

Biennial Technical Report 2009–2010  
UNDP/UNFPA/WHO/World Bank Special Programme  
of Research, Development and  
Research Training in Human Reproduction (HRP)



# HRP Biennial Technical Report 2009–2010



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#### WHO Library Cataloguing-in-Publication Data

Biennial technical report 2009–2010 / 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//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 150174 3

(NLM classification: WP 630)

## Acknowledgements

We are grateful to all those who contributed to the work detailed in this report including our collaborating centres, details of which can be found on our web site at [www.who.int/reproductivehealth/topics/countries/centers](http://www.who.int/reproductivehealth/topics/countries/centers)

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

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# Preface

This biennial technical report of the UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP), presents HRP's work in the context of the World Health Organization's work in sexual and reproductive health. In odd numbered years, HRP produces a Biennial Technical Report, which is drawn from work presented to HRP's Scientific and Technical Advisory Group (STAG); this complements the Biennial Report, which is produced in even numbered years, and targeted at a wider audience, including policy-makers, programme managers and donors.

The Department of Reproductive Health and Research (RHR), including HRP, 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). Its global research and programme development work, including national research and technical capacity strengthening, aim to accelerate progress towards universal access to sexual and reproductive health. The United Nations Secretary-General's Global Strategy for Women's and Children's Health has provided additional impetus to our collective efforts to improve sexual and reproductive health.

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 HRP Biennial Technical Report, 2009–2010, which provides scientific and technical details on the full range of activities undertaken by HRP in 2009 and 2010. This report is intended to be a key tool for disseminating information on sexual and reproductive health to scientists, researchers, programme managers and other partners. Highlights of HRP's work for 2010 are available as a standalone, printed document. To conserve resources we have limited the number of printed copies of this document, but an electronic version is available from: [www.who.int/reproductivehealth](http://www.who.int/reproductivehealth). Details of collaborating researchers and the departmental staff list are available in the online version.

**Dr Mike Mbizvo**

Director

Department of Reproductive Health  
and Research

June 2011

# Chapter 1

## Promoting family planning

### 1. INTRODUCTION

Over the past few decades, family planning (FP) programmes have had increasing success in reaching couples to improve contraceptive prevalence rates globally. However, levels of unmet need for FP remain high, especially in specific populations, and demand for infertility services is increasing worldwide. The RHR Promoting Family Planning Team (PFP) seeks to contribute to a substantial reduction in the unmet need for contraception and improved access to infertility prevention and care services, allowing people to achieve their fertility goals. Its programme of work aims at improving the quality of FP within sexual and reproductive health care globally. The Team focuses on the development and dissemination of evidence-based FP and infertility guidelines and tools, research into users' and providers' perspectives on FP and sexual and reproductive health services and technologies, the development of new or improved methods of fertility regulation, the evaluation of the long-term safety and efficacy of existing methods, and technical assistance to country FP and sexual and reproductive health programmes in the adaptation and implementation of technical and programmatic guidance. Research results and significant accomplishments from 2009 and 2010 are presented here.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

PFP's work contributes to the achievement of WHO Strategic Objectives (SOs) 4 and 6. Specifically, these SOs aim to "Reduce morbidity and mortality and improve health during key stages of life ... and improve sexual and reproductive health" (SO4) and "Promote health and development, and

prevent or reduce risk factors for health conditions associated with ... unsafe sex" (SO6).

Within SO4, the Team's guidelines and research achievements have contributed to the achievement of two WHO Organization-wide expected results (OWERs). The guidelines work is targeted to OWER 7, which highlights the importance of making available "guidelines, approaches and tools ... with provision of technical support to Member States ... towards the attainment of international development goals and targets related to reproductive health." In 2009–2010, the Team focused on developing, updating, translating and disseminating appropriate, evidence-based guidelines in order to support countries to meet the needs of their populations and ensure universal access to contraception and fertility services. Collaborative activities to provide direct support to countries in adapting and implementing the PFP tools and guidelines have been of paramount importance, despite limited funding for this work. OWER 2 within SO4 specifically calls for national research capacity to be strengthened and "New evidence, products, technologies, interventions and delivery approaches of global and/or national relevance" to be developed. The research supported by PFP in 2009–2010 served both to strengthen research capacity and provide new evidence regarding contraceptive and reproductive health products and technologies. Some of the research portfolio is targeted towards the development of new methods of family planning, designed to meet the needs of individuals and couples whose needs are not met by the currently available array of technologies and to provide options with improved safety, efficacy and acceptability profiles over existing methods. Another component of the research establishes the long-term safety and efficacy of existing methods of family

contraception, particularly for women who have certain conditions as identified in the FP *Medical eligibility criteria* guidelines. All of the research is intended to provide evidence that can be taken into consideration when updating, modifying or adapting the PFP guidelines and tools.

An additional component of the research conducted within PFP is related to SO6, OWER 6, which seeks to develop “Evidence-based and ethical policies, strategies, interventions, recommendations, standards and guidelines ... to promote safer sex” and to provide technical support to countries to “strengthen institutions in order to tackle and manage the social and individual consequences of unsafe sex.” A specific set of research activities, conducted in collaboration with a research partner (Family Health International), has been identified, with the goal of expanding access to contraceptives and FP services, particularly among underserved groups, e.g. adolescents, the poor, people with disabilities, people living with HIV and those trafficked or in conflict situations. This work has been established in 2009–2010, and will continue throughout the next biennium.

Specific achievements resulting from the work of the Team in 2009–2010, as well as activities planned for the near-term future, are described below.

### 3. GUIDANCE DEVELOPMENT

Over the past few years, there has been an increasing demand for guidance on FP services, including counselling and provision. The unmet need for FP remains high, and the various interventions designed to address this problem require that these are evidence-based and regularly updated. The four cornerstones of evidence-based and consensus-driven guidance have served as models to ensure that such unmet need is properly addressed. Aside from addressing the needs of the general population, guidance for specific groups, particularly the underserved or disadvantaged, has also been developed. In addition, individuals and couples need to be assured that appropriate access to both contraception and infertility care will be provided if and when needed.

The development of these guidelines and tools alone, while vital, is not enough to assure that FP services are of quality and appropriate. Thus adaptations were developed for use by community-based health workers in order to achieve greater coverage by reaching out to populations.

#### 3.1 Progress

The range of guidance materials developed by the Team, in collaboration with partners, includes those related to providing various methods of contraception and offering a counselling model for providers and clients, and those related to services for infertility care.

##### 3.1.1 Continuous Identification of Research Evidence (CIRE) system for updating guidelines in family planning

Since 2002, the Internet-based Continuous Identification of Research Evidence (CIRE) system has been used to identify and critically appraise published research findings to ensure that the Department's global FP guidance is based upon the best available evidence. CIRE is operated in partnership with the United States Centers for Disease Control and Prevention/WHO Collaborating Centre for Reproductive Health (CDC/WHO CC).

During 2009–2010, new evidence was identified through CIRE on the following conditions: antiretroviral (ARV) therapy use; benign breast disease; breast cancer; cervical intraepithelial neoplasia; diabetes; dysmenorrhoea; endometriosis; fibroids; HIV infection; obesity; parity; postabortion; postpartum; pregnancy; risk of sexually transmitted infection; sickle cell disease; valvular disease; and young age. Further, new evidence for the six selected practice questions was identified.

- When should advanced provision of emergency contraception be provided?
- When should combined oral contraceptives (COCs) be started?,
- What should be done when COCs are missed?
- When can progestin-only injectables be started?
- What can be done for women with bleeding abnormalities during implant use? What can be done for women with bleeding abnormalities during progestin-only injectable use?

Preparation of systematic reviews is under way for the majority of these topics. Reviews summarizing the safety of postpartum IUD insertion and use of hormonal contraception postabortion, as well as addressing what women should do if they miss taking COCs were completed. External review of these systematic reviews has confirmed that guidance in the *WHO Medical eligibility criteria for contraceptive use* (MEC) and *Selected practice guidelines for contraceptive use* (SPR) remains consistent with the body of evidence for these topics.

An update to the Department-supported Cochrane review *Treatment of vaginal bleeding irregularities induced by progestin-only contraceptives*, initially published in the Cochrane Database in 2007, was initiated in light of numerous new publications in this area, and in keeping with the Cochrane schedule. The update will be completed and submitted for publication in 2011.



### 3.1.2 *Technical consultation on the use of combined hormonal contraception during the postpartum period*

In response to concerns raised by experts in the United States of America during their adaptation of the MEC, a systematic review summarizing the risk of venous thromboembolism (VTE) among non-lactating women using combined hormonal contraceptive (CHC) methods during the postpartum period was prepared. At the advice of the Family Planning Guidelines Steering Group (GSG), WHO convened a technical consultation via teleconference in January 2010 to evaluate thoroughly the current MEC recommendation for the use of CHCs among non-breastfeeding postpartum women to determine whether the recommendation remains consistent with the body of emerging evidence. It was found that the then-current WHO guidance on this issue was discordant with the presented evidence, and that WHO guidance inadequately reflected the gradual declining risk of VTE during the postpartum and the potential impact of multiple risk factors on VTE formation during this period. The GSG issued interim guidance, developing 20 new recommendations for postpartum, non-breastfeeding women, which are available in the fourth edition of the MEC, and a statement titled *Combined hormonal contraceptive use during the postpartum period*. The systematic reviews that provided the basis for the consultation have been accepted for publication in 2011 in *Obstetrics & Gynecology*.

### 3.1.3 *External evaluation of the Continuous Identification of Research Evidence (CIRE) system*

An external evaluation of the CIRE system, completed in October 2010, looked at assessing the current methods for identifying evidence, evaluating whether the current process complies with WHO's standards for guideline development, and providing recommendations on modifications to ensure the process adheres to those standards. To evaluate the bibliographic assessment, a comparison of the yield and relevance when searching for six high-priority topics, on POPLINE (the database used by CIRE since its inception) and on PubMed between April and June 2010, was performed. The assessment concluded that PubMed provided more citations, more relevant citations to the topics that were searched, was easier to use, and that citations were available in a more timely manner compared with what POPLINE offered. In addition, the evaluators suggested that the CIRE Internet system should be hosted at WHO.

To evaluate the process used to develop FP guidelines on its compliance with that stipulated by WHO's Guideline Review Committee, structured interviews were conducted among staff at WHO; among staff at CDC; and with the GSG members. Information on the CIRE Internet system was examined, and reports of prior meetings and consultations were analysed. The final evaluation reported that the system

allows for the continuous identification of evidence pertaining to FP clinical guidelines, which is useful and beneficial to WHO during periods between guideline revisions. Further, the current process used for developing FP guidelines is not compliant with WHO requirements for guideline development in the following areas: scoping of guideline content; applying the Grades of Recommendation Assessment, Development and Evaluation (GRADE) system to appraise the quality of evidence and formulate recommendations; ensuring external peer review of finalized revisions; and providing detailed plans for implementation and dissemination of the revised guidance.

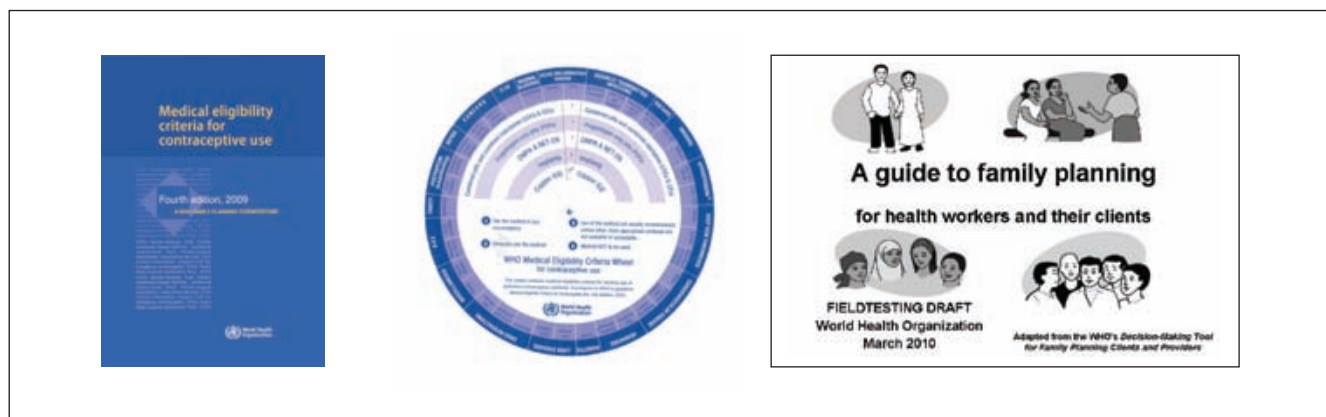
In conclusion, the evaluators recommended that WHO retain the CIRE system as a mechanism to identify research evidence that applies to FP guidelines, with modifications. WHO should revise the process to rely upon PubMed as the primary source for evidence identification and apply the GRADE system to appraise the quality of evidence and formulate recommendations. In addition, it will be important to distinguish membership and to specify the role of the GSG (which should operate during interim periods) from that of a Guideline Development Group (comprising WHO staff, CDC collaborators, topic experts, guideline users, methodologists and programmatic experts), which is responsible for revising FP guidelines. WHO needs to ensure that this Guideline Development Group is geographically and gender-balanced.

### 3.1.4 *Medical eligibility criteria for contraceptive use, fourth edition*

The fourth edition of the MEC was finalized and approved for publication in May 2010. Guidance within the fourth edition reflects recommendations that were developed during an expert Working Group meeting in April 2008, as well as two subsequent technical consultations to address issues related to postpartum VTE risk (in January 2010) and breastfeeding and risk of hormonal exposure in the neonate (in October 2008). Furthermore, new guidance on the use of the lactational amenorrhea method (LAM) among women infected with HIV is offered, which is based upon updated recommendations promulgated in a December 2009 document published by WHO's HIV/AIDS Department, *Rapid advice: use of antiretroviral drugs for treating pregnant women and preventing HIV infection in infants*. Printed copies of the new edition of the MEC will be disseminated to ministries of health, WHO regional and country offices, UN partner agencies, nongovernmental organizations (NGOs), national health-provider associations, and medical and nursing institutions in early 2011. The document is currently available online through the WHO Library and the RHR web sites. Translations of the fourth edition into Spanish and French have been initiated and will be completed in early 2011, to be made available in hard copy and online.



Figure 1. New editions and versions of the Family Planning Guidelines and Tools (from left to right): *Medical eligibility criteria for contraceptive use*, fourth edition; MEC Wheel, updated; *A guide to family planning for health workers and their clients*.



### 3.1.5 MEC Wheel and interactive version

To address the new recommendations in the fourth edition of the MEC, the MEC Wheel was updated in 2009. The updated MEC Wheel (in English) is available on the RHR web site and 15 000 copies were printed for distribution. The update includes reclassifications for several conditions such as drug interactions and viral hepatitis, and the new recommendations for conditions such as deep vein thrombosis and ARV therapy. In addition, a Spanish translation of the updated Wheel (*Disco para determinar criterios médicos de elegibilidad para el uso de anticonceptivos*) is available and 20 000 copies were printed for distribution in hispanophone countries, primarily in Latin America. The Russian translation of the MEC Wheel was also updated. These are available on the RHR web site and CD-ROM. Updating of the French MEC Wheel is under way.

An interactive version of the MEC Wheel developed for personal computer was first presented during the Department's Policy and Coordinating Committee meeting (18–19 June 2009) and in other meetings. The interactive version can be used for teaching or for actual clinic use on a desktop or laptop computer.

### 3.1.6 Selected practice recommendations for contraceptive use

The 2008 update of the SPR was translated into French, Spanish and Russian. These translations are published on the RHR web site. The French and Spanish translations have been printed and distributed globally.

### 3.1.7 Family planning: a global handbook for providers

*Family planning: a global handbook for providers* (the *Global handbook*) is being reprinted with updates on three items: (1) new guidance on the postpartum use of combined hormonal methods by non-breastfeeding women; (2) recommen-

dations that well-trained community-based health providers can safely and effectively administer the hormonal injectable contraceptive, depot medroxyprogesterone acetate (DMPA); and (3) new WHO guidelines on HIV and infant feeding.

### 3.1.8 A guide to family planning for health workers and their clients

The Department has developed *A guide to family planning for health workers and their clients* (Figure 1), which is an adaptation of the clinic-based *Decision-making tool for family planning clients and providers* (DMT) to address the needs of community health workers, who provide an increasing share of FP services. This smaller, less expensive and handier tool is both a counselling tool as well as a job aid for providers, incorporating the latest evidence-based technical information. This tool was developed collaboratively with the Ministries of Health of Ethiopia and Kenya, that have community health worker programmes; nongovernmental partners working in FP and reproductive health; and community health workers currently providing FP services. It has also undergone extensive internal and external review.

The tool has been field tested in two countries in 2010, Guyana and the Philippines, through the support of the United Nations Population Fund (UNFPA) country offices. Feedback from 108 provider–client encounters from Guyana and 415 from the Philippines showed at least 94% favourable responses on the use of the tool. The most commonly used pages included the sections on oral contraceptive pills, hormonal injectables, and the condom. The guide has been translated into Filipino/Tagalog, Visayan/Waray, and Ifugao for use in the Philippines.

### 3.1.9 Update on the recommendations for birth spacing

In cooperation with the RHR Improving Maternal and Perinatal Health Team (MPH), a follow-up to the June 2005 Techni-

cal Consultation on Birth Spacing is being undertaken. On the basis of the evidence available at that point, the experts gathered in the consultation identified caveats and limitations of the studies and the need for further analysis. The Department is thus engaged in developing guidelines for birth spacing recommendations. The online consultation for the scoping of topics has been completed and systematic reviews of the topics are being carried out at the Centro Rosarino de Estudios Perinatales (CREP), in Rosario, Argentina. Further consultation will be completed in 2011.

### 3.1.10 Family planning training resource package

RHR, in collaboration with Family Health International and IntraHealth, produced the *Family planning training resource package*, a package of up-to-date online training materials based on the *Global handbook*, MEC and SPR. The package is designed for FP and reproductive health trainers, supervisors and programme managers. It contains curriculum components and tools needed to design, implement and evaluate training. The package includes visual aids and materials for presentations, speaker notes, discussion questions, case-studies and interactive exercises. The materials could be used independently or included into existing FP training materials in pre-service or in-service courses. These are in modular formats; draft versions were uploaded to the Knowledge for Health web site ([www.k4health.org](http://www.k4health.org)) for a period of public comment ending in January 2011. CD-ROM and USB flash drive versions will also become available when the materials have been finalized.

### 3.1.11 Dissemination of family planning guidance

The FP guidance documents have been printed and translated in many languages and versions (see end of Chapter). The updated FP guidelines and tools are available online at the Department web site and were included in the Department CD-ROMs distributed in many conferences and congresses in 2009 and 2010, such as the FIGO World Congress of Obstetrics and Gynecology in Capetown, South Africa, the International Conference on Family Planning in Kampala, Uganda, and the Women Deliver Conference in Washington, DC. A CD-ROM containing all FP guidelines available in Spanish and/or Portuguese was created for distribution at many events in Latin America, such as the XXI Reunión Bienal de la Asociación Latino Americana de Investigadores en Reproducción Humana (ALIRH) in Sao Paulo, Brazil; at national meetings for obstetricians, gynaecologists and endocrinologists in Costa Rica (June 2009) and Mexico (November 2009); in Mexico for the Ministry of Health (MoH) and organizations involved in sexual and reproductive health service delivery; and during the World Congress of Family Physicians (WONCA), held in Cancun, Mexico, in 2010.

A number of oral presentations were given specifically on these guidance materials at national and international meetings, as listed at the end of the Chapter.

### 3.1.12 WHO laboratory manual for the examination and processing of human semen



The fifth edition of the *WHO laboratory manual for the examination and processing of human semen* was published in 2010. The field of andrology has evolved since the first WHO-recommended laboratory procedures for semen analysis were published in 1980, and semen analysis results are now applied in a variety of research and clinical

settings. The standard laboratory methods described are intended as a means to improve the quality of semen analysis and comparability of results among laboratories. The fifth edition includes numerous high-quality micrographs to aid in the assessment of sperm morphology; new sections on cryopreservation and sperm preparation; and an updated and simplified section on quality control and quality assurance in the andrology laboratory. The manual has been updated with the first evidence-based reference distributions and reference limits for various semen characteristics in fertile men; the reference values were published in late 2009. Numerous translations are ongoing and planned (see end of Chapter).

### 3.1.13 WHO tools on the diagnosis and management of infertility

The WHO International Committee for Monitoring Assisted Reproductive Technologies (ICMART) revised glossary on ART terminology was simultaneously published in November 2009 in both *Fertility & Sterility* and *Human Reproduction*. Its objective is to develop an internationally accepted and updated set of definitions, to standardize and harmonize international data collection, and assist in monitoring the availability, efficacy and safety of assisted reproductive services being practised worldwide. The publication is available in the six official WHO languages as well as in Portuguese, Dutch and German, with translations performed by respective fertility societies. Hard and soft copies have been widely disseminated to fertility society memberships worldwide, including participants at the 2010 European Society for Human Reproduction and Embryology (ESHRE) and American Society of Reproductive Medicine (ASRM) meetings. Presentations covering the glossary have been given at international symposia at ESHRE, ASRM, ISMAAR (International Society for Modified Approaches to Assisted Reproduction), IFFS (International Federation for Fertility Societies), FIGO (International Federation of Gynecology and Obstetrics) and regional meetings.

A tool on basic infertility packages for use by midlevel providers in primary health care (PHC) facilities and in under-

resourced settings is being developed with the new FIGO Reproductive Medicine Committee (RMC). Another tool under development has a colourful, e-health/e-mobile format intended for patient self-assessment of preconception issues and understanding infertility and of the risks of either being or becoming infertile. This is being developed in collaboration with Cardiff University in the United Kingdom, with the original tool, FertiSTAT, developed for the United Kingdom. A flip-chart tool for use during client–provider settings – such as FP or safe motherhood consultations for patients concerned with fertility issues – is being developed, utilizing current WHO guidelines and components from other WHO tools as a starting-point. This counselling tool will assist clients to address preconception issues and to understand infertility as well as the associated risks or risk behaviours that could result in becoming infertile; it is being developed together with IFFS and FIGO-RMC.

### 3.1.14 Collaborative guideline work

#### 3.1.14.1 Health promotion guidance

In 2010, a cross-cluster task force on mainstreaming health promotion was formally constituted in WHO to develop a package of evidence-based, outcome-oriented health promotion actions for low- and middle-income countries addressing the priority public health conditions. A literature review was conducted with the objective to synthesize existing evidence for health promotion activities in the areas of FP, abortion, and female genital mutilation (FGM). In December 2010 the Department contributed to the task force meeting “Mainstreaming health promotion, reviewing the health promotion actions for priority public health conditions”, at which a series of papers developed by consultants, and based on the literature review, were reviewed. This work will continue towards the development of a broader document, which will follow the WHO formal process of evidence review and should be finalized by mid-2011.

#### 3.1.14.2 Contributions to the Essential Medicines List (EML)

At the request of the Expert Committee on the Selection and Use of Essential Medicines, the Team is reviewing Sections 18.4 (Estrogens) and 18.7 (Progestogens) of the WHO Essential Medicines List (EML) to advise on whether the following should remain on the EML or not: ethinylestradiol in tablet form (10 µg or 50 µg); norethisterone tablet 5 mg; and medroxyprogesterone acetate tablet 5 mg. Information on what the hormones are used for and their public health relevance would be provided. A Cochrane Group in Split, Croatia, was contracted to prepare systematic reviews and GRADE profiles on the evidence available on the use and public health relevance of these products. These syntheses will be reviewed by the PFP and submitted to the Expert Committee for consideration at the March 2011 meeting.

#### 3.1.14.3 Family planning use and promotion in emergencies or humanitarian settings

The Team contributed to two documents issued by the Inter-Agency Working Group on Reproductive Health in Crises (IAWG on Reproductive Health in Crises). The *Inter-agency field manual on reproductive health in humanitarian settings (IAFM)*, 2010 revision for field review outlines the priority minimum reproductive health interventions to be implemented from the onset of an emergency and guides the introduction and/or strengthening of reproductive health interventions, including a chapter on FP counselling services. The IAFM can help health programme planners, managers and service providers reduce mortality, morbidity and disability during a humanitarian crisis. The *Statement on family planning for women and girls as a life-saving intervention in humanitarian settings* is used as an advocacy tool and was distributed at the 2010 IAWG on Reproductive Health in Crises Annual Meeting. See also the report of the Improving Maternal and Perinatal Health Team, Chapter 2.

#### 3.1.14.4 Family planning as a component of a strategy for the prevention of mother-to-child transmission of HIV

Significant strides have been made in the coverage and quality of programmes for the prevention of mother-to-child transmission (PMTCT) of HIV. But work is still required to meet the goal of improving maternal and child health and survival. Contraception has been called the best-kept secret in PMTCT, yet PMTCT programmes have been slow to understand the benefits of FP in the context of PMTCT. There is insufficient integration of FP into antenatal and postpartum care – the backbone of PMTCT programmes – and into HIV treatment programmes.

The Team has contributed to the many activities of the PMTCT Team of the WHO HIV/AIDS Department, including the preparation of the *PMTCT Strategic Vision 2010–2015* and the convening of the Technical Consultation on the Elimination of Mother-to-Child Transmission of HIV, among others. The Team also participated in the PMTCT Inter-Agency Task Team Working Group, contributing to the preparation of the document *Primary prevention of HIV and the prevention of unintended pregnancies in women living with HIV, in the context of PMTCT, Strategic framework, 2010–2015*. The Team also promoted the use of the *Reproductive choices and family planning for people living with HIV: counselling tool*, designed for use in HIV service settings.

### 3.2 Planned activities

The guideline development work of the PFP will continue in the next biennium, in particular with the next consultation to develop the revision and updates of the MEC and SPR. Reviews on the other tools on FP and on infertility will also be undertaken. Guidance for underserved groups (for example,



people living with HIV) and for specific situations (the post-partum period) will also be pursued.

### 3.2.1 Guidelines for contraception

- Use of the CIRE system will continue, in order to ensure that WHO FP guidance (MEC and SPR) remains up to date, relevant, available and accessible to intended audiences.
- A manuscript documenting the CIRE evaluation and its findings will be prepared, to serve as a companion to the CIRE methods paper published in 2005.
- Recommendations from the external evaluation will be addressed and applied towards the development of the fifth edition of the MEC and updates of the SPR to be initiated in late 2011. It is anticipated that an expert committee will be convened in 2013 to evaluate recommendations for revision.
- An update of the second edition of the SPR, with an electronic version that compiles the present version with updated recommendations and text clarifications, will be finalized.
- Translation and printing (as appropriate) of the updated FP guidance and tools, including the fourth edition of the MEC and the MEC Wheel, will continue.
- Development of a mobile phone-based application for the MEC and possibly the SPR will be initiated.

Development and updates of other FP tools, guidelines and evidence will be initiated, to help address unmet requirements for family planning among populations of greatest need.

- The DMT will be updated to ensure that the guidance in this provider tool remains up to date with the latest WHO guidance.
- Initiatives to develop service tools and guidance for health care providers outside of traditional FP services will be undertaken, including those for HIV service delivery areas.
- *A guide for family planning for health workers and their clients*, a community-based, simplified counselling tool will be finalized (based on field-testing and user feedback) and disseminated.
- The updated Cochrane review on treatment or prevention of irregular bleeding due to use of progestin-only methods of contraception will be completed and submitted to the Cochrane Database for publication in 2011. The review will be re-written as a manuscript and submitted to a peer-reviewed scientific journal for publication.

### 3.2.2 Guidelines for infertility

Guidance related to infertility also remains a priority, and materials related to diagnosis and management of infertility will be developed and disseminated in order to increase access to relevant and appropriate interventions, for those most in need.

- Additional translations of the fifth edition of the *WHO laboratory manual for the examination and processing of human semen* will be undertaken and made available; the Department will collaborate with WHO Press and the respective translators and publishers to ensure the wide-spread dissemination and availability of this tool.
- A tool to guide discussions and consultations on the ethics and legal and social implications (ELSI) of introducing infertility interventions to be used on a national level will be developed.
- Practice guidelines for medically assisted reproductive interventions, such as ovarian stimulation and induction, intrauterine insemination and in vitro fertilization, as lower-cost services for couples (including HIV-positive couples) with fertility problems will be developed.
- The guidelines on the diagnosis of the infertile woman will be updated.

## 4. 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 Department. Accordingly, the Specialist Panel on Social Science and Operations Research on Sexual and Reproductive Health has approved support to projects with the aim of expanding the evidence base in this area, some of which has been transformed into policy recommendations.

### 4.1 Progress

#### 4.1.1 Users' perspectives on family planning and sexual and reproductive health services

Between 2009 and 2010, 14 research studies focusing on users' perspectives were conducted on the topic of FP. Of these, studies in Argentina, Brazil, China, Guatemala, India, South Africa, Uganda and the United Republic of Tanzania were completed and results published.

A number of studies aimed at understanding the reproductive health needs, perspectives and experiences of people living with HIV/AIDS (PLWHA) in Brazil, Kenya, South Africa, Uganda and the United Republic of Tanzania. These studies variously examined the role of health providers, community members, partners, and perceived partner HIV-positive status on reproductive health choices including condom use and induced abortion.

A study “Patient–provider communication and reproductive health among HIV-positive women in Rio de Janeiro, Brazil” was conducted to evaluate what values and preferences women living with HIV have regarding communication with their providers about reproductive health, specifically decisions surrounding timing and choice of childbearing. The investigators found that many study participants expressed dissatisfaction, especially in terms of receiving inadequate information and attention, and experiencing stigma and prejudice during their appointments with their providers and/or health professionals.

Findings indicate that there are many missed or ineffectively utilized opportunities to address contraceptive use, planned pregnancy and protected sex among PLWHA in ongoing HIV clinical care consultations. Most providers did not communicate at all with their patients about sexual behaviour, fertility intentions or contraception, and were perceived to ignore the realities of the relationships of their clients with their sexual partners. The few exceptions, where the provider assisted the client, were found to have had a great positive impact on the quality of life of both the female patient and her male partner.

Even in the Brazilian context of free universal access to ARV therapy, patients lack appropriate reproductive health and family planning services to ensure fully informed decisions about when and whether to have children. Notably, when they decided to get pregnant, some participants faced stigma, resistance, and discrimination from their providers, rather than counselling and assistance reflecting their particular reproductive needs.

Findings from a study on “A qualitative exploration of HIV-positive pregnant women’s decision-making regarding abortion in Cape Town, South Africa” established that women seek abortions due to socioeconomic hardship in conjunction with their HIV-positive status. The investigators found that most respondents reported not using contraceptives, while describing their pregnancies as “unexpected”.

In this study, respondents reported negative perceptions among members of the community towards HIV-positive pregnant women. A lack of community support for HIV-positive pregnant women may be largely due to a perception that such women risked infirmity or death by becoming pregnant, and would also infect their children with HIV. Such HIV-positive women were also thought of as being exceptionally needy and incapable of caring for themselves or others.

Notably, the investigators found that induced abortion may be even more stigmatized than HIV/AIDS. Respondents were unlikely to get support for abortion given that it is deeply stigmatized regardless of HIV status. Women contended with social discrimination towards HIV-positive women becoming pregnant, yet were also simultaneously hindered in attempts to access safe abortions for unwanted pregnancies. Com-

munity members as well as health facility staff had harsh judgements towards HIV-positive women, blaming them for becoming pregnant, whether this was planned or not. In some cases, abortion facility staff informed women that repeat abortions were not allowed. Despite no legal justification regarding the number of permissible abortions, women were informed that they could not have a second abortion, or were warned not to return for a second abortion.

Fear of community censure was conspicuous and could compel women to continue an unwanted pregnancy, with possible health consequences for mother and baby. Despite this complex and often unsupportive social context, women’s realities compelled them to find solutions to unwanted pregnancy, and access to safe abortion was critically important to them. Such findings indicate the need for efforts to be undertaken to ensure that women are not being denied access to safe abortion services, and that information and counselling on abortion be integrated into a broader effort on sexual reproductive health in HIV care.

The study “Postpartum reproductive behaviour and the role of antenatal HIV diagnosis and family planning counselling in Mwanza, Tanzania” sought to identify opportunities and barriers to integrating FP counselling into antenatal HIV services. This study was conducted within the context of very high unmet need for family planning, and pregnancy risk during the postpartum period in the United Republic of Tanzania. The study results revealed that uptake of PMTCT treatment at delivery by HIV-positive women was extremely low, particularly in rural areas, with only 19% (compared with 29% of women in urban areas) having received drugs for themselves and their baby. Location issues were a major barrier to uptake.

Study findings indicated that HIV-positive women overwhelmingly desired to stop childbearing, mainly due to dissuasive advice from health providers and worries about health deterioration during pregnancy. However, they also had to consider the heavy stigma of childlessness, which emerged stronger than HIV-related stigma (especially in the absence of status disclosure). The major barriers to contraceptive use in this population included negative community attitudes (particularly towards contraceptive use by married women), male resistance to family planning, and concerns over side-effects of contraceptive methods.

In another study, “Reproductive health needs of people living with HIV in rural Kilimanjaro, Tanzania” a substantial proportion of PLWHA were found to desire children in spite of their HIV status. In this population, the prevalence of fertility desire was found to be 43% and the mean number of desired children was three. PLWHA were found to face considerable logistic, technical and social challenges in realizing their reproductive choices and intentions. Yet, the investigators found a substantially higher rate of family planning use in

the HIV-positive study population compared with the general population.

Another WHO study “Can condom use within marriage contribute to HIV prevention: trends in South Africa and Uganda?” compared cross-sectional data on condom use within marriage for HIV prevention from adult men and women and their partners in Uganda and South Africa in 1998 and 2008. Concern about HIV infection from a cohabiting partner was found to have increased substantially in the study sites over the past decade. Four fifths of women in both countries reported concern in 2008. Among men, concern was found to have increased but remained at a lower level, about two thirds in the South African sites and 40% in Uganda.

Consistent condom use among married and cohabiting partners rose substantially in both countries over this time period. HIV infection or perceived spousal HIV infection were found to be a major spur to consistent condom use in both countries over this decade. The percentage reporting consistent condom use in the South African sample of husbands increased from 2.5% in 1998 to 12% in 2008 and from 2.5% to 12% among wives. In Uganda, the corresponding figures are 1–8% for husbands and 4–9% for wives. In both countries, condom use was considerably higher among the minority of couples where one or both partners were thought to be HIV-positive. Notably, attitudes towards condom use within marriage were found to have become more positive and spousal discussion of condoms much more prevalent in 2008 than a decade earlier. Use of dual method protection was found to be much higher in South Africa than Uganda, likely reflecting the fact that non-barrier contraception was well established in South Africa before the advent of HIV, but not in Uganda. These findings suggest the need for countries to give greater prominence to the contraceptive benefits in condom promotion through social marketing, mass media promotion and counselling than have heretofore been emphasized to married and cohabiting populations.

This study also examined the relative influence of partners and motives for contraceptive use among married couples, and found that wives have a stronger role in influencing contraceptive use than previously thought. In 1998, in both sites, data showed that the wife’s desire to delay or stop childbearing was the most powerful predictor of contraceptive use among couples, while in 2008 the data indicated that the wife’s perceived risk of HIV infection from her spouse was the most powerful predictor of condom use among couples. Importantly, these results suggest that most women are able to translate their fertility preferences into protective behaviours regardless of the views of the husband.

In a similar study in Brazil examining “Factors influencing contraceptive choice and discontinuation among HIV-positive women”, findings suggest that HIV status has some impact but is not the most important determinant of contraceptive

choice among HIV-positive women in Brazil. Condom use was found to be largely determined by partner preferences.

The joint Marie Stopes International (MSI) and WHO report *Long-term contraceptive protection, discontinuation and switching behaviour: intrauterine device use dynamics in 14 developing countries* provides an in-depth assessment of intrauterine device (IUD) use dynamics, comparing users of IUDs with users of other methods. Results are reported from the analyses of Demographic and Health Surveys (DHS) contraceptive calendar data from 14 nationally representative surveys, mostly conducted between 1998 and 2008.

The authors found that the contribution of the IUD to contraceptive protection was variable across the 14 countries, accounting for about 2% of all contraceptive users in some countries but over half in others. Across the 14 countries, about half of all IUD use appears to be motivated by the wish to space or postpone childbearing.

This analysis confirmed the low failure rate of IUDs and low discontinuation rates compared with other methods. Following IUD discontinuation for method-related reasons, on average, half of all women switched to another reversible modern method within three months and an additional 11.5% switched to a traditional method. Over 40% of pill, injectable and condom users stopped use within 12 months, while the equivalent figure for IUD users was only 13%. The analysis revealed that the median length of uninterrupted use is typically 30 or more months for IUDs, and typically 10 months for other methods. Thus the results established that the IUD offers, on average, three times the length of contraceptive protection offered by other modern reversible methods.

The variable contribution of IUD use to contraceptive protection was not found to be based in any cultural or biological factors inherent in the study samples. Hence, the investigators concluded that the IUD is equally suitable for all socio-economic and residential strata. The country-to-country variability was found to reflect country-specific policy choices as to which methods to promote, and biases in FP services. The authors highlighted the need for governments to consider more strongly advocating and supporting the IUD for contraceptive protection.

#### 4.1.2 Elements of quality of care and services

Based on recommendations from RHR’s Gender and Rights Advisory Panel (GAP), the Team initiated the development of a human rights-led quality improvement tool that would be based on the broad areas of: (1) access, (2) availability and (3) quality of FP services. The assumption is that improved services that respect and promote human rights will increase contraceptive use and constitute a right of FP clients. Since the 1990s the field of FP has been defined by the Bruce–Jain framework which defines quality of care in FP by the following six elements: (1) choice of contraceptive methods; (2)



information given to patients; (3) technical competence; (4) interpersonal relationships; (5) continuity and follow-up; and (6) the appropriate constellation of services, but it has not focused on human rights as a paradigm. Other quality-of-care evaluation tools in FP have focused broadly on either (1) facilities (infrastructure, equipment, supplies and trained staff) or (2) provider–client interaction.

The Team has undertaken a systematic review of human rights tools for service delivery and/or the effect of quality of care on contraceptive use. The Team also convened a consultation on the possible framework for the development of a tool that could be used by health-care providers (for self-assessment or managerial performance evaluation) or larger entities such as hospitals and ministries of health. This is part of a broader RHR project with the Gender, Reproductive Rights, Sexual Health and Adolescence (GRR) Team that will lead to the development of a human rights implementation tool. Initially, this new tool will focus on FP, but could be used to address all aspects of comprehensive sexual and reproductive health. The implementation tool will be based on current human rights standards and will address the following three levels: law and policy; operations (specifically health systems including programmes and budgeting); and service delivery. The audience and the implementing agencies for the implementation tool may differ depending on the level.

## 4.2 Planned activities

- The quality of care in FP improvement tool will be completed and field-tested.
- Social science studies on users' perspectives will continue, with a focus on vulnerable populations.
- Technical support and/or research capacity building will be provided to investigators conducting social science and/or operations research related to interventions that are in support of strengthening family planning use among underserved populations.
- Collaboration will continue with South African researchers at the University of Cape Town and the NGO Cell-life for the development of, implementation and impact assessment of a mobile technology to promote family planning in the postabortion period.

## 5. CONTRACEPTIVE RESEARCH AND TECHNOLOGY

HRP continues to play an important role in the development and evaluation of contraceptives. As the reproductive health needs of couples for reliable and acceptable methods of contraception and infertility services increase, and considering the varying involvement of the private sector, the role of WHO and its public sector and academic partners becomes increasingly significant.

## 5.1 Progress

The Programme has made much progress on several studies on contraceptive technologies over the past two years. There is a wide range of important findings on emergency contraception, new hormonal methods and on the safety and efficacy of present methods.

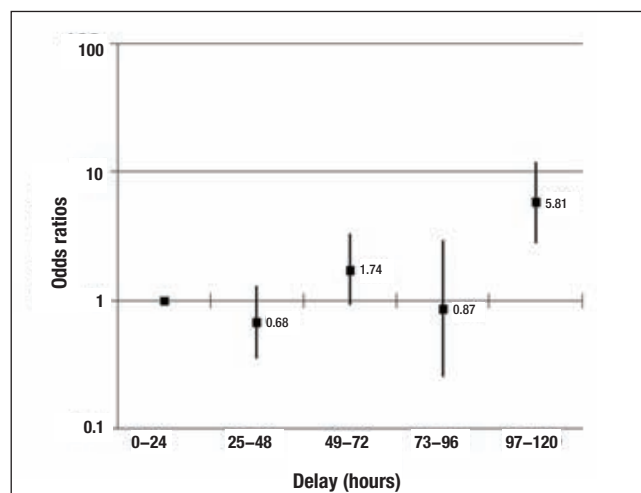
### 5.1.1 Emergency contraception

Emergency contraception (EC) remains the only option for women to prevent pregnancy following an unprotected act of intercourse. HRP continues to advance this domain of FP by conducting research on the efficacy, safety and novel uses of methods of EC.

The earlier a levonorgestrel (LNG) regimen is administered, the more effective it is. Although there is some evidence of decreasing effectiveness of LNG beyond 72 hours, the extent and time pattern of decrease between 72 and 120 hours has been unclear. Combination of results from two HRP trials provided some evidence of effectiveness until the fourth day following an unprotected act of sexual intercourse. A meta-analysis of HRP trials could provide increased power to estimate the relationship between delay in administration and effectiveness up to 120 hours after intercourse. To this end, data were combined from four HRP trials designed to test the efficacy of 1.5 mg of LNG for emergency contraception in a single dose or split in two doses 12 hours apart, within 48 hours, 72 hours or 120 hours of an act of unprotected intercourse. All four studies were randomized controlled trials, randomization being applied to different EC regimens. The proportions of women becoming pregnant among those receiving LNG in successive days after an unprotected act of intercourse were calculated for each trial and for all the trials combined, by day of delay. The odds ratios of pregnancy for each of the successive days of delay, for the four trials combined, were calculated using logistic regression and the first day as reference.

The number of women with data on time interval between intercourse and treatment and analysed for delay was 6794. There was a significant effect of delay on the proportion of women who became pregnant ( $p < 0.0001$ ). The pregnancy rate varied between 0.7% (14/2065) and 1.6% (17/1059) during the first four days and increased to 5.2% (12/230; 95% CI 2.7% to 8.9%) on the fifth day (see Figure 2). This percentage was not significantly different from the 6% to 8% expected without treatment. The odds ratios for pregnancy in the second, third and fourth day with respect to the first day were not significantly different. On the fifth day, the odds ratio of pregnancy compared to the first day was almost 6. A high level of effectiveness of LNG through the fourth day is an important finding. It is uncertain whether LNG still provides some degree of protection, albeit diminished from earlier administration, if administered on the fifth day. This meta-analysis will be published in early 2011 in the journal *Contraception*.

Figure 2. Odds ratios of pregnancy for intervals of delay between an unprotected act of intercourse and administration of LNG after 24 hours with respect to the first 24 hours, with 95% confidence intervals (CI), for combined data of four HRP studies.



Data from an earlier multinational, randomized, controlled trial demonstrated the noninferiority of single-dose LNG with respect to the two-dose regimen. Because of Nigeria's very low contraceptive prevalence rate, high abortion rate and diverse cultural characteristics, collaborators in Nigeria and RHR staff hypothesized that results may differ from other countries regarding effectiveness, reported side-effects, and user and provider perceptions of the different dosing regimens of LNG. The purpose of this randomized, controlled, double-blind, multicentre, noninferiority trial was to compare the efficacy and side-effects of two EC treatments: two doses of 0.75 mg LNG given 12 h apart versus 1.5 mg LNG given in a single dose up to 120 h (5 days) after unprotected intercourse. The two EC regimens were compared among 3022 Nigerian women enrolled in the study. Efficacy was found to be similar between the treatment groups; post-treatment pregnancy rates were 0.57% in the two-dose regimen versus 0.64% in the single-dose regimen (risk difference 0.07% (95% CI -0.50 to 0.64). The majority of women menstruated the first day of expected menses and the groups did not differ regarding reported side-effects. The results from this study demonstrate that the simplified EC regimen of single-dose LNG is not inferior in efficacy to the two-dose regimen among Nigerian women. The results of this trial were published in the journal *Contraception* in 2010.

To determine the effectiveness of the Copper T380A (CuT380A) IUD as an emergency contraceptive, the Programme conducted a prospective, multicentre, cohort clinical study in 18 family planning clinics in China. A cohort of 1963 women, aged 18–44 years, requesting EC within 120 hours of unprotected sexual intercourse was enrolled and followed at 1, 3 and 12 months after the insertion of

CuT380A. The primary outcome of the study was the efficacy of CuT380A as EC and for up to 12 months of post-insertion use. Insertion complication rates, reported side-effects and continuation rates at 12 months were also recorded.

No pregnancies occurred prior to or at the first follow-up visit, making CuT380A 100% effective as EC in this study. The pregnancy rate over the 12-month period was 0.23 per 100 women. In all, 29 (1.5%) women experienced a difficult IUD insertion, requiring local anaesthesia or prophylactic antibiotics. No uterine perforation occurred. The main side-effects were increased menstrual bleeding and menstrual disturbances. The 12-month post-insertion continuation rate was 94.0 per 100 woman-years. These data confirm that the CuT380A is a safe and very effective method for EC, while the advantages of CuT380A include its ability to provide effective, long-term contraception. The results of this study were published in *BJOG: an international journal of obstetrics and gynaecology* in 2010.

The Programme funded a trial at Instituto Chileno de Medicina Reproductiva (ICMER), in Santiago, Chile to determine whether LNG EC can prevent the development of a clinical pregnancy after ovulation has taken place. This project is an extension of one funded by the Chilean National Research Fund.

A cohort of women attending a FP clinic for EC was enrolled, and menstrual history, time of intercourse and time of intake of LNG EC were recorded. On the day of intake of LNG EC and during five days' follow-up, blood samples were taken for examination of luteinizing hormone, estradiol and progesterone concentrations, and vaginal ultrasound examinations were done to document the size of the leading follicle and/or corpus luteum. Thereafter, women were not contacted until the next menses or pregnancy occurred.

Among the first 388 women enrolled, 122 women had intercourse on fertile days according to ultrasound and endocrine findings. At the time of LNG EC intake, 87 women were in days -5 to -1 and 35 women were in day 0 (day of ovulation) or beyond. With the use of the probability of clinical pregnancy reported, expected numbers of pregnancies among the 87 and 35 women were 13 and 7, respectively, while 0 and 6 pregnancies, respectively, occurred. Therefore, preliminary results of this study, published in the journal *Contraception* in 2010, support that LNG EC prevents pregnancy only when taken before fertilization of the ovum has occurred. A manuscript describing the final results of data from all 450 women enrolled is currently in preparation.

### 5.1.2 New methods of fertility regulation for women

The Population Council developed a contraceptive vaginal ring releasing a daily dose of 150 µg of the proprietary progestin Nestorone and 15 µg of ethinyl estradiol over one year. It conducted two phase III clinical trials of this device;

HRP funded two of the participating centres. Preliminary data suggest that this ring has similar efficacy to the marketed Nuvaring. Its safety profile is similar to that of a third-generation oral contraceptive and it was well accepted by women and their partners. Data analysis was ongoing in 2010 and the Population Council intends to file a New Drug Application with the United States Food and Drug Administration in 2011.

### 5.1.3 New methods of fertility regulation for men

The results of the Phase III trial of testosterone undecanoate (TU) as a male injectable contraceptive were published in 2009. The study was supported by HRP, in collaboration with the National Population and Family Planning Commission of China and Zhejiang Xian Ju Pharmaceutical Co. Ltd of China. As reported previously, 1045 couples were enrolled into the study. Approximately 95% of men responded to the monthly testosterone injections with a reduction in sperm production to contraceptive levels; those men experienced a cumulative contraceptive failure rate of 1.1 per 100 men. No serious adverse events were associated with the regimen; spermatogenesis returned to levels generally considered as fertile in all but two men during the planned follow-up period. The regimen was determined to be safe, effective and acceptable for a population of Chinese couples.

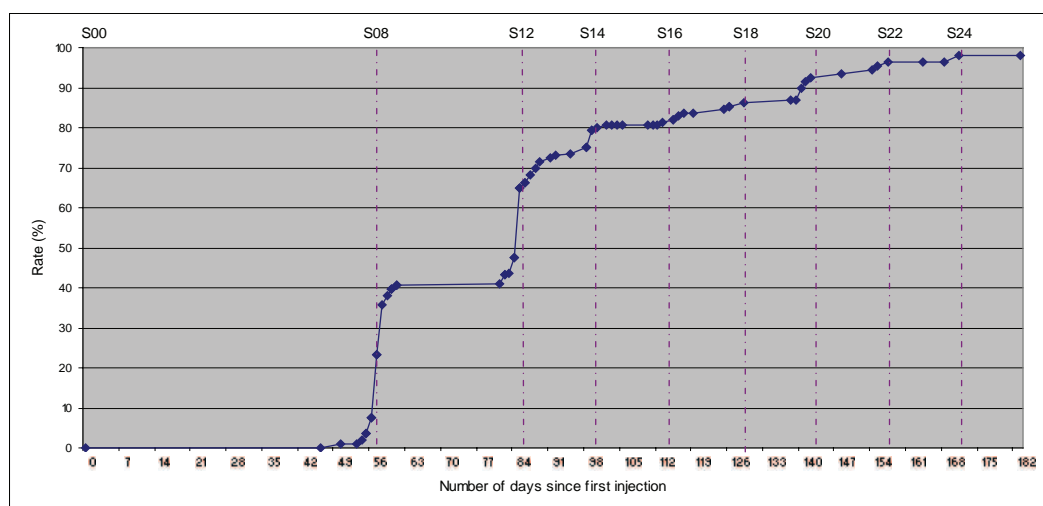
In 2008, a multicentre Phase IIb study of the safety and efficacy of norethisterone enanthate (Net-En) plus TU as a two-monthly injectable for male contraception was initiated at five centres. In 2009, five additional centres were initiated and recruitment was ongoing at nine study sites, with the final site starting recruitment in March 2010. The recruitment period ended at all sites on 31 September 2010; 321 couples were enrolled. This is the first multinational clinical efficacy trial of a combined hormonal regimen for male contraception; endpoints include contraceptive efficacy, suppression of spermatogenesis, safety, side-effects, and acceptability. The

trial is co-funded with CONRAD (Arlington, VA, USA), and study drugs have been donated by Bayer Schering Pharma, AG (Berlin, Germany). An interim analysis was conducted on the data available in mid-2010. As seen in Figure 3, spermatogenesis was suppressed to levels generally considered to offer contraceptive protection in 98% of all men who completed the initial 24-week exposure period. These men were eligible to continue into the year-long efficacy portion of the study, during which they and their partners are expected to discontinue all other methods of contraception.

### 5.1.4 Long-term safety and efficacy of existing methods of fertility regulation

Quinacrine hydrochloride, when formulated into pellets and inserted into the uterus of women, causes permanent scarring and closure of the fallopian tubes. This non-surgical procedure has never been approved by any regulatory agency; however, it is believed that over 140 000 women have received intrauterine quinacrine for the purpose of sterilization. In 2008, a committee of technical experts was convened to review pre-clinical and epidemiological data related to the long-term safety of this intervention. The evidence reviewed was primarily related to cancer risk; contraceptive efficacy and other potential health effects were not reviewed. The review panel recommended a thorough review of all epidemiological data as they become available and continued surveillance of women who have received quinacrine sterilization for risk of gynaecological cancer and other health complications. The experts concluded 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. An interim statement regarding the safety of this procedure as a method of non-surgical sterilization was published on the Department's web site in 2009.

Figure 3. Percentage of study participants achieving suppression of spermatogenesis to levels generally considered to offer contraceptive protection.



To address the association between hormonal contraceptive use and HIV progression, the Department supported the retrospective analysis of a database of 625 female HIV seroconverters from a Ugandan cohort study. A total of 27.5% of women reported ever using hormonal contraception. Time-varying hormonal contraceptive use was not associated with an increased hazard of death as compared with non-use of hormonal contraception (adjusted hazard ratio 0.76, 95% CI 0.41–1.39,  $p=0.37$ ), and was associated with a significantly reduced hazard of progression to AIDS or death (adjusted hazard ratio 0.70, 95% CI 0.50–0.97,  $p=0.03$ ). The conclusion was that hormonal contraceptive use was not associated with faster progression to death, and was associated with a reduced hazard of progression to the composite outcome of AIDS or death.

The multicentre, randomized clinical trial of safety, effectiveness and acceptability of the implantable hormonal contraceptives Jadelle and Implanon continued. In 2006, the protocol was amended to study extended use of Implanon beyond its approved three years duration for its safety and effectiveness. Since then there have been no changes to the study protocol. At the end of 2009, two study centres (Campinas, Brazil, and Ankara, Turkey) completed the five years of clinical follow-up; the last centre will complete follow-up in 2013.

In 2006, the implant study data entry and management responsibilities were outsourced. Lately, issues were raised on data quality that led to a recent decision, in August 2010, to bring back all data management to WHO headquarters in Geneva to ensure integrity and quality of study data. This delayed closing out the two study centres that have completed participant follow-up until early 2011. Following that, admission and third year data will be synthesized for publication.

A protocol to study hormonal injectable contraceptives and their effect on bone mineral density (BMD) in adolescents was finalized, and an initial, pre-study-initiation investigator's meeting was convened in mid-2010. This prospective, multicentre cohort study was designed to evaluate the effect of the combined injectable contraceptive Cyclofem compared with progestogen-only formulations (DMPA and Net-En) and non-hormonal contraceptive use on adolescent women's bone health during the period of peak bone mass acquisition. The study was designed to include long-term follow-up, in order to provide data on BMD in early adulthood in the study cohort, during and after use of these methods. The Research Project Review Panel (RP2) recommended revising the study to limit the investigation to Cyclofem compared with controls, as the effects of progestogen-only injectables have been evaluated by other protocols and reported already in published studies. For example, a five-year longitudinal study in South Africa supported by HRP reported evidence of lower BMD increases per year in Net-En and COC users

compared to nonusers, but no difference between DMPA users and nonusers. Among Net-En users, an overall reduction in BMD of 0.61% per year was reported; upon discontinuation, an increase in BMD of 0.69% per year was reported. These results were considered by the panel to have adequately established the effects on bone due to use of progestogen-only injectables. In addition, it will be important to address the difficulty of following up a cohort of adolescents, who often switch methods and frequently are lost to follow-up. The protocol will be revised and a late 2011 start date is targeted.

At the request of the FP GSG, a sub-analysis of a maternal and infant database from the Avon Longitudinal Study of Pregnancy And Childbirth in the United Kingdom, was initiated to determine possible developmental effects of hormonal contraceptive use during breastfeeding. Previous studies have not well described the potential risks to breastfed newborns exposed to hormonal contraceptives through breast milk, especially concerning infant growth, achievement of developmental milestones, and overall health. The present analysis shows no difference between breastfed children of women taking hormonal contraceptives at the time and breastfed children of women not taking hormonal contraceptives, in terms of weight, height and body mass index (BMI) at two and four years of age. Analysis of the data regarding effects on behaviour as assessed by standard questionnaires showed no effect of hormonal contraceptive exposure during breastfeeding on behaviour at four years of age. Limitations of the analysis include a significant amount of missing data and the relative difficulty of interpretation of contraceptive use data. More in-depth analyses will be performed to address other issues related to specific contraceptive methods and possible effects at older ages.

## 5.2 Planned activities

- A multicentre study to evaluate the efficacy, safety and acceptability of pericoital use of LNG has been developed in collaboration with Family Health International (FHI) and HRA Pharma. Trial start is anticipated for 2011.
- Follow-up of couples in the study of contraceptive efficacy and safety of Net-En + TU for male fertility regulation will continue until early 2013; the final clinical report is expected in 2014, with publications in a peer-reviewed journal to follow.
- A systematic review of the contraceptive efficacy and short-term safety and side-effects of quinacrine as a method of non-surgical sterilization in women will be finalized. An additional review of long-term safety and epidemiological data will be conducted, when data are available. The two reviews will inform the development of a final WHO statement on the safety and efficacy of this intervention.



- A manuscript describing the baseline data from the implant study will be prepared for publication, when validated results are available (expected early 2011). The final sites implementing the study will be closed out in 2012. A second manuscript detailing the results of the first three years of the study will be prepared for publication.
- The protocol to review the effects of combined hormonal injectable contraceptives on BMD of young women will be revised to address the methodological concerns.

## 6. SUPPORT TO COUNTRIES

### 6.1 Progress

In 2009, the Department conducted a consultation on the definition of competencies for the delivery of sexual and reproductive health, including FP, in an integrated manner within PHC services, with the goal of contributing to the achievement of health equity and universal access to sexual and reproductive health, particularly in developing country settings. The report was finalized and made available in late 2010 (see Report 8.8).

In September 2009, the United Nations Population Fund (UNFPA), WHO's Regional Office for the Americas, and the Department organized a workshop for 15 English- and Dutch-speaking Caribbean countries on how to use and introduce the *DMT* and the *Global handbook* into national FP programmes. Participants came from ministries of health and NGOs that provide FP services. Countries developed draft work plans to introduce the *DMT* and the *Global handbook* into their national FP programmes.

A workshop for francophone Central African countries took place in Cotonou, Benin (23–27 November 2009) at which guidelines for FP, sexually transmitted infections and maternal and newborn health were introduced to national programme managers, and plans were made for adaptation and adoption into each country's norms and standards.

An existing document prepared by RHR describing the non-abortionifacient nature of contraceptives was sent for use in advocating for reproductive health policies and services in Uganda in May 2010 and in the Philippines in October 2010, with the support of the RHR Technical Cooperation with Countries for Sexual and Reproductive Health Team (TCC).

The IFFS developed a new plan of work on infertility and was awarded a renewal as an NGO in official relations with WHO in January 2010. Workshops, with presentations by WHO, were held in 2009 in Alexandria, Egypt and in Kampala, Uganda. In 2010, a joint IFFS–WHO infertility workshop was held in Surabaya, Indonesia and a joint IFFS–WHO symposium on the ethics and legal and social implications of introducing infertility interventions was held in Santiago, Chile.

ICMART became an NGO in official relations with WHO following the development of a joint plan of work for the monitoring and surveillance of infertility interventions through the application of assisted reproductive technologies. Two symposia, planned jointly with WHO, were held each year to present ICMART data on worldwide monitoring at the ESHRE and ASRM annual meetings.

### 6.2 Planned activities

- Additional technical support will be provided for further field-testing of *A guide to family planning for health workers and their clients*. This tool will be finalized and disseminated to regional offices and countries for adaptation and use.
- A consultation will be held with partners in the African Region to discuss community health workers' use of FP counselling tools.
- Technical support will be provided to Member States requesting assistance for the introduction, translation and dissemination of family planning guidelines and tools.
- Collaboration with the TCC and other partners will continue on the dissemination, advocacy and adaptation of FP guidelines and tools at regional and country levels.
- A research project will be led with provision of technical support to Karnataka State National Rural Health Mission, India in the development and impact assessment of an mHealth (mobile technology) reproductive health package in support of health service delivery by rural health providers.
- A consultation will be held with collaborators from the African and South-East Asian Regions on the adaptation of the family planning component of the "Packages of Interventions" into mobile technology equivalent tools.

## PUBLICATIONS IN 2009–2010

## Peer-reviewed papers

*CIRE System*

Culwell KR, Curtis KM. Use of contraceptive methods by women with current venous thrombosis on anticoagulant therapy: a systematic review. *Contraception*, 2009, 80:337–45.

Culwell KR, Curtis KM, del Carmen Cravioto M. Safety of contraceptive method use among women with systemic lupus erythematosus: a systematic review. *Obstet Gynecol*, 2009, 114:341–53.

Curtis KM, Nanda K, Kapp N. Safety of hormonal and intrauterine methods of contraception for women with HIV/AIDS: A systematic review. *AIDS*, 2009, 23 suppl1:S55–S67.

Curtis KM, Peterson HB, d’Arcangues C. Keeping evidence-based recommendations up to date: the World Health Organization’s global guidance for family planning. *Contraception*, 2009, 80:323–4.

Curtis KM, Ravi A, Gaffield ML. Progestogen-only contraceptive use in obese women. *Contraception*, 2009, 80:346–54.

Gaffield ME, Culwell KR, Ravi A. Oral contraceptives and family history of breast cancer. *Contraception*, 2009, 80:372–80.

Gaffield ME, Kapp N, Curtis KM. Combined oral contraceptive and intrauterine device use among women with gestational trophoblastic disease. *Contraception*, 2009, 80:363–71.

Gaffield ME, Kapp N, Ravi A. Use of combined oral contraceptives post abortion. *Contraception*, 2009, 80:355–62.

Kapp N. WHO provider brief on hormonal contraception and liver disease. *Contraception*, 2009, 80:325–6.

Kapp N, Curtis KM. Intrauterine device insertion during the postpartum period: a systematic review. *Contraception*, 2009, 80:327–36.

Kapp N, Curtis KM. Hormonal contraceptive use among women with liver tumors: a systematic review. *Contraception*, 2009, 80:387–90.

Kapp N, Curtis KM. Combined oral contraceptive use among breastfeeding women: a systematic review. *Contraception*, 2010, 82:10–6.

Kapp N, Curtis KM, Nanda K. Progestogen-only contraceptive use among breastfeeding women: a systematic review. *Contraception*, 2010, 82:17–37.

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. *Contraception*, 2009, 80:381–6.

Paulen ME, Curtis KM. When can a woman have repeat progestogen-only injectables – depot medroxyprogesterone acetate or norethisterone enantate? *Contraception*, 2009, 80:391–408.

Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion; Centers for Disease Control and Prevention (CDC), Farr S, et al. US *Medical Eligibility Criteria for Contraceptive Use*, 2010. MMWR Recomm Rep, 2010, 18(59):1–86.

*Effects of contraceptives on HIV progression*

Polis CB, et al. Effect of hormonal contraceptive use on HIV progression in female HIV seroconverters in Rakai, Uganda. *AIDS*, 2010, 24(12):1937–44.

Polis CB, et al. Effect of hormonal contraceptive use before HIV seroconversion on viral load setpoint among women in Rakai, Uganda. *J Acquir Immune Defic Syndr*, 2010, Nov 9 [Epub ahead of print].

Polis CB, et al. Trends and correlates of hormonal contraceptive use among HIV-infected women in Rakai, Uganda, 1994–2006. *Contraception*. (in press)

*Emergency Contraception*

Dada OA, Godfrey EM, Piaggio G, von Hertzen H, Nigerian Network for Reproductive Health Research and Training. A randomized, double-blind, noninferiority study to compare two regimens of levonorgestrel for emergency contraception in Nigeria. *Contraception*, 2010, 82: 373–8.

Noé G, et al. Contraceptive efficacy of emergency contraception with levonorgestrel given before or after ovulation. *Contraception*, 2010, 81:414–20.

Piaggio G, Kapp N, von Hertzen H. Effect on pregnancy rates of the delay in the administration of levonorgestrel for emergency contraception: a combined analysis of four WHO trials. *Contraception*. (in press)

Steenland M, et al. Intrauterine contraceptive insertion post-abortion: a systematic review. (submitted)

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

Westley E, Glasier A. Emergency contraception: dispelling the myths and misperceptions. *Bull World Health Organ*, 2010, 88:243–4.

Wu S, et al. Copper T380A intrauterine device for emergency contraception: a prospective, multicentre, cohort trial. *BJOG*, 2010, 117 (10):1205–10.



## Infertility

Fujii M, et al. Perinatal risk in singleton pregnancies following in-vitro fertilization. *Fertil Steril*, 2010, 94:2113–7.

Zegers-Hochschild F, et al. International Committee for Monitoring Assisted Reproductive Technology (ICMART) and the World Health Organization (WHO) revised glossary of ART terminology. *Hum Reprod*, 2009, 24:1–5.

Zegers-Hochschild F, et al. International Committee for Monitoring Assisted Reproductive Technology (ICMART) and the World Health Organization (WHO) revised glossary of ART terminology. *Fertil Steril*, 2009, 92:1502–24.

## Social science research on users' perspectives

Ahman E, Shah I. Contraceptive use, fertility, and unsafe abortion in developing countries. *Eur J Contracept Reprod Health Care*, 2010 Dec, 15(S2):S77–S82.

Bastos FI. Influence of culture on contraceptive utilization among HIV-positive women in Brazil, Kenya, and South Africa. *AIDS Behav*. (in press)

Cooper D, et al. Fertility intentions and reproductive health care needs of people living with HIV in Cape Town, South Africa: Implications for integrating reproductive health and HIV care services. *AIDS Behav*, 2009, 13 (Suppl 1):38–46.

Huang Y, Wenqing W, Suiming P. The culture of talking about Xiaojie (FSWs): Constructing sexuality, gender and health in everyday life: A qualitative study of male construction workers in China. (submitted)

Maharaj P, et al. Can condom use within marriage contribute to HIV prevention: trends in South Africa and Uganda? *Int Perspect Sex Reprod Health*. (in press)

Shah IH. Family planning and reproductive health. Chapter 6 in the Encyclopedia on life support system (EOLSS). Paris: United Nations Scientific and Educational Organization (UNESCO).

Stanback J, et al. Community-based health workers can safely and effectively administer injectable contraceptives: conclusions from a technical consultation. *Contraception*, 2010, 81:181–4.

Wagman J. Integrating intimate partner violence prevention into an HIV/AIDS research program in rural Africa: an example from Rakai, Uganda. (submitted)

## WHO/Rockefeller initiative on implantation research

Yuan JX, 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

Cooper TG, et al. World Health Organization reference values for human semen characteristics. *Hum Reprod Update*, 2010, 16:231–45.

Gu Y, et al. Multicenter contraceptive efficacy trial of injectable testosterone undecanoate in Chinese men. *J Clin Endocrinol Metab*, 2009, 94:1910–15.

Schwingl PJ, et al, on behalf of the HRP Multicenter study of prostate cancer and vasectomy. Prostate cancer and vasectomy: a hospital-based case-control study in China, Nepal and the Republic of Korea. *Contraception*, 2009, 79:363–8.

## Others

d'Arcangues C. Os et contraception hormonale. *Réalités en Gynécologie-Obstétrique*, 2009, 135:29–32.

d'Arcangues C. La contraception au niveau mondial: les grands enjeux. *Médecine de la Reproduction, Gynécologie, Endocrinologie*, 2009, 11(5):1–9.

d'Arcangues C, et al. Women's views and experiences of their vaginal bleeding patterns: An international perspective from Norplant users. *Eur J Contracept Reprod Health Care*, 2010 Dec 7. [Epub ahead of print].

de Francisco A, et al. *Perceived research priorities in sexual and reproductive health for low- and middle-income countries: results from a survey*. Global Forum for Health Research and World Health Organization, October 2009.

Peterson HB, et al. Accelerating science-driven solutions to challenges in global reproductive health: a new framework for moving forward. *Obstet Gynecol*. (in press)

## Reports

Ali MM, et al. *Long term contraceptive protection, discontinuation and switching behaviour: Intrauterine Device (IUD) use dynamics in 14 developing countries*. London, Marie Stopes International. (in press)

Department of Public Health and Department of HIV/AIDS Prevention and Care, Ministry of Health, Government of Botswana. *Rapid assessment of sexual & reproductive health and HIV/AIDS linkages in Botswana*. Gabarone, 2009.

World Health Organization. *Strategic considerations for strengthening the linkages between family planning and HIV/AIDS policies, programs, and services*. 2009.

## Policy briefs

The safety of quinacrine when used as a method of non-surgical sterilization in women. Interim statement. [http://whqlibdoc.who.int/hq/2009/WHO\\_RHR\\_09.21\\_eng.pdf](http://whqlibdoc.who.int/hq/2009/WHO_RHR_09.21_eng.pdf) (2009).

Community based providers in rural Guatemala can provide the injectable contraceptive DMPA safely. [http://whqlibdoc.who.int/hq/2009/WHO\\_RHR\\_09.11\\_eng.pdf](http://whqlibdoc.who.int/hq/2009/WHO_RHR_09.11_eng.pdf) (2009).

Centre for Research on Environment, Health and Population Activities. No way out: sexual violence within marriage in Nepal. CREHPA Reproductive Health Research Policy Brief, No 12, October 2010.

### Statements

Progestogen-only contraceptive use during lactation and its effects on the neonate. [http://www.who.int/reproductivehealth/publications/family\\_planning/WHO\\_RHR\\_09\\_13/en/index.html](http://www.who.int/reproductivehealth/publications/family_planning/WHO_RHR_09_13/en/index.html) (2009).

### Fact sheets

WHO, ICEC, FIGO, IPPF: Fact sheet on the safety of levonorgestrel-alone emergency contraceptive pills (LNG ECPs). World Health Organization, Geneva, 2010. [http://whqlibdoc.who.int/hq/2010/WHO\\_RHR\\_HRP\\_10.06\\_eng.pdf](http://whqlibdoc.who.int/hq/2010/WHO_RHR_HRP_10.06_eng.pdf)

Combined hormonal contraceptive use during the postpartum period. [http://whqlibdoc.who.int/hq/2010/WHO\\_RHR\\_10.15\\_eng.pdf](http://whqlibdoc.who.int/hq/2010/WHO_RHR_10.15_eng.pdf) (2010).

### Summary reports

WHO, USAID, FHI. Community-based health workers can safely and effectively administer injectable contraceptives – conclusions from a Technical Consultation. [http://www.who.int/reproductivehealth/publications/family\\_planning/WHO\\_CBD\\_brief.pdf](http://www.who.int/reproductivehealth/publications/family_planning/WHO_CBD_brief.pdf) (2009).

Technical consultation on hormonal contraceptive use during lactation and effects on the newborn. Summary report. [http://whqlibdoc.who.int/hq/2010/WHO\\_RHR\\_10.05\\_eng.pdf](http://whqlibdoc.who.int/hq/2010/WHO_RHR_10.05_eng.pdf) (2010).

### Conference presentations

d'Arcangues C. "The evolution of family planning: current situation and future trends in the context of WHO Global Strategies for Reproductive Health." First International Congress on Reproductive Health and Family Planning, Tehran, Islamic Republic of Iran, 21–23 January 2009.

d'Arcangues C. "The situation of family planning worldwide." Réseau africain francophone de télé-médecine. 1 April 2009.

d'Arcangues C. «Keeping the WHO family planning guidance up-to-date.» FIGO World Congress in Obstetrics and Gynecology, Cape Town, South Africa, 6 October 2009.

d'Arcangues C. "Situation de la contraception dans le monde, sa contribution à la santé maternelle et infantile." 6ème Congrès de la Société francophone de Contraception, Hammamet, Tunisia, 16–17 October 2009.

d'Arcangues C. "Effets des méthodes de contraception hormonale sur le métabolisme osseux." 6ème Congrès de la Société francophone de Contraception, Hammamet, Tunisia, 16–17 October 2009.

d'Arcangues C. "Reproduction humaine – Réalisations et défis au niveau mondial." University of Geneva, Switzerland, 16 December 2009.

d'Arcangues C. «Sexual and reproductive health.» Athens University, Greece, 11 May 2010.

d'Arcangues C. «Hormonal contraception, bone metabolism and adolescence.» 16th World Congress of Pediatric and Adolescent Gynecology, Montpellier, France, 22–25 May 2010.

d'Arcangues C. «International perspectives on family planning.» Second International Congress on Reproductive Health and Family Planning, Orumieh, Iran (Islamic Republic of), 27–29 October 2010.

d'Arcangues C. "Les adolescents et la contraception." Journées d'Automne du GRSSGO, Montreux, Switzerland, 11–13 November 2010.

d'Arcangues C. "Les critères de choix des méthodes contraceptives actualisés." 7ème Congrès de la Société francophone de Contraception, Libreville, Gabon, 23–24 November 2010.

d'Arcangues C. "La recherche en contraception à l'OMS." 7ème Congrès de la Société francophone de Contraception, Libreville, Gabon, 23–24 November 2010.

d'Arcangues C. "Reproduction humaine – Réalisations et défis au niveau mondial". University of Geneva, Switzerland, 15 December 2010.

Festin M. Elements of successful family planning programmes. Regional workshop on the implementation of best practices in family planning, Amman, Jordan, 27–30 September 2009.

Festin M. Elements of successful family planning programmes and *Medical eligibility criteria* updates. Reconvening Bangkok: 2007 to 2010 – Progress Made and Lessons Learned in Scaling Up FP MNCH Best Practices in Asia and the Middle East Region, Bangkok, Thailand, 6–8 March 2010.

Festin M. "Updates on contraceptive technology and information sources." Women Deliver Philippines Conference, Quezon City, Philippines, September 2010.

Festin M. "Effective counselling strategies for family planning and reproductive health." Women Deliver Philippines Conference, Quezon City, Philippines, September 2010.

Festin M. Panel on the critical role of family planning in the context of maternal mortality reduction and human rights. Women Deliver Philippines Conference, Quezon City, Philippines, September 2010.

Pantelides EA, Gaudio M, Manzelli H. "Men's needs for reproductive health services in two cities in Argentina." VI Taller de Investigaciones Sociales en Salud Reproductiva y Sexualidad (VI Workshop on Social Sciences Research in Reproductive Health and Sexuality), Buenos Aires, Argentina, July 2010.

Mbizvo M. "Integrating HIV and FP Services: Evidence at Hand, Evidence Needed." International Conference on Family Planning, Kampala, Uganda, 16 November 2009.

Peterson H, Festin M. "The new WHO contraceptive guidelines." FIGO World Congress in Obstetrics and Gynecology, Cape Town, South Africa, October 2009.

Thapa S. "Contraceptive use and correlates among the adolescents in developing countries." 16th World Congress of Pediatric and Adolescent Gynecology, Montpellier, France, 22–25 May 2010.

Vanderpoel S. "Infertility - essential components affecting family planning, maternal and perinatal reproductive health care programmes." Third Alexandria Forum for Women's Health, Alexandria, Egypt, 18 March 2009.

Vanderpoel S. "WHO primary health care management of the infertile couple"; "WHO and international initiatives"; and "Low cost IVF". 15th World Congress on IVF, the 4th World Congress on in vitro Maturation (IVM), Geneva, Switzerland, 19–22 April 2009.

Vanderpoel S. "Infertility: the hidden tragedy within family planning." International Conference on Family Planning, Kampala, Uganda, 17 November 2009.

Vanderpoel S. "Infertility, access to care." European Society for Reproductive Medicine and Embryology (ESHRE) Task Force for Infertility in Developing Countries, in association with the ESHRE Intrauterine Insemination Training Course, Genk, Belgium, 4 December 2009.

Vanderpoel S. "Vulnerabilities, assessment of vulnerable populations - the infertile;" "Development of revised WHO guidelines for infertility" and "Affordable IVF initiatives." Symposium on "Ethical Issues Related to Sexual Reproductive Health (SRH) Research," New Delhi, India, 17–18 May 2010.

Vanderpoel S. "Infertile in developing countries" and "Ethical aspects of introducing affordable infertility interventions." International Federation for Fertility Societies, IFFS Symposium on "Infertility in low-resource settings", Surabaya, Indonesia, 12–13 June 2010.

Vanderpoel S. "The importance of monitoring assisted reproductive medicine interventions." 26th Annual Meeting of the European Society for Reproductive Medicine and Embryology (ESHRE), Rome, Italy, 30 June 2010.

Vanderpoel S. "Ethical aspects of reproductive research (infertility) and the need for non-human primate models." 18th International Biomedical Research Conference in association with the National Museum of Kenya and the 50th Anniversary of the Institute for Primate Research, Nairobi, Kenya, 8 July 2010.

Vanderpoel S. "Safeguarding sexual and reproductive rights and addressing barriers to care – achieving empowerment and equity to meet fertility intentions of indigenous peoples." Annual Meeting of the UN Interagency Support Group on Indigenous Peoples Issues (IASG), Geneva, Switzerland, 16 September 2010.

Vanderpoel S. "Fertility management tools for low resource environments" and "Perspectives and activities in reproductive medicine: Infertility." International Federation for Obstetrics and Gynecology (FIGO)/AI Azhar Reproductive Medicine, Infertility diagnosis and management, Cairo, Egypt, 18–22 September 2010.

Vanderpoel S. "Affordable assisted infertility interventions in developing and developed countries." International Society for in-vitro fertilization (ISIVF) Symposium, Tunis, Tunisia, 8 October 2010.

Vanderpoel S. "Recognition of infertility as a global public health problem" 66th Annual Meeting of the American Society for Reproductive Medicine (ASRM), Denver, Colorado, 25 October 2010.

Vanderpoel S. "Addressing ethical challenges in a multicultural world. A global perspective." Symposium on "Ethical challenges of modern reproductive medicine – infertility interventions", Santiago, Chile, 12 November 2010.

Vogelsong KM. Why do we need male contraceptive methods? 11th Congress of the European Society of Contraception and Reproductive Health, Den Haag, the Netherlands, 19–22 May 2010.

## Family planning guidelines and tools completed in 2009–2010

Guideline	Versions available	Versions completed in 2009–2010	Translations ongoing or planned
<i>Medical eligibility criteria for contraceptive use</i> , 4th edition, 2010		English	French, Spanish
<i>Selected practice recommendations for contraceptive use</i> , 2008 update	English, French	Spanish	Russian
<i>Family planning: A global handbook for providers</i> , 2007 (updated in 2008)	Arabic, Chinese, English, Farsi, French, Hindi, Kiswahili, Lithuanian, Portuguese, Romanian, Russian, Spanish, Urdu	Farsi	
<i>Decision-making tool for family planning clients and providers</i> 2005	Arabic, Bahasa Indonesia, Bangali, Burmese, Chinese, Dari, Divehi, English, Farsi, French, Hindi, Kosovar, Mongolian, Nepali, Pashtu, Romanian, Russian, Spanish, Thai, Turkish, Uzbek, Vietnamese		Kiswahili, Korean, Portuguese, Laotian

Tool	Versions available	Versions completed in 2009–2010	Translations ongoing or planned
<i>Medical eligibility criteria Wheel</i> , 2006 (updated in 2009)	Arabic, Burmese, Chinese, English, French, Lithuanian, Mongolian, Portuguese, Romanian, Russian, Spanish, Uzbek	Azeri, Bahasa Indonesian, Burmese, English electronic version (Flash), English (2009 update), English (India), English (Sri Lanka), Farsi, Latvian, Spanish (2009 update), Ukrainian, Uzbek	
<i>Reproductive choices and family planning for people with HIV counselling tool</i> , 2006	English, French (web)	Spanish	Dutch (Suriname), Khmer (Cambodia)
<i>WHO laboratory manual for the examination and processing of human semen</i> , 5th edition 2010		English	Chinese, French, German, Italian, Japanese, Russian, Spanish, Turkish, Vietnamese

## Chapter 2

# Improving maternal and perinatal health

### 1. INTRODUCTION

HRR's Maternal and Perinatal Health Team (MPH) fully embraces WHO's collaborative approach in developing and carrying out its plan of work. MPH aims to learn from others through real collaboration and transform innovative ideas into concrete opportunities for the improvement of maternal and newborn health.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

HRR's work in the area of maternal and perinatal health is conducted in the context of the activities specified under SO4 "Reduce morbidity and mortality and improve health during ... pregnancy, childbirth, the neonatal period, ... adolescence, and to improve sexual and reproductive health ... for all individuals" and, more specifically, OWER 4.2 of WHO's Medium-term Strategic Plan: "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, ... and to improve sexual and reproductive health."

MPH's workplan reflects the principles of the recently launched UN Global Strategy for Women's and Children's Health which calls for all partners to take action to reverse decades of underinvestment, increase the efficient delivery of services, and accelerate global progress towards Millennium Development Goals (MDGs) 4 and 5. Suggested actions include a recommendation for national governments; international organizations; the business community; academic institutions; foundations; health professional organi-

zations and NGOs to make a concerted effort to align their priorities, increase their commitment to women and children, and invest in the establishment of effective collaborations with existing and new partners.

