Removing financial barriers to access reproductive, maternal and newborn health services: the challenges and policy implications for Human Resources for Health (HRH)

Queen Margaret University

December 2011

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Policy Brief

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Introduction

In the last decade a growing consensus has emerged that user fees are regressive and undermine equitable access to essential health services, and in particular, may negatively affect pregnant women and children under five. A policy shift removing or reducing fees has occurred with consequences for the health system, including the need for replacement revenue and to ensure quality in response to increased utilization. Both of these raise specific concerns for human resources for health (HRH) and suggest that careful planning of the supply side response to the demand stimulated by removal of fees has to take place.

This research responds to this concern. Its objective is to determine the associations and interrelationships between workforce characteristics (stock, distribution, competencies and motivational state) and equitable access to Reproductive, Maternal and Neonatal Health (RMNH) services resulting from the removal of, or exemption from user fees. The study was conducted in five countries: Ghana, Nepal, Sierra Leone, Zambia and Zimbabwe and consisted of literature review of international and local published and grey literature, desk based analysis of secondary data from the five countries and field work in two countries, including primary data collection in Zimbabwe.

Policy initiatives in the 5 countries

In Ghana, exemptions were introduced for delivery care in 2004, first in five regions and then across the country. This policy was later superseded, in 2008, by free coverage of all pregnant women within the National Health Insurance Scheme (NHIS), which had started in 2005. Both policies appear to have been undermined by poor availability of funds. Government HRH policy has focused on task shifting, and improving distribution in part through the deprived area incentives scheme augmenting salaries in remoter districts. Large pay increases were secured for all health workers in 2006, and from 2006-7 there was significant expansion of training schools.

In **Nepal,** in principle, all citizens across the country now have free access to primary care, with some targeted groups also protected from secondary care costs. However, the policy has been undermined by shortfalls in funding. In 2008, the Aama policy provided for institutional deliveries in all public facilities and some private ones to be free with government reimbursements to providers. Women who deliver in a facility have received financial incentives since 2005. Current HRH policies aim for a 71% increase in the public sector workforce by 2017 and stress the importance of increasing the number of SBA competent health providers.

In **Sierra Leone,** the Free Health Care Policy (FHCP) under which pregnant and lactating women and children under five are treated in public facilities free of charge was introduced in April 2010. Recent HRH policy focuses on incentives, especially for hard to reach areas; career development and recruitment processes. Substantial salary increases have been achieved, but specific rural incentives have not yet been introduced, although a performance based financing system has recently been established at primary care level.

In **Zambia,** user fees were abolished for primary care in rural areas in 2006 and expanded in 2007 to include peri-urban areas for all services in government and mission facilities. The removal of user fee income was compensated through a DFID grant. Current HRH strategies focus on stepping-up the

training and recruitment of graduates, developing an HR information system and scaling-up of the Zambia Health Workers Retention Scheme (ZHWRS), which offers salary top-ups in remote areas.

In **Zimbabwe**, the MoHCW has a policy of free care at clinic level, but this has not been applied uniformly by local government and mission clinics and few categories of patients achieve free care. There is a perception that charging policies can be locally determined. The return to relative economic stability underpinned by the dollarization of the economy may have increased the real value of fees. After HRH expenditure collapsed to 0.3% of the public health budget in 2008, an Emergency Retention Scheme was introduced, topping up government salaries but is to be phased out by 2013. The HRH strategic plan, 2011-15 makes improving retention of staff a key priority.

Evidence of effects of policies on utilisation of services

In **Ghana**, there was evidence that the delivery exemption policy produced some modest gains in utilisation and equity. A recent evaluation indicates that there has been an increase in access to formal care amongst members of the NHIS but no difference in use of maternal care. OPD use for the population as a whole shows a marked increase from 2005 onward, compared to stable (low) use before and this is correlated with growth in NHIS membership.

In **Nepal**, there is evidence that utilisation rates of disadvantaged groups have been improving, and in line with the timing of the Aama programme, there has been a substantial increase in the proportion of women giving birth in a health facility.

In **Sierra Leone**, the impact of the FHCP on utilisation appears mixed. For outpatient visits of children under 5, there was a marked increase comparing the pre-FHCP and post-FHCP 12 month periods but a downward trend since September 2010, and immunisation rates declined. For maternal health, there were significant increases in ANC, attended deliveries and acceptors of family planning.

In **Zambia**, HMIS records showed that removing fees increased the number of outpatient visits in rural districts by adult patients. However, this was not consistent across districts or always sustained and there was indication of crowding-out of children under 5, who previously received free care. Utilisation increases were greatest in the districts with the highest levels of poverty. However, household survey analysis found no evidence of an effect on probability to seek care when falling ill.

In **Zimbabwe**, there is no recent discrete policy change against which to evaluate utilisation, but there is earlier evidence of the deterrent effects of fees.

Distribution and skill mix of the RMNH workforce

In all countries but Sierra Leone, doctors are much more concentrated in densely populated (urban) areas than other cadres. In Sierra Leone, nurses and midwives are about equally concentrated in those areas, and no cadre provides cover for remoter rural areas. Overall, the concentration of doctors in urban areas is most pronounced in Nepal. Clinical officers in Zambia and ANMs in Nepal are spread almost equally across areas in line with population numbers, suggesting the significant potential for non-traditional cadres to contribute to more equitable population coverage. However in Zimbabwe it is nurse/midwives who are most evenly distributed.

Nepal achieves fairly equitable distribution of health workers in its public sector: the high overall concentration of health workers reflects the dominance of the private sector in employment. In Ghana and Nepal, the private sector employs health workers predominantly in urban areas. Further disaggregation in Sierra Leone between NGO/FBO and other private sector shows that NGO/FBO providers contributed the most equitably distributed labour force, albeit one still highly concentrated in urban areas.

Workload

Most countries do not have an absolute shortage of health workers relative to current levels of facility based delivery, with the exception of Sierra Leone. Ghana and Zimbabwe have sufficient staff to provide full coverage for facility based SBA. Other countries have some shortfalls in relation to ability to provide full coverage. However the dominant problem restricting access to skilled birth attendance in a facility is distribution. In Ghana, all regions have sufficient skilled birth attendants and doctors to provide full coverage, although this may not be true at district level. The situation is similar in Zimbabwe for SBAs, but not for doctors. In Nepal, only two of 5 regions have sufficient doctors for current workload and while all regions have sufficient ANMs for current workload, none has sufficient for full coverage. Nearly all districts in Sierra Leone have insufficient staff to cope with current workload. In Zambia, 55 districts (76%) have insufficient doctors to provide coverage at a rate of one for every 1,000 births; 13 (18%) have no doctors at all. 8- 36 districts out of 72 have insufficient staff for full coverage of SBA, depending on the categories of staff included.

Remuneration and terms and conditions

Complaints about poor pay for most cadres in most countries appear unjustified, and in all cases health workers earn well above average rates of earning in their communities. Doctors in all countries but Zimbabwe earn 28-46-fold the average income; nurses in Ghana, Nepal and Zambia, in the range of 15-38 fold. The recent pay award in Sierra Leone puts doctors into the same category but leaves enrolled and registered nurses and midwives much less well paid. Zimbabwean health workers are more modestly paid than their counterparts in the other four countries.

Projections of need for skilled birth attendants

Projections suggest large increases are required for some cadres in three case study countries: Nepal, Sierra Leone and Zambia. The largest is Sierra Leone's requirement for a nearly seven-fold increase in the numbers of midwives, which may not be realistic. Equipping MCH aides to the level of SBAs would appear the more realistic option. Then achievable moderate increases in MCH and midwife numbers are required. Nepal's need to more than double its midwife numbers may also not be achievable and may require a mix of growing the health workforce and task shifting, while ensuring adequate skill levels are supported. Otherwise, relatively modest increases in staffing in SBAs in Zambia and in doctors in Sierra Leone can probably be achieved to respond to the stimulation of sufficient demand.

However, competence in skilled birth attendance is difficult to assess across the countries and the capacity to scale up to 95% coverage of RMNH services is probably more limited than it appears.

Conclusions and policy recommendations

The HRH situation in case study countries is more variable than might have been expected. However, in general, there are local shortages relative to need. Low salaries are not the general situation of health workers in the case study countries.

Of the four case study countries that have removed or introduced exemptions for user fees for RMNH, only in Nepal is there clear evidence of positive impact on utilisation without significant exception. Demand does respond to price but achieving a real price fall is more than a matter of enacting policy. Other barriers to access may concurrently be influenced by user fee policy, operating through human resource factors and drug and other commodity supply. Other barriers constrain the extent to which the removal of a single barrier can make a significant difference.

Pay reform, recruitment activity and user fee reform are among a plethora of interventions that are being introduced concurrently but with insufficient co-ordination. While in the case study countries, there have been laudable attempts to plan for the impact of fee removal or reduction, globally, poor co-ordination is widespread. Among the associated measures well recognised in the existing literature is the need to ensure replacement of user fee income where it is important at the local level. A mechanism of demand side financing through which facilities continue to earn income at a rate per intervention provided best mimics the positive incentives that are also associated with user charges, giving health workers an incentive to attract users to their facility.

Not only does the removal of fees affect the HRH situation, but the HRH situation in turn affects the implementation of user fee policy. Staff who feel aggrieved because of a sense of over-work, underpay, or a deterioration in conditions are more likely to undermine user fee reform, for example by instituting informal charges. Linkage also operates in both directions through the medium of quality of care. Health workers make perhaps the most critical contribution to quality of care and to whether any utilisation gains following fee removal are sustained.

Policy implications

First, co-ordination of health financing and human resource policies is essential. In order to support free health care policies, investment needs to be made in pay and recruitment, and to ensure that relative conditions of employment do not worsen for rural areas. Generalised pay increases in the context of increasing imbalance of workloads in urban and rural areas may not be sufficient.

Second, in some countries, generalised low pay requires to be addressed. However, in other countries, pay may be higher than is strictly necessary to secure commitment and retention.

Third, projections of staff shortages are too large in some countries to be addressed by training of professional midwives alone. Equipping more junior cadres to provide safe delivery services will be an essential short term measure in some countries.

Third, replacement of user fee income is only part of the solution to the management of the introduction of free health care. Demand side financing approaches better replicate the positive aspects of the incentives embedded in user fee systems. However, they may not be feasible everywhere. A careful analysis of the incentives embedded in alternative mechanisms of user fee replacement is required everywhere for the most effective system in its context to be designed.

Fourth, as is generally good practice, these policies need effective monitoring systems that focus on the realities of their implementation as well as their impacts. The benefits of such monitoring are apparent in Nepal.

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December 2011

Acknowledgements

We acknowledge the support of the following who provided research assistance to the study.

James Antwi
Stephen Buzuzi
Pamela Chandiwana
Amjad Chaudhry
Yotamu Chirwa
Nadia Cunden
Ijeoma Edoka
Elvis Gama
Roshan Karn
Yatta Kosia
Wilson Mashange
Malvern Munjoma
Tuan Nguyen
Caroline Phiri
Mr Sabin Sharma

We would also like to thank the Department for International Development for funding the study and providing help with requests for access to data.

Abbreviations

AA	Anaesthesia Assistant
ADHA	Additional Duty Hour Allowance
ANC	Antenatal care
ANM	Auxiliary Nurse Midwives
ART	Antiretroviral therapy
ARV	Antiretroviral
BEOC	Basic Emergency Obstetric Care
CEOC	Comprehensive Emergency Obstetric Care
CHC	Community Health Centre
CHO	Community Health Officer
CHP	Community Health Post
CI	Concentration Index
CMS	Central Medical Stores
CSO	Central Statistics Office
DEP	Delivery Exemption Policy
DHMIS	District Health Management Information System
DHMT	District Health Management Team
DHS	Demographic and Health Survey
DMS	District Medical Stores
DOTS	Directly Observed Treatment Short course
DRC	Democratic Republic of Congo
EHCS	Essential Health Care Services
EMoC	Emergency Obstetric Care
FCHV	Family and Child Health Volunteers
FGD	Focus Group Discussion
FHCP	Free Health Care Policy
GLSS	Ghana Living Standards Survey
GNI	Gross National Income
GoN	Government of Nepal
GoSL	Government of Sierra Leone
GPRS	Growth and Poverty Reduction Strategy
HDI	Human Development Index
HFMC	Health Facility Management Committee

HIB	Health Information Bulletin
HIPC	Highly Indebted Poor Country
HMIS	Health Management Information System
HP	Health Post
HR	Human Resources
HRH	Human Resources for Health
HRHSP	Human Resources for Health Strategic Plan
HSB	Health Service Board
IGF	Internally Generated Funds
IMF	International Monetary Fund
KI	Key Informants
LCMS	Living Conditions Measurement Survey
LI	Legislative Instrument
LSHTM	London School of Hygiene and Tropical Medicine
MCH	Maternal and Child Health
MCHP	Mother and Child Health Post
MDG	Millennium Development Goal
MDGP	Medical Doctor - General Practice
MIS	Maternity Incentives Scheme
MMR	Maternal Mortality Ratio
MoH	Ministry of Health
MoHCW	Ministry of Health & Child Welfare
MoHP	Ministry of Health and Population
MOHS	Ministry of Health and Sanitation
MPS	Making Pregnancy Safer
NHA	National Health Accounts
NHIA	National Health Insurance Authority
NHIS	National Health Information System
NHSSP	National Health Sector Strategic Plan
NLSS	Nepal Living Standards Survey
NPC	National Pharmaceutical Company
OPD	Out patient department
OPM	Oxford Policy Management
PBF	Performance Based Financing
PHCC	Primary Health Care Centre

PHU	Peripheral Health Unit
PM	Professional Midwife
PMB	Provincial Medial Bureau
PMTCT	Prevention of Mother to Child Transmission
PNC	Postnatal Care
PRSP	Poverty reduction Strategy Paper
RMNH	Reproductive, Maternal and Neonatal Health
RoSL	Republic of Sierra Leone
SBA	Skilled Birth Attendance/Skilled Birth Attendant
SDIP	Safe Delivery Incentive Program
SHP	Sub-Health Post
SSNIT	Social Security and National Insurance Trust
SWAp	Sector Wide Approach
TB	Tuberculosis
TBA	Traditional birth attendant
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organisation
ZIMSTATS	Zimbabwe National Statistics Agency

1. Introduction

A paradigm shift in global health policy regarding user fees has been evident in the last decade with a growing consensus that user fees are regressive and undermine equitable access to essential health services (Yates, 2009). In particular, a concern that pregnant women and children under five are negatively affected by such financial barriers has prompted many low and middle income countries to reconsider levying user charges by ensuring either more thorough implementation of exemption or waiver mechanisms, significant reduction in fee levels or their abolition altogether (Campbell et al. 2010; Witter 2010). Such a policy shift will undoubtedly have consequences for the health system across a number of dimensions, including the search for replacement revenue and ensuring quality in responding to the changes in utilization, reflecting increased numbers and patterns of utilization (Yates 2009; UNICEF 2009). Both of these anticipated consequences raise specific concerns for human resources for health (HRH), yet this issue has been frequently overlooked until recently. Campbell et al. (2011) suggest that demand side support, ensuring that access is no longer constrained by payment for services, requires balance with support for the supply side in terms of capacity and quality of care. This research responds to this concern.

