for multi-item scale scores that will use psychometric analytical techniques to measure provider motivations to join the franchise (non-monetary dimensions), and client perceptions of quality of care and responsiveness; and

- an uncontrolled observational study, to assess health-seeking behaviours among current Sun Quality Health clients (to determine if the network is causing a shift in source of care or expanding coverage), and a two-year prospective cohort study of the member providers' practice characteristics (to assess impact on case load and revenue made by joining the franchise – i.e. why providers join and remain members of the franchise). The results from the formative research will be available in 2009.

3.2 Planned activities

Follow-up to the Network for Africa Public–Private Partnerships will be lead by the USAID PSP-*One* Project. The impact evaluation of the Sun Quality Health Franchise programme in Myanmar will continue, and periodic technical support at key junctures in this study will be provided.

New activities include the development of evaluation research on franchise programmes that seek to demonstrate linkages with social-health-insurance schemes in both low- and middle- income countries. The rapid growth in franchise programmes, primarily being led by Marie Stopes International and Population Services International, is being fuelled by large multi-year grants to each organization. These programmes are expanding membership rapidly and moving into new markets.

However, linkages with national health-insurance programmes have not been established. The secretariat is in discussions with Marie Stopes International to develop a demonstration study concerning how social franchises that provide sexual and reproductive health services can benefit by membership in health-insurance schemes. The discussions also involve ways in which health-insurance schemes can benefit by establishing relations with reputable private-sector networks that provide high-quality sexual and reproductive health services.

4. IMPACT OF FINANCING REFORMS ON REPRODUCTIVE HEALTH SERVICES AND OUTCOMES

4.1 Progress

A case–control, quasi-experimental study design (post-test only) was begun in late 2006, completed in 2007, and fully reported on during 2008. The study (conducted in Egypt) investigated the effect of a performance-based payment scheme upon public-sector providers' behaviours, related to reproductive health-care services (e.g. improved quality of care, and increased volume of clients served).

The results clearly showed statistically significant improvements in the quality of family planning, antenatal care, and child-care services in the experimental sites, as measured by a variety of indicators (including both technical and interpersonal communication content). An analysis of provider and client characteristics found no significant or meaningful differences between study groups and the facilities of both study groups were essentially the same. These findings further strengthened the interpretation of attribution of effects to the introduction of the payment scheme. The Ministry of Health and Population in Egypt has used these findings as evidence for scaling up the use of the performance-based payment scheme in other governorates in 2008.

4.2 Planned activities

Follow-up support to the Egyptian Ministry of Health and Population has been provided by the Social Science Research Centre in Cairo. No additional research concerning provider incentive payments is currently foreseen. However, evaluations of other types of financing reforms are being developed. These alternatives include assessments of the effectiveness and impact of performance-based grants as a vehicle for challenging health-sector budget support to sexual and reproductive health programmes. Discussions are under way with the Department of Health in the Philippines and the World Bank to investigate a recent performance-based grant that targeted financing the provision of reproductive-health commodities.

5. EQUITY AND POVERTY ALLEVIATION RESEARCH

5.1 Progress

5.1.1 Benchmarking the fairness of health-sector reform in the Philippines

The secretariat supported research in the Philippines on the adaptation of an analytical framework termed the "Benchmarks of Fairness" (BOF), which was completed in 2008. BOF is an evidence-based analytical process that is used to assess the fairness of health-sector reform on the three dimensions of equity, efficiency, and accountability – using indicators grouped around nine different benchmarks.

The Philippines study focused on reproductive health services, with particular attention given to indicators of the World Bank's Women's Health and Safe Motherhood Project in the province of Surigao del Sur, Mindanao. As indicators from the Health Sector Reform Programme became available during the course of the study, they were built into the study's framework. Existing data sets were reviewed, and the data organized, to facilitate a scoring of fairness, using agreed rules for the rating. Interpretations of the scoring results came from extensive deliberations by a number of technical working groups.

The study's strategy of reliance upon existing data sets brought the BOF study in the Philippines into direct contact with the disorganized nature of the information system of the Department of Health. The Department of Health routinely collects a tremendous amount of statistics, but the data are not easily available. Moreover, upon inspection it is found that these data are not always the type which are most needed to monitor performance or impact.

For example, very little of the data is disaggregated sufficiently to be of use for drawing conclusions on how well the health system is reaching various groups. Repositories of data sets are spread across multiple branches of the Department of Health without uniformity in definitions, reporting, and periodicity of collection. Reporting streams are not functioning smoothly, and much information is lost as data are consolidated and move upstream from local government units, to provinces, to national levels.

Although the BOF study did find that, overall, actions which have been taken by the health-sector reform programme to improve equity are showing impact (particularly those which reduce financial barriers and promote health equity), the study's assessment of the data collected was suggestive of shortcomings and unfair coverage. The study found strong evidence that the systems put in place by the Department of Health to improve efficiency are promoting conditions of fairness that should have an impact on the population's health.

The study also concluded that the Department of Health is quite simply not collecting sufficient information on how the health sector is working to promote conditions of transparency and accountability. This conclusion is particularly troubling, because the scant evidence that does exist indicates that progress is being made and that efforts are apparently under way to create conditions of accountability – with additional attention to this dimension of fairness, the Department of Health could very well be able to provide evidence of success.

The principle strength of the BOF study is its methodology. The inclusive and highly participatory process created several forums where widely different groups of stakeholders in

the health-sector reform programme were able to meet and discuss issues of fairness. The focal point was always existing data, and the analytical framework (using agreed-upon scoring rules and consensus-building on conclusions) was highly appreciated by the participants in the study.

Also produced was a manual that can serve as a useful guide for future applications of the Benchmarks of Fairness methodology in the Philippines. In addition, a stand-alone policy brief that summarizes key findings from the study was widely disseminated.

5.1.2 Economic impact of maternal deaths at the household level in rural China

Reproductive-health programmes have not been as effective as others – particularly HIV/AIDS, malaria, and tuberculosis – in demonstrating that failure to address the reproductive-health needs of poor women can undermine poverty reduction. In part, this is due to gaps in the evidence base that directly relate improvements in reproductive health to poverty reduction. As such, there is a pressing need for additional evidence on how interventions that improve maternal and newborn health contribute to reducing poverty.

One reason why much existing research has not effectively addressed the effects of poor reproductive health on poverty is that studies have relied on interrupted time series data generated by observational surveys, and only provide suggestions of effects but not strong evidence. Prospective, longitudinal surveys of the same cohort are needed to track changes over time among the same population – describing the relationship between reproductive health and household-level measures of poverty.

The secretariat worked with faculty from the Department of Maternal and Child Health of Peking University during 2007, to develop a study proposal designed to identify the economic impact of maternal death at the household level in rural China. The proposal underwent review by the HRP scientific and ethical review bodies during 2008, and began in late 2008.

The study utilizes a prospective controlled cohort study designed to compare the experiences of families that have suffered a maternal death with carefully matched families that had a birth with no adverse maternal health outcomes – both between one to three months after the maternal death/birth and one year later. The study will investigate the direct and indirect costs of maternal death in the affected households, identify the coping strategies adopted by the households using both quantitative and qualitative research methods. In addition, the study will compare changes for both the affected and comparison groups' household wealth, incomes, and expenditures. The study will also compare health and subsequent education status of the newborn and any siblings.

This study will be the first robust and carefully controlled empirical investigation of the economic effects (at a household level) of maternal deaths in China and in contemporary scientific literature. As such, it directly addresses a worldwide gap in the existing evidence base concerning the impact of maternal mortality on national poverty-reduction strategies. Its results will be useful in making the case for investment in maternal and newborn health as part of national economic development policy. Results from the study will also provide evidence useful for developing policy and programmes to support families who have suffered a maternal death, yielding recommendations for needed social-assistance interventions.

5.2 Planned activities

5.2.1 Transitions to skilled birth-attendance: health-systems response

Programmes to reduce maternal mortality work across several areas of health systems. Such programmes implement activities aimed at reducing barriers to care and increasing coverage of antenatal, delivery, postpartum, and newborn-care services. Effective programmes assemble a package of interventions in each of the following areas:

- financing (both to reduce financial barriers for patients and to provide incentives to providers);
- human resource development (to scale up the availability of skilled attendance);
- service delivery (to ensure quality and appropriate components of maternal and newborn health services at all levels);
- health infrastructure and technologies (emergency obstetric care at referral hospitals linked to the primary-care providers); and
- governance of the health sector (intersectoral support, legislation and partnership with the private sector).

In the coming year, the secretariat will develop a new research programme that examines key issues in the transition from traditional birth-attendants to skilled attendance, as they intersect each of the health-system elements described above.

6. THE STRATEGIC APPROACH TO STRENGTHENING REPRODUCTIVE HEALTH POLICIES AND PROGRAMMES

6.1 Progress

The Strategic Approach is a three-stage process to assist countries in strengthening their reproductive health policies,

programmes, and research. Stage I is a strategic assessment that examines:

- the needs and perspectives of current and potential users of services;
- the extent of coverage, quality of care, and capacities of the service delivery system; and
- the mix of available technologies and other reproductive health interventions.

These assessments use a qualitative methodology and a field-based participatory approach, involving programme managers, service providers, researchers, and others having interest in improving reproductive health – including representatives of women's and youth organizations.

A variety of recommendations emerged from a strategic assessment. Stage II involves pilot studies to investigate those recommendations for policy change in the community, and programmatic interventions to improve access, utilization, and quality of care in service delivery. In Stage III, findings from the first two stages are used to scale up interventions for wider impact. The Strategic Approach has been used by 30 countries to address a variety of reproductive health issues. In ten of these countries, the process has been used two or more times to address additional issues.

6.1.1 Dissemination, advocacy and capacity-building

A short advocacy and information document on the Strategic Approach was published in 2007. This document is intended for busy policy-makers and programme managers who need a succinct overview of the framework and process, and has been translated into French, Russian, and Spanish. In addition, a new draft generic guide for conducting strategic assessments was developed, to replace the original guide which focused on issues of contraceptive introduction and family planning services.

In previous years, regional workshops to introduce national teams to the Strategic Approach, and to discuss and advocate for its implementation, were conducted in collaboration with WHO regional offices and nongovernmental organization partners in Latin America, Africa, Asia, and Eastern Europe. In 2008, subregional workshops were held in Nairobi, Kenya, and Senegal (Dakar), to introduce nine country teams to the use of the Strategic Approach to implement WHO policy and technical guidance for the prevention of unsafe abortion. Subsequently, strategic assessments were conducted in Zambia and are planned in Guinea and Malawi. Table 1 indicates the countries which are implementing the Strategic Approach, the year the strategic assessment was initiated, and the area of major reproductive-health focus.

Figure 1. Countries which have implemented or are currently implementing the Strategic Approach (supported by WHO and by other partners)

Table 1. Countries implementing the Strategic Approach, year initiated, and reproductive health focus

Area of major focus	Date of strategic assessment	Action research/ policy and programme interventions	Scaling-up of interventions
Contraceptive introduction and quality of care in family planning	Brazil 1993 South Africa 1994 Viet Nam 1994 Zambia 1995 Chile 1996 Myanmar 1996 Chongqing, China 2000 Oman 2004 Afghanistan 2005 Côte d'Ivoire 2006 Senegal 2006 Congo (Brazzaville) 2006 Guinea (Conakry) 2006	X X X X X X X X X X X	X X X X X X X
Maternal health and family planning	Bolivia (Plurinational States of) 1994 Dominican Republic 2001 Guatemala 2001 Nepal 2003–4 Paraguay 2004	X X X X X	X X
Adolescent health	Kyrgyzstan 1999	X	X
Preventing unsafe abortion	Viet Nam 1997 Romania 2001 Bangladesh 2002 Mongolia 2003 Ghana 2005 Moldova 2005 Macedonia 2007 Zambia 2008 Ukraine 2008 Russian Federation 2008 Guinea 2008 Malawi 2008	X X X X X X X	X X X X X
Reproductive tract infections	Latvia 2000 Ghana 2001 Brazil 2002 China 2002 Kosovo, Serbia 2004 Viet Nam 2007	X X X X X X	X X X X
HIV/AIDS	Brazil 2001	X	X
Cervical cancer	Bolivia 2002 Uttar Pradesh, India 2004	X X	
Comprehensive reproductive health	Burkina Faso 1996 Ethiopia 1997 Myanmar 1998 Lao People's Democratic Republic 1999 Yunnan, China 2002 Rajasthan, India 2004	X X X X X	X X X

6.1.2 Country activities during 2007–2008

6.1.2.1 Activities in Africa and the Middle East

In Zambia, efforts were undertaken to scale up more widely the "Pilots to Regional Programmes" initiative in Copperbelt province, to strengthen family planning and other reproductive health services. Following a national-level dissemination workshop and site visits by key stakeholders, Copperbelt provincial staff are now providing technical support to other provinces in scaling-up the project initiatives with funding from UNFPA.

6.1.2.2 Activities in Asia

In Viet Nam, a strategic assessment was conducted in 2007 to address the prevention and treatment of reproductive-tract and sexually transmitted infections.

In Yunnan, China, a package of interventions to increase access to higher-quality family-planning and related reproductive-health services for urban migrants in both the public and private sectors was developed and tested. Following dissemination of the final evaluation report, ExpandNet/WHO staff worked with the Yunnan team to develop a strategy for scaling-up project activities to other areas of Kunming city and more broadly in Yunnan province (see 7.1.2.1 for further details).

6.1.2.3 Activities in Eastern Europe

A pilot demonstration project implementing comprehensive reproductive health services in a factory setting was initiated in Braila, Romania in July 2006 and completed in November 2008. Two factory-based general practitioners were trained to provide reproductive health services to women. These services included provision of contraceptive counselling and methods; information and referrals for induced abortion; counselling and other services related to pregnancy; screening and treatment for sexually transmitted infections; screening for genital and breast cancers; counselling and referrals for fertility problems; counselling and referrals for gender-based violence; and information, counselling, and referral for issues related to menopause.

In addition, information, education, and communication (IEC) materials were developed and disseminated throughout the factory. The final evaluation report is awaited, but preliminary information suggests that – although the project was met with enthusiasm by the women workers – there was insufficient time for them to access services during their lunch and other breaks. Moreover, the providers could not cope with the numbers of workers requesting services, as they also needed to serve non-factory patient lists.

6.1.2.4 Activities in Latin America

In Peru, the Brazilian NGO Reprolatina assisted the School of Public Health of the Universidad Peruana Cayetano Heredia in Lima to develop and implement a course for staff from the Ministry of Health and Master of Public Health students on the Strategic Approach. Subsequently, they assisted faculty in the development of a module on the Strategic Approach for incorporation into the school's Master of Global Public Health curriculum.