In the context of the Global Strategy, MPH will contribute to WHO's Medium-term Strategic Plan 2008–2013 by addressing three major challenges:

1. The causes of many of the conditions leading to poor obstetric outcomes are still insufficiently understood and represent a major obstacle to the development of effective interventions with universal application.
2. Many proven interventions for improving maternal and newborn survival are poorly implemented, especially in resource-constrained settings (e.g. magnesium sulfate for the treatment of eclampsia/pre-eclampsia, and corticosteroids for the prevention of mortality in preterm babies). There is growing interest in the international community to develop new methodologies to effectively translate research findings into practice in low-resource settings and monitor and evaluate such translation efforts.
3. Pervasive inequities in maternal and newborn health have persisted in part because of lack of political prioritization and awareness of the dangers associated with pregnancy and childbirth. However, maternal and newborn health is emerging as a global priority and high-level politicians are becoming increasingly interested in accelerating efforts to achieve MDGs 4 and 5. To best capitalize on these positive trends, innovative advocacy and financial mechanisms are needed to increase awareness of and mobilize resources for improving maternal and newborn health.



### 3. BASIC SCIENCE

Pre-eclampsia/eclampsia and preterm birth are major complications of pregnancy and are among the leading causes of maternal and perinatal morbidity and mortality worldwide. Despite considerable investments in research on their prevention and treatment, the causes of pre-eclampsia and preterm birth are far from being understood. Progress in basic science research has the potential to reduce the death toll for women and infants due to these two conditions, as the ability to predict which women are likely to deliver preterm and/or develop pre-eclampsia could have significant implications for clinical practice, potentially leading to a reduction in negative pregnancy outcomes.

#### 3.1 Progress

##### 3.1.1 Genetics and preterm birth: the Preterm Birth Genome Project (PGP)

Since 2006, the Preterm Birth International Collaborative (PREBIC), a group of 60–70 preterm birth experts, has convened annually at WHO headquarters. Several ideas generated at these meetings have turned into papers, approved study protocols and concrete opportunities. For example, the PREBIC group published the first ever global and regional estimates of preterm birth rates and a major synopsis of gene variants potentially associated with the risk of preterm birth.

The work on genetic variants fostered a spin-off of PREBIC, the Preterm Birth Genome Project (PGP). At the 2007 annual meeting, discussion centred on how to apply an emerging genotyping technique, the genome wide association study (GWAS), to determine the genetic risk of preterm birth. Prior to the GWAS, genetic association studies of preterm birth were based on hypothesis testing that a priori defined gene variants that could increase risk of preterm birth. The GWAS made it possible to scan the whole genome for gene variants that appeared to be more frequent in women who deliver pre-

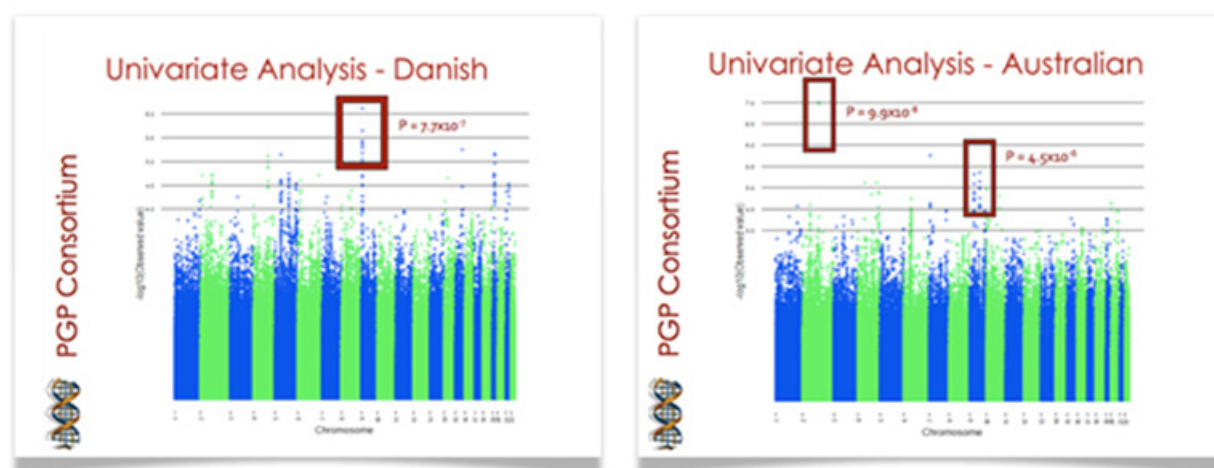
term. The challenge discussed by the PREBIC group was how to develop a feasible research protocol with the limited resources available. To generate a large enough sample and on the basis of a suggestion of Dr Scott Williams, a geneticist from Vanderbilt University, Nashville, TN, USA, PREBIC members agreed to pool already collected samples. This was an unprecedented decision given that PREBIC members are all affiliated with different universities and institutions. Donors attending the meeting offered to provide start up funds for the project. Other donors followed suit, making the study possible. Today PGP is the only GWAS on preterm birth that has produced positive results, making it a clear example of the effectiveness of collaboration.

Figure 1 shows the gene variants significantly associated with risk of preterm birth replicating in two different cohorts. These results generated additional interest and enabled the PGP collaboration to find samples from three additional cohorts and the financial resources needed to replicate the results in independent populations. Analysis of the data from these additional cohorts is ongoing and results are expected by early 2011. Results will be presented at the annual meeting of the Society for Gynecologic Investigation (SGI), the premier society for basic, translational and clinical investigation in the reproductive sciences and women's health.

##### 3.1.2 Angiogenic factors for the screening of pre-eclampsia

Identifying biomarkers that could be used to identify pregnant women at risk of developing pre-eclampsia is a major unachieved objective in obstetrics. A multicentre observational study entitled: "Screening for pre-eclampsia: evaluation of the predictive ability of angiogenic factors" is ongoing, aimed at testing whether changes in serum and urinary angiogenic proteins, substances potentially involved in the genesis of hypertension in pregnancy, can be used as an effective method for identifying women at high risk of devel-

Figure 1. Negative logarithm of the association *P*-value for each single nucleotide polymorphism with risk of preterm birth in two independent cohorts. Highlighted are the strongest associations detected among the ones that replicate in both cohorts.





oping pre-eclampsia. If proven effective, dipsticks and other ready-to-use methods to detect angiogenic factors could be developed for use at point of care.

The study is being implemented in eight countries (Argentina, Colombia, India, Italy, Kenya, Peru, Switzerland, Thailand) and involves the recruitment of approximately 10 000 women. Analyses of blood and urine samples will be performed at the Perinatal Research Branch of the United States National Institute of Child Health and Human Development (PRB/NICHD) under an agreement between HRP and NICHD. 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 for universal application. HRP's role is to coordinate the collection of biological samples and information from large cohorts of women and their infants worldwide according to a well-defined methodological protocol. This collaboration will allow HRP and PRB/NICHD to test rapidly new research hypotheses without having to establish new ad-hoc research protocols and infrastructures. To date, the collaboration has produced important preliminary results as shown in Figure 2 depicting the predictive ability of angiogenic factors.

### 3.2 Planned activities

As new ideas surface within these collaborative networks, HRP is well positioned to facilitate their uptake into research projects. Following are some examples of exciting recent developments.

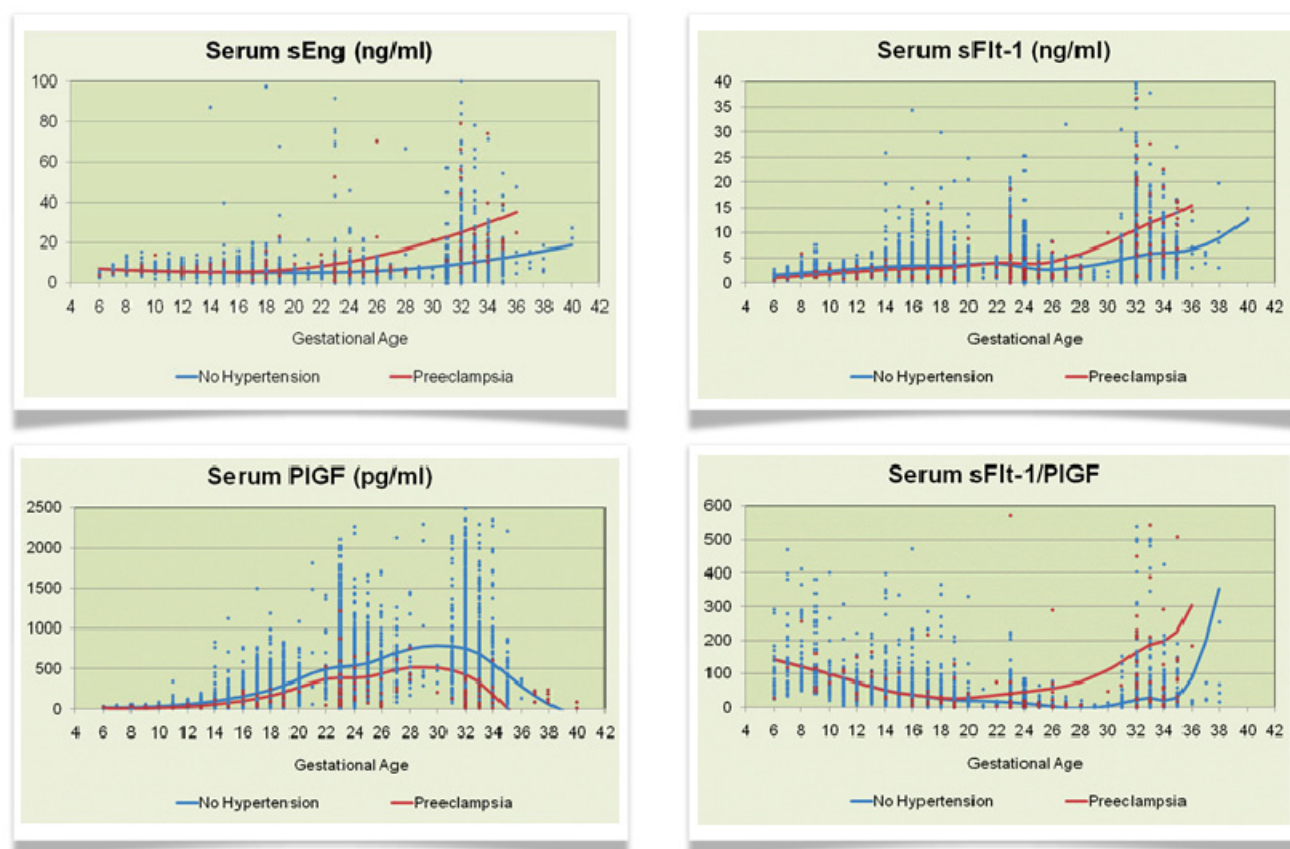
#### 3.2.1 Biomarkers for preterm birth

In the context of PREBIC, a systematic review was conducted to map out knowledge gaps in this area. The review showed that no single biochemical biomarker is capable of predicting with a high degree of accuracy which women will experience a preterm birth (PTB). In response, a two-phase study was planned to develop a multiple biomarker chip that could be useful for predicting PTB. In the first phase, the biomarker chip will be tested on stored blood samples from women at high risk for PTB that were collected for other studies. In the second phase of investigation, the chip will be tested prospectively in a cohort of women at two different times during pregnancy.

#### 3.2.2 Systematic review of the genetic profile of successful pregnancy

Adverse outcomes are frequent in human reproduction: approximately 15% of all pregnancies end in spontaneous abortions, 12% will result in a preterm delivery and at least

Figure 2. Serum level of various angiogenic factors in women with and without pre-eclampsia (preliminary results). sEng: soluble endoglin; sFlt-1: soluble fms – like tyrosine Kinase-1; PlGF: placental growth factor.



8% of all pregnant women will develop pre-eclampsia or other hypertensive disorders. Successful human pregnancy is the result of a complex interaction between genetic and environmental factors and between numerous fetal and maternal mediators, many of which are still unknown. A number of studies have shown that genetics play an important role in pregnancy. However, the exact genetic variants involved in pregnancy success have not been clearly identified. This may be due to the fact that most investigators concentrate on identifying genes involved in adverse pregnancy outcomes, instead of focusing on the genetic profile of women who deliver healthy, full-term, and adequately grown infants. The plan is to review the multiple polymorphisms described in the control groups of genetic profile studies published in the past 20 years. A final product of this systematic review is the creation of an electronic database presenting the genetic profiles of healthy women of various ethnic groups with favourable pregnancy outcomes. This database could be useful for future studies aimed at identifying protective genes or alleles associated with a healthy pregnancy resulting in positive maternal and perinatal outcomes.

### 3.2.3 Biomarkers for pre-eclampsia

First discovered in 1982, calcitonin gene-related peptide (CGRP) is a member of the calcitonin family of peptides and has multiple biological effects. It is one of the most important peptide vasodilators, involved in hypertension and associated diseases, including pre-eclampsia. Adrenomedullin is another polypeptide that shares structural similarity to the calcitonin family. Although there are several primary studies on the use of CGRP and adrenomedullin as possible biomarkers for pre-eclampsia, no systematic review has been published on this topic. To address this gap, a systematic review will be conducted to explore the association between CGRP or adrenomedullin and pre-eclampsia and determine the possible usefulness of CGRP and adrenomedullin as potential predictive markers for pre-eclampsia.

## 4. CLINICAL RESEARCH

Historically, clinical trials have been the focus of the Team's work. In the last few years the scope of this work was expanded to include studies aimed at establishing fetal growth standards for international applications, assessing the safety and appropriate use of ultrasonography in obstetrics and developing innovative ideas with the potential of improving obstetric care especially in low-resource settings. Importantly, the success of PREBIC generated positive interest in horizontal approaches to managing research collaborations and led to the establishment of the Global Obstetrics Network (GONet) described below.

## 4.1 Progress

### 4.1.1 Global Obstetric Network

In 2010, Dr Chaty Spong, Chief of the Pregnancy and Perinatology Branch at the NICHD, Bethesda, MD, USA, called for the establishment of a network of researchers conducting clinical science trials in obstetrics. Having witnessed the success and growth of PREBIC during the past few years, the Team became a founding member of GONet. GONet members proposed that WHO should be the hub of the new collaboration and the Team organized the first official meeting in September 2010. The mission of GONet is to provide a forum for interaction and collaboration among international groups that perform clinical trials and observational studies in maternal–fetal medicine and obstetrics. The purpose is to foster communication between the groups in order to improve ongoing and future trials. The goal is to open new avenues for cooperation in the design and conduct of large international trials/studies, seeking funding and highlighting evidence. The expectation is that this will lead to better studies, more efficient use of resources and minimize duplication. In addition, the group will cooperate on data elements to allow future collaborations, and identify pressing issues in maternal–fetal medicine.

### 4.1.2 Active management of the third stage of labour (AMTSL) trial

Postpartum haemorrhage (PPH) is one of the leading causes of maternal death in developing countries. Active management of the third stage of labour (AMTSL) reduces the occurrence of severe postpartum haemorrhage by approximately 60–70%. AMTSL consists of a package of interventions, but the relative contribution of each to mortality reduction is unknown. Controlled cord traction is one of the interventions that requires training for it to be performed appropriately. If this intervention could be removed from the package without a consequent reduction in efficacy of AMTSL, it would have major implications for effective clinical management of the third stage of labour at peripheral levels of health care – particularly in settings with severe human resource constraints. The “Trial of active management of third stage of labour” is being conducted with the TCC and in collaboration with the US International Agency for International Development (USAID) to determine whether the simplified package of oxytocin 10 IU IM/IV without controlled cord traction is as effective as the full AMTSL package with regard to reducing blood loss  $\geq 1000$  ml. Centres in Argentina, Egypt, India, Kenya, Philippines, South Africa, Thailand and Uganda are participating. Recruitment was completed in October 2010 and results are expected to be published in 2011. This activity is part of a larger collaborative effort to develop updated guidelines for the prevention and treatment of PPH.

#### 4.1.3 Treatment for asymptomatic bacteriuria trial

Based on the results of a Cochrane review on duration of treatment for asymptomatic bacteriuria (ASB), a multicentre, randomized, placebo-controlled double blind trial was conducted to compare the effectiveness of one-day versus seven-day nitrofurantoin treatment to eliminate ASB during pregnancy. Results showed that one-day nitrofurantoin treatment is significantly less effective than the seven-day regimen. Results were published in 2009.

#### 4.1.4 Misoprostol to treat postpartum haemorrhage trial

HRP is contributing to the debate on the use of misoprostol for treatment and prevention of PPH by generating the evidence needed to develop guidelines for universal application. The study “Misoprostol to treat postpartum haemorrhage: a randomized controlled trial” was conducted in collaboration with Gynuity Health Projects. The results, recently published in *The Lancet*, showed no difference in effectiveness when adding misoprostol to routine administration of oxytocin.

#### 4.1.5 Treatment of mild to moderate hypertension trial

There is scarce evidence on whether treating pregnant women who develop mild to moderate hypertension in pregnancy can reduce the risk of pre-eclampsia. A systematic review of the literature has shown that labetalol is the most promising drug to achieve a protective effect. To test its effectiveness, a randomized clinical trial is ongoing in Argentinean hospitals. The tight control needed on blood pressure management and the relative scarcity of eligible subjects makes this trial a long lasting investment to be conducted by well-trained research teams over several years. Approximately 10% of the pilot sample size (200 subjects) has been achieved. After the pilot phase will be completed it will be possible to assess if the study could be realistically expanded to other centres.

#### 4.1.6 Pre-eclampsia Integrated Estimate of RiSk (PIERS)

The idea to develop a clinical tool that can accurately quantify a woman's risk for adverse outcomes once she is diagnosed with hypertension in pregnancy has been proposed by Dr Peter von Dadelszen from British Columbia University, Vancouver, Canada. He developed the Pre-eclampsia Integrated Estimate of RiSk (PIERS) prediction model that is based on clinical and laboratory data such as gestational age on admission and measures of cardiorespiratory, renal, hepatic and haematological functions. A reliable tool to assess the likelihood of adverse outcomes related to hypertensive disorders of pregnancy will inform clinical management on reducing the risk for women while safely prolonging pregnancies (and therefore improving fetal outcomes). This tool has been validated in Australia, Canada, New Zealand and the United Kingdom and results recently published in *The Lancet* showed that the PIERS model identified women

at risk of adverse outcomes up to seven days before complications actually occurred. Those results underline the potential for the PIERS model to improve direct patient care in terms of informing decision on clinical management. A modified version of PIERS, specifically designed to be feasible in low-resource settings is presently tested in Fiji, Pakistan, Uganda and South Africa. Results will be available in 2011. Recently Dr Von Dadelzens received a grant from the Bill and Melinda Gates Foundation (BMGF) to implement a comprehensive project on Pre-eclampsia monitoring, prevention and treatment (PRE-EMPT), which includes PIERS validation in developing countries as a major component.

#### 4.1.7 Development of fetal growth standards for international applications

The use of ultrasonographic machines to assess fetal growth and identify intrauterine growth anomalies is widespread even in low-resource settings. Health-care professionals have questioned the validity of the universal application of existing fetal growth reference charts developed in Caucasian populations (represented as default in all ultrasound machines). To develop universally applicable fetal growth standards, MPH is implementing the “WHO multicentre study for the development of growth standards from fetal life to childhood: the fetal component”. The study objective is to construct 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 and related levels of neonatal morbidity and mortality. The international standards produced by the study will also contribute to an understanding of the role of different determinants of fetal growth, and ultimately improve the clinical management of pregnant women.

The study, conducted in collaboration with the International Society of Ultrasound in Obstetrics and Gynecology (ISUOG), uses state of the art ultrasound equipment (General Electric Voluson V8). It was launched at the University of Bergen, Norway, in 2009. Other participating centres are located in Argentina, Democratic Republic of the Congo, Denmark, Egypt, France, Germany, India and Thailand. In the context of the study, WHO and the Health Division of the International Atomic Energy Agency (IAEA) are collaborating to develop international standards for infant and child body composition assessment. The Team is also working in close collaboration with NICHD on their study “The national standard for normal fetal growth” which aims at establishing fetal growth standards for the US population. The two studies are implemented simultaneously, allowing for the merging of study findings and the production of uniform global fetal growth standards. As a result of this collaboration, a co-authored article was published on methodological issues in assessing fetal growth.



#### 4.1.8 Systematic review of the safety of obstetric ultrasonography

During the process of scientific and ethical review of the “WHO Multicentre study for the development of growth standards from fetal life to childhood: the fetal component”, the Department’s Scientific and Ethical Review Group (SERG) requested updated evidence on the safety of the use of ultrasonography during pregnancy. In response, a systematic review was conducted of the scientific literature in collaboration with ISUOG. A total of 61 publications reporting data from 41 different studies out of 6735 screened citations. The results of the review showed that diagnostic ultrasonography during pregnancy appears to be safe in relation to short and long-term outcomes (adverse maternal or perinatal outcome; impaired physical or neurological development; increased risk for malignancy in childhood; subnormal intellectual performance or mental disease).

#### 4.1.9 Systematic review of the use of ultrasonography for the treatment and management of placenta previa

A diagnosis of placenta previa (PP) can cause emotional stress even if it is only a transitory finding and does not ultimately cause any harm to the mother or the fetus. The dismissal of all diagnoses of asymptomatic PP on second-trimester sonograms as technical artefacts, however, can miss preventable fetal and maternal morbidity and mortality. The exact probability of persistent PP at term after a second-trimester sonographic diagnosis of PP in symptomatic and asymptomatic women is unknown. This information would improve clinical practice by enabling timely referral of high-

risk cases to appropriate facilities and better counselling on women’s risk of persistent PP. A systematic review of the literature is ongoing to determine what percentage of symptomatic and asymptomatic cases with a presumptive diagnosis of PP on second-trimester ultrasound actually persist as PP at delivery providing important information on the diagnostic value of the ultrasonographical examination. The review will be completed in 2011. This work is also contributing to the revision of the Integrated Management of Pregnancy and Childbirth (IMPAC) Guidelines prepared by the Department of Making Pregnancy Safer.

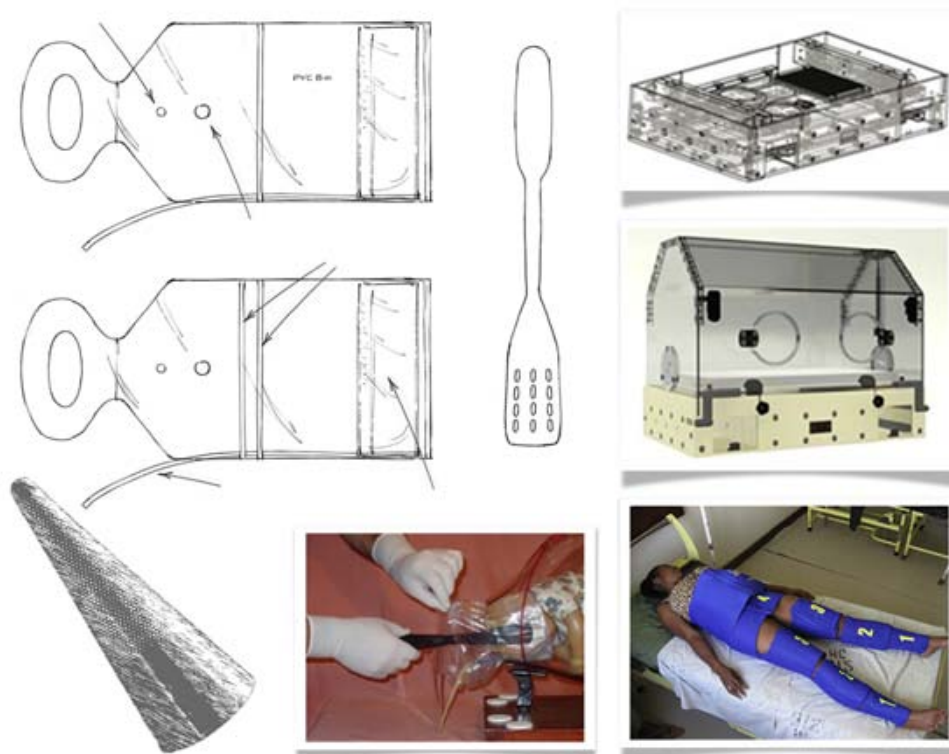
#### 4.1.10 Odon Device

A team of Argentinean obstetricians proposed to test a new device (see Figure 3) to facilitate fetal extraction during prolonged second stage of labour. A feasibility and safety study is presently ongoing in Buenos Aires testing the device on 100 volunteers. Results are expected to be published in 2012. If proven effective, the device – consisting of a two foil plastic bag – could be produced in large quantities and at a minimum cost. The new instrument is called Odon Device, after the name of its inventor, Jorge Odon. For reference, a demonstration of the “Odon Device” is available on YouTube.

#### 4.1.11 The Tanguieta funnel

In 2010, the Team began planning with Brother Florent, and his collaborators in Benin, Togo (Hôpital de Afagnan) and France, a study to test the safety and efficacy of the Tanguieta funnel (see Figure 3) as a life-saving procedure for recovery of intraperitoneal blood after haemorrhage in case

Figure 3. Low-cost incubator, Odon Device, Tanguieta funnel and non-pneumatic anti-shock garment (NASG).



of ruptured ectopic pregnancy followed by immediate auto-transfusion of this blood to the woman. In 1969, Brother Florent, a committed missionary priest and surgeon working at the Hôpital Saint Jean de Dieu in Tanguieta (Benin) learnt from two nuns how they used rudimentary methods to recycle blood during abdominal operations. In the following years, Brother Florent worked on applying these methods and eventually developed and refined the Tanguieta funnel with the help of various partners (internationally renowned designer Piero Lissoni designed the last version).

#### 4.1.12 Low-cost flat pack incubator

Mark Levy is a young British engineer who developed an innovative idea for an incubator that could drastically reduce some of the costs associated with neonatal intensive care. A study is being designed to test the feasibility and safety of this new device. Increasing access to specialized newborn care by reducing the cost of the technology could be a new frontier in equitable access to health care similar to the rapid progress made in making HIV testing and treatment available for millions of people worldwide.

#### 4.1.13 Anti-shock garment trial

A series of studies coordinated by the University of California at San Francisco, CA, USA indicated that the non-pneumatic anti-shock garment (NASG; see Figure 3) originally developed for military use could be life saving when applied to women suffering from postpartum haemorrhage. This is being tested in Zambia and Zimbabwe in a cluster randomized trial that will provide the evidence to support scaling-up efforts to make the garment more accessible to women in need. The study, with a sample size of 1800 subjects, is due to be completed in 2012.

### 4.2 Planned activities

#### 4.2.1 Preconceptional calcium supplementation trial

In a large trial coordinated by the Team and completed in 2005, it was found that calcium supplementation during the second half of pregnancy decreases the risk of severe complications of hypertensive disorders of pregnancy. Historically, some of the most effective public health interventions have been micronutrient fortification of food (e.g. iodine, fluoride) and it is possible that calcium supplementation may be beneficial at population level. A protocol was designed to determine the effect of calcium supplementation before conception and in the first half of pregnancy on the incidence of pre-eclampsia in women with previous pre-eclampsia or eclampsia. The hypothesis is that calcium supplementation commenced before pregnancy reduces the incidence of recurrent pre-eclampsia more effectively than supplementation starting at 20 weeks' gestation. If an effect is found, staple food fortification with calcium could potentially be introduced and could profoundly impact the health and survival of preg-

nant women. It is expected that the trial will commence in February 2011 in three sites in South Africa (Johannesburg, East London and Cape Town); sites in Argentina and Zimbabwe may be added in the future to increase generalizability. The recruitment target is 1410 women.

#### 4.2.2 Fistula trial

A vaginal fistula is a devastating condition, affecting an estimated 2 million girls and women across Africa and Asia. There are numerous challenges associated with providing fistula repair services in developing countries, including a dearth of available and motivated surgeons with specialized skills, operating rooms, equipment, and funding from local or international donors to support both surgeries and postoperative care. Finding ways of providing services efficiently and cost-effectively, without compromising surgical outcomes and the overall health of the patient, is paramount. Jointly with TCC and EngenderHealth, a facility-based, multicentre randomized controlled trial is being planned to examine whether short-term (7 day) bladder catheterization is inferior to longer-term (14 day) catheterization in terms of fistula repair breakdown in African countries. Shortening the duration of catheterization following fistula repair surgery would increase treatment capacity (by freeing available bed space and increasing availability of nursing staff), lower costs of services and, potentially, lower the risk of nosocomial infection among fistula patients. It is anticipated that study subjects will be recruited at eight centres to be defined for a total sample size of 1000 subjects.

#### 4.2.3 Redefining criteria for the diagnosis of gestational diabetes

Over 10 years have passed since the last official WHO recommendations on gestational diabetes (GDM) and new evidence has become available which justifies an update of the recommendations. In collaboration with the Department of Chronic Diseases and Health Promotion (CHP), a revision of the evidence is being undertaken. It will inform a consultation with experts to review the current WHO diagnostic criteria for GDM and issue new, updated recommendations. In December 2010 an expert consultation was held at WHO headquarters in Geneva, Switzerland, to discuss, among other things, systematic reviews conducted by consultants from both CHP and RHR. During 2011, it is expected that the final recommendations for the diagnosis of GDM will be issued. This work will have significant impact on antenatal care (ANC) programmes throughout the world, since the newly defined criteria could substantially increase the incidence of GDM, and this could be a problem especially for low and middle-income countries.

#### 4.2.4 Systematic review of the use of intrapartum ultrasonography diagnosis of gestational diabetes

Progress during labour is normally assessed through repeated vaginal examinations to assess cervical dilation, fetal head position, descent and rotation. This evaluation is highly subjective and directly related to the experience and skill of the attending health professional. Errors in correctly assessing the fetal head position and station frequently lead to traumatic or failed instrumental deliveries or emergency caesarean sections (CS) in the second stage of labour, with increased risks of maternal perineal lacerations or haemorrhage as well as perinatal morbidity and mortality. It is now possible to use “image technology” to monitor the progress of labour. There have been a series of studies on the use of transperineal ultrasound and computerized systems to evaluate patients during labour. The existing literature on this novel technology will be reviewed to assess the effectiveness and safety of this intervention in improving clinically relevant maternal and perinatal outcomes.

### 5. SOCIAL SCIENCES

Sociocultural factors are highly related to health-seeking behaviours and outcomes. To explore how birth is conceptualized within the society, the Team focused on the increased use of caesarean section and the increased incidence of obstetric fistula.

#### 5.1 Progress

##### 5.1.1 Caesarean section in women's magazines – *Io Donna*

CS rates have been increasing in most high and middle-income countries, despite the lack of sound scientific evidence indicating any benefits from increasing use and consistent reports of increased risks for the mother and baby. The modifiable causes of rising CS rates are complex.

Contemporary women are exposed to a wide range of information on health topics, including their options for childbirth. This exposure can influence their opinion and affect their decision-making process. Additionally, women's views and preferences on type of delivery are, for different reasons, being increasingly respected by practising obstetricians.

Women's magazines represent an important source of data on pregnancy and childbirth that can influence women's opinion and decisions on these issues. Top selling women's magazines were reviewed to search and analyse the content of all the articles that presented information or expressed views related to these topics and especially regarding CS versus vaginal delivery. Since women's magazines are country-specific, this review intended to cover countries in Europe, Latin America, North America and Oceania, with Brazil, as one of the countries with the highest CS rates in the world,

as the first country study. The analysis shows that the majority of articles published in women's magazines do not use optimal sources of information. The information presented on CS is mostly balanced but often incomplete and may be leading women to underestimate the maternal and perinatal risks associated with this route of delivery. The results of this analysis have been published in the *British Medical Journal* (“Portrayal of caesarean section in Brazilian women's magazines: a 20 year review”). Data extraction is advancing in Argentina and Spain where it is expected to be finalized in 2011. In collaboration with the PFP Team, colleagues in the Philippines have expanded the idea to collect and assess the information in women's magazines related to contraceptive methods. Additionally, the Italian magazine for women *Io Donna* and the Italian NGO ONDa (Osservatorio Nazionale sulla salute della Donna) have asked MPH to conduct a survey among its readers to better understand what women think about CS and what factors influence women's decisions about mode of delivery. With 600 000 weekly readers, it is estimated that at least 0.1% (600) would take the survey. Importantly, Italy is the European country with the highest rate of CS (around 40% at national level). A similar survey is planned in Brazil in 2011.

##### 5.1.2 Women's Dignity Project

The MPH collaborated with the NGO Women's Dignity Project on the analysis and write-up of a formative research study in rural United Republic of Tanzania examining women's experiences re-integrating into society post-surgical fistula repair. The study findings suggest that communication campaigns raising awareness of the condition significantly reduced women's experiences of stigma when living with and recovering from obstetric fistula. The study also suggests that women need access to long-term follow-up care including counselling after returning home from the hospital and training opportunities to enable them to best transition back into their communities.

#### 5.2 Planned activities

Collaboration with countries will continue to study factors that influence women's decisions about mode of delivery. In particular, analysis of the information given on CS portrayed in women's magazines will continue in Argentina, Philippines and Spain. The survey among readers of women's magazines to better understand what women think about CS is planned to be undertaken in Brazil in 2011.

### 6. EPIDEMIOLOGY

The epidemiological work supported by the Team is action oriented. Good evidence is a prerequisite for effective action and the Team is committed to generating needed evidence, often making good use of the large data sets from studies conducted in the past.



## 6.1 Progress

### 6.1.1 Multicountry study on maternal and newborn health

The WHO Multicountry Study on Maternal and Newborn Health, implemented in collaboration with TCC, is targeted at collecting information through short-term intensive surveys on cases of maternal and newborn severe morbidity and mortality. The study is presently ongoing in 27 countries and more than 300 000 facilities. The results will not only provide information on the main causes of maternal and perinatal mortality and morbidity but will also shed light on what are the management options available and not available to prevent and treat those conditions at the participating facilities. This kind of information, linking epidemiology to clinical management, is most valuable for policy-makers planning future interventions and deciding on allocation of funds.

### 6.1.2 GLOBE: obesity and pregnancy outcomes

The prevalence of obesity has grown in developed and developing countries. An increased number of women are entering pregnancy overweight and this increases the risk for adverse pregnancy outcomes. The project GLOBE (*Gestación Ligada a Obesidad y al Entorno. Estudio longitudinal multicéntrico de factores de riesgo asociados a la obesidad en el embarazo*) is a multicentre longitudinal study coordinated by the Hospital Universitario del Vall d'Hebron in Barcelona, Spain. The objective of this large study is to describe and analyse the differences in maternal and fetal outcomes between obese and non-obese women. MPH provided technical support in the development of the protocol and the study is expected to start in 2011.

### 6.1.3 Awareness Project

CDC, HRP and the WHO Collaborating Centre International Clearing house for Birth Defect Surveillance and Research (ICBDSR) are developing the Awareness Project. The project, initiated at Utah University, in Salt Lake City, Utah, USA seeks to map the knowledge available on periconceptual interventions that could decrease the risk of birth defects. Several related systematic reviews have been completed or are ongoing. Considering that the World Health Assembly has recently approved Resolution WHA63.17 that commits WHO to work with countries on efforts to prevent birth defects, the Awareness Project is rapidly acquiring interest within the international public health community. MPH established critical links between the Awareness Project, the Division of Maternal and Child Health, Aga Khan University Medical Center, Karachi, Pakistan, and the WHO Department of Nutrition and Development who are conducting similar activities, and a meeting of this extended collaboration is planned in 2011.

### 6.1.4 Systematic review of maternal BMI and preterm birth

Spontaneous preterm birth (SPTB) is a major clinical and public health challenge. The risk factors associated with SPTB, are complex, multifactorial and involve different patho-physiologic pathways. Maternal pre-pregnancy (BMI, kg/m<sup>2</sup>) has been investigated as one of the modifiable risk factors associated with SPTB with discordant results. A systematic review was conducted to assess the association between high pregnancy maternal BMI and the risk of PTB. Results showed different effects on different types of PTB. Pre-obese (BMI 25–29.9) and obese I (BMI 30–34.9) women have a reduced risk for SPTB by approximately 16%. Obese II (BMI 35–40) women have a risk increased by 33% for PTB in general, moderate preterm birth (PTB) and very PTB. Obese III (BMI >40) women have a risk for very PTB multiplied by 2.27 over non-obese women.

### 6.1.5 Systematic review of obesity, race and preterm birth

Genetic and biomarker studies documented significant differences in PTB between racial groups suggesting that the manifestation of risk factors in different races may be different. This led to the hypothesis that racial disparity exists in SPTB risk factors and these factors cannot be generalized. A case-control study was conducted to assess the role of race as a BMI associated modifier for risk of SPTB, which involved 447 SPTB cases and 1315 term-births in a group of African American (AA) and Caucasian (C) women delivering singletons in Nashville, TN, USA. Crude and adjusted odds ratio for SPTB were calculated using normal BMI as reference. No significant differences were noted in the crude odds ratio for SPTB among different BMI categories when races were combined. However the odds ratio for SPTB in women with different pre-pregnancy BMI categories differed according to race: obese AA women had a decreased odds ratio for SPTB while C obese women had an increased risk compared with normal weight women.

### 6.1.6 Preterm birth global and regional rate estimates

Mapping the burden of preterm birth at global and regional level was performed by updating the database of the systematic review of maternal mortality and morbidity that was developed by HRP in previous years. The result was the publication, for the first time, of global and regional estimates of preterm birth rates. Globally it is estimated that preterm birth occurs in 9.6% of pregnancies. Rates are higher in North America and Africa. Different risk factors play a role in the high rates of preterm birth in different regions.

### 6.1.7 Preterm birth rates and pollution

Investigators from the University of Michigan, Ann Arbor, USA, and from the Universidad Autonoma de Mexico, Mexico City, Mexico, put forward the hypothesis of a potential

role of air pollution in increasing the risk of preterm birth, and received support from National Institutes of Health to conduct a study on this issue in Mexico City, one of the most polluted cities in the world. The increased interest within WHO and the international community on the effects of climate change and pollution on health outcomes provided an opportunity to collaborate with them to examine the relationship between fine particulate matter concentrations (PM<sub>2.5</sub>), seasonality and preterm birth and low birth weight among 23 countries in the WHO Global Survey on Maternal and Perinatal Health. This analysis uses data from the Global Survey on 290 610 birth outcomes, including potential confounders among women (age, prenatal care, parity and other variables) as well as satellite and ground-based monitoring estimates of air pollution exposure within 50 km of the participating clinics. Furthermore, data on characteristics of the countries (Gini coefficients, health care expenditures per capita, etc.) were included in the analysis. The analysis is ongoing and results will be submitted for publication in 2011.

#### 6.1.8 Child Health Epidemiology Reference Group (CHERG)

MPH is participating in the activities of the Child Health Epidemiology Reference Group (CHERG) to improve the measurement of coverage for high-impact maternal, newborn and child health interventions, and establish standards for assessing trends over time and uncertainty estimates for these measurements. In 2010, the Team provided technical and analytical support to the CHERG group in determining research gaps in coverage measurements for service delivery contacts (i.e. ANC, birth, postnatal care for mother and baby) and for other health issues including CS utilization. In addition, the Team is collaborating with Johns Hopkins University, Baltimore, MD, USA, in a CHERG activity aimed at collecting and analysing data for large studies to investigate the association between intrauterine growth restriction (IUGR), preterm birth and neonatal outcomes.

#### 6.1.9 Caesarean section classifications

The worldwide rise in CS rates is a major public health concern and cause of considerable debate. However, in order to propose and implement effective measures to monitor and reduce or increase CS rates where necessary, an appropriate classification system is required. Several CS classification systems have been proposed which need comparative evaluation. Thus a systematic review was undertaken to: (1) identify the main CS classification systems used worldwide, and (2) analyse the advantages and deficiencies of each system. A total of 2948 citations were screened, 60 selected for full-text evaluation and 27 different classifications identified. These classifications were grouped into four general types, based on the main unit used: Indications ( $N=12$ ), degree of urgency ( $N=5$ ), woman characteristics ( $N=4$ ), and other types ( $N=6$ ). Results suggest that, among all classi-

fications identified, women-based classifications in general, and Robson's classification, in particular, would be the best to fulfil current international and local needs, and that efforts to develop an internationally applicable CS classification should build on this classification. The use of a single CS classification will facilitate auditing, analysing and comparing CS rates across different settings and allow the creation and implementation of effective strategies specifically targeted to optimize CS rates where necessary.

### 6.2 Planned activities

Most of the planned activities are based on the secondary analyses of large data sets from previous WHO studies and will be conducted in collaboration with investigators from different countries.

#### 6.2.1 Secondary analysis Global Survey

An intensive effort began to take advantage of the data set of the WHO Global Survey on Maternal and Perinatal Health to generate new hypotheses and conduct secondary analyses of the database in coordination with researchers from all over the world.

Results from one of those secondary analyses were published in 2009 while other analyses have been finalized and submitted to scientific journals, are ongoing or planned as shown in Table 1.

#### 6.2.2 Optimal rate of caesarean section

Does an optimal rate of CS exist and, if so, what should be the recommendation from WHO? The increase in CS rates observed in many developed and middle-income countries contrasts sharply with the very low rates in numerous low-resource settings, along with lack of access to emergency obstetric care. In 1985, a WHO conference generated a report that stated that there was no justification for a CS rate over 15%. This "recommendation" was based on the data available at the time, which was admittedly of poor quality, and did not support any benefit from higher rates in relation to maternal or perinatal mortality. It is planned to set up a scientific working group to assess different methodologies to review this figure and make new recommendations based on the large amount of evidence collected in the past few years. This will be framed in an open and collaborative approach including mechanisms for revision that would allow maximum transparency and participation.

## 7. HEALTH POLICY/COUNTRY FOCUS

### 7.1 Progress

In 2009–2010, the Team published several policy papers on maternal and newborn health in diverse countries such as Brazil, Chile and Mongolia. Productive dialogue was established with representatives of faith-based organizations

Table 1. Published, ongoing and planned secondary analyses of the WHO Global Survey in which MPH is involved

Secondary analysis	Researchers' team	Status
WHO Global Survey on Maternal and Perinatal Health in Latin America: classifying caesarean sections	Global Survey network	Published
Global references for fetal/birth weight percentiles	Japan, Germany, USA (NIH)	Submitted
Risk factors for intrauterine growth restriction	Italy	Ongoing
Causes of stillbirths and newborn deaths	Australia	Ongoing
Anaesthesia and analgesia in vaginal delivery	Brazil	Ongoing
Anaesthesia and analgesia in caesarean section	Brazil	Ongoing
Adverse maternal and neonatal outcomes in caesarean deliveries classified according to Robson's groups	Brazil, USA	Ongoing
Robson analysis of caesarean section (Africa, Asia, Latin America)	Australia	Ongoing
Preterm birth and pollution	Mexico, USA	Ongoing
Analysis of multiple births	WHO	Planned
Repeated caesarean section in developing countries: indications, risk factors and outcomes	Brazil	Planned
Breech in developing countries: assistance at delivery and maternal and perinatal outcomes	Brazil	Planned
Pregnancy in adolescent and older women in developing countries	Brazil	Planned
Instrumental delivery in developing countries (for single and cephalic fetus)	Brazil	Planned
Risk factors for delayed breastfeeding in developing countries	WHO	Planned
Macrosomic infants in developing countries: complications during pregnancy, route of delivery and analgesia	Brazil	Planned

(FBOs) and the Inter-Parliamentary Union (IPU), and importantly, work began with the Ministries of Health of Afghanistan and Iraq.

#### 7.1.1 Brazil

The team collaborated with the MoH of Brazil to analyse the country's efforts in reducing child mortality and improving maternal health from 1990 through to 2007. The analysis showed declines in maternal mortality ratio from 220 to 110 per 100 000 and in infant mortality from 47.1 to 20.6 per 1000 over this period. Importantly, results demonstrated that proactive measures to reduce health disparities accompanied by socioeconomic progress could result in measurable improvements in the health of children and mothers in a relatively short interval. The analysis of Brazil's successes and remaining challenges to reach and surpass MDGs 4 and 5 can provide important lessons for other low- and middle-income countries.

#### 7.1.2 Chile

A paper "Tackling health inequities in Chile: maternal, newborn, infant, and child mortality between 1990 and 2004" was published describing the remarkable achievements of

the policies and health sector reforms implemented in Chile at national level: not only did maternal and newborn mortality decrease from 42.1 to 18.5 per 100 000 and from 9.0 to 5.7 per 1000, respectively, but the gap in these mortality indicators between the poorest and richest district quintiles also decreased.

#### 7.1.3 Mongolia

In 2001, recognizing the need to improve maternal health in the country, the Mongolian MoH launched the Maternal Mortality Reduction Strategy. The Strategy focused on: community mobilization; quality of health facilities; standards of care; educational activities; involvement of the civil society; improvement of clinical care; management of human resources and improvement of the referral system. MPH wrote a policy paper in collaboration with the MoH showing that important reductions in maternal mortality in low-resource settings are possible through collaborative strategies based on a horizontal approach involving community mobilization and the coordinated action of key partners, including health ministries; national and international agencies and donors; health-care professionals; the media; NGOs and the general public.

### 7.1.4 Afghanistan

Afghanistan has one of the highest maternal mortality ratios in the world, estimated at 1400 per 100 000. To improve monitoring, a collaboration was established in 2009 between the MoH in Afghanistan, the WHO Collaborating Centre in Reproductive Health at CDC in Atlanta, GA, USA, and MPH. The objective of this partnership is to document the development of a facility-based maternal and newborn health surveillance system for use in maternity hospitals in Kabul with the aim of improving the quality of care. In 2009, a manuscript was published in the *International Journal of Gynecology & Obstetrics* ("Caesarean delivery surveillance system at a maternity hospital in Kabul, Afghanistan") showing the drawbacks of poorly coordinated resource flows to obstetric care. For example, appropriate training was not done in tandem with the upgrading of hospital facilities with equipment to perform CS.

This collaboration continues to develop with a focus on capacity building. In 2010 a member of RHR's Statistics and Information Services Team (SIS) provided technical assistance to health staff of the Rabia Balhki Hospital, a Government maternity hospital, specifically for the analysis of survey data that measured patient outcomes over a one-month period.

### 7.1.5 Iraq

The British Broadcasting Corporation (BBC) recently reported statements from health professionals in the city of Fallujah about alarming increases in birth defects rates. Such statements, if confirmed, would raise concerns of potential exposure to toxic or radioactive substances around the time of heavy fighting in 2004. The MoH of Iraq asked WHO country and regional offices for technical support and WHO headquarters' expertise was sought. A workshop was organized with the WHO Collaborating Centre, ICBDSR, Rome, Italy, CDC, and other major institutions (Istanbul, Turkey, September 2010). Follow-up activities include assistance to the MoH to develop a surveillance system in the potentially affected districts in Iraq and training in birth defect surveillance for colleagues from Iraq.

### 7.1.6 Faith-based organizations (FBOs)

In collaboration with missionary health professionals and religious leaders, a systematic review was undertaken to map and assess the contribution of FBOs in maternal and newborn health care in Africa during the past 20 years. The review identified only six articles published in the peer-reviewed literature, thus indicating the need for more scientific work to monitor and quantify the impact of FBOs on the health of populations in Africa. Therefore, data from Demographic and Health Surveys in African countries are being analysed to quantify the contribution of FBOs to maternal and neonatal health. These findings will potentially strengthen the dialogue between FBOs and MPH with the goal of more effectively uti-

lizing FBOs to fill critical gaps in service delivery for women and children.

### 7.1.7 Countdown to 2015

The Countdown to 2015 for Maternal, Newborn and Child Survival is a global movement to use data to stimulate and support country progress towards the achievement of the health-related MDGs, with a particular focus on coverage of effective interventions for maternal, newborn and child health. Established in 2005, the Countdown is a collaboration of academic institutions, UN agencies, NGOs, health-care professional associations, donors, and governments, with *The Lancet* as a key partner. During 2010, the Team helped develop the 2010 Countdown report, *The Lancet* article on the key findings of the technical analyses for the 2010 cycle, and a funded proposal for cross-cutting analyses and advocacy activities for 2011–2012. In addition, the Team participated in the "coverage" technical working group.

### 7.1.8 Health-care professional associations

In collaboration with the Partnership for Maternal, Newborn and Child Health (PMNCH) and members of health-care professional associations in Asia, a multicountry workshop aimed at strengthening the capacity of health-care professional associations to collaborate to improve maternal, newborn and child health was held in Dhaka, Bangladesh (22–25 November 2008). The Team contributed to the publication of a report of the workshop. In addition, the Team developed a publication documenting the success of a similar multicountry workshop held in Amman, Jordan (17–19 December 2009) involving the participation of associations from countries in the North African and Middle Eastern regions.

### 7.1.9 Inter-Parliamentary Union

The Team contributed to a report jointly published by the IPU and the PMNCH entitled, "Taking the lead: Parliamentarians engage with maternal, newborn, and child health". The report provides concrete examples of how Parliaments in developing countries have exercised their representational, oversight, budgetary and legislative roles to advance maternal, newborn and child health. It was launched on 16 July 2010 at the Swiss Parliament in Bern during a meeting where more than 20 women parliamentarians from diverse countries discussed the importance of parliamentarians in taking action on maternal and child survival.

### 7.1.10 Alliance of the Italian hospitals in the world

The Association "Alleanza degli Ospedali Italiani nel Mondo" (Alliance of the Italian hospitals in the world) was established by the Italian Government to coordinate the activities of 44 Italian hospitals abroad. Most of these hospitals are fully integrated into the national health systems. A collaboration was established with the Alliance which led to the organization of the Annual Meeting of the Alliance at WHO headquarters in



April 2010. One important outcome of the meeting was the decision of five hospitals in Argentina to join the WHO Multi-country Survey on Maternal and Newborn Health.

#### 7.1.11 United Nations Human Rights Council

The United Nations (UN) Human Rights Council holds its annual meeting at the UN office in Geneva gathering delegates from all over the world. In 2010 the Team helped in the organization of a side event on maternal and newborn health as a human rights issue to highlight Resolution HRC/15/L.27 approved by the Council on this topic on 27 September 2010. Three ambassadors and the Human Rights High Commissioner chaired the event that was attended by delegates from more than 40 countries.

### 7.2 Planned activities

#### 7.2.1 China

To date, there has not been a systematic evaluation of the Maternal mortality and neonatal tetanus reduction programme implemented in 2000 among the most disadvantaged populations in Western China. In 2011, work is planned with the National Office for Maternal and Child Health Surveillance in China, and the Collaborating Centre in Reproductive Health at CDC in Atlanta, GA, USA, to perform a trend analysis of maternal and infant mortality data collected from 14 counties through the National Mortality Surveillance Network from 1996 to 2008. The health resources, health worker trainings and related policies for the delivery of care at community level will also be assessed.

#### 7.2.2 Mozambique

To assess progress in the implementation of the strategy to reduce maternal and neonatal mortality at facility level, the MoH of Mozambique conducted a national survey at facility level (Needs Assessment for Maternal and Neonatal Health, 2006–2007) to assess the quality of care of maternal and child health services. Upon request from the MoH, the Team is working with SIS on an in-depth analysis of this national database which will also provide the basis for the formative research for the study “A demonstration project for the implementation of the WHO ANC model in Mozambique: a cluster randomized controlled trial”, described below in Section 9.1.3.

#### 7.2.3 Systems for monitoring and accountability

In response to a specific request from the UN Secretary-General and the G8, WHO established the “Commission on Information & Accountability for Women & Children’s Health” to “propose international institutional arrangements for global reporting, oversight and accountability on women and children’s health, including through the UN system”. The Team will contribute to this work by conducting a systematic review

of existing national level systems and policies to monitor maternal mortality.

## 8. HUMANITARIAN AID

In 2009, the Team began addressing sexual and reproductive health in emergencies, in collaboration with WHO’s Health Action in Crises Cluster (HAC) and the Global Health Cluster (GHC), focusing on generating knowledge for action in humanitarian settings.

### 8.1 Progress

#### 8.1.1 Interagency group

With the rising occurrence of disasters, conflicts and other crises, WHO is assuming a greater operational role in emergencies. As lead agency for the GHC, WHO is responsible for coordinating humanitarian health agencies and implementing humanitarian reforms. The GHC comprises over 30 international humanitarian health organizations, builds partnerships and develops coordinated approaches to humanitarian health services. The Department is contributing to this effort – including using its expertise in knowledge synthesis and implementation research to build the evidence base.

WHO is also a founding member of the IAWG on Reproductive Health in Crises, a key partnership and leadership body comprising over 130 member organizations, including the UNFPA, the Office of the United Nations High Commissioner for Refugees (UNHCR), and UNICEF. The Department is actively participating in a number of IAWG on Reproductive Health in Crises activities including the New and Underutilized Technologies subworking group and the IAWG on Reproductive Health in Crises Training Partnership. In addition, the *Inter-agency field manual on reproductive health in humanitarian settings, 2010 Revision for Field Review* (IAFM) has been launched and widely disseminated in collaboration with HAC.

A number of products and activities are developed through these partnerships and are published through various collaborative/interagency processes, including a *Report of the WHO-UNFPA follow-up consultation on sexual and reproductive health in protracted crises and recovery*. MPH is also contributing to a chapter on “Conflict and post conflict situations in programme implementation” in the book entitled *Maternal and perinatal mortality in developing countries*.

#### 8.1.2 Systematic review of reproductive health kits

WHO is participating in the technical review for the revision of the *Inter-agency reproductive health kits for crisis situations*. A number of knowledge synthesis and implementation research needs have been identified and requested from the review team led by UNFPA. The Team has initiated a systematic review of the reproductive health kits, a key first step in building the evidence base for this work.

## 8.2 Planned activities

### 8.2.1 Central African Republic, Chad, Democratic Republic of the Congo, Kyrgyzstan, Uganda

Technical updates will be provided to countries based on recently released guidance in the *Inter-agency field manual on reproductive health in humanitarian settings 2010 Revision for field review*. Thus far, requests were received from Central African Republic, Chad, Democratic Republic of the Congo, Kyrgyzstan and Uganda. These technical updates will cover response to emergencies, emergency preparedness, capacity building as well as recovery.

### 8.2.2 Implementation of the Inter-agency Field Manual on Reproductive Health in Humanitarian Settings

An implementation research project is being conducted, using focus group discussions (FGDs), to obtain information from field staff (e.g. from NGOs, government and UN agencies) about their views of the IAFM. FGDs will be conducted with staff who have used the IAFM in a variety of situations, allowing for the investigation of its applicability to different types of crises. Study findings will contribute to the ongoing revision of the IAFM.

### 8.2.3 New documents

In collaboration with HAC's Risk Reduction and Emergency Preparedness (RRP) Team, two key documents are being prepared: *Disaster risk reduction and emergency preparedness – sexual and reproductive health fact sheet – building resilient communities and reproductive health systems* and the WHO/Global Watch for Humanitarian Affairs (GWHA)/UNICEF/International Federation of Red Cross and Red Crescent Societies/UNHCR Joint Statement *Scaling up the front-line health workforce to increase the safety and resilience of communities to disasters and emergencies*. The joint statement will be followed by further guidance on identifying, coordinating and building the capacity of the front-line health workforce in emergencies.

### 8.2.4 UN H4+ in humanitarian settings

In the context of the UN H4+ (UNAIDS, UNFPA, UNICEF, The World Bank and WHO) plan, a UN H4+ working group for humanitarian settings will be established, and a paper on the added value of UN H4+ in crisis situations will be developed. Furthermore, MPH will support coordination of humanitarian and development sectors. This work includes collaborating with HAC on joint assessment and support missions to humanitarian settings such as Haiti and the Democratic Republic of the Congo as well as on the planning of implementation efforts.

## 9. IMPLEMENTATION SCIENCE

Implementation science represents a rapidly expanding area of work given its potential to result in substantial impacts at

country level. It is also a needed area of research to contribute to the success of the UN Secretary-General's Global Strategy for Women's and Children's Health.

## 9.1 Progress

Ongoing activities include a collaborative framework to bridge the know-do gap by synergizing resources and focusing on ultimate objectives and several large cluster randomized trials.

### 9.1.1 Implementing the UN Secretary-General's Global Strategy for Women's and Children's Health: a UN collaboration using implementation science to dramatically accelerate the progress in meeting countries' needs for preventing maternal and newborn deaths

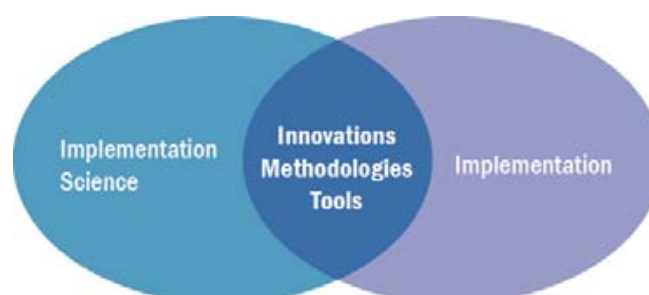
#### 9.1.1.1 The opportunity

With the launch of the United Nations Secretary-General's Global Strategy for Women's and Children's Health in September 2010 and the related commitments to its success, the world now has an unprecedented window of opportunity to reduce dramatically maternal and newborn deaths in the 49 lowest income countries in which the majority of such deaths occur. Implementation science is needed to rapidly accelerate progress in at least three major areas: (1) the implementation of interventions in low-resource settings; (2) the development and use of innovative technologies and processes in these settings; and (3) the transformations in health systems in these settings needed for implementation of life-saving services. Further, such innovations should be linked to a package of interventions in sexual and reproductive health, including family planning to prevent unintended pregnancies, and HIV prevention and treatment.

#### 9.1.1.2 The collaboration

During the previous year, several meetings and activities have been carried out to create a new collaboration. The collaboration will be action oriented and problem solving-focused and will support UN H4+ in rapid implementation of the Global Strategy. Strong commitments to this workforce have already been made by CDC and CARE and it is anticipated that new partners will join soon.

Figure 4. Linking implementation science to implementation.



### 9.1.1.3 The framework

The collaboration will use a conceptual framework that links implementation science to solving implementation challenges in countries (Figure 4). Successful translation of this framework into effective action-oriented plans for meeting countries' needs will require the development of priorities by ministries of health. Agencies with lead responsibilities for implementation will need to work closely with those with lead responsibilities for implementation science, primarily HRP, in both the planning and execution phases of this collaborative effort.

### 9.1.1.4 Proof of concept

The MoH of Malawi has expressed strong interest in receiving support for its efforts in preventing maternal and newborn deaths in Malawi, and its strong support for using this innovative collaborative effort as "proof of concept" for developing similar strategies in other countries, including ones that build on the infrastructure and capacity associated with HIV, TB and malaria programmes. The initial collaboration that has been created to undertake this work in Malawi will be scaled up as the Secretary-General's Global Strategy continues to take off and realizes its full potential for preventing maternal and newborn deaths globally.

### 9.1.1.5 The launch

This innovative collaborative approach will be launched in Atlanta, GA, USA, during a CDC and CARE-hosted meeting of UN H4+ that will include the MoH of Malawi (19–21 January 2011). The launch will follow extensive preparatory work by WHO, UNFPA, UNICEF, CDC, CARE and the MoH, including meetings with the Ministry in Lilongwe. The launch will include representatives not only from the MoH and UN H4+, CDC and CARE headquarters but also representatives from the UN, CDC and CARE in Malawi. During the launch a plan for rapid action in Malawi with focus on integration and improved quality of services as well as human resources management will be agreed upon, and implementation in Malawi will start in 2011.

### 9.1.2 *Trial to increase the use of corticosteroids for the prevention of mortality in preterm newborns*

A highly effective perinatal intervention to reduce neonatal mortality is the administration of antenatal corticosteroids to pregnant women at high risk of preterm birth. However, the literature consistently shows low implementation rates of this intervention in developing countries. In 2000, it was estimated that in the 42 countries with 90% of all childhood deaths, only 5% of appropriate candidates received antenatal corticosteroids. MPH has been collaborating with the US National Institute of Health (NIH) Global Network for Women's and Children's Health Research to implement a pragmatic cluster

randomized controlled trial designed to evaluate the effects of a multifaceted intervention that will improve the identification of pregnancies at high risk of preterm birth and will facilitate the appropriate use of steroids to women at risk of preterm delivery, with the goal of reducing neonatal mortality rates among preterm infants in communities with low antenatal steroid use. The intervention will target the health system, not individual patients. The second investigators' meeting was held in Geneva in August 2010. Participants represented research teams and Ministries of Health from Argentina, Democratic Republic of the Congo, Guatemala, India, and Pakistan that are committed to effective collaboration between researchers and policy-makers on this topic. The establishment of partnerships between governments and research institutions is a priority for MPH, in line with the international agenda set out by the Global Forum for Health Research. The trial is expected to start in 2011.

### 9.1.3 *Antenatal care in Mozambique*

In collaboration with the Flemish International Cooperation Agency (FICA) and the MoH of Mozambique, a demonstration project for the implementation of the WHO ANC model in Mozambique is being launched as a cluster randomized controlled trial. The primary objective of the project is to determine the impact of an intervention designed to increase the use of evidence-based practices included in the ANC package by health professionals in prenatal clinics in Mozambique. In addition, it will assess the effect of the integration of key interventions into routine ANC on obstetric and newborn outcomes as well as the detection, treatment and prevention of major health-related conditions (e.g. anaemia, and infectious diseases such as HIV/AIDS, malaria and congenital syphilis). The project is presently being implemented in 10 districts and will continue through 2012.

### 9.1.4 *Birth plans in United Republic of Tanzania*

A study was conducted in Ngorongoro, rural United Republic of Tanzania to examine the effect of successfully introducing birth plans into routine ANC on health-seeking behaviours for skilled delivery and immediate postnatal care. The study was coordinated by Dr Moke Magoma, a doctoral student at the London School of Hygiene and Tropical Medicine (LSHTM). MPH participated in the analysis and write-up of the findings of the study that showed statistically significant increases in coverage of skilled delivery care among women who completed birth plans during ANC visits in comparison to women who did not develop birth plans.

## 9.2 Planned activities

### 9.2.1 *Management of eclampsia*

An implementation research project is in preparation to evaluate the effectiveness of a multifaceted intervention to improve quality of care for women with eclampsia at hospitals

and primary health-care clinics in Mozambique, measured as the proportion of women that received care appropriate for their condition. This will be a pragmatic pre-post cluster randomized trial that will help bridge the know-do gap in maternal health.

### 9.2.2 Implementation of reproductive health kits

Revision of the interagency reproductive health kits is under way, led by UNFPA (12 kits with commodities for comprehensive RH services for use at community, primary health care, and referral levels). Of note, in 2006–2007 over 18 000 RH kits were ordered from UNFPA Procurement and Supply Branch alone. This number is expected to have markedly increased by now, and other agencies have their own kit systems (Médecins sans Frontières, UNICEF, Save the Children, WHO). MPH is engaging in implementation research on kits for emergency situations which will potentially have an impact on cost-saving practices and lead to improved sexual and reproductive health services.

## 10. CAPACITY BUILDING

Capacity-building activities are a critical function of MPH's work. Fostering collaborations that include world leaders in research, clinical and public health science offers invaluable opportunities to younger colleagues to further develop a career path in public health. Interns work with the Team on specific projects and are invited to participate in courses offered in Geneva, abroad and through web-based applications.

### 10.1 Progress

#### 10.1.1 Capacity building in humanitarian aid

In collaboration with the Uganda WHO Country Office and Save the Children, a training course on reproductive health in humanitarian situations was held in Kampala. Participants came from Afghanistan, Bangladesh, Democratic Republic of the Congo, Ethiopia, Haiti, Kenya, Liberia, Mozambique, Pakistan, Philippines, Sudan, Uganda and Yemen.

#### 10.1.2 Health Cluster Coordinator training

The Team contributed to the Health Cluster Coordinator training by leading a session on sexual and reproductive health aimed at preparing participants for deployment in acute and chronic emergency situations.

#### 10.1.3 Postgraduate course in research methodology in reproductive health

As in the past 15 years, Team members participated in the postgraduate course in research methodology in reproductive health organized by the WHO Collaborating Centre Geneva Foundation for Medical Education and Research (GFMER). In 2010 the course was offered for the first time

online and was attended by more than 100 participants mostly from developing countries.

#### 10.1.4 Lectures at the Royal Tropical Institute (KIT)

Every year since 2005, Team members have been teaching students enrolled in the Master's in International Health Programme at the Royal Tropical Institute in Amsterdam, The Netherlands.

#### 10.1.5 Second Life

In collaboration with Boston University, a location was created in the virtual world *Second Life* targeted at educational activities. The output was a course on diabetes taught to more than 30 participants from different locations in the USA. Each of the participants, the lecturer and the facilitators attended the same virtual lectures through their "avatars". The experience was published as an example of the provision of medical education activities through *Second Life*. Activities are planned to extend the use of *Second Life* to the GFMER postgraduate course.

### 10.2 Planned activities

In the context of the Fetal Growth Study, and in collaboration with ISUOG and General Electrics (GE), courses on obstetric ultrasonography have been planned at the GE training centres in Milwaukee, WI, USA, and Munich, Germany, as well as capacity building site visits. It is expected that 20 sonographers from 10 different countries will be trained. Additionally, it is intended to conduct a course in obstetrics and gynaecology sonography in Argentina to replicate the success of the 2010 workshop on pre-eclampsia which drew to Rosario more than 250 participants from Argentina and other Latin American countries.

## 11. ACTIVISM/NGOS

Establishing partnerships with NGOs has the potential to result in the development of comprehensive approaches to addressing the needs of women and children on the ground. Ideas generated through this collaborative process can then be presented in well-articulated proposals to policy-makers.

### 11.1 Progress

#### 11.1.1 National Observatory for Women's Health (ONDa)

The Team collaborated with the National Observatory for Women's Health (ONDa) – an Italian NGO – in reviewing and identifying key issues in reproductive health that could be discussed in a meeting with a bipartisan group of Italian Parliamentarians working with ONDa. On 23 January 2009, the first annual meeting with this group of legislators was held at WHO headquarters. The meeting was jointly organized by RHR, PMNCH, ONDa, the Permanent Mission of Italy to the United Nations Office and other international



organizations based in Geneva. Two key issues were discussed: (1) The alarming rise in caesarean sections in Italy, and (2) the importance of increasing development aid for the achievement of MDGs 4 and 5 at a time of global financial crisis and particularly in African countries. The meeting with the Italian Parliamentarians resulted in two parliamentary resolutions approved by the Italian Parliament and is now an official event held annually in Geneva. The two motions were instrumental to committing the Italian Government to develop guidelines for the use of CS at national level and to maintain the financial contribution to WHO for maternal and newborn health. In addition, the Parliamentarians engaged in holding several regional workshops on CS in collaboration with ONDa and HRP.

### *11.1.2 Organizations of parents of preterm infants*

In the past few years several organizations were established in Europe by parents who experienced preterm delivery. The birth of a preterm infant is often an unexpected event that places enormous emotional and financial strain on parents. The European Foundation for the Care of the Newborn Infant (EFCNI) functions as the European coordinator of several country-based organizations. The aim of the Foundation is to improve the conditions of infants and families who experience preterm birth and to stimulate new research. The Team collaborated with EFCNI representatives in developing and publishing the European report on Prematurity. A meeting of European Union Parliamentarians is planned in Geneva in 2011 to agree on political action to be taken to support efforts to reduce the burden of preterm birth. A working group on preterm birth was established, coordinated by the Italian organization Vivere, affiliated to EFCNI, which produced the first “Declaration of the rights of the preterm infant”. The declaration, endorsed by the Italian Societies of Neonatology and of Gynaecology and Obstetrics and the Italian Parliament, was officially presented at an event at the Italian Senate in December 2010.

## **11.2 Planned activities**

### *11.2.1 Emergency*

Emergency is a human rights driven NGO established in 1994 by former Red Cross surgeons to provide the highest standards of care for free even in conflict and postconflict settings. The Team was invited to join an Emergency advisory board that will provide technical support to the establishment of four maternity and paediatric hospitals and affiliated community clinics. A study is planned to evaluate the impact at population level of the hospitals on maternal and infant mortality. A similar effort is presently ongoing using data collected at the emergency hospital in the Panshir valley in Afghanistan.

## **12. ADVOCACY AND INNOVATIVE FINANCING**

Increasing awareness of and mobilizing resources for maternal and newborn health is a cornerstone of the Team's work. It will continue to make every effort to raise the visibility of MNCH in the context of growing recognition of the importance of this area to overall development.

### **12.1 Progress**

#### *12.1.1 Art for Health*

In 2006, in collaboration with the PMNCH, the Art4Health project was launched – a project using the power of art to put global maternal health on the radar screen of the general public. Art4Health first commissioned a series of contemporary paintings depicting inspiring portraits of women from nations worldwide. The paintings have been on an international tour of public events ever since, and part of the collection was auctioned at Christie's in Rome. The exhibit is available online ([www.womencreatelife.org](http://www.womencreatelife.org)). The project has now evolved into Women Create Life (WCL).

#### *12.1.2 Women Create Life*

WCL merges the art, design and consumer markets to generate awareness and resources to improve maternal health worldwide – one of the objectives set at the last G8 summits and in the UN Secretary-General's Global Strategy for Women's and Children's Health. WCL builds on artistic creativity, the drive for global development as well as on the need for innovation in financing for international aid. WCL celebrates, through art, women who not only give birth to babies but also often generate the conditions that promote life and development in their communities, thus contributing to global health. How does it work? Each year, WCL will commission a series of paintings portraying women through the brush of a new artist or group of artists. WCL will partner with brand-name designers and companies to integrate the WCL logo and the images painted by featured artists into a range of products. Interested companies will associate their products with WCL and collaborate with companies in low-resource settings through joint ventures. A percentage of the sale of each WCL product will be invested in grass-roots initiatives to improve the health and life conditions of women and their families.

#### *12.1.3 Gracias a Dios*

In 2009, the Team commissioned director Valerio Spazzafoglio to film a documentary on Mosquitia, a remote area in Honduras, with a focus on describing challenges in providing and accessing care. The documentary also highlighted health-care activities supported with the funds generated at the Art4Health Christie's auction. The documentary was screened at a specially organized event endorsed by National Geographic and participated in several international contests. It won the First International Journalism Solidarity Prize awarded at the Global Congress for Maternal and

Infant Health held in Barcelona in September 2010. The director is now producing a new documentary showing the settings, living conditions and challenges of the post-earthquake situation in Haiti with specific emphasis on the condition of women.

#### 12.1.4 *Oportunidades*

“Oportunidades” is a film based in Argentina and produced by parents of children with disabilities to highlight difficulties such children experience integrating into elementary schools. The Team promoted the movie through a collaboration with WHO’s Department of Violence and Injury Prevention. “Oportunidades” was screened at WHO as part of the celebrations of the International Day of Persons with Disabilities on 3 December 2010. The movie will also be shown at the launch of the *World report on disability* in 2011. Related activities are being planned with the Argentina WHO Country Office. These activities are in keeping with the World Health Assembly resolution on birth defects.

#### 12.1.5 *TV, newspapers and magazines*

Team activities have been featured in several newspapers and magazine articles as well as in TV programmes, including popular national TV programmes in Italy and Brazil.

## 12.2 Planned activities

Artakt is a group at the University of the Arts in London, United Kingdom, that conceives and produces exhibitions and events that study the relationship between art and science. Artakt has invited the Team to plan the exhibition: “Born: Childbirth in Science, Art and Culture.” This unprecedented exhibition will bring together the fields of science and art, medicine and culture in order to tackle key issues concerning childbirth, its history and how we approach this most universal of events. It will show that birth has always been a critical feature of our consciousness; in the way we think, express and understand ourselves. Objects will span from the skeleton of Lucy (3–4 million years old) to contemporary art.

It is proposed that the exhibition will be inaugurated in Rome at the time of the 2012 FIGO Congress. The exhibit could also travel to other countries. An exhibition catalogue, with contributions from health-care providers, anthropologists and artists, will be produced and a series of lectures and workshops will be planned to coincide with the exhibition.

## PUBLICATIONS IN 2009–2010

### Peer-reviewed papers

Abalos E, et al. Effects of calcium supplementation on fetal growth in mothers with deficient calcium intake: a randomised controlled trial. *Paediatr Perinat Epidemiol*, 2010, 24(1):53–62.

Abdel Aleem H, et al. 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.

Barros FC, et al. Recent trends in maternal, newborn, and child health in Brazil: progress toward Millennium Development Goals 4 and 5. *Am J Public Health*, 2010, 100(10):1877–89.

Bates DW, et al. Global priorities for patient safety research. *BMJ*, 2009, 338:b1775.

Beck S, et al. The worldwide incidence of preterm birth: a systematic review of maternal mortality and morbidity. *Bull World Health Organ*, 2010, 88(1):31–8.

Betrán AP, et al. WHO Global Survey on Maternal and Perinatal Health in Latin America: classifying caesarean sections. *Reprod Health*, 2009, 6:18.

Bhutta ZA, et al. Countdown to 2015 decade report (2000–10): taking stock of maternal, newborn, and child survival. *Lancet*, 2010, 375(9730):2032–44.

Bustreo F, Requejo J and Johnston A. Effect of development assistance on domestic health expenditures. *Lancet*, 2010, 376(9741):591–3.

Cabeza Vengoechea PJ, et al. Clasificación de cesáreas por Grupos de Robson en dos periodos comparativos en el Hospital de Manacor. *Progresos Obstetricia Ginecología*, 2010, 53(10):385–90.

Carroli G, et al. Effects of calcium supplementation on uteroplacental and fetoplacental blood flow in low-calcium-intake mothers: a randomized controlled trial. *Am J Obstet Gynecol*, 2010, 202(1):45–9.

Caulfield LE, et al. Nutritional influences on maternal autonomic function during pregnancy. *Appl Physiol Nutr Metab*, 2009, 34(2):107–14.

De-Regil LM, et al. Effects and safety of periconceptional folate supplementation for preventing birth defects. *Cochrane Database Syst Rev*, 2010, 10.

Dolan SM, et al. Synopsis of Preterm Birth Genetic Association Studies: The Preterm Birth Genetics Knowledge Base (PTBGene). *Public Health Genomics*, 2010, 13:514–23.

Froen JF, et al. Making stillbirths count, making numbers talk - issues in data collection for stillbirths. *BMC Pregnancy Childbirth*, 2009, 9:58.

Gonzalez R, et al. Tackling health inequities in Chile: maternal, newborn, infant, and child mortality between 1990 and 2004. *Am J Public Health*, 2009, 99(7):1220–6.

Guidotti RJ, et al. Monitoring perinatal outcomes in hospitals in Kabul, Afghanistan: The first step of a quality assurance process. *J Matern Fetal Neonatal Med*, 2009, 22(4):285–92.

Gulmezoglu AM, et al. Active management of the third stage of labour without controlled cord traction: a randomized non-inferiority controlled trial. *Reprod Health*, 2009, 6:2.

Health Care Professional Association Writing Group 2009. Delivering services and influencing policy: Health care professionals join together to improve maternal, newborn, and child health. *Int J Gynaecol Obstet*, 2010, 105:271–4.

Kandasamy T, et al. Cesarean delivery surveillance system at a maternity hospital in Kabul, Afghanistan. *Int J Gynaecol Obstet*, 2009, 104(1):14–7.

Keller M, et al. Policy benchmarking report on neonatal health and social policies in 13 European countries. *Acta Paediatr*, 2010, 99(11):1624–9.

Lawn JE, et al. Setting Research Priorities to Reduce Almost One Million Deaths from Birth Asphyxia by 2015. *PLoS Med*. (in press)

Lumbiganon P, et al. One-day compared with 7-day nitrofurantoin for asymptomatic bacteriuria in pregnancy: a randomized controlled trial. *Obstet Gynecol*, 2009, 113(2 Pt 1):339–45.

Magoma M, et al. High ANC coverage and low skilled attendance in a rural Tanzanian district: a case for implementing a birth plan intervention. *BMC Pregnancy Childbirth*, 2010, 10:13.

Mattar R, et al. [Obesity and pregnancy]. *Rev Bras Ginecol Obstet*, 2009, 31(3):107–10.

Menon R, et al. Racial disparity in pathophysiologic pathways of preterm birth based on genetic variants. *Reprod Biol Endocrinol*, 2009, 7:62.

Mignini L, et al. Accuracy of diagnostic tests to detect asymptomatic bacteriuria during pregnancy. *Obstet Gynecol*, 2009, 113(2 Pt 1):346–52.

Peterson HB, et al. Accelerating science-driven solutions to challenges in global reproductive health: A new framework for moving forward. *Obstet Gynecol*. (in press)

Pope R, Mangser M, Requejo J. Restoring dignity: social reintegration after obstetric fistula repair in Ukerewe, Tanzania. *Glob Public Health*. (in press)

Requejo J, et al. Health care professional associations in select countries in Africa and the Middle East join together to improve maternal, newborn, and child health. *Int Childbirth J*. (in press)

Requejo JH, et al. The World Health Organization policy on global women's health: new frontiers. *J Womens Health (Larchmt)*, 2010, 19(11):2115–8.

Requejo JH, et al. Regional collaborations as a way forward for maternal, newborn and child health: the South Asian healthcare professional workshop. *J Health Popul Nutr*, 2010, 28(5):417–23.

Torloni MR. The Cochrane Collaboration and the World Health Organization: new perspectives for an old relationship. *Sao Paulo Med J*, 2010, 128(2):104–5.

Torloni MR, et al. Maternal BMI and preterm birth: a systematic review of the literature with meta-analysis. *J Matern Fetal Neonatal Med*, 2009, 22(11):957–70.

Torloni MR, et al. Safety of ultrasonography in pregnancy: WHO systematic review of the literature and meta-analysis. *Ultrasound Obstet Gynecol*, 2009, 33(5):599–608.

Torloni MR, et al. Prepregnancy BMI and the risk of gestational diabetes: a systematic review of the literature with meta-analysis. *Obes Rev*, 2009, 10(2):194–203.

Torloni MR, et al. Classifications for caesarean section: a systematic review. *PLoS ONE*. (in press)

Torloni MR, et al. Portrayal of caesarean section in Brazilian women's magazines: a 20 year review. *BMJ*. (in press)

Villar J, et al. World Health Organisation multicentre randomised trial of supplementation with vitamins C and E among pregnant women at high risk for pre-eclampsia in populations of low nutritional status from developing countries. *BJOG*, 2009, 116(6):780–8.

von Dadelszen P, et al. Prediction of adverse maternal outcomes in pre-eclampsia: development and validation of the full PERS model. *Lancet*. (in press)

Widmer M, et al. Misoprostol as an adjunct to standard uterotonics for treatment of postpartum haemorrhage: a multicentre, double-blind randomised trial. *Lancet*, 2010, 375(9728):1808–13.

Widmer M, et al. Duration of treatment for asymptomatic bacteriuria during pregnancy. *Cochrane Database Syst Rev*. (in press)

Wiecha J, et al. Learning in a virtual world: experience with using Second Life for medical education. *J Med Internet Res*, 2010, 12(1):e1.

Yadamsuren B, et al. Tracking maternal mortality declines in Mongolia between 1992 and 2007: the importance of collaboration. *Bull World Health Organ*, 2010, 88(3):192–8.

Zhang J, et al. Defining normal and abnormal fetal growth: promises and challenges. *Am J Obstet Gynecol*, 2010, 202(6):522–8.

## Reports, book chapters

Requejo J, Bustreo F. Global perspectives on child well-being: Response. In: Worthman C, et al., eds. *Formative experiences: The interaction of caregiving, culture, and developmental psychobiology*. Cambridge University Press, 2010.

Requejo J, Merialdi M. Chapter 1: The global burden of preterm birth. In: Berghella V, ed. *Preterm birth: Prevention and Management*. Wiley-Blackwell Press, 2010.

Price Waterhouse & Coopers. Women Create Life – Art for Health. Final report. Geneva, 2010.

Merialdi M, Harris Requejo JA. New directions in maternal health. The State of the World's Children 2009. New York, United Nations Children Fund.

Requejo J, Merialdi M. A4H: Using art for action to improve women and children's health. Abaton: The Global Health Issue 2009; Des Moines University.

Howson CP, et al. March of Dimes White Paper on Preterm Birth: The global and regional toll. White Plains, NY, USA: March of Dimes, 2009.

The Role of Health Care Professionals in Reaching MDGs 4 and 5, Amman, Jordan, 17–19 December, 2009.

Lauer JA, et al. Determinants of caesarean section rates in developed countries: supply, demand and opportunities for control. Geneva, World Health Organization, 2010 (WHR2010 Background Paper, 29).

Gibbons L, et al. The global numbers and costs of additionally needed and unnecessary caesarean sections performed per year: overuse as a barrier to universal coverage. Geneva, World Health Organization, 2010 (WHR2010 Background Paper, 30).