The objective of this research is:

To determine the associations and interrelationships between workforce characteristics (stock, distribution, competencies and motivational state) and equitable access to Reproductive Maternal and Newborn Health (RMNH) services resulting from the removal of, or exemption from user fees.

We aimed to answer the following research questions:

i. In priority countries, what is the evidence on the impact of fees, exemptions and fee removal on HRH; and of HRH characteristics on the impact of fees, exemptions and fee removal.

In each of Sierra Leone, Zimbabwe, Zambia, Nepal and Ghana and where possible, before and after a change in user fee policy:

ii. What is the distribution and skill mix of the RMNH workforce?
iii. What is the workload managed by the RMNH workforce
iv. What data are available about the remuneration and terms and conditions (including deployment procedure)?
v. What are the projected needs for RMNH workforce given standard estimates of capacity per FTE by cadre?
vi. What plans are in place to improve RMNH workforce capacity both quantitatively, qualitatively and with respect to geographical distribution?
vii. What formal fees exist for RMNH services?
viii. Where are revenues from formal fees retained and how are they used?
ix. What exemption policies exist and how are they applied?
x. What evidence is available of the demand suppression effect of formal fees?
xi. What are the policy implications of the evidence from questions (i) to (viii)?

2. Methodology

This study consisted of the following components:

1. Literature review

We undertook a review of the current literature on the removal of, exemption from or waivers of user fees in low and middle income countries in relation to Reproductive, Maternal and Newborn Health (RMNH) and the consequences for human resources for health working in RMNH. First, to be included, studies had to address either the removal of user charges or the application of exemptions and/or waivers in order to facilitate access to Reproductive, Maternal and Newborn health (RMNH) services in low and middle income countries. The user fee, exemption and waiver mechanisms at national, provincial, district level were explored. The second criterion for inclusion was consideration of the effect of these financing instruments on RMNH health personnel, including cadres of skilled birth attendants including nurses, midwives, doctors and clinical officers and the paramedical, support and ancillary staff.

2. Desk based data analysis and document review

Access to data sets held by Ministries of Health, Central Statistical Offices and similar was secured along with policy and planning documents, through the recruitment of local collaborators in a position to access these. Grey literature was located by web search and by contacting relevant local agencies.

3. Field studies

Field studies were undertaken in two countries (Sierra Leone and Zimbabwe) to gain more in depth understanding in both HRH and financing domains. In Sierra Leone, the time was spent accessing documents and secondary data and seeking clarifications in relation to data that appeared inconsistent. Data quality was poor, and there remain considerable gaps in what we were able to collect. As a result of the time taken addressing these issues, further field work was not conducted outside Freetown.

In Zimbabwe, in addition to accessing documents and secondary data, key informant interviews (KII) were carried out with a selected number of experts and practitioners in RMNH in Harare and one field site. Bindura was selected as the research district because of its proximity to Harare and the fact that it contains a variety of communities, including mining and farming and new resettlement areas. A semi-structured questionnaire was drawn up for the KII. The selection of the experts and practitioners was purposive and 13 interviews were conducted in total.

We originally intended to undertake telephone interviews in three countries (Zambia, Nepal and Ghana) with key informants but replaced this part of our methodology with the recruitment of key informants as team members in each of these countries and directed questions of clarification and supplementary information to them instead.

3. Global evidence on inter-relationships between HRH and user fees

In the mid 1980s, many low and middle income countries (LMICs) were encouraged to introduce user fees as a response to declining national health budgets. User fees were presented as a means of cost recovery of public health expenditure, as well as enhancing efficiency and equity (Yates, 2009; McPake 1993). The Bamako Initiative, put into action by African Ministers of Health, followed on closely in 1987. It included user fees among its instruments, amid assertions that it would produce quality improvements in services through the local retention of generated revenue (UNICEF 2009; McPake 1993).

However, after more than two decades of global user fee experience, these objectives have been rigorously critiqued (Gilson and McIntyre 2005; Witter 2005; James et al. 2006). In particular, it was widely observed that the utilisation of services had an inverse relationship with user fees (Abdu, et al. 2004; Pearson 2004; Mubyazi, et al. 2006). As the regressive nature of user fees has come under close scrutiny (Yates 2009; Gilson and McIntyre 2005; WHO 2008), many countries, such as Burkina Faso, Ghana, Nepal, South Africa and Uganda, have taken steps to either reduce or abolish user fees in their health facilities or to apply exemptions or waivers from fees for specific groups or services more consistently (Meesen et al. 2009; Witter et al. 2011; Ridde and Haddad 2009).

The slow progress in reducing the high levels of maternal and neonatal deaths in low income countries has led to a renewed commitment to improve provision and access to reproductive, maternal and newborn health services (RMNH) (Yates 2009). At least three-quarters of neonatal deaths and a similar proportion of maternal deaths occur outside hospital (Hofmeyr et al. 2009). Progress in MDG5 is clearly of concern given these figures, but progress in MDG 4 is significantly affected by the continuing high level of neonatal deaths, which was 42% of under-5 deaths in 2008 compared to 37% of under-5 deaths in 2000" (Lawn et al. 2009a).

User fees are cited as a considerable financial barrier to women's care-seeking during and following their pregnancy. In a study of DHS data from 41 countries undertaken by Lee et al. (2009), "the most common obstacles to seeking obstetric care included financial barriers (>50%), challenges with transport (37%), and distance (37%)" (p. 567) to a health facility. Witter et al. (2007a) reported that, in Ghana, before the delivery fee exemption policy began in 2003, pregnant women would be required to pay "an average of $12 for vaginal deliveries in public hospitals…while caesareans cost an average of $68" (p. 2). As the movement to eliminate fees for maternal health services appears to be gathering momentum across low income countries, the financial barrier presented by fees is being reduced even though other costs continue. A long list of countries including Benin, Burkina Faso, Burundi, Cameroon, Ethiopia, Ghana, Kenya, Liberia, Mali, Nepal, Niger, Senegal, South Africa, Sudan, Uganda and Zambia have pursued fee removal or exemption policies for delivery care and/or caesarean section.

Several studies note an immediate positive impact on utilisation of services for delivery care (El Khoury et al. 2011; Witter et al. 2010; Meesen et al. 2009; Altaras 2009; Yates 2009; Witter et al.

2007b; Burnham et al. 2004) and, in some cases, show that "service usage increases more within poorer quintiles than richer quintiles when such fees are abolished" (UNICEF 2009:11).

Most studies reviewing utilisation following the abolition of user charges for deliveries and other related maternity care have observed a rise in assisted deliveries and caesarean sections at health facilities (Meesen et al. 2009; Penfold et al. 2007; McIntyre et al. 2005). In Ghana, Witter et al. (2007b) noted a 12% increase in women delivering at facilities in two districts, while in Haiti, the access of women to maternal health services increased as a result of both the full fee removal and partial exemptions/reduced fee policies piloted by an international NGO from 2006 in several regions (Altaras 2009). In Senegal facility-based deliveries rose rom 40% to 44% of expected deliveries over 2004-5 caesarean section rates increased from 4.2% in 2004 to 5.6% in 2005 (Witter 2010). In Mali, both institutional deliveries and caesarean section rates increased following fee removal for caesarean sections in public hospitals in 2005 (El Khoury et al. 2011).

Campbell et al. (2011), however, present another perspective in acknowledging the challenges now presented by fee removal: "what is the net benefit of increasing access to 'free' health services if there is no qualified health worker available to provide care, or where you may queue all day only to be afforded an ineffectual consultation which undermines respect, trust, privacy and confidentiality? Such are the realities in many low-income countries, particularly in rural and remote areas, where health workers are drastically in short supply, and often over-burdened and／or under-resourced" (p.1). Lee et al. (2009) concur arguing that "strategies to increase demand for services need to be accompanied by actions to ensure the supply side can cope with the increased demand" (p.114).

Recent reviews of the growing trend to abolish or suspend user fees highlight that for these policies to be effective careful planning of the supply side response to the stimulated demand has to take place (UNICEF 2009:14). Studies by Meesen et al. (2011), McPake et. al (2011), Ridde and Morestin (2011), Witter et al. (2009, 2007b), and Gilson and McIntyre (2005) have sought to identify critical lessons that could guide the process of planning and implementing fee removal, including the need for strong leadership, a rigorous situation analysis, setting clear priorities and objectives, involve and communicate with relevant stakeholders particularly the workforce, and monitoring and evaluation. McPake et al. (2011) propose a process for the estimation of additional requirements for human resources and drugs, and mobilization of additional financial resources. Witter et al. (2009) add three more pragmatic lessons: "facilities must be adequately… reimbursed for their costs; staff must be motivated to provide appropriate care to all; and attention should be paid to improving quality of care" (2009:3-4).

The literature review conducted for this research examined to what extent studies on fee removal, exemption or waivers have addressed 1) the use of fee revenue particularly at sub-national level; 2) reported impact of increased utilisation of RMNH services on staff, including the implications of lost fee revenue for human resources at district facilities and replacement strategies; and 3) capacity of staff to provide quality RMNH care.

1) Use of fee revenue for human resources at district facilities

The literature generally underplays the important contribution of fee revenue at facility level (McPake et al., 2011). In Senegal, for example, at the higher levels of the system, user fees made up 37% of the revenue of the regional hospital and 43% of the Centres de Santes, whereas the health post (Poste de Santes) "derived most of their income from user fees (95-96%)" (Witter et al. 2010: 388). In situations where fee revenue was retained by the district or sub-district facility, it also allowed some autonomy and flexibility for the district health management team or the Health Centre in-charge to respond to gaps in funding (Steinhardt et al. 2011). Such discretionary funding would often supplement low salaries, cover delays in receiving salaries or cover the costs of community or support staff (Cheelo et al. 2010; Steinhardt et al. 2011; Witter et al. 2010; Ssengooba et al. 2007; Burnham et al. 2004).

Supplementing staff salaries was a common use of fee revenue. Before the abolition of fees for all primary care services in Uganda in 2001, fee revenue had routinely been used to supplement low staff salaries (Ssengooba 2007; Burnham et al. 2004);. In Zambia, for example, prior to the abolition of user fees in 2006-7, several district level innovations for locally retained fee revenue were noted by Cheelo et al. (2010) at different facilities including staff bonuses; contracting additional staff and overtime allowances. In Burkina Faso, RMNH staff received 20% of the delivery fee, which was based on a sliding scale depending on level of complication (Meesen et al. 2009). Several studies (for example, Kipp et al. 2001) also describe the important role such incentives had on staff motivation.

Often technical and community support staff received wages or small bonuses: in Afghanistan (Steinhardt et al. 2011), Uganda (Nabyonga-Orem et al. 2008) and Zambia (Cheelo et al. 2010), community health workers (CHWs) or other community workers were frequently paid allowances from fee revenue. In Senegal, the *matrones* who performed normal deliveries and the stretcher bearers working at the *Cases de Sante* were paid out of general facility revenue plus a share of delivery fees (Witter et al. 2010).

2) Impact of increased utilisation of RMNH services on staff

Increases in utilisation lead to increases in staff workloads if there is no additional recruitment. In several countries this was anticipated with a concomitant rise in salary, in other countries a lack of preparation and planning compounded the problem of staff shortages and difficulties with rural allocation and retention leading to significant low morale.

Most studies reported that health staff considered their workload to have increased since the new policies on fee removal or exemptions commenced (Steinhardt et al. 2011; Nimpagaritse and Bertone 2011; Meesen, 2009; McIntyre et al. 2005; Walker and Gilson 2004; Burnham et al. 2004). Burnham et al. (2004) reported that the workload for health workers increased by an average of 47% in Uganda. In Zambia, health workers complained that patients were making unnecessary use of the health centre now that they no longer paid a fee, thus adding to their workload. Witter et al. report that at district level, deliveries per midwife per month ranged between 12 to 125. A 33% increase in workload was observed in one year: "the average increased from 53 per month in 2004 to 73 in 2005" (ibid: 389).

Concomitant with increased workload, various studies report declining morale - in Burundi (Nimpagaritse and Bertone 2011), South Africa (McIntyre et al. 2005), and Uganda (Burnham et al. 2004). In Zambia, although a separate policy from fee removal, "rural hardship allowances were also scrapped, which has demotivated rural health workers" Cheelo (2010:26); other non-monetary incentives such as transport and lunch allowances for outreach were no longer possible. Just under 41% of the health workers in Uganda said they had a 'negative attitude' towards their work following the removal of user fees (Burnham et al. 2004).

With the implementation of fee removal or exemption for delivery services, the loss of discretionary funds might be reimbursed in some form of payment or compensation by the government but, if not, or if insufficient to fully replace the fee revenue, facility staff would need to institute their own form of coping strategies or forego the expenditure. In both Zambia (Cheelo et al. 2010; Masiye et al. 2010) and Uganda (Nabyonga Orem et al. 2011; Xu et al. 2006; Yates et al. 2006), additional funding was released by the Ministries of Health to the districts to compensate for loss of revenue. In Uganda, according to Nabyonga-Orem et al. (2011), flexibility in how these funds were to be used was allowed although Ssengooba et al. (2007) suggest that the additional funds did not directly compensate staff. In Zambia, few guidelines were provided by the Ministry of Health about what the 'user fee replacement grants' could be used for (Cheelo et al. 2010), whereas in Uganda, measures taken included a financial transfer specifically directed to drug purchases. Compensation appears to have been more successful in Uganda than in Zambia.