During 2006, the Ministry of Health in Paraguay implemented a workshop to disseminate the results and recommendations of the prior strategic assessment, which had addressed maternal and neonatal health and family planning with a focus on the community level. The secretariat and Reprolatina subsequently provided technical support for follow-up programmatic research designed to develop interventions to strengthen district-level organizational capacity and training to improve the quality of these services. In addition, the project included activities to strengthen community involvement and demand for quality services.

The project is being implemented in four municipalities. Following initial training of trainers and subsequent training of staff in health facilities, baseline facility and community 'diagnostic exercises' were undertaken by the health staff. These activities were based on newly developed national norms and guidelines developed through the UNFPA-WHO Strategic Partnership Programme. Based on the findings, each health centre has developed action plans to strengthen quality of care and follow-up actions are underway.

6.2 Planned activities

The secretariat will to continue to support previously initiated or ongoing Strategic Approach activities (including strategic assessments in progress), follow-up activities (including policy and national guideline development), programmatic research, and efforts to scale up successful interventions as described above and in Chapter 4 on "Preventing unsafe abortion". In addition, new strategic assessments are expected to be implemented in Guinea, Malawi, and the Russian Federation, which will address issues related to abortion, and a strategic assessment addressing prenatal care is expected to take place in Mozambique. The development of new Stage II activities is expected to take place in the Russian Federation, The former Yugoslav Republic of Macedonia, Ukraine, and Zambia, and scaling-up of interventions will be supported in Moldova and Paraguay.

7. SUPPORTING SCALING-UP: EXPANDNET/WHO

7.1 Progress

Programme staff – together with colleagues from the University of Michigan School of Public Health – continue to serve as the secretariat of ExpandNet, a global network seeking to advance the science and practice of scaling-up successfully tested health-service innovations. Previous reports of the Scientific and Technical Advisory Group have discussed the network's objectives, activities, and funding. New activities are described below.

7.1.1 Development and dissemination of resource materials

Four key resource materials were developed during the period. The first was a book entitled *Scaling up health service delivery: from pilot interventions to policies and programmes,* published in 2007. This book presents a literature review and conceptual framework, as well as seven country case-studies on scaling-up from Africa, Latin America, and Asia.

The second, *Practical guidance for scaling up health service innovations*, is intended to assist policy-makers, programme managers and technical support staff in the design and management of scaling-up initiatives. This document will soon be published by WHO.

The third is a guide entitled *Nine steps for developing a scaling-up strategy*. The latter two documents, together with associated worksheets, have been field-tested by assisting country teams to design scaling-up strategies using these tools in a facilitated process as described below.

A fourth resource is a guide for writing case-studies of scaling-up experiences, developed by the ExpandNet Secretariat in collaboration with Management Systems International. This guide consists of 20 questions to guide the development of retrospective case-studies. All of these documents are available on the ExpandNet web site (www.expandnet.net).

7.1.2 Assisting countries to develop strategies for scaling-up

ExpandNet/WHO has developed an approach to assist country teams in developing scaling-up strategies, using the ExpandNet tools in a facilitated process. This approach involves an initial discussion of the project and the ExpandNet framework; joint field visits to project sites to interview managers, providers, clients, and community members; and a subsequent participatory workshop for strategy development. This process has now been used to assist country teams in developing strategies for scaling-up pilot projects in the following countries.

7.1.2.1 China

Growing out of recommendations from an earlier strategic assessment undertaken in Yunnan, China, a pilot project had focused on the provision of high-quality reproductive health services for urban migrants – with advocacy for required local administrative reforms. The project was evaluated after 18 months and found to have had a dramatic impact, and both local government and the National Population and Family Planning Commission (NCPFP) were eager to see activities expanded. However, the potential for scaling-up was in question due to the complexity of the interventions and the capacity of the research team to provide the necessary support for expansion.

During the strategy-development workshop facilitated by ExpandNet/ WHO, a concrete and feasible plan of action emerged. This plan entailed simplifying the intervention; expanding the resource team; and planning for facilitating national and local policy changes, with reliance on local resources. Participation of national-level NPFPC leaders led to their request for a second national-level strategy-development workshop, to plan for the expansion of the UNFPA-funded 32-county project that seeks to improve multiple dimensions of services in China involving the quality of family planning.

7.1.2.2 Kyrgyzstan

An ExpandNet/WHO team worked with the UNFPA-sponsored "Stronger Voices" project, which seeks to address both the supply and the demand for quality reproductive-health services in rural Kyrgyzstan. Although scaling-up had started, this project relied upon intensive inputs from senior Ministry of Health staff and – as such – was not a sustainable model for expansion. As a result of the strategy-development exercise and a subsequent technical support visit from the ExpandNet/WHO team, emphasis has been placed on linking the process of scaling-up to ongoing health reforms and to institutionalize the innovative "Stepping Stones" community-training methodology within existing training structures.

7.1.2.3 Madagascar

As part of a collaboration with the Institute for Reproductive Health (IRH) of Georgetown University, Washington DC, USA, ExpandNet/WHO supported the Ministry of Health of Madagascar in its effort to scale up the integration of the Standard Days Method (SDM) into their family-planning programme. A key feature of this effort was the focus on the development of detailed regional plans for initiating SDM-service delivery throughout the country.

7.1.2.4 Mali

In further collaboration with IRH, ExpandNet/WHO supported the Ministry of Health of Mali to develop strategies to integrate the SDM into the national family-planning programme. After an initial fact-finding mission, a scaling-up strategy-development exercise took place, resulting in a detailed action plan as well as a mechanism for ensuring the collaboration of the Ministry of Health and its other partners in this effort.

7.1.2.5 Peru

ExpandNet assisted a team of stakeholders from the UNFPA-funded "Stronger Voices" adolescent health and development project in Pucallpa, Peru, to undertake fieldwork and develop a scaling-up strategy. A key accomplishment of the strategy-development exercise was to identify ways in which expansion of this pilot project to additional districts could be linked to funding mechanisms and plans of the regional government.

7.1.2.6 Sierra Leone

An ExpandNet team facilitated strategy development in Sierra Leone for the CARE Sexuality and Youth (SAY) Project. The SAY pilot project is an integrated adolescent reproductive health/sexuality information and life-skills programme implemented in northern Sierra Leone. The project employs radio programming, in-school educational modules taught by teachers, and community programming. The project is being scaled up to the remainder of the district, and the Ministry of Education is interested in it being scaled up nationally.

7.1.3 Dissemination and building capacity to use ExpandNet/WHO resources

7.1.3.1 International workshops and presentations

ExpandNet/WHO staff facilitated several international workshops on scaling-up. A two-day workshop was implemented at IRH (November 2007) for senior Ministry of Health and IRH country representatives from Guatemala, India, Madagascar, Mali, the Philippines, and Rwanda. A workshop was facilitated for UNFPA headquarters and country-office staff, together with senior ministry officials from Malawi, Mauritania, Mongolia, Thailand, and Turkey (May 2008). In Peru, a two-day workshop was implemented in August 2008 for UNFPA staff and their counterparts from the Ministry of Health, other ministries, and NGO partners.

In addition, shorter presentations concerning ExpandNet's conceptual framework for scaling up and key lessons learnt through assisting countries to develop scaling-up strategies, were given by members of the ExpandNet secretariat. The following members made these presentations on these dates:

- WHO Department of Reproductive Health and Research (January 2007);
- Implementing Best Practices Initiative meetings (May 2007, November 2007, June 2008, November 2008);
- The Packard Foundation (January 2008);
- Institute for Healthcare Improvement's International Forum on Quality and Safety in Health Care (April 2008);
- WHO Health Services Delivery Task Force (June 2008);
- The Bill and Melinda Gates Foundation (July 2008);
- The American Public Health Association annual conference in San Diego, California, USA (September 2008); and
- The International Conference on Scaling Up: An Essential Strategy on Attaining Health for All held in Rajendrapur, Bangladesh (December 2008).

7.1.3.2 Use of information technologies to build capacity

During this period, the ExpandNet secretariat has made a major effort to explore the use of information technology to disseminate the ExpandNet tools and approaches. These activities included:

- further development of the ExpandNet web site (www.expandnet.net), which provides information about ExpandNet's activities, tools, and other resources (including a bibliography on scaling-up);
- organization of a web-based seminar on scaling-up, using 'Centra' technology for Implementing Best Practices partner organizations, in October 2008; and
- collaboration with Management Sciences for Health and the Implementing Best Practices (MSH/IBP) initiative in the development of the "Virtual Fostering Change" training programme.

ExpandNet is helping with the integration of its nine-step strategy-development process into the scaling-up module.

7.1.4 ExpandNet/WHO meetings

In January 2007, ExpandNet/WHO held a meeting in which participants reviewed and discussed experiences using the ExpandNet/WHO tools in Kyrgyzstan, and planned for similar exercises in China (Yunnan), Peru, and Sierra Leone. The two ExpandNet/WHO guides were reviewed, and plans were

made for the use of information technology in the dissemination of scaling-up tools. The meeting also provided an opportunity to involve new members in the ExpandNet network. In addition ExpandNet/WHO hosted a small three-day technical meeting in October 2007 to discuss special research, monitoring, and evaluation needs during the process of scaling-up health innovations.

7.2 Planned activities

Programme staff will continue to serve as a member of the secretariat of ExpandNet. In addition to publishing the draft guidelines on scaling-up, further efforts in the coming year will be made to develop capacity for scaling-up globally. The guide *Nine steps for developing a scaling-up strategy* will be revised and published, and the participatory approach for scaling-up strategy development will be documented and placed on the web. Additional multimedia presentations and other resources on scaling-up will also be added to the ExpandNet and RHR web sites. Additional Internet-based workshops and training sessions for country teams and staff of institutions providing technical support to scaling-up efforts will be conducted. A CD-ROM containing ExpandNet/WHO publications and guidelines, multimedia presentations, and other resources is also planned. The development of teaching modules on scaling-up for integration into Master's degree programmes in several schools of public health is also being discussed. As part of the MSH/IBP collaboration on the "Virtual Fostering Change" programme, the scaling-up modules will be reviewed, facilitators will be trained, and ongoing support in the implementation of this programme will be provided.

Technical support will continue to be given to countries for the development of strategies for scaling-up and for strategic management of the scaling-up process. Continued support will be given to Kyrgyzstan, and in Mali and Madagascar, in collaboration with the Institute of Reproductive Health of Georgetown University. Other countries of focus remain under discussion, but are likely to include Bangladesh, Moldova, and Paraguay, as well as further collaboration with the Institute for Reproductive Health in scaling-up fertility awareness-based methods in Guatemala.

Continuing efforts will seek to strengthen the evidence base for scaling-up, and to promote continued networking and national capacity-building. These efforts will include the development of additional case-studies to document the determinants of successful scaling-up, using the ExpandNet framework under a broader range of types of services (e.g. maternal and child health, TB, malaria, and HIV/AIDS) and service delivery modalities (e.g. public–private partnerships), so as to validate and expand the evidence base. The Bill and Melinda Gates Foundation has expressed interest in supporting this activity, and a "Letter of Interest" has been submitted to the Foundation.

Finally, an ExpandNet/WHO meeting will be held at the University of Michigan, USA in May 2009, to address priorities for providing technical support to countries for successful scaling-up. The meeting will bring together individuals representing diverse perspectives on scaling-up – including health-programme managers and leaders of NGOs who are implementing scaling-up initiatives, individuals providing technical support, researchers, and donors.

Annex 1

SCIENTISTS IN 2007–2008

Principal investigators

Noemi Alum	Ministry of Health, Asuncion, Paraguay
Ramesh Bhat	Indian institute of Management, Ahmadabad, Gujarat, India
David Bishai	Johns Hopkins University, Baltimore, MD, USA
Philip Guest	The Population Council, Bangkok, Thailand
Jill Keesbury	The Population Council, Nairobi, Kenya
Kopkeo Souphanthong	Maternal and Child Institute, Vientiane, Lao People's Democratic Republic
Kathryn O'Connell	Population Services International, Nairobi, Kenya
Lucian Puscasiu	East European Institute for Reproductive Health, Targu Mures, Romania
Jay Satia	International Council on Management of Population Programmes, Kuala Lumpur, Malaysia
Geeta Sodhi	Swaastha, New Delhi, India
Michael Tan	University of Philippines, Manila, Philippines
Ting Aung	Population Services International, Yangon, Myanmar
Wang Haijun	Peking University, Beijing, China
Wang Yan	Peking University, Beijing, China
Hassan Mohamed Zaky	Cairo American University, Cairo, Egypt
Nadezhda Zhylka	Ministry of Health, Kiev, Ukraine

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	8	50	1	6	1	6	10
Women	5	32	1	6			6
WHO Region:							
Africa	2	12					2
The Americas	1	6			1	6	2
South-East Asia	4	26					4
Europe			2	12			2
Eastern Mediterranean	1	6					1
Western Pacific	5	32					5

Total = 16

Other scientists

Adriana Baban	East European Institute for Reproductive Health, Targu Mures, Romania
Alina Badiu	East European Institute for Reproductive Health, Targu Mures, Romania
Mohamed Bassyouni	Ministry of Health and Population, Cairo, Egypt
Theresa Batangan	University of Philippines, Manila, Philippines
Francisco Cabral de Oliveira	Reprolatina, Campinas, Brazil
Rodica Comendant	Chisinau, Moldova
Ionela Cozos	East European Institute for Reproductive Health, Targu Mures, Romania
Manal Darwish	University of Assiut, Assiut, Egypt
Juan Diaz	Reprolatina, Campinas, Brazil
Margarita Diaz	Reprolatina, Campinas, Brazil
Daniela Draghici	East European Institute for Reproductive Health, Targu Mures, Romania
Mihaela Ghemes	East European Institute for Reproductive Health, Targu Mures, Romania
Laura Ghiron	University of Michigan, Ann Arbor, MI, USA
Peter Hall	Morges, Switzerland
Danielle Hassoun	Paris, France
Peter Hill	University of Brisbane, Brisbane, Australia
Karen Hoehn	German Foundation for World Population, Brussels, Belgium
Gulnara Kadyrkulova	United Nations Population Fund (UNFPA), Bishkek, Kyrgyzstan

Olav Meirik	Santiago, Chile
Nancy Newton	Takoma Park, MD, USA
Frank Nyonator	Ghana Health Service, Accra, Ghana
James Phillips	Population Council, New York, NY, USA
Dana Samu	East European Institute for Reproductive Health, Targu Mures, Romania
Ruth Simmons	University of Michigan, Ann Arbor, MI, USA
Sara Sulzbach	Abt Associates, Bethesda, MD, USA
Tian Lichun	Institute for Health Sciences, Kunming, China
Maxine Whittaker	Waigani, Papua New Guinea
Xie Zhenming	China Population Information and Research Centre, Beijing, China
Mary Zama	Copperbelt Provincial Health Office, Ndola, Zambia
Zhang Kaining	Institute for Health Sciences, Kunming, China
Zhou Weijin	Institute of Planned Parenthood Research, Shanghai, China
Zhu Jun	West China University of Medical Sciences, Chendu, China

	Developing countries		Countries in transition		Developed countries			Totals
	Number	% of total	Number	% of total	Number	% of total		Number
Men	10	32	1	3	3		9	14
Women	5	16	7	22	6		19	18
WHO Region:								
Africa	2	6						2
The Americas	4	13			5		16	9
South-East Asia								
Europe			8	25	3		9	11
Eastern Mediterranean	2	6						2
Western Pacific	7	22			1		3	8

Total = 32

Annex 2

PUBLICATIONS IN 2007–2008

Bhat R, Huntington D, Maheshwari S. *Public–private partnerships: managing contracting arrangements to strengthen the Reproductive and Child Health Programme in India*. *Lessons and implications from three case studies*. Geneva: World Health Organization and the Indian Institute of Management (Ahmedabad); 2007.