Requejo J, Production editor. Requejo J, Bryce J. Lead authors of the Countdown 2010 report; [www.countdown2015mnch.org](http://www.countdown2015mnch.org).

WHO, PMNCH and ONDa. La salute materno-infantile: il parto cesareo. *Io Donna*, Rome, Italy, 2010.



## Chapter 3

# Controlling sexually transmitted and reproductive tract infections

### 1. INTRODUCTION

The RHR Controlling Sexually Transmitted and Reproductive Tract Infections Team (STI team) develops strategies, guidelines and tools for the prevention and control of STIs, including HIV infection and other non-sexually transmitted reproductive tract infections (RTIs). The STI Team is also responsible for research on the prevention of mother-to-child transmission of HIV (MTCT) and other infections such as syphilis, and advocates for research on the development and deployment of safe and effective microbicides to prevent the sexual acquisition of HIV in women. The STI Team is also involved in the development of guidelines and training activities, in collaboration with the WHO HIV/AIDS Department, to ensure that male circumcision procedures for the prevention of HIV infection are conducted safely, and adverse events are monitored and documented.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

The STI Team contributes mainly to SO4, "To reduce morbidity and mortality and improve health during key stages of life, such as the neonatal period, childhood and adolescence and improve sexual and reproductive health ... for all individuals". The work responds more specifically to OWER 4.2 by supporting creation of "... new evidence, products and technologies", and promoting "interventions to improve maternal, newborn, child and adolescent health and improve sexual and reproductive health". This is achieved through the development of guidelines for the control and surveillance of STIs; research and product registration in the areas of microbicides and male circumcision devices for the prevention of

HIV infection; and research in areas of preventing MTCT. In addition, the STI Team contributes to OWER 4.7 by developing and providing "guidelines and tools ... to accelerate progress towards the attainment of international development goals and targets related to reproductive health". And, as some STIs facilitate the transmission and acquisition of HIV infection, the STI Team also contributes to OWER 2.1 through its work on guidelines, tools and interventions for the prevention of HIV infection and care for persons living with HIV infection.

### 3. CONTROL OF STIS

*The Global Strategy for the Prevention and Control of Sexually Transmitted Infections 2006–2015* has been presented at international, regional and national conferences, and action plans for implementation or strategic frameworks to guide its implementation have been produced at the regional levels. A number of key support documents are under production to support the implementation of the Strategy.

#### 3.1 Progress

Efforts to strengthen interventions for the control of STIs have been made in all the WHO regions. The WHO European Region developed a Regional Framework for the Implementation of the WHO Global Strategy for the Prevention and Control of Sexually Transmitted Infections in the WHO European Region, 2010–2017, and convened a consultation in August 2010 with some countries of the Region to agree on priorities, targets, and performance indicators for implementing the framework in the countries of the European Region. In October 2010, the South-East Asia and Western Pacific Regions held midterm reviews of their respective Strategic

Frameworks for STI control, and identified constraints, gaps and opportunities for scaling up STI interventions in the countries of the regions. Staff from the STI Team were requested by the regional offices to provide technical support during all these meetings.

### 3.1.1 *Gonococcal antimicrobial resistance monitoring*

In response to the threat of emerging cephalosporin resistance in *Neisseria gonorrhoeae*, a need was seen to develop a global plan for monitoring the extent of the problem in all the WHO regions. The objectives of the plan are as follows: (1) to collect good-quality data on gonococcal infections and the magnitude of resistant strains; (2) to improve current knowledge of the potential mechanisms of cephalosporin resistance in *N. gonorrhoeae* through laboratory studies; (3) to establish an early warning system to detect the emergence of cephalosporin resistance; (4) to share experiences between agencies and countries; and (5) to put in place treatment options and to plan for containment of the spread of resistant *N. gonorrhoeae*.

In the first instance, an international consultation on the response to the threat of untreatable gonococcal infections, including an early warning system to detect emergence of cephalosporin resistant *N. gonorrhoeae*, was jointly convened by WHO and the CDC in Manila, Philippines, in April 2010 to share country and agency experiences of monitoring emergence of antimicrobial resistance, and to elaborate plans for a response. The plan is under preparation.

### 3.1.2 *Strategic information on STIs*

The revised guidance tool for surveillance of STIs at the national level, *The strategic and laboratory methods for strengthening surveillance of sexually transmitted infections*, has been finalized.

The global STI estimates were cleared for publication. The estimates give the 2005 global and regional prevalence and incidence of four curable STIs – namely, Chlamydia; *N. gonorrhoeae*; syphilis; and *Trichomonas vaginalis* – in

adults between 15 and 49 years of age. The new estimates show the total number of new cases per year for 2005 to be approximately 448 million (Table 1).

## 3.2 Planned activities

The guidelines for the management of STIs have been updated to take into account the epidemiological trend of the infections and antimicrobial resistance. Publication of the guidelines is expected in the first quarter of 2011.

Literature review is ongoing to support further update of the 2005 STI estimates to produce data that will cover the period up to 2008. Tentatively, it is planned to produce the more recent prevalence and incidence estimates of STIs in early 2011.

Publication and translation into French of *The strategic and laboratory methods for strengthening surveillance of sexually transmitted infections* are scheduled for the first quarter of 2011.

## 4. GLOBAL ELIMINATION OF CONGENITAL SYPHILIS INITIATIVE

### 4.1 Progress

Considerable progress has been made in establishing a global monitoring and evaluation system, improving advocacy and awareness, and working with countries towards the elimination of congenital syphilis.

#### 4.1.1 *Monitoring and evaluation*

A global summary of regional and country-specific data from 77 countries on positivity of syphilis in ANC attendees was published in the WHO 2010 report: *Towards universal access: scaling up priority HIV/AIDS interventions in the health sector*. WHO has developed, and is now finalizing, a tool for countries and regions titled *A tool for surveillance, monitoring, and evaluation of congenital syphilis elimination efforts within existing systems*.

Table 1. Global incidence of four curable STIs, in millions, in males and females, 15–49 years old

WHO Region	<i>Chlamydia</i>	<i>N. gonorrhoeae</i>	Syphilis	<i>T. vaginalis</i>	Total
Africa	10.0	17.5	3.4	78.8	109.70
Americas	22.4	9.5	2.4	54.9	89.20
South-East Asia	6.6	22.7	2.9	38.60	70.80
Europe	15.2	4.6	0.3	24.50	44.60
Eastern Mediterranean	5.7	6.5	0.6	12.60	25.40
Western Pacific	41.6	26.9	1.1	39.10	108.70
TOTAL	101.5	87.7	10.7	248.5	448.40

#### 4.1.2 Advocacy and awareness

WHO produced a brief advocacy document, *Partner Brief: Advancing MDGs 4, 5 and 6: impact of congenital syphilis elimination*, outlining the rationale for why efforts to eliminate congenital syphilis contribute to attainment of MDGs. The brief was released in conjunction with a panel symposium on congenital syphilis elimination and a UN partners' meeting organized by WHO for the Women Deliver Conference held in Washington, DC, USA (7–9 June 2010). A review article of global burden, current progress, and ongoing challenges for the elimination initiative was published in *Obstetrics and Gynecology International*, entitled "A road map for the global elimination of congenital syphilis". In close collaboration with CDC (USA), the University College London, (United Kingdom) and other partners, the text for the in-depth advocacy piece *Investment case for eliminating congenital syphilis: promoting better maternal and child health and stronger health systems* was completed. This advocacy document outlines the public health rationale for investment of US\$ 13 million in congenital syphilis elimination efforts in 10 high-burden countries over a five-year period.

#### 4.1.3 Support to countries

In 2010, WHO headquarters worked with regional offices to identify 10 high-burden countries ready for participation in the *Investment case for eliminating congenital syphilis*.

A programme assessment of syphilis in pregnancy in Mozambique was conducted in December 2009, and resulted in the development of a national action plan. The WHO National Programme Officer in Mozambique, the MoH of Mozambique and partner organizations are currently working to identify key activities in the plan to support.

An assessment of the programme for rapid syphilis testing in ANC attendees in Mongolia was conducted in October 2010. RHR staff worked with MoH officials and partners not only to review the programme, but also to conduct a desk review of the draft global elimination of congenital syphilis monitoring tool, and identify next steps for scale-up of their rapid syphilis testing programme in Mongolia.

#### 4.2 Planned activities

In 2011, WHO will finalize and disseminate the elimination of congenital syphilis monitoring tool. The 2011 HIV universal access data collection will include data on coverage of syphilis testing and treatment among antenatal care attendees.

RHR, in collaboration with the WHO HIV/AIDS Department, the WHO Department of Maternal and Child Health, the WHO Regional Office for Africa and the Intercountry Support Teams, has begun preparations for an African regional workshop scheduled for March 2011 "Accelerating HIV prevention: regional workshop on elimination of mother-to-child

transmission of syphilis and HIV through strengthened antenatal care services".

### 5. COMPREHENSIVE CERVICAL CANCER PREVENTION

#### 5.1 Progress

Good progress was made between different health programmes at the global, regional and country level in mechanisms for collaborative and comprehensive approaches to cervical cancer prevention, particularly in the context of the introduction of the human papillomavirus (HPV) vaccines.

##### 5.1.1 Operations research

The 2006 demonstration project on prevention of cervical cancer was finalized in May 2009. It assessed the acceptability and feasibility of implementing a cervical cancer prevention programme based on the "screen and treat" approach using visual inspection with acetic acid (VIA) and cryotherapy in six countries – namely, Madagascar, Malawi, Nigeria, Uganda, United Republic of Tanzania and Zambia. The final coordinating meeting was held in Zambia in October 2009. The main results of the study were as follows.

- 19 500 women were screened, 1980 (10.1%) were VIA positive, 1745 were eligible for cryotherapy, of which:
  - 1071 (61.4%) received cryotherapy
  - 501 (28.7%) are yet to receive cryotherapy
  - 173 (9.9%) were lost to follow-up.

The procedure was found to be highly acceptable to women. Scaling-up difficulties and impediments included the development of national plans and guidelines; supervision; breakdown of cryotherapy equipment; monitoring and evaluation; and training of health care workers in VIA and cryotherapy. Based on these results, and on the initiative, the Ministries of Health of these countries started to scale-up the activity and develop national cervical cancer prevention and control plans.

##### 5.1.2 Policies and guidelines

The *Comprehensive cervical cancer control: a guide for essential practice* (C4-GEP) is a collaborative effort between several departments within WHO – in particular, RHR and the CHP. External international partners and universities have also participated in the development of this guide. Since 2006 it has been adopted and adapted in several countries, including Bhutan, Cambodia, China, Maldives, Sri Lanka, Thailand and Viet Nam, as well as in the six African countries where WHO provided technical support to strengthen cervical cancer prevention programmes.

A meeting was held to review and finalize the recommendations on the "Use of cryotherapy for cervical cancer prevention" in September 2010 in Geneva, Switzerland.

**Strengthening cervical cancer prevention and control**

Report of the GVA-UNEPS-WHO meeting  
1 December 2008, Geneva, Switzerland

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The HPV Vaccine Global Community of Practice (CoP) is a global network with the goal of providing health professionals with a forum to: (1) share knowledge, experience and resources; (2) add their opinions to the global policy and practice dialogue on establishing HPV vaccination programmes; and (3) access strategies for vaccination programme implementation. The CoP has grown to include 935 members from 110 countries. In March 2010, the CoP conducted a global web-based seminar (webinar) followed by two weeks of online discussions. The webinar focused on HPV vaccine delivery in the Asia-Pacific region and was broadcast from the Conference of the Asia Oceania research organization on Genital Infections and Neoplasia (AOGIN) in New Delhi, India (26–28 March 2010). An online needs-assessment survey was designed and posted to CoP members in August 2010. The results were analysed and will be used to determine future activities of the CoP. The distribution of members according to profession is as follows (numbers have been rounded): 50% researchers and physicians; 12% programme managers; % epidemiologists; 8% health educators; 7% students; 6% from industry; and 6% nurses or nurse practitioners. Feedback indicated that 69% of the educational documents or scholarly articles had been extremely useful in their work and 96% said that the web discussions were useful.

The CoP moderator presented a poster, *Facilitating HPV vaccination program implementation through a global, online network* at the Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) held in Boston, MA, USA (12–15 September 2010).

### 5.2.1 Guidelines

The update of the other chapters of the C4-GEP will be completed in 2011–2012. Three chapters will follow the GRADE table methodology as recommended by WHO, including, health education; use of screening tests (VIA, cytology and HPV DNA based tests); and treatments other than cryotherapy for pre-cancer lesions (loop electrosurgical excision procedure (LEEP), cold knife conisation, cold coagulation). Most of the recommendations should be ready by the end of 2011. The overall guide, the C4-GEP, will be updated in 2012 by incorporating these recommendations. The other chapters of the guide, which discuss treatment of invasive cancer and palliative care, will be updated in parallel in 2011, but under the responsibility of the Department of CHP, based on results of a literature review.

### 5.2.2.1 The introduction of careHPV in VIA-based cervical cancer screening programmes and the impact on programme performance

A project is planned to assess the impact on programme performance of introducing careHPV into existing VIA cervical cancer screening and treatment programmes. The assessment of a “screen and treat” approach based on VIA followed



by VIA and cryotherapy, or careHPV testing followed by VIA and cryotherapy will be carried out in three phases:

1. Strengthening the National Reference Laboratory (NRL) to introduce new screening test based on HPV detection by careHPV.
2. Comparison of results between careHPV performed in the field and in the NRL.
3. Assessment of the performance of a careHPV-based programme compared with a VIA-based programme.

The study will be conducted initially in the United Republic of Tanzania and possibly in the other WHO VIA demonstration project sites. These sites are now actively expanding their coverage by training satellite clinics and increasing regional community outreach.

The activities for 2011 include: (1) finalization of the protocol, obtaining the National Ethical Committee approval in the United Republic of Tanzania, and WHO approval; (2) establishing partnership with the Ministry of Health, Qiagen and other partners for implementation; and (3) implementation of the study.

#### 5.2.2.2 Study of effective delivery strategies of HPV vaccine for adolescents

Introduction of the HPV vaccine into a national public health system has implications for three programmes, namely cervical cancer control, immunizations, and reproductive health, particularly that of adolescents. As such, the proposed study addresses three key policy issues related to each programme.

1. What is the added value of using HPV vaccine delivery as an opportunity to deliver additional adolescent-specific health interventions including sexual health services?
2. What is the impact of delivering the HPV vaccine with an adolescent health package on HPV immunization programmes (uptake, coverage, etc.)?
3. What is the added value of including the HPV vaccine for the national cervical cancer control programme?

The study will include three phases:

**Phase I** – Develop the minimum information component and adolescent health package.

**Phase II** – Assess the feasibility, acceptability, modalities, monitoring and cost of delivering an adolescent health package together with the HPV vaccine in an adolescent-friendly manner.

**Phase III** – Determine the impact of delivering HPV vaccination with minimum vaccine information only compared with delivering the HPV vaccine with a comprehensive adolescent health package.

In 2011, the adolescent health package will be finalized, in collaboration with relevant health departments and a field test of the package will be implemented to assess the feasibility of a school-based programme. Subsequently, the protocol will be submitted for National Ethical Committee approval and WHO approval. At the end of 2011 and early 2012, plans are to initiate implementation of the study in Bolivia (Plurinational State of), Colombia and probably the United Republic of Tanzania as well.

#### 5.2.3 HPV vaccine global community of practice

The HPV Vaccine Global CoP has been effective in facilitating discussion about HPV vaccination and cervical cancer prevention, and disseminating educational resources and advocacy materials to a diverse global audience. Future plans include continuing to expand the CoP and conduct discussions, post announcements, and post educational resources and advocacy materials. New initiatives will be implemented to address needs identified in a recently concluded needs assessment survey. Advocacy materials and educational resources will be distributed from PATH, WHO, Jhpiego and other organizations. Experts on vaccine cost and cost-effectiveness will be consulted to assess the relevance of different models of practice for CoP members. The Department, together with the Initiative for Vaccine Research (IVR) and PATH will partner to provide tool kits and technical guidance for community-level research and to develop a comprehensive, integrated approach to cervical cancer prevention. Subject to availability of funds, the HPV vaccine CoP will be extended to the Latin American region. A manuscript will be published about the development and impact of the CoP.

## 6. PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV

After a comprehensive review of outstanding knowledge gaps in the science of prevention of MTCT, the Department started work on the Kesho Bora project in 2000. The main objective of the project was to assess the safety and efficacy of a triple-antiretroviral (ARV) regimen taken during late pregnancy, delivery and the breastfeeding period to reduce the risk of HIV transmission particularly during breastfeeding. The regimens compared were a triple regimen consisting of zidovudine (AZT), lamivudine (3TC), and lopinavir/ritonavir (LPV/r) continued during breastfeeding to a maximum of 6.5 months postpartum (triple-ARV prophylaxis) or AZT until delivery with single-dose nevirapine (sd-NVP) at the onset of labour and, from December 2006, one week postpartum AZT/3TC (AZT/sdNVP prophylaxis). It was expected that, if successful, the project would lead to important changes in breastfeeding practices by women with HIV infection in resource-limited settings. The project was also intended to give more attention to the health of the mother with HIV infec-

tion and to better understand how to balance her health and long-term survival with the health and survival of her baby.

## 6.1 Progress

The last delivery in women enrolled in the study took place in November 2008. The final 6-month and preliminary 12-month follow-up data (based on 75% of the infants delivered) were presented at the International AIDS Conference in Cape Town, South Africa in July 2009. All follow-up of Kesho Bora was completed in April 2010 and final results were analysed, submitted and accepted for publication in *The Lancet Infectious Diseases*. The cumulative risk of HIV-1 transmission at 12 months was 5.4% (95%CI: 3.6–8.1) in the triple-ARV arm and 9.5% (7.0–12.9) in the AZT/sdNVP arm ( $p=0.029$ ), a 43% risk reduction. The incidence of laboratory and clinical serious adverse events was similar in the two groups.

The only other randomized controlled trial (RCT) evaluating a three-drug maternal prophylaxis regimen during breastfeeding was the “Breastfeeding, Antiretroviral treatment and Nutrition (BAN) study” conducted in Malawi, although the prophylaxis in BAN was only started after delivery. In children not infected with HIV-1 at age two weeks the risk of (post-natal) transmission was reduced by half, both in BAN and Kesho Bora. However, the overall reduction in MTCT risk at age 28 weeks was considerably greater in Kesho Bora than in BAN (42% versus 25%) consistent with the earlier start of maternal triple-ARV prophylaxis in Kesho Bora (from 28 to 36 weeks gestation) than in BAN (after delivery).

In the Kesho Bora RCT, the preventive efficacy was much greater for women with CD4+ cell counts in the range 200–350 cells/mm<sup>3</sup> than in those with CD4+ cell counts in the range 350–500 cells/mm<sup>3</sup>. Among women with CD4+ cell counts above 500 cells/mm<sup>3</sup> who all received the AZT/sdNVP regimen in an open label prospective cohort, there were postnatal transmissions between ages six weeks and six months. These results emphasize the importance of providing early ARV therapy to all pregnant women with CD4+ cell counts below 350 cells/mm<sup>3</sup> as recommended in the new WHO 2010 ARV therapy guidelines, *Antiretroviral therapy for HIV infection in adults and adolescents: Recommendations for a public health approach, 2010 revision*. It is in this group that nearly 90% of transmissions occurred, and universal coverage of ARV therapy for eligible women has the potential to prevent up to 90% of MTCT while preserving the health of the mothers.

The cumulative MTCT rate of 4.9% at age six months in Kesho Bora was considerably higher than the 1.1% rate (95% CI 0.5%–2.2%) observed in the Mma Bana trial in Botswana that compared two different triple-ARV prophylactic regimens. In that study over 90% of women had undetectable viral load at delivery (less than 400 copies/ml) compared with 70% in Kesho Bora. In this subgroup in Kesho Bora

the six-month cumulative transmission rate was 2.2% (95% CI 0.9–5.3). Of note, the viral load at enrolment was lower and the duration of ARV prophylaxis before delivery longer in Mma Bana than in Kesho Bora. Obtaining an undetectable viral load by the time of delivery and sustaining it during breastfeeding is clearly the goal of maternal ARV prophylaxis. At least eight weeks of prophylaxis were needed before an undetectable viral load was achieved in at least 75% of women in Kesho Bora.

These new data from Kesho Bora were strongly influential in shaping the revised WHO recommendations on the use of ARV drugs for the prevention of MTCT. Key points from these recommendations are:

1. All adults with CD4+ count below 350 cells/mm<sup>3</sup>, including pregnant women, should start long-term ARV therapy as soon as possible, whether or not they have any clinical symptoms.
2. For pregnant women with CD4+ count above 350 cells/mm<sup>3</sup> there are two different options for ARV prophylaxis:
  - AZT started as soon as possible after the 14th week of pregnancy with nevirapine given to the baby from birth and continued up to the end of breastfeeding (the infant prophylaxis option for prevention of breastfeeding transmission); or
  - triple-ARV prophylaxis as soon as possible after the 14th week of pregnancy and continued up to the end of breastfeeding (the maternal prophylaxis option for prevention of breastfeeding transmission).
3. Breastfeeding by women with HIV infection can be continued up to 12 months or more in the presence of ARV prophylaxis. The fact that extended use of ARV prophylaxis during breastfeeding had been shown to be safe and effective led the experts to recommend a longer duration of breastfeeding. It was anticipated that this will avoid many of the malnutrition and other morbidities associated with complete cessation of all breastfeeding before age six months.

The efficacy of the new ARV-based strategy also led UNAIDS; WHO; UNICEF; The Global Fund to Fight AIDS, Tuberculosis and Malaria; and partner agencies to launch an “MTCT elimination” initiative.

During the period 2009–2010, a total of nine papers covering Kesho Bora study methods, results in terms of HIV-child free survival, laboratory and nutrition issues were published in international peer-reviewed journals. In addition, preliminary analyses on maternal outcomes (HIV disease progression, emergence of viral resistance) were presented in international conferences.

## 6.2 Planned activities

The research activities of the Team related to MTCT prevention will cease now that the Kesho Bora study has been con-

cluded, and the remaining data analyses and publications will be finalized in 2011. Remaining questions primarily refer to the logistics of rolling out MTCT-prevention programmes in resource-limited settings to ensure high coverage – high availability and accessibility of services; high acceptability of services and hence high acceptance of HIV testing in early pregnancy (or even before onset of pregnancy!); high compliance with triple-ARV prophylaxis; and good links with sexual and reproductive health services as well as long-term treatment services for people living with HIV. These operational research issues, while critically important, are beyond the level of financial and staffing resources available to the Team, and will be left for others to address.

## 7. MICROBICIDES

The Department is the focal point for research, research coordination and policy support for microbicides within WHO. The objectives of the Department's work are to accelerate clinical research on promising microbicide candidates, to help coordinate global microbicide research to ensure complementarity, and to act as an interface between the microbicide development and evaluation partners (on the one hand) and national regulatory and government authorities (on the other), to implement and supervise critical research, and to facilitate the registration of new, safe and effective products.

### 7.1 Progress

#### 7.1.1 Global coordination

In February 2009 the microbicide field was excited with the results from the HIV Prevention Trials Network study HPTN 035 which showed that the candidate microbicide 0.5% PRO 2000 gel was safe and reduced the incidence of HIV infection by 30% overall, with a trend towards higher effectiveness in a subgroup of women who used the gel with high frequency and condoms with low frequency. The result was encouraging, but not statistically significant. A second study using the identical product was nearing completion and results were expected to become available in late 2009. In anticipation, the Department convened a meeting in May in London on *Preparing for access to PRO 2000* involving advocates, policy-makers, research teams and clinicians to review key challenges and identify immediate actions by different actors from the microbicide field in advance of the new data, in the first 6–12 months following release of the new data and in the longer term. Major gaps that would impede the product moving forward rapidly to registration and introduction were identified, and plans were made to fill these rapidly should the second study provide evidence of safety and effectiveness. The results of the MDP301 trial announced in December 2009 confirmed the safety of the product but showed no evidence of protective effectiveness. All further investment in PRO 2000 ceased, though the process was extremely valuable in identifying a collaborative mechanism for the microbi-

cide field to move rapidly on a common agenda and plan for the first safe and effective product to emerge from late-stage clinical trials.

A *Microbicides Access Forum* was implemented in collaboration with the International Partnership for Microbicides in Cape Town, South Africa, in July 2009. This was a follow-up to similar forums held in Kenya (2007) and Mexico (2008); it was attended by civil society advocates, public health experts, clinicians and policy-makers primarily based in the southern African region. It was held at the time when the first results on PRO 2000 were known, but the second trial was nearing completion. The Forum provided an opportunity to review the plans for next steps with PRO 2000 and discuss regulatory, policy and implementation issues with a broad range of stakeholders.

In preparation for a special satellite symposium for regulators from developing countries to be convened at the Microbicides meeting in Pittsburgh, PA, USA in May 2010, a review paper "Regulatory issues in microbicide development" was prepared. This summarized the issues discussed and the recommendations from the series of regulatory meetings on microbicide research, clinical testing and licensure convened by WHO since 2002. This review formed the basis for discussions on accelerating research approvals and licensure of microbicide and other HIV-prevention research. The symposium was attended by a total of 16 representatives from national drug regulatory authorities in the African Region; 8 representatives from the US Food and Drug Administration (FDA); and 18 technical, clinical and scientific experts from the African Region, the USA and Europe. The meeting provided an opportunity for the developing country representatives to interact with each other, share common concerns and plan for coordinated solutions. The US FDA shared its plans for updating regulations on microbicide research and development, and indicated a willingness to arrange collaborative reviews of scientific dossiers submitted as part of the approval process for clinical research, as well as holding joint reviews of licensure applications.

In a related development, the Department supported the European Medicines Agency (EMA) to arrange a joint review and scientific advice with the US FDA and developing country regulatory authorities of the dossier submitted by the International Partnership for Microbicides regarding planned Phase III studies of its flagship product – a vaginal ring releasing the non-nucleoside reverse transcriptase inhibitor (NNRTI), dapivirine. This joint review was conducted under the EMA Article 58 Framework which enables the agency, with the support of WHO, to review products intended for marketing authorization outside the European Union. Regulators from the African Region were involved in the preparation of the scientific advice. The process was warmly welcomed by the sponsor as a coordinated opinion from the major regulators was obtained and issues of potential safety and manufac-



turing were identified by the regulators and they could be appreciated well in advance of the full registration dossiers being prepared.

Immediately after the Microbicides 2010 conference, a second smaller meeting was convened with George Washington University (GWU), the BMGF and UNAIDS to discuss anticipated regulatory issues with oral pre-exposure prophylaxis (PrEp). This meeting was conducted within the context of the collaboration between GWU, BMGF, UNAIDS and WHO (led by the WHO HIV/AIDS Department) to consider PrEp policy issues. Five clinical trials were under way on the safety and effectiveness of a daily oral dose of tenofovir or the combination tenofovir/emtricitabine, an ARV drug registered for treatment of HIV as part of triple-combination therapy. The first clinical trial results were expected to become available in late 2010. The participants were able to review anticipated regulatory challenges in assessing a possible new indication for these products, as well as ensuring adequate oversight and control of the drugs, which were already becoming widely available in developing countries as part of HIV treatment.

In July 2010 at the International AIDS Conference in Vienna, Austria, results of the Centre for the AIDS Programme of Research in South Africa (CAPRISA) 004 trial conducted in Durban, South Africa, were announced on the safety and effectiveness of a microbicide gel containing tenofovir (a nucleotide analogue reverse transcriptase inhibitor). The product was shown to be safe and reduced the incidence of HIV infection by 39% (95% CI 6%–60%,  $p=0.017$ ) overall, with a trend of increasing effectiveness in women who used the gel more consistently. The product also reduced the risk of HSV-2 infection by 51% (95% CI 22%–70%), an additional benefit since genital herpes is an important cofactor in HIV transmission. HSV-2 infection is extremely common in many parts of the world and this opens the possibility of a developed country market for the product. The gel was used in the CAPRISA study around the time of sex in the so-called BAT-24 regimen (one dose **B**efore sex, one dose **A**fter sex, but no more than **T**wo doses in 24 hrs). Another trial supported by the NIH is currently enrolling participants to a placebo-controlled trial of the same gel, but using a single daily dose, not related to the timing or expectation of sex.

The Department, in collaboration with UNAIDS, convened a meeting in Johannesburg, South Africa, in late August 2010 hosted by the South African Department of Science and Technology to review and plan the next steps with 1% tenofovir gel. The objectives of the meeting were to:

- identify gaps and develop consensus on priority research to confirm safety, effectiveness and acceptability of 1% tenofovir gel;
- develop the most efficient pathways for licensure and guideline development, including regulatory dossier development and submission;
- delineate priorities, next steps and lead responsibilities in clinical research, programmatic research, and regulatory submission, and other issues as identified;
- agree on mechanisms for coordination and execution, and identify funding sources and gaps.

The meeting brought together over 80 stakeholders – technical experts; clinicians; regulators; programme managers; advocates; and representatives of funding agencies – who identified key priority research to confirm the safety and effectiveness of the gel, and actions necessary to prepare for product introduction. These included additional key safety studies (in women younger than 18 years, in pregnant women, in women with hepatitis B infection and women with impaired kidney function); new effectiveness trials in South Africa and other southern African countries on either the same two-dose BAT-24 regimen as in the CAPRISA trial, or a simplified single-dose regimen before sex or, failing that, immediately after sex (that was expected to be as effective, but more convenient for women to use and potentially safer and less expensive as it would require considerably less gel to be used). Under the assumption that the product would be confirmed safe and effective by additional research, next steps in ensuring licensure, phased programme roll-out, and resolving marketing, distribution and other logistics issues were outlined. USAID, which has been a major contributor to this research work and an important supporter of the Department's activities related to microbicides, is strongly committed to accelerating implementation and availability of the product.

### 7.1.2 Research and development

Funds were provided to the Mintaka Foundation for Medical Research based at the University of Geneva to accelerate clinical testing of their novel HIV-entry inhibitor 5P12-RANTES that has a different mechanism of action from other candidate products currently entering the clinical testing pipeline. The RHR grant allowed the Foundation to perform further in vitro testing of the product and map out a scalable and efficient manufacturing process to generate sufficient material to complete all necessary pre-clinical studies and move towards the first-in-human studies. The Foundation has since secured funds from the Wellcome Trust to manufacture sufficient quantities of the molecule according to Good Manufacturing Practice standards and initiate first-in-human studies. The midterm review by the Wellcome Trust Team, which was supported technically by RHR, was very complimentary of the progress made and the anticipated future clinical research. RHR will continue to provide technical advice to the Foundation to advance the pre-clinical and clinical testing of their product, and to build partnerships



with the teams that are involved in large clinical safety and effectiveness studies. The product has a likely place as part of a combination microbicide product, not as a stand-alone method.

## 7.2 Planned activities

The main focus of the Department's work over the next years will be to support the roll-out of 1% tenofovir gel to women at high risk of HIV infection in South Africa and other countries in the Region. This will involve facilitating implementation of priority safety research; research into user-filled applicators; supporting coordinated discussion between regulatory authorities and the product developers on requirements for licensure; marketing and promotion of the product; and establishing mechanisms for roll-out through existing sexual and reproductive health services, in particular family planning facilities. The first meeting of key stakeholders will be held in South Africa in early 2011 to provide more details of an implementation strategy. The Department will work in close collaboration with the WHO HIV/AIDS Department and UNAIDS to ensure that preparations are made for rapid normative policy guidance on gel use and programme design once the necessary information becomes available, as well as technical support to countries to make the product available in an equitable and sustainable manner to women most in need.

## 8. MALE CIRCUMCISION

Male circumcision was recommended in March 2007 by WHO and UNAIDS as an additional method of HIV prevention in high HIV incidence settings and since that date the Department has been instrumental in developing technical guidance and assisting countries to design and implement male circumcision programmes.

### 8.1 Progress

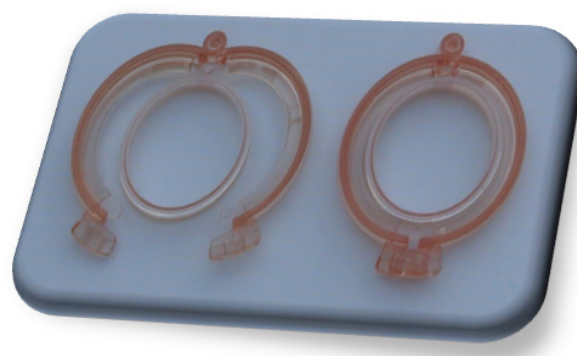
#### 8.1.1 Male circumcision devices

Circumcision devices are widely used in Muslim countries in the Asian region for circumcision of boys near the age of puberty, but have not been studied in boys or young men in Africa. They have the potential to reduce the time required for circumcision, the complications rates and healing times, but must first be evaluated for their acceptability, safety and effectiveness for the circumcision operation. In order to map out the best path for clinical evaluation of male circumcision devices in African populations, the Department convened a technical meeting in Nairobi, Kenya, in March 2009. This meeting reviewed the experience with devices in different countries and in new different age groups, and defined a framework for progressive evaluation in new populations outside the country of origin. The requirements for clinical data are more extensive than those required by regulatory authorities for the approval of new medical devices, particu-

larly those that are external to the body and remain in contact with the skin for a limited time. However, the additional data on the safety, efficacy and acceptability of the device are necessary since male circumcision is being promoted among healthy men for HIV prevention, and not for management of a medical condition. The framework has been distributed for comment to clinical research teams, advocates and national regulatory authorities and it will form the basis of WHO's assessment of new devices or other innovations to accelerate implementation of male circumcision services.

Technical support was given to implement research among men in Kenya on the Shang Ring circumcision device (Figure 1), developed in China. This device is designed to remain on the penis for seven days following the operation and has a unique feature that the foreskin is everted over the inner ring before being clamped and cut off. This has the advantage that the residual foreskin and coronal sulcus are exposed, avoiding the closed space under the foreskin where moisture can accumulate and favour bacterial growth during the healing period. The device has been successfully used in over 5000 Chinese men, but the acceptability and safety of the device and its clinical performance had not been assessed in an African context. A small study involving 50 men in Kenya has been completed with encouraging results and a randomized trial comparing the Shang Ring with conventional surgery has been launched in Kenya and will be extended to a site in Zambia in early 2011.

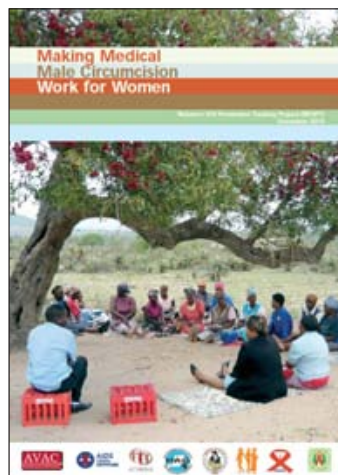
Figure 1. Shang Ring circumcision device.



Another innovative device is the PrePex System which involves an inner plastic ring that sits between the foreskin and the coronal sulcus and an elastic ring placed external to the foreskin. The outer ring restricts blood flow to the foreskin which necroses and is removed with scissors after one week just prior to device removal. Preliminary results on men from Rwanda have been encouraging and there are now plans to perform a randomized comparison against a conventional surgical technique in 150 men and extend the assessment to another country in the region.

### 8.1.2 Male circumcision programmes

Technical advice has been given to countries in the African Region to develop and implement male circumcision programmes, ensuring that circumcision programmes are set



within the context of a comprehensive approach to HIV prevention and improving sexual and reproductive health of young men and women. Of particular concern to the Department is that potential undesirable adverse effects of the programmes are minimized – these might include risk compensation by circumcised men following the operation; changes in perceptions by women that condom use and other HIV-prevention modalities were less necessary with circumcised men; increases in gender-based violence by circumcised men against their partners; or undermining efforts to eliminate FGM. The Department co-convened a meeting on operations research priorities to guide and accelerate male circumcision programme scale-up in Nairobi, Kenya, in June 2009. This was an opportunity to ensure that all ongoing and planned male circumcision programmes had in place mechanisms to monitor potential harms to women from male circumcision scale-up. At present few new data on these issues are available from programmes that are still in the process of scaling up. However, it is important that such issues are monitored so that corrective action can be taken. In addition, the Department provided technical support to the Women's HIV Prevention Tracking (WHIPT) Project pilot studies in Kenya, Namibia, South Africa, Swaziland and Uganda that interviewed a total of 494 women and conducted 40 focus group discussions in the five countries before national circumcision programmes were implemented. Concerns expressed by the women included diversion of funds away from women's health programmes, potentially greater difficulties in negotiating condom use, and possible conflation between male circumcision and FGM in the two areas of Kenya and Uganda where FGM is practised. These are issues that will have to be carefully monitored as the programmes in these countries are expanded, and more formal and rigorous research needs to be conducted.

A key element of advocacy for male circumcision programmes, including sustained financial support to implement them rapidly, is the estimated cost and impact of the intervention. The Department has participated in cost and impact assessments of male circumcision programmes in the 14 focus countries or provinces in Southern and Eastern

Africa (Botswana, Ethiopia Gambela Region, Kenya Nyanza Province, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, Swaziland, Uganda, United Republic of Tanzania, Zambia and Zimbabwe). The initial cost estimates were based on desk reviews of demographic and epidemic information combined with actual and projected male circumcision coverage and lifetime ARV treatment costs. The results were presented in a series of 14 policy briefs prepared with the Health Policy Initiative in Washington, USA, and a summary brief of all countries combined. Scaling up male circumcision services to reach 80% of males aged 15–49 years by 2015 and then sustaining a programme to circumcise each birth cohort as the boys reach age 15 years was estimated to cost a total of US\$ 1.5 billion by 2015 and cost US\$ 100 million annually until 2025. However the intervention was estimated to avert more than 4 million adult HIV infections and



yield annual cost savings of US\$ 1.2–1.4 billion after 2015. The total cost savings up to 2025 were estimated to be US\$ 20.2 billion. Results from the preliminary desk review of costs and impact have been extended by six countries by a more formal assessment of costs based on surveys of facilities and resources and will be incorporated into more refined estimates of cost, impact and cost savings. The costing and impact assessment process has been helpful in identifying the magnitude of the task to offer circumcision to 80% of adult men over a short period and the resources required to implement programmes. These costs have been used by countries to develop their country operational plans for US President's Emergency Plan for AIDS Relief (PEPFAR) support and to submit applications to the Global Fund to Fight



AIDS, Tuberculosis and Malaria. The desk reviews have also enabled countries to adapt their national circumcision strategies to local limitations and constraints. Swaziland, for example, has decided that the desired impact on the HIV epidemic can only be achieved through a rapid expansion of services, but currently available local resources would not be

sufficient to provide the required 60 000 circumcisions in each of the three peak years. The country has, therefore, decided to use external resources and volunteer doctors, nursing and support staff to launch an accelerated programme of offering circumcision to 80% of adult men in a one-year period. This is being funded by USAID and was launched in late 2010. The Department is working with the CDC to implement a formal impact assessment study that would measure the changes in HIV incidence and prevalence attributable to the accelerated circumcision programme.

### 8.1.3 Country experiences

The Department co-convened with the WHO HIV/AIDS Department and UNAIDS a “Male circumcision country update” meeting in Arusha, United Republic of Tanzania, in June 2010. The meeting was attended by 117 participants from ministries of health and national AIDS councils from 10 of the priority focus countries, together with representatives from NGOs and associations, researchers, women and youth representatives. In addition, representatives attended from WHO headquarters, regional and country offices, UNAIDS, UNFPA and UNICEF. The meeting was an opportunity for country teams to share progress in developing national policies and programmes, developing pilot training and implementation programmes, as well as for the more advanced countries to report on progress and obstacles to implementation. At the time of the meeting an estimated 175 000 circumcisions had been performed in 11 of the priority countries, with particularly impressive progress in Kenya and Zimbabwe. The Kenya male circumcision programme was well integrated with other HIV-prevention and health programmes and had involved a country-wide rapid response initiative that had focused on provider-initiated and door-to-door HIV testing. A total of 30 077 circumcisions had been performed over a 30-working day period with a low rate of complications and high acceptability. The hurdles encountered in sustaining a programme at such intensity included obtaining parental consent for minors, as well as attracting men in the key 20–29 year age group to the circumcision service. The importance of strong and effective communications around programme scale-up was stressed, and innovations to increase the efficiency of all aspects of the male circumcision services were shared. The meeting provided an opportunity for country teams to share ideas and experiences. Several arrangements for exchange visits between different country teams to learn from each other’s implementation challenges and experiences were consolidated during the meeting.

In 2010 the Department provided technical advice and support to the South African National Department of Health to oversee and advise on implementation of the male circumcision programme in KwaZulu-Natal. This programme had been launched by the Zulu King, Goodwill Zwelithini, in April

2010, who decreed that circumcision be restored among Zulu men, reversing a previous decree by the legendary King Shaka in the early 19th century banning circumcision because his warriors were unfit for battle for several months after traditional circumcision. King Zwelithini insisted that the new programme would be integrated with civic and manhood education processes and ceremonies and the circumcisions would be performed in hygienic conditions under the supervision of trained doctors. The majority of circumcisions would be performed in camps over two to three day periods, using existing civic facilities, such as church and community halls and schools. The King was anxious to avoid the deaths associated with traditional circumcision performed among the Xhosa people in the Eastern Cape Province. Although the KwaZulu-Natal programme appeared well designed and integrated with educational and HIV testing programmes, the programme has courted controversy by adopting the Tara KLamp circumcision device to increase the number of circumcisions performed in a short period. The device has been used for about two thirds of the 12 000 circumcisions performed. However, the Tara KLamp is not included as a recommended method in the WHO/UNAIDS/Jhpiego Technical Manual on Male Circumcision, mainly as a result of its poor performance in an RCT conducted in South Africa in 2004. At the request of the South African Minister of Health, a Male Circumcision Steering Committee was established in August 2010 to advise on the quality and safety of the programme, particularly with regard to the clinical performance of the Tara KLamp under field conditions. A detailed plan for an analysis of complications has been developed and is currently being implemented by the Health Systems Trust in South Africa. Results are expected in early 2011. This may be followed by a more formal investigation into the KwaZulu-Natal circumcision programme and assistance with development and implementation of a comprehensive monitoring and evaluation system, and a quality assurance programme based on the technical tools developed by WHO.

### 8.2 Planned activities

The work to support countries develop and implement male circumcision programmes for HIV prevention will continue in 2011 in partnership with the WHO HIV/AIDS Department and UNAIDS. Specific work to be completed by the Department includes:

- Support research on male circumcision devices, in particular the Shang Ring and PrePex systems, providing technical advice on the research, sponsoring an additional clinical evaluation in Uganda, as well as assessment of device performance in controlled settings.
- Convene an expert group to advise on technical innovations in male circumcision and advise WHO on whether new devices can be recommended for inclusion in national male circumcision programmes.



- Support research into the safety of the Tara KLamp device and support implementation of monitoring and evaluation and quality assurance systems in the Kwa-Zulu-Natal circumcision programme.
- Support research into potential adverse impacts of male circumcision programmes on women's health.
- Participate in research to assess the impact of male circumcision programmes on population level HIV incidence, and operations research to identify ways to improve the cost-effectiveness and efficiency of male circumcision programmes.

## PUBLICATIONS IN 2009–2010

### Peer-reviewed papers

Beksinska M, et al. Bone mineral density in a cohort of adolescents during use of norethisterone enanthate, depot-medroxyprogesterone acetate or combined oral contraceptives and after discontinuation of norethisterone enanthate. *Contraception*, 2009, 79:345–9.

Beksinska ME, et al. Prospective study of weight change in new adolescent users of DMPA, NET-EN, COCs, nonusers and discontinuers of hormonal contraception. *Contraception*, 2010, 81:30–4.

Beksinska ME, et al. Bone mineral density in young women aged 19–24 after 4–5 years of exclusive and mixed use of hormonal contraception. *Contraception*, 2009, 80:128–32.

Beksinska ME, et al. Assessing menopausal status in women aged 40–49 using depot-medroxyprogesterone acetate, norethisterone enanthate or combined oral contraception. *S Afr Med J*, 2011. (in press)

Cames C, et al. A sustainable food support for non-breastfed infants: implementation and acceptability within a WHO mother-to-child HIV transmission prevention trial in Burkina Faso. *Public Health Nutr*, 2010, 13:779–86.

Cames C, et al. Acceptability and feasibility of infant-feeding options: experiences of HIV-infected mothers in the World Health Organization Kesho Bora mother-to-child transmission prevention (PMTCT) trial in Burkina Faso. *Matern Child Nutr*, 2010, 6:253–65.

International Collaboration of Epidemiological Studies of Cervical Cancer. Cervical carcinoma and sexual behaviour: collaborative reanalysis of individual data on 15 461 women with cervical carcinoma and 29 164 women without cervical carcinoma from 21 epidemiological studies. *Cancer Epidemiol Biomarkers Prev*, 2009, 18:1060–9.

Kamb ML, et al. A road map for the global elimination of congenital syphilis. *Obstet Gynecol Int*, 2010. (in press).

Kania D, et al. Low prevalence rate of indeterminate serological human immunodeficiency virus results among pregnant women from Burkina Faso (West Africa). *J Clin Microbiol*, 2010, 48:1333–6.

Kesho Bora Study Group. Triple-antiretroviral prophylaxis during pregnancy and breastfeeding compared to AZT/sdNVP prophylaxis to prevent mother-to-child transmission of HIV-1: the Kesho Bora randomized controlled clinical trial. *Lancet Infect Dis*, 2011. (in press).

Kesho Bora Study Group. Safety and effectiveness of antiretroviral drugs during pregnancy, delivery and breastfeeding for prevention of mother-to-child transmission of HIV-1: The Kesho Bora multicentre collaborative study rationale, design, and implementation challenges. *Contemp Clin Trials*, 2011; 32(1):74–85.

Kesho Bora Study Group. Eighteen-month follow-up of HIV-1-infected mothers and their children enrolled in the Kesho Bora study observational cohorts. *J Acquir Immune Defic Syndr*, 2010, 54:533–41.

Mephram S, et al. Challenges in PMTCT antiretroviral adherence in northern KwaZulu-Natal, South Africa. *AIDS Care*, 2010. (in press).

Rouet F, et al. Comparison of the generic HIV Viral Load assay with the Amplicor HIV-1 Monitor v1.5 and Nuclisens HIV-1 EasyQ v 1.2 techniques for plasma HIV-1 RNA quantitation of non-B subtypes: The Kesho Bora preparatory study. *J Virol Methods*, 2010, 163:253–7.

Schwingsl PJ, Meirik O, Farley, T on behalf of HRP Multicentre Study of Prostate Cancer and Vasectomy. Prostate cancer and vasectomy: a hospital-based case-control study in China, Nepal and the Republic of Korea. *Contraception*, 2009, 79:363–8.

Steiner J, et al. Sino-implant (II) – a levonorgestrel-releasing two-rod implant: systematic review of the randomized controlled trials. *Contraception*, 2010, 81:197–201.

Viljoen J, et al. Dried blood spot HIV-1 RNA quantification using open real-time systems in South Africa and Burkina Faso. *J Acquir Immune Defic Syndr*, 2010, 55:290–8.

### Reports

Stone A. *Regulatory issues in microbicide development*. Geneva, World Health Organization, 2009.

Van der Straten A, Farley T. *Consultation to review manufacturing, clinical and regulatory requirements for male circumcision devices to support programme expansion in high HIV incidence settings in Africa. 11–12 March 2009, Nairobi, Kenya. Meeting Report*. Geneva, World Health Organization. 2009.



World Health Organization, UNAIDS. *Preparing for access to PRO 2000 microbicide: Report of a meeting 27–28 May 2009, London, United Kingdom*. Geneva, World Health Organization. 2009.

World Health Organization. *Framework for Clinical Evaluation of Devices for Adult Male Circumcision*. 2010. Geneva, World Health Organization.

World Health Organization. *Next steps with 1% tenofovir gel. Meeting report. Johannesburg, South Africa 25-26 August 2010*. Geneva, World Health Organization. 2010.

## Policy briefs

WHO. Partner Brief: *Advancing MDGs 4, 5 and 6: impact of congenital syphilis elimination*. Geneva, World Health Organization. 2010.

## Conference presentations

Farley TM and The Kesho Bora Study Group. Impact of triple-antiretroviral (ARV) prophylaxis during pregnancy and breastfeeding compared with short-ARV prophylaxis to prevent mother-to-child transmission of HIV-1 (MTCT) on maternal disease progression: the Kesho Bora randomized controlled trial in Burkina Faso (Bobo-Dioulasso), Kenya (Mombasa, Nairobi) and South Africa (Durban, Somkhele). Trial registration number ISRCTN71468401. XVIII International AIDS Conference, Vienna, Austria, 18–23 July 2010.

Kesho Bora Study Group. Triple-antiretroviral prophylaxis during pregnancy and breastfeeding compared to short-ARV prophylaxis to prevent mother-to-child transmission of HIV-1: the Kesho Bora randomized controlled clinical trial in five sites in Burkina Faso, Kenya and South Africa. Trial registration number ISRCTN71468401. 5th IAS Conference on HIV Pathogenesis, Treatment and Prevention, Cape Town, South Africa; 19–22 July 2009.

## Conference posters

Gampini SE, et al. Early diagnosis of paediatric HIV-1 infection among West-African breast-fed children using dried blood spots and a quantitative HIV-1 RNA assay. Abstract WEPEB264. 5th IAS Conference on HIV Pathogenesis, Treatment and Prevention, Cape Town, South Africa, 19–22 July 2009.

Hankins C, et al. Making decisions about male circumcision service scale-up: what are the programming options? Abstract CDC0599. XVIII International AIDS Conference, Vienna, Austria. 18–23 July 2010.

Kahn J. Facilitating HPV vaccination program implementation through a global, on-line network. Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Boston, MA, USA, 12–15 September 2010.

Njeuhmeli E, et al. Cost and impact of expanding male circumcision services in Eastern and Southern Africa. Abstract MOPE0343. XVIII International AIDS Conference, Vienna, Austria, 18–23 July 2010.

## Guidelines and tools

*Prevalence and incidence of selected sexually transmitted infections. Chlamydia, Neisseria gonorrhoeae, syphilis and Trichomonas vaginalis*. Geneva, World Health Organization, 2010.

## Chapter 4

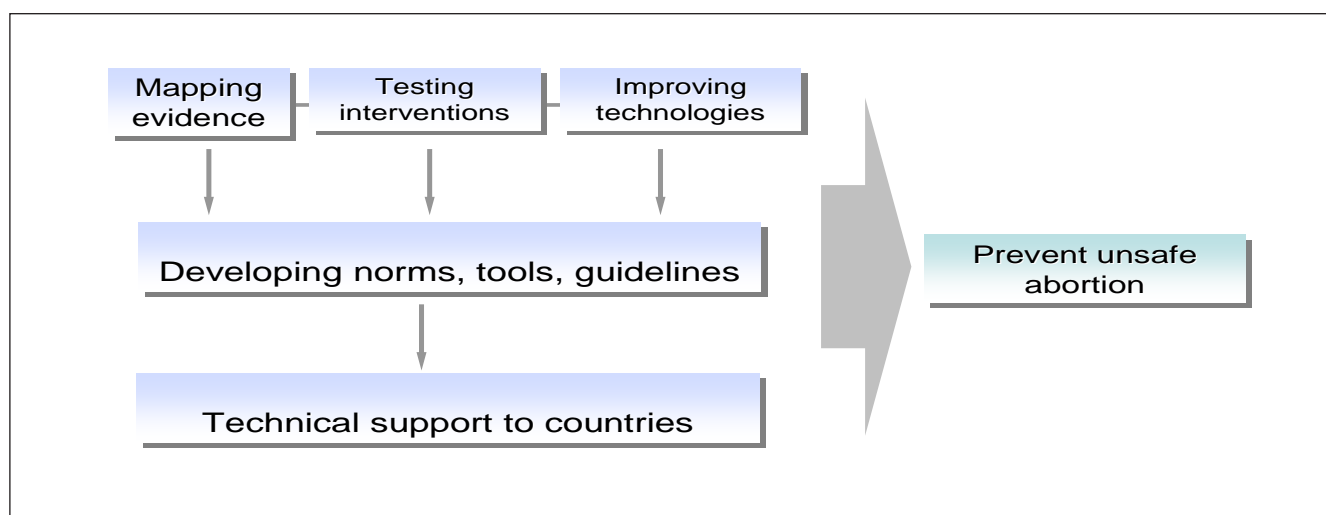
# Preventing unsafe abortion

### 1. INTRODUCTION

Preventing unsafe abortion continues to be a major public health challenge. Each year, millions of unsafe abortions take place despite the high prevalence of contraception and the existence of safe and effective methods of abortion. In 2008, an estimated 21.6 million unsafe abortions occurred globally, resulting in the deaths of 47 000 women worldwide. In addition, 5 million women are estimated to suffer permanent or temporary disability due to complications from unsafe abortion every year. 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 abortion ranges from US\$ 677 million to US\$ 1 billion each year. Africa sustains 42% of the total global cost.

HRP's work on preventing unsafe abortion responds to the recommendations made in WHO's first Global Strategy on Reproductive Health, adopted by the 57th World Health Assembly in May 2004 and to those in the International Conference on Population and Development (ICPD) Programme of Action. The overall strategy for this integrated programme of work (Figure 1) is to map and to generate scientifically sound evidence on the prevalence of unsafe abortion and its related morbidity and mortality; to improve technologies and interventions to make abortion safer; to translate the available research evidence into norms, tools and guidelines; and to assist countries in the development of programmes and policies that reduce unsafe abortion and improve access to safe abortion and quality postabortion care. This work forms an integral part of WHO's efforts to improve reproductive health and to reduce maternal morbidity and mortality.

Figure 1. Preventing unsafe abortion: mission and activities of HRP.



## 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

Preventing unsafe abortion contributes to WHO's Medium-term SO4 "To reduce morbidity and mortality and improve health during key stages of life, including pregnancy, childbirth, the neonatal period, childhood and adolescence, and improve sexual and reproductive health and promote active and healthy ageing for all individuals". Within this objective, the work contributes to OWER 4.2 "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". The work on the development of norms, tools and guidelines contributes to OWER 4.7 "Guidelines, approaches and tools made available, with provision of technical support to Member States for accelerated action towards implementing the strategy to accelerate progress towards the attainment of international development goals and targets related to reproductive health, with particular emphasis on ensuring equitable access to good/quality sexual and reproductive health services, particularly in areas of unmet need, and with respect for human rights as they relate to sexual and reproductive health".

The work also contributes to meeting WHO's SO6 "To promote health and development, and prevent or reduce risk factors for health conditions associated with use of tobacco, alcohol, drugs and other psychoactive substances, unhealthy diets, physical inactivity and unsafe sex". More specifically, it deals with the consequences of unsafe sex as outlined in OWER 6.6 "Evidence-based and ethical policies, strategies, interventions, recommendations, standards and guidelines developed and technical support provided to Member States to promote safer sex and strengthen institutions in order to tackle and manage the social and individual consequences of unsafe sex".

## 3. MAPPING AND GENERATING THE EVIDENCE

HRP continued in 2009–2010 to play a unique role in mapping and generating the evidence on issues related to the prevention of unsafe abortion.

### 3.1 Progress

#### 3.1.1 *Unsafe abortion and mortality due to unsafe abortion*

A major effort was undertaken to map the evidence on the incidence of unsafe abortion and related mortality. The resultant database now includes the largest number of studies (over 4000) compared with the database for the previous five updates. New estimates of unsafe abortion and related mortality were developed and the Update (6th) was submitted

to the Assistant Director-General (ADG) for the WHO Family and Community Health Cluster (FCH) for clearance to publish.

According to the latest estimates, 21.6 million unsafe abortions took place worldwide in 2008, almost all in developing countries. Table 1 summarizes the estimated unsafe abortion numbers, rates and ratios by geographical region, as defined by the United Nations Population Division (UNPD). Worldwide, in 2008, the estimated annual number of unsafe abortions had increased by about two million from the estimate of 19.7 million in 2003; this is due to the increasing number of women of reproductive age globally. Unsafe abortion rates were significantly higher in the least developed countries and in sub-Saharan Africa (27 and 31 per 1000 women aged 15–44 years, respectively) than the average for all less developed regions (16 per 1000 women aged 15–44 years). Unsafe abortion ratios were, however, relatively low (18 and 17 per 100 live births, in least developed countries and sub-Saharan Africa, respectively). When fertility is high and there are large numbers of births, as is the case for Eastern, Middle and Western Africa, the abortion ratios are lower despite the high numbers of abortions because the denominator of births for computing the ratio is large. The opposite holds for regions with low fertility and fewer births, as noted for Latin America and South-Eastern Asia.

Little progress has been made over the past two decades in reducing the rate of unsafe abortion, except in South America and Oceania and in (Eastern) Europe (Figure 2). In Middle Africa, the unsafe abortion rate increased significantly in recent years, primarily due to better coverage and reporting. A modest increase was also noted for Eastern and Northern Africa. Better reporting and coverage for the more recent update mask genuine trends in abortion rates and ratios.

Maternal mortality due to unsafe abortion continues to be high, resulting in an estimated 47 000 deaths in 2008. This estimate is lower than the previous estimates due to the new overall maternal mortality estimate of 360 000 maternal deaths for recent periods. Unsafe abortion-related maternal deaths correspond to 13% of all maternal deaths globally.

The ratio of unsafe abortion maternal deaths per 100 000 live births is 30 per 100 000 live births globally and 40 per 100 000 for developing countries. At 80 per 100 000 live births the risk associated with unsafe abortion for the least developed countries is twice that of less developed countries. The figure for sub-Saharan Africa is even higher at 90 per 100 000 which include Eastern and Middle Africa at 100 per 100 000, while in Western Africa the ratio is 80 per 100 000 live births (Figure 3).

Northern and Southern Africa show moderate risks of 30 and 40 per 100 000 live births similar to Asia which ranges between 10 and 30 per 100 000. Despite large numbers of unsafe abortions, the risk of death associated with unsafe

Table 1. Estimated annual number of unsafe abortions, rates and ratios, by geographical region, 2008

	Number of unsafe abortions (rounded)	Unsafe abortion rate (per 1000 women aged 15–44 years)	Unsafe abortion ratio (per 100 live births)
<b>World</b>	<b>21 600 000</b>	<b>14</b>	<b>16</b>
More developed regions <sup>a</sup>	360 000	1	3
Less developed regions	21 200 000	16	17
Least developed countries	4 990 000	27	18
Sub-Saharan Africa	5 510 000	31	17
<i>Africa</i>	6 190 000	28	17
Eastern Africa	2 430 000	36	20
Middle Africa	930 000	36	18
Northern Africa	900 000	18	18
Southern Africa	120 000	9	10
Western Africa	1 810 000	28	16
<i>Asia*</i>	10 780 000	11	14
Eastern Asia <sup>a</sup>	b	b	b
South-Central Asia	6 820 000	17	17
South-Eastern Asia	3 130 000	22	28
Western Asia	830 000	16	16
<i>Europe</i>	360 000	2	5
Eastern Europe	360 000	5	12
Northern Europe	b	b	b
Southern Europe	b	b	b
Western Europe	b	b	b
<i>Latin America and the Caribbean</i>	4 230 000	31	39
Caribbean	170 000	18	22
Central America	1 070 000	29	34
South America	2 990 000	32	43
<i>Northern America</i>	b	b	b
<i>Oceania<sup>a</sup></i>	18 000	8	7
Australia/New Zealand	b	b	b

Note: Figures may not add up to totals because of rounding.

<sup>a</sup> Japan, Australia and New Zealand have been excluded from their region's estimates, but are included in the total for developed countries.

<sup>b</sup> No estimates are shown for regions where the incidence of unsafe abortion is negligible.

abortion is low at an average of 10 per 100 000 live births in Latin America. This is closer to developed countries estimate and may be due to a high, and apparently increasing, reliance on medical abortions and a relatively well developed infrastructure for health.

Additional analysis of the data shows that unsafe abortion maternal mortality ratio and case-fatality rates of unsafe abortion have declined, suggesting an increasing use of less risky methods of unsafe abortion. Nevertheless, many women continue to die needlessly when mortality due to unsafe abortion can be eliminated entirely with the use of safe and effective methods of contraception and abortion. The progress in reducing unsafe abortion deaths was the

least in sub-Saharan Africa, the region with the highest risk of maternal deaths due to unsafe abortion.

### 3.1.2 Perspectives on safe abortion

A session was jointly organized with the Guttmacher Institute at the Women Deliver Conference, held in June 2010 in Washington, DC, USA. The session was well attended and included four presentations: (1) Levels and trends in unsafe abortion (Elisabeth Åhman); (2) Mortality and morbidity due to unsafe abortion (Fatima Juarez); (3) Preventing unsafe abortion: policy and program response (Sharon Camp); and (4) Unsafe abortion, maternal mortality and MDG 5: the way forward (Rebecca Cook).



Figure 2. Estimated annual number of unsafe abortions per 1000 women aged 15–44 years, 1990 and 2008, by subregion.

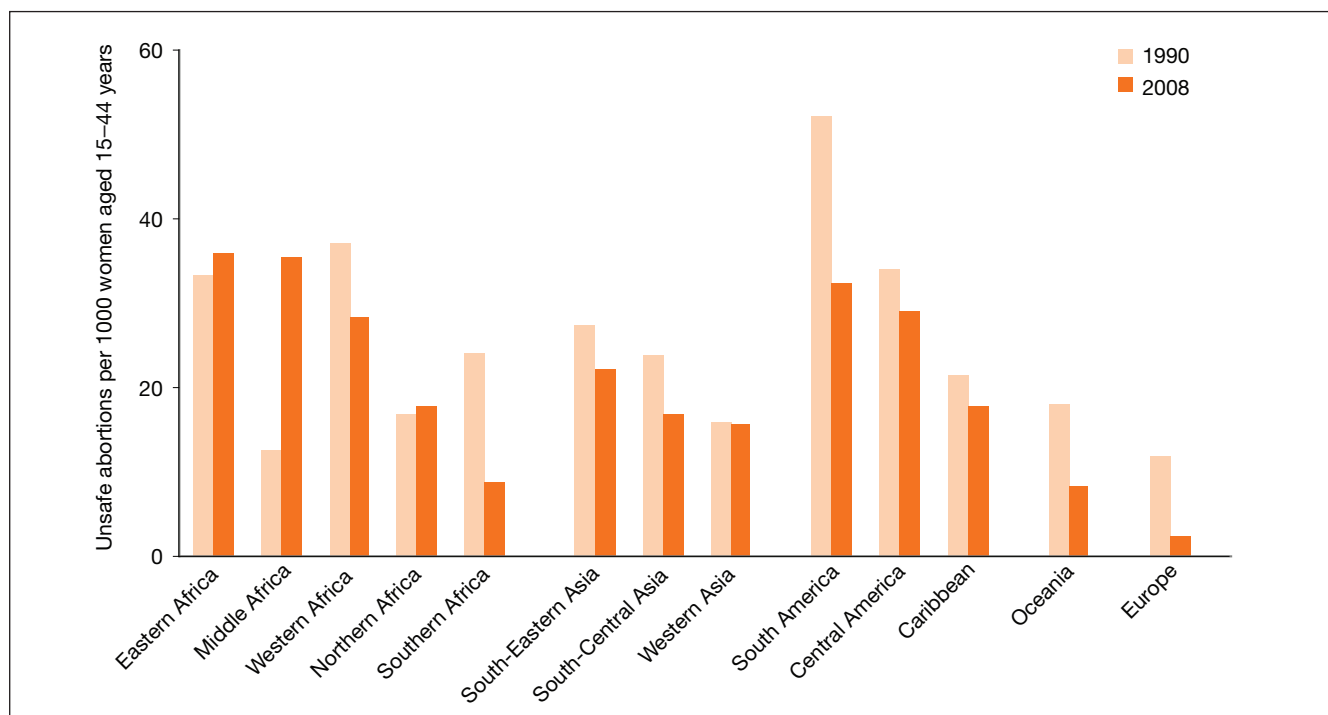
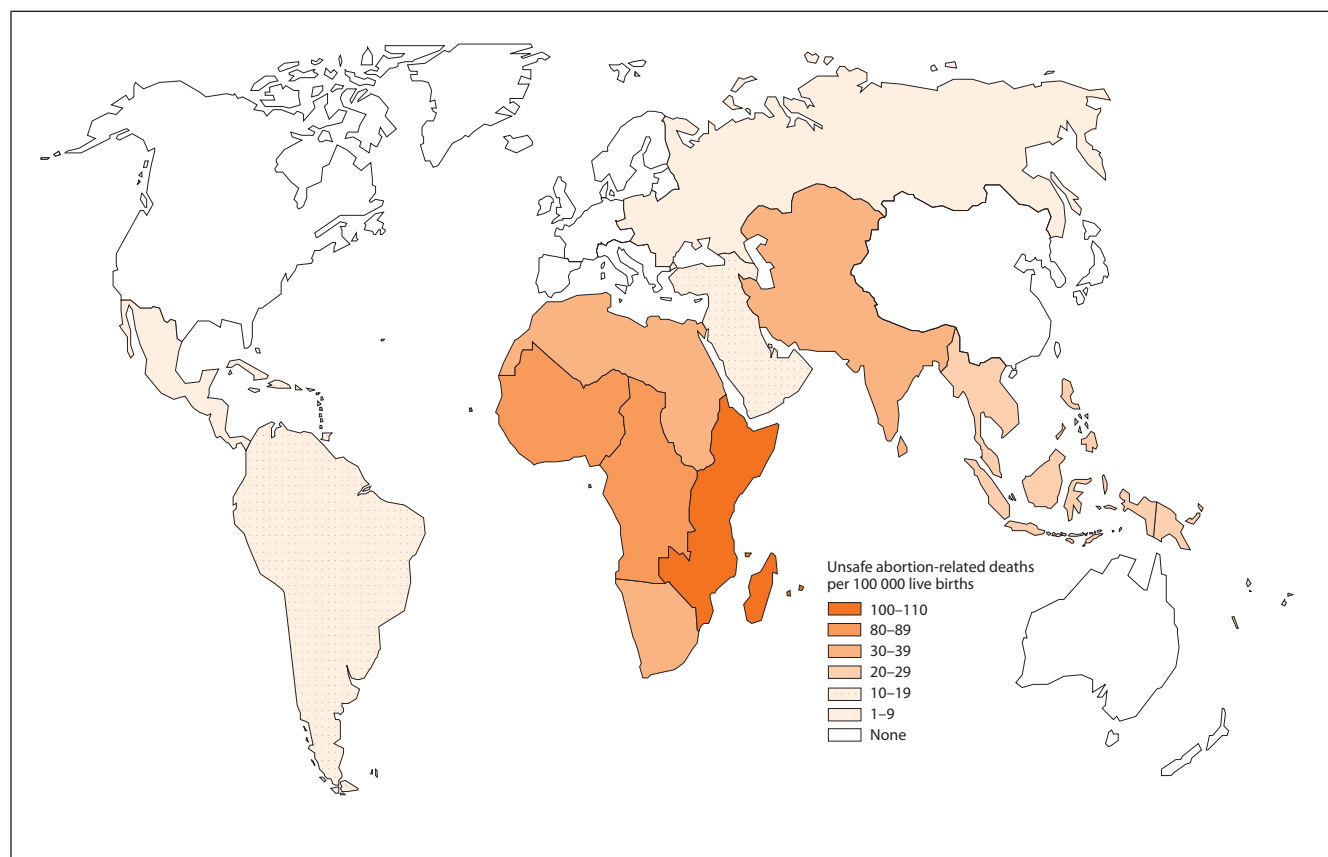


Figure 3. Estimated annual number of maternal deaths due to unsafe abortion per 100 000 live births, by subregion, 2008.



### 3.1.3 Providers' and women's perspectives on safe abortion

A number of studies were completed and provided new insights in countries with restrictive or liberal abortion laws. In Jamaica where abortion is legally permitted only to save the woman's life or to preserve her physical or mental health, a study explored the opinions and attitudes of 284 general practitioners (GPs) and 52 obstetricians and gynaecologists working in Kingston. Approximately, 43% of GPs and 63% of obstetricians and gynaecologists knew that abortions were legally restricted in Jamaica. About 52% of GPs and 45% of obstetricians and gynaecologists felt that abortions should be allowed in case of contraceptive failure and 84% of GPs and 67% of obstetricians and gynaecologists considered rape as legally permissible ground for abortion. Over 30% of providers indicated that 16–18 years old adolescents can be provided abortion care without parental consent. A majority of the providers had no moral objections to providing an abortion.

Nearly all of the providers (over 97%) reported being requested for abortion by their clients. A majority of providers (69% of GPs and 79% of obstetricians and gynaecologists) considered that the availability of induced abortion would not encourage risk-taking behaviour. A majority of the providers (over 75%) also agreed that a greater availability of induced abortion would lead to a reduction in maternal mortality. These findings are timely and inform the policy-making process currently ongoing in Jamaica. The Jamaican Government is considering changing the laws pertaining to who could provide an abortion. The Government is also planning to provide training to providers in abortion technologies.

A cross-sectional survey was conducted among 1493 judges and 2614 prosecutors in Brazil to ascertain their opinion on abortion issues. Participants completed a structured questionnaire with questions on background characteristics of the respondent and their opinions about abortion law and circumstances in which abortion is considered lawful. In Brazil, abortion is legally permitted only to save the woman's life and in case of rape or incest. The majority of participants (78%) noted that the circumstances in which abortion is considered lawful should be broadened, and abortion should not be criminalized. The percentages of those supporting abortion for the following grounds were high: risk to the life of the mother (84%), anencephaly (83%), severe congenital malformation of fetus (82%), and pregnancy resulting from rape (82%). The authors conclude that the study highlighted the need for changing the current abortion law in Brazil to widen the circumstances in which abortion is considered lawful and to decriminalize abortion, regardless of the circumstances in which it takes place.

In South Africa, where abortion is permitted on request, in-depth interviews were conducted with 24 HIV-positive women

in Cape Town. Negative community perceptions towards HIV-positive pregnant women were reported. HIV-positive women decided for abortion due to socioeconomic hardship in conjunction with their HIV-positive status. Respondents were generally aware that women in South Africa had a right to free abortions in public health facilities, and reported no discrimination by abortion providers due to their HIV-positive status. Most respondents reported not using contraceptives, while describing their pregnancies as "unexpected". The majority of women who had abortions wanted to avoid another one, and would encourage other HIV-positive women to try to avoid abortion. However, most felt abortions were acceptable for HIV-positive women in some circumstances. Study results indicated the need for a number of interventions, including counselling for abortion and HIV/AIDS care.

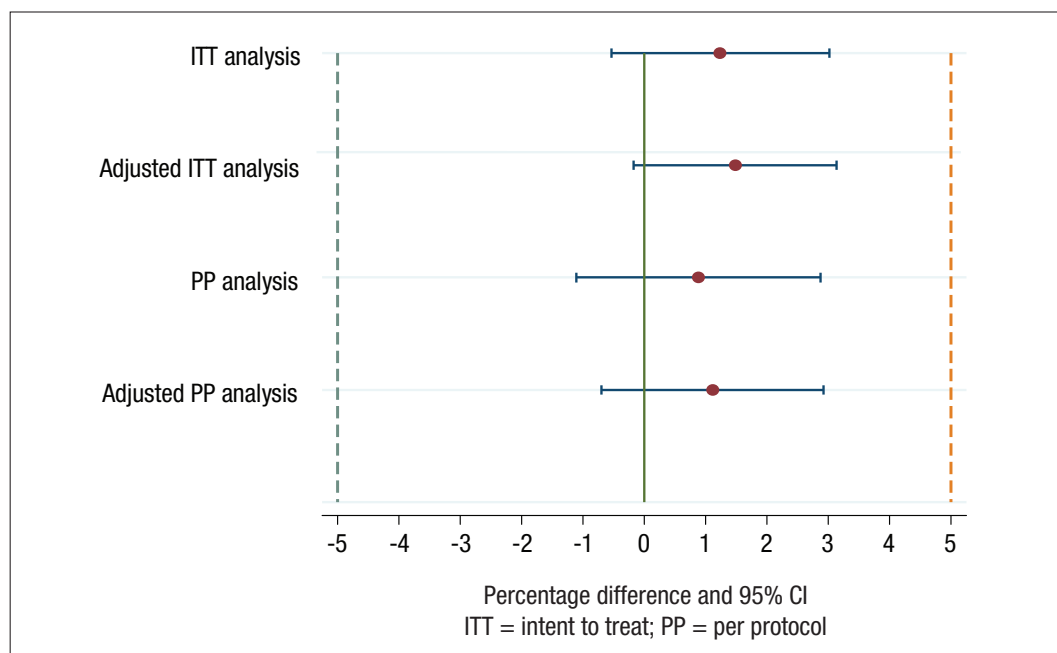
### 3.1.4 Expanding access to safe abortion

The Social Science and Operations Research Initiative on Expanding Access to Medical Abortion was launched in late 2007. Thirteen studies supported under this initiative are nearing completion and five new studies have been approved for funding. The first wave of studies, all of which will be completed in 2011, will provide information on user and provider perspectives and practices as well as insights into increasing postabortion family planning uptake. The new wave of studies focus on intervention research and include looking at the feasibility of providing follow-up support and information to women, using mobile phones; introducing menstrual regulation with medical abortion in primary care settings; and testing the feasibility of using community workers as referral and information sources.

The landmark study in Nepal comparing midlevel health-care providers to physicians, in providing medical abortion services, was completed: a national dissemination meeting was held in September 2010 and the results are in press. This randomized control two-sided equivalence trial compared medical abortion service provision by physician-led teams with service provided by staff nurses and auxiliary nurse midwives (ANMs). Between April 2009 and March 2010, 1104 women seeking early (<63 days pregnancy duration) abortion services were randomized to receive medical abortion services from doctors or nurses and ANMs. Women in each group were comparable in terms of their background characteristics. Results showed that the complete abortion rates for newly trained doctors (96%) and for nurses/ANMs (97%) were nearly the same and the confidence interval of the difference fell within the equivalence range (–5%, 5%) as shown in Figure 4.

There were no transfusions, no complications requiring hospitalization and no ectopic pregnancies. Ultrasound was rarely used and pregnancy tests were not done routinely to confirm pregnancy.

Figure 4. Percentage difference and 95%CI of complete abortion by staff nurses/ ANMs compared with doctors.



The study demonstrated that nurses and also ANMs (who are auxiliary staff and receive only 18 months formal training) can provide medical abortion services to virtually all women independently from doctor oversight.

### 3.2 Planned activities

- Analysis, collation, synthesis and dissemination of the first phase of studies under the Social Science and Operations Research Initiative to Expand Access to Medical Abortion.
- A global consultation on the role of midlevel health care providers in early abortion care.
- Multisite studies looking at expanding access to medical abortion (e.g. feasibility of providing services without a mandatory follow-up visit; strategies to improve post medical abortion contraception uptake etc.).

## 4. IMPROVING TECHNOLOGIES FOR SAFE ABORTION

Improving abortion technologies and expanding the choice of safe and effective methods of abortion are critical in reducing the incidence of unsafe abortion. HRP's clinical research is directed at simplifying and improving regimens for medical abortion (including regimens using only misoprostol) during both first and second trimesters of pregnancy, assessing the role of preoperative cervical preparation and improving regimens of pain management during the abortion process.

### 4.1 Progress

#### 4.1.1 Investigation of the sequential regimen (mifepristone followed by misoprostol) for first-trimester abortion

As a lower dose of mifepristone would reduce the cost of medical abortion, and a shorter interval between mifepristone and misoprostol might be more practical and acceptable to women and providers, a randomized multicentre trial was carried out to investigate whether: (1) the dose of mifepristone could be lowered from 200 mg to 100 mg; and (2) whether the interval between mifepristone and misoprostol could be shortened from 48 hours to 24 hours without compromising the efficacy when a 800 µg dose of misoprostol is 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). The results from the randomized trial included efficacy outcomes for 2126 women, excluding 55 women who were lost to follow-up. Complete abortion rate in early pregnancy (up to 63 days) was between 91.7% and 93.5% without statistically significant differences between any of the four arms of the study. Adverse effects related to treatments did not differ between the four groups. The study concluded that both the 100 mg and 200 mg doses of mifepristone and the 24- and 48-hour intervals have similar efficacy to achieve complete abortion in early pregnancy when mifepristone is followed by 800 µg of vaginally administered misoprostol. The manuscript covering the main findings was published in the *British Journal of Obstetrics & Gynaecology*.

### 4.1.2 Investigating the dose of misoprostol for second-trimester abortion

Misoprostol-alone regimens are less effective than combined regimens using mifepristone; however, in countries where mifepristone is not available and where surgical techniques are not utilized, the misoprostol-alone regimen offers a safe alternative to instillation techniques for abortions in the second trimester. 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 in 11 centres in seven countries (Armenia, Georgia, Hungary, India, Slovenia, South Africa and Viet Nam) were randomly assigned to two treatment groups: 400 µg of misoprostol administered either sublingually or vaginally every 3 hours for up to five doses, followed by sublingual administration of 400 µg misoprostol every 3 hours up to five doses if abortion had not occurred 24 hours after the start of the 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; the abortion interval; side-effects; and women's perceptions of these treatments were secondary outcomes.

The trial did not demonstrate equivalence between vaginal and sublingual administration; vaginal administration showed higher effectiveness than sublingual administration in terminating second-trimester pregnancies (85.9% versus 79.8% at 24 hours, 95% CI: 0.5–11.8). Fever was more prevalent among women who received vaginal misoprostol than among those who received sublingual misoprostol, while the rates of other side-effects were similar between the treatment groups. The results were published in *Human Reproduction*.

### 4.1.3 Cervical preparation using misoprostol prior to surgical abortion in the first trimester

A crucial component of the vacuum aspiration surgery is dilation of the cervical canal. Too little dilation makes emptying of the uterine cavity difficult and can lead to incomplete evacuation with subsequent re-evacuation, bleeding, and pelvic infections, while too much dilation can produce cervical tears. While the direct effect of misoprostol on softening of the cervix has been well documented, no studies have been large enough to assess whether cervical preparation with misoprostol is associated with reduced rate of immediate and delayed complications of surgical first-trimester vacuum aspiration abortion.

HRP therefore undertook a multicentre, randomized, placebo-controlled trial of pretreatment with 400 µg vaginal misoprostol three hours prior to surgical abortion in the first trimester, which took place in 14 departments of obstetrics and gynaecology in nine countries: Yerevan, Armenia; Bei-

jing and Shanghai, China; Havana (two hospitals), Cuba; Szeged, Hungary; Mumbai and New Delhi, India; Ulaanbaatar, Mongolia; Cluj Napoca, Romania; Ljubljana, Slovenia; and Hanoi (two hospitals) and Ho Chi Minh City, Viet Nam. The primary outcome was the occurrence of complications, and additional outcome variables included whether or not extra mechanical cervical dilation was needed at the time of surgical abortion and, if extra dilation was needed, the amount in millimetres of mechanical cervical dilation.

A total of 4972 women were enrolled in the study and randomly assigned to one of the two treatment groups. The mean intervals between the administration of the treatment and vacuum aspiration were the same in both groups (mean 3.3 hours with a standard deviation of 0.5 hour). In this interval, complaints of abdominal pain were more frequent in women treated with misoprostol than in placebo-treated women, 54.6% and 21.9% respectively ( $p=0.011$ ), and 36.6% and 6.7% of those treated with misoprostol and placebo had bleeding or spotting, respectively. The baseline cervical dilation was 7.0 mm and 5.9 mm in misoprostol and placebo-treated women, respectively ( $p<0.001$ ). Fewer misoprostol treated women required additional mechanical dilatation than placebo-treated women.

Cervical tears, uterine perforations and pelvic inflammatory disease occurred rarely, with no difference between misoprostol and placebo-treated women. The overall rate of re-evacuation of the uterus was lower in women treated with misoprostol (0.78%) than in placebo-treated women (2.26%, relative risk 0.35 (95% CI 0.21, 0.58)), this difference was more pronounced in parous (0.74% and 2.65%, respectively) than in nulliparous women (0.84% and 1.78%, respectively). A manuscript reporting these results is under preparation for publication, which is anticipated in 2011.