Loss of financial autonomy provided by user fees has been regretted in a number of countries including Burundi. Before the introduction of free health services for children under 5 and free deliveries in 2006, hospitals retained all user fees and were expected to be relatively self-sufficient (Nimpagaritse and Bertone 2011). Following the abolition of fees for these services, delays in reimbursement affected hospital and health centre functioning as they now could not pay for their own supplies. Complicated administrative arrangements were also introduced for user registration which further added to staff workloads (ibid.). In Burkina Faso, the 20% bonus formerly received by RMNH staff for deliveries from the user fee was retained in a cash payment for all related delivery costs based on a centrally determined lump sum; with no guidance on how to calculate from which price they should take the 20% from the Ministry of Health payment, health centres throughout the country developed their own calculation (Ridde et al. 2011; Meesen et al. 2009).

In Nepal and Burkina Faso, reimbursement tariffs were decided centrally by the Ministry of Health. Nepal's national free delivery policy (see below), has retained incentive payments to health workers of the earlier scheme as well as the cash payment to women who choose to deliver in health facilities (Witter et al. 2011). The tariffs in Nepal varied according to facility type and degree of obstetric complication (Witter et al. 2011), however some flexibility appears to be possible, with modifications by geographical region and by cadre. Witter et al. note that there appears to be significant variety in who receives the incentive payment: "sometimes just to the nurses, sometimes to a range of staff including support staff and administrators," other times "to fund additional support staff positions" (2011:89).

In Niger, the additional administrative and clinical workload experienced by health workers created by increased utilisation was acknowledged and a payment of a monthly bonus ($45) supplemented their salary ($140) (Ridde and Diarra 2009).

Community and support staff often had to be made redundant once facilities no longer had discretionary funds from fee revenue. This occurred in Uganda (Nabyonga-Orem et al. 2008). Some of the *Cases de Santes* community staff in Senegal were given a fixed monthly allowance – which for some represented an increase, while others received a decrease (Witter et al. 2010). Witter and Diadhiou (2008) suggest this was possible by increasing the charges for other services, "cross-subsidising from other sources, reducing investment, and/or soliciting more local government support" (p.101).

3) Capacity of staff to provide quality RMNH care

In countries including Zambia and Uganda, some planning to address the impact on staff of growing workload occurred although there are likely to have been net gainers and losers in Zambia and measures taken were seen by some as unreliable and inconsistent (Cheelo et al., 2010). In Uganda, wages for health workers were increased following fee removal by 14-63% across different cadres; payroll management was also improved to assure more timely salary payment (Nabyongo Orem et al. 2008).

Following the removal of fees in the rural areas for primary care, including deliveries, in Zambia, staff workload was considerably higher in rural than urban areas (where fees remain), with a 'spike' in the workload of rural staff in the first two quarters of 2006 following fee removal (Masiye et al. 2008:12) followed by a gradual increase from the third quarter, thus worsening relative rural-urban inequities of workload.

Nabyonga Orem et al. (2008) suggests a 'human resource crisis' in some centres resulted from fee removal in Uganda; however, they note that health facilities were able to accelerate the recruitment of health workers although it is not clear the source of funds that facilitated this. A later analysis by Nabyonga-Orem et al. (2011) cites increased recruitment to establishment posts, similar to Zambia in which 1300, mainly nurses, were recruited (Masiye et al. 2010).

Very few studies identified the cadres affected by fee removal or exemptions. Witter et al. (2010) cite a shortage of midwives in Senegal and in Nepal, however the staff noted to be associated with delivery care in Nepal "remained stable or increased during period of the study" (Witter et al. 2011: 89), but not directly related to user fee policy.

While Hoope-Bender et al. (2006) argue that "most primary health care (PHC) frontline workers are not sufficiently skilled to deliver a minimum MNH service package" (p. 230), others are more hopeful that a process of careful planning for task shifting could produce sufficient skills in lower cadres to meet the need, including caesarean sections (Lawn et al. 2009b).

Finally, the life chances of a woman during pregnancy and when giving birth are closely intertwined with her child. The need for a combined strategy is essential: while MDG 5 is the only goal with a specified professional as its indicator, i.e. the proportion of births attended by skilled health personnel, it is often the same health worker(s) who cares for both mother and newborn. Unfortunately, there was no mention of newborn health or postpartum complications in any of the studies reviewed. As Lawn et al. (2009a) note "postnatal care is also a critical, yet neglected, gap in

low- and middle-income countries, and coverage is even lower than skilled birth attendance and much lower than prenatal care" (p S12).

4. HRH and user fees policies and plans in case study countries

Ghana

Ghana has been selected as a case study for this research as it has actively engaged in a number of policy reforms in recent years to increase the financial accessibility of reproductive, maternal and neonatal care. In 2004, exemptions were introduced for delivery care, first in five regions and then across the country. This policy was later superseded, in 2008, by free coverage of all pregnant women within the National Health Insurance Scheme (NHIS), which had started in 2005. While the first phase has been relatively thoroughly evaluated, there is less understanding about the impact of the recent NHIS reforms in terms of access to RMNH services. Ghana has also faced a number of challenges in relation to HRH, not least caused by its high level of medical training, links to European markets and consequent brain drain of doctors and nurses. In addition, retaining qualified medical staff and specialists in rural areas remains a challenge, despite recent improvements to public sector pay.

Ghana has made significant progress in health outcomes: infant mortality has reduced (from 77 in 1988 to 50 in 2008), and fertility rates have come down (from 6.4 in 1988 to 4 in 2008) (DHS figures). However, much targeted effort is required to ensure maternal health outcomes in particular are improved. Maternal mortality remains high, though it has declined in the past two decades from 740 per 100,000 live births in 1990 to 451 in 2008. HIV prevalence amongst pregnant women has dropped slightly from 3.2% in 2006 to 2.9% in 2009, while family planning acceptor rates have been climbing (from 25% in 2006 to 31% in 2009). ANC coverage remains high at around 92% in 2009. Skilled deliveries have remained fairly constant, at around 45% in 2006-9 (though with annual fluctuations). Roughly half of women receive post-natal care (56% in 2009) (GHS 2010). Despite progress, Ghana is still off track on both MDG4 and MDG5.

Human resource policy

After independence, Ghana's main human resource policy focus was to build training capacity and increase the supply of health professionals. In 1987, significant investment was made in training of 12,000 Traditional Birth Attendants (TBAs) (including for family planning), and Community Clinic Assistants (CCAs). A 5 year programme of work launched in 1996 had a major human resource component which sought to introduce comprehensive payments systems and conditions of service (Ministry of Health, 1996).

Ghana lost 1,300 doctors to emigration between 1990 and 2000 (Awases et al., 2004). The government response was to focus on task shifting, training community health nurses and augmenting the role of professional nurses and to 'bond' certain health professionals post- training – requiring minimum service in the public sector as a condition of graduation (Dovlo, 1997). In 2002, a 5 year human resources for health policy focused primarily on increasing equity in the distribution of health workers and in 2004, the deprived area incentives scheme was introduced, funded through HPIC and augmenting salaries in 55 districts by between 20 and 25%.

By 1998, doctors lobbying and strike activity secured the agreement of the Additional Daily Hours Allowance which effectively doubled their salaries. This was consolidated into the salary scale in 2006 at which time other health professionals also secured large pay increases. However, even by 2005, salaries and wages were consuming 97% of total government expenditure on health (Ministry of Health, 2007), casting doubt on the sustainability of the pay levels in operation.

From 2006-7 there was also significant investment in training: a 50% increase in intake to health training institutions (for mid-level professionals) and 20% to medical, nursing and pharmacy schools. Direct entry to midwifery and medical assistant training from school was enabled, replacing these courses only available on completion of basic nursing training. Six new schools for training health assistants were established in 2006, with an initial intake of 400 health assistants (Ministry of Health, 2007).

In 2007, a new strategic framework for HRH recognised that the imminent retirement of the 34% of the health workforce, mainly midwives, medical assistants, enrolled nurses and medical assistants constituted a significant threat to rural health provision (Ministry of Health, 2007).

User fee policy

User fees at public health facilities in Ghana were abolished at independence in 1957, but reintroduced in 1969 and increased in 1985, as part of a structural adjustment package and in response to declining government budgets. After the Hospital Fees Legislation of 1985 and the 'cash and carry' policy introduced in 1992, patients paid in part for consultations and tests and in full for drugs. The fees were to be graduated, increasing from rural health centres through to teaching hospitals and distinguishing between rural and urban areas as well as adults and children (Coleman 1997). Although the user fees were initially paid into a central fund, this was soon altered so that facilities retained the revenue, divided into drug funds (to purchase replacement drugs) and other user fees (to be used at the discretion of the in-charge, to improve the quality of services).

Studies from the mid-1980s onwards showed that exemptions were not effective and were largely allocated to health staff, and that informal payments were common. Decentralisation contributed to local variation in implementation practice so that 4 types of fees applied: for drugs ('cash and carry'); nationally sanctioned; locally sanctioned and informal. 65-80% of the non-salary operating budgets of government health facilities and almost all of mission hospitals relied on fees (Coleman, 1997; Garshong et al., 2001; Nyonator and Kutzin, 1999; Nyonator et al., 2006).

The delivery exemption policy was introduced in 2003 in 4 districts and extended nationwide in 2004. The impetus for this initiative was recognition of the problems of fees. 70% of Ghana Living Standards Survey respondents cited cost as the reason for low use of health facilities (World Bank, 1999). The maternal mortality rate remained high and the rate of supervised deliveries remained low. Only 15% of women in the poorest socio-economic quintile received both ANC and delivery care compared to 90% in the richest quintile. The policy exempted women from fees for delivery (for normal and surgical deliveries and for management of the complications arising from delivery) in 4 districts. Funds were to be claimed retrospectively based on the number of exemptions granted from district assemblies, based on a tariff set according to procedure and facility type.

The delivery exemption policy in Ghana was under-funded, causing debts at facility level and intermittent implementation of the scheme (Witter & Adjei 2007). This was exacerbated by the rapid scaling up of the exemptions policy, which was extended from four poorer regions in 2004 to the whole country in 2005, before an evaluation of early results could be conducted. The inadequate funding flows created friction between communities and health staff and between facility managers and higher levels of the health system (Witter et al. 2009).

Superseding the delivery exemption policy, the NHIS was established by Act 650 in 2004 and designed as a mandatory health insurance system with risk pooling across districts. It was funded from members' contributions and a levy on the value-added tax (VAT) charged on goods and services, from which a broad minimum package of care could be funded (Witter & Garshong 2009).

Large population groups are entitled to free care and this was extended in July 2008 to all pregnant women. Coverage for pregnant women includes antenatal care, post natal care and delivery care, including all emergencies arising from delivery. In addition, the baby can benefit from the mother's registration for up to three months. Family planning is not included in the benefits package.

Early studies found evidence of similar problems with fund-flow to the delivery exemption programme, related to the design of the scheme and the system of transfers to district offices (Witter & Garshong 2009). However, membership has been growing, not least thanks to the large numbers of exempt members. In 2010, 72% of the population was registered, of which pregnant women formed just under 8%. However, the number of active members[1] is much lower, at 33% (NHIS presentation 2010).

Nepal

Nepal has introduced a variety of strategies to improve financial access to health care. Progress has been seen in terms of health indicators and reduced inequalities but Nepal faces a variety of challenges including difficult terrain, poor social inclusion of certain population groups, variability in population density, recent political instability, unequal development, and inadequate health funding. The public sector has struggled to maintain adequate staffing of safe delivery services, particularly in rural health facilities.

According to Demographic and Health Survey (DHS) data, the maternal mortality ratio declined from 539 in 1996 to 281 in 2006. This has been attributed to factors including a fall in fertility, legalisation of abortion (in 2002), increase in family planning acceptance, increases in ante-natal care and immunisation, and a three-fold increase in nurse-assisted deliveries in rural areas (Pant et al. 2008). Preliminary data from the 2011 DHS estimates neonatal mortality at 33 per 1,000, down from 45 per 1,000 in 2001. However, major challenges remain. Despite an increase in national rates of coverage, the overall proportion of women delivering with a skilled health professional remains low (36% according to preliminary data from the 2011 DHS, with 28% delivering in a health facility).

[1] Members who have gone beyond registration to purchase a card, and who are therefore entitled to benefits
[2] The 2006 National Essential Maternal and Neonatal Health Care Package is a third key document. It defines the Essential Maternal and Neonatal Care Services for Nepal.
[3] General medical practitioners
[4] http://allafrica.com/stories/201111010110.html

Human resource policy

Safe Motherhood Programme managers recognise that the current government health workforce is inadequate to reach the desired levels of improvement in access (RTI International 2008). Most Auxiliary Nurse Midwives (ANMs), staff nurses and doctors lack SBA skills. The 2003-2017 Strategic Plan for Human Resources projected a 71% increase in the public sector workforce by 2017. The *2006 National Policy on Skilled Birth Attendants* and the *National In-Service Training Strategy for Skilled Birth Attendants 2006-2012*[2] support the plan and stress the importance of increasing the number of SBA competent health providers. However, public and private medical schools and training programmes produce substantial numbers of graduates every year. The root cause of the staffing problem with these cadres (and others) is the inability of the government to attract and retain sufficient numbers of trained staff in the publicly funded health system (RTI International 2008).

The National SBA Policy defines who can be considered a Skilled Birth Attendant in Nepal. It lists the core competencies required of all SBAs and the advanced competencies of selected SBA categories. Measures to improve the workforce are identified including training and SBA certification (as appropriate) for ANMs, staff nurses, and doctors working in Basic Emergency Obstetric Care sites; advanced SBA training for doctors working in Comprehensive Emergency Obstetric Care sites and post-basic midwifery training for all staff nurses working in Primary Health Care Centres and maternity units of district hospitals.

The majority of sanctioned posts for ANMs in rural facilities are filled but there are shortages of staff nurses at the PHCC district hospital levels. Medical officers in district hospitals are adequate in number but are largely freshly graduated on scholarship bonds, lack caesarean section skills and tend not to remain in government service after receiving their full license. Specialist doctors - obstetrician/gynaecologists, anaesthesiologists and MDGPs[3] - are in overall short supply and many have emigrated. The number of physicians per 100,000 population declined from 5.3 in 2001-02 to 5.1 in 2006-07 (RTI International, 2010) and physician availability in public health institutions is particularly low in the mid-Western Region. Many hospitals lack a complete caesarean section team and ultrasound skills are also in short supply.