Bazarragchaa T, Khishgee S, Johnson B R, Strategic Assessment Team. Applying the WHO Strategic Approach to strengthening first and second trimester abortion services in Mongolia. *Reprod Health Matters*, 2008 16(31 Suppl.):127-34.

Che Yan, Fang Kejuan, Zhou Weijin, Ding Yongang, Sun Yuelian, Han Yaoling, et al. The Uterine cavity-shaped device used in China. *J Reprod Contracep* 2007;18(2): 72-85.

Dodd R, Huntington D, Hill P. Programme alignment in higher level planning processes: A four country case study for reproductive health. *Int J Health Plann Manage* 2009. (in press)

Fang Kejuan, Meirik O, Ding Yongang, Che Yan, Zhou Weijin, Fajans P. Once-a-month contraceptive pills in China: a review of available evidence. *Contraception* 2007;75: 337-43.

Huntington D, Liu Yungou, Ollier E, Bloom G. *Improving maternal health - lessons from the basic health services project in China*. DFID/China Policy Briefing note, Beijing, China, January 2008.

Ministry of Health, China/World Bank/DFID UK. *External Evaluation Final Report*, Health VIII (China Basic Health Services Project)/Health VIII Support Project, 2007.

Simmons R, Fajans P, Ghiron L, eds. *Scaling up health service delivery. From pilot innovations to policies and programmes.* Geneva: ExpandNet/WHO; 2007.

World Health Organization. *Public policy and franchising reproductive health: current evidence and future directions. Guidance from a technical consultation meeting*. Geneva: WHO and USAID PDP-*One*; 2007.

World Health Organization. *Practical guidance for scaling up health service innovations*. Geneva: ExpandNet/WHO; 2008.

World Health Organization. *A nine-step guide to developing a scaling up strategy*. Geneva: ExpandNet/WHO; 2008.

World Health Organization. *The WHO strategic approach to strengthening sexual and reproductive health policies and programmes*., Geneva: WHO; 2008 (WHO/RHR/07.7). Also available in French, Spanish and Russian.

World Health Organization and USAID Private Sector Partnerships for Better Health (PSP-*One). Public policy and franchising reproductive health: current evidence and future directions*. Geneva: WHO; 2007.

Chapter 12
Mapping best reproductive health practices

1. INTRODUCTION

The Mapping Best Reproductive Health Practices activities include a range of core-knowledge synthesis and dissemination activities of the Department. The objectives of these activities are to:

- synthesize existing research findings in sexual and reproductive health;
- strengthen the evidence base for guidelines;
- provide the rationale for further research;
- disseminate research summaries in a user-friendly, relevant, and accessible format;
- strengthen evidence-based medicine knowledge through the WHO reproductive health library (RHL);
- innovate in-service education strategies; conduct research to implement evidence-based practices; and build capacity to facilitate informed decision-making.

2. THE WHO REPRODUCTIVE HEALTH LIBRARY

2.1 Progress

RHL is a cumulative electronic journal which is enlarged and updated each year. RHL progressed not only in the volume of its contents, but also in its language coverage and publication and dissemination strategies.

2.1.1RHL 11

The number of Cochrane reviews included in RHL reached 137 in 2008. Two new educational videos, "Umbilical vein injection for retained placenta: why and how?", and "No-scalpel vasectomy technique" were added.

The most substantive development regarding RHL publication was the migration of the web publication platform to the WHO web site which was completed in April 2008 (http://www.who.int/rhl). The work was initiated in August 2007 in collaboration with the WHO web team. Publishing the RHL from the WHO web site enabled the editorial team to control the timing of publications, to provide regular updates, and to correct errors in a timely manner, as well as to increase the visibility of RHL as a whole. Monitoring of the Internet access showed that the approximate number of sessions on the RHL web site increased from 800 per day to 1400 per day between April 2008 and December 2008. Of the 212 WHO unique web addresses, RHL is 39th in ranking by number of sessions per week. Since July 2008, RHL contents are added on a monthly basis – making the Internet site more up-to-date.

Following the successful RHL 10th anniversary scientific meeting in Khon Kaen, Thailand in 2007, the RHL annual editorial meeting was held in conjunction with a symposium on evidence-based sexual and reproductive health care from 22 to 24 April 2008, hosted by the Shanghai Institute of Planned Parenthood Research in Shanghai, People's Republic of China.

RHL subscriptions were assessed, and updated by means of two activities. First, the subscription list was cleaned through two mailings to check for continued interest in receiving

copies of RHL, and second, the mailing-list management was outsourced after a competitive selection process. It was rewarding to see that approximately half of the existing subscribers returned the subscription cards with a request to continue receiving RHL CD-ROMs.

2.1.2 RHL translations

The various language versions of RHL will gradually migrate to the WHO/RHL web site, as soon as translations of issue number 11 are completed. RHL is currently translated into Chinese, French, Spanish, and Vietnamese. The first Russian translations of RHL were completed in December 2008 and the Internet and CD publications are planned for the first half of 2009.

The Spanish version of RHL 11, *La Biblioteca de Salud Reproductiva de la OMS (BSR)*, was published in December 2008 (www.who.int/rhl/es). The French version of RHL 11, *La Bibliothèque de Santé Génésique de l'OMS (BSG)*, was completed in December 2008 and the Internet and CD publications are planned for early 2009. The Chinese translation of RHL 11 is ongoing, and will be finalized in early 2009.

An interactive communication platform was created and implemented in 2008, with the objectives of facilitating, strengthening, and efficiently coordinating communication between RHL translation teams and the RHL team in the department. The tool has been particularly useful for communication, making critical information available to all teams.

2.2 Planned activities

In response to increased demand to include evidence-based guidelines in RHL, the two WHO guidelines on the prevention of postpartum haemorrhage (PPH) and on the management of PPH and retained placenta will be critically appraised with a commentary for RHL.

RHL will include two new types of content:

- selected essays and commentaries from the James Lind Library – a free, multilingual, web-based resource for public and professional education about fair tests of treatments (www.jameslindlibrary.org);
- concise summaries of the best available evidence of the effects of health systems interventions and maternal and child health interventions for low and middle-income countries, funded by the European Union and prepared by the Supporting Policy relevant Reviews and Trials (SUPPORT) project (http://www.support-collaboration.org/index.htm).

RHL presentations are planned for the Asia Oceania Congress of Obstetrics and Gynaecology from 26 to 30 March 2009, and to the Pacific Society for Reproductive Health 2009 Conference from 23 to 26 March both to be held in Auckland, New Zealand.

3. RESEARCH SYNTHESIS

3.1 Progress

Systematic reviews of high-priority topics in maternal/perinatal health and fertility regulation were conducted and updated by RHR staff and collaborating institutions. The Cochrane Pregnancy and Childbirth Review Group Editorial Board meeting was hosted in Geneva, Switzerland from 13 to 14 May 2008. The meeting included a presentation by the Partnership for Maternal, Newborn and Child Health to discuss priority maternal and perinatal health topics globally. Two non-Cochrane systematic reviews on the epidemiology of PPH and the use of misoprostol for the prevention and treatment of PPH were published.

3.2 Planned activities

In 2009, systematic reviews will be performed on the following topics:

- controlled cord traction for the third stage of labour;
- interventions for treating pre-eclampsia and its consequences;
- interventions to reduce perineal pain after vaginal delivery.

4. CAPACITY-BUILDING

4.1 Progress

4.1.1 The RHL evidence-based medicine clinically integrated e-learning project

A research project led by HRP, the University of Birmingham, United Kingdom and the Geneva Foundation for Medical Education and Research (GFMER), Switzerland – in the form of an international cluster randomized controlled trial – has been initiated. The purpose of this research is to evaluate the impact of a clinically integrated e-course on knowledge gain, attitude, and competency in practicing evidence-based medicine (EBM) at postgraduate teaching institutions in seven countries (Argentina, Brazil, the Democratic Republic of the Congo, India, the Philippines, South Africa and Thailand).

The course involves combining the use of e-learning – together with bedside or in-clinic facilitation – and will be compared with self-learning through electronic materials only. If effective, it can be promoted on a larger scale in facilities for in-service training on EBM. In addition, new training programmes on other topics can be developed and implemented using the same approach. The data management

and entry system has been created, and visits to several sites have been completed. As part of this project, an evidence-based medicine educational environment measurement (EBMEEM) tool has been developed. The tool will be validated during the trial.

4.1.2 Workshops on evidence-based decision-making in reproductive health and scientific writing

4.1.2.1 African Region

A national training workshop on "Evidence-based decision-making in reproductive health" was conducted in Monrovia, Liberia, from 4 to 6 February 2008, with the participation of 15 health workers – most of whom were midwives. The first in the country, this training initiative was a joint initiative among the Department, the WHO Country Office in Liberia, and the Merlin-supported Resource Centre in the Ministry of Health and Social Welfare in Liberia.

A regional training workshop was conducted on "Making evidence-based decisions in reproductive health" in Bobo Dioulasso, Burkina Faso, from 12 to 16 February 2008. As a result of the initial publication of RHL in French in 2006, this was the first time this training course was organized in the francophone African Region. This training initiative was organized by the Department and l'Institut Supérieur des Sciences de la Santé (INSSA), de l'Université Polytechnique, Bobo Dioulasso, Burkina Faso. Participants included 18 physicians (15 men and 3 women) from seven countries: Benin (2), Burkina Faso (6), Côte d'Ivoire (2), Mali (2), Niger (2), Senegal (2) and Togo (2).

RHL was presented by the French RHL scientific editor at the 9th and the 10th congresses of the "Société africaine de gynécologie et obstétrique" (SAGO) in Kinshasa (2007) and in Bamako (2008), respectively.

4.1.2.2 European Region

Responding to an invitation from the nongovernmental organization Médecins sans Frontières (MSF), RHL was presented at the "Sixth sexual & reproductive health workshop" in Geneva, from 6 to 18 July 2008. The participants included MSF staff from the countries in the region.

An evidence-based decision-making workshop and seminar was held at the 9 September University in Izmir, Turkey from 2 to 4 April 2008. The backgrounds of the 25 participants were mostly as trainee doctors and specialists in obstetrics and gynaecology, as well as specialists from other disciplines.

4.1.2.3 South-East Asia Region

Commentaries on Cochrane reviews make up the key original content of RHL. Writing a thoughtful pragmatic commentary requires good writing skills and expert knowledge of research methods, clinical practice, and programme management, especially in under-resourced settings. Over the years, a number of experts worldwide have volunteered to write commentaries for RHL. With expanding content, however, the pool of commentary writers (especially from developing countries) must be continuously expanded in order to bring to RHL readers a greater variety of implementation approaches to health-care interventions.

A workshop was conducted at the Department of Obstetrics and Gynaecology in the Faculty of Medicine of Khon Kaen University, Khon Kaen, Thailand, from 5 to 6 November 2008, on how to write a commentary for RHL. The participants were academic staff from the University. The overarching aim of this workshop was to make health-care practitioners aware of evidence-based medicine (in particular RHL) and to provide them with skills for analysing systematic reviews and writing commentaries on clinical interventions evaluated in Cochrane reviews.

4.1.3 Training in research and research methodology in sexual and reproductive health

GFMER, the International Association for Maternal and Neonatal Health (IAMANEH), the San Raffaele del Monte Tabor Foundation, and the Department organized the 17th edition of the course "From research to practice: training in sexual and reproductive health research". The course was held in Geneva, from 4 February 2008 to 5 March 2008. The purpose of this course was to provide training in clinical research in sexual and reproductive health, to strengthen graduates capacities in research methodology, and to acquaint trainees with recent advances in the field. There were 28 participants (21 of whom received full study grants) from 24 nations. They came from Africa (5), South America (4), Asia (10), Europe/former eastern Europe (6), the Eastern Mediterranean Region (3). Preparatory activities for the 18th edition were initiated in July 2008.

This annual course has been instrumental in helping researchers who are affiliated with the collaborating centres to become acquainted with developments in research methodology as well as the Department's priority areas of work.

4.2 Planned activities

The cluster randomized trial research project on e-learning will be completed by the end of 2009. Workshops will be conducted in 2009 and 2010 according to demand from RHL focal points and collaborating centres. Three activities are envisaged.

- RHL commentary and scientific writing training will be conducted in conjunction with the 2009 Conference of the Latin-American Association of Human Reproduction Investigators (ALIHR) in Campinas, Brazil.

- A research methods course will train staff of the Obstetrics and Gynaecology Department of the Istanbul University Medical School in Istanbul, Turkey.

- RHL and the United Kingdom Royal College of Obstetricians and Gynaecologists will collaborate on a project to share content between RHL and StratOG – an award-winning online, structured training resource to assist trainees in obstetrics and gynaecology (www.stratog.net).

5. OTHER RESEARCH SYNTHESIS METHODOLOGY AND DISSEMINATION ACTIVITIES

5.1 Progress

5.1.1 Evidence-based guidelines

Work on the WHO guidelines on postpartum haemorrhage and retained placenta was initiated in November 2007 and completed in November 2008. Preliminary activities (i.e. conceptualization and scoping) for the WHO guidelines on labour induction were initiated in November 2008. In addition, RHR staff participates in the WHO Guidelines Review Committee.

5.1.2 International clinical trials registry platform

RHR staff participated in the “International clinical trials registry platform” (ICTRP) project and specifically contributed to the "Results reporting subgroup" which develops guidance on how results should be reported once a trial is completed. This work aims to ensure that the results of trials are made public after a certain period of time, regardless of peer-reviewed publication.