## 4.2 Planned activities

Assessment of acceptability of misoprostol-only at three discrete time points during the abortion process among 3300 women enrolled at six centres in Armenia, Georgia, India and Viet Nam will be undertaken. Analysis of the data using logistic regression to identify predictors of acceptability is planned, as is publication of the study results.

Two double-blinded, placebo-controlled randomized clinical trials comparing two strategies of pain management among women having early medical abortion are planned to start enrolment in 2011. The medical abortion method used in the two protocols is either the combination of mifepristone with misoprostol or misoprostol alone. The primary objective of the studies is to determine whether prophylactic administration of ibuprofen is superior to administration after pain begins during the medical abortion process in terms of reducing maximal reported pain levels.



## 5. NORMS, TOOLS AND GUIDELINES

### 5.1 Progress

#### 5.1.1 Guidelines for safe abortion

When published by RHR in 2003, the document *Safe abortion: technical and policy guidance for health systems* was the first recognized global guidance for abortion-related care and policy issues. Since that time, it has been translated into French, Russian, Spanish and various non-official UN languages and has been widely used by governments, NGOs, women's health service providers, and women's health and human rights advocates.

Since publication of the guidelines in 2003, a considerable amount of new data have been produced and published, relating to clinical, service delivery, legal and human rights aspects of providing safe abortion care. Therefore, preparation for the revision of the guidelines included extensive review of new evidence, including the conduct of several new systematic reviews and updates of outdated systematic reviews. Substantial revisions were needed to reflect changes in methods of abortion and related care; service delivery as it applies to the availability and use of new methods; and application of a human rights framework for policy-making and legislation related to abortion, among other topics. Recommendations in the 2003 guidelines for which there was no new evidence remain unchanged.

Updating the global guidance on safe abortion care included formulating recommendations for clinical care and related technical and policy guidance for health systems by applying the WHO standards for guideline development. These standards include: identification of priority questions and outcomes; evidence retrieval, assessment and synthesis of evidence; formulation of recommendations; and planning for dissemination, implementation, impact evaluation and updating. Evidence profiles related to the selected topics were prepared based upon recent systematic reviews, most of which were published in the Cochrane Database of Systematic Reviews and the remaining reviews are being published in peer-reviewed medical journals. Chapters 1, 4 and parts of Chapter 3 were updated to reflect the latest estimates on abortion worldwide and international, regional and national human rights law. Issues related to guideline dissemination, adaptation and implementation, including the anticipated impact on the organization of care and monitoring and evaluation of the guideline implementation are also addressed in Chapter 3.

An international panel of experts in abortion care and research, epidemiologists, human rights lawyers, women's health and rights advocates, and users of the 2003 guidance participated in a technical consultation held in Geneva in August, 2010 for the purpose of formulating recommendations based on the evidence profiles through a participatory,

consensus-driven process. The revised guidance resulting from the technical consultation is undergoing internal and external review and publication is anticipated in 2011.

In a parallel process, a companion document to these guidelines, *Clinical practice guidelines for safe abortion care*, was developed to reflect the recommendations for clinical abortion care with additional information on the details of its provision for providers of abortion services. In collaboration with the International Planned Parenthood Federation (IPPF), this guide is currently undergoing field-testing in Ethiopia and Nepal.

### 5.2 Planned activities

- Publication and active dissemination of *Safe abortion technical and policy guidance for health systems* and *Clinical practice guidelines for safe abortion care*.
- Introduction and dissemination of the guidelines through two subregional workshops, with five countries participating in each one.
- Development of an evaluation tool that will be used at regional level to collect information on the use and implementation of the abortion guidelines in countries following their active dissemination.
- Development of WHO guidelines compiling the evidence-based recommendations on the use of misoprostol for various indications.
- Publication of a brief that summarizes the WHO recommendations from the safe abortion guidelines.

## TECHNICAL SUPPORT TO COUNTRIES

During 2009–2010, technical support was provided to four countries – Guinea, Malawi, the Russian Federation and Senegal – to assess the issues related to the prevention of unsafe abortion. Details of this work, including planned activities are provided in the Report on Technical cooperation with countries: Policy and Programmatic Issues (Chapter 11).

## PUBLICATIONS IN 2009–2010

## Peer-reviewed papers

Ahman E, Shah I. Generating National Unsafe Abortion Estimates: Challenges and Choices. In: *Methodologies for estimating abortion incidence and abortion-related morbidity: a Review* 2010. Edited by Singh S, Remez L and Tartaglione A. New York: Guttmacher Institute, International Union for the Scientific Study of Population (IUSSP), 2010:13–22.

Ahman E, Shah I. Contraceptive use, fertility, and unsafe abortion in developing countries. *Eur J Contracept Reprod Health Care*, 2010,15(2):77–82.

Borgatta L, Kapp N. Medical abortion in the second trimester: Society for Family Planning Guidelines. *Contraception*. (in press)

Carr Ellis S, et al. Randomized trial of buccal versus vaginal misoprostol for induction of second trimester abortion. *Contraception*, 2010, 81(5):441–5.

Duarte GA, et al. Aborto e legislação: opinião de magistrados e promotores de justiça brasileiros: Brazilian abortion law: the opinion of judges and prosecutors. *Rev Saude Publica*, 2010, 44(3):1–15.

Gan Kang, et al. Perspectives of Chinese providers on medical abortion. *Journal of International Obstetrics and Gynecology*, 2011. (in press)

Grossman D, Grindlay K. Alternatives to ultrasound for follow-up after medical abortion: a systematic review. *Contraception*, 2011, 83 (6), 504–10 [Epub 2010]

Jackson E, Kapp N. Pain control in first and second trimester medical termination of pregnancy: A systematic review. *Contraception*, 2011, 83(2):116–26

Kapp N, et al. Cervical preparation for first trimester surgical abortion. *Cochrane Database Syst Rev*, 2010, 17(2):CD007207.

Kulier R, Kapp N. Comprehensive analysis of the use of pre-procedure ultrasound for first and second-trimester abortion. *Contraception*, 2011, 83(1):30–3.

Kulier R, et al. Medical methods for first trimester abortion. *Cochrane Database Syst Rev*, 2011. (in press)

Low N, et al. Antibiotic prophylaxis for medical and surgical first-trimester induced abortion. *Cochrane Database Syst Rev*. (in press)

Orner P, et al. A qualitative exploration of HIV-positive pregnant women's decision-making regarding abortion in Cape Town, South Africa. *SAHARA J*, 2010, 7(2):44–51.

Qunxia Mao, et al. Analysis of influencing factors of providers' perspectives on medical abortion in Shenzhen, China. *Asia-Pacific Journal of Public Health*, 2011. (in press)

Ren Shanshan, et al. A qualitative study on providers' perspectives on medical abortion in rural China. (submitted)

Romero M, Zamberlin N, Gianni MC. La calidad de la atención posaborto: un desafío para la salud pública y los derechos humanos (Quality of post-abortion care: a public health and human rights challenge). *Salud Colectiva*, 2010, 6(1):21–35.

Shah I, Ahman E. Unsafe abortion: global and regional incidence, trends, consequences and challenges. *J Obstet Gynaecol Can*, 2009, 31(12):1149–58.

Shah I, Ahman E. Unsafe abortion in 2008: global and regional levels and trends. *Reprod Health Matters*, 2010 18(36):90–101.

Shah I, Ahman E. Unsafe Abortion Mortality: New Estimates and Trends. *BJOG*. (in press)

Steenland M, et al. Intrauterine contraceptive insertion post-abortion: a systematic review. *Contraception*. (in press)

Thapa S, Malla K, Basnett I. Safe abortion services in Nepal: initial years of availability and utilization. *World Health Pop*, 2010, 11(3):55–68.

von Hertzen H, et al. Misoprostol dose and route after mifepristone for early medical abortion: a randomized controlled non-inferiority trial. *BJOG*, 2010, 117(10):1186–96.

Warriner IK, et al. Can midlevel health care providers administer medical abortion as safely and effectively as doctors: results from a randomised controlled equivalence trial in Nepal. *Lancet*. (in press)

Wildschut H, et al. Medical methods for mid-trimester termination of pregnancy. *Cochrane Database Syst Rev*, 2011, CD005216. (in press)

## Policy briefs

What health-care providers say on providing abortion care in Cape Town, South Africa: findings from a qualitative study, Department of Reproductive Health and Research, World Health Organization, Geneva, 2010.

## Conference presentations

Ahman E, Shah I. Unsafe abortion mortality: new estimates and trends. IUSSP Seminar on the Health, Social and Economic Consequences of Unsafe Abortion. San Juan del Rio, Mexico, 9–13 November 2010.

Ahman E. Unsafe abortion: the persistence of a public health challenge. Women Deliver Conference. Washington DC, USA, 7–9 June 2010.

Ganatra B. Updating the Guidelines: Safe Abortion Technical and Policy Guidance for Health Systems. FIGO regional meeting on unsafe abortion. Cairo, Egypt, 21–22 October 2010.

Kapp N. Infection following medical abortion. National Abortion Federation. Denver, CO, USA. 17–20 October 2009.

Kapp N. Medical abortion in the second trimester. Gynuity's 11th Annual Mifepristone Medical Abortion Meeting. New York City, NY, USA, 8–9 June 2009.

Kapp N. Medical versus surgical abortion in the second trimester. National Abortion Federation, Annual meeting. Portland, OR, USA, 24–29 April 2009.

Kapp N. Hormonal contraceptive use among breastfeeding women. US Medical Eligibility Criteria for Contraceptive Use, Centers for Disease Control and Prevention. Atlanta, GA, USA, 16–19 February 2009.

Kapp N. Updating the WHO Guidelines: Safe Abortion: Technical and Policy Guidance for Health Systems. Field-testing workshop for the Clinical Guidelines for safe abortion care. Addis Ababa, Ethiopia, 4–7 December 2010 and Kathmandu, Nepal, 8–11 December 2010.

Kapp N. Background: Technical Consultation for the Guidelines for Safe Abortion. Technical Consultation for the WHO Guidelines for Safe Abortion. Geneva, Switzerland, 9–12 August 2010.

Kapp N. Post-doctoral position on the Preventing Unsafe Abortion team at WHO. Fellowship in Family Planning Annual Meeting. San Francisco, USA, 14–17 May 2010.

Kapp N. Best practice in medical abortion: current evidence. International Consortium for Medical Abortion (ICMA). Lisbon, Portugal, 1–5 March 2010.

Kapp N. Update on research on medical abortion in first and second trimester abortion. National dissemination meeting: New information about medical abortion. Ho Chi Minh City, Viet Nam, 19–25 March 2010.

Kapp N. Unsafe abortion: what has changed. First International Congress of Women's Health and Unsafe Abortion. Bangkok, Thailand, 19–24 January 2010.

Shah I. Can community-based health workers safely and effectively administer injectable contraceptives? Conclusions from a Technical Consultation jointly convened by WHO, USAID and FHI. Capetown, South Africa, 4–9 October 2009.

Shah I. Socio-behavioural and operational research in maternal and neonatal health/reproductive health to guide effective programming. Bi-regional consultation on the application of socio-cultural approaches to accelerate the achievement of MDGs 4 and 5. Bali, Indonesia, 9–13 August 2009.

Shah I. Socio-cultural context of maternal and neonatal health: Evidence on reaching the underserved. Bi-regional consultation on the application of socio-cultural approaches to accelerate the achievement of MDGs4 and 5. Bali, Indonesia, 9–13 August 2009.

Shah I. Preventing unsafe abortion: a global and regional challenge. Executive meeting and networking for prevention of unsafe abortion. Chiangrai, Thailand, 12–14 December 2010.

Shah I. Preventing unsafe abortion: a challenge in meeting MDG5 in Asia. First Asia Population Association Conference. New Delhi, India, 15–20 November 2010.

Shah I. Medical abortion can be safely and effectively provided by doctors and nurses in Nepal: findings from a WHO study – background and relevance. National dissemination meeting. Kathmandu, Nepal, 7–10 September 2010.

Shah I. Safe abortion services: the public health and human rights challenge. Technical consultation on the guidelines for safe abortion. World Health Organization, Geneva, Switzerland, 9–12 August 2010.

Shah I. Abortion and World Health Organization: overview of activities. Regional workshop of FIGO Working Group on Preventing Unsafe Abortion. Istanbul, Turkey, 13–14 July 2010.

Shah I. Family Planning: from novelty to a norm. International Seminar on Frontiers and Perspectives of Demographic Research. Beijing, China, 25–27 May 2010.

Shah I. Preventing Unsafe Abortion: WHO Progress Report. Meeting of the FIGO Working Group on Prevention of Unsafe Abortion. London, United Kingdom, 30 March 2010.

Shah I. Unsafe abortion: a persistent public health problem. The First International Congress on Women's Health and Unsafe Abortion, Bangkok, Thailand, 20–23 January 2010.

## Posters

Unsafe abortion in 2008: global and regional levels and trends. Meeting of the Policy and Coordination Committee (PCC), 24–25 June 2010.

## Chapter 5

# Gender, reproductive rights, sexual health and adolescence

### 1. INTRODUCTION

RHR's Gender, Reproductive Rights, Sexual Health and Adolescence Team (GRR) works to promote gender equity and equality, reproductive rights, sexual health and adolescent sexual and reproductive health across all the technical work of the Department. The aim of this area of work is to provide evidence to guide health systems in drawing up policies and programmes to address issues related to gender inequality and other social and cultural factors that negatively impact on the sexual and reproductive health of individuals. Specific areas of focus are operations research to assess ways in which sexual and reproductive health services can best address violence against women (VAW), including female genital mutilation (FGM); providing guidance on ways in which positive sexuality and sexual health can be promoted; generating evidence on ways to accelerate the abandonment of female genital mutilation and to prevent intimate partner violence (IPV) and sexual VAW; identifying factors that can improve adolescents' access to sexual and reproductive health information and services; and helping governments and their partners to ensure that sexual and reproductive health policies and laws are grounded in human rights. Many of the products outlined in this report are carried out in collaboration with other WHO departments.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

GRR's work contributes to WHO SO4 "To reduce mortality and improve health during key stages of life, including pregnancy, childbirth, the neonatal period, childhood and adolescence, and improve sexual and reproductive health ... for

all individuals", specifically its OWRs 4.1 "Support provided to Member States to formulate a comprehensive policy, plan and strategy for scaling up towards universal access to effective interventions"; 4.2 "National research capacity strengthened and new evidence, products, interventions and delivery approaches of global and/or national relevance available"..., and 4.7 "Guidelines, approaches and tools made available, with technical support, to accelerate progress towards the attainment of international goals and targets related to reproductive health." It also contributes to several OWRs in SO3 "To prevent and reduce disease, disability and premature death from ... mental disorders, violence and injuries", particularly OWR 3.3 on improving Member States' capacity to collect, analyse, disseminate and use data on the magnitude, causes and consequences of violence and in SO6 "To promote health and development and prevent or reduce risk factors for health conditions associated with ... unsafe sex."

### 3. HUMAN RIGHTS AND SEXUAL AND REPRODUCTIVE HEALTH

The objective of 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. This is done through: (1) working with regions to assist countries to assess and improve their policy and legal frameworks to better support sexual and reproductive health and to ensure that they are in line with human rights commitments; (2) building capacity in regions and countries to use human rights to advance sexual and reproductive health in different ways including through use of the UN Human Rights Treaty Moni-



toring mechanisms; and (3) documenting how human rights standards have been specifically applied to sexual health and sexuality in international, regional and national laws and jurisprudence, as a basis for developing international standards on sexual health, sexuality and human rights.

### 3.1 Progress

GRR has: (1) worked on a global research initiative to document how human rights standards have been specifically applied to sexual health and sexuality in international, regional and national laws and jurisprudence as a basis for developing international standards on sexual health, sexuality and human rights; (2) worked with regions to assist countries to assess and improve their policy and legal frameworks to better support sexual and reproductive health and ensure they are in line with human rights commitments; (3) built capacity in regions and countries to use human rights to advance sexual and reproductive health in different ways; (4) contributed to international, regional and national human rights monitoring mechanisms; and (5) provided expert opinions to national legislative processes.

#### 3.1.1 Global research on human rights standards and sexual health and sexuality

In order to foster respect, protection and fulfilment of human rights related to sexuality and sexual health, WHO has undertaken a global research initiative that documents and analyses how human rights standards have been applied to sexual health issues in international, regional and national laws and jurisprudence. The initiative is intended to contribute to states' efforts to improve the protection of rights relating to sexual health. It complements other WHO work related to sexual health, particularly by clarifying states' obligations related to sex, sexuality and sexual health. The aim of the project is to develop publications that will advance a global recognition, understanding and application of human rights standards to sexuality and sexual health. It is expected that the documents will be useful to a wide range of organizations and groups and will provide an invaluable tool for those working on advocacy and policy development, especially for the sexual health and rights of socially marginalized populations.

An expert consultation in 2008 defined eight topic areas for the legal research that intend to reflect a holistic approach to sexual health and capture how laws address these issues and how human rights standards appear in international, regional and legal documents. These are: non-discrimination; criminalization of sexuality/sexual activities; state regulation of marriage; gender identity/expression; violence; health services in relation to sexual health; information, education and expression related to sex and sexuality; and sex work. These eight topics also provide the skeleton for the WHO global analytical document. The research, carried out in 2009, entailed a review and analysis of relevant international, regional and country-specific human rights and legal

instruments, as well as jurisprudence produced by international and regional human rights bodies and highest-level national courts in the following regions: Africa, Latin America, North America, Eastern Mediterranean, Europe, South East Asia and the Western Pacific. An additional review and analysis was conducted of the international level. The research did not aim to provide a comprehensive review and analysis of all countries in the regions concerned. Rather, examples were selected from domestic legislation and jurisprudence that demonstrate the recognition of human rights related to sexual health and sexuality, as well as illustrate the diverse legal cultures and reveal trends in the region.

In 2010, based on this research, GRR prepared one international and six regional papers reviewing and analysing relevant international, regional and country specific human rights and legal instruments, as well as jurisprudence produced by international and regional human rights bodies and the highest-level national courts in relation to these eight sexual health issues.

The international paper will be co-published by WHO, the International Council for Human Rights Policy (ICHRP), and the International Commission of Jurists (ICJ) in 2011. The regional papers have been made accessible as draft working papers on ICHRP's web site and will be developed by ICHRP into more formal policy briefs aimed at activists, policy-makers and other human rights practitioners.

For each of the topic areas covered in the international and regional papers, evidence documenting the enforcement, implementation, and impact of laws on sexual health and well-being was analysed. These findings along with the results of the international and regional papers will be presented in a global analysis document to be published by WHO, which is already under development. In 2010, GRR held a meeting of experts to decide the methodology for such a comparative analysis and an outline of the document, which was subsequently commissioned. This is expected to be ready for review, clearance, and publication in 2011.

#### 3.1.2 Human rights tool for advancing sexual and reproductive health

In response to the 2004 WHO Global Reproductive Health Strategy calling for the establishment of supportive legislative and regulatory frameworks for the achievement of the MDGs and targets, particularly universal access to reproductive health, RHR in collaboration with the Program on International Health and Human Rights at the Harvard University's School of Public Health, Boston, MA, USA, developed a *Sexual and reproductive health tool* that provides a method for countries to use a human rights framework to identify and address legal, policy and regulatory barriers to people's access to sexual and reproductive health and to the provision of quality services. The Tool brings together information about which human rights treaties – both inter-

national and regional – a country has ratified and covers cross-cutting human rights principles such as non-discrimination and recognition of vulnerable groups; availability, accessibility, acceptability and quality of sexual and reproductive health services and access to information; informed consent. The five topic areas that it covers are drawn from the WHO Global Reproductive Health Strategy: pregnancy and childbirth; family planning; abortion; sexually transmitted infections, including HIV, and reproductive morbidities; and sexual health. The Tool has been adapted to adolescents' sexual and reproductive health in collaboration with the WHO Department of Child and Adolescent Health and Development. Its section on maternal health, for instance, focuses more specifically on early marriage and early childbearing.

Using the Tool helps countries to: recognize national human rights obligations related to sexual and reproductive health; review and document government efforts to put in place a supportive legal and policy framework related to sexual and reproductive health; identify legal, policy and regulatory barriers to achieving sexual and reproductive health for all, and make recommendations to overcome or reduce these barriers; identify specially vulnerable groups and existing government effort to address their needs; engage health sector, as well as non-health sector, actors to help eliminate legal, regulatory and policy barriers to sexual and reproductive health.

The Tool application consists of a process which engages many different stakeholders. It involves compiling data from readily available sources on both health and legal aspects of sexual and reproductive health and analysing these data drawing on a human rights framework. On the basis of this analysis, the stakeholders generate recommendations, and assign responsibilities, for action. The ultimate aim is to ensure a positive, enabling environment to foster the enjoyment of rights, in support of the achievement of sexual and reproductive health.

In 2010, GRR concluded field-testing of the *Sexual and reproductive health tool* in the Republic of Moldova, and its companion version on adolescent sexual and reproductive health in Tajikistan. Relevant aspects of the Tool were also tested in a Strategic Assessment on abortion conducted in Malawi. The reports of these country pilots will be published in early 2011. The Tool is scheduled to be launched and disseminated in early 2011 with support from regional offices and partner agencies. Strategies for rolling it out and providing technical assistance to countries in its implementation are under discussion with the regional offices.

In 2010, GRR published an article in the *WHO Bulletin* introducing the Tool and its relevance and documenting the experience of the various field tests.

### 3.1.3 Contributing to the UN human rights treaty monitoring mechanisms

The UN human rights treaty monitoring mechanisms (that, among others, consist of the treaty monitoring bodies, the Human Rights Council, the Inter-American Commission on Human Rights and the Special Rapporteurs) provide an opportunity for WHO to assist countries in complying with their treaty obligations for sexual and reproductive health and human rights, including the elimination of discrimination against women in health care. The framework of the treaties and country-specific recommendations from the treaty monitoring bodies can be used to strengthen partnerships between government 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 feed into the UN human rights monitoring processes by, on the one hand, keeping the committees and the Human Rights Council informed about the latest data and developments in evidence and policy, and on the other hand, working with the WHO country and regional offices to provide relevant information to the UN treaty monitoring bodies and/or assisting governments in the preparation of national reports. WHO, together with other UN agencies, is in a position to work with governments and NGOs on following up on the concluding observations provided by the treaty monitoring bodies and linking them to ongoing processes for the improvement of sexual and reproductive health and rights.

GRR has provided ongoing guidance and information to WHO at headquarters, regional and country levels on reporting to human rights monitoring bodies, with special attention to the Committee on the Elimination of all Forms of Discrimination against Women (CEDAW). In addition, the Team was called upon to provide highly specialized technical assistance to the UN Human Rights Council, Special Rapporteurs, and other agencies on matters related to sexual and reproductive health. Over the past year, the Team has provided input to the following:

- The Committee on Economic, Social and Cultural Rights' new General Comment on sexual and reproductive health.
- The Human Rights Council's Resolution on Maternal Mortality (2009) and its implementation report in 2010.
- The Office of the High Commission for Human Rights on unsafe abortion in connection with follow-up of the Maternal Mortality and Human Rights resolution of the UN Human Rights Council.
- The UN Special Rapporteur on the right to the highest attainable standard of health on various sexual and reproductive health issues.

### 3.1.4 Preparation of technical expert opinions

Responding to requests from regional and country offices, CEDAW, national parliamentary committees and international and national NGOs, the Department prepared technical expert opinions on various sexual and reproductive health issues in relation to international, regional and national human rights monitoring, legislative and judiciary processes. They include requests from:

- The Pan American Health Organization (PAHO), in connection with requests received from the Inter American Commission on Human Rights on emergency contraception in Peru, and in vitro fertilization (IVF) in Costa Rica.
- WHO Country Offices of Slovakia and The former Yugoslav Republic of Macedonia in connection with amendments of abortion legislations.
- WHO Country Office of the Philippines in connection with a proposed legislation on contraceptives.
- Action Canada on Population and Development for parliamentary hearings (in connection with the G8 Summit) on unsafe abortion and maternal mortality.
- The Center for Reproductive Rights, USA in connection with a case on maternal mortality in Brazil, considered by CEDAW.

### 3.2 Planned activities

- During 2011, GRR will finalize the global analysis of human rights and sexual health based on comments from peer review, and will disseminate it along with the international report through workshops, knowledge networks, and key actors. With support from GRR, ICHRP will continue to work on the regional and country-specific documents and publish them as a series of regional reports and policy briefs. The research results are expected to provide governments and other stakeholders at national, regional and international level with a better understanding of the meaning and content of sexuality and sexual health-related rights and examples of ways in which these rights have been or could be incorporated into legislation and legal practice. They also identify gaps and challenges within and across international, regional and national authoritative standards with regard to the protection of human rights related to sexuality and sexual health and encourage further application of human rights standards to sexuality and sexual health. GRR plans to track demand for these documents, and work proactively with the UN human rights system to ensure that the standards outlined in the reports are included in their deliberations with countries.
- After extensive field-testing and adaptation, the *Sexual and reproductive health tool*, which is currently undergoing final editing, will be published, launched and disseminated in early 2011. GRR will continue to assist regional and country offices and partner agencies to adapt, implement and institutionalize the Tool in policy and programme development, implementation and evaluation.

nated in early 2011. GRR will continue to assist regional and country offices and partner agencies to adapt, implement and institutionalize the Tool in policy and programme development, implementation and evaluation.

- GRR is developing and field-testing, in collaboration with the family planning team, an implementation guidance arm of the Tool aimed specifically at family planning programmes.
- GRR will continue to contribute to the work of the UN treaty monitoring bodies, the UN Human Rights Council, and Special Rapporteurs.
- GRR will continue to provide technical expert opinions with respect to international, regional and national legislative processes, at the request of countries or other organizations.

## 4. SEXUAL HEALTH AND SEXUALITY

The non-reproductive aspects of people's sexual health have only recently been the focus of information and interventions in the health and other sectors. The promotion of sexual health is one of the five priorities identified in the Global Reproductive Health Strategy. Yet the understanding of sexual health and sexual well-being is in its infancy and there is little evidence on how this can best be promoted. The value of having a WHO imprimatur on indicators and any ultimate policy guidance is considered exceptionally important in this sensitive area. The objective of this area is to advance and expand the field of sexual health by promoting conceptual work, new evidence, measurement tools and clinical guidelines for health providers on how to address these issues.

### 4.1 Progress

GRR contributed to expanding the field by continuing to develop, refine and test indicators for measuring sexual health, developing a multidisciplinary framework for action for developing sexual health programmes, and exploring future strategic directions for WHO.

#### 4.1.1 Developing sexual health programmes: a framework for action

Building on the outcomes of an international technical consultation held in 2002 on challenges in sexual and reproductive health, GRR developed and published on its web site *Developing sexual health programmes: a framework for action*. The document contextualizes an internationally agreed set of ideas concerning what constitutes sexual health, what factors influence sexual health, and how the concept of sexual health can best be promoted in health programmes. It covers issues related to five domains: law and policies; education; society and culture; economics; and health systems, and provides case-studies of interventions and programmes addressing these areas.



#### 4.1.2 Expert meeting on sexual health

GRR held a meeting of international experts to review the work undertaken by the Department on sexual health in the past five years and to assess possible strategic directions for RHR to advance the field of sexual health over the next five years in the areas of policy, programme development and research. The meeting recommended that WHO focus on promoting sexual health in primary health care systems, and creating an enabling legislative and policy environment supported by sound research. It recommended that RHR develop a conceptual framework to clarify the relationship between sexual and reproductive health and that the Department consider revising its name to include sexual health. It also recommended the development of guidelines on sexuality counselling for health providers.

#### 4.1.3 Indicators for monitoring the promotion of sexual health

GRR developed a set of indicators for promoting sexual health as a complement to those developed on reproductive health 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 FGM, and include indicators on law and policy, on health services and on health outcomes. GRR published the report and initiated discussions with regions on how to pilot test these indicators in countries. RHR participated in a European Regional Meeting of National Counterparts “Challenges in improving sexual health in Europe” organized by the WHO Regional Office for Europe (21–22 October 2010) where the need for more and better data in this area and for indicators to measure sexual health was highlighted as a priority. The work of RHR on indicators was strongly supported and further piloting in the region was endorsed.

#### 4.1.4 Research on vaginal practices

GRR undertook a study of vaginal practices in Indonesia, Mozambique, South Africa and Thailand. Using both qualitative and quantitative methods, the aim of this study was to identify and document vaginal practices in these countries, including motivations for the practices, and the role they play in women’s health, sexuality and sense of well-being, as well as a source of harm. The study found prevalence to be higher than earlier documented, motivated by the desire for maintaining health and wellness, and enhancing sexual pleasure. Several peer-reviewed papers based on the study were published and a policy brief summarizing the findings is under development.

#### 4.1.5 Sexual health in International Classification of Diseases (ICD-11)

GRR commissioned work to feed into the revision of the ICD and Related Health Problems (ICD-10), specifically in

relation to issues of sexual orientation and gender identity, currently considered mental health disorders. Discussions are under way with the mental health ICD revision group to create a Working Group on Sexual Disorders and Sexual Health to review these issues further and make recommendations in this regard. The Working Group will report jointly to the Advisory Group for the Revision of ICD-10 Mental and Behavioural Disorders and the Advisory Group on Reproductive Health. Among other things, the working group would review available scientific evidence, clinical and policy information on use, clinical utility, and experience with the ICD-10 diagnostic categories for sexual disorders and sexual health within various health care settings – including primary care and specialist settings. The Working Group will then prepare specific proposals for revision of the ICD-10 mental and behavioural disorders classification as it relates to sexual disorders and sexual health, including the placement and organization of these categories within the overall ICD system.

#### 4.2 Planned activities

- Develop a conceptual framework outlining the connections and intersections of sexual and reproductive health based on recommendations of the meeting on sexual health.
- Support the working group on sexual disorders and sexual health for the revision of the ICD.
- Collaborate with the World Association for Sexual Health (WAS), an NGO in official relations with WHO, on its upcoming World Congress, possibly including a WHO panel.
- Explore the development of guidelines on sexuality counselling for health providers.

### 5. VIOLENCE AGAINST WOMEN (VAW)

VAW has been recognized as an important public health and development concern and a human rights violation. Addressing this violence is central to MDG 3 on gender equality and women’s empowerment and is also relevant for the achievement of health MDGs 4, 5 and 6. The extent and nature of VAW is now well documented for many countries, and evidence of its health impacts is also growing. Despite this, health services including 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. Primary prevention programmes have been lacking as well. Stronger policies and programmes are needed to prevent and respond to VAW.



GRR contributes through conducting research for policy and programmes, developing policy and programmatic guidance, building capacity and providing technical support to countries and regions, and ongoing advocacy for attention to these issues within existing sexual and reproductive health programmes and activities. The focus of the work is on IPV and sexual violence, including in conflict and crises settings, and on FGM (covered in the next section).

## 5.1 Progress

### 5.1.1 Research for policy and programmes

#### 5.1.1.1 Analyses of the WHO Multicountry Study on Women's Health and Domestic Violence Against Women

This study 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 analysed and widely used at the national and international levels. While 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 analysis as part of their research-to-action agenda. To date, the study findings have been used to illustrate the extensive burden of IPV and its associations with poor physical, mental and reproductive health and they have been very instrumental in bringing attention to this problem.

During this period, GRR has undertaken new analyses which have either been submitted and are being revised for publication in peer-reviewed journals, or are in preparation. These include: (1) IPV and women's experience of unintended pregnancy and abortion; (2) IPV during pregnancy and risk of miscarriage; (3) emotional abuse: its prevalence, patterns and health impacts; (4) IPV and suicidal behaviour (ideation and attempts); (5) patterns of IPV in younger age group (15–18 and 19–24); (6) IPV and child sexual abuse; and (7) the risk and protective factors for IPV across settings.

#### 5.1.1.2 Global estimates of VAW for the Global Burden of Diseases (GBD) Study

The GBD, Injuries, and Risk Factors Study (the GBD 2005 Study), led by a consortium of experts from around the world, builds on the original 1990 effort to quantify the global burden (morbidity and mortality) of diseases, injuries and risk factors. Unlike previous estimates, the GBD 2005 study will include IPV and non-partner sexual violence as risk factors for adverse health outcomes including injuries, maternal and perinatal health outcomes, sexually transmitted infections including HIV, and mental health outcomes. GRR and researchers from the London School of Hygiene and Tropical Medicine (LSHTM) in the United Kingdom, lead the working group on IPV, non-partner sexual violence, and child sexual abuse for the GBD Study.

The aim of this work is to: (1) systematically review population-based evidence on the prevalence of: physical and sexual IPV, child sexual abuse and non-partner sexual violence and to use this information to obtain regional and global prevalence estimates; (2) systematically review published epidemiological evidence on the association between exposure to each form of violence and different health outcomes and use meta-analyses to obtain aggregate estimates of health effects; (3) estimate the health burden of exposure to each form of violence and identify the extent to which each form of violence contributes globally and regionally to the burden of ill-health.

As part of this work, GRR commissioned systematic reviews and meta-analyses on the associations between IPV and abortion, low birth weight, and injuries to complement those on IPV and STIs and HIV, and IPV and mental health, undertaken by the LSHTM.

The review of prevalence studies of IPV highlights that while relatively new it is also a growing research field. Since 2005, when the first results of the WHO Multicountry Study on Women's Health and Domestic Violence Against Women were published, the number of intimate partner prevalence studies increased fourfold, from 80 to more than 300 in 2008. There are now population-based IPV prevalence data from more than 90 countries, although there are still some regions – such as the Middle East and West Africa – where there is relatively limited data. Similarly there is also a growing body of evidence about the range of negative health and development consequences of this violence.

#### 5.1.1.3 Sexual Violence Research Initiative (SVRI)

GRR continues to participate in the Steering Group of the SVRI.<sup>1</sup> The GRR Coordinator is also the Chair of the SVRI Forum 2011: Moving the agenda forward, which will take place in Cape Town, South Africa (10–13 October 2011). The conference programme will feature abstract-driven sessions, guided by the following three categories: (1) sexual violence and primary prevention; (2) responding to sexual violence: models of care, including community-based programmes; and (3) sexual violence and conflict, post-conflict and crises.

### 5.1.2 Policy and programmatic guidance

#### 5.1.2.1 Addressing VAW in the WHO Antenatal Care Model

IPV during or around pregnancy has been associated with adverse maternal and perinatal health outcomes due to the direct trauma of abuse to pregnant women, as well as the

1 The SVRI aims to promote research on sexual violence and generate empirical data that ensures sexual violence is recognized as a priority public health problem. The SVRI does this by building an experienced and committed network of researchers, policy-makers, activists and donors to ensure that the many aspects of sexual violence are addressed from the perspective of different disciplines and cultures.

physiological effects of stress on fetal growth and development. Antenatal care visits provide a window of opportunity for identifying women suffering from violence during pregnancy and offering them the 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, care and prevention of VAW in antenatal care settings in Mozambique and South Africa. This will be used to provide evidence on the effectiveness and feasibility of the intervention to address VAW in antenatal care in resource-poor settings. In March 2009, a small group of experts participated in a meeting in Geneva to provide inputs into the design and content of the intervention, and key stakeholders met in Maputo, Mozambique, in August 2009 to further develop the project proposal. During 2010, GRR worked with the University of the Witwatersrand in Johannesburg, South Africa, to develop the research protocol. The proposal is being revised to take into account the high prevalence of HIV and its documented association with partner violence in the design of the intervention. Following ethical and technical approval of the revised proposal, the research process will begin in early 2011.

#### 5.1.2.2 Guidelines for the health sector response to VAW

A meeting of experts took place in March 2009 to review the evidence and experience with different models of health care provision for violence victims. The report of the meeting is available on <http://www.who.int/reproductivehealth/publications/violence/9789241500630/en/index.html>. The meeting made recommendations for the scope and content of WHO Guidelines on the health sector response to VAW, including minimum standards, a set of principles and key interventions to identify and respond to women suffering from violence. The guidelines are a response to requests from Member States for guidance on how best to respond to VAW, in particular IPV and sexual violence. They will address the reality that VAW has serious health consequences and may be an underlying cause of various health conditions and also that referral options may be limited in low- and middle-income countries.

In 2010 a proposal for the development of WHO Guidelines on the health sector response to VAW was developed and approved by the WHO Guidelines Review Committee. The proposed guidelines will include technical and policy guidance on service delivery aspects, capacity building and other systemic issues as well as clinical practice guidance for providers, and will be designed for use by clinicians and programme planners. The provisional title of this document is *Policy and clinical practice guidelines for responding to intimate partner violence and sexual violence* and it will be

based on recently updated existing systematic reviews and de novo reviews as needed. The guidelines will be aimed at health professionals who are in a unique position to address the health and psychosocial needs of women who have experienced violence. Health professionals can provide assistance by facilitating disclosure, offering support and referral, gathering forensic evidence in cases of sexual violence, or by providing the appropriate medical services and follow up care. There will also be service delivery/programme guidance aimed at those who are responsible for identifying, funding and implementing programmes in the field.

The guideline will have four sections.

1. **Introduction** which will contextualize the guideline with other WHO guidance and includes epidemiological data on the scale of the problem.
2. **Clinical guidance** which will have detailed advice for health providers on the management of VAW.
3. **Service delivery** guidance which will review options and contain advice on the elements of effective programmes, with a focus on low- and middle-income countries. This will include issues such as models of service delivery, training of health care providers and systems level approaches for addressing VAW in the health sector. This may take the form of a risk benefit table to enable different health communities to make their own decisions on what is appropriate in their area.
4. **Laws and policy** which will place the guidance in a legal and human rights context.

GRR has set up an advisory group; developed a scoping document which has now been approved by WHO's Guidelines Review Committee (GRC); and commissioned systematic reviews on the health sector response to partner violence and sexual violence with relevance to low- and middle-income countries, which will inform the development of the guidelines. A meeting of the Guidelines Development Group is scheduled for June of 2011 and it is expected that the guidance will be finalized by the end of 2011.

#### 5.1.2.3 Addressing VAW and AIDS

WHO has been collaborating with UNAIDS and the Global Coalition on Women and AIDS to identify the nature of the associations of VAW with HIV/AIDS (as a vulnerability/risk factor, as an outcome of positive diagnosis, and as a barrier to testing and to access to services) and to identify interventions to address these associations through HIV/AIDS programmes. GRR, in collaboration with UNAIDS, held a working group meeting of expert researchers, policy-makers, and practitioners in October 2009 to review the current state of evidence and practice in developing and implementing interventions and strategies to address the intersections of VAW and HIV. The meeting report – entitled *Addressing violence against women and HIV/AIDS: what works?* – released

by the Department and UNAIDS, provides a summary of existing evidence on the intersections between VAW and HIV/AIDS building on a systematic review, as well as policy and programmatic recommendations for national and international HIV/AIDS programmes and for future programme development, evaluation and research efforts. GRR commissioned Emory University in Atlanta, Georgia, USA, to do a systematic review of interventions which address the interface of violence and HIV risk reduction and this is being finalized. Based on recommendations of the meeting, GRR is also producing a guide to health care programming, addressing the intersections of VAW and HIV/AIDS, and a more in-depth programmatic brief on addressing VAW in counselling and testing. Both documents are forthcoming.

GRR co-led with United Nations Development Programme (UNDP) the development of the business plan for the UNAIDS Strategic Outcome Framework priority area on addressing the HIV needs of women and girls and stopping violence against them, and provided technical support to UNAIDS in Liberia and to WHO and UNAIDS in Swaziland on integration of VAW and HIV.

#### 5.1.2.4 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. 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 IPV, usually continue at elevated rates after conflict, due to a breakdown in the rule of law and social disruption. RHR works with HAC providing support to the integration of sexual and reproductive health and gender-based violence in the health response in emergencies. RHR also works with the UN Action against Sexual Violence in Conflict (UN Action) which brings together 13 UN agencies to strengthen the response of the UN to this problem and improve its effectiveness and accountability. UN Action activities fall under three broad objectives: supporting and enhancing the UN system action at country level, advocacy and knowledge building. As the WHO focal point for UN Action, GRR supports knowledge building on: (1) the magnitude and nature of the problem through surveys and other forms of data collection; and (2) identifying effective interventions. The GRR Coordinator currently chairs the Resources Management Committee of the Multi-Donor Trust Fund for UN Action.

Specific activities in the reporting period include:

1. Developing a research agenda for conflict-related sexual violence, in collaboration with the SVRI. In consultation with key experts from different regions and with UN Action partners, a list of broad headings and research questions was developed (building on the broad areas identified at the SVRI Forum 2009), together with a literature review. An online survey will be used to gather additional input on research priorities and on criteria for prioritization.
2. Developing a survey instrument to capture data on the perpetrators of sexual violence, especially in post-conflict settings. A draft instrument was developed, in collaboration with the CDC International Health and Refugee Branch, which was tested by CDC and UNHCR in Uganda among refugee populations. The instrument will be further revised and field-tested in 2011.
3. Beginning preparations for a technical meeting to review psychosocial and mental health responses for conflict-related sexual violence, in collaboration with HAC and the Department of Mental Health. Reviews will be commissioned and the meeting will be held in 2011.

#### 5.1.2.5 Preventing intimate partner and sexual violence against women

The Department, together with the WHO Department of Violence and Injury Prevention and Disability (VIP), and LSHTM released in September 2010 *“Preventing intimate partner and sexual violence against women: taking action and generating evidence.”* This document provides a planning framework for developing policies and programmes for the prevention of intimate partner and sexual violence. It reviews the latest available evidence on effective, promising and theoretically feasible prevention strategies. The manual is built around a life-course perspective that recognizes how infant and early childhood experiences influence the likelihood of later becoming a perpetrator or victim of intimate partner and sexual violence. It emphasizes the importance of integrating monitoring and evaluation into all prevention initiatives to assess their effectiveness, and to expand the global evidence base in this area. Currently the manual is available in English only, but it is being translated into Spanish, French and Portuguese. VIP is developing a three-day training course based on the manual and is working with GRR to obtain resources for developing policy briefs.

GRR has collaborated with PAHO on a regional workshop in June 2010 to roll-out the content of the manual. A similar workshop is planned with WHO's Regional Office for Africa for early 2011. The workshops bring together people from relevant ministries, key NGOs from selected countries to discuss primary prevention of partner and sexual violence and explore potential entry points for taking this work forward in-country.



#### 5.1.2.6 Developing indicators on VAW

Several efforts are currently under way to capture international indicators on VAW in order to monitor progress, inform policy-makers, and promote targeted efforts to address VAW internationally. Most importantly, the UN General Assembly recommended that the United Nations Statistical Commission (UNSC) identify and define statistical indicators on VAW. The UNSC therefore established a “Friends of the Chair” working group comprising a group of countries who are responsible for developing these indicators. The Department has participated as an observer to “Friends of the Chair” meetings, most recently in December 2009, and provided inputs into the methodological, ethical and technical considerations in defining the indicators and capturing the appropriate data. In parallel, the Statistics Office of the Economic Commission for Europe (ECE) has been working with other economic commissions on a module for collection of the core set of VAW indicators proposed by the UNSC. The proposed module is based on the questionnaire developed for the WHO Multicountry Study on Women’s Health and Domestic Violence Against Women, and the training module being developed is based on the materials of the WHO Study and the *WHO Ethical and safety guidelines for researching violence against women*. WHO continues to follow up on and provide technical guidance to the work of the UNSC Friends of the Chair group as an official observer in the process and also participated in an ECE meeting in November 2010 to review the proposed module.

#### 5.1.3 Capacity building and technical support to countries

WHO is frequently asked to support capacity building and provide technical support to countries undertaking work on measuring or addressing VAW. Technical support and WHO materials were provided to Swaziland for developing guidelines for post-rape care; to Liberia for integrating gender-based violence in HIV programming; and to PAHO for developing guidance on primary prevention. In Fiji and Viet Nam, studies on VAW were undertaken using the WHO Multicountry Study questionnaire and materials.

Using the WHO/PATH publication *Researching violence against women: a practical guide* as the basis for developing a training curriculum. GRR is supporting Mahidol University in Bangkok, Thailand, to initiate a short course for capacity building on conducting research on VAW in Asia. The guide provides an introduction to gender issues and gender-based violence, as well as practical training on data collection using both quantitative and qualitative research methods and practical suggestions on how to use the data for advocacy and action. The course has been previously adapted and replicated in Ethiopia, Kenya and South Africa. The regional adaptation to Asia is currently under way and a course is planned for July 2011.

#### 5.1.4 Advocacy and technical support to other initiatives

GRR continued to participate in several interagency forums on VAW, emphasizing the need for advocacy to be evidence-based. The GRR Coordinator was invited to advise the US Institute of Medicine Forum on Violence Prevention on a conference on violence against women and children which will take place in Washington, DC, USA (27–28 January 2011).

### 5.2 Planned activities

#### 5.2.1 Research for policy

In 2011, GRR will:

- Publish three systematic reviews on: IPV and low birth weight; IPV and abortion; and IPV and injuries; and two peer-reviewed articles (based on data from the WHO Multicountry Study on Women’s Health and Domestic Violence Against Women) on IPV and unintended pregnancy and abortion, and on the effects of IPV on pregnancy and miscarriage.
- Publish global and regional estimates for IPV (based on the analysis for the GBD).
- Obtain ethical clearance and begin implementation of the study to address VAW in antenatal care in one country.
- Finalize the systematic review of interventions to address VAW and HIV/AIDS.
- Finalize the development of a survey tool for studying conflict-related sexual violence and, if funds are available, pilot and implement the survey in one country.

#### 5.2.2 Policy and programme guidance

In 2011, GRR will:

- Conclude programmatic guidance tools for addressing the intersections of VAW and HIV/AIDS and the programmatic brief on VAW and testing and counselling.
- Produce a draft of WHO Guidelines for the health sector response to VAW, following the Guidelines Review Group meeting in June 2011.
- With the Department of Mental Health and HAC, commission reviews and organize a meeting on addressing the psychosocial and mental health needs of victims.
- With VIP and regional offices, implement regional workshops to disseminate the guidance on VAW. The first one is planned for 1–3 March with the WHO Regional Office for Africa on primary prevention of IPV and sexual violence.
- Participate in ongoing work to ensure issues of “partner maltreatment” are adequately covered in the ICD-11



and that the codes are linked to specific diseases where VAW has been shown to have a clear association.

- Continue to participate in several interagency activities, particularly UN Action against Sexual Violence in Conflict (UN Action); the Interagency Working Group on Gender and HIV; and the Friends of the Chair on VAW indicators for the UN Population and Statistics Commission. GRR will also continue to participate in the SVRI coordinating group and to advocate for attention to prevention of VAW and improved access to comprehensive services for women suffering from this violence.
- Continue to collaborate with UNAIDS and WHO's HIV/AIDS Department on the integration of responses to VAW in HIV programmes.

### 5.2.3 Capacity building and technical support to countries

In 2011, GRR will:

- Finalize the Asia regional adaptation of the curriculum on "Researching violence against women" and hold the first regional training course with Mahidol University in Bangkok, Thailand.
- Continue to respond to requests, either direct or through regional offices, for technical support on issues related to VAW and to work with country offices and regional offices to strengthen the response to this issue.

## 6. FEMALE GENITAL MUTILATION

Data on the prevalence and type of FGM are now available from most countries in which the practice has been documented. They record a decline in almost all countries, although the extent of decline varies significantly. A growing challenge is the increasing degree to which FGM is being carried out by health-care providers. Legal regulations against FGM are currently in place in 18 of the 28 countries with known FGM prevalence in Africa, but the extent to which the law is implemented, and is supported through systematic community-based interventions and health system strengthening is generally low. Systematic knowledge of health effects of FGM is limited to the WHO study on obstetric outcomes that was published in 2006. For other health outcomes, no prevalence or risk studies exist. In contrast, evidence and experience in the most efficient ways to promote the elimination of the practice is growing. A broad-based, long-term community empowerment programme with public declarations of intent to stop practising FGM has been shown to be most efficient. However, many interventions have never been evaluated. A systematic review from 2009 on effectiveness of FGM interventions found only six interventions that could be included.

## 6.1 Progress

GRR has been supporting research to elucidate the reasons for the persistence as well as the abandonment of the practice of FGM. Efforts have also been made to improve health care for victims, and to discourage health-care providers from performing FGM.

### 6.1.1 Global strategy to stop health care providers from performing FGM

To strengthen the efforts to curtail and reverse the increasing trend which shows FGM is performed by health-care providers, WHO initiated, together with UNICEF and UNFPA, a consultative process to develop a global strategy against the medicalization of FGM. A consultative meeting with key international professional organizations and representatives from the six countries with the highest prevalence of medicalization was held in Nairobi in July 2009.

The *Global strategy to stop health care providers from performing female genital mutilation* was published in May 2010, and was signed by seven UN and six professional organizations. The document outlines the issue, its causes, the case against it, and the strategy for addressing it based on international human rights principles.

RHR supported the development of national plans of action to counteract the medicalization of FGM in the six countries with the highest prevalence of this practice. Furthermore it has widely promoted the global strategy, including to human rights monitoring bodies, and in an interagency response to the suggestion by the American Academy of Pediatrics to allow or promote medicalization of "mild" forms of FGM.

### 6.1.2 Report to the World Health Assembly on resolution WHA 61.16 concerning FGM

GRR researched, prepared and submitted the first triennial progress report to the World Health Assembly on resolution WHA61.16 adopted in May 2008, which committed Member States to take necessary political, educational, and legal steps to promote the elimination of FGM in their countries and to increase support for related research.

The report covered accounts of new legislation, country plans of action, regional resolutions, and specific country policy and programme initiatives, including the following: four African countries passed new legislation; 4 countries in Africa and 9 in Europe launched national plans of action against FGM; and the European Parliament took several initiatives against the practice. Information and education initiatives were taken in 8 countries in Africa and Asia and community interventions were carried out in 16 African countries. Clinical guidelines have been adapted and used by five African countries. In-service training on the abolition of FGM and development of curricula for various health-care professionals on their role in the abandonment of FGM was reported from two African

countries. Furthermore, national help-lines offering support services to girls or women who have undergone FGM have been established in two countries.

### 6.1.3 Participation in the FGM Donors Working Group

GRR participates in the FGM Donors Working Group, which includes bilateral donors, private foundations and intergovernmental organizations. The mission of the Working Group is to mobilize political and financial support and to share information on best practices. The group supports WHO's work to promote best practices with regards to interventions against FGM. Recently, the group observed that large amounts of funding go to interventions that use methods that have been discredited, such as alternative income and/or re-training of circumcisers and simple information campaigns on health risks. GRR will compile an information sheet to establish clearly which interventions have been shown to be effective as well as those that have been shown not to be effective.

### 6.1.4 Mainstreaming a concern for FGM

GRR works to ensure that FGM is addressed in all relevant research, tools and guidelines produced by WHO and external agencies, including various sexual and reproductive health guidelines and tools, as well as the human rights tool whenever relevant. For example, GRR is advocating for FGM to be included in the Demographic and Health Surveys in countries where FGM is practised, and in the next edition of the ICD (ICD-11).

### 6.1.5 Guidance for health systems

GRR developed an electronic training and information programme for health-care providers, adapted for web-based access on the WHO web site. It is based on a review of the available evidence, teaching tools and clinical guidelines, and includes online versions of two training and information videos on counselling pregnant women with Type III FGM aimed at health-care providers.

During 2009–2010, GRR hosted five sessions on FGM in a weekly live webcast series aimed at teaching health care providers in 18 French- and English-speaking African countries. This is a part of a collaboration initiative RHR began in 2006 with the telemedicine network Réseau d'Afrique francophone de télé-médecine (RAFT), created and operated by the Geneva University Hospital in Switzerland.

### 6.1.6 FGM research

During the biennium, HRP finalized, reported and disseminated the results of a series of studies in five different countries. These included: community interventions in Burkina Faso and the Sudan; decision-making in Senegal and the Gambia; and studies of sexual aspects of FGM in Egypt and Senegal. In addition, a study of costs of obstetric complications in six countries (Burkina Faso, Ghana, Kenya, Nigeria, Senegal and the Sudan) was completed. A study looking at

the linkages between FGM and obstetric fistula was initiated in 2009 in Sierra Leone, and is about to start its second year with quantitative data collection.

To improve dissemination of study results, WHO produced a progress report, a series of policy briefs or research summaries, and supported the writing of several scientific papers for peer-review publications.

In 2010 GRR secured scientific and ethical approval for the first qualitative phase of a protocol for a multicountry study on the psychological consequences of FGM.

## 6.2 Planned activities

- RHR will continue to disseminate and support implementation of the *Global strategy to stop health care providers from performing female genital mutilation* in countries, exploring specific initiatives with UNFPA.
- GRR will strengthen its technical support to the UN human rights treaty monitoring system, particularly CEDAW and the Committee on the Rights of the Child (CRC) which often request information on FGM for their country reviews, but need further support in developing targeted questions. It will also provide advice for states parties, particularly in relation to promoting the best strategies against medicalization of FGM, and providing health care for girls and women who have been subjected to FGM.
- To further encourage the use of the most efficient interventions against FGM, GRR will produce a summary review on "What works and what doesn't?" updated with information from a series of recent systematic reviews.
- GRR will further explore ways to promote and support improved tools for monitoring and evaluating interventions to abandon FGM, using output from GRR supported study on decision-making in Senegal and the Gambia.
- In response to the need to support further guidance for health systems, GRR plans to collaborate with the UNFPA–UNICEF Trust Fund on FGM to update, consolidate and disseminate WHO guidelines for health-care providers.
- To secure funds for the planned multicountry study on psychological consequences of FGM, GRR will develop a smaller package with only the first qualitative research phase that has been approved by the RHR research committee, in only one or two countries initially.
- RHR will seek funds to continue support for and disseminate results from the ongoing study that looks at the links between FGM and obstetric fistula in Sierra Leone.
- GRR will continue its work to support the mainstreaming of FGM into all relevant areas, including the ICD (ICD-11).

## 7. ADOLESCENTS' SEXUAL AND REPRODUCTIVE HEALTH

GRR continued to address research gaps with the aim of promoting sexual and reproductive development, maturation and positive health 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 to adolescents.

### 7.1 Progress

With the research initiative on adolescent sexual and reproductive health (ASRH) nearing its completion, a synthesis of key findings was undertaken in 2009. The initiative included thus far 54 studies in 28 developing countries and addressed a wide range of issues of high priority for ASRH in the local context. This reporting period has focused on consolidating, further analysing and publishing results from this research initiative with the purpose of drawing out policy guidance at the global and regional levels; strengthening research capacity in regions and countries; and strategic planning for research on the sexual and reproductive health needs of the most vulnerable subgroups, namely younger adolescents/older children aged 10–14.

#### 7.1.1 Research

##### 7.1.1.1 Consolidating the research initiative on adolescent sexual and reproductive health research

An important research activity during the reporting period has been a systematic review of risk-taking behaviours among adolescents in developing countries based on the research supported by the Department. Using specific criteria, 17 case-studies were included in the review, which were conducted in Brazil, Cape Verde, China, Croatia, Ghana, India, Indonesia, Kenya, Nepal, Thailand and United Republic of Tanzania.

The studies found that adolescents were generally poorly informed about ways to prevent such unwanted outcomes as STIs and pregnancy. Their knowledge of safe sexual activity was generally weak, misperceptions of risk were common, and many had limited or non-existent access to condoms and contraception so they could do little (apart from abstinence) to engage in preventive safe sexual behaviours. At the individual level, alcohol and drug use were associated with male sexual initiation and activity in populations as diverse as Croatian secondary school students and young Nepali men seeking commercial sex workers. Awareness and use of contraception was generally low, with few exceptions. For those young people who reported using condoms, use was frequently erratic and often trailed off as the relationship progressed, sometimes within a few weeks of first sexual activ-

ity. Obstacles to contraceptive and condom use were many, ranging from embarrassment (even among young men going to brothels) to fear of punishment from parents and teachers. Although negative associations with condom use were common and some of the adolescents in the case-studies reported resistance to condom use, in other instances youth were open to using condoms.

Based on the findings from the systematic review, several recommendations were made: (1) encourage open dialogue about adolescent sexual and reproductive health within families; (2) challenge gender norms among youth and parents; (3) implement programmes in early adolescence; (4) incorporate peer networks into adolescent sexual and reproductive health programmes; (5) increase programmes for vulnerable adolescents in marginalized communities; (6) target misinformation and misperceptions about risk; and (7) conduct further research on effective intervention strategies.

The research results have been disseminated through peer-reviewed journals (three published so far, and seven under review); two WHO reports; and three publications by partner agencies.

##### 7.1.1.2 Developing a research agenda for young adolescents/older children (10–14 years)

As part of its strategic planning, GRR, in collaboration with the WHO Department of Maternal, Newborn, Child and Adolescent Health (MCH), and the WHO Department of Gender, Women and Health (GWH), held a meeting of experts to determine new directions for collaborative research on the sexual and reproductive health and rights of younger adolescents/older children aged 10–14 including priority policy-relevant themes, optimal methodologies, and possible country partners. GRR also commissioned a background paper for the meeting, which reviewed the existing evidence on the biological and social maturation of 10–14-year-olds, the needs of this age group and programmatic approaches to ensuring healthy maturation and transition into adolescence. This paper is being finalized for publication.

The consultation emphasized that priority should be given to those countries in which relatively high proportions of boys and/or girls are initiating sexual intercourse before age 15, either voluntarily or involuntarily, and within or outside early marriage in the case of girls. Because precocious sexual initiation tends to be associated with other risky behaviours such as alcohol/drug use or dropping out of school, or with coercive behaviours on the part of peers, adult partners, or parents who force their daughters into marriages when they are still below the age of consent, it is essential to take a holistic view of these diverse patterns and to consider the context as well as the individual both in basic research (data collection) and in assessing the effects of different types of intervention on sexual and reproductive health outcomes.

Some of the main recommendations made are as follows.

- Prepare a guidance document on ethical and safety issues in research with adolescents similar to the ones prepared by WHO on sexual violence (*WHO ethical and safety recommendations for researching, documenting and monitoring sexual violence in emergencies*, WHO 2007) or on trafficked women (*WHO ethical and safety recommendations for interviewing trafficked women*, WHO 2003).
- Identify and assess existing conceptual frameworks for researching sexual and reproductive health issues as well as asset building factors for adolescents, including younger adolescents and propose a conceptual framework and a research agenda.

While the meeting did not generate a research agenda as such, it identified the following broad areas for research:

(1) Research that would help to define a basic health and information package for, say, 12-year-olds, to be adapted to different settings according to local needs; (2) research on the most effective strategies for building young adolescents' assets, defined here as a cluster of personal competencies and social support, both at the individual level and through parenting and institutional change; (3) research that builds on other initiatives that are currently under way in the educational and health sectors – for example, HIV prevention, male circumcision, female HPV vaccine programmes, school-based sexuality education, and other initiatives – as points of intervention for research on the most effective ways to reach young male and female adolescents through these programmes; (4) research that pays special attention to marginalized populations, especially in the collection of basic data on the needs and concerns of isolated young married rural girls, boys and girls living on the city streets, female domestic workers, young adolescents living in AIDS-affected families or in the slums, refugees, and other vulnerable groups; (5) research on sexual and reproductive health issues and needs of most disadvantaged adolescents in urban areas of low-income countries; (6) research that identifies the social determinants of young adolescents' sexual and reproductive health along the lines of the WHO Initiative on the Social Determinants of Health.

### 7.1.2 Building research capacity

In collaboration with UNESCO, GRR organized a skill-building workshop for approximately 60 health professionals on "Using the international technical guidance on sexuality education to develop country-specific action plans for education and health authorities" at the Fourth Africa Conference on Sexual Health and Rights held in Addis Ababa (8–12 February 2010).

## 7.2 Planned activities

- The current phase of the adolescent sexual health research initiative will be concluded with the publication of the articles submitted to or under review by various journals.
- Following up on the recommendations emerging from the recently completed expert consultation on younger adolescents/older children aged 10–14, there is much still to be decided with respect to the identification of concrete research proposals for a programme of collaborative research on 10–14-year-olds. The next steps will be to narrow down the possibilities to a few concrete examples of topics and research questions, to then identify approaches, methodologies and possible countries for eliciting research proposals and donor funding for a collaborative cross-national research programme.
- As part of preparing groundwork for the field research for this particular population, GRR plans to develop (1) safety and ethical recommendations for research with adolescents, including younger adolescents, and (2) conceptual/analytical frameworks with illustrative indicators for some of the key dimensions to be researched.



## PUBLICATIONS IN 2009–2010

### Peer-reviewed papers

Abramsky T, et al. What factors are associated with recent intimate partner violence? Findings from the WHO Multicountry Study on Women's Health and Domestic Violence. (submitted)

Adam T, et al. Estimating the obstetric costs of female genital mutilation in six African countries. *Bull World Health Organ*, 2010 Apr, 88(4):281–8.

Ajuwon AJ, Fawole FO, Osungbade KO. The experience and perpetration of violence among secondary school students in Ibadan, Nigeria. *Afr J Reprod Health*. (in press)

Asling-Monemi K, Naved RT, Persson LA. Violence against women and increases in the risk of diarrheal disease and respiratory tract infections in infancy. A prospective cohort study in Bangladesh. *Arch Pediatr Adolesc Med*, 2009 Oct, 163(10):931–6.

Asling-Monemi K, Naved RT, Persson LA. Violence against women and the risk of fetal and early childhood growth impairment: a cohort study in rural Bangladesh. *Arch Dis Child*, 2009 Oct, 94(10):775–9.

Bagnol B, Mariano E. Cuidados consigo mesma, sexualidade e erotismo na Província de Tete, Moçambique [Care with herself, sexuality and eroticism in Tete Province, Mozambique]. *Physis*, 2009, 19(2):387–404.

Bagnol B, Mariano E. Politics in naming sexual practices. Outliers, a Collection of Essays and Creative Writing on Sexuality in Africa. Vol.2. 2009.

Cottingham J, Kismodi E. Protecting girls and women from harmful practices affecting their health: Are we making progress? *BJOG*, 2009 Aug, 106(2):128–31.

Cottingham J, et al. Using human rights for sexual and reproductive health: improving legal and regulatory frameworks. *Bull World Health Organ*, 2010 Jul, 88(7):551–5.

Cui Nian, et al. Parental attitudes towards provision of sexual and reproductive health information and services to unmarried youth in Chengdu, China. *J Adolesc Health*. (in press)

Cui Nian, Tian Aiping, Li Minxiang. Study on parents' perspectives towards provision of sexual and reproductive health information and services to unmarried youth in Chengdu, China. *Chinese Journal of Family Planning*. (in press)

Devries K, et al. Violence against women is strongly associated with suicide attempts: evidence from the WHO Multi-country Study on Women's Health and Domestic Violence Against Women. *Soc Sci Med* 2011. (in press)

Devries KM, et al. Intimate partner violence during pregnancy: analysis of prevalence data from 19 countries. *Reprod Health Matters*, 2010, 18 (36):1–13.

Fahmy A, El-Mouelhy MT, Ragab AR. Female genital mutilation/cutting and issues of sexuality in Egypt. *Reprod Health Matters*, 2010 Nov, 18(36):181–90.

Feng Y, et al. Study on the clustering characteristics of non-consensual sex among the undergraduate students in Shanghai. (submitted)

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.

Hilber AM, et al. A cross-cultural study of vaginal practices and sexuality: Implications for sexual health. *Soc Sci Med* 2010 Feb, 70(3):392–400.

Niu HF, et al. Analysis of childhood sexual abuse among 1099 University students in Shanghai. *Reprod Contracept*, 2010, 21(1):53–61.

Khalaj F, Farahani A, Shah IH. Adolescent boys and young women in Tehran: differing perspectives and needs for reproductive health. (submitted)

Khalaj F, Farahani A, Cleland J. Perceived norms on heterosexual relationships among female college students in Tehran: A Mix Method Study. (submitted)

Lamichhane P, et al. The silent cry: Women's status and violence against young married women by husbands in rural Nepal. (submitted)

Luenog-Charath, X et al. Barriers and facilitators for Chilean adolescent students to access the Public system for sexual and reproductive health care. *Int Perspect Sex Reprod Health*, 2010.

Naved RT, et al. Paramedic-conducted mental health counselling for abused women in rural Bangladesh: An evaluation from the perspective of participants. *J Health Popul Nutr*, 2009 Aug, 27(4):477–91.

Naved RT, Persson LA. Dowry and spousal physical violence against women in Bangladesh. *J Fam Issues*, 2010 Jun, 31(6):830–56.

Puri M. The silent suffering: prevalence and determinants of sexual violence against young married women by husbands in rural Nepal. (submitted)

Puri M, Shah IH, Tamang J. Exploring the Nature and Reasons for Sexual Violence Within Marriage Among Young Women in Nepal. *J Interpers Violence*, 2010 Oct, 25(10):1873–92. Puri M, Tamang J, Shah I. Silent suffering: consequences of sexual violence within marriage among young women in Nepal. (submitted)

Rwenge M. De la pertinence de l'approche systémique d'explication de la sexualité à risque des adolescents et jeunes au Cameroun. *Etude Popul Afr*, 2010, 24(3) (in Press).

Sambisa W, et al. Physical and sexual abuse of wives in urban Bangladesh: Husbands' reports. *Stud Fam Plann* 2010 Sep;41(3):165–78.

Scorgie F, et al. "Cutting for love": genital incisions to enhance sexual desirability and commitment in KwaZulu-Natal, South Africa. *Reprod Health Matters*, 2010 May, 18(35):64–73.

Scorgie F, et al. In search of sexual pleasure and fidelity: vaginal practices in KwaZulu-Natal, South Africa. *Cult Health Sex*, 2009, 11(3):267–83.

Silverman JG, et al. Maternal experiences of intimate partner violence and child morbidity in Bangladesh. Evidence from a national Bangladeshi sample. *Arch Pediatr Adolesc Med*, 2009 Aug, 163(8):700–5.

Yoshihama M, Horrocks J, Bybee D. Intimate partner violence and initiation of smoking and drinking: a population-based study of women in Yokohama, Japan. *Soc Sci Med*, 2010 Sep, 71(6):1199–207.

## Reports

Dixon-Mueller R. *The sexual and reproductive health of younger adolescents: Research issues in developing countries*. Geneva, World Health Organization, in press 2010.

El-Mouelhy M, Fahmy A, Ragab AR. *Investigating Women's sexuality in relation to FGM in Egypt*. Cairo, Family Planning and Development Association. 2009.

Jansen HAFM. *Swimming against the tide. Lessons learned from field research On violence against women in the Solomon Islands and Kiribati*. New York, UNFPA, 2010.

Shell-Duncan B. Contingency and change in the practice of female genital cutting: Dynamics of decision-making in Senegambia. Summary report in English with a 10-page French summary, 2010. A full copy of the report is available at <http://csde.washington.edu/bsd>. (accessed 22 May 2011)

## Policy documents

Center for Research on Environment Health and Population Activities. The silent scourge: sexual violence within marriage. CREHPA; 2010. Report No: 12.

UNFPA/UNHCR/UNICEF/UNIFEM/WHO/FIGO/ICN/MWIA/WCPA/WMA. *Global strategy to stop health-care providers from performing female genital mutilation*. Geneva, World Health Organization, 2010.

WHO/LSHTM *Preventing intimate partner and sexual violence against women. Taking action and generating evidence*. Geneva, World Health Organization, In press 2010.

WHO/UNAIDS *Addressing violence against women and HIV/AIDS. What works?* Geneva, World Health Organization, 2010.

## Research briefs

UNDP/UNFPA/WHO/World Bank Special Programme of Research. Dynamics of decision-making and change in the practice of female genital mutilation in the Gambia and Senegal. Social science policy brief. 2010. Report No: WHO/RHR/HRP/10.16.

World Health Organization. Men's and women's perceptions of the relationship between female genital mutilation and women's sexuality in three communities in Egypt. 2010. Report No: WHO/RHR/HRP/10.17.

UNDP/UNFPA/WHO/World Bank Special Programme of Research. *Perspectives on sexual violence during early years of marriage in Nepal: findings from a qualitative study*. Geneva, Switzerland: World Health Organization [WHO]. Special Programme of Research, Development and Research Training in Human Reproduction (HRP); 2009. Report No: (Social Science Research Policy Briefs WHO/RHR/HRP/09.01).

PROGRESS – an update on WHO's work on FGM. Geneva, World Health Organization. (in press).

## Film

*Female genital mutilation and Pregnancy*. Counselling training videos for health care providers. WHO and Safe Hands for Mothers, 2010.

## Conference presentations

Ahmed A, et al. Fostering an Enabling Legal and Policy Environment for the Effective Prevention, Care and Treatment of Sexually-Transmitted HIV. Presented at the XVIII AIDS Conference, Vienna, Austria, 18–23 July 2010.

d'Arcangues C. Sexual and reproductive health and human rights. Expert consultation on SRH organized by the UN Committee on Economic Social and Cultural Rights, Geneva, Switzerland, 16 November 2009.

d'Arcangues C, Kismodi E. Selected issues in sexual and reproductive health in the context of evolving human rights standards. Expert consultation on SRH organized by the UN Committee on Economic Social and Cultural Rights, Geneva, Switzerland, 16 November 2009.

Bathija H. Medicalization of Female genital mutilation. WHO, Geneva. 23 September 2009.

Camara A. Infibulation, virginity and gender based violence in Dakar, Senegal. Presented at the XIXth World Congress of Sexual Health. Göteborg, Sweden, 21–25 June 2009.

El-Mouelhy M. Investigating Women's Sexuality in Relation to Female Genital Mutilation in Egypt. Presented at the XIXth World Congress of Sexual Health. Göteborg, Sweden, 21–25 June 2009.

Garcia-Moreno C. Violence and health. Presented at the European Forum Beijing+15, Cadiz, Spain, 4–5 February 2010.

Garcia-Moreno C. WHO Women and health report for the roundtable on "Gender Equality, Rights, and Improving Sexual and Reproductive Health" hosted by the Netherlands WHO, Geneva, Switzerland, 22 March 2010.

Garcia-Moreno C. Considerations for indicators on sexual and other forms of violence against women and girls. Paper prepared for the Small Arms Survey and presented at meeting on Indicators of violence against women hosted by the Geneva Convention, Geneva, Switzerland, 25–26 March 2010.

Garcia-Moreno C. WHO's work on women and health. Presented at First Women's Health Conference, Riyadh, Saudi Arabia, 28 March–1 April 2010.

Garcia-Moreno C. Keynote presentation on Making cities safe for women and girls: Integrating a gender perspective into urban health and planning. Presented at the Penn-ICOWHI 18th International Congress, Cities and Women's Health: Global Perspectives Conference, University of Pennsylvania, USA, 7–10 April 2010.

Garcia-Moreno C. RHR/HRP's work on gender equality, rights and sexual and reproductive health. HRP Briefing to co-sponsors (UNFPA & UNDP) and Partners. Hosted by UNFPA, NY. New York, USA, 10 May 2010.

Garcia-Moreno C. The Knowledge work of UN Action against Sexual Violence in Conflict. Presented at the meeting of donors and parties interested in the work of UN Action Against Sexual Violence in Conflict, Sida Headquarters, Stockholm, Sweden, 17 June 2010.

Garcia-Moreno C. Overview of violence against women for Planning Committee for an Institute of Medicine (IOM) workshop on violence against women and children, Washington DC, USA, September 2010.

Garcia-Moreno C. Preventing intimate partner violence and sexual violence against women. Taking action and generating evidence at the launch of this publication. Presented at the Safety 2010 World Conference, London, United Kingdom, 21–24 September 2010.

Garcia-Moreno C, Watts, C. Intimate partner violence, childhood sexual abuse and non-partner sexual violence: update on the Global burden of disease study. Presented at the Safety 2010 World Conference, London, United Kingdom, 21–24 September 2010.

Garcia-Moreno C. Global considerations/applicability of proposed partner relational processes and partner maltreatment ICD categories. Presented at the Conference on relational processes in ICD, Ascona, Switzerland, 14–15 October 2010.

Garcia-Moreno C. Improving sexual health: WHO/RHR's contributions. Presented at the European Regional Meeting of National Counterparts. Challenges in improving sexual health in Europe. Madrid, Spain, 21–22 October 2010.

Guyo J. Training of health providers as advocates against the practice of FGM: The Kenya experience. Presented at the XIXth FIGO World Congress of Gynecology and Obstetrics, Cape Town, South Africa, 4–9 October 2009.

Johansen EB. Female genital mutilation. Scientific update. Presented at the Stop MGF Giornata (la giornata internazionale delle MGF). Rome, Italy, 6 February 2009.

Johansen EB. Prevention of FGM at the community level. Presented at the International Conference on Female Genital Mutilation in the EU organized by EuroNet-FGM. European Parliament, Brussels, Belgium, 15–17 April 2009.

Johansen EB. Health professionals should never perform female genital mutilation. Presented at WHO, Geneva, Switzerland, 9 June 2010.

Johansen EB. Female genital mutilation and sexuality; WHO funded studies. Presented at the XIXth World Congress of Sexual Health, Göteborg, Sweden, 21–25 June 2009.

Johansen EB. FGM: recent update and new finding on FGM and sexuality. Presented at WHO, Geneva, Switzerland, 18 November 2009.

Johansen EB. Drawing the line – FGM and "acceptable (genital) surgeries – challenges and possibilities. Presented at the 5th FOKO Workshop. Uppsala, Sweden, 17–19 September 2010.

Johansen EB. Female Genital Mutilation. Global Perspectives: Facts and Trends. Presented at the XIXth FIGO World Congress of Gynecology and Obstetrics. Cape Town, South Africa, 4–9 October 2009.

Johansen EB. Health professionals should never perform female genital mutilation. Presented at the International Seminar: Harmful Practices and Human Rights, by Institut International des Droits de l'Enfant, Sion, Switzerland, 10–13 October 2010.

Johansen EB. Rights and Wrongs, Gender Equality and the International Organizations. Female Genital Mutilation. Presented at the “Rights and Wrongs, Gender Equality and the International Organizations”. Institute of Biomedical Ethics. University of Zurich, Switzerland, 19 November 2009.

Kismodi E. Abortion in the context of public health evidence and evolving human rights standards. Expert consultation organized by UNFPA, New York, USA, 8–9 September 2009.

Kismodi E. Strengthening interdisciplinary dialogues on reproductive rights: the link between public health and human rights. Presented at the 1er Congreso Derechos Reproductivos .Arequipa, Peru, 5–7 November 2009

Mbodj AN. Femininity, excision and the application of erotic and aphrodisiac utensils in Senegal. Presented at the XIXth World Congress of Sexual Health. Göteborg, Sweden, 21–25 June 2009.

Miller A, Kismodi E, Bhardway K. WHO Session on Sexual Health and Human rights organized at the IASCS Conference on “Contested Innocence – Sexual Agency in Public and Private Space”. Hanoi, Viet Nam, 15–18 April 2009.

Momoh C. Challenges and Struggles in training health professionals on FGM in the UK. Presented at the XIXth FIGO World Congress of Gynecology and Obstetrics. Cape Town, South Africa, 4–9 October 2009.

Nawal N. Training of health personnel on improving care for women with FGM. Introduction to the workshop. Presented at the XIXth FIGO World Congress of Gynecology and Obstetrics. Cape Town, South Africa, 4–9 October 2009.

Thapa, S. Youth and contraceptive use in developing countries: Trends, use dynamics, and correlates. Presented at the 16th World Congress of Paediatric and Adolescent Gynaecology in the Symposium on Contraception and the Adolescent. Montpellier, France, 22–25 May 2010.

Toure M, Bathija, H. La volonté politique, au centre de l'action pour atteindre la tolérance zéro aux mutilations génitales féminines. Presented at Bamako, Mali, 5 February 2009.

Warriner I, Jejeebhoy SJ, Shah IH. Risk-taking behaviours among adolescents in developing countries: evidence from a WHO research initiative. Presented at the Population Association of America 2009 Annual Meeting, 30 April–2 May 2009.

### Conference posters

Gruskin S, et al. Using human rights to improve legal and regulatory frameworks for HIV/AIDS. Presented at the XVIII AIDS Conference, Vienna, Austria, 18–23 July 2010.



## Chapter 6

# Research capacity strengthening and programme development: interregional activities

### 1. INTRODUCTION

The enhancement of the synergy between research (mostly national research) and programmatic activities remained the main focus of RHR interregional activities as part of the overarching goal of achieving universal access to, and improving quality of, sexual and reproductive health services. Closer collaboration with regional and country offices enabled progress in the implementation of the WHO Global Reproductive Health Strategy to be reviewed, and enabled identification of key issues that will need to be addressed globally and regionally.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

The interregional activities contribute to WHO's Medium-term SO4: "to reduce morbidity and mortality and improve health during key stages of life, including pregnancy, childbirth, the neonatal period, childhood and adolescence and to improve sexual and reproductive health ... for all individuals". Within this objective, in close cooperation with regions and countries, the work contributes to OWER 4.1: "Support provided to Member States to formulate a comprehensive policy, plan and strategy for scaling up towards universal access to effective interventions in collaboration with other programmes, paying attention to reducing gender inequality and health inequities, providing a continuum of care throughout the life-course, integrating service delivery across different levels of the health system and strengthening coordination with civil society and private sector". The work with research institutes contributes to OWER 4.2: "National research capacity strengthened as necessary and new evi-

dence, products, technologies, interventions and delivery approaches of global and/or national relevance available to improve maternal, newborn, child and adolescent health, ... and to improve sexual and reproductive health". The support of the adoption and adaptation of norms, tools and guidelines contributes to OWER 4.7: "Guidelines, approaches and tools made available, with provision of technical support to Member States for accelerated action towards implementing the strategy to accelerate progress towards the attainment of international development goals and targets related to reproductive health, with particular emphasis on ensuring equitable access to good/quality sexual and reproductive health services, particularly in areas of unmet need, and with respect for human rights as they relate to sexual and reproductive health".

### 3. THE WHO–UNFPA STRATEGIC PARTNERSHIP PROGRAMME (SPP) FRAMEWORK: CLOSING PHASE

#### 3.1 Progress

##### *3.1.1 Last subregional dissemination workshops in 2009*

Two subregional capacity strengthening workshops were organized in Dakar, Senegal, in January 2009, and in Cotonou, Benin, in December 2009. Thirteen additional francophone countries (Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Gabon, Guinea, Madagascar, Mauritania, Congo/Brazzaville, Senegal, Togo), one hispanophone country (Equatorial Guinea) and two lusophone countries (Sao Tome and Principe, Guinea-Bissau) were introduced to the

full set of guidelines on FP, STIs and maternal and neonatal health, including reproductive health commodity security and introduction of maternal death audits. In addition – given the focus on attaining the MDG target 5B: Universal access to reproductive health by 2015 – an implementation framework for monitoring progress towards the achievement of this target was also shared. Issues on adaptation and implementation processes in countries were discussed based on experiences and lessons learnt from Benin. Later in the year, Burkina Faso, Senegal and Togo received seed funding to initiate the implementation process. The workshops brought to 122 the total number of countries that have been introduced to the SPP-supported guidelines. Figure 1 shows the level of implementation and expansion of SPP activities, as of December 2009.

In September 2009, 24 representatives from 15 of the 21 countries within the Caribbean subregion (Antigua, Aruba, Barbados, Belize, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Maarten, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago) were also introduced to the DMT and *Family planning: A global handbook for providers*, using the same SPP process, and made plans for the adaptation of this guidance into national programmes to address the unmet needs for FP.

### 3.2 Planned activities

Despite wide recognition of the successful process underpinning the SPP, the systematic adaptation of guidelines in countries has slowed down significantly during the period under review and needs to be revitalized. An evaluation is planned in the countries that received technical and financial support through SPP since 2005 (also called “countries of intensified focus”) to assess the level of change that has resulted from this systematic approach and the actual utilization of the revised national guidelines on sexual and reproductive health at service delivery level. Relevant survey instruments are ready for use as soon as resources become available.