Issues related to the lack of career ladder and further study and promotion possibilities are now a severe deterrent for MDGPs. Lack of staff housing, continuing education opportunities and communication emerged as particular important de-motivating factors for health workers in rural areas. Overall, there is a lack of a functioning human resource management system and skills at every level of the government health system.

User fee policy

The Interim Constitution of Nepal in 2007 stated that every citizen has the right to access basic health services. Initially, the Government of Nepal provided emergency and inpatient services free of charge to poor, destitute, disabled, senior citizens and Female Community Health Volunteers

[2] The 2006 National Essential Maternal and Neonatal Health Care Package is a third key document. It defines the Essential Maternal and Neonatal Care Services for Nepal.
[3] General medical practitioners

(FCHVs) in district hospitals (of up to 25 beds) and PHCCs. From mid-January 2008, free care for all citizens at primary level across the country was added. From mid-January 2009, all services at district hospitals (of up to 25 beds) were declared free for targeted groups, but with listed essential drugs available freely for all citizens. These policies added to the existing public health activities, for which users were not charged at point of service, and have since been augmented by fee removal for other specific services within a list of Essential Health Care Services (EHCS). In essence therefore, all citizens across the country now have free access to primary care (treatment and drugs), with some targeted groups also benefiting from protection for secondary care costs.

For deliveries, in November 2008, the GoN declared under the new Aama policy that institutional deliveries in all public facilities and some private ones would be free to all, with government reimbursements to providers. The policy started from January 2009. However, abortion services are charged for. Under the Aama programme, health facilities are reimbursed according to monthly activities, with a fixed tariff according to delivery and facility type. These tariffs are intended to cover the cost of all required drugs, supplies, instruments, and a small incentive to health workers.

The Department of Health Services (DoHS) allocates funds to the districts on the basis of the estimated number of institutional and home-based deliveries attended by skilled health workers. The Health Facility Management Committee (HFMC) formed at each health facility puts in monthly claims for reimbursements to their District (Public) Health Office (D(P)HO, using customised forms.

The Aama programme now covers institutions in both public and not-for-profit private sectors and intends to expand to the for-profit private sector as public sector capacity for emergency obstetric care is insufficient.

In addition to the services which are offered without user fees to all or specified groups, there is a fund for assistance with secondary and tertiary costs, which is focussed on those who are destitute or poor, but also those requiring chronic and high-cost treatment (Witter & Prasai 2010). Districts request funds according to their need; however, the budget is not sufficient to meet all requests. Hospitals are also required to set aside some sums to help people who are unable to afford to pay. According to a field report, about one third gets free or partially free care in referral hospitals (Witter & Prasai 2010).

Demand-side finance arrangements for different patient groups have also been proliferating in Nepal. Under the Aama programme, women who have institutional deliveries have received financial compensation since 2005. Since 2009, all service costs are removed for all women in all areas of the country. Recent reports suggest that 90% of women received incentives for institutional deliveries (DoHS, 2009). Further incentives are paid to women who complete their 4th ANC visit, on completion of 3 PNC visits (since 2009) and for seeking care for prolapsed uterus after diagnosis of this condition. Additional incentives apply for other situations including for PMTCT, transport costs and there are in-kind nutrition benefits for pregnant women and infants in some zones. Anecdotally, there has been a large response, but also concerns about fraud, as the ANC card is easily reproduced.

There are also a number of incentive payments for providers including, under the Aama programme, payments per delivery at a health facility (although inconsistent implementation of this was found by Witter et al. 2011); per attended delivery at home; per sterilisations; per repair of prolapsed uterus;

and two initiatives are being piloted: a pay-for performance approach to motivating staff to stay in rural areas; and payments to FCHVs if they bring clients to 4 ANC check-ups, institutional delivery and to attend PNC. In a study, some key informants expressed concern about perverse incentives and demotivating effects on other (non-rewarded) health workers (Witter & Prasai 2010).

Sierra Leone

Sierra Leone has some of the worst maternal and child mortality statistics in the world with 857 maternal deaths per 100,000 live births and 140 child deaths per 1,000 live births, according to the DHS 2008. The second Sierra Leone Poverty Reduction Strategy Paper (PRSP II: 2008-2012), *Agenda for Change*, identified as a priority the need to address high levels of child and maternal mortality and morbidity. This led to the development of the Health Sector Strategic Plan 2010-2015, the introduction of a Basic Package of Essential Health Services and concern to reduce the financial barriers to seeking care. The government decided to remove user fees for some elements of the Basic Package, specifically reproductive, maternal and child health care services, launched as the Free Health Care Policy (FHCP) on 27 April 2010. Under the FHCP, pregnant and lactating women and children under five are treated in public facilities free of charge.

Human resource policy

HRH was one of six 'pillars' of the *National Health Sector Strategic Plan (NHSSP) 2010-2015*, which recognises the extent of staff shortages in the country (ranging from 40-100% of the required staff by cadre) and the level of maldistribution of human resources in the country. The problems of the concentration of midwives in the Western region of the country, and the reliance of the rest of the country on MCH aides, insufficiently equipped to provide services above community level, are specifically recognised in the plan. The main issues and challenges to which the plan responds include lack of incentives, especially for hard to reach areas; poor career development and cumbersome and bureaucratic recruitment processes, making it hard to attract and retain health workers. Additional problems identified include poor conditions of service and low motivation, weak HR planning and management systems, and weak capacity in the county's HRH training institutions.

A health sector performance review evaluated progress with the implementation of the NHSSP in 2010 against its strategic objectives. The objectives were:

- Provide and maintain a policy and strategic framework to guide HR development and management
- Strengthen institutional capacity for HR policy, planning and management
- Enhance capacity and relevance for training of health workers in partnership with other stakeholders
- Upgrade and enhance competencies and performance of health workers
- Promote research into HRH interventions to provide evidence-based information for the improvement of service delivery

The review suggests that after one year, steps have been put in place towards implementing the components of the plan. Among elements at least partially achieved are the putting in place of the policy and plan, and the revision of the salary structure for the whole health workforce, although the

implementation of a remote area allowance has taken lower priority. Training has been scaled up in some areas and performance based financing has been established at primary care level under which each Local Council together with the DHMT signs an agreement - 'Tripartite Performance Based Financing (PBF) Agreement' - with each service provider (health facility) for provision of the PBF interventions. This specifically targets six reproductive, maternal, neonatal and child health service activities including family planning, antennal care, safe delivery and post natal care. The PBF agreement specifies the quantity and quality indicators, the formula on which PBF payments will be based and procedures for supervision, verification and dispute resolution. In addition, a payroll cleansing exercise in 2010 helped address human resource irregularities such as ghost employees (Amnesty International, 2011).

The revision of the salary structure, the 'salary uplift' scheme, has perhaps been the most significant development. The salary increase applies to all health technical and clinical staff. It does not apply to administrative or support staff but the intention is that their salaries will be reviewed as part of the wider Public Sector Pay Reform. All standard allowances have been consolidated into basic pay. The salary increases for technical health workers do not appear to have been based on any evidence of the pay levels needed to recruit and retain staff and are significantly greater for doctors than for other health professionals, which does not reflect relative scarcity. Alongside the increase in pay for health workers, a recruitment drive was initiated. However, in the very short timescale in which this took place, a fast track hiring process had to be introduced and most of the new health workers were volunteers in district hospitals and clinics.

DFID is largely financing the new salary structure but the plan is for the Government to generate or identify other funding sources. However, the Government is already over-committed. According to the Free Services Framework document (Government of Sierra Leone, 2009), the total cost of the FHCP in 2010 is $91 million, which already faces a funding gap of $20 million.

User fee policy

Following the Bamako Initiative, user fees were introduced in Sierra Leone as a means of strengthening district health systems, implementing primary health care self-financing mechanisms and encouraging social mobilization for community participation (GoSL, 2006). The cost recovery program was launched in Bo, Pujehun and Bombali in 1987. By 1990, the program was functional in all thirteen districts of the country.

Patients were required to pay for consultations, drugs and diagnostic tests. 'Vulnerable groups', were exempted but evidence suggests that exemption systems worked poorly. During the war (1991-2002), many districts became inaccessible to central government and the public health care system collapsed in much of the country. Humanitarian organisations continued to provide emergency care in some districts but most people resorted to private providers.

Provision of health services, including medicines, was free of charge for the first three years following restoration of peace but in 2002, the government made an attempt to re-introduce the medicines cost recovery scheme. However cost recovery targets proved incompatible with exemption policy. In most cases, it appears that the need to ensure continued cash flow to facilities

tended to override the notional requirement to exempt particular groups from payment (OPM, 2008).

A further cost recovery policy was introduced in 2006, developed alongside the National Health and Medicines Policy and a decentralised structure for the delivery of primary care. The aim was to recover 100% of the cost of medicines and to charge flat rates for other services. User fees were to be charged for all services provided at hospital level. Exemptions were to be determined by the Local Council, Hospital Boards and the community on a case by case basis. Antenatal care and treatment of children under five was to be levied at a flat rate minimal fee.

It is not clear whether this comprehensive and carefully designed system ever operated as intended. Most facilities did not receive regular drug supplies from the Central Medical Store after 2006. Many PHUs continued to employ their own cost recovery schemes, purchasing medicines from private sources, applying their own mark-up and then selling on to patients (OPM, 2008). Uniform guidance on fee levels across Sierra Leone does not appear to have been issued or, if so, to have been acted upon. A survey in 2006 found that charges varied considerably across the country (IRCBP, 2007). However, the 2006 cost recovery system is still important because, at least in theory, it remains in place for those services not covered by the Free Health Care Policy.

The FHCP introduced in April 2010 removed charges for health services for pregnant and lactating women and children under five, aiming to increase availability and utilisation of quality health care services. Liaqat and Ferry (2011) undertook an early review of the policy and found that overall it had been implemented effectively in Bombali district where they undertook fieldwork, and parents of under 5s understood that care should be free and had often been able to access care without charge. However there were gaps in implementation. Some charges were found to be in place, most notably for immunisation, insecticide treated bednets and some drugs, particularly injectable drugs. Some parents reported that free care was only available to children under 2, or that the policy had not been introduced until 6 months after its intended introduction.

Despite an overall positive evaluation of the early experience of the policy, a number of problems were reported in relation to policy impact and implementation. There was inconsistent evidence concerning the effect on drug availability which some respondents, both patients and health providers considered had worsened as utilisation increased, however others disagreed and it seems that complaints related mainly to the early phase of implementation. While workloads were considered to have increased by health workers, mostly they were satisfied that this was compensated for by improved pay, and was manageable. However volunteer workers who did not benefit from increased (or any) pay were an exception. Previously they had charged, for example for vaccinations and one volunteer vaccinator interviewed considered that he would no longer be able to continue, while the loss of volunteer health workers to the system was recognised by a wider range of health workers.

Zambia

The maternal mortality ratio (MMR) in Zambia has declined in recent years; however, it would need to drop another 45%, from its current level of 591 per 100,000 live births (DHS 2007), to reach the MDG target of a 75% reduction. The proportion of births attended by a skilled birth attendant has remained virtually constant for almost two decades. There is a similar situation with peri-natal

deaths, with a rate of between 30 and 40 deaths per 1,000 births over the last 15 years (DHS 1992, 1996, 2001/02, 2007).

A recent analysis examining the apparent contradiction between improvements in maternal outcome indicators and stagnation in utilisation indications found that there are strong urban-rural differences in access to services (Ensor et al. 2010). In rural areas maternal health utilisation appears to have deteriorated. Despite positive trends in contraceptive prevalence, fertility has increased whilst births with a skilled attendant and levels of surgical delivery have hardly changed. By contrast, in urban areas there has been a modest rise in skilled delivery, falling fertility and improved birth spacing. Treatment of maternal complications as reflected in caesarean section rates have increased substantially. De-urbanising trends across the country mean that the rural trends dominate the national picture.

Human resource policy

Zambia suffers from a significant shortage of human resources for health, particularly in clinical cadres and particularly of doctors. Factors contributing to low stocks include low production, low absorption capacity (in 2008 close to 40% of established posts were not funded) and labour market exit, particularly of doctors and premature death due to HIV/AIDS (Herbst et al., 2011). A recent survey (Picazo and Zhao 2009) found that high staff vacancies were crippling facility operations.

The overwhelming majority of health workers in Zambia work in the public sector (close to 80% in 2006) although the private sector is growing. The not-for-profit sector employs less than 20% of HRH, whereas the for-profit sector is extremely small, at less than 1% (Herbst et al., 2011).

The problem of maldistribution is pronounced for higher-level cadres and less acute for mid- or lower-level cadres (a larger proportion of health officers, for example, are located in rural areas). The rural incentive scheme may have improved desirability to work in a rural area for some cadres in recent years. Absenteeism is also particularly high among higher-level cadres, in the public sector, and in urban areas and has been blamed on inadequate management and accountability structures (Herbst et al., 2011; Picazo and Zhao, 2009).

Competency on delivery of key interventions such as antenatal care is low (Herbst et al., 2011) and there are high levels of dissatisfaction among staff. A plethora of cash and non-cash benefits that government has provided to ease the incentive problem have become unwieldy (Picazo and Zhao, 2009); and are undermined by salary management problems that afflict significant numbers of health workers: delay in the receipt of salaries; non-receipt of the full amount of salaries; unauthorized salary deductions; and staff payment of “expediter’s fee” to obtain salaries.

Current HRH strategies focus on stepping-up the training and recruitment of graduates and scaling-up of the Zambia Health Workers Retention Scheme (ZHWRS), which offers top-ups on salary to selected individuals in order to attract doctors and nurses to the most remote parts of the country. In addition, initiatives are underway to improve the performance of health workers through job descriptions and person-to-post matching, as well as the development of a HR information system to support planning, implementation and monitoring of interventions (Carasso et al. 2009).