5.2 Planned activities

Guidelines on labour induction will be developed in collaboration with the United Kingdom National Coordinating Centre for Women's Health Guidelines of the National Institute for Health and Clinical Excellence (NICE). This work should be completed in 2009.

Cochrane systematic reviews on pregnancy hypertension will be conducted or updated in preparation for the Pregnancy hypertension guideline. RHR staff will participate in a technical meeting on "Improving the descriptions of interventions available in published trials and systematic reviews" in Oxford, United Kingdom.

6. RESEARCH

6.1 Progress

6.1.1. The WHO Global Survey on Maternal and Perinatal Health

The “WHO Global Survey for Maternal and Perinatal Health” project was implemented in Asia in 2007 and 2008. A meeting for evaluation of the results of the Global Survey project which has been implemented in three regions to date, and for the initiation of the “WHO multicountry study on maternal and perinatal health” (see Section 6.2) was held in Malaga, Spain from 3 to 5 June 2008. The principal findings of the Asia survey were presented in a dissemination meeting in Phnom Penh, Cambodia from 21 to 23 October 2008. A manuscript for dissemination of the results is being prepared for publication in a scientific journal.

Secondary analyses of the Latin American Global Survey were conducted on severe maternal morbidity, labour induction, and classification of caesarean sections. Scientific papers were accepted for publication in the WHO Bulletin (concerning severe maternal morbidity) and the British Journal of Obstetrics and Gynaecology (concerning labour induction). A manuscript evaluating caesarean sections among various obstetric populations is in preparation. A policy brief summarizing the findings for Latin America was prepared.

Following the completion of the Global Survey project in Asia, a multiregion database – including observations on nearly 300 000 deliveries – was prepared with data from Africa, Latin America, and Asia. Secondary analyses of this database were initiated in December 2008, focusing on the outcome of birth for the second twin and on maternal severe morbidity and mortality.

6.1.2 Active management of the third stage of labour without controlled cord traction: a randomized non-inferiority controlled trial

The Department initiated a large randomized controlled trial (RCT) to evaluate the role of controlled cord traction as part of active management of the third stage of labour in eight countries (Argentina, Egypt, India, Kenya, the Philippines, South Africa, Thailand, and Uganda). If shown not to be inferior to the full package, the alternative package can be scaled up more efficiently without the need for training on manual skills. The preparatory activities have been completed and recruitment of 25 000 women will start in March 2009.

6.2 Planned activities

A meeting to plan national and provincial analyses from the Global Survey in Asia is organized by the WHO Regional Office for South-East Asia for January 2009.

The Department is preparing another large, worldwide, and cross-sectional study, the "WHO multicountry study on maternal and perinatal health", that will evaluate the relationship between quality of care and the burden of severe maternal morbidity and preterm birth. A draft protocol was prepared, regional and country coordinators were contacted, and work to obtain the concurrence of ministries of health was initiated. The steering committee will discuss the protocol and the implementation timeline in March 2009.

The Department is involved in establishing a large multicentre RCT, to evaluate the role of tranexamic acid (a synthetic fibrinolysis inhibitor in the treatment of PPH). The project will be coordinated by the London School of Hygiene and Tropical Medicine in the United Kingdom, and the first steering committee meeting is scheduled for January 2009.

Annex 1

CONTRIBUTING SCIENTISTS, 2007-2008

RHL Editorial Board

Guillermo Carroli	Centro Rosarino de Estudios Perinatales (CREP), Rosario, Argentina
Linan Cheng	International Peace Maternal and Child Health Institute, Shanghai, China
Jean-José Wolomby-Molondo	Département de Gynécologie et Obstétrique, Cliniques Universitaires de Kinshasa, Kinshasa, Democratic Republic of the Congo
Justus Hofmeyr	Effective Care Research Unit, University of the Witwatersrand, Johannesburg, South Africa
Pisake Lumbiganon	Khon Kaen University, Khon Kaen, Thailand
Suneeta Mittal	All India Institute of Medical Sciences, New Delhi, India

Project Steering Committee Members

Edgardo Abalos	Centro Rosarino de Estudios Perinatales (CREP), Rosario, Argentina
Hany Abdel Aleem	Department of Obstetrics and Gynecology, Assiut University Hospital, Assiut, Egypt
Fernando Althabe	Department of Mother & Child Health Research, Institute for Clinical Effectiveness and Health Policy (IECS), Buenos Aires, Argentina
Deborah Armbruster	Program for Appropriate Technology for Health (PATH), Washington, DC, USA
Anne-Marie Bergh	Faculty of Health Sciences, University of Pretoria, Pretoria, South Africa
Jennifer Blum	Gynuity Health Projects, New York, NY, USA
Michel Boulvain	Maternité, Hôpitaux Universitaires de Genève, Genèva, Switzerland
Guilherme Cecatti	Department of Obstetrics and Gynecology, School of Medical Sciences, State University of Campinas, Campinas, São Paulo, Brazil
Richard J. Derman	Department Obstetrics and Gynecology, Christiana Care Health Services, Jefferson Medical College, Newark, DE, USA
Diana Elbourne	Medical Statistics Unit, London School of Hygiene and Tropical Medicine, London, United Kingdom
Maria Julieta V. Germar	University of the Philippines, College of Medicine, Manila, Philippines
Shivaprasad Goudar	Department of Medical Education, K L E Society's JN Medical College, Belgaum, Karnataka, India
Gill Gyte	Cochrane Pregnancy and Childbirth Group, University of Liverpool, Liverpool, United Kingdom
Khalid Khan	Department of Obstetrics and Gynaecology, University of Birmingham, Birmingham, United Kingdom
Regina Kulier	Geneva Foundation for Medical Education and Research, Geneva, Switzerland
André B. Lalonde	The Society of Obstetricians and Gynaecologists of Canada (SOGC), Ottawa, Canada
Win May	Division of Medical Education, Keck School of Medicine of the University of Southern California, Los Angeles, CA, USA
Robert Pattinson	Department of Obstetrics and Gynaecology, University of Pretoria, Kalafong Hospital, Pretoria, South Africa
Cristina G. Pelàez-Crisologo	Department of Obstetrics and Gynecology, Philippine General Hospital, Paranaque City, Philippines
Pius Okong	St. Francis Hospital Nsambya, Kampala, Uganda
Enrique Oyarzun	Department of Obstetrics and Gynecology, Pontificia Universidad Catolica de Chile, Santiago, Chile
Zahida Qureshi	Department of Obstetrics / Gynaecology, University of Nairobi, Nairobi, Kenya
Mandisa Singata	University of the Witwatersrand / University of Fort Hare / Eastern Cape Department of Health, Effective Care Research Unit, East London, South Africa
Mary Ellen Stanton	Center for Population, Health and Nutrition United States Agency for International Development, Washington, DC, USA
Surasak Taneepanichskul	College of Public Health Sciences, Chulalongkorn University, Bangkok, Thailand
Tran Son Thach	Hung Vuong Hospital, Ho Chi Minh City, Viet Nam
Juan Carlos Vazquez	Instituto Nacional de Endocrinología, Hospital "Cmdte. Fajardo" Zapata y D, Vedado, Havana, Cuba
Beverly Winikoff	Gynuity Health Projects, New York, NY, USA
John Yeh	Department of Gynecology-Obstetrics, University at Buffalo, Buffalo, NY, USA

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	15	43			5	14	20
Women	7	20			8	23	15
WHO Region:							
Africa	7	20					7
The Americas	6	17			8	23	14
South-East Asia	4	11					4
Europe					5	14	5
Eastern Mediterranean	1	3					1
Western Pacific	4	11					4

Total = 35

Annex 2

PUBLICATIONS IN 2007–2008

Abdel-Aleem H, d'Arcangues C, Vogelsong K, Gulmezoglu AM. Treatment of vaginal bleeding irregularities induced by progestin only contraceptives. *Cochrane Database Syst Rev* 2007;2:CD003449.

Anorlu RI, Maholwana B, Hofmeyr GJ. Methods of delivering the placenta at caesarean section. *Cochrane Database Syst Rev* 2008;3:CD004737.

Brown H, Hofmeyr GJ, Nikodem VC, Smith H, Garner P. Promoting childbirth companions in South Africa: a randomised pilot study. *BMC Med* 2007;5:7.

Carroli G, Cuesta C, Abalos E, Gulmezoglu AM. Epidemiology of postpartum haemorrhage: a systematic review. *Best Pract Res Clin Obstet Gynaecol* 2008;22:999-1012.

Cheng L, Gulmezoglu AM, Piaggio G, Ezcurra E, Van Look PF. Interventions for emergency contraception. *Cochrane Database Syst Rev* 2008;2:CD001324.

Conde-Agudelo A, Rosas-Bermudez A, Gulmezoglu AM. Evidence-based intrapartum care in Cali, Colombia: a quantitative and qualitative study. *BJOG* 2008;115:1547-56.

Ghersi D, Clarke M, Berlin J, Gulmezoglu A, Kush R, Lumbiganon P et al. Reporting the findings of clinical trials: a discussion paper. *Bull World Health Organ* 2008;86:492-3.

Gulmezoglu AM, Forna F, Villar J, Hofmeyr GJ. Prostaglandins for preventing postpartum haemorrhage. *Cochrane Database Syst Rev* 2007;3:CD000494.

Gulmezoglu AM, Hofmeyr GJ. Commentary on 'Antenatal care programmes in low resource settings'. *BJOG* 2007;114(7): 810-1.

Gulmezoglu AM, Langer A, Piaggio G, Lumbiganon P, Villar J, Grimshaw J. Cluster randomised trial of an active, multifaceted educational intervention based on the WHO Reproductive Health Library to improve obstetric practices. *BJOG* 2007;114: 16-23.

Hofmeyr GJ, Duley L, Atallah A. Dietary calcium supplementation for prevention of pre-eclampsia and related problems: a systematic review and commentary. *BJOG* 2007;114:933-43.

Hofmeyr GJ, Mlokoti Z, Nikodem VC, Mangesi L, Ferreira S, Singata M et al. Calcium supplementation during pregnancy for preventing hypertensive disorders is not associated with changes in platelet count, urate, and urinary protein: a randomized control trial. *Hypertens Pregnancy* 2008;27:299-304.

Hofmeyr GJ, Mathai M, Shah A, Novikova N. Techniques for caesarean section. *Cochrane Database Syst Rev* 2008;1:CD004662.

Hofmeyr GJ, Abdel-Aleem H, Abdel-Aleem MA. Uterine massage for preventing postpartum haemorrhage. *Cochrane Database Syst Rev* 2008;3:CD006431.

Hunter S, Hofmeyr GJ, Kulier R. Hands and knees posture in late pregnancy or labour for fetal malposition (lateral or posterior). *Cochrane Database Syst Rev* 2007;4:CD001063.

Kulier R, O'Brien PA, Helmerhorst FM, Usher-Patel M, d'Arcangues C. Copper containing, framed intra-uterine devices for contraception. *Cochrane Database Syst Rev* 2007;4 CD005347.

Kulier R, Gee H, Khan KS. Five steps from evidence to effect: exercising clinical freedom to implement research findings. *BJOG* 2008;115:1197-202.

Lumbiganon P, Gulmezoglu AM, Piaggio G, Langer A, Grimshaw J. Magnesium sulfate is not used for pre-eclampsia and eclampsia in Mexico and Thailand as much as it should be. *Bull World Health Organ* 2007;85:763-7.

Mangesi L, Hofmeyr GJ. Fetal movement counting for assessment of fetal wellbeing. *Cochrane Database Syst Rev* 2007;1:CD004909.

Mathai M, Gulmezoglu AM, Hill S. Saving women's lives: evidence-based recommendations for the prevention of postpartum haemorrhage. *Bull World Health Organ* 2007;85:322-3.

Mathai M, Hofmeyr GJ. Abdominal surgical incisions for caesarean section. *Cochrane Database Syst Rev* 2007;1:CD004453.

May W, Gulmezoglu AM, Ba-Thike K. Antibiotics for incomplete abortion. *Cochrane Database Syst Rev* 2007;4:CD001779.

O'Brien PA, Kulier R, Helmerhorst FM, Usher-Patel M, d'Arcangues C. Copper-containing, framed intrauterine devices for contraception: a systematic review of randomized controlled trials. *Contraception* 2008;77318-27.

Shah A, Faundes A, Machoki M, Bataglia V, Amokrane F, Donner A et al. Methodological considerations in implementing the WHO Global Survey for Monitoring Maternal and Perinatal Health. *Bull World Health Organ* 2008;86:126-31.

Taljaard M, Donner A, Villar J, Wojdyla D, Velazco A, Bataglia V et al. Intracluster correlation coefficients from the 2005 WHO Global Survey on Maternal and Perinatal Health: implications for implementation research. *Paediatr Perinat Epidemiol* 2008;22:117-25.

Villar J, Carroli G, Zavaleta N, Donner A, Wojdyla D, Faundes A et al. Maternal and neonatal individual risks and benefits associated with caesarean delivery: multicentre prospective study. *BMJ* 2007;335:1025.

Weeks A, Alfirevic Z, Faundes A, Hofmeyr GJ, Safar P, Wing D. Misoprostol for induction of labor with a live fetus. *Int J Gynaecol Obstet* 2007;99:194-S197.

Chapter 13
Implementing Best Practices Initiative

1. INTRODUCTION

The Implementing Best Practices (IBP) Initiative is a global partnership of 27 international agencies committed to working collaboratively at the global, regional, and country levels to develop strategies to support the identification, implementation, and scaling-up of proven effective technical and managerial practices to improve reproductive health The programme of work, developed with support from the IBP secretariat, encompasses a broad range of collaborative activities designed to strengthen programmatic and technical linkages and to identify, study and adapt new and existing models for knowledge sharing, implementing and scaling up proven effective practices. A summary of the main achievements in 2007–2008 is provided below.

2. GLOBAL ACTIVITIES

2.1 Family planning

The guide *Family planning: a global handbook for providers* was published by the Department in 2007. This guide is the product of extensive collaboration between partners, who continue to support its successful dissemination through regional and country programmes and workshops. In addition, IBP partners launched the electronic dissemination of this handbook through the IBP Knowledge Gateway by holding a series of expert-led discussion forums on sections of the book. Partners are now planning ways to link the dissemination of the handbook with that of the *Guide to fostering change to scale up effective services*, in order to address the managerial challenges of implementing the recommended practices.