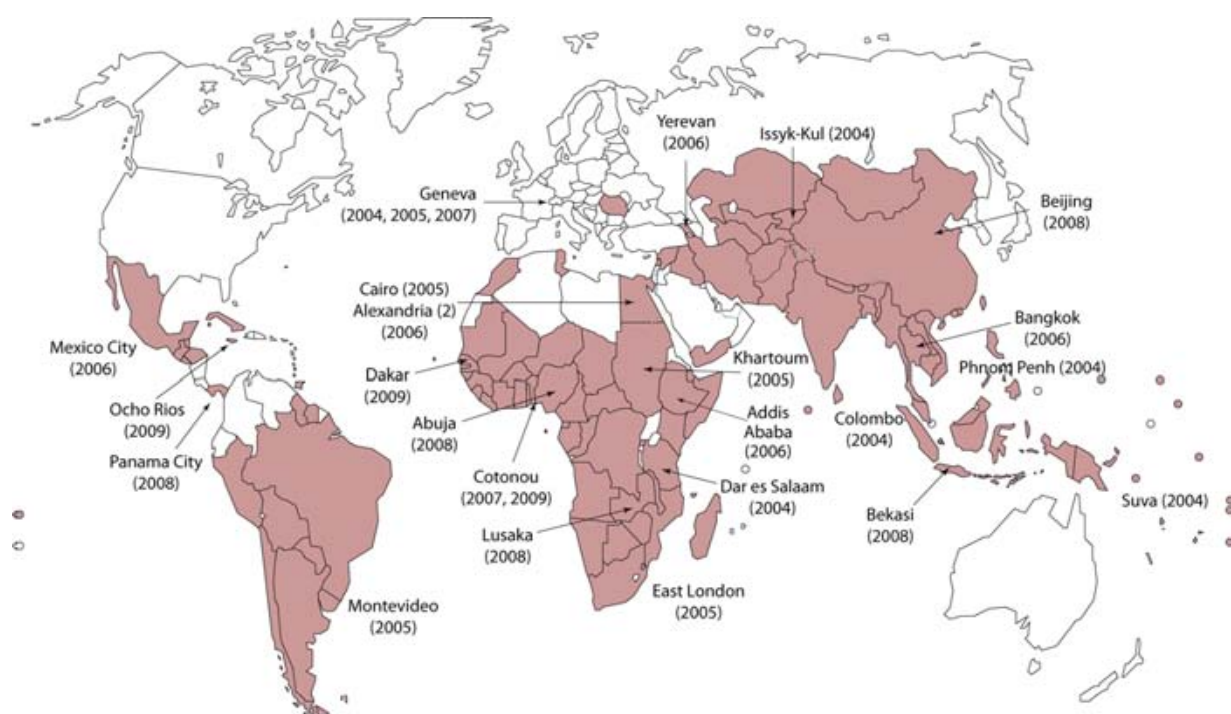
## 4. GLOBAL COLLABORATION IN SUPPORT OF SEXUAL AND REPRODUCTIVE HEALTH

### 4.1 Progress

#### 4.1.1 Progress on the implementation of the WHO Global Reproductive Health Strategy

In endorsing the Global Reproductive Health Strategy in 2004, the World Health Assembly requested the Director-General to report every two years on country-level progress in the use of the Strategy and the implementation of the recommended actions spelt out therein. Regional and country offices facilitated data collection from February to June 2009 based on an updated version of the survey instrument developed for earlier reporting periods in 2006 and 2008.

Figure 1. Countries introduced to the SPP-supported guidelines as of December 2009.



The reports from the 57 countries that responded in 2009 (up from 38 countries in 2007) indicate that all the recommended actions have been followed up, as highlighted.

- *Strengthening health systems:* a variety of specific policies have been developed in the areas of human resources; infrastructures (e.g. emergency obstetric care facilities); free care and social protection schemes; integration of services and quality improvement; technologies; and commodity security.
- *Improving information for priority setting:* follow-up included putting in place procedures and systems for setting priorities; inclusion of reproductive issues in routine population surveys; and instigating regular reporting.
- *Creating supportive legislative and regulatory frameworks:* this involved alignment of programmes with human rights treaties; revision of health laws; and ensuring focused regulations for specific population groups (e.g. adolescents).
- *Strengthening monitoring and evaluation:* this entailed refining methodologies; conducting routine and special surveys (e.g. on quality of care); and appointment of focal points. However, infrastructure and programmatic barriers as well as limitations due to low capacity, lack of resources and irregular/poor quality data persist in many countries. Also resource flows to sexual and reproductive health are rarely monitored (except for donor-supported resources).
- *Mobilizing political will:* this entailed information sharing in cabinet meetings, briefings for policy-makers and mass media; holding rallies and celebration days; lobbying with parliamentarians.

Barriers to improved sexual and reproductive health care delivery varied by countries but the most commonly reported themes included: cultural issues; lack of clear policy guidelines; lack of clear resource allocation for specific targeted activities; difficulties in reaching vulnerable groups; poor security in conflict-affected areas; geographical nature and terrain of the country; turnover of staff and shortage of training facilities or some equipment.

Finally, the extent to which the Strategy has influenced the identification of national research priorities and research gaps as well as the use of research for improving services at country level still needs to be explored in future assessments.

#### 4.1.2 Joint review and planning on global and regional efforts to achieve universal access to reproductive health

A three-day global meeting (25–27 April 2010) brought together the reproductive health regional advisers and regional advisers for STIs from all WHO regional offices to share with RHR Teams highlights of achievements made

in sexual and reproductive health and in the control of STIs across regions. Examples of key achievements in the regions follow.

- *African Region:* despite insufficient progress in the Region as a whole, some countries are either on track (Eritrea, Equatorial Guinea) or making notable progress in the reduction of maternal mortality (Angola, Benin, Cape Verde, Ghana, Malawi, the Niger, Rwanda, Senegal, Togo). High rates of unsafe abortions and significant unmet needs for FP remain a major challenge.
- *Region of the Americas:* the “Towards HIV and syphilis-free generation” initiative is on track. Next steps aim at strengthening an integrated approach into primary health care and improved surveillance systems to achieve the elimination of congenital syphilis and mother-to-child transmission of HIV.
- *Eastern Mediterranean Region:* several countries have adapted and used the tool on “National-level monitoring of achievement of universal access to reproductive and related indicators”. The development and incorporation of STI indicators for vulnerable groups (commercial sex workers, men having sex with men (MSM)) into routine surveillance systems remains a challenge.
- *European Region:* nearly 50% of Member States, including many Western European countries (e.g. Finland, Spain, United Kingdom) have used the Global Reproductive Health Strategy to develop or update their national strategic documents. Meeting the needs for safe abortion and sexual health are major emerging issues within the Region.
- *South-East Asia Region:* with a few exceptions, there is significant progress in reducing unmet needs in FP throughout the Region. However, gross inequities remain between rich and poor and between rural and urban populations, especially in accessing skilled birth attendance.
- *Western Pacific Region:* several countries are making significant progress (Cambodia, China, Lao People's Democratic Republic, Mongolia), and some are even on track (Viet Nam), in reducing maternal mortality and increasing focus on improving services for minority groups and young people. In the area of STIs, however, gonorrhoea antimicrobial resistance is a major concern with serious implications at regional and global levels.

## 4.2 Planned activities

- The next survey on the implementation of the WHO-Global Reproductive Health Strategy will be carried out in early 2011, followed by presentation of the fourth progress report to the World Health Assembly in May 2012. An additional 20 countries or more are expected to respond.

- Regional Advisers agreed to use an interregional approach to address the following issues for improved country support:
  - assisting countries to build capacity for ensuring the availability of reliable data towards the achievement of universal access to reproductive health;
  - establishing a mechanism for sharing experiences on regional innovations in addressing hard topics such as preventing unsafe abortion, reducing unmet needs for FP and elimination of congenital syphilis;
  - enhancing advocacy within WHO at regional and headquarters levels (through better use of channels such as the World Health Assembly and regional committees) for higher visibility and resource allocation for sexual and reproductive health in countries.

## 5. INSTITUTIONAL RESEARCH AND TECHNICAL CAPACITY STRENGTHENING ACROSS REGIONS

### 5.1 Progress

Since the inception of HRP, grants allocated for institutional capacity strengthening in developing countries have served as the main instrument for promoting essential national research to address priority needs in sexual and reproductive health. Past external evaluations have underscored HRP's achievements in this area, noting among other things that "the research centres that have benefited from HRP's

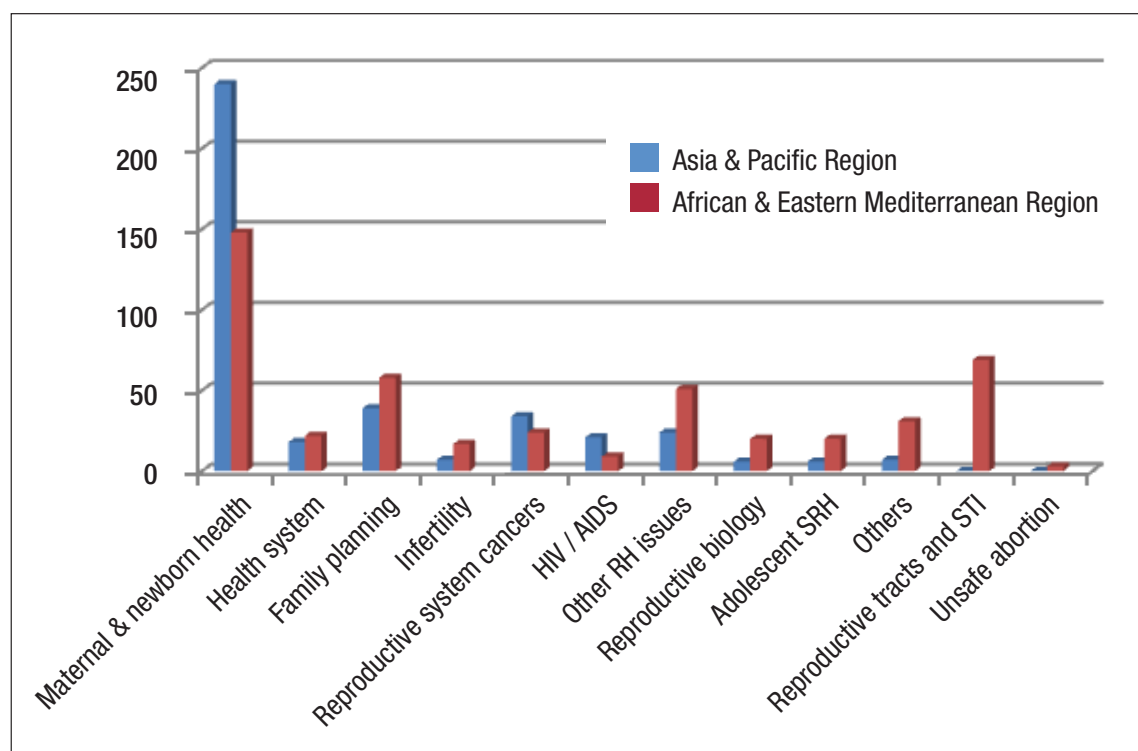
research capacity strengthening efforts have contributed to shaping national policies and programmes in their countries" (WHO/RHR/HRP/03.14 External evaluation 1990–2002, Executive summary, p. 20).

The need to strengthen the link between research and programmes has been further emphasized following the adoption of MDG target 5B on universal access to reproductive health in 2007. Furthermore, HRP participated in the preparation of the Global Strategy for Women's and Children's Health launched by the United Nations Secretary-General in September 2010 and is poised to rely on the "impressive network of research institutions" established over the past two to three decades to support the implementation of country commitments.

#### 5.1.1 Enhancing inter-institutional South–South collaboration

The long-term results of HRP's institutional capacity strengthening for research is evident in interregional collaboration between and among past recipient centres. An outstanding example is the networking between institutions in different regions for the ongoing Multicountry Survey on Maternal and Newborn Health coordinated by the Programme. This 26-country cross-sectional study covering 370 health facilities, which includes a criterion-based clinical audit, requires an online system for standardizing data collection, entry and management.

Figure 2. Research focus in 15 centres receiving long-term institutional development (LID) grants by thematic areas (2004–2009).





CREP in Argentina has developed the online data entry and management system. In addition to its role as a resource for seven countries in the Region of the Americas, the Centre trained a team from Khon Kaen University, Thailand, to enable it to function as a multiregional data manager centre. The team from Thailand is now providing technical assistance and data management for the implementation of this study in the South-East Asia and Western Pacific Regions. Furthermore in 2011, CREP and Khon Kaen University will jointly provide technical support for online data entry and management in seven countries in the African and Eastern Mediterranean Regions.

Another example is the Sichuan Family Planning Research Institute (SFPRI), Chengdu, China. Building on a long-term institutional development (LID) grant awarded by HRP in the late 1980s which focuses on safety and efficacy of FP methods, this institute established non-scalpel vasectomy (NSV) as an alternative for surgical vasectomy and it is currently the reference training centre for the dissemination and adaptation of NSV across all regions.

Through South–South partnerships using mentoring grants from a variety of sources, the Centre has trained physicians from many countries in NSV not only within the Western Pacific Region (e.g. Cambodia, Kiribati, Laos, Mongolia, Philippines and Viet Nam) but also extended its support to countries in the Eastern Mediterranean Region (Islamic Republic of Iran, Pakistan, Tunisia) and the South-East Asia Region (Bangladesh, Democratic People's Republic of Korea, India, Indonesia, Sri Lanka). A request from Rwanda in the African Region is also being considered. Where appropriate, the support has been channelled through an institution collaborating with HRP, including former research capacity strengthening (RCS) grant-recipients or WHO collaborating centres.

#### *5.1.2 Support from centres currently receiving RCS to national priorities*

Over the years, the centres have conducted research covering a wide spectrum of issues in line with the priority areas spelt out in the WHO Global Reproductive Health Strategy. Currently a total of 15 centres located in the African, Eastern Mediterranean, and Asia and Pacific Regions are receiving LID grants and their research work focuses mostly on maternal and newborn health research; FP; adolescent sexual and reproductive health; and reproductive system cancers. The focus on health systems research through operations research is gradually increasing across all regions. However, unsafe abortion remains a neglected research area, which is a matter of great concern given the burden of this issue in countries where the centres operate (see Figure 2). It is expected that the country implementation of the UN Global Strategy for Women's and Children's Health mentioned above will provide more impetus for future research work to be carried out in these centres.

## **4.2 Planned activities**

- Long-term commitment to institutional capacity strengthening in least developed countries across all regions remains vital and HRP's attention to this high-impact thrust should not decline. Mechanisms to enhance inter-regional collaboration seem very promising.
- Stepping up the funding for LID grants is also required in order to achieve the target set by WHO to establish 22 new research centres by 2013. Whereas six new centres were awarded an LID grant by the end of 2009 (i.e. two above the target) the achievement of the target of eight additional new centres set for the biennium 2010–2011 is seriously at risk given that no new LID grant was awarded in 2010 in any region, due to shortage of funds.

## Chapter 7

# Research capacity strengthening and programme development: African and Eastern Mediterranean Regions

### 1. INTRODUCTION

The main objectives of RHR's Technical Cooperation with Countries for Sexual and Reproductive Health (TCC) team are: (1) to pursue the research capacity strengthening (RCS) of institutions in the African and Eastern Mediterranean Regions in order to enhance their potential to implement reproductive health research and programmatic activities relevant to national and regional needs, and to facilitate their participation in global research efforts; and (2) 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 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 to policies and programmes, the focus was on supporting the 2011–2013 strategic plan for reduction of maternal and newborn mortality in Afghanistan in the context of UN H4+ and the UN SG's Global Strategy for Women's and Children's Health.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

The programme of work to support countries in national RCS and development of new evidence, interventions and deliv-

ery approaches, contributes to SO4 "To reduce morbidity and mortality and improve health during key stages of life, including pregnancy, childbirth, the neonatal period, childhood and adolescence, and improve sexual and reproductive health ... for all individuals". Within this objective, the work contributes to OWER 4.2: "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, ... and to improve sexual and reproductive health" as well as to OWER 4.7 "Guidelines, approaches and tools ... towards the attainment of international development goals and targets related to reproductive health ... ensuring equitable access to good-quality sexual and reproductive health services ...".

### 3. ACTIVITIES IN SUPPORT OF POLICIES AND PROGRAMMES

#### 3.1 Progress

##### *3.1.1 Introduction, adaptation and implementation of evidence-based guidelines and tools*

Two subregional workshops for the introduction, adaptation and utilization of guidelines in family planning, maternal and newborn health and management of STIs and RTIs were held in Dakar, Senegal (January 2009), and Cotonou, Benin (December 2009). 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 MDGs framework.

Specific objectives were to:

1. 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.
2. Discuss implications of the key aspects of the guidelines for national programmes, reproductive health commodity security and maternal death audits.
3. Orient participants on the different steps involved in using a systematic approach for the adaptation and adoption of guidelines.
4. Discuss the additional MDG target for universal access to reproductive health and strategies for operationalising related indicators.
5. Develop plans of action for mainstreaming the guidelines into national country plans, and identify technical and/or financial assistance needed.

At the Dakar workshop, participants were from Chad, Guinea, Guinea-Bissau, Mali, Mauritania, Niger, and Togo. In Cotonou, participants were from Burundi, Central African Republic, Congo, Comoros, Democratic Republic of the Congo, Gabon, Equatorial Guinea, Madagascar, and Sao Tome and Principe. Country teams developed plans of action in order to improve family planning services, maternal and newborn health, and prevention and management of STIs/RTIs, using the WHO evidence-based guidelines.

### 3.1.2 Female genital mutilation (FGM)

Many activities relating to FGM have been carried out in close collaboration with the Gender, Reproductive Rights, Sexual Health and Adolescence Team. As a follow-up to the multicountry study on FGM and obstetric outcome, an electronic teaching tool for health personnel was completed in Sudan, in collaboration with the Ahfad University for Women in Khartoum and produced by the SafeHands for Mothers, a film production company based in the United Kingdom. This DVD *Female genital mutilation and pregnancy: counselling training videos for health-care providers* contains two films in which a gynaecologist/obstetrician and a midwife provide FGM-related counselling to a pregnant woman and her husband, and to a woman alone, respectively. Both videos contain important information as well as tips on how to present and tackle specific questions and concerns. Although they are primarily targeted at health-care providers, the videos can also be shown to any woman or man to raise and illustrate various themes related to FGM, pregnancy, childbirth, and health care for women with infibulation. The videos do not contain any offensive or disturbing words or images. They are in Arabic with subtitles in English. The dissemination plan includes both pre-service and in-service training events as well as workshops in the context of conferences.

### 3.1.3 Policy and programme support to Afghanistan and Yemen

The Ministry of Public Health (MoPH) of Afghanistan, while facing enormous challenges of a country in conflict, pursues evidence-based decision-making and this demands strong research capacity. However, without having a specific strategy and policy for health research, it is unlikely to meet its targets. Therefore the development of a health research policy with a special emphasis on reproductive health was identified as an important and urgent priority. With RHR support, the process started in 2009 and included:

- undertaking a situation analysis on what research is being carried out, by whom and with which funding source;
- identifying the research needs, using a wide ranging consultation process with stakeholders.

The situation analysis involved important stakeholders not only from the MoPH but also from other ministries: women's affairs, youth affairs, religious affairs and justice. NGOs, both local and international, were involved, as well as development partners and UN agencies. The results were presented in October 2010, and the following points are of note.

- The amount of information available is inadequate for evidence-based decision-making. The data available are not being adequately used for decision-making. There is need for better dissemination of the available information.
- Available data are not only inadequate but also outdated and of relatively poor quality. For example there are no data on maternal mortality, one of the vital indicators, since 2002.
- Usage of modern technology in managing information is suboptimal and this compromises the speed of processing information.
- There is need to create and maintain a strong research database.
- A group of stakeholders felt that neither government nor donors have paid adequate attention to routine but very important issues such as human resources; specifically recruitment, deployment and training. This, along with a study of the motivational level of the employees, is needed to get the best out of the human resources responsible for the delivery of health services. This group felt that if the health system is to achieve optimal service delivery, these matters need to be given priority.

RHR gave technical support for the initiation of a similar process in Yemen, but there has not been progress yet because of insufficient funds and human resources.

### 3.1.4 Regional Office for the Eastern Mediterranean regional meeting on research on adolescent reproductive health

A regional workshop on “Adolescent sexual and reproductive health research: translating research findings into action” was held in Tunis, Tunisia, from 14 to 17 June 2010. The workshop was organized by the WHO Regional Office for the Eastern Mediterranean with financial and technical support of HRP and attended by 38 participants from 14 Member States, as well as from UNICEF, UNFPA, United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), League of Arab States (LAS), IPPF, and the American University of Beirut, along with WHO staff from the Department.

The workshop methodology included updates on adolescent sexual and reproductive health research activities of WHO and of participating partner agencies, presentations on relevant national activities from selected countries, and two group-work sessions to:

- identify priority research issues for promoting adolescent sexual and reproductive health in Eastern Mediterranean countries;
- conduct strengths, weaknesses, opportunities and threats (SWOT) analysis of using adolescent sexual and reproductive health research findings in programme planning and implementation.

Draft country workplans for addressing adolescent sexual and reproductive health research priorities and translating research findings into action in the participating countries were developed during the final day, and major conclusions and recommendations were discussed in a plenary discussion for determining future steps.

### 3.2 Planned activities

In Africa, the development of a “Regional agenda for universal access to sexual and reproductive health” is planned for 2011. The agenda aims at replacing the Regional Reproductive Health Strategy (1998–2007). With RHR support, funds were mobilized for the agenda development.

Regarding implementation of the WHO–UNFPA Strategic Partnership Programme activities, the focus will be on country level follow-up and monitoring depending on the funds available. In most of the countries, activities will be concentrated on adapting and revising national guidelines in family planning, maternal and newborn, and STIs; and disseminating new national guidelines.

The main common activities of the countries’ programmes of work for 2011 will be:

- conducting orientation/sensitization workshops;
- targeted dissemination of guidelines to policy-makers and service providers at national, provincial and district levels;
- establishment of monitoring and supportive supervision mechanisms;
- development of job aids and update of training curricula in pre-service training institutions.

Responding jointly with the regional offices to requests from the ministries of health will continue to be a high priority in 2011.

## 4. RESEARCH CAPACITY STRENGTHENING

### 4.1 Progress

#### 4.1.1 Research capacity strengthening at national level

##### 4.1.1.1 Institutional capacity strengthening

Collaborative activities continued in 34 institutions in 21 countries in Africa and the Eastern Mediterranean Regions through RCS activities, including new collaborating institutions in Burkina Faso and Madagascar. Initial site visits for long-term institutional support were carried out in the Democratic Republic of the Congo and Sierra Leone. Details of the grants awarded in 2009–2010 are given in Table 1.



Table 1. RCS grants awarded in 2009–2010

Country	Institutions and grants
Afghanistan	An LID grant was awarded to the Afghan Public Health Institute, Kabul
Burkina Faso	An LID grant was awarded to the Institut de Recherche en Science de la Santé (IRSS) - Equipe de Recherche Interdisciplinaire sur le VIH et la Santé de la Reproduction (ERIS)
Côte d'Ivoire	An LID grant was awarded to the Reproductive Research Health Unit (CRESARCI), hosted in the National Institute of Public Health, Abidjan
Ethiopia	An LID grant was awarded to the Reproductive Health Research and Training Unit (RHRTU), Department of Obstetrics and Gynaecology, Faculty of Medicine, 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, University of Nairobi, received a service guidance centre grant
Madagascar	The Institut national de santé publique et communautaire, received a courses/workshops/seminars (CWS) grant for organizing a research methodology course focusing on maternal health research
Malawi	The Centre for Reproductive Health, College of Medicine, University of Malawi, Blantyre, received an LID grant
Nigeria	The Centre for Research in Reproductive Health (CRRH), University Teaching Hospital, College of Health Sciences, Ogun State, received an LID grant
Senegal	The Centre de formation et de recherche en santé de la reproduction (CEFOREP) received a research training grant (RTG)
South Africa	The Effective Care Research Unit (ECRU), Department of Obstetrics and Gynaecology (East London), affiliated to the Universities of the Witwatersrand (Johannesburg) and Fort Hare (East London), received an LID grant
Sudan	An RMG was awarded to the Department of Obstetrics and Gynaecology, Faculty of Medicine, Khartoum University
United Republic of Tanzania	A LID grant was awarded to the Kilimanjaro Christian Medical Centre, Centre for Reproductive Health Research, Moshi
Zimbabwe	A resource maintenance grant was awarded to the Department of Obstetrics and Gynaecology, University of Zimbabwe, Harare

#### 4.1.1.2 Overall research outputs by area within reproductive health and by source of funding

The 12 centres supported with LID grants or resource maintenance grants (RMGs) are involved in projects which address regional and national reproductive health priorities. From a total number of 19 studies, the highest number of projects was on maternal health (see Table 2). However, many projects were dealing with several thematic areas at a time. Most of the projects were implemented with support from national sources and international agencies other than WHO.

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	5	3	1	1
Family planning	3	3		
Unsafe abortion	1			1
HIV/AIDS	3		2	1
Other	7	4	1	2
Total	19	10	4	5

### 4.1.2 Strengthening of human resources for research and programmatic activities

#### 4.1.2.1 Research training grants and re-entry grants

Two researchers from Burkina Faso received an RTG for a short course in reproductive health data analysis at the Université catholique de Louvain (Belgium) and one researcher from Burkina Faso started the Master's in Public Health training at the University of Montreal, Montreal, Canada. In 2010, a researcher from Afghanistan graduated with a Master's in Public Health, received through distance learning from Loma Linda University, California, USA. In 2010, a statistician from Senegal received a grant for a two-year Master's in Public Health course with special concentration on monitoring and evaluation in the School of Health Systems and Public Health, University of Pretoria, Pretoria, South Africa.

#### 4.1.2.2 Training on impact of environment pollutants on reproductive health

Since 2008 RHR supported a multidisciplinary training course in Alexandria University, Egypt, designed to provide participants with both theoretical bases 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. 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 a more realistic field-training course.

The training consists 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 most relevant academic departments to the project such as Human Health and the Environment, community health educators working for health, and occupational workers. The goal behind establishing such a diverse target audience was to foster greater awareness, knowledge and skills offered by personnel of different technical disciplines and to employ the value of collaboration and communication among the disciplines for solving complex public health problems. Senior students, graduate students, and health and occupational educators were considered most appropriate as participants since they are the immediate disseminators of the project outcomes in the community. A total of 28 participants were involved in the first year of this training course. The second year, 2009–2010, with 27 participants recruited from 600 applicants, benefited from extensive feedback evaluation provided by participants and instructors in the first phase. To broaden access to the training course materials, a web site was set up, which includes course lectures, practical skills and field applications. In addition, selected lectures from the course were videotaped and

made available to professors and practitioners at other Universities in Egypt either online or on DVDs.

The data collected during the field training component will be used to develop reports answering some research questions and to help in developing proper research proposals for the future.

#### 4.1.2.3 Research methodology training, Centre for Health and Population Studies, Lahore, Pakistan

The Centre for Health and Population Studies (CHPS), Pakistan, conducted a short course on research methods at Lahore, Pakistan (19–30 April 2010). It aimed at improving the analytical skills of the participants in their area of work, particularly reproductive health. There were 12 participants from MoH, Ministry of Population Welfare of Punjab, Sindh, Khyber Pakhtunkhawa (formerly known as NWFP), Baluchistan, Azad Jammu Kashmir and different NGOs of Pakistan. The course content was designed to achieve:

1. Research proposal development skills.
2. Knowledge about the complete research process.
3. Expertise about the preparation of data collection instruments.

During the course the participants conducted a pilot study as an exercise for data collection at Manawa with help from Rahnuma Family Planning Association of Pakistan. This exercise was designed especially to understand ethical issues related to reproductive health research.

#### 4.1.2.4 Webcasting lectures on reproductive health topics

RHR has continued to disseminate information on reproductive health issues to health professionals through the telemedicine network Réseau d'Afrique francophone en télémédecine (RAFT) created and operated by the Geneva University Hospital in Switzerland through the Internet (raft.hcuge.ch). The core activity of RAFT is the webcasting of interactive courses. These sessions put emphasis on knowledge sharing across health care professionals, usually in the form of presentations and dialogues between experts in different countries. Over 60 sessions were broadcast live on priority reproductive health issues during 2009–2010. The sessions have been archived on the web site and are also available on CD-ROM.

#### 4.1.2.5 Training course of the Geneva Foundation for Medical Education and Research

The Geneva Foundation for Medical Education and Research (GFMER – a WHO collaborating centre), in partnership with WHO and other partner institutions, ran a postgraduate training course from 2003 to 2009 at WHO headquarters in Geneva, with participation of professionals from different countries. This course consisted of a two-week module in research methodology followed by two-week training in

sexual and reproductive health through the use of the training-for-trainers approach.

In 2010, considering the above-mentioned competitive advantages, GFMER and its partners launched a distance training/online course by combining their experience in the provision of medical education and online lectures and seminars. With this project the Foundation provides a cadre of health practitioners with knowledge, skills and competencies in sexual and reproductive health as well as research in this field, especially for those health care providers whose access to learning is limited by time, financial resource or other constraints and where access to quality education and learning in the field of reproductive health is limited.

An appropriate package of training, which meets the needs of health-care providers in many countries, has been developed to allow the course participants to learn from first hand health experiences in day-to-day demands and through longer-term challenges in the field of sexual and reproductive health. The programme is designed to address a wider range of contemporary reproductive and sexual health problems, especially in developing countries.

A total of 147 health professionals from 48 countries are currently enrolled in the training programme that started in May 2010 and will finish in February 2011. The majority of them are from developing countries. A total of 43 teachers from WHO, GFMER and 12 more universities and research institutions are involved in the curricula development, lectures and tutorship.

The 2010 online course consists of four modules each given over six weeks. These modules are:

- Maternal and perinatal health
- Sexually transmitted infections & HIV/AIDS
- Sexual health with a special focus on adolescent sexual and reproductive health
- Community genetics.

These modules are supplemented by a core module on research methods as well as selective lectures on gender issues, FGM and other topics related to sexual and reproductive health. The contents of each module are based on the reality of the situation and address current problems and challenges in the field of sexual and reproductive health research.

Teaching methods consist of online lectures (live, recorded and didactic presentations), key readings, practice materials, additional readings and referrals to related web sites. It is worth mentioning that in terms of documentation and published teaching resources, this course is one of the richest in the world.

For each module students receive assignments from course organizers. These assignments help the students become more familiar in scientific reading and writing and in applying the knowledge acquired in their day-to-day professional practice.

Moreover, the course participants are required to make a review of a WHO guideline on sexual and reproductive health. The aim of this exercise is to familiarize the participants with WHO guidelines on sexual and reproductive health, relevant to their professional environment, and to see if these guidelines are applied in their countries. With this initiative the Foundation contributes in optimizing the use of guidelines through the course participants. Moreover with participants from 48 countries, the Foundation has started to make an inventory of national guidelines on sexual and reproductive health in participants' countries.

In order to ensure the smooth running of the course, to provide access to academic and administrative support, ensure the interaction with the participants on one hand, and the participants and the course organizers on the other, an online environment has been created. The diversity within the students' community and the networking facilitated by the programme has provided a wonderful opportunity to learn from and share experiences with peers from different countries. For this, the Foundation uses Google groups; Facebook; Skype; and the *Second Life* project as tools for communication and interaction. The web link to the training course for 2010 is: <http://www.gfmer.ch/SRH-Course-2010/index.htm>

#### 4.1.2.6 Regional and national courses and workshops

Regional and national workshops held in 2009–2010 are listed in Table 3.

#### 4.1.2.7 Other training

Many other training initiatives have been undertaken and supported in collaboration with other units, such as the workshops on using the *WHO Reproductive Health Library* held in Ouagadougou, Burkina Faso, 29 November–3 December 2010.

### 4.1.3 Monitoring and evaluation

#### 4.1.3.1 Regional Advisory Panel meeting

The Regional Advisory Panel (RAP) for the African and Eastern Mediterranean Regions met in Kampala, Uganda, in November 2009. The meeting was attended by 12 RAP members; regional reproductive health advisers from the WHO Regional Offices for Africa and the Eastern Mediterranean; and officials from the MoH, Uganda.

A virtual RAP meeting was held on 9–10 November 2010, in which 10 RAP members were connected through video and telephone conference services with the RHR Secretariat. The experience was very positive in its efficiency and smooth-

Table 3. Regional and national workshops held in 2009–2010

Topic	Participating countries	Number of participants Female–Male	
Ninth Research Methods and Systematic Reviews Workshop, organized by the Effective Care Research Unit, University of the Witwatersrand, East London, South Africa, 2009	Botswana (5), Cameroon (2), Ghana (1), Kenya (3), Malawi (2), Nigeria (2), and South Africa (20)	25	10
Tenth Research Methods and Systematic Reviews Workshop, organized by the Effective Care Research Unit, University of the Witwatersrand, East London, South Africa, 2010	Cameroon (3), Kenya (1), Nigeria (9), and South Africa (15)	22	6
11th International Semenology and Cervical Cytology Workshop organized by the Department of Obstetrics and Gynaecology, Stellenbosch University, Tygerberg Hospital, South Africa, 2009	Burkina Faso (1), Egypt (1), Ethiopia (1), Kenya (2), Mali (2), Nigeria (2), Saudi Arabia (1), South Africa (1) and Sudan (1)	8	4
Scientific writing workshop, College of Medicine, University of Ibadan, Nigeria, 2009–2010	Nigeria (120 total for 2009–2010 but no disaggregation available for 2009)	18 (2010)	21 (2010)
Research methods in sexual and reproductive health and HIV course organized by the Reproductive Health Research Unit, Department of Obstetrics and Gynaecology, Chris Hani Hospital, South Africa, 2009	Cameroon (1), Egypt (1), Mozambique (2), Nigeria (9), South Africa (8), Uganda (1), Zambia (1) and Zimbabwe (3)	15	11
Research methods in sexual and reproductive health and HIV course organized by the Reproductive Health Research Unit, Department of Obstetrics and Gynaecology, Chris Hani Hospital, South Africa, 2010	Kenya (3), Mozambique (2), Nigeria (8), South Africa (6), Uganda (5), United Republic of Tanzania (1) and Zambia (2)	15	12
TOTAL		103	64

ness and allowed participation of more Secretariat members than in traditional RAP meetings, with cost savings.

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 RCS activities, and 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.

#### 4.1.3.2 Site visits to collaborating institutions

In 2009 and 2010, the Secretariat – jointly with regional reproductive health advisers, RAP members, and/or temporary advisers – visited seven centres receiving RCS grants. During these visits, administrative issues and technical and financial reports were reviewed. In addition, travel was undertaken to 10 countries in the context of other activities. These activities involved training courses; dissemination of research results; follow-up of ongoing research projects; planning new projects and events; inauguration of a WHO collaborating centre in Tunis, Tunisia; and assessing possibilities for future RCS support.

RHR supported financially and technically the First International Safe Pregnancy & Motherhood Congress, held in Tehran, Islamic Republic of Iran, in February 2010. In the context of the UN Summit on MDGs, September 2010, in New York, RHR supported technically the Multi-Religious Leaders' Consultation on the MDGs, organized by the United

Nations Millennium Campaign; World Justice Project; World Council of Churches; and Religions for Peace. In the context of the same MDG Summit, RHR gave technical support for "Women connect for health", a roundtable discussion on the increasing role mobile technology is playing to achieve the MDGs, organized by Advanced Development for Africa (ADA). The event, which brought together female leaders from across the globe, along with leading mobile health (mHealth) providers and philanthropists, included also showcasing 10 mHealth projects on maternal and newborn health from around the world.

## 4.2 Planned activities

Among the new initiatives to be started in 2011, is the operations research training for lusophone countries in Africa. RCS activities, in the form of pre-LID grant are likely to start in the Democratic Republic of the Congo and in Sierra Leone, which will lead to a five-year LID grant starting in 2012. In the area of social science research strengthening, two centres in Nigeria and Rwanda are finalizing their proposals to be submitted to RAP in 2011 for review.



## 5. RESEARCH

### 5.1 Progress

#### 5.1.1 Completed projects

##### 5.1.1.1 Strategic assessment of unsafe abortion, Guinea

In the context of efforts to reduce maternal mortality, the strategic assessment for the reduction of unsafe abortions in Guinea was initiated by the Ministry of Public Health and Hygiene and executed by the reproductive health research unit in Guinea (CERREGUI) with technical and financial support from RHR.

The specific objectives of this strategic assessment were to obtain answers to the following questions:

1. How to prevent unsafe abortions in Guinea?
2. How to improve access to safe abortion services in the framework of the new law on sexual and reproductive health?
3. How to improve existing services of postabortion care?
4. How to improve the support to young girls and women who have had an abortion?

Following the development of the basic document, a multidisciplinary team of 18 people consisting of decision makers; programme managers; health professionals; researchers in matters of health and social sciences; women's health advocates; lawyers; and youth representatives, was set up.

The data collection carried out in 2009 covered all the four natural regions of the country (one prefecture per region) as well as the city of Conakry. The multidisciplinary team carried out 110 in-depth interviews as well as 40 group discussions. Services were observed in the Conakry Ignace Deen Hospital, in four prefectural hospitals and in four health centres and two health posts in rural areas.

The results were presented to different actors and partners intervening in the domain of unsafe abortion during the national workshop of dissemination, at the beginning of May 2010. Recommendations were developed on the basis of the workshop discussions. They include the following:

- Strengthen the offer of quality FP services.
- Popularize the Law on Sexual and Reproductive Health in relation to authorized abortions through the media and at all levels (health structures, community).
- Develop application texts of the Sexual and Reproductive Health Law in order to improve access to authorized abortions and to offer a clear legal framework in the entire country; distribute these texts widely; and plan an effective and rapid implementation.
- Sensitize and organize an advocacy initiative for the legislation and the voluntary interruption of pregnancy

in order to reduce maternal deaths due to induced abortions.

- Ratify and distribute international texts concerning the protection of women and young girls.
- Develop and adopt standards and procedures so that abortions authorized by the law can be performed in appropriate services.
- Sensitize and ensure the training of licensed service suppliers concerning the standards and the procedures as well as the welcome of patients and the respect of confidentiality.
- Inform the community on the existence of services offering authorized abortions, and of postabortion care.
- Inform communities on the existence of postabortion care.
- Ensure the in-service training of health care providers on postabortion care.

A follow-up plan is being developed for the interventions and operations research based on selected recommendations.

##### 5.1.1.2 HPV prevalence survey in Islamic Republic of Iran

The study, initiated in 2007, is a community-based survey of HPV infection and cervical lesions among women residing in Tehran, Islamic Republic of 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 infections were determined by detection of HPV DNA in exfoliated cell samples, with HPV genotyping among HPV-positive women. Cumulative exposures to HPV were determined by type-specific detection of antibodies to HPV. Age- and type-specific prevalence rates of HPV DNA/antibodies and socioeconomic/behavioural determinants thereof, were estimated in the Tehran population. The resulting data were compared directly with those from other populations worldwide using a similar population sampling and HPV testing protocol.

This is the first study to determine the population-based prevalence of HPV in Islamic Republic of Iran or anywhere in the Middle East. It is also one of the first 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 Islamic Republic

of 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 Islamic Republic of Iran.

The study results showed the following:

- Among 825 women from the general population with valid cytology and HPV results, HPV prevalence was 7.8% (5.1% for high-risk types). Cervical abnormalities were diagnosed in 4.1% of women, of whom 35.3% were HPV-positive. They included 29 atypical squamous cells of undetermined significance (10 HPV-positive), 3 low-grade squamous intraepithelial lesion (all HPV-negative), and 2 high-grade squamous intraepithelial lesions (1 HPV16-positive, 1 HPV58-positive). HPV16 was confirmed as the most common type among women with both normal (1.8%) and abnormal (8.8%) cytology.
- Significant risk factors for HPV positivity included being in a polygamous marriage (OR=3.98; 95% confidence interval [CI]: 1.04–15.3), being divorced (4.84; 95% CI: 1.24–18.9) and reporting a husband that was away from home >7 nights/month (OR =3.62; 95% CI: 1.83–7.16).
- HPV prevalence in the present study was much lower than that found using similar protocols in areas known to be at high cervical cancer risk in sub-Saharan Africa (e.g. 51% in Guinea, also a predominantly Muslim country), South America and India, but a little higher than certain very low-risk rural populations in Asia (2%–4%). In addition, the prevalence of high-risk HPV in Islamic Republic of Iran (5.1%) can be directly compared with GP5+/6+-based prevalence (5.6%–15.7%) among women attending cervical screening in Europe and Canada.

These findings should be taken into account when considering the cost-effectiveness and feasibility of HPV-based vaccination and/or screening in the Region.

#### 5.1.1.3 Use of partograph, Afghanistan

The first phase of the operations research project “Increasing usage and correct application of the partograph in three maternity hospitals in Kabul, Afghanistan” was completed by the Afghan Public Health Institute (APHI) in 2009. Three kinds of quantitative data were collected from three hospitals: interviews of staff for knowledge, attitudes and practices (KAP) regarding the partograph (106 staff members); observation of deliveries (219 observations); review of patient records (1387). The results showed that the partograph was included in the patient’s record in 87% of cases, but only 20% were used correctly. Some 24% of the staff expressed the opinion that although the partograph is a good tool, it is impossible to use because they do not have time to fill it in. When asked in the focus group discussions how decisions are made about whether to augment, rupture membranes or refer a patient for Cesarean section, the doctors stated that most decisions are made based on clinical findings and examination, and

the midwives said that they are made in consultation with the physician, based on clinical findings, rarely based on the partograph. Most mentioned there is a rush of patients; limited number of staff; insufficient time; and staff not trained in the use of the partograph. The following recommendations were made: training, supervision and monitoring of midwives and junior doctors; maternity hospitals should have three shifts with equal number of staffs in each shift; logistical problems should be addressed; patronage and advocacy are needed at the policy-makers level; and good record keeping practice, possibly computerized, should be developed. Interventions, based on these recommendations, started in April 2010 and show encouraging results. The final evaluation will be done in 2011.

### 5.1.2 Ongoing projects

#### 5.1.2.1 Third stage of labour in Islamic Republic of Iran

Since 2009, RHR supports a survey of practices related to the management of the third stage of labour in Islamic Republic of Iran. The Islamic Republic of Iran is a large country with considerable variation in population as well as medical and midwifery care models of management. This survey will substantially add to this knowledge in establishing the current practices of prevention and management of PPH. It can ultimately help in developing appropriate policies that impact on maternal and neonatal well-being. Thirty-five cities are identified for this study, covering all geographical regions in Islamic Republic of Iran. Results are expected in 2011.

#### 5.1.2.2 Operations research project on prevention of infections in a maternity hospital in Benin

The project, initiated in the last quarter of 2008, is testing the impact of various interventions to prevent infections in a maternity hospital. At baseline, the incidence of peripartum infections was 5.7% and 79.8% of women who developed a peripartum infection had been transferred from another health facility. The results relating to practices of health personnel observed during the study at each stage of delivery showed severe problems for instance in washing and drying hands and opening and closing the water taps. Half of the health personnel did not wash their hands before doing a vaginal examination and only 43.9% used the recommended technique. Use of a clean compress against the perineum during the expulsion phase was almost never done and the decontamination of gloves when removing them was also never done. The second, ongoing phase of the study consists of interventions such as improving the general hygienic conditions in the hospital, training the health personnel and behavioural change communication to the patients. The impact of these measures will be evaluated in 2011.

#### 5.1.2.3 FGM and obstetric fistula in Sierra Leone

Since September 2009, RHR supported a national, multicentre case-control study in Sierra Leone to examine

whether there is an association between FGM and obstetric fistulae. FGM has previously been linked to higher risks of various obstetric sequelae, indirectly supporting a link with obstructed labour, a known risk factor for fistula formation. Keloid formation in vulva, another risk factor for obstructed labour, has also been shown to be common after FGM. In Sierra Leone, this study is of vital importance given that the Government has been requested by CEDAW at its 38th Session (May–June 2007) to provide details of its intention to investigate the link between fistula and FGM. The country's present Reproductive Health Policy also recognizes the risks of the practice on the health of girls and women, and is committed to limiting the effects of this gender-based traditional practice.

A secondary objective of this study is to provide research training and skills for medical staff, and academic staff within the Department of Community Medicine of the University of Sierra Leone. Brain drain – the loss of health and other workers from developing to developed countries – is a problem that particularly affects the health system of Sierra Leone. It is expected that trained academics and health professionals are more likely to remain in post, thus promoting the retention of staff in academia and within the health-care system. Activities during the first year of the study have focused on identifying and selecting the study sites, training of data collectors and supervisors on how to use the data collection instruments; research methodology; and how to perform the genital inspections.

## 5.2 Planned activities

There are many proposals submitted by centres receiving LID grants that are in the final stages of scientific and ethical review and are expected to start in 2011:

“Expanding Contraceptive Health Options (ECHO): a randomized comparison of the copper intrauterine contraceptive device and depot progestogen contraception” submitted by the ECRU, Frere Maternity Hospital, East London, South Africa is currently under review in RHR.

“National data system on near-miss and maternal death: shifting from maternal risk to public health impact in Nigeria”, submitted by the Nigerian Network for Reproductive Health Research and Training (NNRHRT) Maternal and Fetal Health Research Unit, Department of Obstetrics & Gynaecology, Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun state, Nigeria is currently under review by WHO's Research Ethics Review Committee.

In addition, in collaboration with the Alliance for Health Policy and Systems Research (AHPSR) the following implementation research projects will be coordinated by HRP: “Four-country (Egypt, Lebanon, Palestinian Self-Rule Areas and Syrian Arab Republic ) implementation research project on quality of care in maternity hospitals” and “Innovation for increasing access to integrated safe delivery, PMTCT and newborn care in rural Uganda”.

## CONFERENCE PRESENTATIONS AND POSTERS 2009–2010

### Conference presentations by Heli Bathija

Securing resources and funding for efforts towards abandonment of FGM. Geneva International Convention Centre. Observance of the 6th anniversary of the International Day on Zero Tolerance to FGM. Geneva, Switzerland, 6 February 2009.

Women's human rights to safe motherhood and sexual & reproductive health. G8 International Parliamentarians' Conference. Rome, Italy, 22 June 2009.

Women's human rights to safe motherhood and sexual & reproductive health. Operations research training course on reproductive health in the Eastern Mediterranean Region. Beirut, Lebanon, 8 July 2009.

Medical Code of Ethics and FGM. Technical Consultation on the Medicalization of FGM. Nairobi, Kenya, 20 July 2009.

Why does WHO support training on environment and reproductive health? Seminar on the Impact of Pollutants on Reproductive Health. Alexandria, Egypt, 9 April 2010.

WHO's work on reproductive health research capacity-strengthening in the African and Eastern Mediterranean Regions. International Workshop on Consanguinity. Geneva, Switzerland, 5 May 2010.

Framework for planning, implementing and evaluating an mHealth project for family planning or maternal and newborn health. Online conference on mHealth. 5 May 2010.

WHO guidelines on sexual and reproductive health. GMER Course. Geneva, Switzerland, 28 May 2010.

Centres Collaborateurs de l'OMS (CCOMS). CEFIR, Tunis, Tunisia, 13 July 2010.

Strengthen accountability for enhancing women's rights, improving the health of women and children, and ending discrimination. Multi-Religious Leaders' Consultation on the MDGs. New York, USA, 20 September 2010.

Maternal and infant health in Africa, Global Congress on Maternal and newborn health. Barcelona, Spain. 23 September 2010.

Why take action against female genital mutilation (FGM)? GFMER Course. Geneva, Switzerland, 6 October 2010.

Gender Issues in reproductive health research. Satellite session, Extending universal coverage through health systems research: key research issues for the health of women and girls over the life-course. Montreux, Switzerland, 15 November 2010.

### Conference posters

Bathija H, et al. From research to action: a knowledge translation approach to improve reproductive health in the Eastern Mediterranean Region. First Global Symposium on Health Systems Research, Montreux, Switzerland, 19 November 2010.



## Chapter 8

# Research capacity strengthening and programme development: Region of the Americas

### 1. INTRODUCTION

The main objectives of the Department in the Region of the Americas 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 on sexual and reproductive health, and to contribute to the improvement of sexual and reproductive health programmes and services by promoting the dissemination and utilization of relevant research findings and evidence-based guidelines in policy-making and planning.

Collaboration continued with 22 groups/institutions involved in research, academic and/or programmatic activities in different areas of sexual and reproductive health in 15 countries in the Region of the Americas through RCS activities and through support to reproductive health programmes.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

Activities undertaken in the Region address several strategic objectives of WHO's Medium-term Strategic Plan for 2008–2013. The support provided by the Department in the Region directly contributes to SO4: "Reduce morbidity and mortality and improve health during ... pregnancy, childbirth, the neonatal period ... adolescence, and improve sexual and reproductive health for all individuals", specifically, to OWER 4.2: "National research capacity strengthened ... and new evidence ... available to improve maternal, newborn, child and adolescent health ... and to improve sexual and reproductive health".

Additionally, the programme contributes to OWER 4.7 "Guidelines, approaches and tools ... towards the attainment of international development goals and targets related to reproductive health ... ensuring equitable access to good-quality sexual and reproductive health services ...", and to SO2 "To combat HIV/AIDS, tuberculosis and malaria" and SO10 "To improve health services through better governance, financing, staffing and management informed by reliable and accessible evidence and research".

The above strategies can be summarized in two main areas supported by the Department: RCS and programme development. These will be described in more detail in the sections that follow.

### 3. RESEARCH CAPACITY STRENGTHENING

#### 3.1 Progress

##### *3.1.1 Institutional capacity strengthening*

Substantial progress was made by the two institutions awarded LIDs: the Center for Population Studies (CEPEP), Asunción, Paraguay and the Centre for Research in Development Sciences (CIDES) of San Andrés University, La Paz, Bolivia (Plurinational State of). Both completed the programme of work they had planned for the first two years, and increased the number of staff and skills for sexual and reproductive health research.

CEPEP designed and completed a study on "Risk factors and characteristics of women victims of domestic violence in Paraguay". The study was quantitative in nature and used secondary and multivariate analyses of nationwide Demographic and Health Surveys. Among interesting results was a

positive relationship between women experiencing or being witness to, domestic violence in their childhood and the risk of experiencing violence currently. The CIDES centre carried out and completed a study entitled: “Knowledge about medical abortion among women and their social networks in Bolivia”. In this study, users attending health services in three private centres were interviewed about their knowledge and experiences with the use of misoprostol (Cytotec). Important social and cultural aspects were revealed, such as women needing to ask their spouses for the medicine, since strong gender-based stigmatization prevented them from procuring it themselves. Both projects are seeking publication in either local or international circles.

A third project, “Maternal haemoglobin and pregnancy and fetal outcomes at high altitude in Peru”, was carried out with a competitive intraregional research (CIR) grant by the Institute for Altitude Research from the Cayetano Heredia University in Lima, Peru. The study used the Perinatal Information System (SIP, in Spanish) of PAHO to obtain data on more than 360 000 births nationally, and correlate outcomes with risk factors, through multivariate analyses. Among results were significant associations between low (i.e. anaemia) and high levels of haemoglobin (common in altitude) and adverse outcomes such as stillbirths and preterm newborns. For example, see in Figure 1 the significant relationship between very low and very high levels of haemoglobin and stillbirths found in the study.

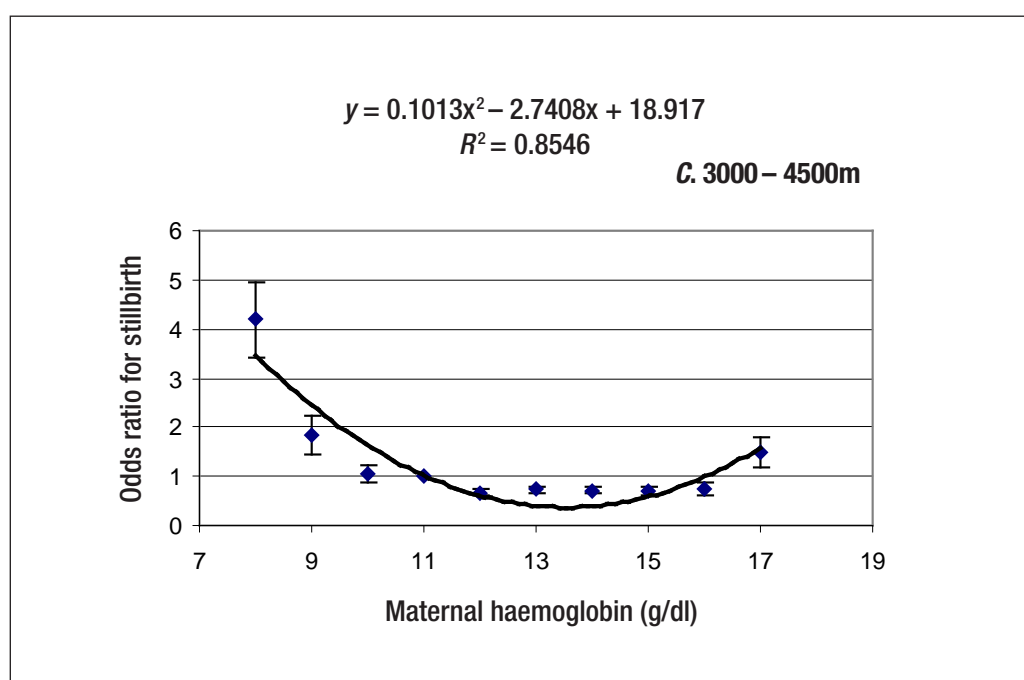
Of importance is the recommendation to not use an adjustment factor to “correct” laboratory results of haemoglobin levels in altitude (as advocated by WHO), which would erroneously lower high haemoglobin levels; this may prevent early recognition of an adverse effect, and may lead to unnecessary provision of iron tablets to women with already high haemoglobin levels ( $\geq 13$  g/dl) in altitude.

### 3.1.2 Research training grants

RTGs were awarded to the Latin American programme for research and research training in human reproduction (PLISSER) hosted by the Institute for Biology and Experimental Medicine (IBYME, in Spanish) in Buenos Aires, Argentina, which coordinates research training activities funded by the Programme in the Region.

Table 1 below summarizes the overall number of grants completed or ongoing in 2009–2010 with HRP funds for the Region. A total of 24 fellows were awarded courses or practical training of six months or less, 13 in 2009 and 11 in 2010. Average duration of training was 4.5 months in 2009, which reduced to 3.6 months in 2010. Of all the fellows, two thirds (67%) were women, and all training was carried out in centres located in Latin America.

Figure 1. Levels of haemoglobin and odds ratios for stillbirths.



From Gonzales GF, Steenland K, Tapia V. Regulatory, integrative and comparative physiology. *Am. J. Physiol.*, 2009;297(5):R1477-85.2010.

Table 1. Number of trainees supported by HRP grants in 2009–2010

Type of research training activity	Men	Women	Total
MSc course in critical obstetric management	1	–	1
Biomedical/basic sciences	6	8	14
Clinical	1	1	2
Epidemiology	–	4	4
Social sciences	–	3	3
Total	8	16	24

### 3.1.3 Capacity building in research ethics

A research ethics workshop was held in Bolivia (Plurinational State of) in June 2009 organized by CIDES, from San Andres University (UMSA) in La Paz, Bolivia (Plurinational State of), the LID-grant recipient centre. The workshop focused on the basic concepts of research ethics and was attended by 46 local resource persons selected from over 60 applicants. The group was multidisciplinary and represented national institutions, health research agencies and institutional research ethics committees.

A second meeting was held with 18 members of three different research ethics committees and professional backgrounds, including the National Commission on Research Ethics of Bolivia. The group identified three problems that impeded development of research ethics in Bolivia (Plurina-

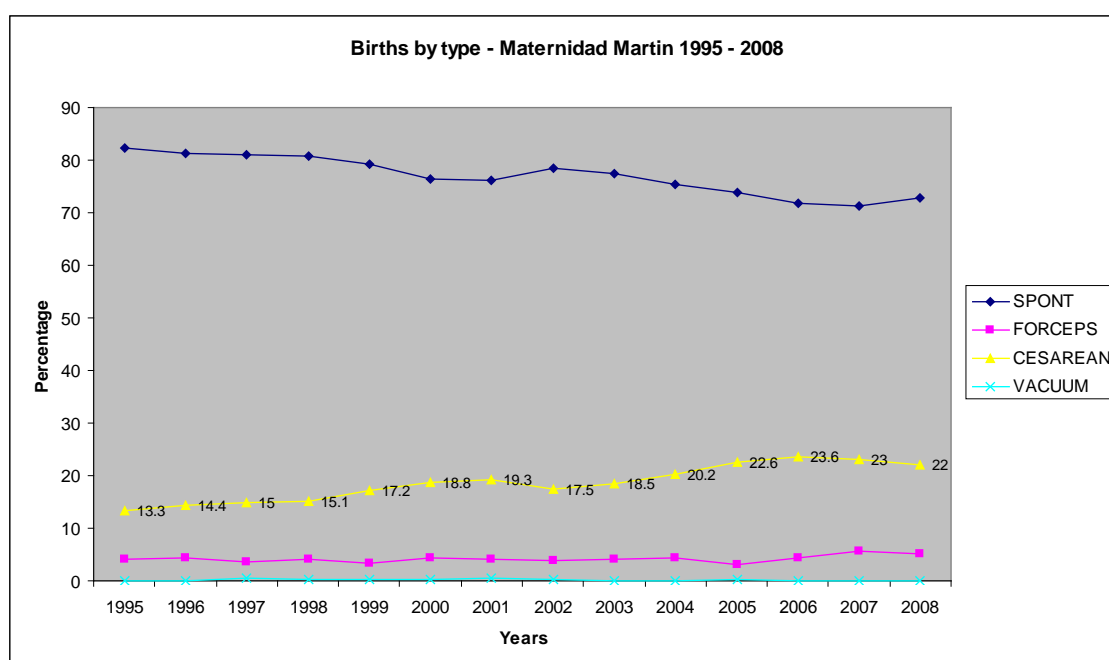
tional State of): (1) lack of standard operational procedures of the National Commission and of most other committees; (2) lack of knowledge by the National Commission of the number and location of research ethics committees in the country; and (3) need for training and skill development in research ethics for researchers and committee members.

A proposal, coordinated by the local PAHO/WHO Representation, was developed to address these issues. In 2010, the three committees hired a consultant, who produced an inventory that found only 13 ethics committees existing in the country, most of them located in the capital. The leading committees have produced a set of standard operating procedures (SOPs) to be approved and disseminated widely among the existing committees and other interested parties in 2011. It is hoped this initiative is pursued and expanded further in the country.

### 3.1.4 Dissemination of research findings

At the First Global Symposium on Health Systems Research, held in Montreux, Switzerland, from 16 to 19 November 2010, a poster was presented highlighting the use of data from the Perinatal Information System to take informed decisions affecting quality of health care. For example, analysts at the Hospital Maternidad Martín, in Rosario, Argentina, used data covering more than 10 years on type of births in the hospital to identify an alarming rise in the trend of caesarean sections (see Figure 2). This led to meetings and trainings at the maternity hospital on the use of protocols and standards, resulting in a decreasing trend in such procedures. The hospital team continues to monitor the trend.

Figure 2. Trends in birth types at Hospital Maternidad Martín, Rosario, Argentina.



The most important regional gathering of the Latin American Association for Research in Human Reproduction (ALIRH) takes place every two years and was held in Sao Paulo, Brazil in April 2009. At the meeting, over 200 scientific papers were presented on practically all sexual and reproductive health topics, including biomedical, epidemiologic and social science investigations conducted in the Region (many of which have been supported by HRP); likewise, four plenary conferences and six special symposia were organized and covered topics such as: the contribution of Latin American scientists and centres to the work of HRP over the past 30 years, development of new contraceptive methods including basic research and the contribution of the social sciences, the WHO family planning guidance, VAW, and the health MDGs. The grant awarded by HRP to support the meeting made possible the attendance and participation of 18 directors of HRP collaborating institutions in the Region and of 15 young scientists selected through a competitive process. The next ALIRH meeting is scheduled for 11 October 2011 in Panama City, Panama.

### 3.1.5 *The Nicaragua Observatory for Women*

Given the situation of high rates of maternal mortality and domestic violence against women in the country, the 2009 RAP decided that Nicaragua would benefit from the constitution of a national observatory for women's reproductive health. Contacts were made with the National Autonomous University at Leon, which agreed to undertake the initiative. A contract was signed and initial payments and activities began in late 2009. Unfortunately, authorities changed in February 2010, which brought about a more conservative stance on reproductive health and women's rights, making advancement of activities for the Observatory impossible. The agreement with the University is being terminated and other local public organizations and NGOs, which have shown interest, are being contacted. Given the social and political context existing at present, the programme will seek to support a more neutral initiative, such as a LID grant to disseminate available maternal-neonatal health information and strengthen research capacity. A visit is planned early in 2011 to explore the possibility of pursuing the initiative with more autonomous institutions.

### 3.1.6 *Call for proposals for operations research on integration of HIV/AIDS and sexual and reproductive health services*

In January 2010 a call for proposals was released for projects that undertake operations research on the integration of HIV/AIDS services with sexual and reproductive health services. By the 15 May deadline, five concept papers had been submitted: one from Brazil; three from Chile; and one from Peru. The papers were quickly reviewed by two members of the RAP Secretariat to give authors time to revise and improve the papers if necessary. Three papers came back modified

and were submitted to the RHR Research Project Review Panel (RP2) in September 2010. Only the Peruvian paper showed some promise and had the minimum qualifications to merit further expansion. The other papers were seen as not responding to the call (i.e. the authors had not included action or operations research methods, or had interpreted integration as a holistic view of HIV/AIDS for the patient). The Peruvian investigator is elaborating the proposal further to seek final approval for funding.

## 3.2 **Planned activities**

### 3.2.1 *Strengthening institutional research capacity*

The RAP for the Americas designed a selection process to identify and select new collaborating institutions as potential recipients of RCS grants. The new centres in Bolivia (Plurinational State of) and Paraguay are the result of this policy. Given the current levels of financial resources, there may only be one additional institution incorporated to the LID grant group in 2011–2012 (e.g. Nicaragua), as the LID grant duration implies guaranteed support to a centre for at least five years if its performance is satisfactory.

### 3.2.2 *Strengthening human resources for research*

The RAP for the Americas had reiterated its recommendation that a larger portion of funds be awarded to PLISSER to offer young research fellows from collaborating institutions six-month grants to develop very specific training objectives; it had also recommended that a small amount be devoted to well identified needs for longer, more basic training (e.g. MSc courses). Also, given the relatively low number of trainees in the areas of Social Sciences and Epidemiology, more effort will be put to increase the number of applicants and grants awarded in these areas. Support will continue to be provided for short-term courses and visits, workshops and other group-learning activities in the different sexual and reproductive health topics of interest in the Region.

### 3.2.3 *Capacity strengthening in research ethics*

The joint initiative of HRP and FHI to build country level capacity in research ethics will continue depending on the funding situation. At present, the only active participation is from Bolivia (Plurinational State of), which undertook activities during 2010 and will disseminate their work in 2011. Target countries identified for the following period are: Ecuador, Honduras and Nicaragua. As funding increases for programme development initiatives, follow-up visits will also be undertaken in the six countries that have already participated: Bolivia (Plurinational State of), Colombia, Guatemala, Panama, Paraguay and Peru.



## 4. SUPPORT TO PROGRAMME DEVELOPMENT

### 4.1 Progress

#### 4.1.1 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 Region continued in 2009 through coordinated efforts with the Latin American Perinatology Center/Women's and Reproductive Health (CLAP/SMR) regional centre in Montevideo, Uruguay, and with UNFPA. Nearly 5000 copies of the Spanish language version of the DMT and of the Global handbook for family planning providers were distributed in 16 of the 18 Spanish-speaking countries in Latin America. Updating of national family planning norms was also supported and new norms were completed in Bolivia (Plurinational State of), Cuba and Guatemala. A training workshop on the DMT and on the global handbook was organized in September 2009 for English-speaking Caribbean countries. Due to funding constraints, participating countries committed to disseminate this initiative through their existing mechanisms and resources in 2010.

#### 4.1.2 Country level implementation of the WHO Global Reproductive Health Strategy

In 2009, four countries (Argentina, Brazil, Guatemala and Peru), which participated in the regional initiative to evaluate the feasibility of calculating indicators recommended in the *Framework for the implementation of the Strategy*, conducted national-level workshops to share the results with relevant stakeholders. These were important opportunities to bring together researchers from the HRP network and MoH authorities and officers involved in sexual and reproductive health issues. The results of these meetings have led to further collaboration between these two parties in the

area of measurement of indicators relevant to universal access to sexual and reproductive health. In view of the overall lack of awareness on the new MDG Target 5B, the Americas desk prepared a flyer in Spanish, which is being distributed throughout the Region; this material summarizes the 50 core indicators included in the WHO–UNFPA document *National-level monitoring of the achievement of universal access to reproductive health*:

**INDICADORES BÁSICOS RECOMENDADOS EN EL DOCUMENTO:**  
SEGUIMIENTO A NIVEL NACIONAL DE LOS LOGROS EN EL ACCESO A LA SALUD REPRODUCTIVA (DMS 2009)

Generales		
Indicador	Tipo de medición	Fuente de datos
1. Política o estrategia nacional de salud sexual y reproductiva	Si/no	Revisión de políticas
2. Asignación presupuestaria específica y coordinada, para medios e insumos para la salud sexual y reproductiva en el presupuesto nacional o en otras fuentes	Si/no	Registros administrativos
3. Presupuesto gubernamental dedicado a la salud	Por ciento	Registros administrativos
4. Presupuesto gubernamental de salud dedicado a la salud sexual y reproductiva	Por ciento	Registros administrativos

Organización Mundial de la Salud UNFPA

*conceptual and practical considerations and related indicators.* Monitoring of wider dissemination of the indicators within the initial countries and possible expansion to others are being contemplated.

#### 4.1.3 Technical support to programmes in selected countries

During 2009 a concerted effort was made to assist El Salvador in addressing some technical gaps in sexual and reproductive health. Two main topics were supported: strengthening of knowledge and skills on technical and scientific issues relevant to sexual and reproductive health programmes, and increased utilization of a gender and rights approach in the provision of sexual and reproductive health services. To address the first issue, two separate group-learning workshops were organized in coordination with the local PAHO/WHO Representation: a workshop on gynaecologic ultrasonography for providers, and a three-day “on the spot” training on the structure and utilization of the *WHO Reproductive Health Library*. A “Gender and rights” workshop based on the RHR curriculum was organized to address the second need. Overall, these three workshops benefited nearly 100 professionals involved in the provision of sexual and reproductive health services and were organized mobilizing human resources from within the Region (Argentina, Guatemala and Peru). Technical support continues in this and other countries of the Region as needs arise.

#### 4.1.4 Supporting achievement of universal access to reproductive health at country level

In 2009, national-level workshops were implemented in Argentina, Brazil, Guatemala and Peru, in support of WHO's global initiative to accelerate progress towards universal access to reproductive health. These events brought together researchers and sexual and reproductive health policy-makers who had extensive discussions on the indicators related to the achievement of MDG Target 5B “Achieve by 2015 universal access to reproductive health”. Specific recommendations for application at country level were also discussed and the obvious need to strengthen public health statistical information systems at country level was highlighted. The RAP considered this task of high priority to countries in the Region and recommended that the Regional desk continues to coordinate it with other units of TCC and other RHR Teams. Continuation of this activity was not possible in 2010 but is envisioned to restart in 2011, with a regional workshop to gauge progress in this area.

#### 4.1.5 The PLEAS workshop

In 2008, a group of clinical and scientific specialists created the Latin American programme for the standardization of semen analysis (PLEAS). This group used the WHO publication *WHO laboratory manual for the examination and processing of human semen* as an opportunity to share the new

criteria and procedures in a standardized form across the Region. They organized and conducted the first workshop on standardization of semen analysis at the School of Medicine of the University of Chile in Santiago (5–7 May 2010). Thirteen researchers and practitioners were selected from 27 applicants to receive financial support to attend the event. A total of 39 professionals from 12 countries in Latin America attended the event: Argentina (3); Bolivia (Plurinational State of) (1); Chile (21); Colombia (1); Cuba (1); Dominican Republic (1); Guatemala (1); Mexico (4); Nicaragua (1); Panama (1); Peru (3); and Venezuela (Bolivarian Republic of) (1). The participants committed to disseminate the contents of the WHO manual throughout their countries and Region. The next meeting is planned for October 2011 in Panama City, before the twenty-second biennial meeting of ALIRH, also a WHO-supported regional conference.

## 4.2 Planned activities

As a newer component of the RAP's objectives, programme capacity strengthening (PCS) is no less important than RCS, as recognized by the RAP, and also deserves support. The Group reiterated its support for a budgetary division of 70% for RCS and 30% for PCS for 2009 and beyond. With the current budgetary situation, planning has been more cautious; however, activities will continue by complementing and liaising with other initiatives present in the area, such as PREVEN (community initiative to prevent STIs), and the PAHO strategy and plan of action for the elimination of mother-to-child transmission of HIV and congenital syphilis.

Support will continue to the extent possible to countries involved in updating their national sexual and reproductive health 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*, in which a multiagency collaborative approach was used since the very beginning, is to be extended to other materials and situations. Recently, two national governments have offered to re-print the materials on their own, only requesting that WHO provides the printing rights. This has been the case in early 2010 in Mexico, whose MoH offered and has now reprinted 10 000 copies of the MEC Wheel, which is being disseminated in-country. WHO will assist as necessary in the evaluation of the impact of distribution and use of this job aid. Also in 2010, the Government of Argentina and CEPEP made similar requests for reprints, which are being followed up. A regional monitoring and evaluation strategy is currently being developed to evaluate the progress and potential impact of this initiative.

## SELECTED PUBLICATIONS IN 2009–2010

### Peer-reviewed papers or national publications

*From the Institute of Experimental Biology and Medicine (IBYME), Buenos Aires, Argentina (Regional training centre, and RMG recipient)*

Cohen DJ, et al. "Participation of 'CRISP' proteins in gamete interaction and their potential use for male fertility regulation". Proceedings of the 9th International Congress of Andrology, 2010, 25–28.

Cohen DJ, et al. Molecular mechanisms involved in mammalian sperm–egg interactions: Participation of CRISP (Cysteine-Rich Secretory Proteins) family members. *Biol Res.* (in press)

Ellerman DA, et al. "Immunological behaviour of human cysteine-rich secretory protein 1 (hCRISP1) in primates: prospects for immunocontraception. *Fertil Steril*, 2010, 93 (8):2551–6.

Ellerman DA, et al. Relevance of human Cysteine-Rich Secretory Protein 1 (hCRISP1) for fertility: immunization studies in non-human primates. (submitted)

*From the Altitude Research Institute, Cayetano Heredia University, Lima, Peru (recipient of competitive intraregional grant, 2009–2010)*

Gonzales GF, Gonzales-Castañeda C. The Methyltetrahydro-b-Carbolines in Maca (*Lepidium meyenii*). *Evid Complem Altern Med*, 2009, 6:315–6.

Gonzales GF, Tapia V. Birth weight charts for gestational age in 63 620 healthy infants born in Peruvian public hospitals at low and at high altitude. *Acta Paediatr*, 2009, 98:454–8.

Gonzales GF, et al. High serum testosterone levels are associated with excessive erythrocytosis of chronic mountain sickness in men. *Am J Physiol Endocrinol Metab*, 2009, 296:E1319–25

Zaobornyj T, et al. Mitochondrial nitric oxide metabolism during rat heart adaptation to high altitude: effect of sildenafil, L-NAME, and L-arginine treatments. *Am J Physiol Heart Circ Physiol*, 2009, 296:H1741–7.

Gonzales GF, Steenland K, Tapia V. Maternal hemoglobin level and fetal outcome at low and high altitudes. *Am J Physiol Regul Integr Comp Physiol*, 2009, 297:R1477–85.

*From the Center for Research in Development Sciences (CIDES), La Paz, Bolivia (Plurinational State of). 35 publications*

Wanderley F. Cidadania coletiva e documentos de identidade .DADOS. Revista de Ciencias Sociais, IUPERJ. Brazil. 2008.

Salazar C; Farah I. (2010). Neoliberalismo y desigualdad entre mujeres: elementos para replantear el debate en Bolivia. En Género y Globalización, Alicia Girón (coordinadora) CLACSO.

*From the Center for Population Studies (CEPEP) – Asunción, Paraguay*

Kanako Ishida, et al. Exploring the associations between intimate partner violence and women's mental health: Evidence from a population-based study in Paraguay. *Social Science and Medicine*, 2010, 71(9):1653–1661.

Kanako Ishida, et al. Perinatal risk for common mental disorders and suicidal ideation among women in Paraguay, 18 May 2010. *International Journal of Gynecology & Obstetrics*, September 2010, 110(3):235–240.

Kanako Ishida, Stupp P, Melian M. Fertility Decline in Paraguay, Studies in *Family Planning*, 2009, 40[3]:227–234.

## Chapter 9

# Research capacity strengthening and programme development: South-East Asia and Western Pacific Regions

### 1. INTRODUCTION

The strategic framework of the Department in supporting countries in the WHO South-East Asia and Western Pacific Regions is to assist them in:

- strengthening the research capacity of investigators in developing countries;
- supporting researchers to conduct studies based on national priorities in reproductive health, and facilitating their participation in regional and global research;
- promoting dissemination and utilization of research results and evidence-based guidelines in sexual and reproductive health programmes and services;
- developing strategies to plan, implement, monitor and evaluate programmes to enhance reproductive health.

Collaborative activities were continued with research and academic institutions in five countries in the South-East Asia and Western Pacific Regions through activities that strengthened research capacity, and in five countries through support for reproductive health programmes.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

The programme of work to support countries in national research capacity strengthening and development of new evidence, interventions and delivery approaches, contributes to SO4 “To reduce morbidity and mortality and improve health during key stages of life, including pregnancy, childbirth, the neonatal period, childhood and adolescence, and improve sexual and reproductive health...” Within this objective, the

work contributes to OWER 4.2: “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, ... and to improve sexual and reproductive health”.

### 3. STRENGTHENING INSTITUTIONAL CAPACITY FOR RESEARCH

#### 3.1 Progress

Strengthening the research capacity of investigators from low- and middle-income countries remains a priority for HRP. At the institutional level, the focus is on upgrading infrastructural support mechanisms while at the individual level, the emphasis is on building up a critical mass of competent individuals to be able to conduct research in accordance with the highest scientific and ethical standards.

#### 3.1.1 *Strengthening institutions for research*

##### 3.1.1.1 Ongoing institutional research capacity strengthening grants

A list of ongoing research capacity strengthening grants is given in Table 1. The thrust of support is on institutions in least developed countries, particularly those that have not yet received grants from HRP. LID grants were awarded to institutions in Bhutan, Cambodia and Myanmar. The majority of institutions in South-East Asia and in the Western Pacific Region received RMGs or small grants. In China and Sri Lanka, a single grant was awarded to an institution to coordinate national-level activities such as workshops and



maintenance of web sites. In 2010, the number of recipient institutions awarded RMGs was reduced due to financial constraints.

For Cambodia and the Lao People's Democratic Republic, the grants provide an opportunity to develop and enhance mechanisms for collaboration between research and implementation institutions under the MoH, i.e. Institutes of Public Health, and Maternal and Child Health Centres.

As a component of the LID grant to the National Institute of Public Health, Phnom Penh, Cambodia, the Programme provided support for the development of a module on reproductive health for inclusion in the Master's in Public Health course.

### 3.1.2 Strengthening human resources for research

The mechanisms employed to strengthen the research capacity of young and midlevel researchers from recipient institutions included individual training as well as group-learning activities. Investigators participating in workshops

and seminars included staff of institutions that are previous recipients of grants or WHO CCs, and programme managers for reproductive health from the MoH.

#### 3.1.2.1 Research training grants

RTGs for Master's degree courses in epidemiology or population and reproductive health within the region were awarded to two mid-level researchers each from Cambodia, the Lao People's Democratic Republic and Myanmar. Three of the six researchers were women and the training grant recipient from Myanmar received the best student award for the Master's degree course in population and reproductive health at the Institute for Population and Social Research (IPSR), Mahidol University, Bangkok, Thailand. As many women are reluctant to study abroad for prolonged periods, the training grant awarded to the staff member of the reproductive health programme in Cambodia enabled her to follow the Master's in Public Health course in her own country.

Table 1. Ongoing research capacity strengthening grants

Country	Institutions and grants
Bhutan	LID grant to Research and Epidemiology Unit, Ministry of Health, Thimphu (Starting 2009)
Cambodia	LID grant to National Institute for Public Health and the National Maternal and Child Health Centre, Phnom Penh (Starting 2008)
China	A single grant to the National Coordinating Board for collaborative activities with seven institutions: (2009) 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 Tianjin Municipal Research Institute for Family Planning, Tianjin
India	RMG to All India Institute of Medical Sciences, New Delhi (2009–2010)
Indonesia	RMG to Reproductive Health Research Centre, Airlangga University, Surabaya (2009–2010)
The Lao People's Democratic Republic	RMG to Maternal and Child Health Centre, Ministry of Public Health, Vientiane (2009–2010)
Mongolia	RMG to State Research Centre on Maternal and Child Health and Human Reproduction, Ulaanbaatar (2009–2010)
Myanmar	RMG to Department of Medical Research, Lower Myanmar, Yangon (2009) LID grant to Department of Medical Research, Upper Myanmar, Pyin-Oo-Lwin (Starting 2008)
Sri Lanka	A single grant to the National Coordination Committee for Research on Reproductive Health, Colombo to three institutions: (Task Forces based in Universities of Colombo and Ruhuna) (2009–2010) Small grants to Universities of Kelaniya and Sri Jayawardenepura, Sri Lanka (2009)
Viet Nam	RMG to National Hospital of Obstetrics and Gynaecology, Hanoi (2009) RMG to Hung Vuong Hospital, Ho Chi Minh City (2009–2010)

## 3.1.2.2 Regional and national training workshops

In line with the shift to research to improve reproductive health programmes and in response to the requests from WHO regional and country offices and institutions, regional and national workshops on operations research were organized (see Table 2). Twenty-four participants from four countries in the South-East Asia Region took part in a regional “Training of trainers” workshop on operations research in reproductive

health, which was held in Delhi, India, in November 2009. The workshop was jointly organized by the Population Council (Asia and Near-East Regional Office), the WHO Regional Office for the South-East Asia Region and the Programme. National workshops on operations research were held in Dhaka, Bangladesh; Beijing, China; Yogyakarta, Indonesia; Ulaanbaatar, Mongolia, and Hanoi, Viet Nam. Proposals developed during these workshops have been funded by national governments.

Table 2. Regional and national workshops (by topic, countries and number of participants)

Topic	Participating countries	Number of participants	
		Men	Women
Regional Training of trainers workshop on operations research in reproductive health (Delhi, India, November 2009)	Bangladesh, Bhutan, India (4 institutions) and Myanmar	13	11
Regional workshop on data analysis for projects on improving sexual and reproductive health of young migrants through peer education and services (Bangkok, Thailand, June 2010)	China (Chengdu and Tianjin), Lao People's Democratic Republic, Myanmar, Thailand and Viet Nam	4	10
National workshops on operations research in reproductive health (2009 and 2010)	2009		
	Dhaka, Bangladesh	10	6
	Ulaanbaatar, Mongolia	6	12
	Hanoi, Viet Nam	10	11
	2010		
National workshops on ethical issues in reproductive health research (2009 and 2010)	Yogyakarta, Indonesia	11	11
	Beijing, China	7	15
	2009		
	Pyin-Oo-Lwin, Myanmar	10	10
	Hanoi, Viet Nam	10	10
National seminar on research ethics (2010)	2010		
	Paro, Bhutan	12	9
	Delhi, India	7	12
National workshops on research methodology (2009 and 2010)	2009		
	Ragama, Sri Lanka	8	8
	Phnom Penh, Cambodia	10	6
	Vientiane, Lao PDR	5	12
	Ulaanbaatar, Mongolia	6	12
	Paro, Bhutan	10	8
	Surabaya, Indonesia	10	10
	2010		
	Pyin-Oo-Lwin, Myanmar	10	12
	Vientiane, Lao People's Democratic Republic	1	15
	Paro, Bhutan	10	10
National workshop on monitoring and evaluation (2010)	Phnom Penh, Cambodia	8	14
National workshop on cervical cancer screening and VIA (2010)	Ulaanbaatar, Mongolia	12	3
National workshop on management of infertility in low-resource settings (2010)	Surabaya, Indonesia	10	10
National workshop on scientific writing and communication skills for scientists and researchers (2009 and 2010)	2009		
	Surabaya, Indonesia	5	15
	Chandigarh, India	10	10
	2010		
	Ho Chi Minh City, Viet Nam	9	11
<b>Total</b>		<b>224</b>	<b>273</b>

Group training on research methodology and ethical issues in reproductive health was supported at the national level. Workshops on research ethics are held towards the beginning of the grant period in institutions receiving capacity strengthening grants for the first time. In Bhutan, subnational workshops were then held with support from the MoH. In order to strengthen capability to communicate research findings to key stakeholders and promote uptake by end-users, workshops on scientific writing and communication were held in Surabaya, Indonesia, Chandigarh, India and Ho Chi Minh City, Viet Nam.