User fee policy

Following a period of free services, user charges were introduced in Zambia in the beginning of the 1990s as part of a reform package (Government of the Republic of Zambia, 1991). A flat registration fee – which included payment for consultation and drugs – was set by districts in collaboration with health centre staff and neighbourhood health committees based on the ability to pay of the catchment population. All referral services to higher-level hospitals were provided free of charge when the patient presented a referral letter. Otherwise a by-pass fee was charged. According to the policy, children under 5 years and adults over 65 years of age, patients with chronic diseases and those affected by epidemics such as cholera, pregnant women and those "unable to pay" were officially exempt from paying fees. However, exemption from paying based on poverty-criteria was in reality poorly functioning (Gilson et al., 2000, Masiye, 2003).

The collected revenue was to be used to fund activities at the health facilities and communities in the catchment area, based on agreed health centre action plans. In addition, 10% of the income from user fees could be used for performance bonuses to staff in order to increase staff motivation and accountability.

In January 2006, the President of Zambia announced the abolition of user fees at health centres and level-1 hospitals in rural areas from April 1st 2006 onwards for all services in government and mission facilities. In May 2007, the scope of the reform was broadened and facilities located in outlying areas of urban districts were included as part of the user fees removal policy (Government of the Republic of Zambia, 2006c), and revised guidelines on the removal of user fees in government and mission health facilities in Zambia were published in May 2007 (Government of the Republic of Zambia, 2007a). This "second wave" of the policy officially took effect in June 2007. Charges for non-Zambians as well as 'by-pass fees' for those coming directly to the hospital without a referral letter were supposed to remain (LSHTM 2010a).

The guidelines state that loss of user fee revenue would be compensated through an earmarked monthly grant to the district which would then be passed on to the facilities, with the amount based on projected income and district action plans. In January 2006, the UK Department for International Development (DFID) confirmed a grant of £14.5m to support abolition of health user fees at public health facilities, to be disbursed over a period of 5 years (2006-2010) (Carasso et al. 2010).

The removal of the income from user fees created a gap in financing at the facility-level at a time when demand for services increased (Cheelo et al. 2010). Compensation supported by the DFID grant was received 8 months after fee removal, and only by some facilities. In many facilities, this led to the activities previously funded with fees being scaled back or discontinued. In addition, the guidelines for the use of this additional money were not well understood: many districts used it for capital expenditure such as infrastructure repairs instead of it being channelled to facilities to cover recurrent expenses like fuel, food or cleaning material previously paid for by fees (LSHTM 2010c).

Although there was a systematic increase in the proportion of patients who benefited from free care after the policy change, in none of the 54 rural districts did all patients obtain free care, and in some districts less than half of them did not have to pay (LSHTM 2010a) Similarly, the case studies showed a large variety in services provided free of charge. All facilities visited waived charges for consultation, but fees for other services varied widely. In some facilities, non-Zambians were seen

without having to pay, or no by-pass fees were charged. In others, charges still existed for the registration and lab tests, while it was unclear if patients should pay for admissions, surgery or ambulance. There was also evidence of informal charging, and interviews in the community showed that many people did not perceive care to be free of charge now.

Zimbabwe

More than a decade of political conflict and economic collapse has created serious challenges for communities in Zimbabwe in accessing health care and also for retaining a skilled and well-distributed health workforce.

After independence, the Government expressed the intention to focus its efforts on redressing the existing inequalities by investing especially in health services in rural areas. By 1989 the number of rural health centres and clinics had increased from 247 at independence to 1062 (Auret, 1990) resulting in much better geographical accessibility of primary care services. In the 1980s and early 1990s these health centres were adequately staffed with a doctor to patient ratio of on average 1: 6000 per year in public institutions (Chikanda, 2004). However, in the 1990s, the focus shifted from equity to cost recovery and greater efficiency, including increased use of private sector facilities (MoH, 1991) and changes in the policy on user fees and HRH.

Whilst the 1980s showed a general improvement in most of the major health indicators and service utilization, attributable to expansion and improvements in the area of primary health care (UNICEF, 1990 and 1994; Sanders, 1993), signs of deterioration were evident in the 1990s. The trends were a reversal of the gains made in the previous decade (Bijlmakers, 2003). Between 1990 and 2008, life expectancy at birth fell from 62 to 44 years (World Bank 2010). Under five mortality and infant mortality rose from 77 and 53 per 1,000 live births in 1992 to 94 and 67 in 2009. Tuberculosis incidence increased from 136 per 100 000 in 1990 to 557 per 100,000 in 2007. The deterioration in these indicators is also related to the high prevalence of HIV/AIDS in the country. However, HIV prevalence has been falling, from 25% in 2003 to 15.6% per cent in 2007.

ANC coverage remains high, at 93%. C-section rates were 4.8% of deliveries in 2006 (WHO Observatory, 2011). However maternal mortality increased from 390 per 100,000 births in 1990 to 790 in 2008. Skilled attendance at delivery dropped from 73% in 1999 to 60% in 2009 (the level of skill is not specified). Neonatal mortality rose and then fell over the period of 1990-2009, ending still higher than it started (29 per 1,000 births in 1990; 27 in 2009). (Global Observatory, 2011).

Human resource policy

The expansion of the public health workforce in the 1980s was affected by the economic slow-down and adjustment period in the 1990s. In 1997, the government introduced bonding for nurses and doctors, for three years after qualification. Prior to this, the government had lifted the ban on private practice by public health workers. Hongoro and Kumaranayake (2000) estimated that in 1996 about 45% of registered doctors in Zimbabwe worked full-time in the private sector. A study in 2009 estimated that 90% of staff worked in the public sector with significant levels of dual practice (Gupta and Dal Poz, 2009).

An assessment of maternal and neonatal health services conducted in 2004 found that there were serious shortages of nurses and midwives at the primary levels of care (MoHCW, UNFPA, UNICEF,

WHO, 2005). Although improving slightly between 2005-9, the average vacancy rate for critical cadres (such as doctors) over 2005-9 was still 50%, meaning heavy workloads for those remaining (Chasokela, 2001; Chimbari et al, 2008). Mission facilities are reported to have lower vacancy levels (Osika et al. 2010).

It is estimated that more than 80% of health professionals who trained since 1980 have left the country (Chikanda, 2005). The capacity to produce health professionals in Zimbabwe was heavily impacted by the crisis. Health training schools lost many of their teaching staff through international migration, leading to the closure of some schools in 2008.

HRH expenditure fell between 2005 and 2007, with a complete collapse in 2008 to 0.3% of the public health budget (Osika et al. 2010). The Ministry of Health and Child Welfare (MoHCW) and partners developed an Emergency Retention Scheme in 2008, topping up government salaries. In March 2009, the government and its partners revised the retention scheme to only more senior cadres. However, the overall level of remuneration is still very low: salaries are estimated to be below subsistence level, and the retention payments (currently funded by the Global Fund and only available to staff above C5 level) are being reduced by 25% each year, with the aim of phasing out in 2013.

Since 2005, the Health Service Board (HSB) has been responsible for hiring public health workers. Responsibility for hiring lower level staff is decentralised to facilities and the Provincial Medical Directorate (PMD) can hire up to senior nurse level. The MoHCW and HSB emphasise the need for the establishment posts to be reviewed, in light of recent changes in needs and workload (HSB Strategic Plan 2011-14).

The MoHCW, through the HSB, has developed a draft Human Resources for Health Policy and Strategic Plan 2011-2014. The HRH strategic plan includes broad strategies on HR planning and financing, production, training and development, deployment, retention, utilization, management and HRH information and research. Improving retention of staff is a key priority for both the MoHCW and the HSB.

User fee policy

User fees existed in Zimbabwe from independence. However, those with incomes of less than ZWD 150 per month qualified for free health care, non-retention of funds at facility level and poor enforcement of the threshold, resulted in high rates of exemption (Hecht et al., 1993). Facing economic pressures and pressures from the World Bank, collection of fees was more rigorously enforced from 1991.

In 1994, an estimated 49% of the total expenditure on health was private, mostly through out of pocket payments (Schwartz and Zwizwai, 1995). A study conducted in 1993/94 in two districts found that the majority of households were paying for health care, even though household incomes were below the required thresholds for exemptions (Bijlmakers et al, 1996). In addition to user fees, informal fees are known to exist, though they are rarely quantified (Todd et.al, 2009).

The economic collapse of the early 2000s led to a sharp reduction in public funding for health, and inevitably a shift to private (largely out of pocket) funding. Government health expenditures as a percentage of total health expenditures declined from 36.8% in 1999 to 9.8% in 2005 (GOZ 2001 and

Abt Associates 2005). In the same period, household out-of-pocket spending soared from 23% to 62%. Insurance, which had contributed 20% of health expenditure in 2001 shrank dramatically to 0.9% by 2005, according to NHA data. Donors absorbed some of the gap, but given the political problems, this was relatively limited: the share of donor funding increased from 13% to 19% over the period.

Spiralling inflation in the 1990s and the subsequent dollarisation will have affected the affordability of health care, through changes to incomes, prices of health care and the wider cost of living. In 2008, the 'Access to health services' study found that 59 per cent of respondents were charged for health care services, especially in urban, large-scale farming and mining areas. Of these, 36 per cent reported inability to pay. No studies to date have examined the overall effect on different segments of the population.

While the MoHCW has a policy of free care at clinic level, this has not been applied uniformly by local government and mission clinics. Unless lost revenues are replaced through some mechanism, it is unlikely that implementation will be effective, particularly in the non-MoHCW facilities. The categories reported to be exempt during our fieldwork generally included the under-fives and over-65s, and staff, but with local variations such as the chronically ill (psychiatric patients) and lepers. Certain donor-supported national programmes are also free (such as ART treatment and TB treatment). There is a perception that charging policies can be locally determined.

Average consultation fees for adults, collected from a sample of facilities in 2009, increased according to level of care, with an average of $1 at rural health centres, $3 at mission hospitals, $4 at private health clinics, $4 at district hospitals, $5.5 at provincial hospitals and $9.75 at national hospitals (Osika et al, 2010).

Our small-scale fieldwork confirms that users are being charged for primary care in rural areas, not least because under the policy of decentralisation the majority of clinics are managed by local authorities, which are able to set their own charging policies. In the area we visited, the rural and urban clinics collect fees but do not retain them. They were reported to receive very little back by way of financial support from district councils and municipalities. They therefore suffer a double disadvantage of higher barriers for users and a lack of funds to reinvest in services.

Many resist paying, so a variety of mechanisms are used to recoup health service costs including trying to obtain upfront payments, encouraging relatives to pay allowing payment by instalment and, in some rural areas, in kind. Debtors are followed up after discharge. For women who have delivered, the birth record (which is needed for the birth certificate) is withheld until payments are made. In the hospital we visited, staff reported very poor relations with clients over the issue of non-payment, with women being held in the hospital but in the corridor (as beds were needed) until they paid, or until they absconded.

The MoHCW has been carrying out a review of user fees. Given the financial constraints facing the sector, there are concerns about the feasibility of reducing financial barriers for users. However, in

November 2011, Prime Minister Tsvangirai said it was his hope that the fees would be scrapped during the tenure of the government of national unity[4].

5. Evidence of demand suppression effect of fees

Ghana

Delivery exemption policy

Exemptions appeared to be effective in raising utilisation with some modest equity gains (Penfold et al. 2007). However, it was also found that facility-based costs for women were not reduced to zero by the exemption policy – the reduction was of a magnitude of 28% for caesarean sections and 26% for normal deliveries (Witter et al. 2009).

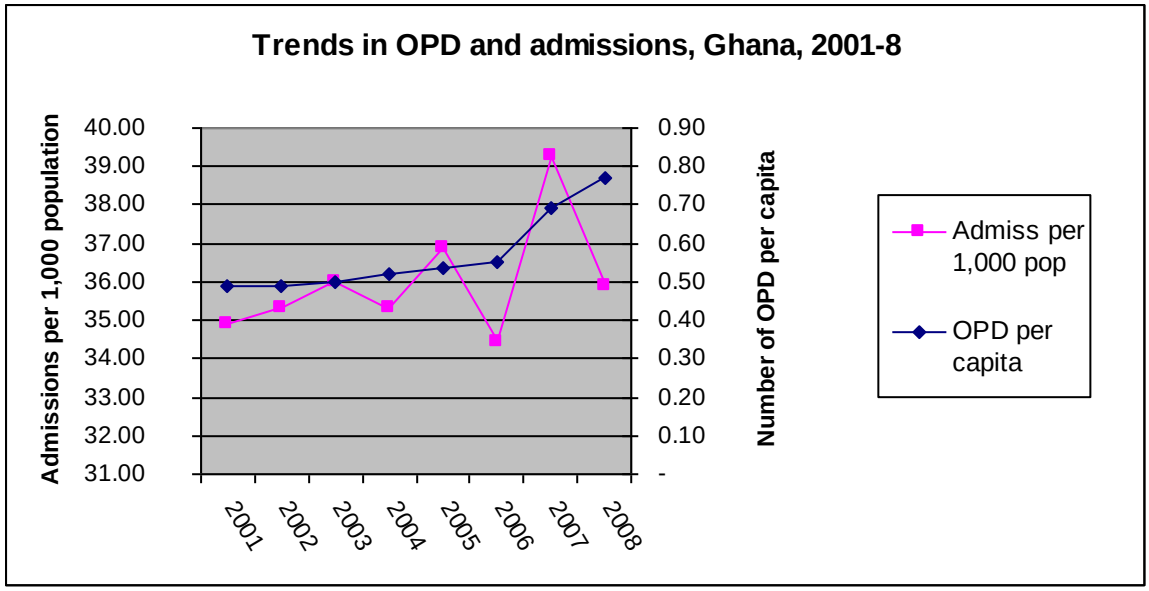
NHIS

One study has compared baseline data in two districts, before the NHIS (in 2004) and after (in 2007) (Sulzbach 2008). Its findings suggest that there has been an increase in access to formal care amongst members, as well as a significant decrease in out-of-pocket expenditure. However, there was no difference in use of maternal care (ANC, deliveries or caesareans) between the intervention and control group.

While there is no public information on trends in out-patient (OPD) services by insured patients specifically, OPD use for the population as a whole shows a marked increase from 2005 onward, compared to stable (low) use before (Figure 1). The timing and pattern correlated with growth in NHIS membership, indicating that the NHIS has indeed increased service use (Witter and Garshong 2009). According to an ILO paper of 2006, utilisation for the insured was then at around 0.9 OPD per capita – almost twice the non-insured rate (then at 0.49 visits per capita) (Leger 2006). It is interesting to note however that overall admissions have not experienced consistent growth between 2005-8. This might reflect the benefits of early intervention through better access to outpatient care.