2.2 Management of change

IBP partners identified a missing link to scaling up effective practices as the ability to manage the change process required to support the implementation of best practices. The partnership reviewed published managerial guidelines and support materials to develop a step-by-step guide to the management of change *Guide to fostering change to scale up effective health services.* This guide was approved for publication by USAID and WHO in 2006, and was widely introduced into countries by partner agencies throughout 2007 and 2008.

A French version of the guide was prepared in 2008. MACRO International presented the French version of the guide at the francophone community-based services meeting for nongovernmental organizations in Bamako, Mali, in February 2008. The guide will be finalized and published in French early in 2009.

2.3 Pre-service competency-based education in low-resource settings

In January 2008, Jhpiego, with support from IBP partners, launched a "Pre-service Education Community of Practice" (COP) through a virtual discussion forum on the IBP Knowledge Gateway. Discussions focused on how low-resource settings use competency-based education, and identified barriers for training of community-based providers. Guidance will be prepared to address these barriers.

2.4 Skill-building to improve community-based reproductive health services

In June 2007, the IBP secretariat worked closely with social scientists within the Department and the WHO Regional

Office for Africa, USAID, and other partners, to bring together country managers and partners from five African countries with a strong government commitment to scaling up community based services (Cameroon, Ethiopia, Ghana, Madagascar, and Mali). The five countries met in Bamako, Mali and analysed issues facing quality community-based services in general and reproductive health services in particular. Following the workshop, a virtual community of practice was launched to enable ongoing exchange between participants. In June 2008, representatives from Ethiopia, Madagascar, and Mali presented the first-year report of their programme at the Global Health Council Annual Conference, at the IBP Consortium Meeting, and at a meeting involving representatives from USAID and the Bill and Melinda Gates Foundation.

In Ethiopia, the "Extending Service Delivery Project" (ESD) conducted by a group of IBP partners, which co-organized the Bamako meeting, is working with an Ethiopian team to analyse the effectiveness of the Ethiopian Ministry of Health Health Extension Programme in delivering sexual and reproductive health services in two regions. In December 2008, partners joined the Ministry of Health Family Health Department and Health Extension Programme to discuss and plan for the adaptation of the WHO *Decision-making tool for family planning clients and providers* for use by health extension workers. This activity is in response to needs identified in the Bamako meeting.

In Madagascar and Mali, the Institute for Reproductive Health, Georgetown University, Washington, DC, USA, has been working to scale up the Standard Days Method. The IBP secretariat is working to link these activities to the broader context of scaling up community-based services.

2.5 Addressing the sexual and reproductive health needs of people with disabilities

In support of the Convention on the Rights of Persons with Disabilities, the IBP secretariat, in collaboration with UNFPA, is developing guidance for the full inclusion of people with disabilities in sexual and reproductive health activities. The draft guidance note *Promoting sexual and reproductive health for persons with disabilities* will be finalized and published in 2009. An IBP task team will inform IBP partners and members of the reproductive health community about the guidance.

3. CONTINUED EXPANSION AND SCOPE OF THE IBP KNOWLEDGE GATEWAY

The IBP Knowledge Gateway (IBP/KG) is an electronic communication tool that supports virtual networking, dialogue, and communities of practice in and among countries. RHR leads the development of the IBP/KG and knowledge-management strategies, in collaboration with IBP partners. The IBP/KG was launched in September 2004, and has grown rapidly. In 2007, it reached over 5000 users and in 2008 the number increased to 11 550 users from 190 countries.

The simplicity, adapted low-resolution technology, and email capability used by the Gateway are proving to be a best practice for supporting virtual networking and communities of practice around the world. In 2007–2008, the IBP partners supported nine global discussion forums on specific family-planning interventions – including one that asked the community to identify effective practices and challenges in family planning. The evaluation of this discussion forum was used by the John Hopkins Bloomberg School of Public Health/ Center for Communication Programs (JHU/CCP) as a basis for creating an interactive web site that identifies and highlights successful family planning practices.

3.1 Support to other organizations to establish communities of practice

Since 2006, RHR in collaboration with JHU/CCP and other partners provides support to other organizations to brand, own, customize, manage, and launch their own social networks and independent communities of practice using the IBP/KG electronic platform. This support includes training organizations on how to establish, manage and facilitate virtual networks**.**

In 2008, the following new networks were launched through customized country video conferences.

- Mental Health Community of Practice
- HPV Vaccine Global Community of Practice
- Global Alliance on Health Workforce Migration Network
- Reproductive Aid Network on sector-wide approaches and poverty reduction strategies

3.2 International agencies choose the Knowledge Gateway for their organization

In 2006, WHO accepted the use of the Knowledge Gateway as a corporate tool. Currently, many Departments across WHO have their own communities of practice. In 2008, six other international organizations – including the United Nations System Staff College in Turin, Italy; the Office of the United Nations High Commissioner for Refugees (UNHCR) in Geneva, Switzerland; and John Snow International (JSI) – have started to use the KG platform for their organizations and are contributing to enhancements to the system. In addition, the IBP Secretariat has been approached by a consortium of 22 international organizations supported by the World Bank (operating under the name "Dgroups") to transfer their communities to the Knowledge Gateway.

3.3 Programme of enhancements

Each year, enhancements to the platform are undertaken in response to user feedback. At the request of the Global Alliance of Nurses and Midwives (GANM) and the WHO Regional Office of the Americas, IBP developed a Spanish-language facility. This enhancement has generated very active Spanish communities. The IBP secretariat is working with a WHO collaborating centre in Chile to diffuse the use of the Knowledge Gateway to countries in the region.

4. REGIONAL AND COUNTRY COLLABORATION

The IBP secretariat worked closely with teams within the Department, the UNFPA/WHO Strategic Partnership Programme, and WHO regional and country offices, to initiate new and support ongoing country-level activities.

4.1 Sub-Saharan Africa

4.1.1 Family-planning advocacy toolkit

One way the IBP is supporting the initiative "Repositioning family planning in Africa" led by AFRO and USAID is through the production and dissemination of the *Family planning advocacy toolkit* published in English and French in August 2008. At a workshop organized by the West African Health Organization (WAHO) in September 2008 in Bobo Dioulasso, Burkina Faso, eight country teams were trained in the use of this toolkit and additional workshops are planned for 2009. Country teams developed action plans and the IBP secretariat and partners are involved in follow-up.

4.1.2 UNFPA/WHO Strategic Partnership Programme

The IBP secretariat continues to work closely with the UNFPA/WHO Strategic Partnership Programme to improve the access to and the quality of reproductive health services. IBP partners follow up and support ongoing activities at the country level in Benin, Kenya, Nigeria, the United Republic of Tanzania, and Zambia. The IBP secretariat and partners have been active in several regional SPP meetings held in sub-Saharan Africa.

4.1.3 Post-abortion care programmes

In 2007, the Centre Régional de Formation et de Recherche en Santé de la Reproduction (CEFOREP) in Dakar, Senegal conducted an assessment of post-abortion care services in six west African countries. A workshop was held from 20 to 23 October 2008, during which country teams reviewed and exchanged experiences and identified 'best practices' that they planned to implement and scale up when they returned to their countries. A virtual training programme based on the "Fostering change" framework provides follow-up support for implementing action plans.

4.1.4 Documentation, sharing and scaling up local best practices

4.1.4.1 Ethiopia

Activities to identify, document, and scale up local best practices have continued in Ethiopia. Currently, eight regions have identified priority issues and IBP partners have identified regions in which they will provide support to implement local activity plans. Follow-up visits to several regions were conducted in 2008. The Ministry of Health has recently requested IBP to work on integrating the process of documentation and scaling-up into their national planning process.

4.1.4.2 Benin

In Benin, a three-day workshop was held in July 2008 to introduce key stakeholders in the Ministry of Health and partners to a process supporting the documentation, sharing, and scaling-up of local best practices. A local consultant is being recruited to work with a planning committee to begin identifying and documenting these practices.

4.1.4.3 Zambia

In Zambia, RHR is providing support to the Ministry of Health to scale up the "Expanding contraceptive choice" initiative implemented in the Copperbelt region. After an initial meeting and site visits in 2007, the Ministry selected two provinces as sites for scaling-up using the ExpandNet model. In 2008, a lack of commodities affected activities resulting in concerted efforts from all partners to improve commodity security. The Ministry reported the major achievement of securing a national budget line for family planning commodities during 2008.

4.2 Asia/Near East

In September 2007, the Asia Near-East (ANE) Conference was held in Bangkok, Thailand. The theme of the conference was the scaling-up and dissemination of effective practices in sexual and reproductive health. Thirteen countries attended this meeting, and IBP partners selected three countries (Afghanistan, Jordan, and Pakistan) to which they committed to support follow-up activities.

Jordan received funds for the introduction and scale-up of post-abortion care, and excellent progress has been achieved. The continuing security challenges in Afghanistan and Pakistan have affected implementation in both countries. Continued efforts will be made to support a follow-up programme in these countries. In addition, the IBP secretariat joined representatives from ESD (Extending Service Delivery) in Cairo, Egypt, to assist in activities to improve postpartum family planning services.

5. PLANS FOR 2009–2010

IBP partners will work collaboratively to:

- develop a generic process for the identification, documentation, adaptation, implementation, and scaling-up of locally identified 'best practices';
- follow up country-specific IBP-initiated activities;
- undertake activities to promote the dissemination and use of WHO evidence-based clinical practices and proven effective managerial practices;
- introduce into the annual programme of work new activities that enhance collaboration within WHO and with partners to support country-specific activities;
- expand the use of the IBP/KG, and develop innovative technology and approaches to support strategies to promote virtual collaborative learning and knowledge sharing;
- disseminate among and orient partners to the guidance note on *Promoting sexual and reproductive health for persons with disabilities.*

Annex 1

IMPLEMENTING BEST PRACTICES (IBP) INITIATIVE

27 Consortium Members

Academy of Education and Development (AED)
CARE International, Atlanta, GA, USA
Centre for African Family Studies (CAFS), Nairobi, Kenya
Centre for Development and Population Activities (CEDPA), Washington, DC, USA
CORE Group, Washington, DC, USA
EngenderHealth, New York, NY, USA
ExpandNet, Ann Arbor, MI, USA
Family Health International (FHI), Chapel Hill, NC, USA
IntraHealth International, Chapel Hill, NC, USA
Institute for Reproductive Health (IRH), Georgetown University, Washington, DC, USA
International Council on Management of Population Programmes (ICOMP), Selangor, Malaysia
International Planned Parenthood Federation (IPPF), London, United Kingdom
Jhpiego, Baltimore, MD, USA
Johns Hopkins Bloomberg/School of Public Health Center for Communication Programs (JHU/CCP), Baltimore, MD, USA
John Snow International (JSI), Boston, MA, USA
Management Sciences for Health (MSH), Boston, MA, USA
Partners in Population and Development (PPD), Dhaka, Bangladesh
Pathfinder International, Watertown, MA, USA
Population Council, New York, NY, USA
Program in Appropriate Technology in Health (PATH), Seattle, WA, USA
Public Health Institute (PHI), Oakland, CA, USA
Regional Centre for Quality of Health, Makerere University, Uganda
United Nations Population Fund (UNFPA), New York, NY, USA
United States Agency for International Development (USAID), Washington, DC, USA
University Research Co. (URC), Bethesda, MD, USA
World Health Organization, Department of Reproductive Health and Research (RHR), Geneva, Switzerland
White Ribbon Alliance, Washington, DC, USA

Chapter 14
Monitoring and evaluation

1. INTRODUCTION

Monitoring and evaluation activities seek to monitor progress towards global goals and targets related to sexual and reproductive health, such as those agreed at the International Conference on Population and Development (ICPD), and the Millennium Summit. These activities involve the provision and dissemination of timely information concerning indicators used for this purpose. They also facilitate the generation and interpretation of relevant information.

2. GLOBAL MONITORING OF SEXUAL AND REPRODUCTIVE HEALTH

2.1 Progress

2.1.1 Global maternal mortality estimates and other global databases

In collaboration with UNFPA, UNICEF, and the World Bank, estimates for maternal mortality at the global, regional, and country levels for 2005, as well as global and regional trends between 1990 and 2005, were developed. The findings were as follows.

- 536 000 women died of maternal causes in 2005, compared to 576 000 in 1990.
- 99% of these deaths occurred in developing countries.
- Sub-Saharan Africa and South Asia accounted for 86% of the world's maternal deaths in 2005.
- The annual decline in global maternal mortality ratio is estimated at less than 1% between 1990 and 2005.
- No region achieved the 5.5% annual decline required to achieve Millennium Development Goal 5, although eastern Asia came closest to the target with a 4.2% annual decline.
- Northern Africa, South-East Asia, and Latin America and the Caribbean experienced relatively faster declines than sub-Saharan Africa, where the annual decline was only 0.1%.

The database on the proportion of births attended by a skilled health worker has been updated annually. The updates were disseminated in various ways, including reporting them in the annual WHO *World Health Statistics*. In response to the addition of antenatal care coverage as a new MDG indicator, a database of antenatal care coverage (at least four visits) was developed and maintained in collaboration with UNICEF. Regional estimates of preterm birth were developed and submitted for publication. The Department provided input on the main causes of maternal deaths to the new round of the Global Burden of Disease project, and participated in its working groups on preterm delivery and stillbirth.

2.1.2 Updating estimates of causes of maternal deaths

An analysis of the "WHO systematic review of causes of maternal deaths" published in 2006 in the *Lancet* had reported on the regional distribution of the causes of maternal deaths. The analysis had included data reported during 1997–2002. In 2007, the Department initiated an update of this previous work that includes data reported after 2002. It is expected that the additional data gathered through this exercise will allow generation of pie charts of cause-distribution of maternal deaths at both global and subregional levels, in addition to regional levels reported in the first analysis. In

2008, a working group was established and the project protocol was prepared. The new analysis will use the multinomial modelling approach developed by the Child Health Epidemiology Reference Group (CHERG) to estimate the cause-specific proportions of neonatal deaths in countries for which recent, nationally representative data are not available.

2.1.3 MDG monitoring framework and reproductive health

The Department continued to represent WHO on matters relating to MDG 5 in the Interagency and Expert Group (IAEG) on MDG Indicators. The IAEG on MDG Indicators is led by the United Nations Statistics Division (UNSD) and is composed of representatives of agencies responsible for reporting on MDG indicators. RHR's participation in IAEG includes provision of technical expertise on related topics in the MDG monitoring framework and input (together with UNICEF, UNFPA, and the United Nations Population Division (UNPD) into the development of the official MDG monitoring databases and reports.