### 3.1.2.3 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, on operations research and research methodol-

ogy for proposal development. An NPO from China received support to attend the training course in sexual and reproductive health research, jointly organized by GFMER and the Department in 2009.

The centres were funded from national and international sources for research projects. National reproductive health programme managers were involved in identifying issues and in proposal development to ensure the relevance of research and to facilitate dissemination and utilization of research results.

In addition, HRP supported 18 national studies in 9 countries, 5 of which were in response to the call for proposals for the competitive intraregional research (CIR) grant (Table 3). The results of the study on “Evaluation of the haemoglobin colour scale in improving the treatment and referral of anaemic pregnant women in Mongolia and Myanmar” were presented during a poster session at the First Global Sympo-

Table 3. Research studies supported by the Programme at the national level

Country	Title of research project
Cambodia	Factors related to the uptake of HIV testing among women attending antenatal clinics with prevention of maternal to child transmission services in Cambodia
China	Improving sexual and reproductive health issues of young migrants through life-skills-based training and youth-friendly service on sexual and reproductive health – Chengdu, Tianjin and Shanghai, China (3 CIR grants)
Indonesia	Prevalence of RTIs in pregnant women in Medan, North Sumatra
Lao People's Democratic Republic	<ul style="list-style-type: none"> <li>Unsafe abortion in the Lao People's Democratic Republic</li> <li>Evaluation of the haemoglobin colour scale in improving the treatment and referral of anaemic pregnant women in Savannakhet Province</li> <li>Reproductive health promotion for young migrant factory workers in four main districts in Vientiane</li> </ul>
Mongolia	<ul style="list-style-type: none"> <li>Sexual risk behaviour, and knowledge and access to the services related to STIs including HIV/AIDS, among young internal migrants to Ulaanbaatar</li> <li>Evaluation of the haemoglobin colour scale in improving the treatment and referral of anaemic pregnant women in Bayan-Olgii Province</li> </ul>
Myanmar	<ul style="list-style-type: none"> <li>STIs among male highway drivers in Myanmar</li> <li>A case-control study of ectopic pregnancy in Myanmar: special focus on etiological factors</li> <li>Promoting antenatal care services in urban health centres of Mandalay, Myanmar, to improve early detection of pre-eclampsia</li> <li>Evaluation of the haemoglobin colour scale in improving the treatment and referral of anaemic pregnant women in Mandalay division</li> <li>Promotion of reproductive health of adolescent and youth migrants in periurban areas of Mandalay City</li> <li>Linking STI/RTI services to reproductive health services at primary health care level (CIR grant)</li> </ul>
Sri Lanka	The effectiveness of a patient education programme and a direct referral system in improving contraceptive uptake in women with medical illnesses
Thailand	Expanding access to sexual and reproductive health information and services for migrant youth in periurban areas of Bangkok
Viet Nam	<ul style="list-style-type: none"> <li>An intervention to improve knowledge on reproductive health and access to services of migrant youth in Ho Chi Minh City</li> <li>Improving the quality of sexual and reproductive health services through linking RTI/STI services to reproductive health services at the primary health care level (CIR grant)</li> </ul>

Table 4. Research studies conducted by centres receiving support from HRP

Thematic area	Year			
	2009		2010	
	Number	Per cent	Number	Per cent
Adolescent reproductive health	24	8	23	12
Family planning	42	15	42	22
Health systems	17	6	14	7
HIV	25	9	34	18
Infertility	20	7	4	2
Maternal and neonatal health	40	14	34	18
Reproductive biology	60	21	14	7
Reproductive cancers	16	6	6	3
RTIs/STIs	10	3	5	2
Unsafe abortion	2	1	2	1
Gender, violence, harmful practices	27	10	7	4
Menopause, other reproductive health issues	—	—	8	4
Total	283	100	193	100

sium on Health Systems Research, Montreux, Switzerland, in November 2010.

The detailed breakdown of studies conducted by institutions receiving support from HRP in the South-East Asia and Western Pacific Regions is shown in Table 4.

### 3.1.3 Identifying priorities for research

A workshop to review reproductive health research priorities for Indonesia was held in conjunction with the 11th RAP meeting for the South-East Asia and Western Pacific Regions in March 2009. As maternal mortality and morbidity remain high, especially in underserved areas, the assessment of the existing programme for fee exemption and transport incentives to increase facility-based birth delivery, clinical audits on emergency obstetric services at first referral facilities, and care-seeking behaviour in different cultural contexts were identified as priority issues. In addition, the participants recommended operations research to address the lack of progress in contraceptive prevalence and the narrowing of the contraceptive method mix. To follow up, a national workshop on operations research was supported in 2010. This workshop was organized by the National Institute for Health Research and Development, and the WHO and UNFPA Country Offices in Indonesia.

### 3.1.4 Mechanisms to establish linkages between centres

The research project mentoring (RPM) grant and CIR grant were employed to establish collaboration between institu-

tions receiving capacity strengthening grants and more mature research centres that can assist in their development.

#### 3.1.4.1 Research project mentoring grants

The objectives of the RPM grants include provision of mentoring support to less mature centres to strengthen research proposal development and implementation. The following institutions received RPM grants: the Epidemiology Department, Prince of Songkla University, Hat Yai; College of Public Health of Chulalongkorn University, Bangkok; IPSR, Mahidol University, Bangkok, Thailand; and Department of Community, Occupational and Family Medicine, Yong Loo Lin School of Medicine, National University of Singapore.

The CIR grant is awarded with the following aims: to foster multidisciplinary and/or multicentre scientific collaboration for research training and to develop evidence-based recommendations for priority regional reproductive health problems. The grant led to the establishment or strengthening of subregional and intracountry networks for research.

#### 3.1.4.2 Networking among WHO Collaborating Centres

Senior researchers and representatives from three WHO CCs participated at a regional “Training of trainers” workshop on operations research in Delhi, India. These centres were: the Department of Obstetrics and Gynaecology, Post Graduate Institute of Medical Education and Research, Chandigarh; All India Institute of Medical Sciences, Delhi; and National Insti-



tute for Research in Reproductive Health (NIRRH), Mumbai. Other participants were from institutions that collaborate with the Programme: Indian Council of Medical Research, Delhi; and the Department of Obstetrics and Gynaecology, SAT Hospital Medical College, Trivandrum. The workshop provided an opportunity to further consolidate modalities of collaboration with the Programme: participating in multicentre studies, strengthening South–South partnerships with institutions from other countries and facilitating national-level training on operations research and workshops to help with implementation of research evidence.

Similar collaborative mechanisms were also discussed with Directors and representatives of WHO CCs on Reproductive Health and Research, Reproductive Health and Population Science, and Women's Health, from Australia, China (Beijing, Chengdu, Hong Kong Special Administrative Region, Shanghai, and Tianjin) and the Philippines. The WHO Regional Office for the Western Pacific Region had organized this meeting in Shanghai, China, in November 2009 to promote networking among institutions and with WHO.

### 3.1.5 Dissemination and utilization of research findings

A symposium on “Sex education and sexual and reproductive health in China: from research to action”, sponsored by the Programme and other partners, and organized by the Shanghai Institute of Planned Parenthood Research, a WHO CC, was held in Shanghai, China from 25 to 27 May 2010. Results of research supported by the Programme were presented at the event. Recommendations included: to

conduct research on most at-risk populations such as young migrants and university students, and to test and scale-up feasible and effective service interventions for such groups. The need to highlight sexual and reproductive health needs of adolescents and youth when developing policies, and to enhance cooperation among education, health and FP sectors were stressed.

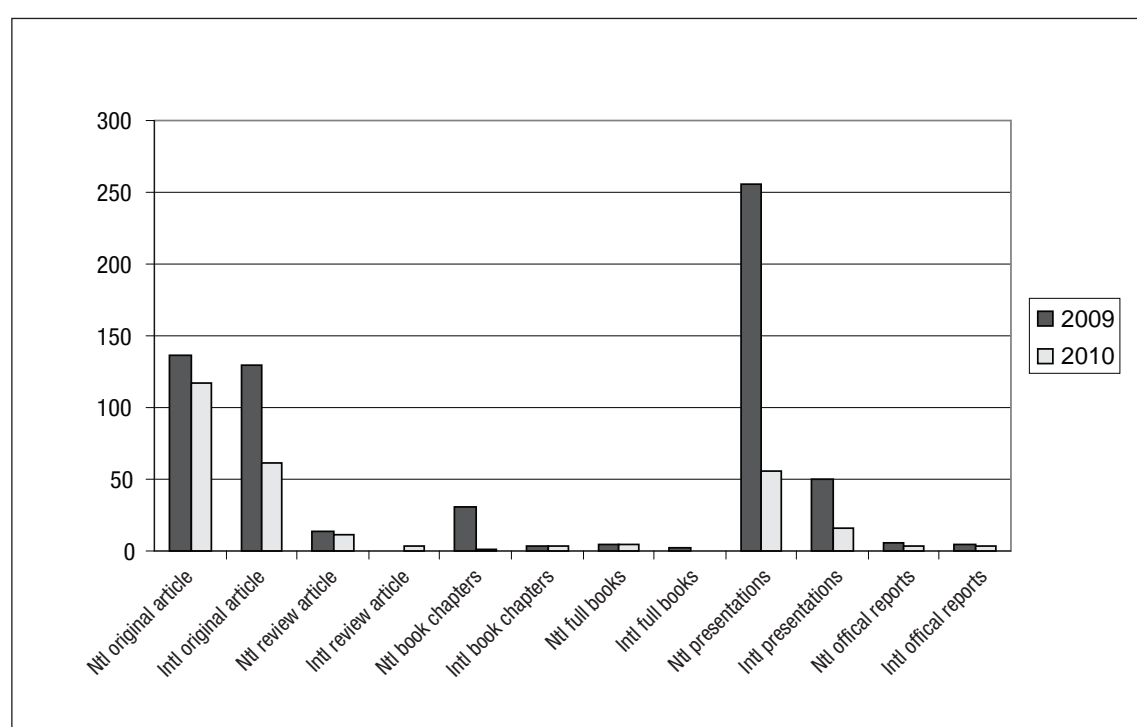
The web site for the National Co-ordinating Committee for Reproductive Health and Research, Colombo, which coordinates activities of five major universities in Sri Lanka, was launched in January 2009. This web site contains 1067 abstracts of journal articles and published abstracts of presentations made in local and international conferences on reproductive health research carried out in Sri Lanka from 1990 to date. Research findings were disseminated at national meetings in Myanmar, Sri Lanka and Viet Nam.

In 2009–2010, a total of 253 original research articles were published in national journals and 190 in international journals by scientists from the centres. Forty books and book chapters were authored by staff from the centres. At national meetings, 312 presentations were made, and 66 were made at regional or international scientific events. Figure 1 shows the distribution of publications and presentations from 15 centres in 8 countries in 2009; and from 10 centres in 6 countries in 2010.

### 3.1.6 Challenges

Over the years, the Programme has achieved a measure of success in research capacity strengthening in this vast

Figure 1. Distribution of publications and presentations in 2009 and 2010.



region despite relatively small investments. However, some of the institutions may not have yet developed the skills and competencies to conduct studies in alignment with current global trends: an emphasis on implementation research and health care financing. Often it is challenging to maintain and retain a critical mass of trained researchers. Staff turnover may be due to a combination of factors: limited funding for research, poor remuneration for service and lack of recognition; while those with more experience obtain positions at the Ministries of Health or in international organizations.

HRP responds to requests from least developed countries with the most critical needs for capacity strengthening. These centres that are in the initial stages of developing capacities require committed leadership and appropriate training of staff to develop a group of researchers with core skills. Access to web-based resources, networking with other researchers and continuing mentorship are critical in these early phases. Staff from these institutions often have additional training, services and administrative responsibilities in addition to research. Different long-term and more supportive approaches may need to be employed for these countries.

### 3.2 Planned activities

Institutional development and research training grants will be awarded to countries that are in the early phases of strengthening research capacity in the health sector, e.g. Bhutan, Cambodia and the Lao People's Democratic Republic. Continuing support will be provided for ongoing studies as a means to enhance research capacity. The Programme will collaborate with and complement the efforts of other partners who are undertaking capacity building in countries in the South-East Asia and Western Pacific Regions.

For institutions that are receiving RMGs, the emphasis will be towards conducting research that will improve reproductive health programmes and participation in regional research initiatives. WHO CCs in China, India, Singapore and Thailand will continue to be engaged in their contribution to the global research effort and will be supported to continue their role as mentors to encourage South-South collaboration.

## 4. SUPPORT FOR DEVELOPMENT OF NATIONAL REPRODUCTIVE HEALTH PROGRAMMES

### 4.1 Progress

#### 4.1.1 Introduction, adaptation and implementation of WHO evidence-based guidelines and tools at the country level

As a follow-up to the WHO–UNFPA SPP for implementation of guidelines and tools on FP and RTIs and STIs, technical support was provided to eight countries and funding provided to four countries. In the Lao People's Democratic Republic, funds were provided for printing the Laotian version of the DMT; in Myanmar, the same tool was simplified for use by

community health workers. As a partner of the MoH, the Family Planning Association of Nepal implemented DMT in 40 villages in four districts, two of which are UNFPA project sites. In Cambodia, the tools *Reproductive choices for family planning for people living with HIV/AIDS* and *Decision-making tool for family planning clients and providers in areas with generalized HIV epidemics* have been translated into Khmer and adapted by the PMTCT Team of the National Maternal and Child Health Centre (NMCHC). The Khmer Tool will be integrated into the existing curriculum of the National Safe Motherhood protocol and PMTCT. The Khmer version will be implemented in Kampong Son Provincial Health Department by the Government and will be extended to three provinces where support has been received from the Global Fund for a continuum of care project.

Translation of the RHL no. 11 into Chinese was undertaken by the Shanghai Institute of Planned Parenthood Research, China, in 2009 and into Vietnamese by a team led by Hung Vuong Hospital, Ho Chi Minh City, Viet Nam, in 2010. Dissemination of the translated versions of the RHL took place at national obstetric and gynaecological meetings held annually and through the web site of the MoH in Viet Nam. India, Indonesia and Sri Lanka adapted the MEC Wheel.

With support from national governments, the implementation of guidelines and tools adapted with support from the Programme was expanded to additional districts and provinces in China, Mongolia, Myanmar and Viet Nam.

#### 4.1.2 Country level implementation of WHO's Global Reproductive Health Strategy

The WHO–UNFPA framework on “national level monitoring of indicators of the achievement of universal access to reproductive health” was introduced during regional workshops in the Western Pacific Region in 2008 and in the South-East Asia Region in 2009.

In China, the MCH and Community Health, MoH, National MCH Surveillance Centre, Chengdu, Peking University (which is responsible for compiling hospital statistics on maternal and neonatal health), National Population and Family Planning Commission (which collects indicators on FP), and WHO and UNFPA Country Offices in China participated in the development of a framework of indicators on reproductive health. A draft list of indicators for China was finalized by a technical working group in March 2009. Following this, the availability and the quality of data, and the feasibility of collecting additional indicators was tested in nine pilot sites (provincial, prefecture and county level) in three different development areas (eastern, central and western). The WHO Country Office used the framework to collect data in six counties in four provinces where ethnic minorities predominate. Technical support to develop a similar framework was provided to the Family Health Bureau, MoH, Sri Lanka.

A bi-regional workshop on National level monitoring of universal access to SRH was held in March 2010 in conjunction with the 12th RAP meeting for Asia and Pacific. The participants included managers of reproductive health programmes and representatives of national statistics offices from three countries from the Western Pacific region (Cambodia, China, Viet Nam) and four countries from the South-East Asia Region (India, Indonesia, Myanmar and Sri Lanka). China and Sri Lanka provided an update on their experiences with the review and update of sexual and reproductive health indicators in their respective countries. Participants then developed plans to apply the WHO–UNFPA indicator framework to strengthen systems to monitor sexual and reproductive health.

Following the workshop, assistance was provided to the Department of Maternal and Child Health and Reproductive Health, MoH, Myanmar, to update and pilot-test monitoring forms for reproductive health indicators at the central, state/divisional and township levels.

A national workshop on monitoring and evaluation for the staff of the National Maternal and Child Health Centre, Phnom Penh, Cambodia, was conducted in March 2010. The workshop was facilitated by a faculty member of the School of Public Health and Community Medicine, University of New South Wales, Australia, and a regional resource person.

The Programme provided technical support to the MoH and WHO Country Office in Bangladesh to review programme and research proposals submitted by national nongovernmental organizations for improving sexual and reproductive health through a rights-based approach. The objective of the project supported by the Dutch Government was to increase awareness of and improve services for FP and menstrual regulation.

## 4.2 Planned activities

Technical support will be provided to update, adapt and implement WHO evidence-based guidelines on FP, STIs/RTIs, maternal health and other elements of reproductive health. Several countries have expressed interest in updating national guidelines on comprehensive abortion care, which were developed in 2010 by WHO and its partners. With respect to national-level monitoring of universal access to sexual and reproductive health, technical assistance will be extended to review and update indicators and to strengthen existing monitoring systems. The Department will continue technical collaboration with WHO regional and country offices and other partners for sexual and reproductive health programmes but will need to leverage funds to be able to carry out activities in 2011.

## PUBLICATIONS IN 2009–2010

### Peer-reviewed papers

Munkhuu B et al. One-stop service for antenatal syphilis screening and prevention of congenital syphilis in Ulaan Baatar, Mongolia: a cluster randomized trial. *Sex Transm Dis*, 2009, 36 (11):714–20.

Munkhuu B et al. Feasibility of one-stop antenatal syphilis screening in Ulaan Baatar, Mongolia: women and providers perspectives. *Southeast Asian J Trop Med Public Health*, 2009, 40 (4):861–70.

Yongjun T et al. The prevalence of sexually transmitted and other lower reproductive tract infections among rural women in Sichuan Province, China. *Southeast Asian J Trop Med Public Health*, 2009, 40 (5):1038–47.

### Conference posters

Kabra R et al. Use of Haemoglobin colour scale in management of anaemia in pregnant women in rural areas in Mongolia and Myanmar. First Global Symposium on Health Systems Research, Montreux, Switzerland, 16–19 November 2010.

## Chapter 10

# Research capacity strengthening and programme development: Eastern Europe and Central Asian Republics

### 1. INTRODUCTION

In view of the wide disparities between countries within the Region, the work of the Department in the European Region focuses on Eastern Europe and Central Asian Republics, which have the greatest needs. It is carried out collaboratively with relevant counterparts in the Regional Office for Europe in order to strengthen in-country capabilities for operations/health services research in support of evidence-based policy-setting and programming on regional and country priority issues. This work is monitored through regular meetings of the RAP for Europe, which also involves many partners actively working in sexual and reproductive health within the Region.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

Through its global and regional focus, RHR's work in Central Europe and Central Asia contributes to the achievement of SO4 "to reduce morbidity and mortality and improve health during key stages of life ... and improve sexual and reproductive health ... for all individuals", and more specifically to OWERs 4.1, 4.2 and 4.7, respectively, on the formulation of comprehensive policies, strategies and plans; strengthening national research capacity; and making appropriate guidelines and tools available to Member States to enable them to meet national and international goals and targets on universal access to sexual and reproductive health.

### 3. RESEARCH CAPACITY STRENGTHENING IN THE EUROPEAN REGION

Since 2001, there has been a strong push to expand the coverage of HRP's efforts to build and strengthen national capacity for research to the European Region, namely to the Eastern European and Central Asian countries. As a result, in June 2007, the Policy and Coordination Committee agreed to allocate 10% of HRP's budget for national research and RCS to support the institutional capacity in the area of health services/health systems research, a new area of growth within the Programme. This has enabled the establishment of a regional centre responsible for organizing a regional course on operations research delivered in Russian and English, and plans are under way to initiate the institutional capacity development process for one centre in Central Asia as detailed below.

#### 3.1 Progress

##### *3.1.1 Establishing a regional training centre for delivering a course on operations research in reproductive health*

The School of Public Health of the Lithuania University of Health Sciences at Kaunas (LUHS-Kaunas), Lithuania, has hosted a course on operations research in reproductive health since 2008. The criteria and process for selecting and empowering the centre to achieve this assignment were described in previous reports. Being a member of the Association of Schools of Public Health in the European Region



(ASPHER) with staff fluent in Russian and English, the centre offered high scope for ensuring the sustainability of the course as a basis for promoting health systems research within the Region. The first phase of the development process included identification and capacity strengthening of the course coordinators, establishment of a core multidisciplinary team of trainers, and effective delivery of the course for three consecutive years with minimal external support. This phase was successfully completed in December 2010 and negotiations with high-level management of the University for the consolidation phase are under way – including the possibility of applying for a formal designation of the school as a WHO Collaborating Centre for training and research in reproductive health.

Box 1. Topics selected by country participants for operations research

#### Course session 2009 (concept papers):

- Impact of updated guidelines on medical abortion on reduction of maternal mortality (Russian Federation)
- Use of mobile telephones (SMS) to increase the demand for cervical cancer screening (Armenia)
- Reduction of medical barriers to increase access to safe abortion (Armenia)
- Impact of improved counselling on uptake of postabortion contraception (Tajikistan)
- Role of family physician in prevention of sexually transmitted infections (Kazakhstan)
- Impact of sexuality education on the knowledge and sexual behaviour of adolescents (Turkmenistan)

#### Course session 2010 (draft proposals)

- Maternal health: can the use of near-miss case review method – compared to traditional method to train emergency obstetric care providers – improve maternal health outcomes? (Turkey)
- Cervical cancer prevention and control: Testing the effectiveness of a new tool in increasing the uptake of the national cervical cancer screening programme (Latvia)
- Normal delivery practices: Evaluation of the effectiveness of attendance of normal deliveries by midwives on reducing the over-medicalization rates (caesarean section, use of oxytocin) in a third-level maternity hospital (Albania)
- Cervical cancer control: Will improved communication and counselling skills increase provider-initiated rates of cancer screening? (Romania)

### 3.1.2 Regional operations research course sessions 2009–2010 and course outcomes

LUHS-Kaunas organized their second course, delivered in Russian, in November 2009, attended by 17 participants: programme managers, researchers and/or university staff from Armenia, Kazakhstan, the Russian Federation, Tajikistan and Turkmenistan. The third course, organized in November 2010, was delivered in English and brought together 20 participants with similar profiles from Albania, Kosovo, Latvia, Romania, Serbia and Turkey.

One major outcome of these two sessions was the gradual improvement in the understanding of the scope of this type of research as it focuses on improving service delivery and/or management of programmes at local (facility or district) level. The last group of trainees went beyond the preparation of a concept paper to actually producing a draft proposal for a preliminary peer review. Topics chosen by the trainees are indicated in Box 1.

Altogether, a total of 57 participants, more than two thirds of whom were female, have attended this course during this initial development phase of the centre.

In summary, through this centre, progress has been made in the efforts to improve capacity of groups of individual researchers and managers from Eastern Europe and Central Asia to commission and conduct health services research on selected priority sexual and reproductive health issues. However there is still a long way to go to achieve a critical mass of scientists willing to move this initiative forward at national level. In addition, the capacity of HRP to ensure the follow-up and mentoring of Russian-speaking former trainees to help them develop proposals that could be submitted for HRP technical review and funding remains a big challenge.

### 3.1.3 Initiation of institutional capacity building for national research – Tajikistan

At its sixth meeting held in Copenhagen in 2009, the RAP for the European Region endorsed a plan to expand the scope of HRP-support on RCS, and to identify a centre in one of the Central Asian Countries to be awarded a new grant for long-term institutional capacity development (LID) during the biennium 2010–2011. Evidence of strong links with the MoH for research on health services and health systems issues was one of the main selection criteria. Based on the extent of its needs, Tajikistan was chosen for a site visit during this exploratory phase. In consultation with the WHO Country Office, the MoH in Tajikistan nominated the Dushanbe-based Scientific Institute of Obstetrics and Gynaecology and Perinatology, which is part of the Tajik State Medical University and Medical College, and has a long-standing involvement in research projects. Following a reorganization within the Ministry, a new Director with a strong background in maternal and child health and other reproductive health issues

was appointed two years ago and has introduced significant improvements to the scope and productivity of the centre, beyond its traditional focus on clinical work. The joint site visit with the Regional Office for Europe and Country Office counterparts noted these changes, particularly the efforts made by the younger generation of scientists to improve their ability to communicate in English as a means to improve their access to international forums. More information about the centre is available in Russian at: <http://www.tniiagip.tj/>. An institutional profile prepared by the centre will be reviewed at the 2011 RAP meeting and recommended follow-up actions will be formulated accordingly.

### *3.1.4 Sixth meeting of the Regional Advisory Panel for Europe, Copenhagen, November 2009*

According to its mandate, the main issues requiring advice from RAP relate to the collaborative work between RHR and counterpart-programmes in the Regional Office for Europe in support of country-level activities. In the Regional Office, the Panel noted major structural changes designed to implement a new focus on aligning the work of all technical programmes with a health systems approach, scheduled to be completed in 2010. The new emphasis relates to service delivery aspects, financing and effective use of costing tools, governance and stewardship, etc. Support for technical and RCS in all these aspects will also be required, with involvement from WHO collaborating centres and other partners such as IPPF (European Network), UNFPA Regional Office and the European Society of Contraception who also take part in RAP deliberations. Appropriate process and outcome indicators are also required to monitor changes at country level. In view of the extensive use of these documents for policy-setting processes in countries of the Region, including in Western European countries (Finland, Spain, United Kingdom), closer links need to be maintained between the renewed focus on a health systems approach and implementation of the regional and global strategies on reproductive health. Implementation of RAP recommendations for RCS has already been discussed. RAP welcomed PCC's decision to earmark seed funding to the area as this could be used for leveraging financial support from other sources.

### **3.2 Planned activities**

Preliminary discussions are under way with the high-level management of the LUHS-Kaunas to agree on a multiyear workplan for a new phase of collaboration with the Kaunas Regional Training Centre. The experience accumulated by their team of trainers will be invaluable for responding to training needs at country and regional levels.

From the last group of trainees, three country teams will receive mentoring support to finalize selected draft proposals that have a high likelihood of successfully undergoing HRP technical and ethical review, and receiving financial support.

The Scientific Institute of Obstetrics, Gynaecology and Perinatology in Dushanbe, Tajikistan, will be assisted in preparing a formal application for the first five-year cycle of LID grant support, if RAP/Regional Office for Europe finds its institutional profile satisfactory.

## **4. PROGRAMMATIC SUPPORT TO THE EUROPEAN REGION**

### **4.1 Systematic introduction and adaptation of evidence-based guidelines in countries in Central Asia**

This work was originally part of the WHO–UNFPA Strategic Partnership Programme funded by UNFPA. After this funding ceased, work continued in Kyrgyzstan, Turkmenistan and Uzbekistan in 2009 at slower pace with the support of the respective local offices of UNFPA. This allowed for country-wide dissemination of the newly adapted national guidelines. The focus on integration of family planning and management of STIs at primary health care level was maintained in Turkmenistan and Uzbekistan. In addition several opportunities were used, through the Regional Office for Europe counterparts, to disseminate RHR guidelines at national and regional meetings/congresses organized by scientific societies and collaborating partners, such as the European Society of Contraception and Reproductive Health, IPPF European Network and the European Federation of Sexology. Products in particular high demand included the Russian version of the RHL, which became available in April 2009, the MEC Wheel and *Comprehensive cervical cancer control: a guide to essential practice*.

### **4.2 Planned activities**

- Ensure that progress on the dissemination and adaptation of sexual and reproductive health guidelines in Central Asian countries is incorporated into the next biennial progress report on the implementation of the WHO Global Reproductive Health Strategy to be submitted to the World Health Assembly in 2012.
- Ensure that other priority issues identified by RAP are firmly integrated in the new European Health Policy for 2020 adopted by the WHO Regional Committee for Europe (Moscow, Russian Federation, October 2010), including aspects related to the European agenda on social determinants of health and on noncommunicable diseases.

## Chapter 11

# Technical cooperation with countries: policy and programmatic issues

### 1. INTRODUCTION

The central objective of RHR's work in policy and programmatic issues (PPI) is to build health system capacity for evidence-based 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: (1) providing technical assistance and support to research addressing key gaps in the evidence base on how to strengthen health systems through reforms, public–private partnerships and efforts to strengthen sectoral governance and financing in support of reproductive health care; and (2) the WHO Strategic Approach for strengthening reproductive health policies and programmes, including the related work on scaling-up experimental, pilot and demonstration projects. PPI works as a cross-cutting unit within the Department, conducting much of its work in collaboration with staff from other Teams and addressing topics across the full range of the ICPD definition of sexual and reproductive health. PPI also collaborates extensively with other WHO departments and external partners.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

The work of PPI contributes to SO4 and SO10 of WHO's Medium-term Strategic Plan and, more specifically, OWERs 4.1, 4.2 and 10.3. The work supporting country implementation of the Strategic Approach and efforts to promote successful scaling-up of health innovations underpins Member States' capacity to implement policies, plans and strategies for scaling-up reproductive health services towards achieving universal access (OWER 4.1). Support to health systems

research builds national research capacity and provides needed evidence concerning approaches to strengthen health systems' ability to provide reproductive health services (OWER 4.2). The work on building the capacity of WHO and UNFPA country offices, as well as that of civil society, to advocate for and promote reproductive health in the new aid environment supports increased coordination of national efforts to achieve national health systems development and global health goals (OWER 10.3).

### 3. HEALTH SYSTEMS RESEARCH

#### 3.1 Progress

##### *3.1.1 Resource mobilization for reproductive health in the new aid environment*

Substantial effort was devoted to the implementation of two related multiregional projects, both aimed at supporting national level funding for reproductive health. Both projects began activities in 2008 and will run through 2011. These are described below.

##### 3.1.1.1 Joint UNFPA–WHO Country Office capacity building project

UNFPA and the Department undertook joint implementation of a project that builds directly upon collaborative work undertaken in previous reporting years. The project aims 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 UN agencies for joint training and discussions; second, it looks at broader planning

and budgeting processes from the perspective of reproductive health.

The project was organized around the delivery of four regional workshops, each bringing together senior staff (i.e. heads of office and international, as well as national, staff) of both agencies from approximately six country offices. A core curriculum was developed – built around nine modules that discuss aid instruments and modalities, health sector financing, government planning processes, improving aid effectiveness, monitoring and evaluation, and the role of civil society – and has been posted on the web, available for public use. The first workshop was held for six countries from the Western Pacific Region in December 2008. In 2009–2010, three more workshops were held in anglophone and francophone Africa, and eastern Europe/central Asia. Each workshop was facilitated by staff from UNFPA and WHO headquarters, regional and country offices.

The aim of each workshop was to develop the skills and knowledge of relevant UNFPA and WHO staff to better navigate their way through the “new aid environment” and to ensure adequate support to sexual and reproductive health in this changing context. The workshops developed the participant’s understanding of 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. Practical advice was provided on 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 were made available to selected country offices, based upon action plans produced by their staff. An external evaluation of the project at midterm was conducted in 2009; the following is an excerpt from the consultant’s report:

*“What is clear from the project management documents, from the interviews, and from the course evaluations, is that ... one of the most critical outcomes of the collaborative training is the promotion of dialogue between WHO and UNFPA country offices, and the enhanced understanding and synergies that have emerged from their interaction, and the complementarity evident in the workshop presentation teams.*

*While confidence in their skills in these areas cannot be directly attributed to attendance at the workshop, it is encouraging that a majority of respondents stated they have actually had the opportunity to apply their skills in each of these work scenarios since attending the workshops.”*

### 3.1.1.2 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 UN, are working to alleviate global poverty has changed significantly over recent years. International development cooperation policy prioritizes partnership between governments, donors, private sector and civil society to achieve sustainable development. The involvement of civil society is crucial to this process, as their demand for accountability to the health needs of the communities being served by national programmes is an essential element of 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 governments. Some do not have sufficient economic training to influence the economists in the ministries of finance or in 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 Department continued to address this important issue in 2009–2010 through the implementation of a three-year project that aims to build the advocacy capacity of CSOs to more effectively interact with governments in support of sexual and reproductive health. This project 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, were held in 2009, and small grants were provided to selected CSOs to support implementation of action plans aimed at influencing local government funding for reproductive health in 2010.

### 3.1.2 Working with the private sector

The Department supports research that responds to gaps in the evidence base on how the private, or non-state sector, contributes to ensuring universal access to sexual and reproductive health. Key issues concern quality, equity and alignment with national health goals and sector policy.

#### 3.1.2.1 Impact evaluation of Sun Quality Health franchise in Myanmar

The Department works with the Population Services International’s Sun Quality Health franchise in Myanmar to conduct a study that assesses the impact of the social franchise network on the health care seeking behaviours. This study responds to the following policy question: Is the emergence of a private sector network growing the health-care market or merely shifting sources of care? The study in Myanmar is constructed around three main elements: (1) formative



research to develop items for multi-item scale scores that use psychometric analytic techniques to measure provider motivations to join the franchise (non-monetary dimensions) and client perceptions of quality of care (responsiveness); (2) an uncontrolled observational study to assess health-seeking behaviours among current Sun Quality Health clients (in order to determine if the network is causing a shift in source of care or expanding coverage); (3) 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 have been submitted for publication. The data for the uncontrolled observational study element were collected in 2010 and will be reported on in early 2011.

### *3.1.3 Impact of financing reforms on reproductive health services and outcomes*

The Department supports research that examines key issues in health sector financing affecting sexual and reproductive health programmes. During the reporting period, two areas were investigated: performance-based payments and demand-side financing.

#### *3.1.3.1 Performance-based grants in the Philippines*

Over the past decade, performance-based grants (PBGs) have become an increasingly common set of financing options. These PBGs are essentially interventions in which specific actions are requested, received and paid for. They reward results with payment, aiming principally to resolve issues of access, utilization and provider performance. Although PBGs are conceptually easy to describe, their operations are in fact quite complex and difficult to implement. As such, there is a pressing need for monitoring and continual refinement of these schemes' implementation. The Department supported an assessment of a PBG in the Philippines, aiming to provide rapid feedback to the government on schemes that targeted reproductive health programme performance, namely the procurement of FP commodities by local government units and the creation of women's health teams.

The study was exploratory, investigating the start-up operations of the two PBGs in four provinces – Ifugao, Sorsogon, Capiz and Surigao del Sur. In-depth interviews and desk review of financial and progress reports and of government records were conducted. The findings showed that the following key areas of the PBGs are critical and need attention: information system, managing the change process and integrating the different PBG schemes into a single programme. The results from this rapid assessment informed the refinements to the PBG scheme enacted by the Department of Health.

#### *3.1.3.2 Evaluating the impact of vouchers as a demand-side financing tool on the Marie Stopes programme in Sierra Leone*

The origin of HRP's interest in the topic of this research – output-based aid, demand-side financing of reproductive health services – comes from two sources. In 2006, an international technical consultation meeting on Health Sector Reform and Reproductive Health prioritized financing reforms as a key area where evidence is lagging behind operations. In 2008, the Scientific and Technical Advisory Group (STAG) of HRP specifically recommended that the programme undertake the development of a research study to examine the effectiveness and impact of demand-side financing programmes that utilize vouchers or pre-paid coupons.

At present, poverty is a major barrier to accessing quality FP and sexual reproductive health services in Sierra Leone. In response to this problem, Marie Stopes Sierra Leone (MSSL) began introducing an output-based aid (OBA) voucher programme in early 2010. The programme aims to distribute approximately 1600 vouchers per quarter that can be redeemed at all MSSL static, BlueStar franchise clinics and – pending ongoing discussions with the Ministry of Health and Sanitation – it is possible that the vouchers may also be redeemable at government-run clinics in the same catchment areas as the MSSL programme.

The Department worked with Marie Stopes researchers to conduct a study that aims to assess the extent to which vouchers are an effective and viable approach to increasing the use of long-term family planning methods among the poor in Sierra Leone. In addition, the study will examine the efficiencies of the voucher scheme's operations. The baseline survey was completed in 2010, and the end-line survey is expected to be completed in 2011.

#### *3.1.3.3 Economic impact of maternal deaths at the household level in rural China*

The Department continues to support the Peking University, Department of Maternal and Child Health on research that aims to identify the economic impact of maternal deaths at the household level in rural China. The study utilizes a prospective controlled cohort design. The experiences of families that have suffered a maternal death and those of carefully matched families that had a birth with no adverse maternal health outcomes will be compared, between one to three months after the maternal death/birth and one year later. During the reporting period, this study began operations and completed all of the baseline interviews. Preliminary data analysis is ongoing and a report from the baseline data set is expected during the first quarter of 2011. The study undertook a series of in-depth, qualitative interviews with both the case and comparison groups as part of the questionnaire development, formative research element.

These findings were used to prepare a paper submitted to a journal for publication in late 2010.

### 3.1.4 First Global Symposium on Health Systems Research

Health systems research – the purposeful generation of knowledge that enables societies to organize themselves to improve health outcomes and health services – is rapidly emerging as one of the most dynamic and complex areas of research for health. Awareness is growing among politicians, policy-makers, health-care providers and researchers that the evidence base to support the theory and practice of strengthening health systems is not strong, especially in low- and middle-income countries. Moreover, the scientific foundations for this type of research are in need of significant development and improvement.

Calls for more and better health systems research are not new, but they have recently been given a boost. In November 2008, the High Level Task Force on Scaling up Research and Learning for Health Systems recommended: (1) a high profile agenda of research; (2) the engagement of policy-makers in this agenda; (3) stronger country and global capacity for research; and (4) increased financing for health systems research. This four-point agenda was presented to the Global Ministerial Forum on Research for Health where it was unanimously endorsed in the Bamako Call to Action on research for health in 2008. Among the Task Force's recommendations was a Global Symposium on Health Systems Research in 2010.

The Department's health systems research scientist served as a core team member for the First Global Symposium on Health Systems Research, chairing the Programme Committee.

The specific objectives of the Symposium were to:

- share state-of-the-art research on universal health coverage;
- develop a global agenda of priority research on accelerating progress towards universal health coverage;
- facilitate greater research collaboration and learning across disciplines, sectors, initiatives and countries;
- strengthen the scientific rigor of the field of health systems research, including concepts, frameworks, measures and methods;
- identify mechanisms for strengthening capacities – individual, institutional and infrastructural – for research on health systems particularly in low- and middle-income countries.

The Symposium was held in Montreux, Switzerland, from 16 to 19 November 2010, and brought together over 1200 researchers, policy-makers and other key stakeholders. Full

information on the Symposium, including webcasts of plenary sessions, is available at: [www.hsr-symposium.org](http://www.hsr-symposium.org).

## 3.2 Planned activities

### 3.2.1 Country-level resource mobilization for reproductive health in the new aid environment

The Department will jointly conduct with UNFPA staff four country case-studies in 2011 to assess: (1) the impact of the workshop on country office staff capacity; and (2) whether the key themes of the project – i.e. building the capacity of country staff to work on sectoral and national budget and planning processes – remain relevant. For this second objective, there will be some exploration of current challenges in donor coordination and aid management, from the perspective of sexual and reproductive health. A consultation meeting will bring together the case-study country teams and external advisers to review the findings, draw out cross-cutting issues and prepare a synthesis report. This will be the final activity of the multiyear joint UNFPA–WHO programme of work. Future actions will be developed within the context of the UN H4+ partnership, to be identified as an outcome of the case-study consultation meeting.

### 3.2.2 Strengthening the capacity of civil society organizations to promote reproductive health in the new aid environment

The Department will conduct impact evaluation research of the civil society programmes that received financial support to better document the effects of CSO support and involvement in new aid environment processes. At the close of 2011, the Department will convene an international consultation to review the results of these evaluations within the context of worldwide experience with civil society engagement in national development and health sector planning processes to support sexual and reproductive health.

### 3.2.3 Impact evaluation of Sun Quality Health franchise in Myanmar

The final results from the full study will be available in 2011 and a series of publications are planned, including two technical briefs and two published papers. These findings will be presented at international professional association meetings, such as the International Health Economics Association annual meeting.

### 3.2.4 Evaluating the impact of vouchers as a demand-side financing tool on the Marie Stopes programme in Sierra Leone

The study will be completed in 2011 and a final report produced. It is anticipated that at least one paper will be prepared for submission to a peer-reviewed professional journal.

### 3.2.5 Economic impact of maternal deaths at the household level in rural China

During 2011, the baseline survey dataset will be fully analysed and a report prepared. The end-line survey will continue through the year, with a final report produced early 2012. It is anticipated that there will be at least one paper prepared for publication in a peer-reviewed, professional journal.

### 3.2.6 Evaluation of a programme to use reproductive health vouchers as an enrolment mechanism into the Philippine National Health Insurance programme

The Department will work with Marie Stopes, Australia, to develop and launch an evaluation study of a new voucher programme in the Philippines that aims to use reproductive health vouchers as a mechanism to pay the enrolled person's contribution to the national health insurance programme. It is anticipated that a fully developed research proposal will be developed in 2011 and the study, once approved, will begin operations that same year.

### 3.2.7 First Global Symposium on Health Systems Research

During 2011, the Department will work to produce a report from the Global Symposium on Health Systems Research, participate in the development of a special edition of *Health Policy and Planning* that includes the background papers from the Symposium, and develop one or more papers for publication. These products will be produced as part of the collaborative efforts of the Symposium's core organizers.

## 4. THE STRATEGIC APPROACH TO STRENGTHENING REPRODUCTIVE HEALTH POLICIES AND PROGRAMMES

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: (1) the needs and perspectives of current and potential users of services; (2) the extent of coverage, quality of care and capacities of the service delivery system; and (3) 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 interested in improving reproductive health, including representatives of women's and youth organizations.

A variety of recommendations emerge from a strategic assessment. Stage II involves investigating through pilot studies the feasibility and effectiveness of recommendations for policy change, and the community and programmatic interventions to improve access, utilization and quality of care in service delivery. In Stage III, findings are used as the basis to scale-up interventions for wider impact. The Strategic

Table 1. Countries implementing the Strategic Approach

Area of Major Focus	Date of Strategic Assessment
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
Maternal health and family planning	Bolivia (Plurinational State of) 1994 Dominican Republic 2001 Guatemala 2001 Nepal 2003–2004 Paraguay 2004
Adolescent health	Kyrgyzstan 1999
Preventing Unsafe Abortion	Viet Nam 1997 Romania 2001 Bangladesh 2002 Mongolia 2003 Ghana 2005 Republic of Moldova 2005 The former Yugoslav Republic of Macedonia 2007 Zambia 2008 Ukraine 2008 Russian Federation 2009 Guinea 2009 Malawi 2009 Senegal 2010
Reproductive tract infections	Latvia 2000 Ghana 2001 Brazil 2002 China 2002 Kosovo 2004 Viet Nam 2007
HIV/AIDS	Brazil 2001
Cervical cancer	Bolivia (Plurinational State of) 2002 Uttar Pradesh, India 2004
Comprehensive reproductive health	Burkina Faso 1996 Ethiopia 1997 Myanmar 1998 Lao People's Democratic Republic 1999 Yunnan, China 2002 Rajasthan, India 2004

Approach has been used by 34 countries to address a variety of different reproductive health issues. In 11 of these countries, the process has been used two or more times to address additional sexual reproductive health issues.

Table 1 shows countries implementing the Strategic Approach and area of reproductive health focus.

## 4.1 Progress

In response to country requests, in 2009–2010 the major focus of support to countries in implementing the Strategic Approach was for the prevention of unsafe abortion and the strengthening of national abortion policies and programmes.

### 4.1.1 Activities in Africa

In Malawi, for the first time a strategic assessment focusing on the prevention of unsafe abortion incorporated implementation of the WHO Human Rights Tool. This added a rights-based framework for the efforts of partners of the MoH and NGOs to advocate for increased legal access to safe abortion services. The assessment found that international treaty agreements on human rights, ratified by Malawi, are unknown at the community level and even among some national policy-makers. In addition, some of these agreements contradict the national law on abortion. The assessment revealed strong support among respondents for addressing unsafe abortion through both policy reform and by strengthening the delivery of safe abortion services. Immediately following the strategic assessment in June 2009, the MoH and Ipas conducted a study on the magnitude of unsafe abortion in Malawi. This study found that the rate of abortions in Malawi is 38 per 1000 women of reproductive age, compared with the global average of 29. This provides additional compelling evidence for advocating reform of the restrictive abortion law, as well as strengthening services for emergency treatment of complications from unsafe abortion.

Following a national dissemination workshop in August 2010, a core group of national stakeholders hosted by the NGO, Women in Law in Southern Africa, is in the process of forming the Coalition for the Prevention of Unsafe Abortion in Malawi, to advocate for and support implementation of the strategic assessment's key recommendations. The dissemination conference participants recommended harmonizing Malawi's abortion law with the Maputo Protocol, with additional legal grounds to facilitate adolescents' access to safe abortion. This recognizes the cultural and religious sensitivity in Malawi of abortion on request of the woman; however, it will require a liberal interpretation of the mental and physical health grounds for legal abortion in order to ensure equitable access for poor and young women.

A strategic assessment addressing prevention of unsafe abortion was also conducted in Senegal in March 2010. The proposal for this assessment resulted from a francophone

regional workshop on applying the Strategic Approach to abortion issues held in 2008. The assessment fieldwork and related follow-up activities have been supported by Ipas.

Following the regional workshop, a similar strategic assessment was also conducted in Guinea. See Chapter 7 for more details.

Following a strategic assessment in Zambia, conducted in 2008, Ipas continued to support the introduction of and scaling-up of safe abortion services. Following development of national standards and guidelines for comprehensive abortion care, new services were introduced in 28 facilities (22 primary- and 6 hospital-level) in two provinces: Lusaka and Copperbelt. In 2010, services were introduced in 13 additional facilities in a third province.

In Zambia, efforts continued to more widely scale-up the family planning and other reproductive health service interventions of the "Pilots to Regional Programmes" initiative to provinces beyond Copperbelt province. The Population Council and members of the Implementing Best Practices Consortium collaborated on further dissemination activities and teams from the MoH and the Population Council worked with local health staff in two additional provinces to develop plans for implementation of innovations tested in the Copperbelt.

Follow-up activities to the 2005 strategic assessment in Ghana have been strongly supported by Ipas. Shortly after the assessment, national standards and guidelines were developed with technical support from HRP. Subsequent introduction of new comprehensive abortion care services has been proceeding and, by the end of December 2010, they had been expanded to 46 facilities in three regions (Greater Accra, Ashanti, Eastern), including 14 hospitals, 10 polyclinics, 19 health centres and three smaller clinics. In most of the facilities, abortion care is provided by trained midwives, using manual vacuum aspiration (MVA); however, efforts are also under way to register mifepristone and misoprostol. The next phase of scaling-up in the three regions will include introduction of new services in 18 additional facilities, including eight hospitals, eight health centres and two satellite clinics linked to hospitals.

### 4.1.2 Activities in Eastern Europe

In 2009, as a follow-up to recommendations from a previous strategic assessment conducted in The former Yugoslav Republic of Macedonia, HRP provided technical support to a national workshop where national norms and standards for comprehensive abortion care were drafted. The guidelines are now in the final stages of approval by the MoH. In addition, the Concept Foundation is working with the MoH and professional associations to register Medabon for the introduction of medical abortion, as recommended in the assessment.



In 2009, in the Republic of Moldova, new national abortion standards and guidelines, a national provider training curriculum and information, and education and communication materials (IECs) for women were all approved by the MoH. A pilot project, demonstrating high-quality outpatient abortion care in two perinatal centres, one in the capital Chisinau and the other in the urban centre of Balti in northern Moldova, was completed. Medical abortion, with the combined regimen of mifepristone–misoprostol, and MVA were introduced along with appropriate infection prevention and pain management measures. The centre in Balti reported a total of 721 first-trimester abortion procedures (602 by MVA, 43 by electric vacuum aspiration (EVA) and 76 with mifepristone–misoprostol). Post-abortion contraception counselling was provided to 100% of women, patient satisfaction was high, and the rate of complications was low (0.8%). In the most recent 12-month reporting period in Chisinau, the centre reported a total of 948 abortions (613 by MVA and 335 with mifepristone–misoprostol). As in Balti, post-abortion counselling was 100%, patient satisfaction was high, and no complications were reported. The results were disseminated in a meeting of MoH and other key stakeholders, which focused on scaling-up services. Comprehensive abortion care was expanded to two additional perinatal centres (in Orhei and Comrat) and one adolescent reproductive health centre in Chisinau (Neovita) in 2010. By the end of 2010, all infrastructural renovations and provider training had been completed and supplies for MVA had been procured and distributed.

Following a 2008 strategic assessment on issues related to abortion in Ukraine, efforts to strengthen the quality of abortion care, including provision of post-abortion contraception, began with the review and revision of national norms, standards, and provider training curricula for abortion, and the implementation of public sector outpatient comprehensive abortion care services in Vinnyts'ka and Donetsk'ka oblasts.

Implementation of new services started with minor infrastructure upgrades to service delivery facilities, as well as training and equipping service delivery providers. By the end of 2010, the international donor for the project had expressed strong interest in providing new funding for scaling-up abortion services in additional parts of the country.

Following a strategic assessment in the Russian Federation, HRP will fund a small study to assess the impact of an educational/training course in MVA in Yekaterinburg. Currently, MVA is only used for pregnancies  $\leq 6$  weeks since last menstrual period (LMP). Following a new MoH order to utilize MVA for abortion up to 12 weeks, service providers in six of 12 facilities will receive special training to examine the impact of training on performance of MVA and reductions in abortion-related complications.

#### 4.1.3 Activities in Latin America

As a follow-up to the 2006 strategic assessment in Paraguay, the MoH, with technical support from the Brazilian NGO Reprolatina has been implementing programmatic research, developing interventions to strengthen district-level organizational capacity and training to improve the quality of family planning and maternal health services. In addition, the project includes activities to strengthen community involvement and demand for quality services. The project is being implemented in four municipalities in Alto Paraná Region. The project experienced serious delays in 2009 due to changes in MoH and project leadership, but activities resumed in 2010 with a series of efforts to improve the organization of reproductive health services in clinics and trainings to strengthen providers' technical capacity. In addition, providers from the clinics implemented community dialogues and in-school lectures for adolescents to increase awareness of sexual reproductive health issues and services, and to initiate discussions on sexuality and gender issues. Following an end-of-project evaluation in late 2010, a dissemination and scaling-up strategy development workshop will be held in early 2011 as the Regional Director has indicated that he wishes to expand the project to all municipalities in the region.

#### 4.2 Planned activities

Implementation of strategic assessments in the next biennium will be planned based on receipt of requests from countries, but are likely to include an assessment related to increasing access to safe abortion care in Kyrgyzstan. Activities following up recommendations from previous assessments and/or scaling-up successful new interventions will continue in Malawi, Paraguay, Republic of Moldova, the Russian Federation, Ukraine and Zambia.

### 5. SUPPORTING SCALING-UP: EXPANDNET/RHR

Programme staff continue to serve as a member of the Secretariat of ExpandNet, a global network of public health professionals seeking to advance the science and practice of scaling-up successfully tested health service innovations.

#### 5.1 Progress

##### 5.1.1 Development and dissemination of resource materials

Two guidance documents were published. *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. *Nine steps to developing a scaling-up strategy*, a second shorter and more focused guide is intended to assist country teams to systematically identify action steps for developing a strategy for scaling-up tested innovations. These documents,

together with associated worksheets have been field-tested through assisting country teams to design scaling-up strategies using these tools in a facilitated process as described below.

A new draft document entitled *Beginning with the end in mind: planning pilot projects and other programmatic research for successful scaling-up* was also developed in 2010 and will be field tested in early 2011, prior to publication. This document is intended to facilitate future scaling-up of project results by assisting those developing proposals to consider in advance key determinants of scaling-up success.

### 5.1.2 Assisting country teams to develop strategies for scaling up

ExpandNet/RHR has developed a method to assist country teams to develop scaling-up strategies, using the Nine steps guide and accompanying worksheets in a facilitated process. This 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; followed by a participatory workshop for strategy development. During the period, ExpandNet/RHR continued to support country teams to design or revise scaling-up strategies, using the tools in this facilitated process. In Guatemala, Madagascar and Mali, the process was used to develop scaling-up strategies for the wider introduction of the Standard Days Method (SDM) of fertility awareness, previously implemented in demonstration projects.

Technical support on various aspects of policy and programme development, as well as on issues related to scaling-up, was provided to the Urban Health Initiative of the BMGF, being implemented in Uttar Pradesh, India. The project is attempting to improve access to, the quality of care of, and the utilization of family planning and other reproductive health services for people living in urban slums in four cities. It focuses on strengthening services in both the private and public sectors, and is planning on expanding to an additional six cities in 2011. The project is being led by FHI and the Ministry of Health and Family Welfare, and involves multiple international and local partners.

Technical assistance was also provided in Nepal for scaling-up the introduction of medical abortion and, in China, for the facilitation of a national workshop for family planning officials on scaling-up of the national “Quality of Care” project.

### 5.1.3 Dissemination and building capacity to use ExpandNet/RHR resources

In addition to supporting capacity development in countries, ExpandNet and RHR staff members have also provided technical input to other international institutions involved in supporting the scaling-up of sexual and reproductive health research findings and health service interventions.

The ExpandNet Secretariat worked with FHI’s Research Utilization Team to develop new guidelines for their researchers to consider when developing new studies, so as to increase the likelihood of utilization of their research results for scaling-up.

ExpandNet and RHR staff members continued to provide technical input and support on scaling-up to the Institute of Reproductive Health (IRH), Georgetown University, USA, for their project on scaling-up availability of the SDM in six countries in Africa, Asia and Latin America. In addition to the country-level support mentioned above, the ExpandNet Secretariat helped facilitate sessions in IRH project collaborators’ meetings and provided input to IRH staff members on research and programmatic issues related to scaling-up. IRH has adopted the ExpandNet/WHO framework as a basis for the project’s approach to implementation, including their research agenda.

The ExpandNet Secretariat has also provided extensive input to Management Sciences for Health (MSH) and the Implementing Best Practices (IBP) Consortium in the development of a new Virtual Fostering Change programme. The final two modules of this programme address scaling-up using the ExpandNet/WHO framework and nine-step process of strategy development.

In early 2010, the Department’s IBP Secretariat, together with Pathfinder’s Extending Service Delivery (ESD) Project supported the “Reconvening Bangkok Conference” for 13 country teams of senior policy-makers, programme managers and researchers from USAID Asia and Middle East Region (described in detail in Chapter 13). The ExpandNet Secretariat was requested to provide technical support to the meeting on issues related to scaling-up. This included making plenary presentations, helping to develop the facilitator’s guides for participant group-work and facilitating a skills-building workshop for country participants.

The ExpandNet Secretariat and RHR convened a consultative meeting entitled *Priorities for supporting successful scaling-up of health innovations* in 2009 to identify: (1) useful approaches for the strategic planning and management of scaling-up health service innovations; (2) ways to strengthen the capacity of national institutions to ensure scaling-up on a sustainable basis; (3) how technical assistance agencies and donors could be more strategic in supporting successful scaling-up; and (4) what research on the topic was needed. The meeting brought together MoH programme managers and representatives of NGOs implementing scaling-up initiatives from Brazil, China, Egypt, Ethiopia, Ghana, India and Pakistan; representatives from institutions providing technical support to scaling-up efforts (FHI, John Snow International, IRH, University of Research Corporation, PATH, and Save the Children); academic researchers; and donors including

BMGF, the Ford, MacArthur and Packard Foundations, as well as USAID and The World Bank. The report of the meeting summarizes conclusions and recommendations and is available on the ExpandNet web site: [www.ExpandNet.net](http://www.ExpandNet.net).

In an effort to widely disseminate the ExpandNet/WHO framework, experiences and resource materials, members of the Secretariat made presentations in a number of international conferences, including the American Public Health Association; the Global Health Council; the Institute for Development Studies, Sussex, United Kingdom/STEPS Workshop on Beyond Scaling Up; and the Institute for Healthcare Improvement Conference to Advance the Science and Practice of Scale Up.

Presentations were also made to smaller audiences, including in biennial IBP partners' meetings; the WHO Service Delivery seminar series; the FHI Applied Research Group; MSH staff in Boston and Washington, DC; and a technical seminar at the Office of PEPFAR, Washington DC, USA. In addition, workshops on the ExpandNet/RHR framework and tools were facilitated for the office of Global Population and Reproductive Health of USAID, and at the First Global Health Services Research Symposium held in Montreux, Switzerland.

## 5.2 Planned activities

Technical support for scaling-up will continue in countries based on requests. The ExpandNet Secretariat has been requested by FHI and BMGF to continue to provide technical support to the Urban Health Initiative in India over the coming three years of the project. In addition, a preliminary request for technical support to Urban Health Initiative activities in the three other project countries has been made by BMGF.

ExpandNet/WHO will also continue its collaboration with FHI, IRH, MSH and IBP. The Secretariat will field-test the new document providing guidance on *Beginning with the end in mind: planning pilot projects and other programmatic research for successful scaling-up* and the accompanying checklist, so as to learn about its utility in supporting the development of pilot, demonstration or experimental projects to increase the likelihood of future scaling-up of the tested interventions. An initial field test is planned in Thailand with the development of a proposal to introduce medical abortion in the public sector. Collaboration with the USAID supported Maternal and Child Health Integrated Project (MCHIP) in field-testing the guidance document is also being planned.

## PUBLICATIONS IN 2009–2010

### Peer-reviewed papers

Bishai D et al. Estimating the obstetric costs of female genital mutilation in six African countries. *Bull World Health Organ*, 2010, 88:281–8.

Dodd R, Huntington D, Hill P. Programme alignment in higher-level planning processes: a four-country case-study for sexual and reproductive health. *Int J Health Plann Manage*, Jul–Sep 2009, 24(3):193–204.

Huntington D et al. Impact of a provider incentive payment scheme on the quality of reproductive health services in Egypt. *J Health Popul Nutr*, June 2010, (3):273–80.

Huntington D. The impact of conditional cash transfers on health outcomes and the use of health services in low- and middle-income countries: RHL commentary (last revised: 1 May 2010), *The WHO Reproductive Health Library*, Geneva: World Health Organization.

Jackson E et al. A strategic assessment of unsafe abortion in Malawi. (submitted)

O'Connell K et al. Using and joining a franchised provider network in Myanmar. (submitted)

Simmons R et al. Managing scaling up, presented at the *International Conference on Scaling Up: an Essential Strategy to Attaining Good Health for All*, Dhaka, Bangladesh, December 2008, and forthcoming in a book of selected papers from the conference.

Wang HJ et al. Household economic costs of maternal deaths and coping strategies in rural China: a qualitative study. (submitted)

### Reports

*Benchmarking the fairness of health sector reform in the Philippines*. Policy Brief, Department of Reproductive Health, World Health Organization, Geneva, 2009.

ExpandNet Secretariat. *Supporting the scaling up of health innovations: ExpandNet's experience and lessons for the field*. Paper prepared for the meeting 'Priorities for supporting successful scaling up of health innovations'. University of Michigan and WHO/RHR, 6–7 May 2009, Ann Arbor, Michigan, USA. Available at [www.ExpandNet.net](http://www.ExpandNet.net).

ExpandNet Secretariat. *Priorities for supporting successful scaling up of health innovations: Summary recommendations of a meeting: Report of a meeting*. Available on the ExpandNet web site at [www.ExpandNet.net](http://www.ExpandNet.net).

*Impact of provider incentive payments on reproductive health in Egypt*. Policy Brief, Department of Reproductive Health, World Health Organization, Geneva, 2009.

Malawi Ministry of Health Reproductive Health Unit. *Strategic assessment of issues related to unsafe abortion in Malawi*. Lilongwe: Ministry of Health, August 2010.

Russian Federation Ministry of Health. МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ И СОЦИАЛЬНОГО РАЗВИТИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ ВСЕМИРНАЯ ОРГАНИЗАЦИЯ ЗДРАВООХРАНЕНИЯ. Moscow: Ministry of Health, 2009.

*Guide to producing reproductive health accounts within the national health accounts framework*. World Health Organization, Geneva, 2009.

*A nine-step guide to developing a scaling-up strategy*. ExpandNet/WHO, Geneva, 2010, 34 pp.

*Practical guidance for scaling up health service innovations*. ExpandNet/WHO, Geneva, 2009, 54 pp.

*Beginning with the end in mind: Planning pilot projects and programmatic research for scaling up success*. ExpandNet/WHO. (draft)

### Conference presentations

Fajans P. *Applying the ExpandNet/RHR framework and methodology for scaling-up strategy development*. Presented at the Global Health Council annual meeting, Washington DC, USA, 26 May 2009.

Fajans P. *Designing and testing innovation for scaling up success*. Presented at the ExpandNet/RHR international technical meeting 'Priorities for supporting successful scaling up of health innovations', University of Michigan School of Public Health, Ann Arbor, Michigan, USA, 6–7 May 2009.

Fajans P. *Introducing medical abortion: Thinking strategically*. Presented at the 3rd International Conference of the International Consortium for Medical Abortion, Lisbon, Portugal, 24 February 2010.

Fajans P et al. *The ExpandNet framework for researching and planning the scale-up of health systems innovations*. Organized session at the First Global Symposium on Health Systems Research, Montreux, Switzerland, 5–19 November 2010.

Huntington D et al. *Improving maternal health – lessons from the basic health services project in China*. International Health Economics Association Congress, Beijing, China, 15 July 2009.

Johnson R. *Abortion laws and women's health*. Women Deliver Conference, Washington DC, 7–9 June 2010.

Johnson R. *WHO tools and activities addressing unsafe abortion*. 9th annual meeting of the International Federation of Professional Abortion and Contraception Associates (FIAPAC), Seville, Spain, 22–23 October 2010.

Johnson R. *Using the WHO Strategic Approach to strengthen safe abortion care*. 'Keeping our promise: Addressing unsafe abortion in Africa', Accra, Ghana, 8–11 November 2010.

Simmons R, Fajans P. *Contextualizing Scale-up: Lessons from ExpandNet*, presented at the international conference 'Beyond scaling up: Pathways to universal access', Brighton, United Kingdom, 11 May 2010.

Simmons R, Fajans P, Ghiron L. *The determinants of scaling-up success: Findings from literature and practical experience*. First Global Symposium on Health Systems Research, Montreux, Switzerland, 15–19 November 2010.



## Chapter 12

# Mapping best reproductive health practices

### 1. INTRODUCTION

The Mapping Best Reproductive Health Practices (MBP) activities cover a range of core knowledge synthesis and dissemination activities of the Department. The objectives of these activities are to: (1) synthesize existing research findings in sexual and reproductive health to strengthen the evidence base for guidelines; (2) provide the rationale for further research; (3) disseminate research summaries in a user-friendly, relevant and accessible format; (4) strengthen, at country level, knowledge about evidence-based medicine through RHL and e-learning; (5) conduct research to implement evidence-based practices; and (6) build capacity to facilitate informed decision-making.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

MBP work contributes to SO4 of WHO's Medium-term Strategic Plan "To reduce morbidity and mortality and improve health during key stages of life ... and improve sexual and reproductive health ... for all individuals" and, more specifically, OWER 4.2. "... new evidence, products, technologies, interventions and delivery approaches of global and/or national relevance available to improve maternal, newborn, child and adolescent health, and to improve sexual and reproductive health".

### 3. THE WHO REPRODUCTIVE HEALTH LIBRARY

#### 3.1 Progress

The *WHO Reproductive Health Library* (RHL) is an online review journal covering the area of sexual and reproductive health. The online RHL has been updated every month, since July 2008, with at least two new or updated systematic reviews and corresponding commentaries. In 2009–2010, RHL expanded not just in terms of content, but also of its language coverage and dissemination. RHL also continues to be published each year on CD-ROM in seven languages. Subscriptions to the RHL CD-ROM currently stand at 4788.

#### 3.1.1 RHL content and readership

At the end of 2010, there were a total of 170 Cochrane reviews and corresponding commentaries in RHL. In 2009–2010, three new training videos were added. In addition, a WHO guideline entitled *WHO recommendations for the prevention of postpartum haemorrhage* was added with a new corresponding "RHL guideline appraisal" – a short independent critical review of the WHO guideline based on the AGREE (Appraisal of Guidelines Research and Evaluation) instrument.

Between 15 January 2010 and 16 November 2010, over 3.6 million hits were recorded on RHL web pages, ranking RHL among the 25 most-visited sites on the WHO web site. In a bid to expand further the use of RHL, 13 new "RHL Champions" were appointed in various WHO regions. These volunteer scientists have undertaken to promote the use of RHL in clinical and policy decisions as well as in research training.

### 3.1.2 RHL translations

In 2009, the first translation of RHL into Arabic was published on the Internet, followed in 2010 by publication of the Arabic CD-ROM version. RHL is now published in seven languages: Arabic, Chinese, English, French, Russian, Spanish and Vietnamese.

In August 2009, a meeting was organized between the RHL team and RHL translation focal points to agree on a standardized approach for all translations and to discuss the use of translations tools such as TRADOS.

The English CD-ROM version of RHL 2010 was published in April 2010, but owing to financial constraints its translation was delayed until December 2010. The lack of funds also severely affected the dissemination of the CD-ROM version to subscribers.

To overcome the financial impediments, in 2010, the RHL team explored more cost-effective ways of translating and publishing RHL. One option currently being pursued is the use of free Google services. The legal aspects of this potential move are currently being discussed by the legal offices of WHO and Google.

### 3.2 Planned activities

RHL remains a flagship publication for RHR. Its use will be further expanded in the next biennium. If the legal challenges can be overcome, RHL will be transferred from the WHO web site to Google Sites.

## 4. RESEARCH SYNTHESIS

### 4.1 Progress

Systematic reviews constitute the backbone of both research and normative work of RHR. Reviews on high-priority topics in maternal/perinatal health and fertility regulation were conducted and updated by RHR staff and collaborating institutions. RHR staff continue to participate in the editorial boards of the Cochrane Pregnancy and Childbirth Group (PCG) and Fertility Regulation Group (FRG). Current financial difficulties prevented RHR from making a financial contribution to FRG in 2010.

The Cochrane review on *Patterns of routine antenatal care for low-risk pregnancy*, which was originally published in October 2001, was updated in 2010. The updated review suggests an increase in perinatal deaths associated with the four-visit model of antenatal care. In response, a technical consultation was held in Geneva, Switzerland, in November 2010. The reason for increased perinatal mortality is unclear, but seems to be associated with stillbirths before term. Currently secondary analyses are being undertaken to explore the reasons behind this finding as reported in three randomized controlled trials conducted in low- and middle-

income countries. Mapping work was also initiated to investigate interventions aimed at reducing stillbirths.

### 4.2 Planned activities

Systematic reviews are increasingly being integrated into RHR's normative work. This area of work will be expanded further in the next biennium (see Section 6.1.1.).

## 5. CAPACITY BUILDING

### 5.1 Progress

#### 5.1.1 The RHL evidence-based medicine clinically integrated e-learning project

A cluster randomized controlled trial to evaluate an RHL-based, clinically integrated e-learning training course in evidence-based medicine was completed in October 2010. Findings of the study, conducted in Argentina, Brazil, Democratic Republic of the Congo, India, Philippines, South Africa and Thailand, will be reported in 2011. In 2010 work was under way to make the e-learning programme accessible to teaching institutions worldwide.

#### 5.1.2 Presentation of RHL at meetings

In 2009–2010, presentations on RHL were made at eight meetings or institutions, including the XIX Congress of FIGO, Cape Town, South Africa, in October 2009.

#### 5.1.3 Scientific writing workshops

In 2009, two scientific writing workshops were held in Chandigarh, India, and Surabaya, Indonesia. In 2010, five scientific writing workshops were conducted in Japan, Republic of Korea, Thailand and Viet Nam (two workshops), with some 200 researchers being trained. Four of the five workshops in 2010 were funded entirely by the institutions requesting training in scientific writing.

### 5.2 Planned activities

In 2011, work will be undertaken to make the RHL evidence-based medicine course available via an e-learning platform. There are also plans to continue presentations of RHL at meetings and institutions, especially by RHL Champions. Scientific writing workshops will be conducted upon request from collaborating institutions.

## 6. OTHER RESEARCH, RESEARCH SYNTHESIS METHODOLOGY AND DISSEMINATION ACTIVITIES

### 6.1 Progress

#### 6.1.1 Knowledge synthesis, exchange and implementation research

In 2009, RHR adopted a knowledge-to-action (KTA) framework (Figure 1) and initiated a project called GREAT (Guidelines, Research Priorities, Evidence synthesis, Applicability of evidence, Transfer of knowledge) with the aim of increasing the use of evidence-based guidance on maternal and perinatal health.

In December 2009, a technical consultation was held, with support from the Maternal Health Task Force of EngenderHealth, to discuss the various aspects of the project. Briefly, the project seeks to integrate research, research synthesis (in the form of systematic reviews), normative guidance (in the form of evidence-based guidelines) and adaptation and implementation of the guidelines in the field. Work under way in this project is summarized in the three sections below.

##### 6.1.1.1 Identifying priority problems/gaps in knowledge

In 2010, HRP/RHR conducted a multi-pronged consultation to identify guidance needs of countries and regions in the area of maternal and perinatal health. This involved documenting the perspectives of various stakeholders at country, regional and international levels. The Knowledge Gateway (KG) of the IBP project was used to conduct a moderated discussion with programme managers, researchers and

policy-makers. The forum was attended by over 1000 people registered with IBP-KG and ended with a survey of various strategies and their prioritization. The same survey was also sent to the Ministries of Health and WHO country offices. A total of 349 responses were received.

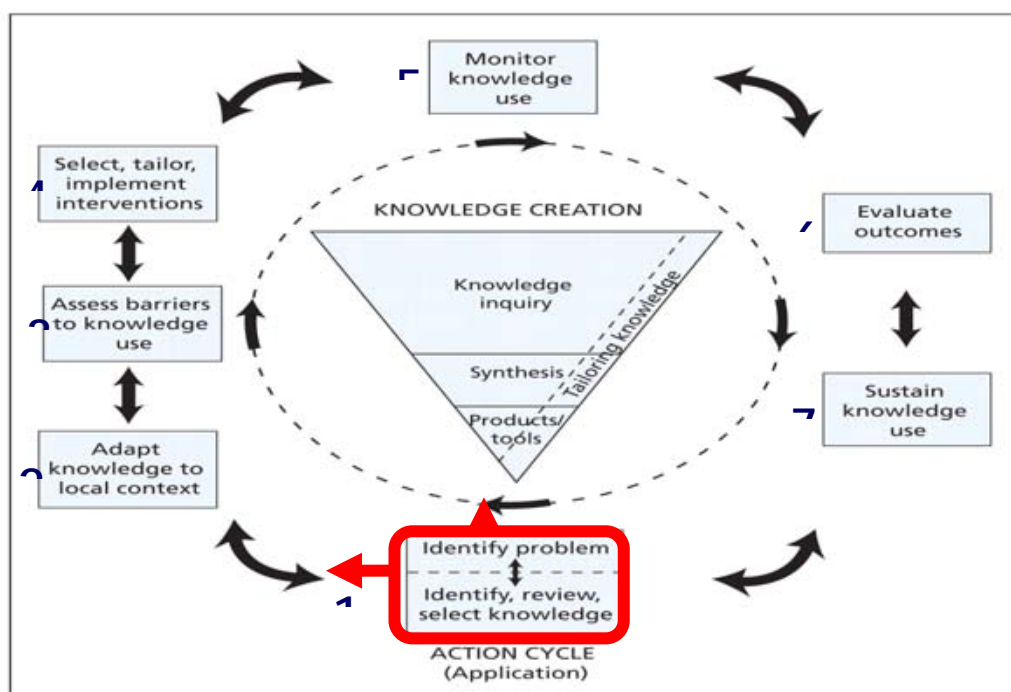
Gaps in knowledge were also documented by screening Cochrane reviews, RHL commentaries and WHO guidelines. Priorities identified through this approach will be published in RHL in 2011.

##### 6.1.1.2 Guidelines

Since 2007, HRP/RHR has been developing evidence-based guidelines in sexual and reproductive health using the GRADE approach for appraising the quality of evidence and determining the strength of recommendations. In 2010, the following guideline-related activities were undertaken:

- *WHO Recommendations for induction of labour.* These guidelines were finalized for publication in December 2010.
- *Hypertensive disorders of pregnancy.* Scoping for this guideline, updating of related Cochrane reviews, and grading of evidence were completed in 2010. The guideline panel meeting is scheduled for March 2011.
- *The RHR/WHO Department of Making Pregnancy Safer (MPS) guidelines working group.* In 2010, work was under way to update the antepartum haemorrhage section of the guidelines entitled *Managing complications in pregnancy and childbirth*. Guidelines on basic newborn resuscitation and postnatal care were also being

Figure 1. Knowledge-to-action framework.



reviewed collaboratively, with staff from MPS and the WHO Department of Child and Adolescent Health and Development (CAH) taking the lead.

- *Optimizing the delivery of key health-care interventions to improve maternal and perinatal health.* Following preparatory meetings, work towards this guideline was initiated jointly with several WHO departments and the Norwegian Knowledge Centre for Health Services. In 2010, an electronic discussion on priorities took place with the participation of more than 600 stakeholders. The guideline scoping meeting was convened in December 2010.
- *Guidelines on postpartum haemorrhage.* As a follow-up to the *WHO Recommendations for the prevention of postpartum haemorrhage* (2007), new *WHO guidelines for the management of postpartum haemorrhage and retained placenta* were published in 2009.
- *GREAT Project guideline production system (GPS):* In order to optimize the guideline updates and improve communication between collaborating institutions, a Content Management System has been developed. This web-based system allows all guideline-related documents (search strategies, results, articles, systematic reviews, GRADE tables, draft and final recommendations) to be stored in an organized, central repository and performs regular automated searches of PubMed on each guideline to alert the guideline developers about emerging evidence.
- *WHO Task Force on Health Systems Recommendations.* In December 2009, WHO formed a task force to develop tools for supporting staff working on evidence-based recommendations on health systems-related issues. The Task Force held several meetings, including a session at the First Global Symposium on Health Systems Research, held in Montreux, Switzerland in November 2010, and is working on a handbook for WHO staff, and three scientific articles for publication in peer-reviewed journals. These products will be available in 2011.

### 6.1.1.3 Implementation research

The Department presented a large portfolio of implementation research (IR) projects to STAG members in February 2010. Some of those activities are reported in individual team reports. RHR initiated several implementation research activities and projects in 2009–2010. Of these, the most significant was the joint NORAD HRP/Special Programme for Research and Training in Tropical Diseases (TDR)/CAH/AHPSR Implementation Research initiative, under which three activities were started in 2010: IR call for projects led by AHPSR; IR curriculum development led by TDR; and evidence synthesis in IR led by HRP.

In 2010, in response to the call for projects, HRP/RHR staff worked with selected partner institutions to prepare letters of intent. In October 2010, the shortlisted 14 teams were invited to a proposal development workshop held in Geneva,

Switzerland. At this workshop HRP staff facilitated the development of proposals with staff from other partners.

A call for proposals on evidence synthesis was issued in October 2010 and evaluation of proposals will be carried out between December 2010 and January 2011. Other IR projects initiated include:

- *Implementing evidence-based antenatal care programme in Mozambique.* This is a four-year project to evaluate a strategy for increasing the delivery of evidence-based practices included in an antenatal care package aimed at midwives (and other health-care professionals).
- *HRP/TDR project on "Evaluation of interventions to strengthen community capacity to reduce maternal mortality".* This project aims to evaluate tailor-made implementation strategies for strengthening district health systems, including community-based actions as well as activities to improve access to care and referral processes and to strengthen health-care facilities. In this research, the primary end-point will be reduction in maternal deaths. The concept proposal was finalized with TDR and will be submitted to an aid agency for funding.
- *Delivery strategy to increase the use of antenatal corticosteroids in developing countries – a cluster randomized trial.* HRP, in collaboration with the Institute for Clinical Effectiveness and Health Policy, Argentina, and the US NICHD, and Global Network for Women's and Children's Health Research, will conduct a cluster randomized trial to test whether a multicomponent intervention designed to increase the use of antenatal corticosteroids among mothers at risk of preterm birth in African, Asian and Latin American countries is safe and will reduce neonatal mortality in comparison to the existing standard of care.
- *Kosovo postpartum haemorrhage guideline assessment of barriers and facilitators project.* This RHR/University of Toronto project seeks to evaluate factors associated with the implementation of best practices in PPH-related maternal health care. Work will start in 2011.

### 6.1.2 Knowledge synthesis, exchange (KSE) and implementation research (IR) working group meetings

The Department's KSE & IR working groups, established in 2009, merged and continued to meet in 2010 to discuss a variety of cross-cutting issues relevant to the work of the RHR. Regular meetings of the group will continue in 2011.

## 6.2 Planned activities

Activities under the GREAT project are expected to expand in 2011, especially with respect to guideline development, guideline methodology and implementation research. The KTA framework would be used to make use of guidance more effective via monitoring and evaluation of change following guidance implementation.



## 7. RESEARCH

### 7.1 Progress

#### 7.1.1 *The WHO Global Survey on Maternal and Perinatal Health*

From 2004 to 2008, the WHO Global Survey on Maternal and Perinatal Health was implemented in 24 countries. Following publication of the regional analysis for Asia in 2010, the regional databases were integrated into a single database and a global analysis of the data was published in 2010. Two policy briefs and tabulations for all study variables, stratified by continent and country were published in 2009–2010. Several secondary analyses are under way, by teams in different countries, with four having already been published. Publications and data tabulations from this project have been published on the study web site: [http://www.who.int/reproductivehealth/topics/best\\_practices/globalsurvey/en/index.html](http://www.who.int/reproductivehealth/topics/best_practices/globalsurvey/en/index.html)

#### 7.1.2 *WHO Multicountry Study on Maternal and Newborn Health*

The WHO Multicountry Study on Maternal and Newborn Health is a large cross-sectional study involving 370 health-care facilities in 26 countries (the 23 countries that participated in the Global Survey plus Afghanistan, Mongolia and Pakistan). It is focused on the management of severe complications of pregnancy and childbirth, and is based on the use of a maternal near-miss and criterion-based clinical audit tool developed by RHR.

The study protocol was developed in collaboration with the regional and country coordinators of the study between 2008 and 2009. In 2009, three regional meetings were held to review the study protocol with the country coordinators and to plan for implementation of the study.

In May 2010, the study was initiated in Latin America, followed by the WHO Western Pacific Region. The study protocol is being adapted and independently used in several countries, including Argentina (5 hospitals), China (437 hospitals), Ghana (1 hospital), Iraq (6 hospitals), Jordan (1 hospital), Kuwait (1 hospital) and Lebanon (5 hospitals). In total, over 825 hospitals will eventually provide data using the multicountry study methods, yielding over 1 000 000 observations (including 300 000 observations to be carried out in the WHO Multicountry Study).

#### 7.1.3 *Active management of the third stage of labour without controlled cord traction: a randomized non-inferiority controlled trial*

To evaluate the role of controlled cord traction in active management of the third stage of labour, RHR conducted a randomized controlled trial involving 25 000 women in eight developing countries. The findings of this trial are expected to have major policy, training and practice implications. If controlled cord traction is found not to have a significant role in active management, the focus in this approach will shift to uterotonic administration.

### 7.2 Planned activities

The WHO Multicountry Study on Maternal and Newborn Health will be implemented in the WHO African, South-East Asia and Eastern Mediterranean Regions between 2011 and 2012.

The Department is collaborating with Engenderhealth Fistula Care and will jointly implement a randomized controlled trial in seven or eight African countries comparing short (5–7 days) versus longer (13–15 days) catheterization of the urinary bladder following surgical fistula repair.

## PUBLICATIONS IN 2009–2010

## Systematic reviews

Chou D et al. Paracetamol/acetaminophen (single administration) for perineal pain in the early postpartum period. *Cochrane Database Syst Rev*, 2010, 17(3):CD008407.