[4] http://allafrica.com/stories/201111010110.html

Figure 1 Trends in OPD and admissions, Ghana, 2001-8



Source: (Witter & Garshong 2009)

Analysis of financial impact at the facility level has been lacking (Witter & Garshong 2009) and no specific evaluation or analysis of the impact of the new version of the pregnant women's exemptions programme (using the NHIS funding channel) has yet been undertaken.

Nepal

Across both Aama and EHCS package interventions, a monitoring and evaluation strategy has been implemented. Dalits, Janajatis, and Madhesi ethnic groups, and Muslims are identified as disadvantaged groups in Nepal. It has been demonstrated that at primary level, use of health care by Dalits and Janajatis increased, and although Dalits continue to use services at primary level proportionally higher than their numbers, Janajatis still utilize services at less than proportionate rates. The proportion of Madhesi users did not change significantly. Use by Muslims fell during the period, with their service utilization falling below levels proportionate to their share in the total population. A number of indicators suggest that funding has increased, quality has been maintained and costs for outpatient visits have decreased (although only slightly).

The latest household survey on the Aama programme (Powell-Jackson et al. 2010) indicates that over the past five years, there has been a substantial increase in the proportion of women giving birth in a health facility. In high Human Development Index (HDI) districts, the rate of institutional delivery care has increased from 33% to 54% and in low HDI districts from 6% to 21% between 2005 and 2010.

Women's awareness of the cash incentive during pregnancy and the proportion of facility births in which women received the cash incentive had risen between 2005 and 2010. In the same period, delays in receiving the cash payments were significantly reduced, associated with a governance improvement effort. There was some evidence of pro-poor impact of fee exemption: 3 low HDI districts saw higher rates of free facility births than 3 high HDI districts, and in the low HDI districts poorer women were more likely to receive free care. Trends over time by wealth group show that

inequality in facility births has fallen substantially and marginalised castes have seen large increases in utilisation over the past five years.

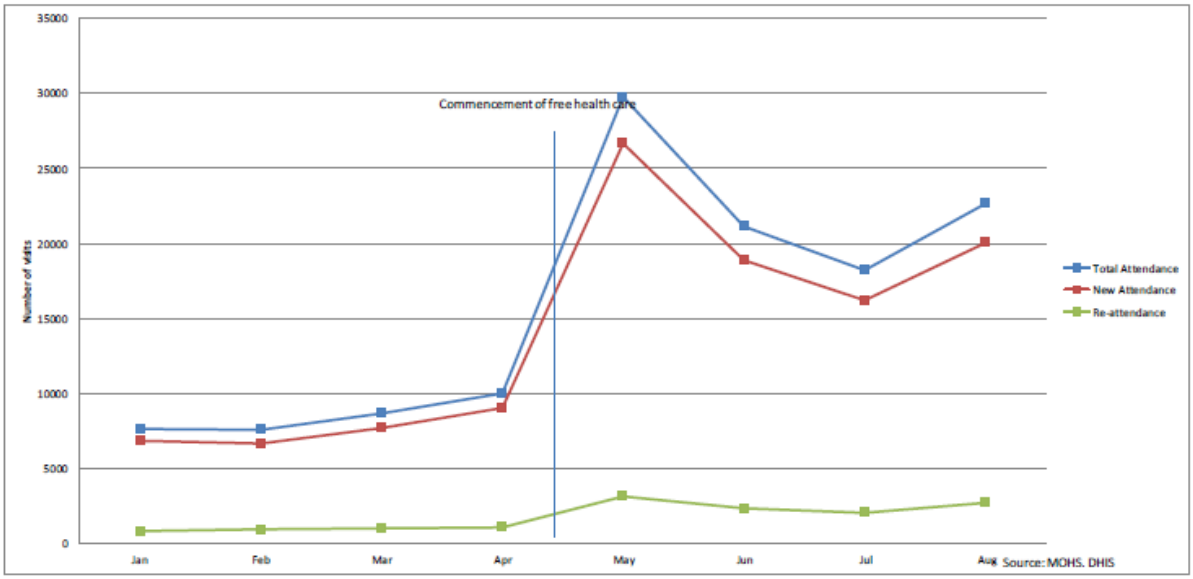
Since the start of the Aama programme, household costs incurred at the health facility have fallen. However, there has been no fall in expenditures on drugs and medical supplies bought outside of the health facility, probably reflecting drug supply problems in the public sector.

However, access to health care remains unequal. The Nepal Living Standards Survey (NLSS) showed that about 43% of the poorest did not seek care for their previous episode compared to 27% among the richest (Government of Nepal, 2010). The significantly positive concentration indices confirm that in general the better off incur more out of pocket expenditure for health care (Adhikari, 2010). This distribution was more skewed toward richer households in NLSS 2003/04 than NLSS 1995/96. Similarly, the significantly positive Kakwani index indicates that the rich spend a higher proportion of their income out of pocket – an indicator of progressivity but also possibly of non-use by poorer households.

Sierra Leone

The impact of the FHCP on utilisation is very mixed (Department of Health and Sanitation, Health Information Bulletin, 2:3). For outpatient visits of children under 5, there was a marked increase in the number of consultations in the twelve months post FHCP (April 2010-March 2011) compared to the last year before the FHCP (April 2009-March 2010): from 933,349 to 2,926,431. However, this conceals a gradual downward trend in numbers since September 2010. Liaqat and Ferry (2011) confirm that there was a sharp and statistically significant increase in health utilisation by children under five across Bombali District immediately after the introduction of the FHCP, but the peak was not sustained (figure 2). For immunisation of children under 1, 88% of children were fully immunised pre FHCP but this had fallen to 76% post FHCP. It is not clear why this has happened but possible reasons include breakdown of existing cold chain systems, increased numbers of new facilities without cold chain, and reduced frequency of outreach activities (DoHS, HIB, 2:3).

Figure 2: Trends in PHU attendance for children <5 years in Bombali District, Jan - Aug 2010



Source: Liaqat and Ferry (2011)

For maternal health, there was a significant increase in the number of pregnant women making at least one ANC visit. 126,477 deliveries were conducted in the first twelve months of the FHCP compared to 87,302 in the preceding twelve months, an increase of 45%. There was an initial increase in the number of PNC consultations but a slight reduction towards the end of the first year. The number of new acceptors of modern family planning methods increased by about 140% in the first 12 months of the FHCP (DoHS, HIB, 2:3).

Zambia

An initial large fall in utilization was observed upon introduction of fees in 1990, although this was not sustained at such a degree (Kahenya and Lake, 1994, Blas and Limbambala, 2001, Gilson, 2000, Masiye, 2003). Utilization remained relatively low due to both ineffective exemption policies and drug shortages at facilities (Geest et al., 2000, Gilson et al., 2000, Masiye, 2003). Some 22% of urban and 30% of rural households reported being unable to access care because of inability to pay (DHS 2001/2).

After free care was introduced in 2006, an analysis of facility records from the HMIS showed that removing user fees for primary health care services increased the number of outpatient visits in rural districts by patients over 5 years. However, there was a wide difference across districts, ranging from a fall of 39% to more than 100% increase in utilisation (LSHTM 2010a). Besides, the increase in utilisation was not always sustained over time and there was indication of crowding-out of children under 5, who already received care free of charge before the policy change. Analysis of a comprehensive national facility-based dataset found that utilisation increased among the rural population aged at least five years by 55%. Importantly, utilisation increases were greatest in the districts with the highest levels of poverty and material deprivation (Masiye et al. 2010).

However, analysis of the LCMS surveys did not confirm an increase in access to care. The analysis found no evidence that removing fees improved the probability to seek care when falling ill, even after adjusting for the varying degree of implementation of the policy across districts and showed that other factors, such as living in more rural areas, low education and living far from facilities still acted as obstacles deterring individuals from seeking care (LSHTM 2010a).

Zimbabwe

The lack of clarity about levels of fees that should and have in practice applied in Zimbabwe over recent decades implies that analyses of utilisation trends cannot be linked effectively to discrete changes in policy and implementation. However, there is evidence that fees act as a deterrent to use of health care from a number of sources.

In a study conducted in 1993/94 in two districts, a quarter of households reported reduction in expenditure on medical care as a result of user fees and this was achieved mainly by reducing clinic/hospital attendance. Most reported that they did not seek treatment unless illness was serious, with some saying they would treat minor illnesses at home (Bijlmakers et al, 1996). Those who reported illnesses but did not seek treatment – 22% in Murewa and 10% in Chitungwiza -were all paying directly for health care (Bijlmakers et al, 1996). Lack of money was cited by 67% of the respondents as the main reason for not seeking treatment.

In the interviews conducted for our fieldwork, delivery care in facilities was viewed as difficult to afford for most families, even in the absence of complications. This is likely to be one factor behind the high rate of home deliveries, even though these are discouraged (and TBAs were nervous about speaking about their work as a result), and despite the fact that families have to bring newborn babies into health facilities to get a birth record.

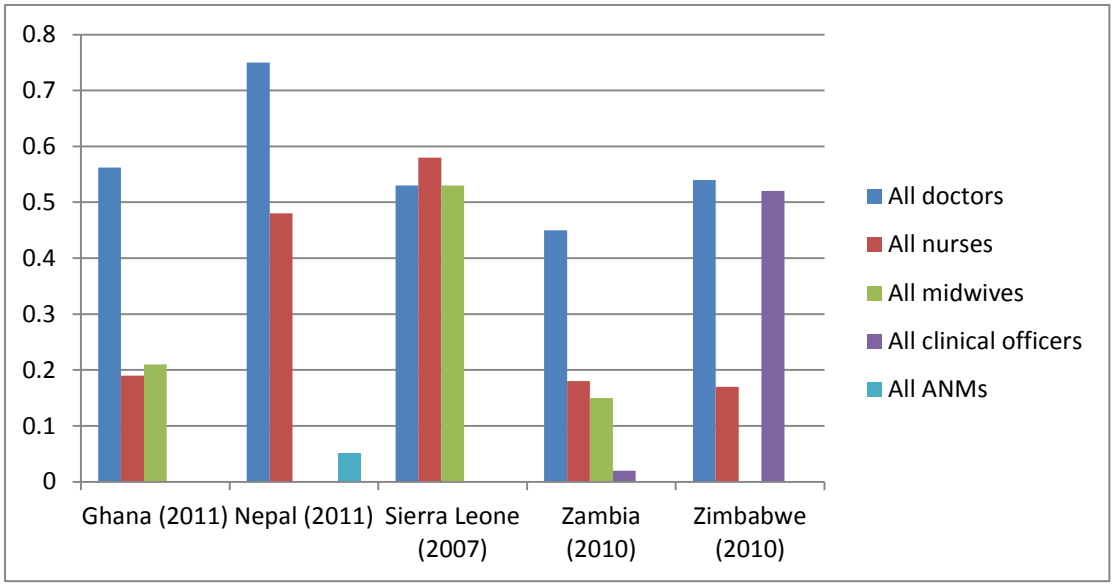
6. Current distribution and skill mix of the RMNH workforce

The categories of staff, at least some of whom have skilled birth attendant capacities in the five countries can be listed as Doctors, Nurses, Midwives (not a separate category from nurses in Nepal and Zimbabwe), clinical officers (Zambia and Zimbabwe only), and auxiliary nurse midwives (Nepal only). We were able to disaggregate data for public and private sectors in Ghana, Nepal and Sierra Leone, and further separate non-governmental organisations (NGO) and faith-based organisations (FBO) from the rest of the private sector in Sierra Leone. In Zambia, data were available for two time periods: 2004 and 2010. It was not possible to get data for more than one time period in any other country. It has generally not been helpful to apply the ISCO classification as it is not in general use, and the location of clinical officers within this classification, present in Zambia and Zimbabwe, is not clear.

The distribution of health workers across each country has been graphically illustrated by a concentration curve in each of the case study country annexes, and the corresponding concentration index (CI) calculated. These have been constructed by organising districts by increasing population density (from most sparsely to most densely populated districts) and plotting accumulated health worker numbers across this distribution. A hypothetical situation where health workers are distributed equally in proportion to population across the country produces a CI of zero. In a situation where the distribution favours densely populated areas, the index will be greater than zero. Maximum, pro-urban, concentration is where all staff are based in the most densely populated district and the corresponding CI is one.

Figure 3 shows the comparative CIs for the 5 countries, computed in this manner (confidence intervals around CIs can be found in individual annexes).

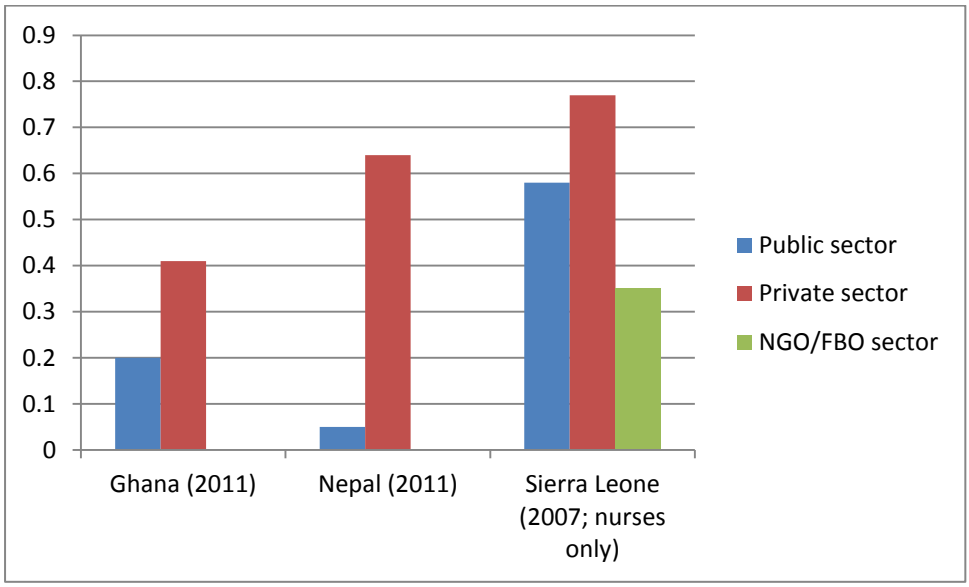
Figure 3: Concentration indices: health workers by cadre, latest available dates.