In 2007, the IAEG finalized the new MDG-monitoring framework, in response to the recommendations of the World Summit 2005. In 2008 – for the first time – the official MDG progress report included information on the new framework, including reporting of progress on the new target (Target 5B) of MDG 5 ("to achieve, by 2015, universal access to reproductive health") based on its four indicators: contraceptive prevalence, adolescent birth rate, antenatal care coverage, and unmet need for family planning.

2.1.4 Monitoring progress in implementing the Global Reproductive Health Strategy

The WHO World Health Assembly (WHA) Resolution 57.12, adopted the Global Reproductive Health Strategy in 2004, and WHO reports biannually to the WHA on the progress made in its implementation. In 2008, the second progress report was prepared, based on the results of a questionnaire survey of WHO Member States.

2.2 Planned activities

- Maintenance of databases on maternal mortality, proportion of deliveries with the help of a skilled health worker, and antenatal care coverage will continue. An in-depth analysis of antenatal care coverage will be conducted in collaboration with UNICEF.
- Updated estimates of cause-distribution of maternal deaths at global/regional and subregional levels will be completed.
- Secondary analyses of maternal mortality/severe morbidity and their determinants will be conducted using the WHO Global Survey dataset.
- Global/regional/national estimates of preterm birth and stillbirths will be developed and published.
- Participation in the IAEG on MDG indicators will continue.
- Joint work with Child Health Epidemiology Reference Group (CHERG) will be conducted to improve the information on epidemiology of maternal health, largely through systematic reviews of various maternal morbidities and mortality.

3. SEXUAL AND REPRODUCTIVE HEALTH INDICATORS – DEVELOPMENT OF STANDARDS AND CAPACITY-BUILDING

3.1 Progress

3.1.1 Development and implementation of indicators of access to sexual and reproductive health

Following the incorporation of the ICPD goal of "universal access to reproductive health" within the MDG framework, a technical consultation was convened in 2007 in collaboration with UNFPA. The purpose of this consultation was to elaborate the concept of universal access to sexual and reproductive health, in order to provide guidance on measuring various aspects of universal access at country level. The proceedings of the consultation, which defined a framework of indicators to measure sexual and reproductive health, were published in 2008. The framework was introduced at two regional meetings – one in the Region of the Americas and the other in the Western Pacific Region. Participating programme managers were supported in the development of action plans, using the indicator framework to identify priority interventions and to monitor their implementation for accelerated progress in achieving universal access.

In collaboration with the Team on Gender, Reproductive Rights, Sexual Health and Adolescence, a working group on sexual health indicators was convened. The group fine-tuned indicators of sexual health defined by the WHO/UNFPA meeting on reproductive health indicators, and incorporated them into the published indicators framework.

In collaboration with the Regional Advisory Panel for the Americas, RHR supported a regional initiative to identify means of collecting data and calculating the indicators of sexual and reproductive health which are included in the implementation framework of the Global Reproductive Health Strategy. It was found that the majority of the indicators included in the framework could be computed from routinely collected data.

A module of questions for the measurement of safe sex was developed for inclusion in the WHO "Stepwise approach to surveillance" (STEPS) survey, in collaboration with the Department of Chronic Diseases and Health Promotion

(CHP) and the London School of Hygiene and Tropical Medicine, London, United Kingdom.

Support involving the prevention of mother-to-child transmission (PMTCT) was provided to the monitoring and evaluation subgroup of the Inter-agency Task Team, in collaboration with the Department of HIV/AIDS, to define an indicator of family planning for routine monitoring at HIV treatment and care sites. The indicator "Unmet need for family planning among women attending HIV treatment and care sites" will be included in the PMTCT monitoring and evaluation guide as one of the core indicators.

3.1.2 Updating indicators of emergency obstetric care

A new edition of *Guidelines to monitor availability and use of obstetric care*, last published in 1997, was prepared in collaboration with UNICEF, UNFPA, and Columbia University, New York, USA. The document entitled *Indicators for monitoring the availability and use of obstetric services: a handbook* is expected to be printed in 2009.

3.1.3 Standard classification system for identification of the causes of maternal deaths and maternal 'near-miss'

The WHO analysis of causes of maternal deaths (based on a systematic review) highlighted the lack of consensus on cause-attribution of maternal deaths in both the relevant literature and in practice. An expert working group was convened in 2007, to develop a draft classification system for accurate identification of causes of maternal deaths. The draft was tested in existing data-sets from eight countries, and subsequently modified. The work is ongoing, and will also inform the revision of the International Classification of Diseases and Related Health Problems 10th edition (ICD-10) to develop the 11th edition.

Together with the development of a standard classification system for identification of causes of maternal deaths, the working group considered the definition and a parallel classification system for maternal near-miss or severe morbidity. A set of criteria to identify maternal near-miss in both high- and low-income settings was developed and tested in middle/high-income settings.

3.2 Planned activities

- The indicators of universal access to reproductive health developed by the WHO/UNFPA technical consultation (see Section 3.1.1) will be tested in a number of countries within the context of the UNFPA MDG 5 Thematic Fund.

- The module on safe sex within the WHO STEPS survey will be piloted and implemented.

- The Department will participate in capacity-building activities for implementing the handbook on the indicators for monitoring the availability and use of obstetric services.

- A consensus meeting of stakeholders to review/verify the new classification system for cause-identification of maternal mortality and near-miss will be convened.

- The identification criteria developed for maternal near-miss will be used in the new round of the "WHO multi-country study on maternal and perinatal health".

- Both the classification system for cause-identification of maternal deaths and maternal near-miss criteria will be disseminated through special sessions at the XIX World Congress of Gynecology and Obstetrics in October 2009.

- The family-planning indicator developed for routine monitoring in HIV care and treatment settings will be tested in collaboration with the Department of HIV/AIDS and other agencies.

- The Department will facilitate the development and functioning of a topic advisory group on sexual and reproductive health, to develop proposals in relevant sections of ICD-10 to develop the 11th version.

- Regional and subregional workshops will be supported, with the objective of applying sexual and reproductive health indicators to the prioritization of interventions and monitoring of progress towards achieving Target 5B of MDG 5.

.

Annex 1

MONITORING AND EVALUATION

Scientists in 2007–2008

Saifuddin Ahmed	Johns Hopkins School of Public Health, Baltimore, MD, USA
Cristina Alvarez	Medicus Mundi Catalunya, Barcelona, Spain
Patricia Bailey	Family Health International, Chapel Hill, NC, USA
Jon Barrett	Sunnybrook Health Science Centre, Toronto, Canada
Linda Bartlett	John Hopkins School of Public Health, Baltimore, MD, USA
Stuart Berman	Centers for Disease Control and Prevention, Atlanta, GA, USA
Robert Black	Johns Hopkins School of Public Health, Baltimore, MD, USA
Jose Guilherme Cecatti	University of Campinas, Campinas, Brazil
Maureen Chisembele	University of Lusaka, Lusaka, Zambia
John Cleland	London School of Hygiene & Tropical Medicine, London, United Kingdom
Simon Cousens	London School of Hygiene & Tropical Medicine, London, United Kingdom
Sian Curtis	University of North Carolina, Chapel Hill, NC, USA
Alex Ezeh	African Population and Health Research Center, Nairobi, Kenya
Véronique Filippi	London School of Hygiene & Tropical Medicine, London, United Kingdom
Lynn Freedman	Columbia University, New York, NY, USA
Jason Gardosi	Perinatal Institute, Birmingham, United Kingdom
Joaquín G. Gómez Dávila	University of Antioquia, Medellín, Colombia
Rogelio Gonzalez	Ministry of Health, Santiago, Chile
Kenneth Hill	Harvard Center for Population and Development Studies, Cambridge, MA, USA
Debra Jackson	University of Western Cape, Cape Town, South Africa
Khalid Khan	University of Birmingham, Birmingham, United Kingdom
Joy Lawn	Save the Children, Cape Town, South Africa
Virginia Li	University of California, Los Angeles, CA, USA
Deborah Maine	Boston University, Boston, MA, USA
Anthony Mbonye	Ministry of Health, Kampala, Uganda
Affette McCaw-Binns	University of the West Indies, Kingston, Jamaica
Vittal Mogasale	Family Health International, Mumbai, India
Stephen Munjanja	University of Zimbabwe, Harare, Zimbabwe
Alberto Palloni	University of Wisconsin-Madison, Madison, WI, USA
Robert Pattinson	University of Pretoria, Pretoria, South Africa
Herbert Peterson	University of North Carolina, Chapel Hill, NC, USA
Mahesh Puri	Centre for Research on Environmental Health and Population Activities, Kathmandu, Nepal
Rosalind Raine	University College London, London, United Kingdom
Mohamed Cherine Ramadan	El Galaa Teaching Hospital, Cairo, Egypt
Cleone Rooney	Office for National Statistics, London, United Kingdom
Nynke van den Broek	Liverpool School of Tropical Medicine, Liverpool, United Kingdom
Neff Walker	Johns Hopkins School of Public Health, Baltimore, MD, USA
Kaye Wellings	London School of Hygiene & Tropical Medicine, London, United Kingdom
Buyanjargal Yadamsuren	Ministry of Health, Ulaanbaatar, Mongolia
Zhao Gengli	Beijing University, Beijing, China

	Developing countries		Countries in transition		Developed countries		Totals
	Number	% of total	Number	% of total	Number	% of total	Number
Men	10	24			12	29	22
Women	6	15			13	32	19
WHO Region:							
Africa	7	17					7
The Americas	4	10			14	34	18
South-East Asia	2	5					2
Europe					11	27	11
Eastern Mediterranean	1	2					1
Western Pacific	2	5					2

Total = 41

Annex 2

PUBLICATIONS IN 2007–2008

Peer-reviewed publications/book chapters

Beck S, Wojdyla D, Say L, Betran AP, Merialdi M, Requejo JH, Rubens C, Menon R, Van Look PFA. WHO systematic review on maternal mortality and morbidity: the global burden of preterm birth. *Bulletin of the World Health Organization* (in press).

Bernstein S, Say L, Chowdhury S. Sexual and reproductive health: completing the continuum. *Lancet* 2008;371:1225-6.

Di Mario S, Say L, Lincetto O. Risk factors for stillbirth in developing countries: a systematic review of the literature. *Sex Transm Dis* 2007;34(7 Suppl.):S11-21.

Hill K, Thomas K, AbouZahr C, Walker N, Say L, Inoue M et al. Estimates of maternal mortality worldwide between 1990 and 2005: an assessment of available data. *Lancet* 2007;370:1311-9.

Say L, Pattinson RC. Maternal Mortality and Morbidity. In: Kris H, ed. *International encyclopedia of public health*. Oxford: Academic Press; 2008:222-36.

Say L, Raine, R. Inequalities in the use of maternal health care: a systematic review and explanation of the evidence. *Bull World Health Organ* 2007;85:812-9.

Say L, Souza JP, Pattinson RC. Maternal near miss − a standard tool for monitoring quality of maternal health care. *Best Pract Res Clin Obstet Gynaecol*. 2009 Jun;23(3):287-96.

Shah I, Say L. Maternal mortality and maternity care from 1990 to 2005: uneven but important gains. *Reprod Health Matters* 2007;15:17-27.

WHO reports/documents

Department of Reproductive Health and Research. *Maternal mortality in 2005. Estimates developed by WHO, UNICEF, UNFPA and the World Bank*. Geneva: World Health Organization; 2007.

Department of Reproductive Health and Research. *National-level monitoring of the achievement of universal access to reproductive health: conceptual and practical considerations and related indicators.* Geneva: World Health Organization; 2008.

Proportion of births attended by a skilled attendant: 2007 updates. Fact sheet. Geneva: World Health Organization, Department of Reproductive Health and Research; 2007.

Proportion of births attended by a skilled attendant: 2008 updates. Fact sheet. Geneva: World Health Organization, Department of Reproductive Health and Research; 2008.

Chapter 15
Communication, advocacy, and information

1. INTRODUCTION

The Department's work in the area of communication, advocacy, and information is carried out within the Programme Management Team (PMR), with a focus on the following functions:

- provision of advice to the Department in all matters related to the production and dissemination of information products, including audiovisual materials;
- provision of editorial, desktop publication, and dissemination support for the Department's information products;
- management of the web site of the Department and that of HRP;
- evaluation of the impact of dissemination/communications activities, with a view to strengthening the Department's dissemination/communications strategies.

2. PRODUCTION, DISSEMINATION, AND PROMOTION OF INFORMATION PRODUCTS

2.1 Production of documents in various languages

The Department produces and disseminates a variety of serial and non-serial documents and information materials for a variety of target audiences, which include researchers, policy-makers, health-care programme managers, and the general public. In 2007 and 2008, 82 and 77 information materials, respectively, were produced and distributed widely. Of the 82 information materials produced and distributed in 2007, 39 were in languages other than English – Arabic (4), Chinese (2), French (17), Russian (5), and Spanish (11), Of the 77 documents produced in 2008, 30 were translated into various languages – Arabic (4), Chinese (2), French (10), Russian (5), and Spanish (9).

2.2 Dissemination and promotional activities

Over the years, the Department has strived to make more of its documents available from its web site. Today all documents of the Department can be downloaded from its Internet web site. Print copies of documents are also widely distributed, primarily in countries that still do not have good access to the Internet. In addition (to save on the cost of printing), some documents (five in 2008) were published exclusively as electronic documents on the Internet. Table 1 lists the key general documents produced by the Department. (Other documents, for which individual technical teams of the Department are responsible, are listed under the teams' respective chapters.)

To highlight the Department's work at high-level conferences and meetings, exhibits were prepared during 2008 on the following themes.

- Long-term safety and effectiveness of copper-releasing intrauterine devices;
- Improving the safety and effectiveness of contraception in China;
- Knowledge synthesis and transfer;
- Impact of HRP research in maternal and perinatal care;

- Impact of HRP research in medical abortion;
- Female genital mutilation;
- Obstetric fistula.

The Department also issued a number of flyers, 'partner briefs' (brochures on the Department's work aimed specifically at donors), policy briefs, and posters for conferences and meetings. Information booths, with displays of relevant publications of the Department, were set up at seven international meetings in 2008, reaching almost 10 000 participants.

2.3 Internet web sites of the Department

The Department's web site (http://www.who.int/reproductive health) has become the most important channel for disseminating sexual and reproductive health information. During the period 1 January to 1 December 2007, the site had an estimated 2 770 879 visitors (number of sessions) who downloaded a total of 1 375 832 documents. During the period 1 January 2008 to 4 December 2008, 1 640 000 downloads from the Department's web site were recorded. This represents an increase of some 264 000 downloads from 2007.