Dowswell T et al. Alternative versus standard packages of antenatal care for low-risk pregnancy. *Cochrane Database Syst Rev*, 2010, 6(10):CD000934.

Duley L, Gülmezoglu AM, Chou D. Magnesium sulphate versus lytic cocktail for eclampsia. *Cochrane Database Syst Rev*, 2010, 8(9):CD002960.

Duley L et al. Magnesium sulphate and other anticonvulsants for women with pre-eclampsia. *Cochrane Database Syst Rev*, 2010, 10(11):CD000025.

Geoghegan J et al. Cell salvage at caesarean section: the need for an evidence-based approach. *BJOG*, 2009, 116(6):743–7.

Hofmeyr GJ et al. Misoprostol to prevent and treat postpartum haemorrhage: a systematic review and meta-analysis of maternal deaths and dose-related effects. *Bull World Health Organ*, 2009, 87(9):666–77.

Hofmeyr GJ, Gülmezoglu AM, Pileggi C. Vaginal misoprostol for cervical ripening and induction of labour. *Cochrane Database Syst Rev*, 2010, 6(10):CD000941.

Kidney E et al. Systematic review of effect of community-level interventions to reduce maternal mortality. *BMC Pregnancy Childbirth*, 2009, 20 9:2.

O'Mahony F, Hofmeyr GJ, Menon V. Choice of instruments for assisted vaginal delivery. *Cochrane Database Syst Rev*, 2010, 10(11):CD005455.

Tuncalp O, Gülmezoglu AM, Souza JP. Surgical procedures for evacuating incomplete miscarriage. *Cochrane Database Syst Rev*, 2010, 8(9):CD001993.

van den Broek N et al. Vitamin A supplementation during pregnancy for maternal and newborn outcomes. *Cochrane Database Syst Rev*, 2010, 10(11):CD008666.

## Peer-reviewed papers

Betran AP et al. WHO Global Survey on Maternal and Perinatal Health in Latin America: classifying caesarean sections. *Reprod Health*, 2009, 6:18.

Cecatti JG et al. Brazilian Network for Surveillance of Severe Maternal Morbidity. Brazilian network for the surveillance of maternal potentially life threatening morbidity and maternal near-miss and a multidimensional evaluation of their long term consequences. *Reprod Health*, 2009 6(15).

Costa ML et al. Audit and feedback: Effects on professional obstetrical practice and healthcare outcomes in a university hospital. *Acta Obstet Gynecol Scand*, 2009, 88(7):793–800.

Costa ML et al. Cryptococcal meningitis in HIV-negative pregnant women: case report and review of literature. *Rev Inst Med Trop Sao Paulo*, 2009, 51(5):289–94.

Costa ML et al. Using a Caesarean Section Classification System based on characteristics of the population as a way of monitoring obstetric practice. *Reprod Health*, 2010, 26(7):13.

Coutinho PR et al. Factors associated with low birth weight in a historical series of deliveries in Campinas, Brazil. *Rev Assoc Med Bras*, 2009, 55(6):692–9.

Guerra GV et al. Factors and outcomes associated with the induction of labour in Latin America. *BJOG*, 2009 Dec, 116(13):1762–72.

Gülmezoglu AM et al. Active management of the third stage of labour without controlled cord traction: a randomized non-inferiority controlled trial. *Reprod Health*, 2009, 6:2.

Gülmezoglu AM, Souza JP. The evolving management of the third stage of labour. *BJOG*, 116:26–8.

Gülmezoglu AM, Souza JP. Community-based interventions to reduce maternal mortality. *Lancet*, 2010 Feb 6, 375(9713):458.

Gülmezoglu AM et al. Misoprostol use in the community to reduce maternal death. *Lancet*, 2010, 376(9745):955.

Kulier R et al. A cluster randomized controlled trial to evaluate the effectiveness of the clinically integrated RHL evidence-based medicine course. *Reprod Health*, 2010, 7:8.

Lumbiganon P et al. World Health Organization Global Survey on Maternal and Perinatal Health Research Group. Method of delivery and pregnancy outcomes in Asia: the WHO Global Survey on Maternal and Perinatal Health 2007–08. *Lancet*, 2010, 375(9713):490–9.

Neto AFO et al. Factors associated with maternal death in women admitted to an intensive care unit with severe maternal morbidity. *Int Gynec Obstet*, 2009, 105(3):252–6.

Pacagnella RC et al. Rationale for long-term evaluation of the consequences of potentially life-threatening maternal conditions and maternal “near-miss” incidents using a multidimensional approach. *J Obstet Gynaecol Can*, 2010, 32(8):730–8.

Pattinson RC et al. WHO working group on maternal mortality and morbidity classifications. WHO maternal death and near-miss classifications. *Bull World Health Organ*, 2009, 87(10):734.

Pileggi C et al. Neonatal near miss approach in the 2005 WHO Global Survey Brazil. *Jornal de Pediatria*, 2010, 86(1):21–6.

Say L, Souza JP, Pattinson RC. Maternal near miss – towards a standard tool for monitoring quality of maternal health care. *Best Pract Res Clin Obstet Gynaecol*, 2009, 23(3):287–96.

Souza JP et al. An emerging «maternal near-miss syndrome»: narratives of women who almost died during pregnancy and childbirth. *Birth-Issues in Perinatal Care*, 2009, 36(2):149–58.

Souza JP et al. World Health Organization 2005 Global Survey on Maternal and Perinatal Health Research Group. Maternal near miss and maternal death in the World Health Organization's 2005 global survey on maternal and perinatal health. *Bull World Health Organ*, 2010, 88(2):113–9.

Souza JP et al. Development and validation of a questionnaire to identify severe maternal morbidity in epidemiological surveys. *Reprod Health*, 2010, 7:16.

Souza JP et al. Global Survey on Maternal and Perinatal Health Research Group W. Caesarean section without medical indications is associated with an increased risk of adverse short-term maternal outcomes: the 2004–2008 WHO Global Survey on Maternal and Perinatal Health. *BMC Med*, 2010, 8(1):71.

Souza JP et al. Maternal morbidity and near miss in the community: findings from the 2006 Brazilian demographic health survey. *BJOG*, 2010, 117(13):1586–92.

## Policy briefs

Caesarean section without medical indication increases risk of short-term adverse outcomes for mothers, 2010.

Clarifying WHO position on misoprostol use in the community to reduce maternal death.

Rising caesarean deliveries in Latin America: how best to monitor rates and risks.

## Web sites

**GREAT project:** [http://www.who.int/reproductivehealth/topics/best\\_practices/en/index.html](http://www.who.int/reproductivehealth/topics/best_practices/en/index.html)

**RHL:** <http://www.who.int/rhl>

## Chapter 13

# Implementing best practices in reproductive health

### 1. INTRODUCTION

For over a decade the Implementing Best Practices in Reproductive Health (IBP) Initiative has created and implemented a strategy at the global, regional and country levels – designed to foster collaboration, reduce duplication and harmonize approaches to support the identification, implementation and scaling-up of proven effective technical and managerial practices to improve reproductive health. By 2010 this partnership has grown to 34 members and now includes the East, Central, Southern African Health Community, Family Care International (FCI), FIGO and Population Services International (PSI). This year IBP partners celebrated 10 years of the partnership. IBP Secretariat published a report summarizing achievements, challenges and lessons learnt over the last 10 years: *Implementing Best Practice (IBP) Initiative—Our First 10 Years 2000–2010*.



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### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

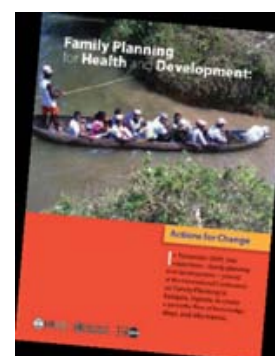
The IBP Secretariat and partnership continue to support the corporate goals of WHO by working within the framework of SO4 and OWER 4.7. The annual programme of work of the

partnership supports the departmental strategy and involves extensive networking, coordination and collaboration with teams within the Department, across WHO and with global, regional and country level entities. In 2010 the IBP Secretariat initiated a strategic planning process to formulate with partners the 2011–2016 IBP Strategy. Fundamental to this process will be the departmental vision of universal access to reproductive health, WHO's Global Strategy for Reproductive Health and collaboration with WHO departments such as Making Pregnancy Safer, Child and Adolescent Health and WHO's regional offices.

### 3. PROGRESS ON SELECTED ACTIVITIES

#### 3.1 International Conference on Family Planning: Research and Best Practices

This conference was held in November 2009 in Kampala, Uganda and was attended by over 1300 leading policy-makers, researchers and health professionals from 61 countries. IBP partners sponsored the third day of the conference, which focused on practical strategies to transfer the research presented in the first two days into practice. Partners continue to support follow-up activities through a virtual discussion forum and the dissemination of a report synthesizing key messages, challenges and action for change, at the Women Deliver Conference, the Global Health Council





conference, IBP meetings and regional and country workshops. The report *Family planning for health and development: Actions for Change, IBP Partnership, 2010*, is currently being translated into French.

### 3.2 Advancing universal access by providing programmatic guidance for the full inclusion of people with disabilities in sexual and reproductive health activities

In support of the Convention on the Rights of Persons with Disabilities, the IBP Secretariat, in collaboration with UNFPA, developed and published guidance that was launched in December 2009. Presentations and education efforts are being led by an IBP team, in collaboration with the WHO Disability Team within the Department of Human Resources for Health (HRH).



### 3.3 Fostering Change and scaling-up in the East, Central and Southern Africa Health Community

The IBP Secretariat, MSH, Johnson and Johnson and the Tides Foundation supported the East, Central and Southern Africa Health Community (ECSA-HC) to organize “Fostering change” workshops in July 2009 in Arusha, United Republic of Tanzania, and in July 2010 in Lilongwe, Malawi. ECSA-HC staff from 10 member countries were trained. To capitalize on other regional initiatives, three of the countries that attended the 2010 meeting – Kenya, Malawi and Zambia – are developing plans that directly follow from work that was done during the USAID FP meeting held in Kigali, Rwanda, in April 2010. All countries have submitted plans to begin fostering a specific change in their reproductive health activities. Implementation will be supported by IBP partners working in these countries. Workshops to launch the Tides grant and document best practices took place during the February 2010 Health Ministers’ meeting in Kampala, Uganda, and the October, 2010 meeting in Harare, Zimbabwe.

### 3.4 Family planning best practices meeting for countries of the Eastern Mediterranean Region followed by a training workshop in “Fostering Change”

In September 2009, the WHO Regional Office for the Eastern Mediterranean, with support from the IBP Secretariat and IBP partners, conducted a regional meeting on best practices in FP in Amman, Jordan. As a follow-up to that meeting IBP partners assisted the Regional Office for the Eastern Mediterranean to conduct a workshop in May 2010 in Rabat, Morocco, to enhance skills for the eight priority MDG countries to manage the change process. This builds on work already taking place in some of the countries, such as Afghanistan, Egypt, Pakistan and Yemen who attended

the “Extending Service Delivery (ESD) project Bangkok conference” in March 2010, and who have taken the virtual fostering change training programme. Countries are currently finalizing their plans.

### 3.5 Training in use of the family planning advocacy toolkit

IBP is supporting the WHO/Regional Office for Africa/USAID-led initiative to *Reposition family planning in Africa* through the dissemination, training and follow-up of an advocacy toolkit. The most recent workshops were held in September 2009 in Lomé, Togo, and in September 2010 in Douala, Cameroon, for a total of 23 West and Indian Ocean African countries. This brings the total number of sub-Saharan African countries trained to 27. Technical and financial support to follow-up with several countries where WHO and IBP partners are already active is planned.

### 3.6 The IBP Knowledge Gateway

The Knowledge Gateway was developed by RHR. The simple, easy-to-use technology is proving to be a best practice for supporting virtual knowledge networks around the world, particularly in settings with low Internet bandwidth. The technology platform that powers the IBP-KG is being shared within WHO and with other organizations and agencies, enabling them to customize, brand and manage their own communities of practice.

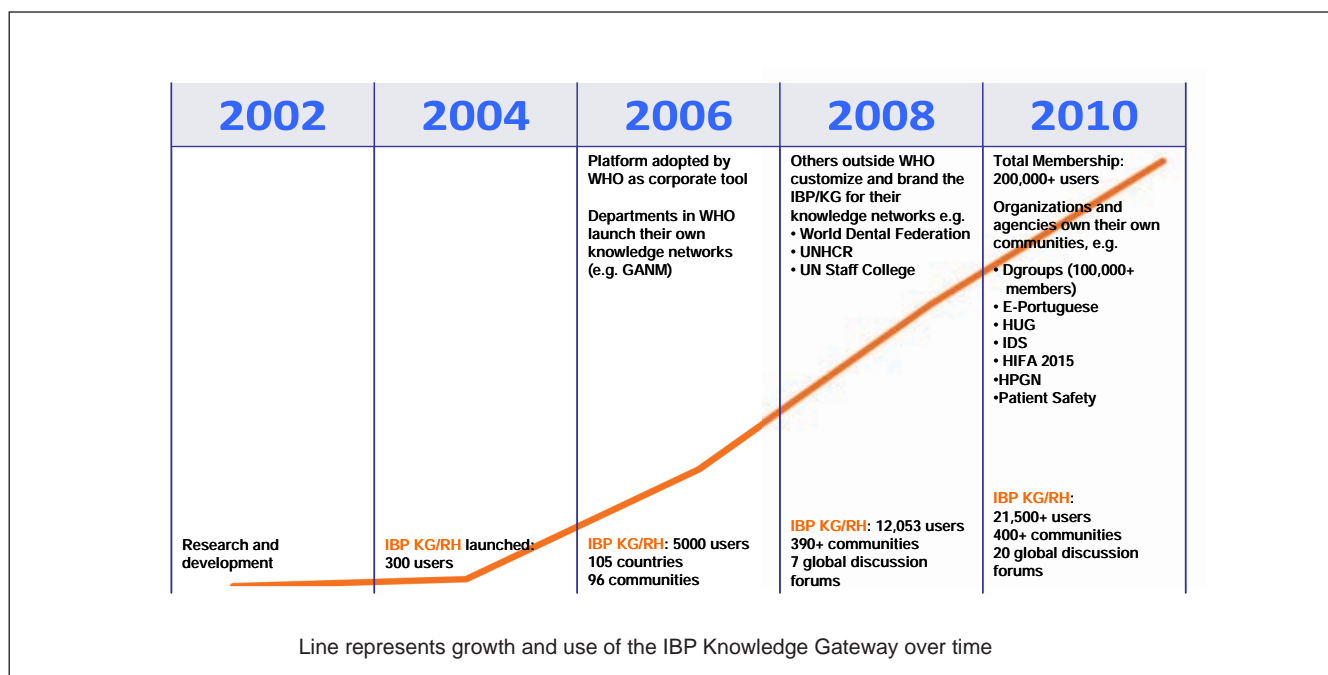
In 2010 the platform attracted 70 000 new members (Figure 1) and on average sends and receives 2 million messages each month. The “shared ownership business model” used to finance an annual programme of enhancements benefits all users, and supports small nongovernmental agencies outside of WHO that have limited funds to use the system. For example, a new modern interface will be launched in 2011 for all members funded by RHR and other key organizations using the system, such as Dgroups. This business model will be evaluated in early 2011 by the Overseas Development Institute (ODI) and the Institute Mario Boella (ISMB), in collaboration with the Department.

A knowledge management strategy underpins the use of the KG and the focus of activities has been on supporting and training IBP partners and Departments within WHO to establish and manage their own knowledge networks. During this reporting period six new networks have been established and six major discussion forums held, see Figure 1.

In addition, the following activities have been undertaken:

- a skill-building session on “Knowledge management and networking” at the Global Health Council annual conference in May 2009;
- in collaboration with the WHO Departments of Human Resources for Health and of Knowledge Management and Strategies (KMS), technical assistance has been

Figure 1. Growth and development of the IBP Knowledge Gateway reaches 270 000 users from over 200 countries and territories.



provided to support and develop further the Global Alliance for Nursing and Midwifery (GANM), Health Information for All by 2015 (HIFA 2015), Afro European Research Medical Network (AERMN) and the United Nations Programme on Nutrition.

- The IBP Secretariat has worked with KMS to develop a training manual on *Knowledge networking and virtual collaboration*. This has been used to develop, implement and follow-up a one-day training programme for WHO Staff undertaken in June and October 2010. This material will be adapted for use by IBP partners and turned into a blended learning programme to support workshops and e-learning.
- At the request of the Ethiopian MoH, the IBP Secretariat worked in collaboration with HRH and Global Health Workforce Alliance (GHWA) to help establish knowledge resource centres at two district hospitals in Ethiopia for district-level health care providers. At a workshop held at Bishoflu Hospital in July 2010, support was provided to establish the knowledge centres and train staff on how to use different types of electronic tools. An evaluation of the use of the knowledge centres has shown that they are a valuable resource being used by hospital staff, community-based health workers and teachers. They have also been used to support in-service training programmes and virtual training programmes for hospital staff hosted by WHO. Ongoing support is provided both through the MoH and WHO headquarters.
- Senior management from IBP partners formed a knowledge management think-tank to analyse present initiatives; capitalize on current thinking; document effective

practice; and work together to envision future strategies. A meeting with over 50 partner representatives was held in Washington, DC, in October 2010. Follow-up activities concentrate on four key areas of knowledge management led by IBP task teams: making the case for knowledge management; knowledge management tool kit of effective practices; steering committee; and monitoring and evaluation. Each working group met in December 2010 to plan their programme of work, which will be undertaken virtually through the KG.

## 5. PLANS FOR 2011–2012

RHR will continue to support the functionality and expansion of the IBP Consortium at global, regional and country levels to:

- follow-up the Kampala Family Planning Conference to support countries in the identification, documentation, implementation and scaling-up of locally identified best practices, and support the next international conference scheduled for 2011;
- undertake activities to promote the use of WHO evidence-based practices and of the fostering change framework for implementing and scaling up effective practices in additional regions and countries;
- prepare the IBP 2011–2016 strategy and include new areas of work that enhance collaboration within WHO and partners to support specific activities focused on universal access to reproductive health;

- continue to support countries to strengthen their capacity to manage change and to translate research and best practices into policy and programmatic action to improve family and community health, drawing on past activities and experience of the IBP partnership;
- expand the use of the IBP-KG and work on the development of innovative strategies to promote collaborative learning and the sharing; exchange; synthesis; transfer; and application of knowledge.

## PUBLICATIONS IN 2009–2010

Implementing Best Practices in Reproductive Health. *Guide de promotion du changement pour le passage à grande échelle de services de santé efficaces*. Cambridge, MA, Management Science for Health, 2009.

World Health Organization (WHO), United Nations Population Fund (UNFPA). *Promoting sexual and reproductive health for persons with disabilities*. Geneva, World Health Organization, 2009

Implementing Best Practice Secretariat. *Implementing Best Practices in Reproductive Health: Our first 10 years, 2000–2010*. Geneva, World Health Organization, 2010

Implementing Best Practice (IBP) Initiative. *Family planning for health and development: Actions for change*. Family Health International, May 2010

*Tools and techniques to support knowledge networking and virtual collaborations*. Geneva, World Health Organization, 2010.

## MEMBERS OF THE IBP CONSORTIUM

### 34 international partners

Academy of Education and Development (AED), Washington DC, USA  
 Bill and Melinda Gates Institute for Population and Reproductive Health, Baltimore, MD, USA  
 CARE International  
 Centre for African Family Studies (CAFS), Nairobi, Kenya  
 Centre for Development and Population Activities (CEDPA)  
 CORE Group  
 EngenderHealth  
 ExpandNet  
 Family Care International (FCI)  
 Family Health International (FHI)  
 Federation of Gynaecology and Obstetrics (FIGO)  
 IntraHealth International  
 Institute for Reproductive Health (IRH) – Georgetown University, MD, USA  
 International Council on Management of Population Programmes (ICOMP)  
 International Planned Parenthood Federation (IPPF)  
 Johns Hopkins Program of International Education in Gynaecology and Obstetrics (Jhpiego), Baltimore, MD, USA  
 Johns Hopkins Bloomberg/School of Public Health Center for Communication Programs (JHU/CCP), Baltimore, MD, USA  
 John Snow International (JSI)  
 Management Sciences for Health (MSH), Boston, MA, USA  
 Marie Stopes International  
 Partners in Population and Development (PPD)  
 Pathfinder International  
 Population Council  
 Population Reference Bureau (PRB)  
 Population Services International (PSI)  
 Program in Appropriate Technology in Health (PATH)  
 Public Health Institute (PHI)  
 Regional Centre for Quality of Health, Makerere University, Uganda  
 The East, Central and Southern Africa Health Community (ECSA-HC)  
 United Nations Population Fund (UNFPA)  
 United States Agency for International Development (USAID)  
 University Research Co, LLC  
 White Ribbon Alliance  
 World Health Organization, Department of Reproductive Health and Research (IBP Secretariat)

## Chapter 14

# Monitoring and evaluation

### 1. INTRODUCTION

The monitoring and evaluation area of work of the Department responds to the need to monitor progress in the achievement of global goals and targets related to sexual and reproductive health, including the related MDGs, and those set at the ICPD, and in the implementation of the WHO Global Strategy for Reproductive Health. In addition, support is provided to regions and countries in the measurement and monitoring of sexual and reproductive health indicators, via development of relevant standards and tools, and capacity strengthening in their use.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

The monitoring and evaluation work contributes to WHO's Medium-term SO4: "To reduce morbidity and mortality and improve health during key stages of life, including pregnancy, childbirth, the neonatal period, childhood and adolescence, and improve sexual and reproductive health ...". Within this objective, the work contributes to OWER 4.2: "National research capacity strengthened as necessary and new evidence, products, technologies, interventions and delivery approaches of global and/or national relevance available ... to improve sexual and reproductive health"; to OWER 4.7: "Guidelines, approaches and tools made available, with provision of technical support to Member States for accelerated action towards implementing the strategy to accelerate progress towards the attainment of international development goals and targets related to reproductive health, with particular emphasis on ensuring equitable access to good/quality sexual and reproductive health services, particularly in areas

of unmet need, and with respect for human rights as they relate to sexual and reproductive health", by providing strategic information on implementing the work plans for improving sexual and reproductive health, as well as monitoring the achievement of related targets and indicators.

### 3. MONITORING OF SEXUAL AND REPRODUCTIVE HEALTH RELATED INDICATORS

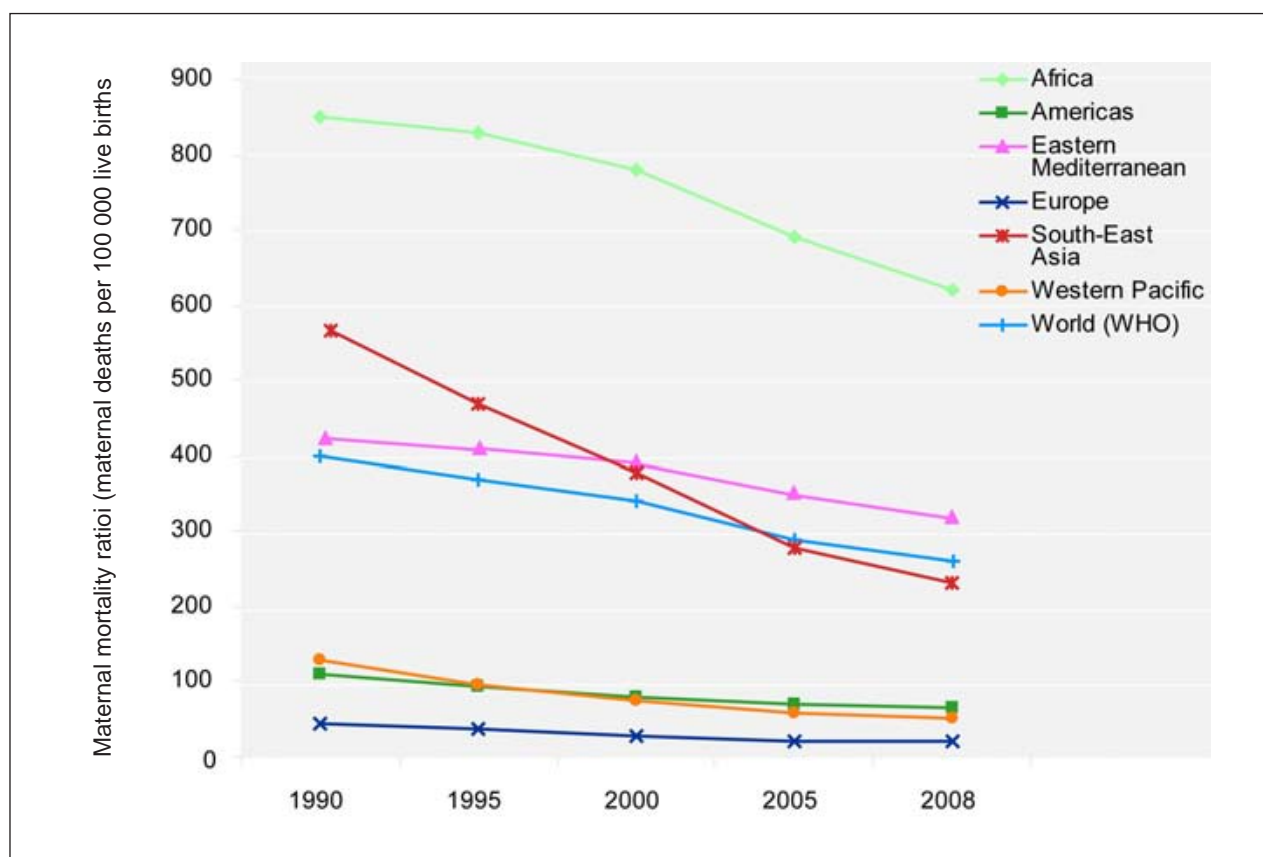
#### 3.1 Progress

##### 3.1.1 Maternal mortality estimates

The Department leads a collaborative effort with UNICEF, UNFPA, and The World Bank to provide up-to-date estimates of global maternal mortality levels as part of monitoring progress towards MDG 5 Target 5A (reducing between 1990 and 2015, the maternal mortality ratio (MMR), by 75%). In September 2010, the latest estimates resulting from a rigorous and comprehensive analysis were published. The Maternal Mortality Estimation Interagency Group (MMEIG) led by the Department collaborated with scientists from the University of California at Berkeley in the new analysis, which was overseen by a technical advisory group (TAG) of external experts from universities: Harvard, Johns Hopkins and Texas in the United States; Aberdeen in the United Kingdom; Umeå in Sweden; and Statistics Norway. Levels of maternal mortality for five-yearly intervals from 1990 to 2008 were analysed for each country using an improved method, superior to those used for previously published estimates and allowing time-trend analysis. As usual, a consultation with countries was carried out for them to review the preliminary estimates, data sources and methods, and provide feedback, and to obtain additional data sources that may not have been used in the analysis.



Figure 1. Maternal mortality ratios from 1990 to 2008, WHO regions.



Globally, maternal mortality fell by 34% between 1990 and 2008, representing an annual decline of 2.3%. The biggest declines in the MMR were seen in the regions of Eastern Asia and Northern Africa (61% and 59%, respectively). Figure 1 shows trends according to WHO regions.

In order to maintain complete transparency regarding the input data and estimation process – the interagency report, all underlying data and methodology, including the statistical programmes used to generate these estimates, were made available on a publicly accessible web site simultaneously with the publication of the report ([www.who.int/reproductivehealth/publications/monitoring/9789241500265/en/index.html](http://www.who.int/reproductivehealth/publications/monitoring/9789241500265/en/index.html)). Between 15 September and 29 November 2010, this departmental site was the most accessed among all specific RHR sites. This site is now linked to the Global Health Observatory (GHO) ([http://www.who.int/gho/mdg/maternal\\_health/situation\\_trends\\_maternal\\_mortality/en/index.html](http://www.who.int/gho/mdg/maternal_health/situation_trends_maternal_mortality/en/index.html)) where user-friendly datasets, country profiles and graphs are downloadable (Figure 2).

### 3.1.2 Updates of global databases of maternal and perinatal health care coverage indicators

A number of global databases were updated annually and published in the World Health Statistics annual issues. They include: births attended by a skilled health professional

(MDG 5.2), antenatal care coverage (MDG 5.5), caesarean section rates and facility deliveries.

### 3.1.3 Systematic reviews of epidemiological data on reproductive health conditions

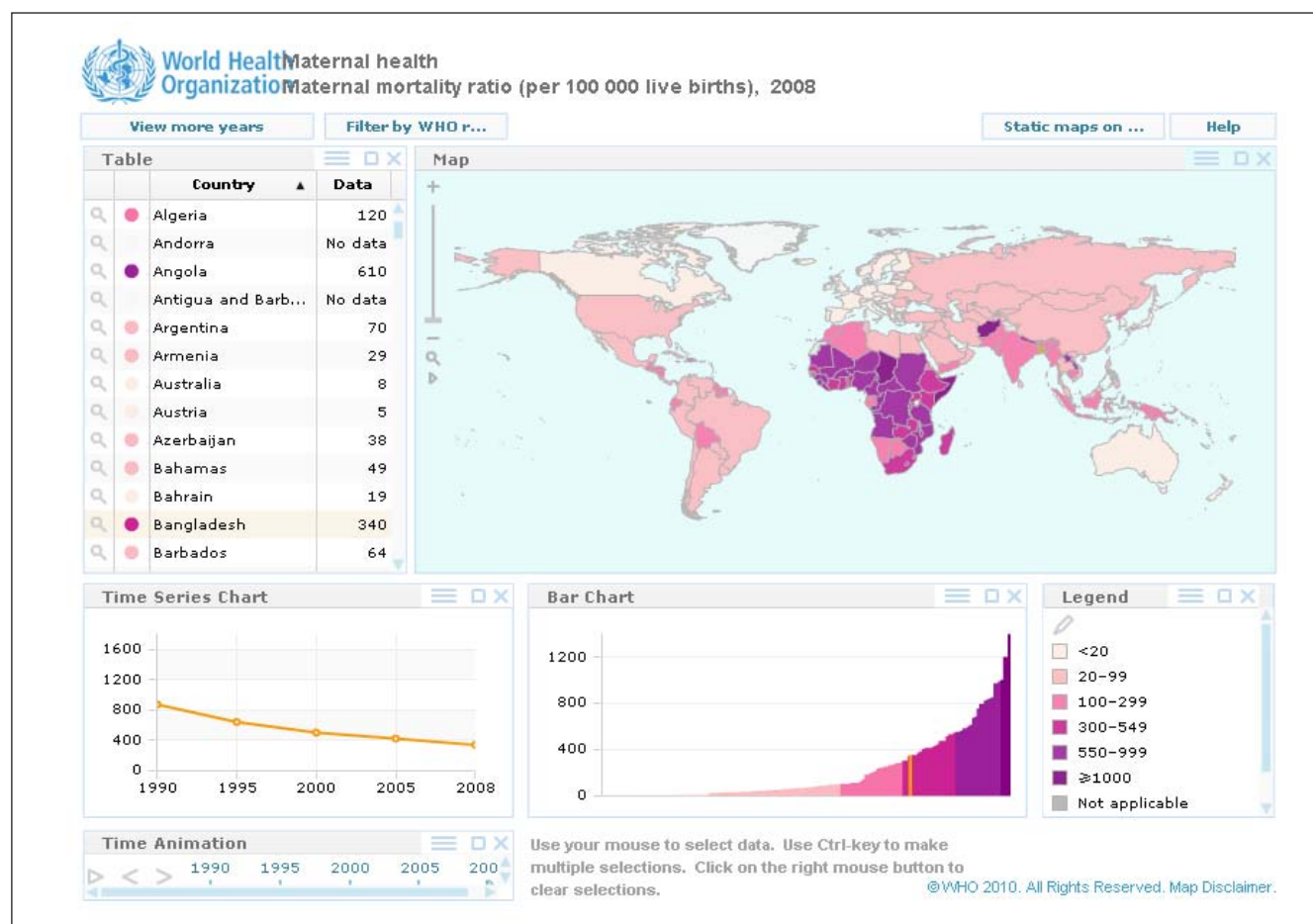
To further understand the magnitude of maternal mortality, the Department conducts epidemiological systematic reviews of priority reproductive and maternal health conditions. In 2010, a systematic review of preterm delivery was published, reporting the first ever global and regional estimates. The findings show a global incidence of preterm birth of 9.6%, resulting in 12.9 million preterm births every year. Approximately 85% of these preterm births are in Africa and Asia. The highest rates of preterm birth are found in Africa and Northern America (11.9% and 10.6%, respectively).

An update of the systematic review of causes of maternal deaths published in 2006 in *The Lancet* was initiated and preliminary analyses were undertaken. This review is being finalized with the inclusion of additional country data, which became known during the country consultative process for maternal mortality estimates.

## 3.2 Planned activities

- Annual updates of maternal and perinatal health databases will be carried out and published in the World Health Statistics.

Figure 2. Maternal mortality estimates at Global Health Observatory – interactive page of a country example (Bangladesh).



- An MMEIG/TAG meeting will be convened to review the feedback to the maternal mortality estimates published in 2010, discuss methodological issues, needs for further methodological work, and the timeline for the new round of estimates considering the accountability framework requested by the UN Secretary-General in support of the Global Strategy for Women's and Children's Health.
- Systematic reviews on causes of maternal death and the attribution of individual causes to the overall magnitude of maternal mortality will be published.
- Case-studies of countries that have reduced maternal mortality, describing likely factors for the improvement, are being synthesized and will be published in 2011.

## 4. NORMS, TOOLS AND STANDARDS

### 4.1 Progress

#### 4.1.1 Classification system for identification of causes of maternal deaths

The WHO Classification of Deaths during Pregnancy, Child-birth and the Puerperium was developed through a consultative process that started in 2008. The classification system builds on current International Statistical Classification of

Diseases and Related Health Problems (ICD-10) codes and represents an effort to standardize the use of the codes to describe causes of maternal death. In 2010, the beta draft of this document was circulated among researchers and other relevant stakeholders for comment. Through this consultation, it became apparent that the concepts of "obstructed labour" and "suicide in pregnancy" are potential difficult areas for consensus. The Department has actively engaged stakeholders to comment on the classification as its adoption will have significant impact on the use of vital registration data for the purpose of estimating maternal mortality and for other programmatic decisions. Work on this classification system identified gaps in the current ICD-10 structure and these will be addressed in the 11th revision to the ICD (see below).

#### 4.1.2 Standard Identification criteria for maternal near-miss cases

There is increasing attention to study severe morbidities (maternal near-miss) instead of maternal mortality to identify health system shortcomings and take actions to address them. Various definitions and criteria have been used to identify maternal near-miss cases, limiting the usefulness of this indicator as a standard quality-of-care tool. A set of standard criteria for identifying maternal near-miss cases were

developed, tested and published (Figure 3), and a guidance document for facilitating its routine use is in preparation. These criteria formed the basis of the questionnaire for the WHO Global Survey on Maternal and Perinatal Health being undertaken by the Mapping Best Practices Team of TCC.

#### 4.1.3 ICD revisions

The Department serves as the Secretariat that coordinates efforts to revise Chapters 14 (Diseases of the genitourinary system), 15 (Pregnancy, childbirth and the puerperium) and 16 (Certain conditions originating in the perinatal period) of ICD for the 11th version. The ICD, a key instrument of the WHO, was initially developed for coding causes of death, but evolved to coding for morbidity, as well as recording specific diseases, injuries, signs, symptoms, complaints, social circumstances, reasons for presentation to medical examination, and external causes of both injury and disease.

Within its mandate of ensuring optimum input to the ICD revision in line with the latest evidence and scientific and professional consensus, the Department engaged external stakeholders and assisted in convening working groups and focal points in the sub-areas of: urology/urogynaecology, gynaecology-oncology, reproductive medicine, perinatology and obstetrics, as well as a Topic Advisory Group overseeing the overall work. The first meeting of this Genito/urinary and Reproductive Medicine Topic Advisory Group was convened in October 2010. The Department coordinates inputs of individual working groups and acts as advocate for concepts relevant to sexual and reproductive health.

## 4.2 Planned activities

- The classification system for identification of causes of maternal mortality and the guidance document to study maternal near-miss cases will be published.
- Coordination of ICD-11 revision as relating to the sexual and reproductive health related chapters will continue.
- New work will be initiated to define and facilitate measurement of “maternal morbidity”.

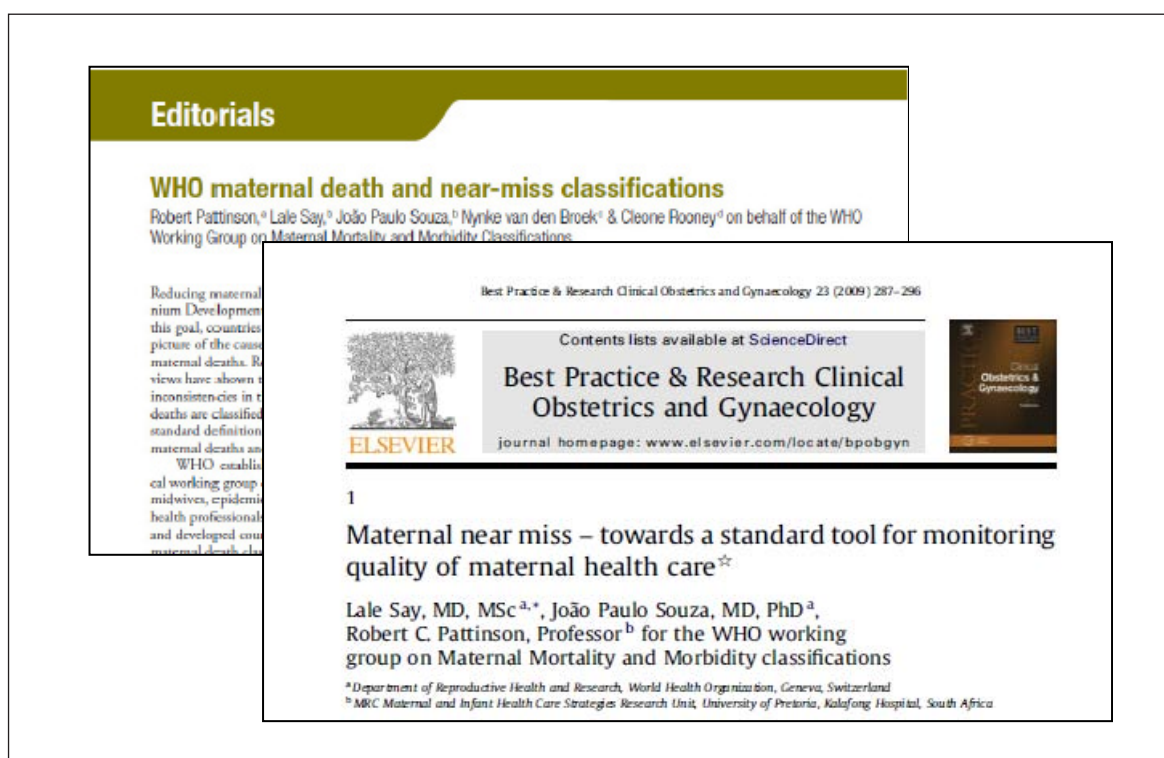
## 5. SUPPORT TO REGIONS AND COUNTRIES IN MONITORING AND EVALUATION

### 5.1 Progress

#### 5.1.1 Capacity building in estimation of maternal mortality

Due to limited availability of reliable data on maternal mortality and the variety of sources from which they are generated, the analysis of maternal mortality levels and trends relies on statistical modelling and adjustments for international comparability. The Department has received numerous requests to support country capacity in improving data collection and quality. In 2009–2010, on the request of respective ministries of health, the monitoring and evaluation team provided technical support to Lebanon for design and analysis of a reproductive age mortality study; and to the Islamic Republic of Iran for assessing the completeness of the maternal mortality surveillance system.

Figure 3. WHO classification system for maternal deaths and standard criteria for maternal near-miss (publications).



In collaboration with partners, a number of regional workshops on capacity building in maternal mortality measurement were convened:

- As part of the country consultation for maternal mortality estimates, a regional workshop was held in Bangkok in August 2010 for 15 countries of Asia and the Pacific region in collaboration with UNFPA.
- Following the publication of the estimates, two regional workshops were organized by MMEIG in Nairobi, Kenya, in December 2010 for 16 francophone and 19 anglophone African countries.
- A regional workshop on monitoring progress towards MDGs 4 and 5 was organized by the UN ECE for 13 countries from the Central and Eastern Europe. The Department ran the section on MDG 5. This workshop aimed to discuss the revised MDG monitoring framework, new targets and indicators, and to review national data to resolve any discrepancies with international data.

#### *5.1.2 Capacity building in monitoring and evaluation of reproductive health programmes*

The Department provided guidance in monitoring and evaluation of sexual and reproductive health programmes. Three regional workshops (in the South-East Asian, Eastern Mediterranean and Western Pacific Regions) were organized for programme managers and statisticians from ministries of health, specifically to provide support to measuring and monitoring universal access to sexual and reproductive health, and prioritizing interventions using the WHO–UNFPA framework for monitoring universal access. Additionally, technical assistance was provided to reproductive health programmes in China, Myanmar, Sri Lanka and United Republic of Tanzania, to develop monitoring frameworks through adaptation and adoption of the WHO–UNFPA indicator guide, and in Brazil, Canada and China to incorporate maternal near-miss indicators in assessments of quality of maternal health care.

### **5.2 Planned activities**

Support for adapting indicators of universal access to reproductive health will be provided to regions and countries, including to the WHO Regional Office for Africa in the context of the development of a regional agenda for sexual and reproductive health; and to PAHO through convening a regional meeting on monitoring and evaluation.

## **6. SUPPORT TO OTHER INITIATIVES**

### **6.1 Progress**

Monitoring and evaluation support was provided to ongoing initiatives within RHR and FCH. For example, an indicator to monitor unmet need for family planning among women enrolled in HIV care and treatment, as a national PMTCT

indicator, was developed in collaboration with partners within and outside WHO and will be pilot tested in 2011.

Another key deliverable included the design and analysis of a mapping survey on the range of support provided by WHO, UNFPA, UNICEF and The World Bank, to the 25 priority countries identified for joint support by the UN H4+ to improve reproductive, maternal and newborn health. The mapping exercise aimed to provide a baseline for H4 activities and identify gaps for accelerated actions. The Department also took an active part in the development of a joint UN H4+ proposal for improving maternal and newborn health in a selected number of countries that will receive a grant from the Canadian International Development Agency (CIDA) within the context of the UN Secretary-General's Global Strategy for Women's and Children's Health.

### **6.2 Planned activities**

- UN H4+ activities will continue to be supported in the context of the implementation and monitoring of the Global Strategy for Women's and Children's Health.
- Monitoring and evaluation support will continue to be provided to departmental teams.



## PUBLICATIONS IN 2009–2010

### Peer-reviewed papers

Abdool-Karim Q et al. HIV and maternal mortality: turning the tide. *Lancet*, 2010, 375(9730):1948–9.

Beck S et al. The worldwide incidence of preterm birth: a systematic review of maternal mortality and morbidity. *Bull World Health Organ*, 2010, 88(1):31–8.

Cecatti JG et al. Brazilian Network for Surveillance of Severe Maternal Morbidity. Brazilian network for the surveillance of maternal potentially life threatening morbidity and maternal near-miss and a multidimensional evaluation of their long term consequences. *Reprod Health*, 2009, 6:15.

Cousens S et al. National, regional and global estimates of stillbirth rates in 2009 with trends since 1995. *Lancet*. (in press)

Lusti-Narasimhan M, Say L, Mbizvo MT. Linking HIV and sexual and reproductive health services to enhance program outcomes. *Int J Gynaecol Obstet*, 2010, 110 Suppl:S7–9.

Pattinson R et al; WHO Working Group on Maternal Mortality and Morbidity Classifications. WHO maternal death and near-miss classifications. *Bull World Health Organ*, 2009, 87(10):734.

Say L. Importance of accurate information on causes of maternal deaths for informing health care programmes. *Indian J Med Res*, 2010, 132:123–4.

Say L. Neonatal near miss: a potentially useful approach to assess quality of newborn care. *J Pediatr (Rio J)*, 2010, 86(1):1–2.

Say L, Souza JP, Pattinson RC. WHO working group on Maternal Mortality and Morbidity classifications. Maternal near-miss – towards a standard tool for monitoring quality of maternal health care. *Best Pract Res Clin Obstet Gynaecol*, 2009, 23(3):287–96.

Wilmoth J et al. Maternal deaths drop by one-third 1990 to 2008: a United Nations analysis. *Bull World Health Organ*, 2010, 88(10):718–718A.

### Reports

*Trends in maternal mortality: 1990–2008; Estimates developed by WHO, UNICEF, UNFPA, and the World Bank.* Geneva, World Health Organization, 2010.

*Accelerated implementation of maternal and newborn continuum of care as part of improving reproductive health: Mapping of in-country activities.* Geneva, World Health Organization, 2010.

## Conference presentations

Say L. Critical gaps in universal access to reproductive health. XIX FIGO Congress. Pre-congress workshop, Cape Town, South Africa, 2–3 October, 2009.

Say L. New WHO Classification System for Identification of Maternal Deaths. XIX. FIGO Congress. Cape Town, South Africa, 4–9 October, 2009.

Say L. Maternal Near Miss – standard definition and identification criteria. XIX. FIGO Congress. Cape Town, South Africa, 4–9 October 2009.

Say L. Millennium Development Goal 5: to improve maternal health: Current Situation and Progress. 53rd Congress of Brazilian Obstetricians and Gynaecologists, Belo Horizonte, Brazil, 14–17 November 2009.

Say L. Should we focus on particular MDGs and targets? Progress in health MDGs. Third “Etats Generaux” of Development Cooperation. The Millennium Development Goals: How to step up the efforts? Brussels, Belgium, 4 May 2010.

Say L. Births attended by a skilled health worker – concepts and trends. Women Deliver Conference, Washington DC, Washington, USA, 7–9 June 2010.

Say L. Maternal Mortality Estimates: Inter-Agency Approach. Plenary Panel: Global Progress on Maternal Health: The Numbers and their Implications. Maternal Health Task Force Conference. New Delhi, India, 30 August–1 September 2010.

## Chapter 15

# Communication, advocacy and information

### 1. INTRODUCTION

An Advocacy Working Group, established in late 2008 to support advocacy and communication, meets periodically – drawing on expertise across all teams in RHR and providing support to peer review and coordination of activities. Advocacy in RHR is still led by teams, with advocacy budgets controlled by each team.

In developing approaches to its work in the area of advocacy, the Advocacy Working Group has agreed on three strategic directions:

1. RHR will focus on advocating the uptake of its evidence-based outputs, e.g. evidence-based positions, strategies, research findings, clinical and scientific guides, and other departmental outputs.
2. RHR will contribute to high-level advocacy and awareness building for key issues in sexual and reproductive health. This will involve the initiation of or contribution to international or regional partnerships, engaging with the international development community [e.g. International Health Partnership and related initiatives (IHP+), UN H4+].
3. RHR will promote the work of the Department and HRP, in order to raise funds and to ensure the continued commitment and engagement of Member States, WHO and other agencies.

Although the work of the Department covers all three of the above areas, based on the guidance of STAG in 2010, the focus in 2009–2010 was on selected high-impact activities under 1 and 3.

The RHR Programme Management Team (PMR) supports key aspects of advocacy and communication in the Department, including:

- document editing and production
- multimedia development
- creation of display materials
- graphic design
- web development
- dissemination of information products
- conference and workshop site support.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

The work of PMR in communications and advocacy contributes to SO4 of WHO's Medium-term Strategic Plan and, more specifically, OWERs 4.2 and 4.7. Production, translation and dissemination of advocacy and promotional materials, and scientific and technical materials for sexual and reproductive health contributes to making available to Member States: new evidence, interventions and delivery approaches to improve sexual and reproductive health (OWER 4.2); and guidelines, approaches and tools for accelerated action towards implementing the strategy to accelerate progress towards the attainment of international development goals and targets related to reproductive health (OWER 4.7).

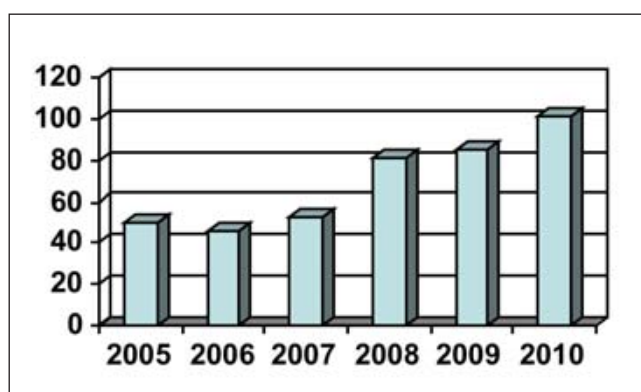
### 3. ACHIEVEMENTS IN 2009–2010

#### 3.1 Publications and information materials

The Department produces and disseminates 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 2009, 85 information materials were produced and distributed widely, and in 2010, 101. It is notable that in addition to 44 new, English-language technical publications and guidelines, 34 other-language versions of technical publications were produced: Arabic (2), Chinese (2), French (14), Spanish (7) and Russian (9). Other information materials produced included: policy and partner briefs, statements, brochures and fact sheets (41); posters (25); CD-ROMs and electronic newsletters and web sites (21), promotional materials and a catalogue of publications.

Although the total number of publications produced annually has increased by about 50% since 2005–2007 (Figure 1), the number of technical publications has remained about the same. A greater number of short documents, such as factsheets, newsletters and policy briefs are now being produced, targeted to non-technical audiences, which ensures that the information produced by the Department reaches a wider range of stakeholders. Also an increasing number of documents are issued and disseminated in electronic format only.

Figure 1. Number of RHR information products issued, 2005–present.



PMR continued to support and follow-up the complex clearance procedures required for WHO publications; each product requires four clearances by the Assistant Director-General, and materials on sensitive topics require additional review and approval by the Director-General's Office.

#### 3.2 Internet web sites of the Department

##### 3.2.1 Redesign of web sites

During 2009, the main activity for the Department's web team was the migration of the entire site to the WHO corporate content management system, and the transfer of some 500 departmental publications in all languages to a new central WHO electronic repository. The technical work of the Department was migrated to a site with a slightly revised URL: [www.who.int/reproductivehealth](http://www.who.int/reproductivehealth) and a redirect was put in place for returning users. The migration of the site also provided an ideal opportunity to review and update all technical content. Additionally, a new site describing the work of HRP was created, and can be found at [www.who.int/hrp](http://www.who.int/hrp). Improvements to the HRP Governance web site were carried out, as recommended in the HRP external evaluation (2003–2007).

In 2010 the reproductive health web site continued to be updated daily. To keep visitors up to date with new activities and publications, a "What's new?" page was developed, providing information on the latest publications, articles, statements, events and news. Also in 2010, two new major areas of work were added to the reproductive health site. First, a section was added on VAW, bringing together sections on research, prevention and response, and related publications. Second, a section on linkages between sexual and reproductive health and HIV was developed to cover advocacy activities, information on policy and programmatic issues, research and related publications. Two other sections of the web site were substantially developed: in the field of FGM a new section on research was added to provide summaries of texts of the many journal articles on the subject; also the section on the WHO Strategic Approach to strengthening sexual and reproductive health policies and programmes was significantly expanded, reflecting the growing amount of country interest in this approach and the increasing number of publications on this subject. Material related to reproductive health and produced elsewhere in WHO is fully accessible through the portal of the Department's site, and the site is more easily navigable from the WHO top-level pages.

##### 3.2.2 Web dissemination of publications

The web site continues to be the major means of disseminating publications from the Department and, in order to save on printing and distribution costs given the difficult economic climate, an increasing number of publications were only disseminated electronically in 2010. Download statistics in 2010 for a small selection of publications are provided in Table 1. (During 2009, WHO IT services did not provide web site statistics and, since the corporate redesign, total downloads of all publications from the RHR web site are no longer provided.)

Table 1. Publication downloads from the RHR web site in 2010

Publication	No. of downloads
Catalogue of publications	English: 31 053
WHO laboratory manual for the examination and processing of human semen	English: 16 400
Eliminating FGM. An interagency statement – OHCHR, UNAIDS, UNDP, UNECA, UNESCO, UNFPA, UNHCR, UNICEF, UNIFEM and WHO	Arabic: 1176 English: 9736 French: 1340
Medical eligibility criteria for contraceptive use. Wheel 2008	English: 6637 Spanish: 2419
National-level monitoring of the achievement of universal access to reproductive health: conceptual and practical considerations and related indicators	Arabic: 631 Chinese: 810 English: 1229 French: 1015 Russian: 537 Spanish: 981

### 3.2.3 Adaptation to WHO web corporate system

During the course of 2010, the WHO Web Team revisited the design of the WHO corporate system with the aim of improving communication with audiences online. In mid-December, the web sites of the Department and of HRP were migrated to the new system. The most visible improvement in this migration is a much clearer, lighter and more attractive layout. This together with the improved navigation structure whereby the top navigation bar is reserved for corporate functions, leaving the left navigation bar for Department functions, means

that the site is much easier to navigate. Locating material has also been made easier thanks to a more prominent and clearer search function, and where materials exist in languages other than English, the corresponding language tab is clearly indicated as active. Migrating the site means that it is now also available through smartphones and further development on the sites will be easier.

### 3.2.4 CD-ROM versions

As in previous years, the 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. The CD was updated and published twice during 2010. This remains the most popular way for people attending conferences to obtain a complete but lightweight set of RHR materials. It also minimizes the costs associated with distribution.

### 3.2.5 The web site in languages other than English

The RHR and HRP site is one of the few technical-unit sites on the WHO web site to be published in four official languages. During 2010, French and Russian "mini sites" were published that include selected key information and pages, as well as translations of all pages with French and Russian publications materials together with the corresponding files for download. Additionally, each "mini site" provides a list of the publications that have been translated, enabling visitors to see at a glance what exists in their language. With the web redesign, the availability of these language versions has been made more clearly visible to visitors.



The HRP stand at Health Systems Research Symposium, Montreux, Switzerland, November 2010.



### 3.3 The WHO Reproductive Health Library (RHL)

The 2009 and 2010 issues of RHL on CD-ROM were published in English in April of each year, and subsequently on CD-ROM in all official languages: 12 000 CD-ROMs of RHL 2010 were printed and disseminated in English; 7000 copies in French and Spanish, and 2000 copies in Arabic, Chinese, Russian and Vietnamese. The first Arabic version of RHL was published in 2009. Dubbing of the RHL training videos in all official languages was completed in early 2010. Future translations with an external provider are planned, and a translation community to check and improve accuracy of texts has been set up on the Implementing Best Practices community web site. In 2010, the Department started exploring the use of new computer-assisted translation approaches to reduce cost while maintaining translation quality.

### 3.4 Dissemination

Web download is now the primary channel for document distribution with an estimated five times more downloads of electronic PDF copies than hard-copy distribution. The RHR Advocacy, and the Knowledge Synthesis and Exchange Working groups considered and endorsed a new dissemination approach, which is outlined in the plans for 2010–2011.

RHR and HRP information materials were actively disseminated at over 50 major conferences and workshops, some of which included training sessions in using RHR tools and guidelines.

Covering letters outlining the intended audience, and the aim and purpose of the publication are now included when hard-copy publications are disseminated, and new software is now available that will enable teams to manage more easily team-specific mailing lists to ensure products reach the right audiences.

#### 3.4.1 Communication with the media

In 2010, over 30 enquiries from the media, relating to RHR's work, were responded to, and the Department's work featured in several WHO press releases and briefings to journalists at the United Nations Office in Geneva, resulting in good coverage in print and broadcast media. RHR staff gave a number of interviews to the media, including print, television and radio outlets. A practical training course on media communications skills was held for RHR staff in August 2010, with a follow-up course planned for early 2011. Media relations remains an underdeveloped area in the Department due to lack of dedicated expertise.

### 3.5 Fundraising activities

Within the current economic climate, fundraising and donor relations continue to be vital. In 2009–2010, emphasis was placed on stewardship to maintain the existing donor base, along with efforts to bring back former major contributors to

HRP and to invite new donors to support the programme of work. A regular dialogue is maintained with all donors, current and prospective. Two Geneva diplomatic mission briefings were held at WHO headquarters during the biennium: a roundtable discussion, "Gender equality, rights, and improving sexual and reproductive health" was held in January, and in May 2010 a pre-World Health Assembly briefing was held on sexual and reproductive health. Attendance for both briefings was excellent and HRP is encouraged to continue to hold these sessions regularly. Another mission roundtable will be planned for early 2011. In addition to the mission briefings and other donor brief sessions that are arranged on demand, there is bimonthly distribution of the electronic newsletter for partners, *HRP-RHR e-News*. Two additional special issues were added to the regular distribution, following PCC 2010, and ahead of the UN MDG Summit.

A number of key issues were identified as possible thematic initiatives for outreach and fundraising, for which 13 concept notes were produced. In addition, partner briefs were developed to synthesize key research findings for donors and policy-makers. Support was also provided to regional efforts in resource mobilization. For example, RHR staff supported a programme of resource mobilization seminars for WHO colleagues in the Regional Office for the Eastern Mediterranean and in Afghanistan, which was carried out using videoconferencing. Furthermore, opportunities for resource mobilization in collaboration with the WHO country and regional offices are being explored. In 2010, the David and Lucile Packard Foundation confirmed support in the amount of US\$ 250 000 to the Regional Office for Africa, in coordination with headquarters. In addition, the Wellcome Trust also confirmed support in 2010 for a comprehensive mobile health (mhealth) initiative in India, "Development and impact assessment of an mHealth package for rural India focusing on reproductive, maternal and child health, in support of the Government of India National Rural Health Mission".

2009–2010 saw one donor returning and several new donors joining. Former donor, The John D and Catherine T MacArthur Foundation returned to support work in humanitarian settings. Nine new donors joined including: Foundation Open Society Institute; The Global Fund to Fight AIDS, Tuberculosis and Malaria; Gynuity Health Projects; Population Communication; Small Arms Survey; UNDP; University of North Carolina; US fund for UNICEF; and Wellcome Trust. Efforts in applying for funding support from the European Commission have been redoubled, and RHR is currently involved in preparing several collaborative proposals in response to European Commission calls. Finally, GWH and RHR are jointly approaching the Government of Germany for financial support and partnership in light of their recent announcement of the "Initiative on Voluntary Family Planning". This initiative supports FP and reproductive health and rights as part of Germany's ongoing annual commitment in the area of

mother-and-child health and Germany's commitment made in June 2010 at the G8 meeting in Muskoka, Canada.

## **4. PLANNED ACTIVITIES**

The Department will continue to produce and disseminate technical publications and guidelines in English and other languages; as of December 2010, there were over 20 materials in production, with many others at planning and writing stages.

### **4.1 Dissemination**

RHR is enhancing its web-based solicited distribution of information products. Regular e-mail announcements will be sent out detailing new products with links to online PDFs. Hard-copy distribution will continue to decline, but will not be abandoned. RHR will focus its non-solicited hard-copy distribution on Member States, WHO offices, UN partners and NGOs. More emphasis will be placed on active distribution of information products to ensure uptake and use of information, e.g. through Implementing Best Practices activities.

### **4.2 Web**

Following the launch of the redesigned web site in December 2010, the usability and user interface of the RHR and HRP web site will continue to be strengthened.

### **4.3 Fundraising**

RHR will continue working to strengthen relationships with core donors, building upon this circle of leadership and engendering new support in 2011. In particular, RHR will highlight several initiatives that require financial support, and that have been described in concept notes and partner briefs for outreach. RHR will also continue to provide regular updates of its work through roundtables and briefings, responses to requests, and regular dispatches on achievements, important upcoming dates and publications. Additionally, RHR will work with colleagues in WHO regional and country offices to strengthen donor relations and resource mobilization efforts.

## Chapter 16

# Statistics and informatics services

### 1. INTRODUCTION

This report summarizes the work of RHR's Statistics and Information Services Team (SIS) in three main domains, namely: technical support for research projects, capacity building for collaborating institutions in developing countries, and coordination and support of IT activities in the Department. Section 3.1.1 describes the work conducted to support the design, implementation and reporting of RCTs. This type of research has specific and demanding requirements, and the Team has a group of very experienced statisticians, data managers and a trial coordinator devoted to this task. The Team also supports other types of research projects, which are reported under Section 3.1.2. Sections 3.1.3 and 3.1.4 provide more details on how SIS is implementing new technologies to increase its capacity to support research projects at country level.

The Department not only has a mandate to deliver scientific innovations through epidemiological and clinical research, but increasingly important is the need to develop and test strategies to implement and scale-up at country level. To this aim, SIS is playing a significant role in supporting HRP activities in implementation research, as described in Section 4.

Section 5 summarizes the work that SIS is doing to support capacity strengthening at country level.

As a leading statistical unit, SIS develops innovative methods and tools to support the design and conduct of research in developing countries. Section 6 describes the innovative work of the Team in biostatistics and computer science.

Finally, Section 7 describes the way SIS has implemented and delivered activities to support the IT needs in the Department.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

As a support unit, the main role of SIS is to empower the other teams in HRP as well as research institutions in developing countries to design and implement research projects that have the potential to inform improved action towards universal access to sexual and reproductive health. To this aim SIS is committed to conducting research that is not only highly relevant, but that also adheres to the highest scientific standards and assures compliance with GCP.

### 3. SUPPORT FOR RESEARCH ACTIVITIES

The SIS team provides technical support in biostatistics for protocol development and review including advice on study design; computation of sample size estimates; writing of interim and final statistical analysis plans; data analysis, preparation of statistical reports; and participation in the writing of scientific papers resulting from the projects.

Support for trial coordination includes the design, development and deployment of data management procedures. For all projects SIS also develops and deploys a comprehensive monitoring and data quality assurance programme. As part of capacity building activities, SIS also trains research teams in these areas in the context of research project.

SIS develops, or assists in the development of, paper and electronic case report forms, SOPs, and monitoring reports. For the vast majority of the trials, the data management is

now web-based, using Internet technologies. The team works closely with research sites and partners to assure the highest level of quality for the research conducted by RHP, with a strong focus on GCP compliance. SIS team members conduct site visits to study sites for training and support of country teams, and for auditing and monitoring. Remote, web-based access technologies are also increasingly used for support and training.

### 3.1 Progress and planned activities

#### 3.1.1 Technical support for clinical trials

The interim and final analysis plan was developed for the phase III cluster randomized trial to assess the effectiveness of the NASG trial on severe PPH in Zambia and Zimbabwe. Two interim analyses were conducted. SIS also developed and deployed the data management system for this trial using OpenClinica. Since Internet connectivity was very limited in both countries, the system was implemented by installing a local server, which was managed remotely, at each country. A mirror copy of the server was maintained on another online server for data auditing. Internet connectivity improved recently and in 2010 the system was migrated to the SIS in-house production server.

The Kesho Bora study was completed and showed that the risk of HIV infection in breastfed infants is greatly reduced when mothers with a CD4+ count between 200 and 500 cells/mm<sup>3</sup> are placed on an extended ARV treatment regimen. SIS developed and coordinated the implementation of data management procedures for this trial. In 2009–2010, intense data cleaning and data quality assurance procedures were carried out, including several site visits. SIS also provided statistical support for the project, including the production of the interim and final statistical reports for the main study as well as statistical analyses and reports for other secondary papers.

For the project “Comparison of two doses and two routes of administration of misoprostol after pre-treatment with mifepristone”, the development of the data management system was outsourced to an application service provider KIKA Medical. Implementation and coordination of data management was the responsibility of the SIS Team. The study was completed in 2009, and was the first study fully deployed using web-based data entry and validation.

SIS developed the data management system for the study: “Comparison of the safety, efficacy, and feasibility of medical abortion provided by physicians and non-physicians in Nepal: a randomized controlled, equivalence trial”. This was the first study completed using the new in-house data management system, OpenClinica. By using a web-based approach, data cleaning and preparations for the final statistical analysis was completed in a very short time (1 month) after data collection was completed at the sites. An added value is the

fact that the team in Nepal now has advance expertise in OpenClinica, and SIS has incorporated the group as an outsourcing partner.

The interim and final statistical analysis plan was developed for “the multicentre Phase IIb study on the safety and efficacy of norethisterone enanthate (Net-En) plus TU as a male contraceptive”. SIS generated the analysis databases, implemented the interim data analysis and produced the final statistical report. Data management for this trial was outsourced to a contract research organization in the USA.

The interim and final analysis plan was developed for the phase III non-inferiority trial: active management of the third stage of labour without controlled cord traction. An interim analysis was conducted and a report was produced. Recruitment for the trial has been completed and database closure and final analysis is under way. SIS developed and deployed the data management system using OpenClinica. All data collectors at eight country sites were trained and supported remotely from Geneva using web technologies (GoToMeeting). SIS also implemented an innovative method to conceal the randomization procedures using small notebooks on site to generate the subject allocation. A programme was developed in-house to implement the procedure (see Section 6.1.2). As part of the routine operating procedures for all SIS trials, a comprehensive data monitoring programme was implemented, and problems were identified in one of the sites (Philippines). A site visit was conducted and measures were implemented to correct the issues. This trial is being conducted in Argentina, Egypt, India, Kenya, Philippines, South Africa, Thailand and Uganda, and has recruited more than 23 000 women.

In 2006 data management for the project “Multicentre randomized clinical trial of two implantable contraceptives for women, Jadelle and Implanon, and IUDs” was outsourced to CREP in Argentina. Data quality issues were identified during an interim analysis, and a site visit was conducted to audit data management procedures at the centre. In August 2010 a decision was taken to transfer all data management procedures back to SIS. The transfer has been completed successfully, and a set of exhaustive data cleaning procedures has been put in place. The study has more than 150 000 case report forms, making the task of finding and retrieving paper case report forms particularly challenging. To facilitate the case report form management a new system has been implemented for scanning and indexing paper case report forms. As of December 2010 all study case report forms have been scanned, indexed and uploaded to a web-based repository. Using the new system any member of the research team can access a scanned version of the case report forms from any computer with Internet access. An analysis of the data is almost completed. The final and interim analysis plans were developed and a draft interim statistical analysis completed.



Secondary analyses were conducted for several trials. Analyses were conducted on the “WHO Antenatal Care Trial” published in *The Lancet* in 2001 to inform the update of the Cochrane systematic review.

The Concept Foundation requested reanalyses of two trials to develop the documentation required by national regulatory agencies for registration of misoprostol for induced abortion.

SIS is providing support for several studies that are expected to start recruitment in 2011. For these studies SIS is responsible for the development and implementation of the data management system, data monitoring; and statistical support for study design, development of analysis plans, and interim and final data analysis.

- “Pericoital oral contraception with levonorgestrel: a prospective, open-label, single arm, multicentre study to evaluate efficacy, safety and acceptability”.
- “A randomized, placebo-controlled study of prophylactic ibuprofen in addition to a pain control regimen for early medical abortion with misoprostol alone”.
- “Long-term calcium supplementation in women at high risk of pre-eclampsia: a randomized, placebo-controlled trial”. The trial will be conducted in East London, South Africa.
- “Non-inferiority of short-term catheterization following fistula repair surgery”. The trial will be conducted in Dakar, Senegal.

Design and development of trial coordination and data management procedures are also under development for a cluster randomized trial in Mozambique to test an intervention to improve the delivery of antenatal care components. This study is being deployed in 10 large antenatal care clinics, and is expected to collect data on 70 000 women in two years. Innovative data capture tools are being developed, including the use of digital cameras for capturing and transmitting images of source documents in remote settings with no Internet connection and very frequent power outages. The team is also providing statistical support for the study design and protocol development. In the context of this study, and following a request from the MoH in Mozambique, SIS is also conducting the analysis of the antenatal care modules of a country-wide needs assessment carried out by the MoH.

### 3.1.2 Technical support for surveys and other epidemiological studies

SIS conducted the analysis of the WHO Service Availability Mapping (SAM) database, initially composed of the data collected in Rwanda and United Republic of Tanzania, to evaluate involvement and contribution of FBOs in maternal and neonatal health care in developing countries.

Statistical support was provided for the WHO estimates of maternal mortality for 1990–2008, including the review of

country estimates, data sources and methods, along with advice on primary data sources. The team also helped with Spanish and Russian translations.

SIS provided technical assistance for the design, management and subsequent analysis of the survey: “The role of primary health care providers in sexual and reproductive health in developing countries”.

Several statistical analyses were conducted on the databases of the WHO Global Survey conducted in Asia, Africa and Latin America. Most of the analyses were conducted in-house, with portions of the work outsourced.

SIS conducted the analysis of a population-based survey on equity of reproductive health services in South Africa.

SIS is supporting the Controlling Sexually Transmitted Infections Team to summarize data coming from countries in the Americas on the initiative for the elimination of congenital syphilis. Procedures were developed to update regularly the master data file, and for data cleaning and analyses.

In collaboration with the Promoting Family Planning Team, an analysis to assess the effect of hormonal contraception during breastfeeding on child growth and development was conducted. This is a secondary analysis of the United Kingdom’s Avon Longitudinal Study of Parents and Children database.

The analysis of the WHO Multicountry Study on Women’s Health and Domestic Violence against Women was outsourced to a consultant statistician.

### 3.1.3 Adoption of an in-house data management system

Over the years SIS used a number of different technologies to implement GCP-compliant data management procedures for research projects. Such diversity was limiting the ability of the programme to strengthen research capacity, both within the Department and at collaborating sites. A need was identified for HRP to have a robust, GCP-compliant, in-house data management system. In early 2008, different options were evaluated by a panel constituted by staff from the Department and from the Department of Information Technology and Telecommunications. The panel decided to adopt OpenClinica as the in-house data management system for HRP research studies. The selection was based on the following advantages: (1) the system was specifically developed as an online system for clinical trials and complies with GCP guidelines; (2) it is ready to use and liberates a research team from the need of low level programming; (3) it can be used for capacity building, because research teams that participate in collaborative studies can use the same technology for their own studies; and (4) the software is open source and free, but external (fee based) support and training are available.

In 2009–2010 the system was successfully implemented. At different levels of implementation, the system is also currently being used in eight randomized trials, and several institutions have been trained in its use. (See Section 3.1.1 for further details).

An example of the capacity-building model is the Brazilian Network for Studies on Reproductive and Perinatal Health. The Network conducts collaborative research among its 27 Brazilian centres. In 2008 OpenClinica became the online data platform for this network and SIS provided technical support for setting up the OpenClinica system for the first study. The network has just finished the first observational study on severe maternal morbidities, which screened 85 000 women and included 9500 cases. A similar study on prematurity and an RCT on corticosteroids for the haemolytic anaemia, elevated liver enzymes and low platelet count (HELLP) syndrome have been launched.

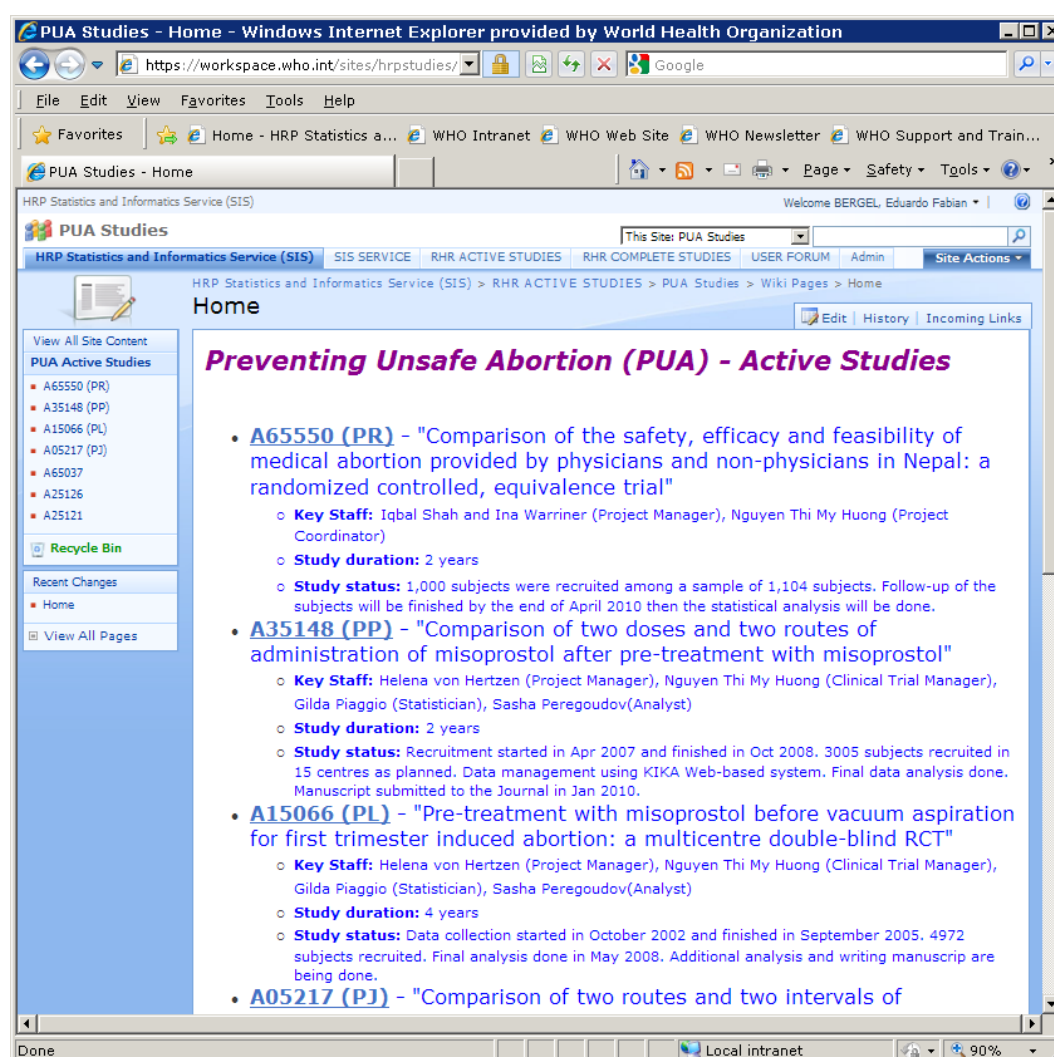
SIS is also providing technical support on data management to other WHO departments. For example, SIS supported the development of the data management system for a study

conducted by the TDR that is assessing the side-effects of malaria treatment during pregnancy. The study, developed using OpenClinica, and hosted in HRP servers, has been implemented during this initial phase in Brazil, Ghana, Kenya, and United Republic of Tanzania and will eventually be extended to other countries.

### 3.1.4 Web-based files repository and collaboration tool for research projects

Multicentre clinical trials have complex document management requirements. One example of a documents library is the GCP-compliant study folder for a clinical trial, which must contain the latest version of key documents such as the study protocols, SOPs, case report forms, study logs, informed consent forms, etc. During the study such files need to be available to a team of researchers and investigators with a wide geographical distribution. After a study has been completed, the files need to be stored and archived for long periods of time because of regulatory requirements. To facilitate file management and collaboration within study teams, SIS developed an online document repository using

Figure 1. Screenshot of the files repository, showing active studies for the Preventing Unsafe Abortion Team.



wiki technologies similar to the one used by Wikipedia. The main advantages of this approach are that information can be shared and updated by a geographically distributed team, while preserving the confidentiality of the documents by setting up a hierarchy of user's access privileges. An additional critical advantage of this approach is that a full audit trail of all changes is maintained, so changes to files and documents can be linked to a time, date and specific user. The initial phase of this project has been completed with a fully functional collaborative workspace and document repository (see Figure 1). In a second phase the team is working with the WHO Records and Archives team for further integration of the current solution with other WHO corporate document management tools.

For research projects conducted before 2000, the study databases were managed and stored in the WHO mainframe environment, hosted by the UN International Computer Centre. Such environment was decommissioned in 2010, and a careful migration plan implemented to ensure safe transition of the old RHR research databases and related project information to HRP's current computer environment.

#### 4. IMPLEMENTATION RESEARCH

In collaboration with the other RHR teams, SIS was actively involved in research studies designed to evaluate strategies to increase the usage of effective interventions at country level.

SIS has a strong interest in implementation research. The team has a strong skillset in this area, including expertise in the design of complex interventions and formative research sub-studies for tailoring the interventions, process measurements, and design and conduct of multicentre cluster randomized trials. The team also encourages and supports researchers to use other innovative research designs like the stepped wedge, multiple baseline, interrupted time series, etc.

In collaboration with the TCC, SIS is facilitating the activities of the RHR inter-team working group on knowledge transfer and implementation research. Given the many streams of work that the different teams in the Department have in this area, the working group served as a forum for the development of a collective vision for the Department, and to facilitate the mapping and expansion of work in implementation research. The group generated a report summarizing ongoing and planned activities in this area that was presented to STAG in 2010.

SIS also supported the work of the Implementation Research Platform, hosted by WHO, as a partnership between the AHPSR, CAH, TDR and HRP. The Platform issued a call for research proposals on implementation research, to promote and accelerate priority implementation research studies on maternal and child health. SIS provided technical support for

the implementation of this call for proposals, and will support selected research teams in the design and conduct of the research projects.

SIS provided support in statistics and study design for a workshop on implementation research capacity building in Accra, Ghana, organized by TDR. There were 23 participants from nine African countries and one South-East Asian country. Support is also being provided to help the country teams implement the research projects in the field.

SIS is directly involved in the design and conduct of various IR projects. Research protocols for cluster randomized trials were developed in collaboration the MPH, TCC and external partners to evaluate large-scale implementation strategies for the following trials:

- Scaling-up of magnesium sulfate for eclampsia: a multicentre cluster randomized trial. The research protocol was developed in collaboration with the MPH team, and submitted for funding to the WHO Implementation Research Platform.
- Scaling-up of the WHO Antenatal Care Model in Mozambique. A cluster randomized trial. The project will start recruitment in 2011.
- Scaling-up of corticosteroid for women with threatened preterm labour to prevent respiratory distress syndrome in the newborn. A multicentre cluster randomized trial. The project will start recruitment in 2011.
- PPH prevention in the community: Evaluation of the implementation of the Ethiopia Health Extension Worker (HEW) misoprostol programme.

#### 5. RESEARCH CAPABILITY STRENGTHENING IN BIOSTATISTICS AND DATA PROCESSING

The Team continued on-site training of staff in collaborating centres participating in international multicentre trials. A member of the Team conducted a data management training workshop in Kathmandu, Nepal, for the study "Comparison of the safety, efficacy and feasibility of medical abortion provided by physicians and non-physicians".

On-site training is now also conducted with the use of web-based technologies to deliver remote training sessions. Using these technologies, trainers in Geneva delivered real time training sessions to collaborators at study sites. This technology was used extensively to train new data collectors in Kenya for the Kesho Bora study, as well as data collectors for the "Active management of the third stage of labour clinical trial" in all sites, and to support data managers working for the "NASG trial" in Zambia and Zimbabwe.

A member of the Team gave lectures at the Postgraduate course for training in research in reproductive health and sexual health, organized in Geneva, Switzerland, by

GFMER; the International Association for Maternal and Neonatal Health; and HRP.

A member of the Team gave lectures at the 5th GCP Conference & Course in Szeged, Hungary. The course was organized by the Department of Obstetrics and Gynecology at the University of Szeged, and the Hungarian Clinical Trial Management Society, with support from HRP.

Capacity strengthening activities are also being conducted for implementation research (See Section 4).

## 6. DEVELOPMENT OF NEW METHODS AND TOOLS TO SUPPORT RESEARCH PROJECTS

As a leading statistical unit, SIS develops innovative methods and tools to support the design and conduct of research in developing countries. Examples of such tools are the clinical trial simulator and the randomization tools that are described in this section.