The figure shows that in all countries but Sierra Leone, doctors are much more concentrated in densely populated (urban) areas than other cadres. In Sierra Leone, nurses and midwives are about equally concentrated in those areas, and no cadre provides cover for remoter rural areas. Overall, the concentration of doctors in urban areas is most pronounced in Nepal. Clinical officers in Zambia and ANMs in Nepal are spread almost equally across areas in line with population numbers, suggesting the significant potential for such additional, non-traditional cadres to contribute to more equitable population coverage for RMNH services. However in Zimbabwe it is nurse/midwives who make most contribution to providing RMNH services in remoter rural areas. The number of clinical officers is very small and most of them are in Harare.

Figure 4 compares public and private sector concentration indices for those countries for which that disaggregation was possible.

Figure 4 Concentration indices in public and private sectors



The figure shows that Nepal achieves fairly equitable distribution of health workers in its public sector: its high overall concentration indices (figure 4) reflect the dominance of the private sector in the employment of health workers. In Ghana and Nepal, the private sector employs health workers predominantly in urban areas resulting in concentration indices considerably higher than for the public sector. The further disaggregation in Sierra Leone between NGO/FBO and other private sector shows the importance of this distinction; with NGO/FBO providers contributing the most equitably distributed labour force, albeit one still highly concentrated in urban areas, relative to the public sectors of Ghana and Nepal.

7. Workload

Table 1 shows the workload in terms of the current numbers of deliveries per skilled birth attendant and per doctor and the number of births per skilled birth attendant (SBA) and per doctor in each country as a whole. This shows the actual workload if evenly distributed among all health workers in the country and the full coverage workload, if all deliveries were attended by a SBA in a facility. In Zambia, the definition of a SBA is particularly difficult and we show these totals for both a 'narrow' and a 'broad' definition[5].

[5] The narrow definition includes only midwives, doctors and clinical officers. The broad definition includes midwives, doctors, clinical offers and nurses weighted for the % of obstetric workload in total facility workload. The weighting procedure is fully explained in Annex 5: Zambia case study.

Table 1 Delivery workload for skilled birth attendants and doctors: actual rate of facility based deliveries and full coverage (all births)

	Births per SBA	Births per doctor	Deliveries per SBA	Deliveries per doctor
Ghana 2010/11	29	283	13	127
Nepal 2011	309	525	132	224
Sierra Leone	1202	1048	320	279
Zambia Narrow	185	1317	73	515
Zambia Broad	133		52	
Zimbabwe	18	475	12	313

WHO suggest that 1 doctor is required for around 1,000 births[6], to provide emergency intervention where there are complications before, during and after delivery, while a midwife can provide care for 175 births per year. On the basis of these assumptions, most countries do not have an absolute shortage of health workers relative to current levels of facility based delivery, with the exception of Sierra Leone. In Sierra Leone, births with MCH aides, CHOs and nurses as well as midwives and doctors are counted as 'attended' births although these cadres of staff do not meet the training requirements to be classified as SBAs (Oyerinde et al., 2011). Ghana and Zimbabwe even have sufficient staff to provide full coverage for facility based SBA . Other countries have some shortfalls in relation to ability to provide full coverage. Clearly this includes Sierra Leone which does not have sufficient staff to cope even with current workload. Zambia does not have sufficient number of doctors nor marginally, skilled birth attendants under the narrow definition. Nepal has sufficient doctors for full coverage but not SBAs.

However the dominant problem restricting access to skilled birth attendance in a facility is distribution: geographical and between public and private sectors. In Ghana, all regions have sufficient skilled birth attendants and doctors to provide full coverage, although this may not be true at district level. The situation is similar in Zimbabwe for SBAs, although regional numbers suggest that most districts are likely to have sufficient SBAs to cope, even with full coverage. This is not the case for doctors in Zimbabwe which are insufficient in 4/10 regions to cover actual current workload and 7/10 regions to provide full coverage. This compares to no more than 120 births and 100 deliveries per doctor in Harare and Bulawayo. In Nepal, only two of 5 regions (the Central and Western development regions) have sufficient doctors for either current workload or full coverage and while all regions have sufficient ANMs for current workload, none have sufficient for full coverage. At the extreme, the Far Western Development Region has one doctor for every 7,562 births and one ANM for every 517 births. Nearly all districts in Sierra Leone have insufficient staff to cope with current workload. At the extreme, Kailahun has 1 midwife for every 17,415 births and one

[6] The World Health Report, 2005 (p91) suggests that for a district with a birth rate of 30/1000 1 full time equivalent doctor is required for 3600 births. Gabrysch et al. (2011) translates this into 1200 births per doctor on the basis of 3 doctors required to provide 24 hour cover. The MPS model specifies 1000 births per doctor, and we apply this lower number which also seems to allow for professional development days, leave and sick leave.

midwife for every 4,627 current facility deliveries, explaining the use of under-skilled staff to play this role. In Zambia, 55 districts (76%) have insufficient doctors to provide coverage at a rate of one for every 1,000 births; 13 (18%) have no doctors at all. 36 districts (50%) have insufficient staff for full coverage under the narrow definition of SBA and 8 districts (11%) have insufficient staff for actual levels of facility based delivery under the broad definition .

We were able to break down staff and workload numbers by district and public and private sectors in Sierra Leone. Of our 5 case studies, Sierra Leone has some of the most extreme RMNH staff shortages according to the above analysis. The numbers cited above for Kailahun are unaffected by the public-private disaggregation as there is no private sector of either type there. This is likely to apply in other contexts: those districts that are most under-served in general are those in which private sector presence is likely to be least. A better served district such as Western Area has a relatively manageable 119 actual deliveries per midwife. Excluding sources of private sector care, that number rises to 175, on the cusp of what is considered manageable and indicating that even Western region would require more public sector midwives to provide adequately skilled care to an increasing rate of utilisation of SBA in public facilities.

8. Remuneration and terms and conditions

It is very difficult to compare terms and conditions. There are variations in entry level qualifications required, length of training and other barriers to entry to the health professions, and some of the case studies show these to be in flux as attempts are made to cope with shortages by reducing such barriers. Conditions that are important to health workers cannot all be captured as a national level phenomenon: the quality and security of accommodation available, the working conditions including presence of utilities and availability of basic supplies to support effective work; the sanitary and other infection prevention conditions cannot be effectively compared and summarised across countries.

We have attempted to compare public sector salaries for the main health professions involved in RMNH. This is complex for several reasons. First, health professions are defined slightly differently. For example, we have used the term ‘doctor’ but attempted to capture the ranges of pay and allowances that apply to a health professional with a medical degree, operating as a general primary provider, excluding specialists operating at tertiary level from our calculations. However, pay scales often overlap between longer serving general doctors and more junior specialists and an approximate cut off was used in some cases. Enrolled and registered nurses are still separated categories in some countries (among our case studies, Sierra Leone). As previously discussed, midwives are not a separate category in all countries.

Second, comparisons of different currencies can be made in terms of purchasing power parity. However estimates of the rate of translation of a currency to its international dollar value are not made continuously. Currently, the best available estimates are from 2009. For Zimbabwe, these relate to the pre-dollarised economy and cannot be used for our purposes. Zimbabwean estimates are consequently presented in US dollars.

Third, we are interested in the relative as well as the absolute value of salaries. We have compared salary levels to measures of national income or national product per capita as a measure of this. However, income distributions may differ and good quality data on income distribution in Africa is

scarce. If health workers 'benchmark' their standards of living against others within their society they deem professionally comparable, out analysis is unable to indicate what this comparison may indicate.

Table 2 shows the public sector pay (salary midpoints) of health workers in international dollars[7] and as a ratio to GNI per capita for the country[8]. (In Zimbabwe the figures are for US dollars and GDP at current exchange rates[9]).

Table 2 Public sector remuneration (salary midpoints incorporating allowances) in international dollars and as a ratio to GNI per capita (all current: December 2011)

	Value of salary and allowances in Int$			Salary expressed as ratio to p.c. GNI		
	Doctor$^{\Delta}$	Nurse	Midwife	Doctor	Nurse	Midwife
Ghana	3932	2171	2171	28.4	15.7	15.7
Nepal	4408	3851		43.7	38.2	
Sierra Leone	3179	429®	578°	46.0	6.2®	8.4°
Zambia	5346	2167		46.5	18.4	
Zimbabwe*	218	176		4.4	3.6	

*Zimbabwe estimates are expressed in US$ and as ratio to p.c. GDP at current exchange rates

®State enrolled nurse

°State registered nurse and community midwife

$^{\Delta}$'General medical doctor' or closest equivalent available

The data suggest that complaints about poor pay for most cadres in most countries are unjustified, and in all cases health workers earn well above average rates of earning in their communities. Doctors in all countries but Zimbabwe appear to be among a rich elite earning 28-46 fold the average income. Nurses in Ghana, Nepal and Zambia are nearly as well paid, in the range of 15-38 fold. The recent pay award in Sierra Leone puts Sierra Leonean doctors into the same category but leaves Sierra Leonean enrolled and registered nurses and midwives much less well paid. Zimbabwean health workers are more modestly paid than their counterparts in the other four countries. It is unsurprising that it has been very difficult for Zimbabwe to retain health workers given the close proximity of the medical labour market in Zambia offering 25-fold the real rate of pay for doctors and 12-fold the real rate of pay for nurses. It is probable that those retained in Zimbabwe are enhancing their pay through private sector work or other economic activity.

[7] **PWT 7.0 Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 7.0, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, May 2011.** http://pwt.econ.upenn.edu/php_site/pwt70/pwt70_form.php (accessed 15th December 2011)

[8] http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD (accessed 21st December 2011)

[9] http://data.worldbank.org/indicator/NY.GDP.PCAP.CD , Accessed 15th December 2011

In those countries in which high salaries apply, reform of salary scales has been among the recent HRH policy innovations, suggesting a trend that other countries and at least Zimbabwe among our case study countries may have little choice but to follow.

As suggested above, the comparison with per capita GNP or GDP does not enable a judgement of the relative remuneration in sectors health workers may deem comparable. It is difficult to get data for the top end of income distributions in African countries. Survey data is subject to large errors because of the small population earning at high levels and probable biases in the self reporting of income among this population. The Zambia Living Conditions Monitoring Survey of 2004, for example, uses a cut-off point of ZK800,000 per month as its upper income threshold. I8% of Zambians stated an income of this level or above in 2004 and no further breakdowns of this 18% are available. Doctors' incomes have been estimated at more than 10 fold this cut off point, and nurses' 3-4 fold. If 2% of a population earned incomes 46-fold the national average, they would consume virtually the whole national income, suggesting that if benchmarks deemed comparable do not suggest a favourable comparison, the group deemed comparable is a very small, rich, elite.

Another possibility is that comparisons are not made locally but with international salary benchmarks. Given the increasing international mobility of health workers, it may be considered by governments setting salaries that health workers can only be retained if international salary levels can be matched. However, salaries so out of touch with the national economic capacity raise significant questions of sustainability, not only in a long term future in which aid dependency is reduced, but in an aid-supported future in which health worker numbers are significantly higher.

9. Projected demand

The Making Pregnancy Safer tool (MPS), produced by WHO, provides a simple and graphical analysis of the quantity and cost of skilled birth attendants and doctors as coverage is scaled up from the current levels. The original tool is based on 2008 as a baseline but has been adapted to permit entry of baseline for 2010 and scale up of coverage to 2015[10] and we have replaced estimates of births, current rates of attended deliveries and HRH numbers with those used elsewhere in this report. An option to incorporate regional data into the projections has also been included. We assume near universal coverage (95%) by 2015.

The model is quantity driven. It assumes that the current level of staff is just sufficient to provide the current level of skilled deliveries. Any increase in coverage requires additional SBAs and doctors based on standard ratios: around 1,000 deliveries per doctor and (a user adjustable) 175 deliveries per skilled birth attendant. The model permits users to specify levels of attrition for staff and salaries and assumed salary increases to permit cost projections. The number of births is based on demographic projections for each country.

The presumption that coverage can be increased by adding staff in a fixed ratio to deliveries is an important one. It assumes that the main constraint to increasing attended deliveries is one of supply. Yet it is clear from the analysis of actual data that in some areas high levels of attended

[10] The original model (http://mps.projection.free.fr/mdg5-hrsu.html) is available as an online and offline web-based. For the purposes of this study, the model was converted to excel and adapted to permit variations in the base and target years and differences in attrition rates and salaries for doctors and nurses/midwives.

deliveries are possible with a relatively small staffing whilst in other areas a high level of staffing is associated with a modest level of attended deliveries. Various factors may account for these differences including:

- Staff may be busy with other activities and only able to devote a small proportion of time to delivery care. This is dealt with by focusing on full time equivalents at least for the additional staff required.
- Staff may not be motivated to provide services
- Staff have insufficient resources to provide adequate care
- Human resources are available at a facility but women are impeded from seeking care due to inaccessibility or high cost of transport and lack of knowledge about when to seek care. Both these factors are known to be associated with levels of delivery.

These factors could mean that a much higher ratio of staff to deliveries may be required in order to achieve universal access or indeed that targets are unattainable unless other barriers to use of services are addressed. Conversely, it may be that current staffing levels are sufficient to deal with more deliveries but that other factors prevent scale up.

The analysis in section 5 suggests that additional staffing is not required at national level for full coverage of delivery care in Ghana and Zimbabwe. The case study annexes use an adapted version of the MPS model to confirm this to be the case, and that projection of need to 2015 does not alter the situation. This implies that in Ghana and Zimbabwe, failure to achieve high levels of SBA for deliveries is a result of the bullets above, and maldistribution of the existing staff. Below, the results of applying the MPS model in Nepal, Sierra Leone and Zambia are summarised.

The MPS model focuses on the additional full time equivalent workers required for scale up. The scale up to 95% coverage is modelled over the period 2010 to 2015 using assumptions based on local information. The salary data in Table 2 for nurses and doctors are translated to US$ at current exchange rates and used for the projection of recurrent cost and these are expected to increase by 3% per annum (in dollar terms).