Table 1. Publications in 2007–2008

Title	Language
Providing the foundation for sexual and reproductive health: a record of achievement	English
Progress in sexual and reproductive health research (newsletter)	Chinese, English
Department of Reproductive Health and Research: highlights of 2007	English
UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction: highlights of 2007	English, French, Spanish
About HRP	English
External evaluation 2003–2007: executive summary	English, French, Spanish
Follow-up on governance, management administration and efficiency: a case-study	English, French
Long-term safety and effectiveness of copper-releasing intrauterine devices: a case-study	English
Improving the safety and effectiveness of contraception in China: a case-study in promotion and improvement of family planning	English
Knowledge synthesis and transfer: a case-study	English
Impact of HRP research in maternal and perinatal care: a case-study	English
Impact of HRP research in medical (non-surgical) induced abortion: a case-study	English
WHO sexual and reproductive health: revised budget 2008–2009	English
UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction: revised budget 2008–2009	English
Sexual and reproductive health: research and action in support of the Millennium Development Goals. Biennial report 2006–2007	English
Twentieth meeting of the Policy and Coordination Committee: report of the meeting	English, French
Twenty-fifth meeting of the Scientific and Technical Advisory Group: report of the meeting	English, French

Note: This is not a comprehensive list of all documents produced by the Department in 2008. The documents listed here are general documents of the Department that do not fall under the work of specific technical teams of the Department.

A further breakdown of the 2008 statistics shows that this increase is largely accounted for by an increased demand in the publications that exist in languages other than English. In 2007, the number of such downloads was 185 000 (13% of the total number of downloads), but in 2008 this figure rose to 413 000 (25% of the total number of downloads). It should also be noted that these figures reflect only those documents hosted on the WHO Headquarters web site, and do not include other translated documents made available through the web sites of WHO Regional Offices.

As in previous years, complete contents of the Department's web site were also made available in CD-ROM format, allowing those without good Internet services to access all the Department's materials in searchable electronic form. This remains the most popular way for people attending conferences to obtain a (lightweight) complete set of RHR materials.

3. STRENGTHENING THE CAPACITY OF COLLABORATING CENTRES TO PUBLISH SCIENTIFIC PAPERS IN PEER-REVIEWED JOURNALS AND COMMUNICATION OF RESEARCH FINDINGS

3.1 Scientific writing workshops

The Programme's scientific writing workshops aim to impart the skills involved in writing a scientific research paper, and seek to encourage scientists in the Programme's collaborating centres to publish more papers – especially in international peer-reviewed journals. In 2007, four scientific writing workshops (for biomedical researchers) were conducted. These workshops took place in: Nanjing, China (27 participants); Ibadan, Nigeria (15 participants); Durban, South Africa (12 participants), and Hanoi, Viet Nam (27 participants).

The workshop in Nanjing was a training-of-trainers workshop in which seven researchers (in addition to 20 regular trainees) were trained to conduct scientific-writing workshops. Participants in the workshop in Ibadan were mostly middle- to senior-level teaching staff of the University of Ibadan; four to five of these participants will be trained to become scientific-writing workshop trainers in a training-of-trainers workshop to be conducted in 2009.

At the request of the Population Council, New York, USA, a workshop was conducted in New York to train 25 Population Council researchers in scientific writing. In addition, in collaboration with FRONTIERS and the Population Council, a workshop was conducted in Dhaka, Bangladesh, in which 25 Bangladeshi scientists and two editors of local research journals were trained in scientific writing. In this workshop, four participants were identified as being suitable to become trainers in scientific writing. In 2008, FRONTIERS and the Population Council conducted a follow-up workshop to train these four participants as trainers.

4. PLANNED ACTIVITIES

In the coming years, the Department will continue to produce and disseminate its usual serial and non-serial reports, publications, and public relations materials – including materials designed with the specific objective of enhancing fund-raising efforts. In addition, the Department will continue to make increasingly more documents available in languages other than English, and to emphasize electronic publications. The Department will also continue to expand and improve its web site as a tool for dissemination of sexual and reproductive health information.

Chapter 16
Statistics and informatics services

1. INTRODUCTION

The Statistics and Informatics Services (SIS) team provides support to the statistical and data processing activities of the Department's research projects. SIS also supports the research-capability-strengthening of institutions in biostatistics, and provides data processing and informatics support to the administration and management of the Department.

2. TECHNICAL SUPPORT TO RESEARCH ACTIVITIES

2.1 Progress

Activities carried out by the SIS Team in support of research projects included technical advice in their development and review; statistical design; assistance with project organization; data processing, monitoring, and management; procurement of data management services; data analysis and preparation of statistical reports; and participation in the writing of scientific papers resulting from the projects. A total of 38 research projects were supported by the Team. The distribution of these projects at the end of 2008 is shown by their stage of development in Table 1 and by area of work in Table 2.

Support was given to programme managers with the technical review of projects submitted to them for funding, and with the arrangements for logistic support to projects before launching. HRP Standard Operating Procedures (SOPs) for the design, analysis and conduct of research projects were reviewed by SIS staff. Informatics support for updating computer equipment for the Department was also provided.

2.1.1 Decentralization and outsourcing

The provision of data management and statistical services to these projects through outsourcing and decentralizing continued, as detailed below.

- Data management continued to be outsourced to a collaborating centre in Argentina, the Centro Rosarino de Estudios Perinatales (CREP), for the project "Multicentre randomized clinical trial of two implantable contraceptives for women, Jadelle and Implanon". Supervision and monitoring functions are under the responsibility of the SIS Team.

- Data management which was outsourced to an application service-provider, KIKA Medical, continued for the project "Comparison of two doses and two routes of administration of misoprostol after pre-treatment with mifepristone for early termination of pregnancy". This project began at the end of 2006 and continued in 2007, using web-based data entry and validation. Recruitment for this study was completed in July 2008. Coordination of data management was the responsibility of the SIS Team, who actively participated in a principal investigators pre-trial meeting for this project, held in Viet Nam. SIS staff also conducted monitoring visits to the following three centres: International Peace Maternity and Child Health Hospital, Shanghai, China; Tu Du Hospital, Ho Chi Minh City, Viet Nam; and National Hospital of Obstetrics and Gynaecology, Hanoi, Viet Nam.

- Data management was outsourced to an application service-provider, Global Research Services, for the project "Sperm suppression and contraceptive protection provided by norethisterone enantate (Net-En) combined with testosterone undecanoate (TU) in healthy men", using web-based data entry and validation. Monitoring

is the joint responsibility of Contraceptive Research and Development Program (CONRAD) and HRP.

- Data management was outsourced to CREP for five projects of the MPH Team.

- Data management continued to be decentralized for the project "Impact of highly active antiretroviral treatment on mother-to-child transmission of HIV and mother's health (Kesho Bora Study)", with monitoring from Geneva. Participating centres include: Network for AIDS Researchers in East and Southern Africa (NARESA), Nairobi, Kenya; International Centre for Reproductive Health (ICRH), Mombasa, Kenya; Centre Muraz, Bobo-Dioulasso, Burkina Fasso; Africa Centre for Health and Population Studies, Mtubatuba, South Africa; Department of Paediatrics and Child Health, Nelson R. Mandela School of Medicine, University of KwaZulu-Natal, Durban, South Africa. Site visits were also conducted by SIS staff to monitor decentralized data management (see Section 2.2).

2.1.2 Adoption of an in-house data-management system

A meeting was held in Geneva in May 2007, at which SIS staff and external consultants discussed various options for an in-house data-management system. In early 2008, the various options were evaluated by a panel comprised of staff from the Department and from the Department of Information Technology and Telecommunications. The panel decided to adopt the OpenClinica system as the in-house data management system for HRP research studies.

The selection was based on the following advantages.

- The system was specifically developed as an online system for clinical trials and complies with Clinical Data Interchange Standards Consortium (CDISC) standards.

- The system is ready to use and liberates a research team from the need of high-level programming, as it can be used without much expertise.

Table 1. Number of studies by stage of development (December 2008)

Stage of development	Number of studies
Planning or just starting: protocol preparation, forms design, data management systems design, supplies distribution	6
Ongoing studies: recruitment ongoing	7
Ongoing studies: recruitment finished, final data cleaning ongoing	1
Finalized studies: final analysis ongoing, manuscript in preparation	15
Finalized studies: manuscript submitted or published	9
Total	**38**

- The system can be used for capacity-building, since studies can be outsourced easily using the same technology.

- External (fee-based) support and training are available.

In June 2008, OpenClinica was installed and SIS staff were trained. Three new studies were set up in OpenClinica and are ongoing.

2.1.3Development of new software tools

A software tool for remote data capture was developed as an alternative to web-based questionnaires, using Microsoft Word for questionnaire design and email for questionnaire administration. This technology will be useful in situations were Internet connectivity is limited.

2.2 Planned activities

The SIS Team will continue to provide support to the statistical and data processing activities of the Department's research projects. Monitoring of data management, through site visits if needed, will be continued for decentralized projects and for outsourced data management. The possibility of outsourcing data management to countries in Africa will be explored, in a way similar to that which is currently being used in Argentina,.

Data management online will continue using the in-house data management system OpenClinica. Review of Standard

Table 2. Number of studies by areas of work (December 2008)

Area of work	Number of studies
Promoting family planning (PFP)	10
Improving maternal and perinatal health (MPH)	10
Controlling sexually transmitted and reproductive tract infections (STI)	5
Preventing unsafe abortion (PUA)	8
Gender, reproductive rights, sexual health and adolescence (GRR)	1
Technical cooperation with countries (TCC)	3
Other departments/regions	1
Total	**38**

Operating Procedures (SOP) for RHR-supported research will continue (if resources are available) to adapt the SOP to the in-house data-management system.

3. SUPPORT TO THE RESEARCH-CAPABILITY-STRENGTHENING OF INSTITUTIONS IN BIOSTATISTICS AND DATA PROCESSING

3.1 Progress

The Team continued on-site training of staff in collaborating centres which are participating in international multicentre trials. The 'training of trainers' concept was implemented in the context of the Kesho Bora study, by having the data manager from Nairobi, Kenya, conduct data-management training in the Africa Centre for Health and Population Studies, Mtubatuba, South Africa. SIS staff followed up on this training during their site visit.

A member of the Team gave lectures at the 17th and 18th "Postgraduate course for training in research in reproductive health and sexual health", which were conducted from 26 February to 28 March 2007 and from 4 February to 5 March 2008, respectively. These courses were organized in Geneva, Switzerland, by the Geneva Foundation for Medical Education and Research, the International Association for Maternal and Neonatal Health, and HRP.

SIS staff participated in a Good Clinical Practice (GCP) course organized by the Special Programme for Research and Training in Tropical Diseases (TDR) in Geneva, from 12 to 13 November 2007, and in a Webex training session organized by KIKA Medical on 1 June 2007. Twenty-two investigators and data-entry operators from 10 collaborating centres also participated in these activities.

SIS staff collaborated in several RHR and HRP publications which are listed in the reports of the various teams.

3.2 Planned activities

Capacity-strengthening activities will continue in response to demands from ongoing projects.

Appendix 1

Staff of the Department of Reproductive Health and Research, December 2007

Paul Van Look, Director[1]

Office of the Director

Catherine d'Arcangues, Coordinator[1]
Barbara Kayser, Secretary
Manjula Lusti-Narasimhan, Technical Officer[2]
Michael Mbizvo, Coordinator
Corinne Penhale, Administrative Assistant[1]
Claire Tierney, Secretary[1]
Sheryl Vanderpoel, Medical Officer[2]
Hazel Ziaei, Administrative Assistant[1]

Programme Management

Anne Allemand, Administrative Assistant[1]
Maureen Dunphy, Document Assistant
Catherine Hamill, Technical Officer
Teresa Harmand, Assistant (Supplies)[1]
Jitendra Khanna, Technical Officer
Svetlin Kolev, Information Officer
Deborah Leydorf, Technical Officer[1, 2]
Craig Lissner, Technical Officer, Team Coordinator[1]
Alessandra Meylan, Programme Officer[1, 2]
Christine Meynent, Technical Assistant
Bérengère Nail, Secretary
Janet Petitpierre, Layout Assistant
Nalini Wijesundera, Clerk[3]

Gender, Reproductive Rights, Sexual Health and Adolescence

Jane Cottingham, Technical Officer, Team Coordinator[1]
Henriette Jansen, Technical Officer[2]
Elise Johansen, Technical Officer[1]
Eszter Kismodi, Human Rights Adviser[1]
Claudia Garcia-Moreno, Medical Officer
Kerry White, Assistant (Team)[1]

Promoting Family Planning

Catherine d'Arcangues, Team Coordinator, a.i.[1]
Kelly Culwell, Medical Officer
Sybil De Pietro, Secretary[1]
Mary Lyn Gaffield, Technical Officer
Sarah Johnson, Technical Officer[2]
Nathalie Kapp, Medical Officer
Maud Keizer, Secretary[1]
Gloria Lamptey, Secretary
Natalie Maurer, Secretary[1]
Nuriye Ortayli, Medical Officer[2]
Kirsten Vogelsong, Scientist[1]

Improving Maternal and Perinatal Health

Ana-Pilar Betran, Medical Officer[1]
Margrit Kaufmann, Secretary[1]
Mario Merialdi, Medical Officer, Team Coordinator[1]
Mariana Widmer, Technical Officer[1, 2]

Controlling Sexually Transmitted and Reproductive Tract Infections

Nathalie Broutet, Scientist
Isabelle de Vincenzi, Medical Officer[1, 2]
Sarah Dumont, Secretary
Timothy Farley, Scientist
Philippe Gaillard, Medical Officer (Field Support)[1, 2]
Francis Ndowa, Medical Officer, Team Coordinator
Theresa Ryle, Secretary
Julia Samuelson, Technical Officer [2]
Kenneth Wind-Andersen, Technical Officer[2]

Preventing Unsafe Abortion

Karie Pellicer, Secretary[1]
Nicola Sabatini-Fox, Secretary[1]
Iqbal Shah, Coordinator[1]
Helena von Hertzen, Medical Officer[1]

Technical Cooperation with Countries for sexual and reproductive health

Heli Bathija, Scientist[1]
Katherine Ba-Thike, Scientist[1]
Davy Chikamata, Medical Officer[1]
Asa Cuzin, Technical Officer[1]
William Duke, Technical Officer[2]
Enrique Ezcurra, Scientist[1]
Peter Fajans, Scientist[1]
Ekaterina Filatova, Medical Officer[2]
Mai Fujii, Associate Professional Officer
Metin Gülmezoglu, Scientist
Dale Huntington, Scientist[1]
Lauri Jalanti, Assistant (Team)[1]
Catherine Kiener, Secretary[1, 2]
Ronnie Johnson, Scientist[1]
Ruth Malaguti, Secretary[1]
Shawn Malarcher, Scientist
Alexis Ntabona, Coordinator
Jenny Perrin, Secretary[1]
Suzanne Reier, Technical Officer
Lale Say, Medical Officer
Joanne Simpson-Deprez, Assistant (Team)[1]
Margaret Usher-Patel, Scientist
Anne Warren, Assistant (Team)