### 6.1 Progress and planned activities

#### 6.1.1 Clinical trial simulator

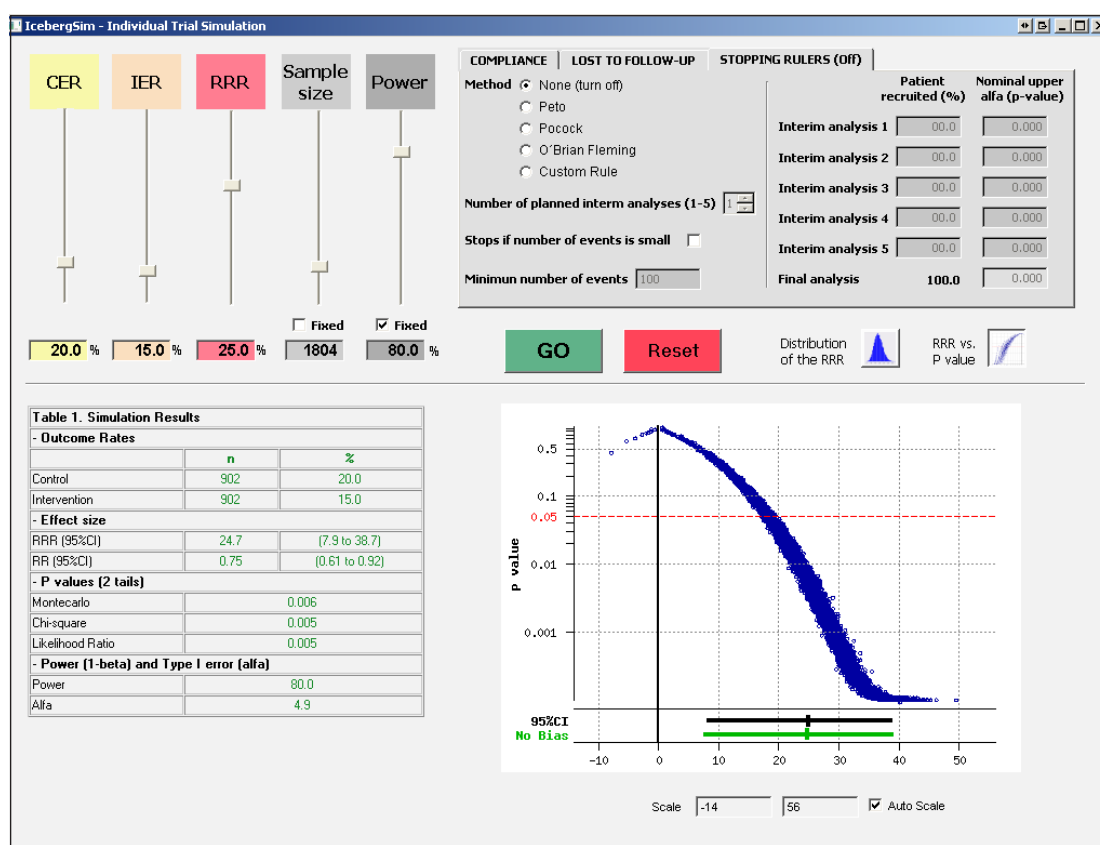
The clinical trial simulator (CTS) is a free software package designed to support the design, analyses, and reporting of clinical trials. This software package was developed by SIS and partners in Argentina, Canada, Norway and Uruguay.

The current version can be used to simulate both individual and cluster randomized trials, and can assess the impact on study results of lost to follow-up and protocol non-compliance. The CTS also has an advanced module to assess the impact of stopping a trial early during an interim analysis that triggered pre-defined stopping rules. The CTS can also be used to compute the sample size under a wide variety of designs, adjusting for potential protocol deviations. In a typical usage scenario, the user can input the trial parameters (i.e. effect size, outcome rates, lost to follow-up rate, treatment non-compliance, etc.), and the simulator generates thousands of such trials. The trials are then analysed and the results are presented in figures and tables (see Figure 2). The simulator, which can be downloaded from <http://www.randomization.org/>, has been very successful and is used in many research and academic institutions around the world, in both developing and developed countries. A new version of the simulator is being developed to improve the user interface and to add additional study designs.

#### 6.1.2 Innovative technologies for concealing randomization in low resource settings

Randomization concealment has been identified as one of the key factors to improve the validity of a clinical trial. The implementation of robust randomization procedures can be challenging in poor resource settings as the gold standard, telephone randomization, requires access to reliable phone

Figure 2. Screenshot of one of the clinical trial simulation modules.





lines. Such limitation could be particularly challenging in trials that address emergencies, as subjects need to be randomized within a very short time window. The most common approach in such settings is to use sealed envelopes, an inferior option that can be easily tampered with. As an alternative, SIS developed a solution using small laptops (netbooks) and a program developed in-house. To conceal the randomization assignment, as in telephone randomization, the investigators are required to identify the patient that is going to be randomized before the code is exposed. These technologies were used in the “Active management of the third stage of labour clinical trial”, to randomize 23 000 women (Figure 3). Because women needed to be randomized during labour, and just before delivery, the time available for randomization was very short. A similar system is now under development for a pre-conceptional calcium supplementation trial to be conducted in South Africa.

## 7. INFORMATICS SUPPORT

The SIS team supports the specific informatics needs of RHR, complementing the support provided by WHO IT. Specifically, SIS provides the following services: (1) assist RHR staff in computer hardware/software troubleshooting, as a “second level” support after WHO IT help desk; (2) upon request, advise RHR staff on hardware and software needs; (3) manage RHR laptop pool for duty travels, meetings, and other temporary needs; (4) maintain an inventory of all RHR IT material, including hardware and software; (5) maintain the “RHR cold room”, which hosts critical IT equipment; (6) manage the stock of IT equipment spares, such as laptops computers, screens, keyboards, and cables; and (7) coordinate delivery of new equipment, and removal of old equipment. SIS also recently implemented IT support clinics, twice a week, for RHR staff members having specific IT support issues.

Figure 3. Screenshot of the computer program developed to conceal randomization in the “Active Management of the third stage of labour” clinical trial.

**Random Allocation** v0904061057

(A65554) ACTIVE MANAGEMENT OF THE THIRD STAGE OF LABOUR WITHOUT CONTROLLED CORD TRACTION: A RANDOMIZED NON INFERIORITY CONTROLLED TRIAL .

Password: .....

Country: 0137 - Egypt Hospital: 01 Assiut University Hospital EEPC No: 01

**Details of subject to be randomized**

Screening number: 0137 - 01 - 00001 (ex. 00001)

Name: Ana Talbot Rone  
First Name Last Name

Year of birth: 1962 (9999 if not known)

Initials and last name of staff or investigator randomizing the subject: AL Sentar (ex. JL Smith)

**Search by Screening Number**

Screening number: 0137 - 01 - [ ] (ex. 00001)

Enter a screening number and click here to retrieve the subject's allocation (Only for subjects already randomized)

**Administrator functions**

View list of randomized subjects Admin Reset Admin Exit

**Click when ready to randomize**

Click to save the list of randomized subjects to an external file (ex. USB drive)

## PUBLICATIONS IN 2009–2010

### Peer-reviewed papers

Bergel E et al. Maternal calcium supplementation during pregnancy and dental caries of children at 12 years of age: follow-up of a randomized controlled trial. *Acta Obstet Gynecol Scand*, 2010 Nov, 89(11):1396–402.

Dada OA et al. Nigerian Network for Reproductive Health Research and Training. A randomized, double-blind, noninferiority study to compare two regimens of levonorgestrel for emergency contraception in Nigeria. *Contraception*, 2010; 82:373–8.

d'Arcangues C et al. Women's views and experiences of their vaginal bleeding patterns: An international perspective from Norplant users. *Eur J Contracept Reprod Health Care*, 2010. (in press).

Fujii M et al. Perinatal risk in singleton pregnancies after in vitro fertilization. *Fertil Steril*, 2010, 94(6):2113–7.

Gülmezoglu AM et al. Active management of the third stage of labour without controlled cord traction: a randomized non-inferiority controlled trial. *Reprod Health*, 2009, 6:2.

Hofmeyr GJ et al. Misoprostol to prevent and treat postpartum haemorrhage: a systematic review and meta-analysis of maternal deaths and dose-related effects. *Bull World Health Organ*, 2009, 87:666–77.

Karolinski A et al. Lost opportunities for effective management of obstetric conditions to reduce maternal mortality and severe maternal morbidity in Argentina and Uruguay. *Int J Gynaecol Obstet*, 2010 Aug, 110(2):175–80.

Kesho Bora Study Group. Triple-antiretroviral prophylaxis during pregnancy and breastfeeding compared to AZT/sdNVP prophylaxis to prevent mother-to-child transmission of HIV-1: the Kesho Bora randomized controlled clinical trial. *Lancet Infect Dis*, 2010. (in press).

Kesho Bora Study Group. Safety and effectiveness of antiretroviral drugs during pregnancy, delivery and breastfeeding for prevention of mother-to-child transmission of HIV-1: The Kesho Bora multicentre collaborative study rationale, design, and implementation challenges. *Contemp Clin Trials*, 2010. (in press).

Kesho Bora Study Group. Eighteen-month follow-up of HIV-1-infected mothers and their children enrolled in the Kesho Bora study observational cohorts. *J Acquir Immune Defic Syndr*, 2010, 54:533–541.

Meirik O et al. IUD Research Group at the UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction. The frameless copper IUD (GyneFix) and the TCu380A IUD: results of an 8-year multicenter randomized comparative trial. *Contraception*, 2009, 80:133–41.

Piaggio G, Kapp N, von Hertzen H. Effect on pregnancy rates of the delay in the administration of levonorgestrel for emergency contraception: a combined analysis of four WHO trials. *Contraception*. (in press).

Piaggio G, von Hertzen H. Ulipristal acetate for emergency contraception? *Lancet* 2010; 375:1607–8.

Piaggio G et al. Is there evidence for tripling the dose of 200 mg mifepristone for medical abortion? *Contraception*, 2010, 81:265.

Thorpe KE et al. A pragmatic-explanatory continuum indicator summary (PRECIS): a tool to help trial designers. *CMAJ*, 2009 May 12, 180(10):E47–E57.

Thorpe KE et al. A pragmatic-explanatory continuum indicator summary (PRECIS): a tool to help trial designers. *J Clin Epidemiol*, 2009 May, 62(5):464–75.

Torloni MR et al. Maternal BMI and preterm birth: a systematic review of the literature with meta-analysis. *J Matern Fetal Neonatal Med*, 2009 Nov, 22(11):957–70.

Von Hertzen HH et al. Misoprostol dose and route after mifepristone for early medical abortion: a randomised controlled noninferiority trial. *BJOG*, 2010 Sep, 117(10):1186–96.

Von Hertzen HH et al. Two mifepristone doses and two intervals of misoprostol administration for termination of early pregnancy: a randomised factorial controlled equivalence trial. *BJOG*, 2009 Feb, 116(3):381–9.

Von Hertzen HH et al. Comparison of vaginal and sublingual misoprostol for second trimester abortion: randomized controlled equivalence trial. *Hum Reprod*, 2009 Jan, 24(1):106–12.

Warriner IK et al. Can midlevel health care providers administer early medical abortion as safely and effectively as doctors: results from a randomised controlled equivalence trial in Nepal. *Lancet* 2010. (in press).

### Reports

de Francisco A et al. Perceived research priorities in sexual and reproductive health for low- and middle-income countries: results from a survey. *Global Forum for Health Research*, 2009.

Hennessy D, Peregoudov A, Guarenti L. Sexual and Reproductive Care: A comparison of providers and delivery points between AFRO and other regions. *ReproNet-Africa*, 2010, 2(1).

## Chapter 17

# Primary health care

### 1. INTRODUCTION

Capacity strengthening is a main component of the Department's strategic work in sexual and reproductive health and includes strengthening the capacity of health systems to plan for and fund the training and education of health workers to a competent level. To achieve health equity and universal access to reproductive health the national health-care systems<sup>1</sup> have to be strengthened to provide well-functioning primary care services for the delivery of sexual and reproductive health by a competent workforce. The latter must have the knowledge, skills and competence to provide an appropriate basic sexual and reproductive health package.

To contribute to the achievement of health equity and universal access to reproductive health, the Department worked on the definition of sexual and reproductive health competencies to be provided in an integrated manner within Primary Health Care (PHC)

The 2006 World Health Report, *Working together for health*, stated that:

“... people are a vital ingredient in the strengthening of health systems ... developing capable, motivated and supported health workers is essential for overcoming bottlenecks to achieve national and global health goals. Health service providers are the personification of a system's core values – they heal and

care for people, ease pain and suffering, prevent disease and mitigate risks – the human link that connects knowledge to health action” (WHR, 2006).

The World Health Report *Primary Health Care: Now more than Ever (2008)*, makes the case for revitalizing a PHC approach as a means of strengthening health care systems. Towards this end, it identifies valuing human resources for health as a priority.

The history of sexual and reproductive health rests on a public health and human rights approach to issues related to sexual and reproductive health; a focus on prevention without undermining the importance of care; equity; solidarity and the goal of universal coverage through the strengthening of the health system. These principles share numerous similarities with the founding values of PHC. Further parallels exist between the principles of sexual and reproductive health and the call to make PHC systems “people centred” while fostering programme and policy linkages; intersectoral and agency collaboration; promoting leadership; and mobilizing political will. Finally, both sexual and reproductive health and PHC remain committed to strengthening monitoring, evaluation, accountability and using research-based evidence to drive programme development and policy formulation.

However, only a well-trained and competent workforce, providing care in a functioning health system can turn policies into action and effectively implement the best possible practices in different settings. Without a skilled workforce with sufficient capacity, the WHO's Global Reproductive Health Strategy, as well as MDGs 5A and 5B, will not translate into effective practices or health improvements for individuals at

<sup>1</sup> The health care system includes the ministries of health and those organizations that deliver care such as PHC, hospitals and NGOs, and those that support the delivery such as pharmacists, supplies and logistics.

the country level. To ensure the health and safety of women, men and children, it is of paramount importance that all sexual and reproductive health and PHC workers are adequately prepared in training institutions in their respective countries, regularly supervised, and supported in their day-to-day work by their managers and communities.

## 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

The monitoring and evaluation work contributes to WHO's Medium-term SO 4: "To reduce morbidity and mortality and improve health during key stages of life, including pregnancy, childbirth, the neonatal period, childhood and adolescence, and improve sexual and reproductive health ...". Within this objective, the work contributes to OWER 4.7: "Guidelines, approaches and tools made available, with provision of technical support to Member States for accelerated action towards implementing the strategy to accelerate progress towards the attainment of international development goals and targets related to reproductive health, with particular emphasis on ensuring equitable access to good/quality sexual and reproductive health services, particularly in areas of unmet need, and with respect for human rights as they relate to sexual and reproductive health", by providing tools to ensure a central role of sexual and reproductive health in primary care.

## 3. PROGRESS

To support countries in generating "capable and motivated" health workforces, the Department first carried out a survey on the role of PHC providers in sexual and reproductive health, and then used this background information to develop a list of competencies needed by sexual and reproductive health providers in primary health.

### 3.1 Survey on the role of providers in delivering sexual and reproductive health care

In 2009, RHR ran a survey on the role of PHC providers in sexual and reproductive health. The purpose was to gather information about sexual and reproductive health services provided in PHC mainly in developing countries with an emphasis on the different ways sexual and reproductive health in PHC is organized; what sexual and reproductive health services are provided in each country; where they are delivered; and by which providers. Specific questions were asked in seven technical areas as follows: antenatal; childbirth; newborn; FP and infertility; abortion, STI/RTI (including HIV, and voluntary counselling and testing) as well as screening for sexual violence and cancers; and sexual health education and counselling. Information was received from 67 countries, providing an excellent background for identifying the knowledge, skill and attitudes that health providers need, to be competent in delivering sexual and reproductive health in PHC.

The results of the survey were summarised in a report "Survey on the role of primary care providers in sexual and reproductive health", sent to all contributors and all technical partners involved in its realization, via the Internet. The report and a sub-analysis of the African Region data were published in the *Repronet Newsletter* of May 2010 and are available on the departmental web site. The survey results are now being used for the first edition of The State of the World's Midwifery report, which will result from the collaboration of multiple agencies and organizations. The report will be released at the Triennial Congress of the International Confederation of Midwives in Durban, South Africa, in June 2011.

### 3.2 Sexual and reproductive health competencies for PHC providers

In defining competencies for the delivery of quality sexual and reproductive health in PHC, it was decided not to target a priori a specific cadre, but all categories of providers of sexual and reproductive health. With different health systems, each country must decide both the place of delivery of sexual and reproductive health services in its PHC structure and which category of health workers will undertake specific sexual and reproductive health tasks, in view of improving access to care for clients. Thus, RHR's document includes attitudinal development; management; general; and specific service competencies.



Due to financial constraints the competency list was field tested in just one country – in Mozambique during the revision of the competency-based curriculum of the nurse-midwifery training course. The outcome was a list that is very easy to use, simple and helpful in decision-making. It is now available to be used as a basis for the development/revision of pre-service curricula. In a way, the dissemination strategy started long before the finalization of the tool, thanks to the involvement of WHO regional and country technical staff, as well as several health partners, during the conceptualization and development stages of the competency list. This was followed by the publication of the final product *Sexual and reproductive health – core competencies in primary care* (2010).



The document (which will be translated into French and Portuguese) was disseminated online while printing of the hardcopies was in progress. The de facto dissemination strategy targeted ministries of health, academic and training institutions as well as human resources centres for health managers at district, provincial and central levels. Health partners, working at global and country levels towards the improvement of sexual and reproductive health care provision in PHC, were also targeted. Other dissemination activities included technical presentations by RHR staff – in conferences and workshops at the global, regional and country level; and most importantly, the provision of technical support for the utilization of the core competency list in countries planning or undergoing the development or revision of their sexual and reproductive health competency-based curriculum.

Several experts, countries and regions have already acknowledged the tool. WHO's Regional Office for Africa is planning to use it in implementation of their Nursing and Midwifery education scale-up plan 2010–2020. In Mozambique, the document is already in use for the development of a curriculum for a new course for public health specialists in the area of reproductive health. They see "the competencies list as a great asset in that exercise because from there it is possible to design something sound". In Gambia, the MoH

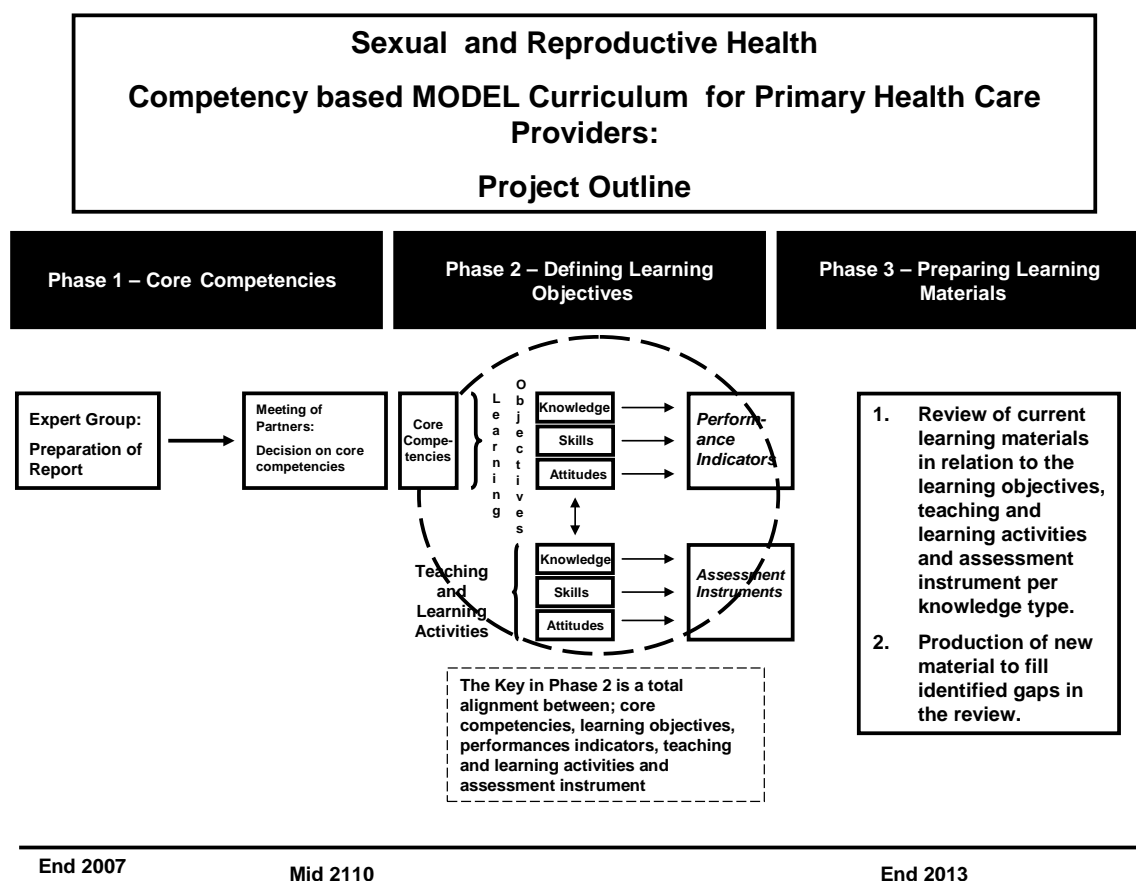
is undertaking the revision of the nursing curriculum, using the competencies list and the result of the survey. This will be WHO's contribution to showing evidence of, and advocating for, the strengthening of sexual and reproductive health within nursing training. In Tunisia, the list was shared with the MoH Department of training. Several WHO country offices in francophone countries have asked for the French translation to facilitate dissemination in training institutions.

### 3.3 Sexual and reproductive health model curriculum for PHC providers

To support countries with the capacity building of their health workforce, in 2010, the Department began to work on developing the companion of the sexual and reproductive health competencies list, the *SRH model curriculum for PHC providers*. This curriculum aims to comprehensively cover learning objectives and corresponding learning material, as outlined in Figure 1 below.

In preparation of developing the "model curriculum", two different parallel activities started in 2010, and will be finalized in 2011. A literature review of competency-based curricula was undertaken to understand, inter alia, if these are aimed at fostering positive changes in: (1) human resource participation in the delivery of care; (2) attitude; (3) knowledge/skills; (4) retention of workforce; (5) confidence in service

Figure 1. Project outline for the development of a competency-based model curriculum.



provision; (6) client satisfaction; and/or (7) services utilization. At the same time, a mapping exercise was undertaken of developing and developed countries where sexual and reproductive health training is implemented utilizing competency-based curricula. This activity is carried out with the global collaborative effort of the members of the IBP Initiative. This mapping study explores and describes the structure of the curricula received from countries and the teaching materials in use, and identifies gaps in different domains. As the aim is to provide competency-based education in sexual and reproductive health, these activities will help determine if, where and how existing information and material can be used to design the new model curricula. In 2011, the Department will convene a technical meeting of experts to review the information gathered, and provide guidance and recommendations.

## 4. PLANNED ACTIVITIES

### 4.1 Technical support to countries

One of the main concerns of the Department after the finalization of any document is how to be able to support regional and country offices fostering the tools' adaptation and utilization. To date, RHR has been in close contact with all reproductive health or maternal-newborn-child-adolescent health focal points in WHO country offices and with their regional advisers, providing technical assistance to maximize the proper use of a highly demanded tool developed thanks to the expertise of hundreds of professionals. At the same time RHR staff will continue to present the document and the surveys in meetings inside and outside WHO headquarters. Presentations are already scheduled in Addis Ababa, Ethiopia; Palermo, Italy; Ankara, Turkey; and The Hague, The Netherlands.

### 4.2 Sexual and reproductive health model curriculum for primary health care providers

As described above, a technical meeting of experts will be convened to review the information collected on existing competency-based curricula and to advise on the way forward for the development of a curriculum based on the competencies list.

### 4.3 Working to identify barriers within the health system that reduce access to primary care and specifically to sexual and reproductive health services among underserved groups

Two activities will be conducted related to access to FP services for people living with HIV. One will evaluate the impact of the utilization of the tool *Reproductive choices and family planning for people living with HIV* on knowledge of returning clients on contraception.

The other will be the field test of a tool developed to facilitate provider initiated counselling and testing for clients utilizing sexual and reproductive health services.

These activities will be implemented in close collaboration with regional and country offices, and results will be linked with regional and country offices interventions to minimize sexual and reproductive health inequity in access to care.

### 4.4 Health system requirements for converting competencies into essential services

In 2010, STAG recommended that RHR elaborate the health system requirements for converting competencies into essential services, including the requirements of workforce, equipment, supplies and facilities. To perform this activity properly, all the technical work done by different agencies and health partners in this area must be collected and analysed – to avoid duplication and utilize what already exists. RHR will review and collate all the existing documents related to facility workforce, equipment and supplies that are needed to provide good-quality sexual and reproductive health care, to be able to evaluate the real need for a comprehensive document.

## Chapter 18

# Linkages between sexual and reproductive health and HIV interventions

### 1. INTRODUCTION

Combating STIs, including HIV is a core aspect of the WHO Global Reproductive Health Strategy, endorsed by 191 Member States in 2004. It highlights how sexual and reproductive health services can offer a means through which to provide HIV prevention, counselling, testing and treatment, and to prevent MTCT. Linkages, or the sexual and reproductive health policy, programmes, services and advocacy synergies with HIV interventions have the potential to increase universal access to both sexual and reproductive health and HIV prevention and care, as well as to contribute to the achievement of the MDGs 4, 5 and 6. The Department is continuing to show leadership in promoting efforts to mainstream sexual and reproductive health (SRH)/HIV linkages to achieve sexual and reproductive health goals and to provide a meaningful and sustainable response to the HIV epidemic.

### 2. CONTRIBUTION TO WHO'S MEDIUM-TERM STRATEGIC PLAN 2008–2013

Support was provided to Member States through the national SRH/HIV assessments to formulate SRH/HIV integrated national policies and strategies that focus on providing a continuum of care and strengthening coordination with civil society, international partners, and donors (OWER 4.1). The national SRH/HIV assessments also enabled countries to work towards the attainment of MDGs 4–6 with particular emphasis on ensuring equitable access to good-quality sexual and reproductive health services, including for people living with HIV (OWER 4.7). Programmatic considerations were developed, published and disseminated on FP, and preventing unintended pregnancies among women living

with HIV — for improving maternal care in the context of PMTCT of HIV at country level, including measuring the PMTCT indicator for unmet need for FP (OWER 4.3). In addition, the counselling tool on reproductive choices and FP for people living with HIV has been implemented and translated into local languages (OWER 2.6). The analysis of HIV proposals approved by the Global Fund to Fight AIDS, tuberculosis and malaria (Global Fund) has provided information to countries enabling them to address gaps in scaling-up key areas of SRH/HIV linkages such as linking HIV and syphilis testing, and using condoms for preventing unintended pregnancy and STIs (OWER 2.2). Advocacy and capacity building at national, regional and international levels on SRH/HIV linkages is being carried out through the development and dissemination of a SRH/HIV resource pack promoting health and preventing or reducing major risk factors such as prevention of unsafe sex (OWER 6.1).

### 3. SUPPORTING COUNTRIES IN ASSESSING SRH/HIV SYNERGIES

#### 3.1 National SRH/HIV assessments

##### 3.1.1 Progress

Linking SRH and HIV at the policy level requires the development of mechanisms to enable joint planning between national AIDS coordinating bodies and reproductive health departments at the ministerial level – to ensure that the national AIDS and SRH strategies and costed plans are appropriately harmonized. RHR has promoted and supported the strengthening of dialogue between SRH and HIV communities at country level.

### 3.1.1.1 Implementation of the SRH/HIV rapid assessment tool

In 2009, the Department, in collaboration with UNFPA, UNAIDS, the Global Network of People living with HIV/AIDS (GNP+), the International Community of Women Living with HIV/AIDS (ICW) and Young Positives, developed the *Rapid assessment tool for sexual and reproductive health and HIV linkages* to assess national bi-directional SRH/HIV linkages at the policy, systems and service levels; identify gaps; and contribute to the development of country-specific integrated action plans. To date, 16 countries have systematically implemented the tool (Figure 1) (Belize, Benin, Botswana, Burkina Faso, Côte d'Ivoire, Kyrgyzstan, Lebanon, Malawi, Morocco, Pakistan, Russian Federation, Swaziland, Tunisia, Uganda, United Republic of Tanzania, and Viet Nam) and the process, results and outcomes have been summarized in country briefs.

### 3.1.1.2 Consultations to discuss country implementation of the SRH/HIV assessment tool

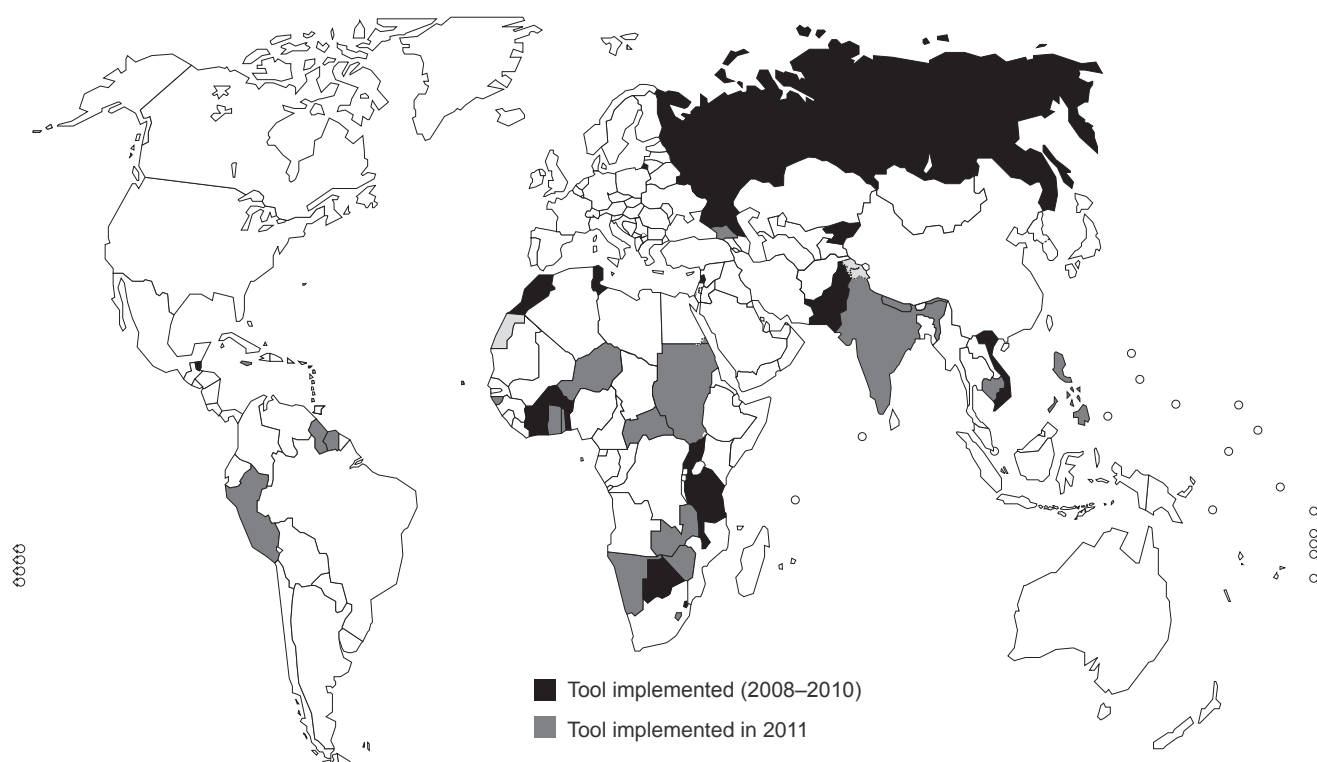
Several consultations were convened to reinforce country actions by sharing experiences in this area and to discuss actions needed at country level to improve health outcomes related to both sexual and reproductive health and HIV prevention and care. Findings indicate that overall, there is a larger pool of resources for HIV than sexual and reproductive health, but that the dialogue that has been initiated and

strengthened through the assessment process between ministries of health and the national AIDS control (NAC) programmes has enabled countries to develop national policy frameworks that are comprehensive and supportive of sexual and reproductive health and HIV integration, and address structural determinants such as gender equality and human rights. The outcomes have also supported countries in including recommendations on SRH/HIV integrated activities that have been included within HIV proposals submitted to the Global Fund and other donors.

### 3.1.2 Planned activities

- The *SRH/HIV Rapid assessment tool* will be further implemented at the request of countries and in collaboration with partners in Cambodia, Central African Republic, Georgia, Ghana, Guinea Bissau, Guyana, India, Jamaica, Lesotho, Namibia, Nepal, Niger, Peru, Philippines, Sudan, Surinam, Togo, Trinidad and Tobago, Zambia and Zimbabwe. These assessments will provide a better understanding of how to scale up best practices in linkages in different HIV epidemic contexts.
- Summaries will be prepared to share the process, findings, recommendations and lessons learnt.
- Impact assessments will be performed to evaluate how countries are following up on the findings, gaps, recommendations and analysis from the national SRH/HIV assessments in order to determine financial and technical support needed for national scale up of best practices.

Figure 1. Countries that have implemented the SRH/HIV assessment tool in 2010 and those that are planning to do so in 2011.





- Two to three subregional consultations will be convened in collaboration with partners and WHO regional offices to continue to help support dialogue between ministries of health, NAC and civil society at national levels to strengthen development of a linked response in national planning and strategies.
- Advocacy for the SRH/HIV linkages agenda will be pursued by: (1) publishing findings of the national assessments made with the *Rapid assessment tool*; and (2) participating in international meetings.

#### 4. STRENGTHENING THE EVIDENCE AND INCREASING VISIBILITY FOR SRH/HIV LINKAGES

##### 4.1 Progress

While there was general acceptance that SRH/HIV linkages was a step in the right direction, many national governments and donors want robust evidence to support their increased and continued investment. However, scant research has been undertaken to document the benefits of this approach despite the integration of sexual and reproductive health and HIV services in many settings for a considerable period of time. RHR has played a key role in developing a systematic review of evidence and because the response to the linkages agenda is moving at a rapid pace, RHR continues to work with partners to address the research gaps and ensure that the evidence base is strengthened.



RHR continues to work with partners to address the research gaps and ensure that the evidence base is strengthened. Some of the evidence has been highlighted in a special theme issue of the *WHO Bulletin* coordinated by RHR.

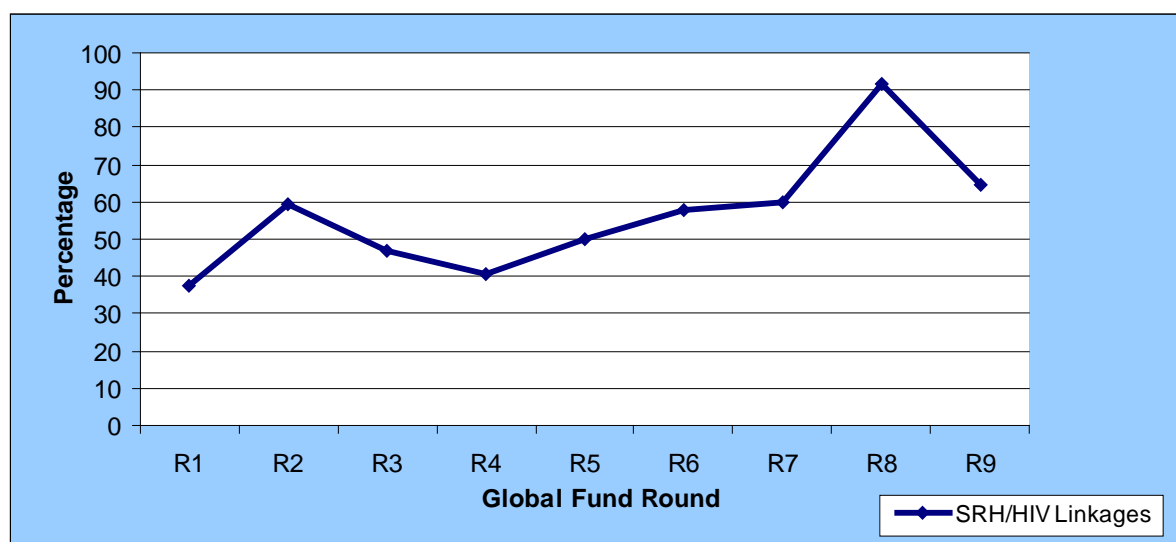
Additionally, in order to build a common understanding between the sexual and reproductive health and HIV communities of linked sexual and reproductive health and HIV responses, and to ensure they are underpinned by a human rights approach, broad principles for joint action have been articulated. This addresses one of the stumbling blocks in linking these fields due to the different perceptions and understanding of what constitutes SRH/HIV linkages (Figure 2).

##### 4.1.1 Analysis of sexual and reproductive health components in HIV proposals approved by the Global Fund

The first comprehensive and systematic analysis of sexual and reproductive health elements in HIV proposals funded by the Global Fund covering Rounds 1–8 was published and a further analysis including Round 9 has been developed into a report. This report provides the baseline data that can be used by country coordinating mechanisms (CCMs), international and national partners working to include an integrated approach including sexual and reproductive health in HIV proposals to the Global Fund. The analysis includes sexual and reproductive health elements such as maternal and perinatal health and PMTCT; prevention of STIs; condom promotion and distribution; sexual and reproductive health and rights of people living with HIV; sexual and reproductive health of young people and most-at-risk populations; health commodities; health system strengthening; monitoring and evaluation systems; and operational research on SRH/HIV linkages (Figure 2).

The analysis clearly shows that CCMs and national level stakeholders see the opportunity provided by the Global Fund to support sexual and reproductive health programmes as a means to strengthen HIV responses. Certain important gaps exist such as support for a comprehensive approach to PMTCT; integrated HIV and syphilis testing; sexual and reproductive health needs of people living with HIV; safer

Figure 2. Percentage of HIV proposals funded by the Global Fund to Fight AIDS, Tuberculosis and Malaria, which include elements of sexual and reproductive health.



sex counselling; promotion of condoms for preventing unintended pregnancy and STIs, and interventions to meet the needs of vulnerable populations, including young people.

#### *4.1.2 Inter-agency Working Group on Sexual and Reproductive Health and HIV/AIDS Linkages*

The IAWG on Sexual and Reproductive Health and HIV/AIDS Linkages convened by RHR and UNFPA has developed an SRH/HIV linkages resource package, which includes a list of definitions, presentations and advocacy briefs to the donor community, and other materials (Figure 3). Its purpose is to build a common understanding of this area and provide an overview of the current status of linkages among key partners. The linkages agenda is a dynamic field and the package is designed as a “living”, adaptable set of resource materials targeted to national governments, international and national NGOs, United Nations agencies and donors. This material is being widely disseminated through partners working at country level and through the process of the national SRH/HIV assessments.

A mapping of key research priorities was also created and will enable partners to collaborate in fundraising and initiating new research on key gaps related to SRH/HIV linkages. In 2009, the Harvard School of Public Health, in Boston, MA, USA and the International HIV/AIDS Alliance, United Kingdom became members of the IAWG on Sexual and Reproductive Health and HIV/AIDS Linkages. The IAWG on Sexual and Reproductive Health and HIV/AIDS Linkages Meetings were convened by WHO in June 2009 and 2010.

#### *4.1.3 Operational research on postpartum family planning, including for women living with HIV*

Providing effective services to women and their newborns during the postpartum period can substantially reduce maternal and infant morbidity and mortality, thereby contributing to a country's efforts to achieve MDGs (particularly MDGs 3–6). An operations research protocol to evaluate the feasibility, acceptability, quality and effectiveness of innovative models for strengthening postpartum care and FP, including for women living with HIV, was finalized. It describes a country-specific study design that forms part of a multicountry randomized controlled trial to develop and evaluate new models of integrated postpartum care for women living in both high and low prevalence HIV settings. The data generated through this study will demonstrate the extent to which reorganizing models of postpartum care can directly influence some of the key MDG indicators, against which countries (and many development partners, including WHO) are measuring their progress towards meeting their own MDG targets.

#### *4.1.4 Partnership building*

The Millennium Village Project (MVP) is a partnership between The Earth Institute at Columbia University, New York, NY, USA, Millennium Promise, UNDP, and UNAIDS

that aims to demonstrate that MDG targets can be achieved with an integrated package of health and development interventions. Discussions with the MVP group, and UNAIDS in particular, are targeted to strengthen the SRH/HIV services being provided in the 14 sites in 10 sub-Saharan African countries, particularly FP in the context of PMTCT of HIV services.

RHR worked closely with UNAIDS and partners in the development of a thematic day of the UNAIDS Board Meeting (Geneva, Switzerland, June 2010) on SRH/HIV linkages, and hosted a session together with the Global Fund on funding mechanisms and support for linked SRH/HIV services.

RHR hosted the first session on SRH/HIV at the PEPFAR HIV Implementers' meeting in collaboration with PEPFAR and GNP+ in June 2009, in Windhoek, Namibia.

### **4.2 Planned activities**

- The online information of the SRH/HIV Linkages Resource Pack will be maintained and updated.
- At its next meeting, the SRH/HIV IAWG on Sexual and Reproductive Health and HIV/AIDS Linkages will focus on finalizing the research matrix of SRH/HIV activities and gaps as outlined by the systematic review undertaken by the Cochrane group in collaboration with RHR, UNFPA and IPPF.
- The operations research protocol on postpartum FP will be implemented in Zambia in collaboration with the Population Council.
- A study to assess the expenditures and impact of Global Fund country investments in sexual and reproductive health will be undertaken in collaboration with the Global Fund Secretariat in a few selected countries.
- Work will be undertaken with national and multilateral partners to develop a safe, appropriate and effective comprehensive PMTCT of HIV implementation model in the MVP project settings in collaboration with UNAIDS.

## **5. SEXUAL AND REPRODUCTIVE HEALTH OF PEOPLE LIVING WITH HIV**

### **5.1 Progress**

Overall prognosis for people living with HIV (PLHIV) has greatly improved since the availability of ARVs. This has led to a greater emphasis on quality of life and on meeting their needs for sexual and reproductive health. RHR had previously played a catalytic role in the development of policy and programmatic guidance on ways to ensure that PLHIV have access to sexual and reproductive health services that meet their reproductive needs and respect, protect and fulfil their human rights. RHR is continuing its strong collaboration with GNP+, ICW and Young Positives to develop and advocate for their sexual and reproductive health and human rights.

In addition to the activities below, RHR continues to support participation of networks of positive people to international meetings such as the “Technical consultation on the elimination of MTCT” (Geneva, November 2010). In addition, the recent changes in the political environments have created a more enabling milieu for linking maternal health and HIV. The prevention of MTCT provides an opportunity to showcase the impact of linkages and simultaneously address some of the identified bottlenecks in promoting a comprehensive and sustained response.

- The Conference on the “Pregnancy intentions of HIV-positive women: forwarding the research agenda” (Boston, USA, March 2010) organized by RHR and the Harvard School of Public Health was framed around the concerns of HIV-positive women before and during pregnancy, exploring issues raised by desired and undesired pregnancy. The meeting report sets a research agenda for developing effective public health responses that can deliver a high quality constellation of reproductive health services to HIV-positive women. ([http://www.who.int/reproductivehealth/topics/linkages/pregnancy\\_intentions\\_hivpositivewomen\\_rpt.pdf](http://www.who.int/reproductivehealth/topics/linkages/pregnancy_intentions_hivpositivewomen_rpt.pdf))
- *Guides to the guidance package on advancing SRH and human rights for people living with HIV.* The disproportionate — and often underreported — impact of the HIV epidemic on marginalized populations has led RHR to support the development of a series of five guides that discuss how the guidance on sexual and reproductive health and human rights for people living with HIV can best be used for MSM, injecting drug users (IDUs), prisoners, migrant populations and sex workers. These guides are intended to be complementary to the larger guidance package ([http://www.who.int/reproductivehealth/topics/linkages/guidance\\_package.pdf](http://www.who.int/reproductivehealth/topics/linkages/guidance_package.pdf)) and review policy and programmatic considerations for health-care workers and networks of PLHIV.
- *Challenges of sexual health among people living with HIV in Europe.* In collaboration with GNP+, this paper was presented at the first WHO regional meeting on Sexual Health in Europe, held in Madrid, Spain, in November 2010 that highlights how health systems throughout Europe need to address the sexual health needs of PLHIV by tackling the underlying inequities that exacerbate the HIV epidemic across the European Region.
- *Preventing unintended pregnancy among women living with HIV: technical considerations.* In acknowledgement of the poor scale, to date, of a comprehensive approach to PMTCT of HIV, technical recommendations are being developed in partnership with UNFPA and FHI. In addition, an indicator to measure Prong 2 of PMTCT of HIV, on unmet need for FP for women living with HIV will be field-tested. The global target agreed to in the inter-agency task team (IATT) is to eliminate 100% of current

unmet need for FP by 2015 in all the 22 countries with the greatest number of HIV-positive pregnant women.

- The *Counselling tool on reproductive choices and family planning for people living with HIV* has been translated into local languages and implemented in collaboration with the PFP, FHI, USAID and national partners. This tool is a critical part of providing comprehensive PMTCT of HIV and addressing training needs of health-care workers to provide integrated, effective services to people living with HIV ([http://whqlibdoc.who.int/publications/2006/9241595132\\_eng.pdf](http://whqlibdoc.who.int/publications/2006/9241595132_eng.pdf)).

## 5.2 Planned activities

- The background papers and discussions at the Boston meeting on fertility intentions of women living with HIV, and the paper presented at the Madrid meeting on the sexual health needs of PLHIV will be published in peer-reviewed journals.
- The policy and programmatic framework on primary prevention of HIV and prevention of unintended pregnancy will be finalized in collaboration with partners in the PMTCT of HIV IATT.
- Technical guidance will be provided to selected countries for implementing the PMTCT of HIV framework on prongs 1 and 2 in collaboration with UNFPA and UNAIDS, including the dissemination of the WHO *Counselling tool on reproductive choices and family planning for people living with HIV*.

## PUBLICATIONS IN 2009–2010

### Peer-reviewed papers

Special theme issue: Strengthening linkages between sexual and reproductive health and HIV. *Bull World Health Organ*, 2009, 87 (11): 805–884.

Campbell-Lendrum D, Lusti-Narasimhan M. Taking the heat out of the population and climate debate. *Bull World Health Organ*, 2009, 87:807.

Komatsu R et al. Sexual and reproductive health activities in HIV programmes: can we monitor progress? *J Epidemiol Community Health*, 2010 (doi:10.1136/jech.2009.092940).

Lusti-Narasimhan M, Collin C, Mbizvo M. Sexual and reproductive health in HIV-related proposals supported by the Global Fund to Fight AIDS, Tuberculosis and Malaria. *Bull World Health Organ*, 2009, 87:816–23.

Lusti-Narasimhan M, Say L, Mbizvo MT. Linking HIV and sexual and reproductive health services to enhance program outcomes. *Int J Gynaecol Obstet*, 2010, 110:S7–S9.

Mbizvo MT, Zaidi S. Addressing critical gaps in achieving universal access to sexual and reproductive health (SRH): The case for improving adolescent SRH, preventing unsafe abortion, and enhancing linkages between SRH and HIV interventions. *Int J Gynaecol Obstet*, 2010, 110:S3–S6.

Spaulding AB et al. Linking family planning with HIV/AIDS interventions: a systematic review of the evidence. *AIDS*, 2009, 23:S79–S88.

## Reports

Report of the Consultation to discuss country implementation of the *Rapid assessment tool for sexual & reproductive health and HIV linkages*, 1–3 December 2010, Geneva, Switzerland.

Country case summaries of the implementation of the SRH/HIV rapid assessment tool from Belize, Benin, Botswana, Burkina Faso, Côte d'Ivoire, Kyrgyzstan, Lebanon, Malawi, Morocco, Nigeria, Pakistan, Russian Federation, Swaziland, Tunisia, Uganda, United Republic of Tanzania, and Viet Nam, 2010. (draft)

Program on International Health and Human Rights, World Health Organization, Harvard Center for Population and Development Studies. *The pregnancy intentions of HIV-positive women: Forwarding the research agenda*. Conference Report, 17–19 March 2010, Boston, MA, USA, Harvard School of Public Health, 2010.

*Rapid assessment of sexual and reproductive health and HIV/AIDS linkages in Botswana*. Collaborative study report between WHO, Ministry of Health, Botswana, UNFPA, 2009.

## Conference presentations

Challenges of sexual health among people living with HIV in Europe. WHO Regional conference on challenges in improving sexual health in Europe, Madrid, Spain, 21–22 October 2010.

Funding opportunities for integrating SRH/HIV services. UNAIDS 24th Programme Coordinating Board meeting: Thematic day on SRH/HIV Linkages, 22–24 June 2010.

An analysis of HIV proposals approved by the Global Fund: Opportunities to scale up interventions for women. Women Deliver Conference, Washington DC, USA, 7–9 June 2010.

Opportunities for funding national strategic plans for sexual and reproductive health (SRH), including STIs through the Global Fund to Fight AIDS, tuberculosis and malaria. 16th International Union against Sexually Transmitted Infection (IUSTI) Asia Pacific Conference: “STIs in Asia-Pacific: Obstacles and Challenges”, Bali, Indonesia, 4–8 May 2010.

Linking family planning to PMTCT: Empowering women living with HIV. International Conference on Family Planning: Research and Best Practices, Kampala, Uganda 15–18 November 2009.

Opportunities and priorities for FP/HIV integration. FHI Technical Meeting on Family Planning/HIV Integration, Addis Ababa, Ethiopia, 12–14 November 2009.

Strengthening linkages between sexual and reproductive health, human rights and HIV 2009. US President's Emergency Plan for AIDS Relief (PEPFAR) HIV Implementers' meeting, Windhoek, Namibia, 10–14 June 2009.

Strengthening linkages between sexual and reproductive health and HIV: the way forward in tackling the epidemic. 5th Asia-Pacific Conference on sexual reproductive health and rights, Beijing, China 17–20 October 2009.

“Are we being heard?” — Effectively strengthening SRH/HIV services. WHO, UNFPA, UNAIDS Roundtable, Geneva, Switzerland, 17 June 2009.

## Tools

Resource pack on SRH/HIV linkages. <http://www.srhivlinkages.org/en/index.html>.

Making the case for interventions linking sexual and reproductive health and HIV in proposals to the Global Fund to Fight AIDS, Tuberculosis and Malaria, WHO, 2009.

WHO/USAID/FHI Strategic considerations for strengthening the linkages between family planning and HIV/AIDS policies, programs, and services, 2009.

WHO/IPPF/UNFPA/GNP+/UNAIDS *Rapid assessment tool for sexual and reproductive health and HIV linkages*, 2009.

## Review

WHO/UNFPA/IPPF Sexual & reproductive health and HIV linkages: evidence review and recommendations, 2009.

## Guidance

Advancing the sexual and reproductive health and human rights of people living with HIV: Guidance package, 2009.

## Case-studies

WHO/IPPF/UNFPA/UNAIDS Gateways to Integration: Case Study from Serbia, 2009.



## Chapter 19

# Universal access

### 1. INTRODUCTION

The work of the Department on “Universal access” aims to support acceleration of progress towards universal access to reproductive health, the second target of the MDG 5 –MDG 5B. The overall workplan of the Department includes lines of activities that aim to ensure that effective interventions are in place to address elements of universal access (availability, information, cost/affordability, and quality/acceptability) in key aspects of sexual and reproductive health as defined within WHO’s Global Reproductive Health Strategy, contributing to achievement of universal access.

### 2. CONTRIBUTION TO WHO’S MEDIUM-TERM STRATEGIC PLAN 2008–2013

This work contributes to WHO’s SO4, OWER 4.7 which is concerned with supporting implementation of WHO’s Global Reproductive Health Strategy, through identifying and promoting actions at country-level for universal access to reproductive health, supporting its integration in regional/national policy and programme frameworks, and monitoring implementation of the Strategy.

### 3. PROMOTE ACCELERATED ACTIONS FOR OF UNIVERSAL ACCESS TO REPRODUCTIVE HEALTH

#### 3.1 Progress

##### *3.1.1 Elaborating and promoting strategies to accelerate progress in universal access to reproductive health*

Despite generally little progress in reproductive health globally, a number of countries have made improvements over the years. In 2010, a technical consultation was convened

to examine strategies that could have contributed to these improvements with a view to identify potential actions for accelerating progress towards achievement of universal access to reproductive health. Presentations from seven countries with respect to their reproductive health situation and potential reasons for improved trends were discussed. The Department had collaborated with these countries in the development and implementation of various strategies.

Diverse strategies and policies had contributed to improvements in different countries. For example, in Morocco, expanding rural health care access with designation and establishment of new health facilities; ensuring sustainable commodities for reproductive health care; and strengthening the skills of the health workforce with promotion of training in managerial and technical skills including support for training in epidemiology for health providers were among the key strategies. These were implemented in parallel with the National Initiative for Human Development, which addressed broader aspects of development, including roads, education, and communication. Subsequently, related indicators, especially contraceptive use increased significantly, with the most remarkable increase noted in rural areas.

In Cambodia, policies introducing demand-side financing mechanisms, including health equity funds and community-based health insurance; and those improving the supply side such as safe delivery incentives for providers, essential delivery package, and improving the midwives’ status through administrative reforms were deemed to have impacted positively on the increase in the proportion of deliveries occurring in health care facilities from 16% in 2005 to 44% in 2009 and the subsequent drop in maternal mortality.

In Brazil, various policies have been put in place since 1996 with an attention to equitable access to reproductive health. These include: free distribution of contraceptives at public facilities and reduced prices at popular pharmacies; family health strategy offering counselling; identification of and training in hospitals for legal abortion care; development of guidelines for legal abortion care; and providing free access to vasectomy. These actions contributed to an increase in contraceptive use from 55% in 1996 to 68% in 2006, together with a decrease in the proportion using tubal ligation. Broader actions and factors such as policy framework aligned to MDGs, civil society and communities influencing political will, long-lasting health activism, integrated intersectoral policies, universal public health system and national and regional research agenda have contributed to improvements.

Highlights from the case-studies and discussions at the technical consultation are summarized in a document *Accelerated actions to enhance progress on Millennium Development Goal 5 through advancing target 5B: Achieve, by 2015, universal access to reproductive health* to promote development of policies and programmes for accelerated progress in reproductive health.

Additionally, the Department initiated and coorganized a side event at the MDG Summit held in New York, USA, September 2010, in the context of the UN H4+ (see more information on UN H4+ in Chapter 14). The event involved elaboration of the effect of various strategies and policies on the reduction of maternal mortality in Benin, Ethiopia, and Nepal, presented by high-level policy makers in those countries and attended by the Heads of the UN H4+ agencies, including WHO's Director-General.

### *3.1.2 Support to regions/countries in development of policy and programme frameworks for universal access to reproductive health*

The Department provided input in the development of high-level regional policy documents that promote achievement of universal access to reproductive health. For example, contribution was made to the development of a Parliamentarians Declaration on universal access to reproductive health services and commodity security in the Asia-Pacific region in collaboration with UNFPA at a conference held in Kathmandu, Nepal, July 2009. Another activity included contribution to a Regional Ministerial Declaration on the role of family planning in reducing maternal mortality and poverty reduction at a high-level conference organized by Partners in Population and Development (PPD) in Yogyakarta, Indonesia in October 2010.

At the programme level, a series of regional workshops were organized in collaboration with WHO regional offices to promote efforts focusing on MDG Target 5B; provide assistance in identification of areas needing attention; and prioritize interventions for accelerated progress, using the framework of indicators developed by WHO and UNFPA for national-level monitoring of MDG 5B.

Three regional workshops (in the South-East Asia, Eastern Mediterranean and Western Pacific Regions), were organized for ministry of health representatives together with WHO country office staff where conceptual and operational issues in achieving universal access to reproductive health within the context of MDGs were elaborated. Countries were supported to outline action plans to strengthen use of information for decision-making. Based on these plans, country teams from Afghanistan, China, Myanmar, Sri Lanka, and United Republic of Tanzania were provided support to develop and implement national monitoring frameworks for reproductive health programmes.

## **3.2 Planned activities**

- The document *Accelerated actions to enhance progress on Millennium Development Goal 5 through advancing target 5B: Achieve, by 2015, universal access to reproductive health* will be printed and effectively disseminated.
- An analysis of policies and strategies contributing to progress in countries showing improvements in universal access to reproductive health (including maternal health) will be carried out.
- Support will be provided to regions and countries to strengthen monitoring frameworks for effective tracking of interventions for universal access to reproductive health. Joint work with the WHO Regional Office for Africa to develop a regional agenda for sexual and reproductive health in the African Region will be carried out.

## **4. SYSTEMATIC INTRODUCTION OF WHO GUIDELINES IN COUNTRY PROGRAMMES TO IMPROVE QUALITY OF SEXUAL AND REPRODUCTIVE HEALTH CARE (SPP)**

### **4.1 Progress**

A key determinant of access is the quality of health care to ensure effectiveness, acceptability, and use of services. RHR, in collaboration with UNFPA, implemented the WHO–UNFPA SPP during 2004–2007, which is a systematic and standard approach to adaptation and/or adoption of WHO guidelines on family planning, STIs and maternal health to promote use of evidence-based recommendations for improving quality of care. In 32 countries of intensified focus, the guidelines were systematically introduced through the SPP. The SPP related activities carried out in 2009–2010 are presented in Chapter 6.

### **4.2 Planned activities**

- A number of countries of intensified focus where the steps of systematic introduction of guidelines were completed will be supported to implement, monitor, and evaluate guideline recommendations at service delivery level.

## 5. MONITORING IMPLEMENTATION OF THE WHO GLOBAL REPRODUCTIVE HEALTH STRATEGY

### 5.1 Progress

The 2004 World Health Assembly, through Resolution 57.12, endorsed the first WHO Global Reproductive Health Strategy ("the Strategy") to accelerate progress towards the attainment of international development goals and targets related to reproductive health. In 2010, progress in implementation of the Global Reproductive Health Strategy was reported to the World Health Assembly as part of WHO's mandate to provide biannual reports. The progress report included information at global, regional and country levels. Country-level progress is examined through a questionnaire survey of Member States. A data-collection instrument developed in the earlier rounds for this purpose was updated and sent during February to June 2009 to ministry of health officials. In addition to the progress report submitted to and reviewed by the World Health Assembly, a synthesis of the data elicited through country questionnaires was published.

Information synthesized from 57 countries showed that the Strategy and its implementation framework was used widely in: guiding the creation of national health policies and strategic plans on sexual and reproductive health; implementing of maternal and child health/reproductive health activities; capacity strengthening for family planning and prevention of unsafe abortion; curriculum reform in schools on HIV prevention and unplanned pregnancy; strengthening monitoring and evaluation; elaborating policies and laws on sexual and reproductive health; and as reference material for the development of national action plans. Countries have developed various strategies to adopt some of the actions recommended within the Strategy, but progress was usually inadequate and uneven. Barriers and bottlenecks to improving reproductive health services emerging from the questionnaire survey included: sociocultural factors; conflict situations; poor reporting on reproductive health indicators; poor access to vulnerable groups; shortage of equipment and care providers; unwillingness of providers to work in remote areas; lack of awareness about the range of family planning methods; and inadequate services for adolescents.

- During the discussion on the progress report at the World Health Assembly, Member States commended the Secretariat for the report. They highlighted the importance of sexual and reproductive health in achievement of the MDGs, the need to address the continuing high unmet need for family planning, the need to give attention to young people in terms of sexual and reproductive health, social determinants of poor sexual and reproductive health outcomes, and the need to ensure access to sexual and reproductive health services of all people in need, especially of vulnerable populations. They called for full implementation of the Strategy; and recom-

mended, among others, WHO to show strong leadership and commitment to sexual and reproductive health and rights and to prioritize this area. It was suggested that future reports could be expanded to include a discussion on intraregional variation of data and proposed an increase in the number of countries participating in the questionnaire survey.

### 5.2 Planned activities

- The instrument for assessing country-level progress in implementation of the Strategy will be revised and administered during the first half of 2011 for preparation of the report to the 2012 World Health Assembly.
- Regional-level information from the questionnaires from respective country summaries will be synthesized and regional summaries will be provided.

## PUBLICATIONS IN 2009–2010

### Reports

*Universal access to reproductive health: Accelerated actions to enhance progress on Millennium through advancing Target 5B.* Geneva, World Health Organization, 2011.

*Reproductive Health Strategy. Progress Report.* Geneva, World Health Organization, 2010.

### Conference presentations

Mbizvo M. Achieve, by 2015, universal access to reproductive health (equitable access to quality care, services, information and coverage): A new MDG target. Asia and Pacific Regional Conference for the SAARC Countries" Parliamentarians on advocating universal access to reproductive health services and commodity security, Kathmandu, Nepal, 27–30 July 2009.

Mbizvo M. Critical gaps in universal access to reproductive health. XIX FIGO Congress. Pre-congress Workshop, Cape Town, South Africa, 2–3 October, 2009.

Mbizvo M. Integrating family planning and maternal health into poverty alleviation strategies. International Conference on Promoting Family Planning and Maternal Health for Poverty Alleviation, Yogyakarta, Indonesia, 25–27 October 2010.

Say L. Millennium Development Goal 5: to improve maternal health: Current Situation and Progress. 53rd Congress of Brazilian Obstetricians and Gynaecologists, Belo Horizonte, Brazil, 14–17 November 2009.

Say L. Should we focus on particular MDGs and targets? Progress in health MDGs. Third "Etats Generaux" of Development Cooperation. The Millennium Development Goals: How to step up the efforts? Brussels, Belgium, 4 May 2010.

Say L. Births attended by a skilled health worker – concepts and trends. Women Deliver Conference, Washington DC, Washington, USA, 7–9 June 2010.

## ACRONYMS AND ABBREVIATIONS

<b>ADA</b>	Advanced Development for Africa	<b>CHERG</b>	Child health epidemiology reference group
<b>ADG</b>	Assistant Director-General	<b>CHP</b>	Chronic Diseases and Health Promotion
<b>AERMN</b>	Afro European Research Medical Network	<b>CHPS</b>	Centre for Health and Population Studies
<b>AGREE</b>	appraisal of guidelines research and evaluation	<b>CI</b>	confidence intervals
<b>AHPSR</b>	Alliance for Health Policy and Systems Research	<b>CIDA</b>	Canadian International Development Agency
<b>ALIRH</b>	Asociación Latino Americana de Investigadores en Reproducción Humana. [Latin American Association for Research in Human Reproduction]	<b>CIDES</b>	Centre for Research in Development Sciences, Plurinational State of Bolivia
<b>AMTSL</b>	active management of the third stage of labour	<b>CIR</b>	competitive intraregional research
<b>ANC</b>	antenatal care	<b>CIRE</b>	Continuous Identification of Research Evidence
<b>ANM</b>	auxiliary nurse midwives	<b>CLAP/PAHO/WHO</b>	Latin American Centre for Perinatology and Human Development (Centro Latinoamericano de Perinatología)/PAHO/WHO
<b>AOGIN</b>	Asia Oceania research organization on Genital Infections and Neoplasia	<b>CLAP/SMR</b>	Latin American Perinatology Center/ Women's and Reproductive Health
<b>APHI</b>	Afghan Public Health Institute	<b>COC</b>	combined oral contraceptives
<b>ART</b>	assisted reproductive technologies	<b>CoP</b>	Community of Practice
<b>ARV</b>	antiretroviral	<b>CRC</b>	Committee on the Rights of the Child
<b>ASB</b>	asymptomatic bacteriuria	<b>CREP</b>	Centro Rosarino de Estudios Perinatales (Centre for Perinatal Studies, Argentina)
<b>ASPHER</b>	Association of Schools of Public Health in the European Region	<b>CRESARCI</b>	Reproductive Research Health Unit
<b>ASRH</b>	adolescent sexual and reproductive health	<b>CRISP</b>	cysteine-rich secretory proteins
<b>ASRM</b>	American Society of Reproductive Medicine	<b>CRRH</b>	Centre for Research in Reproductive Health
<b>AZT</b>	zidovudine	<b>CS</b>	caesarean section
<b>BAN</b>	Breastfeeding, Antiretroviral treatment and Nutrition	<b>CSO</b>	Civil Society Organization
<b>BBC</b>	British Broadcasting Corporation	<b>CTS</b>	clinical trial simulator
<b>BMD</b>	bone mineral density	<b>CWS</b>	courses/workshops/seminars
<b>BMGF</b>	Bill and Melinda Gates Foundation	<b>DHS</b>	Demographic and Health Surveys
<b>BMI</b>	body mass index	<b>DMPA</b>	depot medroxyprogesterone acetate
<b>CAH</b>	WHO Department of Child and Adolescent Health and Development	<b>DMT</b>	<i>Decision making tool for family planning clients and providers</i>
<b>CAPRISA</b>	Centre for the AIDS Programme of Research in South Africa	<b>EC</b>	Emergency contraception
<b>CCM</b>	country coordinating mechanisms	<b>ECE</b>	Economic Commission for Europe
<b>CCOMS</b>	Centres Collaborateurs de l'OMS	<b>ECPs</b>	emergency contraceptive pills
<b>CDC</b>	United States Centers for Disease Control and Prevention	<b>ECRU</b>	Effective Care Research Unit
<b>CEDAW</b>	Committee on the Elimination of all Forms of Discrimination against Women	<b>ECSA-HC</b>	East, Central and Southern Africa Health Community
<b>CEPEP</b>	Centre for Population Studies, Paraguay	<b>EFCNI</b>	European Foundation for the Care of the Newborn Infant
<b>CERREGUI</b>	Cellule de recherche en santé de la reproduction en Guinée	<b>ELSI</b>	ethics and legal and social implications
<b>CGRP</b>	calcitonin gene-related peptide	<b>EMA</b>	European Medicines Agency
<b>CHC</b>	combined hormonal contraceptive	<b>EML</b>	Essential Medicines List
		<b>ESD</b>	Extending Service Delivery
		<b>ESHRE</b>	European Society for Human Reproduction and Embryology



<b>EVA</b>	electric vacuum aspiration	<b>GWU</b>	George Washington University
<b>FBO</b>	faith-based organization	<b>HAC</b>	Health Action in Crises Cluster
<b>FCH</b>	WHO Family and Community Health Cluster	<b>HELLP</b>	haemolytic anaemia, elevated liver enzymes and low platelet count
<b>FCI</b>	Family Care International	<b>HEW</b>	Health Extension Worker
<b>FDA</b>	Food and Drug Administration	<b>HIFA</b>	Health Information for All by 2015
<b>FGD</b>	focus group discussions	<b>HPV</b>	human papillomavirus
<b>FGM</b>	female genital mutilation	<b>HRH</b>	Human Resources for Health
<b>FHI</b>	Family Health International	<b>HRP</b>	Human Reproduction
<b>FICA</b>	Flemish International Cooperation Agency	<b>IAEA</b>	International Atomic Energy Agency
<b>FIGO</b>	International Federation of Gynecology and Obstetrics	<b>IAFM</b>	<i>Inter-agency field manual on reproductive health in humanitarian settings</i>
<b>FOKO</b>	The Nordic Network for Research on Female Circumcision (forskning om kvinnelig omskjæring)	<b>IARC</b>	International Agency for Research on Cancer
<b>FP</b>	family planning	<b>IAS</b>	International AIDS Society
<b>FRG</b>	Fertility Regulation Group	<b>IATT</b>	interagency task team
<b>GANM</b>	Global Alliance for Nursing and Midwifery	<b>IAWG</b>	Inter-Agency Working Group
<b>GAP</b>	Gender and Rights Advisory Panel	<b>IBP</b>	Implementing best practices in reproductive health
<b>GAVI</b>	Global Alliance for Vaccines and Immunisation	<b>IBYME</b>	Experimental Medicine and Biology Institute
<b>GBD</b>	Global Burden of Diseases	<b>ICAAC</b>	Interscience Conference on Antimicrobial Agents and Chemotherapy
<b>GCP</b>	Good Clinical Practice	<b>ICBDSR</b>	International Clearinghouse for Birth Defect Surveillance and Research
<b>GDM</b>	gestational diabetes (mellitus)	<b>ICD</b>	International Classification of Diseases
<b>GE</b>	General Electrics	<b>ICHRP</b>	International Council for Human Rights Policy
<b>GFMER</b>	Geneva Foundation for Medical Education and Research	<b>ICJ</b>	International Commission of Jurists
<b>GHC</b>	Global Health Cluster	<b>ICMART</b>	International Committee for Monitoring Assisted Reproductive Technologies
<b>GHO</b>	Global Health Observatory	<b>ICMER</b>	Instituto Chileno de Medicina Reproductiva [Chilean Institute of Reproductive Medicine]
<b>GHWA</b>	Global Health Workforce Alliance	<b>ICPD</b>	International Conference on Population and Development
<b>GLOBE</b>	Gestación Ligada a Obesidad y al Entorno. Estudio longitudinal multicéntrico de factores de riesgo asociados a la obesidad en el embarazo (project)	<b>ICW</b>	International Community of Women Living with HIV/AIDS
<b>GNP+</b>	Global Network of People living with HIV/AIDS	<b>IDU</b>	injecting drug users
<b>GP</b>	general practitioner	<b>IEC</b>	Education and Communication material
<b>GPS</b>	guideline production system	<b>IFFS</b>	International Federation for Fertility Societies
<b>GRADE</b>	Grades of Recommendation Assessment, Development and Evaluation	<b>IHP+</b>	International Health Partnership and related initiatives
<b>GRC</b>	Guidelines Review Committee	<b>IMPAC</b>	Integrated Management of Pregnancy and Childbirth
<b>GREAT</b>	Guidelines, Research Priorities, Evidence synthesis, Applicability of evidence, Transfer of knowledge	<b>IPPF</b>	International Planned Parenthood Federation
<b>GRR</b>	RHR Gender, Reproductive Rights, Sexual Health and Adolescence Team	<b>IPSR</b>	Institute for Population and Social Research
<b>GSG</b>	Guidelines Steering Group	<b>IPU</b>	Inter-Parliamentary Union
<b>GWAS</b>	genome wide association study	<b>IPV</b>	intimate partner violence
<b>GWH</b>	WHO Department of Gender, Women and Health	<b>IR</b>	implementation research
<b>GWAH</b>	Global Watch for Humanitarian Affairs	<b>IRH</b>	Institute of Reproductive Health

<b>IRSS</b>	Institut de Recherche en Science de la Santé	<b>MSI</b>	Marie Stopes International
<b>ISMAAR</b>	International Society for Modified Approaches to Assisted Reproduction	<b>MSM</b>	men having sex with men
<b>ISMB</b>	Institute Mario Boella	<b>MSSL</b>	Marie Stopes Sierra Leone
<b>ISUOG</b>	International Society of Ultrasound in Obstetrics and Gynecology	<b>MTCT</b>	mother-to-child transmission of HIV/AIDS
<b>IUD</b>	intrauterine device	<b>MVA</b>	manual vacuum aspiration
<b>IUGR</b>	intrauterine growth restriction	<b>MVP</b>	Millennium Village Project
<b>IUSSP</b>	International Union for the Scientific Study of Population	<b>NAC</b>	national AIDS control
<b>IVF</b>	in vitro fertilization	<b>NASG</b>	nonpneumatic anti-shock garment
<b>IVM</b>	in vitro maturation	<b>NGO</b>	nongovernmental organization
<b>IVR</b>	Initiative for Vaccine Research	<b>NICHD</b>	National Institute of Child Health and Human Development
<b>Jhpiego</b>	Johns Hopkins Program for International Education inGynecology and Obstetrics	<b>NIH</b>	National Institutes of Health, United States
<b>KAP</b>	knowledge, attitudes and practices	<b>NIRRH</b>	National Institute for Research in Reproductive Health
<b>KG</b>	Knowledge Gateway	<b>NMCHC</b>	National Maternal and Child Health Centre
<b>KMS</b>	Department of Knowledge Management and Strategies	<b>NNRHRT</b>	Nigerian network for reproductive health research and training
<b>KSE</b>	knowledge synthesis, exchange	<b>NNRTI</b>	non-nucleoside reverse transcriptase inhibitor
<b>KTA</b>	knowledge-to-action	<b>NPO</b>	National programme officers
<b>LAM</b>	lactational amenorrhea method	<b>NRL</b>	National Reference Laboratory
<b>LAS</b>	League of Arab States	<b>NSV</b>	non-scalpel vasectomy
<b>LEEP</b>	loop electrosurgical excision procedure	<b>OBA</b>	output-based aid
<b>LID</b>	long-term institutional development	<b>ODI</b>	Overseas Development Institute
<b>LNG</b>	levonorgestrel	<b>ONDa</b>	National Observatory for Women's Health
<b>LMP</b>	last menstrual period	<b>OR</b>	Odds Ratio
<b>LSHTM</b>	London School of Hygiene and Tropical Medicine	<b>OWER</b>	Organization-wide expected result
<b>MCH</b>	WHO Department of Maternal, Newborn, Child and Adolescent Health	<b>PAC</b>	postabortion care
<b>MCHIP</b>	Maternal and Child Health Integrated Project	<b>PAHO</b>	Pan American Health Organization
<b>MDG</b>	Millennium Development Goal	<b>PATH</b>	(formerly) Program in Appropriate Technology in Health
<b>MEC</b>	<i>Medical eligibility criteria for contraceptive use</i>	<b>PBG</b>	performance-based grant
<b>MGF</b>	mutilazioni genitali femminili	<b>PCC</b>	Policy and Coordination Committee
<b>mhealth</b>	Mobile Health	<b>PCG</b>	Pregnancy and Childbirth Group
<b>MMEIG</b>	maternal mortality estimation interagency group	<b>PCS</b>	programme capacity strengthening
<b>MMR</b>	maternal mortality ratio	<b>PDR</b>	People's Democratic Republic
<b>MNCH</b>	maternal, newborn and child health	<b>PDRH</b>	Programme Development in Reproductive Health (PDRH) component of RHR
<b>MoH</b>	ministry of health	<b>PEPFAR</b>	President's Emergency Plan for AIDS Relief
<b>MoPH</b>	Ministry of Public Health	<b>PFP</b>	RHR Promoting Family Planning Team
<b>MOU</b>	Memorandum of Understanding	<b>PGP</b>	Preterm Birth Genome Project
<b>MPH</b>	RHR Improving Maternal and Perinatal Health Team	<b>PHC</b>	primary health care
<b>MPS</b>	WHO Department of Making Pregnancy Safer	<b>PHI</b>	Public Health Institute
<b>MSH</b>	Management Sciences for Health	<b>PIERS</b>	Pre-Eclampsia Integrated Estimate of RiSk
		<b>PLEAS</b>	Latin American programme for the standardization of semen analysis
		<b>PLHIV</b>	People living with HIV

<b>PLISSER</b>	Latin American programme for research and research training in human reproduction	<b>SVRI</b>	Sexual Violence Research Initiative
<b>PLWHA</b>	people living with HIV/AIDS	<b>SWApS</b>	Sector Wide Approaches
<b>PMNCH</b>	Partnership for Maternal, Newborn and Child Health	<b>SWOT</b>	strengths, weaknesses, opportunities and threats
<b>PMR</b>	RHR Programme Management team	<b>TAG</b>	technical advisory group
<b>PMTCT</b>	Prevention of Mother to Child Transmission	<b>TCC</b>	Technical Cooperation with Countries for Sexual and Reproductive Health Team
<b>PP</b>	placenta previa	<b>TDR</b>	Special Programme for Research and Training in Tropical Diseases
<b>PPI</b>	Policy and Programmatic Issues group	<b>TU</b>	testosterone undecanoate
<b>PPH</b>	postpartum haemorrhage	<b>UMSA</b>	San Andres University
<b>PRB</b>	Perinatal Research Branch	<b>UN</b>	United Nations
<b>PREBIC</b>	Preterm Birth International Collaborative	<b>UNAIDS</b>	Joint United Nations Programme on HIV/AIDS
<b>PRE-EMPT</b>	Pre-eclampsia monitoring, prevention and treatment	<b>UNDP</b>	United Nations Development Programme
<b>PSI</b>	Population Services International	<b>UNECA</b>	United Nations Economic Commission for Africa
<b>PTB</b>	preterm birth	<b>UNESCO</b>	United Nations Scientific and Educational Organization
<b>RAFT</b>	Réseau d'Afrique francophone en télémédecine	<b>UNFPA</b>	United Nations Population Fund
<b>RAP</b>	Regional Advisory Panel	<b>UNH4+</b>	UNAIDS, UNFPA, UNICEF, the World Bank and WHO
<b>RCS</b>	research capacity strengthening	<b>UNHCR</b>	Office of the United Nations High Commissioner for Refugees
<b>RCT</b>	randomized controlled trial	<b>UNICEF</b>	United Nations Children's Fund
<b>RHL</b>	<i>The WHO Reproductive Health Library</i>	<b>UNPD</b>	United Nations Population Division
<b>RHR</b>	WHO Department of Reproductive Health and Research	<b>UNRWA</b>	United Nations Relief and Works Agency for Palestine Refugees in the Near East
<b>RHRTU</b>	Reproductive Health Research and Training Unit	<b>UNSC</b>	United Nations Statistical Commission
<b>RMC</b>	Reproductive Medicine Committee	<b>USAID</b>	United States Agency for International Development
<b>RMG</b>	resource maintenance grant	<b>VAW</b>	violence against women
<b>RPM</b>	research project mentoring	<b>VCT</b>	voluntary counselling and testing
<b>RRP</b>	Risk Reduction and Emergency Preparedness	<b>VIA</b>	visual inspection with acetic acid
<b>RTG</b>	research training grant	<b>VIH</b>	Le virus de l'immunodéficience humaine (HIV)
<b>RTI</b>	reproductive tract infection	<b>VIP</b>	WHO Department of Violence and Injury Prevention and Disability
<b>SAM</b>	Service Availability Mapping	<b>VTE</b>	venous thromboembolism
<b>SDM</b>	Standard Days Method	<b>WAS</b>	World Association for Sexual Health
<b>SERG</b>	Scientific and Ethical Review Group	<b>WCL</b>	Women Create Life
<b>SFPRI</b>	Sichuan Family Planning Research Institute	<b>WHiPT</b>	Women's HIV Prevention Tracking
<b>SGI</b>	Society for Gynecologic Investigation	<b>WHO CC</b>	WHO Collaborating Centre for Reproductive Health
<b>SIP</b>	Perinatal Information System	<b>WONCA</b>	World Congress of Family Physicians
<b>SIS</b>	RHR Statistics and Information Services Team		
<b>SO</b>	strategic objectives		
<b>SOP</b>	standard operating procedures		
<b>SPP</b>	Strategic Partnership Programme		
<b>SPR</b>	<i>Selected practice guidelines for contraceptive use</i>		
<b>SPTB</b>	Spontaneous preterm birth		
<b>SRH/HIV</b>	sexual and reproductive health/HIV		
<b>STAG</b>	Scientific and Technical Advisory Group		
<b>STI</b>	sexually transmitted infection		

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.

Regional Advisory Panels (RAP) monitor and evaluate the work in their respective geographical regions. At an annual meeting, progress is reviewed and evaluated, and joint plans for the coming year are made for headquarters and for each region.

The Research Project Review Panel (RP2) reviews all projects which are supported by the Programme, from a scientific, technical, financial and ethical perspective. In addition, the Programme has several strategic review committees, expert groups and specialist panels that advise on detailed research strategies and promote debate on sexual and reproductive health issues.

Administratively, HRP is the research arm of the WHO Department of Reproductive Health and Research (RHR), whose vision is the attainment by all peoples of the highest possible level of sexual and reproductive health. It strives for a world where all women's and men's rights to enjoy sexual and reproductive health are promoted and protected, and all women and men, including adolescents and those who are underserved or marginalized, have access to sexual and reproductive health information and services.

RHR's work is premised on the need to achieve access to and quality of sexual and reproductive health, in order to meet the needs of diverse populations, particularly the most vulnerable. It is shaped around the five components of WHO's Global reproductive health strategy:

- improving antenatal, perinatal, postpartum and newborn care;
- providing high-quality services for family planning, including infertility services;
- eliminating unsafe abortion;
- combating sexually transmitted infections, including HIV, reproductive tract infections, cervical cancer and other sexual and reproductive health morbidities;
- promoting sexual health.

Capacity strengthening for research and programme development is a sixth main component of the work. Within the WHO Global Reproductive Health Strategy, key areas of action and partnership include the need for: strengthening health systems' capacity; improving the information base for priority-setting; mobilizing political will; creating supportive legislative and regulatory frameworks; and strengthening monitoring, evaluation and accountability.

Three overarching themes form part of the mission of RHR's work: universal access to sexual and reproductive health including addressing unmet needs; the renewal of primary health care; and fostering programmatic and policy linkages between services and interventions for HIV and for sexual and reproductive health.

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Cover Photo: WHO/J. Petitpierre

ISBN 978 92 4 150174 3