Statistics and Informatics Services

Mohamed Ali, Statistician[1]
Eduardo Bergel, Statistician[1]
Emilie Diagne, Technical Assistant[1, 2]
Lucio Fersurella, Technical Assistant[1, 2]
Sihem Landoulsi, Programmer Analyst[1]
Thi My Huong Nguyen, Clinical Trial Manager[1]
Sasha Peregoudov, Systems Analyst[1]
Gilda Piaggio, Statistician, Team Coordinator[1]
Mashiur Rahman, Clerk[1, 2]
Roselyne Vallo, Technical Officer[1, 2]
Milena Vucurevic, Technical Assistant, Data Management[1]

[1] Staff of the UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP)
[2] Temporary staff
[3] Funded by the WHO Department of Making Pregnancy Safer (MPS)

Appendix 2

Staff of the Department of Reproductive Health and Research, December 2008

Paul Van Look, Director[1]

Office of the Director

Catherine d'Arcangues, Coordinator[1]
Barbara Kayser, Secretary
Manjula Lusti-Narasimhan, Technical Officer[2]
Michael Mbizvo, Coordinator
Corinne Penhale, Administrative Assistant[1]
Claire Tierney, Secretary[1]
Sheryl Vanderpoel, Medical Officer[2]
Hazel Ziaei, Administrative Assistant[1]

Programme Management Team

Maureen Dunphy, Document Assistant
Roshni Fernando, HR Assistant
Catherine Hamill, Technical Officer
Teresa Harmand, Assistant (Supplies)[1]
Jitendra Khanna, Technical Officer
Svetlin Kolev, Information Officer
Deborah Leydorf, Technical Officer[1, 2]
Craig Lissner, Technical Officer, Team Coordinator[1]
Christine Meynent, Technical Assistant
Bérengère Nail, Secretary
Janet Petitpierre, Layout Assistant
Vinod Unikkadath, Programme Officer

Gender, Reproductive Rights, Sexual Health and Adolescence Team

Jane Cottingham, Technical Officer, Team Coordinator[1]
Elise Johansen, Technical Officer[1]
Eszter Kismodi, Human Rights Adviser[1]
Claudia Garcia-Moreno, Medical Officer
Christina Pallitto, Technical Officer
Kerry White, Assistant (Team)[1]

Promoting Family Planning Team

Catherine d'Arcangues, Team Coordinator, a.i.[1]
Kelly Culwell, Medical Officer
Sybil De Pietro, Secretary[1]
Mary Lyn Gaffield, Technical Officer
Sarah Johnson, Technical Officer[2]
Emily Jackson, Medical Officer
Maud Keizer, Secretary[1]
Gloria Lamptey, Secretary
Kirsten Vogelsong, Scientist[1]

Improving Maternal and Perinatal Health Team

Ana-Pilar Betran, Medical Officer[1]
Margrit Kaufmann, Secretary[1]
Mario Merialdi, Medical Officer, Team Coordinator[1]
Mariana Widmer, Technical Officer[1, 2]

Controlling Sexually Transmitted and Reproductive Tract Infections Team

Iyanthi Abeyewickreme, Medical Officer[1,2]
Nathalie Broutet, Medical Officer[1]
Isabelle de Vicenzi, Medical Officer
Sarah Dumont, Secretary[1]
Timothy Farley, Scientist[1]
Philippe Gaillard, Medical Officer
Natalie Maurer, Secretary[1]
Francis Ndowa, Team Coordinator[1]
Mashiur Rahman, Secretary[1,2]
Theresa Ryle, Secretary[1]
Julia Samuelson, Technical Officer[1]
Caitlin Wetzel, Technical Officer[1]
Kenneth Wind-Andersen, Technical Officer[1]

Preventing Unsafe Abortion Team

Nina Benedicto, Clerk
Karie Pellicer, Secretary[1]
Nicola Sabatini-Fox, Secretary[1]
Iqbal Shah, Coordinator[1]
Helena von Hertzen, Medical Officer[1]

Technical Cooperation with Countries for Sexual and Reproductive Health Team

Heli Bathija, Scientist[1]
Katherine Ba-Thike, Scientist[1]
Sophie Berlamon, Technical Officer[2]
Davy Chikamata, Medical Officer[1]
Thérèse Curtin, Secretary
Asa Cuzin, Technical Officer[1]
William Duke, Technical Officer[2]
Enrique Ezcurra, Scientist[1]
Peter Fajans, Scientist[1]
Ekaterina Filatova, Medical Officer[2]
Mai Fujii, Associate Professional Officer
Metin Gülmezoglu, Scientist
Dale Huntington, Scientist[1]
Lauri Jalanti, Assistant (Team)[1]
Catherine Kiener, Secretary[1, 2]
Ronnie Johnson, Scientist[1]
Ruth Malaguti, Secretary[1]
Shawn Malarcher, Scientist
Alexis Ntabona, Coordinator
Suzanne Reier, Technical Officer
Lale Say, Medical Officer
Joanne Simpson-Deprez, Assistant (Team)[1]
Joao Souza, Medical Officer
Khin Win Thin, Technical Officer
Margaret Usher-Patel, Scientist
Anne Warren, Assistant (Team)

Statistics and Informatics Services Team

Eduardo Bergel, Statistician
Emilie Diagne, Statistical Assistant[2]
Lucio Fersurella, Clerk[2]
Ndema Abu Habib, Data Analyst[2]
Sihem Landoulsi, Programmer/Analyst
My Huong Nguyen, Data Analyst
Alexandre Peregoudov, Systems Analyst
Gilda Piaggio, Team Coordinator
Milena Vucurevic, Technical Assistant (Data Management)

[1] Staff of the UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP)
[2] Temporary staff

ACRONYMS AND ABBREVIATIONS

AFRO	WHO African Region
AIDS	acquired immune deficiency syndrome
AIIMS	All India Institute of Medical Sciences
AMRO	WHO Region of the Americas
AMS	Activity Management System
ANM	auxiliary nurse midwife
ART	assisted reproductive technology
ARV	antiretroviral
ASRH	adolescent sexual and reproductive health
AUA	achievement of universal access to reproductive health
BOF	Benchmarks of Fairness
BSG	La Bibliothèque de Santé Génésique de l'OMS
BSR	La Biblioteca de Salud Reproductiva de la OMS
CAH	Department of Child and Adolescent Health and Development
CAPRISA	Centre for the AIDS Programme of Research in South Africa
CBR	Center for Biology of Reproduction, Brazil
CCH	WHO/UNICEF/UNFPA Coordinating Committee on Health
CDC	Centers for Disease Control and Prevention, Atlanta, Georgia, USA
CEDAW	Committee on the Elimination of All Forms of Discrimination Against Women
CEDES	Center for the Study of the State and Society, Argentina
CEFOREP	Centre de Formation et de Recherche en Santé de la Reproduction
CEMIC	Centro de Educación Médica e Investigaciones Clínicas
CEMICAMP	Centre for Research and Control of Maternal and Infant Disease, Brazil
CENEP	Center for Population Studies, Argentina
CEPEP	Paraguayan Center for Population Studies, Paraguay
CGF	countries of general focus
CHERG	Child health epidemiology reference group
CHP	Department of Chronic Diseases and Health Promotion
CIF	countries of intensified focus
CIR	competitive intra-regional (grant)
CLAP	Centro Latinoamericano de Perinatologia
COP	community of practice
CREP	Center for Perinatal Studies, Argentina
CSO	civil society organization
CST	Country Support Team (UNFPA)
CWS	courses, workshops and seminar (grant)
D&C	dilatation and curettage
DFID	Department for International Development
DHS	Demographic and Health Surveys
DMT	Decision-making tool for family planning clients and providers
DSMB	Data and Safety Monitoring Board
DSW	German Foundation for World Population
EBM	evidence-based medicine
EBMEEM	Evidence-based medicine educational environment measurement (tool)
EC	emergency contraception
ECRU	Effective Care Research Unit
EMNOSTIC	Eastern Mediterranean Network of STI Control
EMRO	WHO Eastern Mediterranean Region
EURO	WHO European Region

FCH	Family and Community Health Cluster
FECASOG	Central American Federation of Obstetrical and Gynecological Societies
FIGO	International Federation of Gynaecology and Obstetrics
FLASOG	Latin American Federation of Gyneco-Obstetric Societies
FWCW	Fourth World Conference on Women
GAP	Gender Advisory Panel
GAPPS	Global Alliance for the Prevention of Prematurity and Stillbirth
GASP	Gonococcal Antimicrobial Surveillance Programme
GBD	Global burden of disease
GFMER	Geneva Foundation for Medical Education and Research
GFTAM	Global Fund to fight AIDS, Tuberculosis and Malaria
GRR	Gender, Reproductive Rights, Sexual Health and Adolescence Team
GSG	Guidelines Steering Group
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German agency for technical cooperation)
GWH	Department of Gender, Women and Health
HAC	Humanitarian Action in Crisis - WHO Cluster
HIV	human immunodeficiency virus
HPV	human papillomavirus
HRP	UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction
HSS	health systems strengthening
HSV-2	Herpes simplex virus type 2
HVAC	HPV Vaccines Advisory Committee
HVH	Hung Vuong Hospital
IAEG	Interagency and Expert Group
IARC	International Agency for Research on Cancer
IAWG	Interagency Working Group (on SRH/HIV linkages)
IBP	Implementing best practices
IBP/KG	IBP Knowledge Gateway
ICD	International classification of diseases
ICMA	International Consortium on Medical Abortion
ICMART	International Committee for Monitoring Assisted Reproductive Technologies
ICMR	Indian Council of Medical Research
ICPD	International Conference on Population and Development
ICTRP	International Clinical Trials Registry Platform
IDIMI	Institute of Maternal and Child Health Research, Chile
IEC	Information, education and communication
IFFS	International Federation of Fertility Societies
IMPAC	Integrated Management of Pregnancy and Childbirth
IOM	International Organization for Migration
IPPF	International Planned Parenthood Federation
IPR	Institute of Population Research, Peking University
IPSR	Institute for Population and Social Research, Mahidol University
ISA	International Stillbirth Alliance
ISSTDR	International Society for Sexually Transmitted Diseases Research
IUD	Intrauterine device
IVB	Department of Vaccines and Biologicals
IVF	in vitro fertilization
IVM	in vitro maturation of oocytes
JHU/CCP	Johns Hopkins University/Center for Communication Programs
KEMRI	Kenya Medical Research Institute

LDC	least developed country
LGU	local government unit
LID	long-term institutional development (grant)
LNG	levonorgestrel
LSHTM	London School of Hygiene and Tropical Medicine
MAR	medically assisted reproduction
MCHC	Maternal and Child Health Centre
MCHR	State Research Centre on Maternal and Child Health and Human Reproduction
MDG	Millennium Development Goal
MEC	Medical eligibility criteria for contraceptive use
MIP	Meeting of interested parties
MISP	Minimum Initial Services Package
MRC	Medical Research Council of South Africa
MSI	Marie Stopes International
MSM	men having sex with men
MTCT	mother-to-child transmission
MVA	manual vacuum aspiration
NCB	National Coordinating Board
Net-En	norethisterone enantate
NGO	nongovernmental organization
NICE	National Institute for Health and Clinical Excellence
NICHD	United States National Institute of Child Health and Human Development
NIH	National Institutes of Health
NIPH	National Institute of Public Health
NIRRH	National Institute for Research in Reproductive Health
NPFPC	National Population and Family Planning Commission
NPO	national programme officer
NRIFP	National Research Institute for Family Planning
OECD	Organization for Economic Cooperation and Development
OHCHR	Office of the High Commissioner for Human Rights
ONFP	Office National de la Famille et de la Population
PAC	post-abortion care
PAHO	Pan American Health Organization
PATH	Program for Appropriate Technology in Health
PCC	Policy and Coordination Committee (of HRP)
PCS	programme capacity strengthening
PEPFAR	United States of America's President's Emergency Plan for AIDS Relief
PGIMER	Post-Graduate Institute for Medical Education and Research
PGT	Programme guidance tool for STI/RTI
PHC	primary health care
PLACIRH	Latin American Programme for Research and Research Training in Human Reproduction, Mexico
PLHIV	people living with HIV/AIDS
PMNCH	The Partnership for Maternal, Newborn & Child Health
PMR	RHR Programme Management Team
PMTCT	prevention of mother-to-child transmission (of HIV)
PPH	postpartum haemorrhage
PREBIC	Preterm Birth International Collaborative
PRSP	poverty reduction strategy paper
PSP-One	Private Sector Partnerships for Better Health
PUMCH	Peking Union Medical College Hospital

RAP	Regional Advisory Panel
RCS	research capacity strengthening
REG	re-entry grant
RFPD	The Rotarian Action Group for Population Growth & Sustainable Development
RHL	The WHO reproductive health library
RHR	Department of Reproductive Health and Research
RMG	resource maintenance grant
RTG	research training grant
RTI	reproductive tract infection
SAGE	Scientific Advisory Group of Experts
SDM	standard days method
SEARO	WHO South-East Asia Region
SERG	Scientific and Ethical Review Group
SES	socioeconomic status
SIDA	Swedish International Development Cooperation Agency
SIPPR	Shanghai Institute of Planned Parenthood Research
SMG	small grant
SPP	WHO-UNFPA Strategic Partnership Programme
SPR	Selected practice recommendations for contraceptive use
SRH	sexual and reproductive health
SRHR	sexual and reproductive health and rights
STAG	Scientific and Technical Advisory Group
STEPS	Stepwise approach to surveillance
STI	sexually transmitted infection
STI/RTI GEP	Sexually transmitted and other reproductive tract infections: a guide to essential practice
SWAp	sector-wide approach
TCC	technical cooperation with countries
TDR	Special Programme for Research and Training in Tropical Diseases
TMRIFP	Tianjin Municipal Research Institute for Family Planning
TU	testosterone undecanoate
UCSF	University of California, San Francisco
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIFEM	United Nations Fund for Women
UNPD	United Nations Population Division
UNSD	United Nations Statistics Division
USAID	United States Agency for International Development
VCT	voluntary counselling and testing (HIV/AIDS)
VIP	Department of Violence and Injury Prevention
WHA	World Health Assembly
WHO	World Health Organization
WIRHDC	Western Indonesia Reproductive Health Development Centre
WPRO	WHO Western Pacific Region