Table 3 shows the assumptions applied for each of the three countries, the level of scale up required the additional numbers of midwives and doctors needed (in Nepal these are assumed to be additional to the existing complement of ANMs and salary levels are computed assuming all SBAs are midwives, as we did not succeed in collecting salary information for ANMs) and the annual cost at current salary levels.

Table 3: Assumptions and results for staff requirements for scaling up skilled birth attendance in Nepal, Sierra Leone and Zambia

	Doctors	Skilled birth attendants
Common assumptions		
Deliveries/year	1000	175
Salary growth	3%	3%
Nepal		
Attrition	5%	5%
Baseline salary (current US$)	3972	3468
Scale-up needed	43-95%	
Additional staff needed	0	3456 (109% increase)
Annual cost in 2015(current US$)	6,003,621	17,661,052
Sierra Leone		
Attrition	5%	5%
Baseline salary (current US$)	1,847	679
Additional staff needed	21 (9% increase)	1212 (515% increase)
Scale-up needed	44-95%	
Annual cost (current US$)	374,352	896,024
Zambia		
Attrition	5%	10%
Baseline salary (current US$)	18,246	8,581
Scale-up needed	47%-95%	
Additional staff needed	382 (29% increase)	2464 (47% increase)
Annual cost (current US$)	12,693,524	35,527,457

The projections suggest large increases required for some cadres in these three countries. The largest is Sierra Leone's requirement for a six-fold increase in the numbers of midwives. Meeting this requirement is unrealistic. In Sierra Leone a larger cadre of MCH aides currently takes responsibility for the supervision of deliveries despite insufficient skills to be classified as SBAs. Equipping this cadre to the level of SBAs would appear the only realistic option. Then, achievable moderate increases in their numbers are required.

Nepal's need to more than double its midwife numbers may also not be achievable and may require a mix of growing the health workforce and task shifting while ensuring adequate skill levels are supported. Otherwise, relatively modest increases in staffing in SBAs in Zambia and in doctors in Sierra Leone can probably be achieved if sufficient demand can be stimulated.

10. Conclusions and policy implications

HRH crisis?

The HRH situation in case study countries is more variable than might have been expected. At national level, shortages of human resources relative to the needs of RMNH services are not

universal, and in Ghana there is sufficient HRH for RMNH needs even at regional level. However, in general, there are local shortages relative to need, either because of overall national level shortages which are acute in Sierra Leone and more marginal in Zimbabwe or because maldistribution creates local shortage where there is national sufficiency. Even in Ghana, this is likely to be the case at district level.

Low salaries are not the general situation of health workers in the case study countries with salary levels for doctors in Nepal, Sierra Leone and Zambia implying that they must be located *at least* in the top 2% of the income distribution, and Ghana, the top 3-4%[11]. Other cadres, other than nurses in Nepal who earn similarly to doctors in Ghana in relation to the local economy, are not quite so well paid. Even so, nurses in Zambia and nurses and midwives in Ghana must locate in at least the top 7% of earners in their countries. The situation in Sierra Leone for non-doctor health workers and for all health workers in Zimbabwe is more moderate with pay levels at 3-9 fold per capita GDP/GNI.

The relatively high salary levels for at least some health workers suggest that their market position or collective bargaining power is strong. One explanation of this is the greatly increased levels of international migration since the 1990s. This implies a global market for scarce medical skills in which some countries seem positioned to compete, although the sustainability of that level of competition is questionable both in the medium and long terms. Another explanation is the successful syndicalisation, especially of medical staff. In Zambia and Ghana, strike action and political pressure from doctors' unions is understood to have been an important force in shaping the current employment conditions of doctors. In Sierra Leone, the much better pay position of doctors than other cadres does not reflect their relative scarcity, nor the relative rates of loss to the international market.

Both governments and development partners contributing to the funding of health worker pay levels may wish to understand where is the boundary between reasonable and excessive pay, or what levels of pay are required to prevent health workers feeling aggrieved and delivering less than whole hearted commitment to their jobs as a result, and whether or not the higher rates of pay currently prevailing are necessary to attract and retain a sufficient labour force. Benchmarks are not available and the expectations of well educated Africans and Asians whose economies are characterised by high degrees of inequity in income distribution are likely to be relatively high in comparison to national incomes per capita than in countries where education is less scarce. Given that only 2% of Zambians (for example: Zambia Living Conditions Monitoring Survey, 2004) are educated to degree level or above, it may be a reasonable expectation of those who are, that their incomes should locate them in the same elite.

Another key issue is the extent to which competence in skilled birth attendance is difficult to assess across the case study countries. The research has relied on rules of thumb about who counts or does not count as a skilled birth attendant. There are particular difficulties in this assessment in Zambia, where no separate category of midwife exists and where nurses are not all trained to an adequate

[11] Detailed income distribution data are not available but these estimates are based on the extreme assumption that those earning the given ratio of salaries to average GDP/GNI per capita capture virtually the whole GNI/GDP. More realistic assumptions rank the salary earner more highly still relative to the rest of the population.

level of competence in skilled birth attendance; and in Sierra Leone where MCH aides do not meet the international definition of SBA but are locally expected to play this role. Even staff who have initially been provided with sufficient training but who are not highly motivated, have not subsequently practised in the role of SBA, or have not received sufficient in-service training since, will not in practice have the requisite level of skill. Hence the capacity to scale up to 95% coverage of RMNH services is probably more limited than it appears.

User fees and utilisation

Of the four of the five case study countries that have removed or introduced exemptions for user fees for RMNH, only in Nepal is there clear evidence of positive impact on utilisation without significant exception. In Ghana, better evidence is available in relation to the earlier maternal health exemption programme than the more recent inclusion of free maternal health services in the national health insurance scheme, although an evaluation of the NHIS exemption for pregnant women is due in 2012 according to MoH sources.. It appears clear that utilisation increased where free care was effectively available, but that implementation difficulties, most notably under-funding of the programme, implied that effective free care was not sustained, with the implication that higher rates of utilisation also could not be. In Zambia, fee removal was not specifically targeted at MNCH services and there is conflicting evidence of the impact of fee removal on utilisation. Overall, outpatient visits increased in rural districts by 55% (Masiye et al., 2010) but there was a wide difference across districts ranging from a -39% to more than +100% change in utilisation, changes were not sustained over time and analysis of the LCMS survey failed to confirm an overall increase in access(LSHTM, 2010a). In Sierra Leone, data suggest initial increase in outpatient visits for children under 5 in the first year of the policy but gradual decline since and an overall fall in immunisation levels which may have been caused by factors external to the policy.

None of this challenges the economic law of demand – that demand will increase as price falls, but it illustrates that achieving a real price fall is more than a matter of enacting policy. Other barriers to access that may concurrently be influenced by user fee policy, operating through human resource factors (such as pay, motivation, and workload) and also through drug and other commodity supply, may prevent an effective price decrease for a comparable service being achieved. Other barriers such as transport and women's motivation to see RMNH services may constrain the extent to which the removal of a single barrier can make a significant difference.

Co-ordinated policy measures

This research highlights gaps in systematic and well planned co-ordination between financing policy and human resources policy. In our case study countries, there have been laudable attempts to plan for the impact of fee removal or reduction and sometimes concomitant supportive change, even if not specifically responding to the needs of financing policy change. The global literature review suggests that poor co-ordination is widespread. In some cases, such as in Niger and Zambia, measures were taken after problems associated with the removal of fees became evident. In Zambia's case, of which we know more, the measures of compensation appeared to come too little and too late, sometimes not at all.

Pay

A number of countries that removed fees also increased health worker pay to some extent at around the same time although it is not clear that this was directly in compensation of changes brought about by fees in all cases. The Zambia Health Workers Retention Scheme was introduced in 2003-4, before the removal of rural fees, supplementing doctors' salaries by $600-$700/month. However, this is a relatively small component of overall doctors' pay in Zambia. The process of improving pay in Ghana began in the late 1990s but included significant increases around the same time as the delivery exemption programme. We do not have information about the history of pay in Nepal. In Zimbabwe, pay shrank virtually to zero during the period of hyperinflation and has recently recovered, but is still low relative to other countries. Only in Sierra Leone among our case study countries was the salary uplift directly linked to the introduction of the maternal and child health exemption programme.

Recruitment

Rather like pay, in some cases additional recruitment was undertaken concurrent to fee reform but it is not clear that this was carefully planned as part of a package of complementary policies. For example in Zambia, one source indicates that an additional 1,300 health workers were recruited, although the timing of this recruitment was not clear. A Ministry of Health document (Ministry of Health, 2008) indicates that no recruitment took place, suggesting that the 1,300 health workers were not part of the user fee policy plans but may have been recruited in later recognition of the demands on health workers that user fee removal had created. We also do not know whether these workers were posted to rural areas in which workloads had increased. Similarly, recruitment strategy in Ghana has been driven by the general recognition of shortage rather than specifically in alignment with user fee reform.

In contrast, Sierra Leone did plan increased recruitment as an element of the free health care policy and this had been 'partially achieved' at the time of a review in June 2010 in the sense that it was seen as contingent on the salary uplift.

Other concurrent reforms

Rather it appears that pay reform, recruitment activity and user fee reform are among a plethora of interventions that are being introduced concurrently but with insufficient co-ordination. The literature on user fees is now quite clear on the need for associated measures, and the implications of the neglect of these are clear. In the first place, failure to co-ordinate undermines the impact of user fee reform through what appear as implementation problems and result in the failure of policies to secure expected results or to sustain them in all cases except Nepal. In the second place, user fee reform may be exacerbating human resource problems. The clearest case of this is the Zambian one. Ironically, the focus of user fee removal on rural districts, intended to target access improvements in rural areas, has had a disproportionate effect on workloads in rural areas which were already significantly greater than in urban areas. Worsening the relative conditions in rural areas is likely, other things being equal, to worsen the maldistribution of HRH and may result in rural access deteriorating. In Sierra Leone, loss of user fee income has resulted in the loss of 'volunteer' workers, who in practice depended on user fees for an income rather than constituting volunteers in

the strict sense. This may explain the declining rate of immunisation as this appears to depend to some extent on such workers.

The HRH situation also affects user fee reform in the sense that there is some evidence among our case studies that staff who feel aggrieved because of a sense of over work, underpay, or a deterioration in conditions are more likely to undermine user fee reform in the interests of maintaining the status quo. In all countries, there was evidence that services intended to be 'free' were not always experienced as such by users, although to different extents. This problem was seen to be small in Sierra Leone, and to have reduced in Nepal, but indicates a clear link between the two areas of policy in this direction. At the extreme, informal fees can simply replace formal ones.

Linkage also operates in both directions through the medium of quality of care. User fee removal can only be counted successful to the extent that users recognise a better option in the reformed service, comparing both quality and price variables. Consideration of utilisation as an indicator of the effectiveness of policy measures the direct and desired outcome, improved access, but also indicates the extent of users' preferences for the reformed service. The observation that initial increases in utilisation are not sustained (most likely in Zambia of our case studies) implies that neither measure of success is long lived. Health workers make perhaps the most critical contribution to quality of care and to whether any utilisation gains following fee removal are sustained. Inter-personal aspects of quality of care: whether users are treated with dignity and respect and given the attention their problem requires always rank highly in studies of the attributes of quality that matter to users, and are mainly under the control of health workers. Health workers also have influence on whether drugs and other supplies are available when required: they can conceal available stocks, and can use initiative to replace drugs that are out of stock at time, for example. Aggrieved staff who do not support user fee removal because they have not been adequately compensated for the lost income and increased workload are least likely to support the maintenance of quality in any of its dimensions.

Mechanisms to replace user fee income

Among the associated measures well recognised in the existing literature is the need to ensure replacement of user fee income where it is important at the local level. User fee income has typically been used to provide bonuses to staff, employ additional contracted staff and to support drug supply. All the case studies of user fee removal or exemption except Nepal identified problems in either the failure to replace user fee income or the inadequacy of the replacement in form or amount.

In Nepal, a mechanism of demand side financing was used to replace user fee income, through which facilities continued to earn income at a rate per intervention provided. This mechanism has the greatest chance of mimicking the positive incentives that are also associated with user charges, giving health workers an incentive to attract users to their facility. The design of the Ghanaian policy was similar but the failure to manage and finance it adequately implied that the link between service delivery and facility income was broken.

In Zambia, the attempt to compensate for loss of user fee income with a supply side financing intervention – an additional subsidy unrelated to service uptake – appears to have failed for several reasons. Districts whose utilisation increased most were effectively penalised as a result, by being

least well compensated for the change and presumably consequently least able to maintain service quality. The different mechanism for payment and basis on which payment is determined appear also to have affected the use of funds, with bonus payments for front line health workers lost to investment in the maintenance of infrastructure in one example. To design a mechanism to compensate for lost user fee revenue it is therefore important to consider the degree of control that different health workers from front line workers to senior managers will have over the resulting fund and the differences in the preferences of these workers for different types of expenditure, including supporting drug supply, expanding and maintaining infrastructure and supporting staff remuneration and conditions.

In Zambia, the emergence of other major problems of supply side financing – late and non-payment of the expected sums, and a lack of transparency in who receives how much and when and what funds are used for has also been experienced in some districts. To the extent that these problems were coincidental in timing to the user fee removal policy, it is difficult to evaluate its impact per se. However part of the problem was that the mechanism used to compensate for user fee income loss did not ensure that compensation reached front line staff.

In Sierra Leone, the strategy is to generally improve funding for the health system alongside the free health care policy, which it is intended to scale up to a wider range of vulnerable groups in a second phase: in other words to use a supply side financing approach. There is a funding shortfall for the $91m estimated cost of the policy of just over $20m (Government of Sierra Leone, 2009). More recently, Sierra Leone plans to introduce a performance based financing system with the objective: 'to help change the behaviour of health providers at facility level for them to deliver more quality services and to increase their productivity under the free health care policy' (MoHS, 2011, 61). The initiative may provide the required incentives to implement the free health care policy effectively, although much depends on whether it proves feasible to implement the new policy as designed.

Informal charges

A final problem likely to arise in the absence of an effective compensation for lost user fee revenue is the emergence of informal charging. In Ghana, reports of informal payments were rare in the years before the NHIS, with user fee collection closely controlled at health facility level but reports of informal payments to health workers have grown since, including charges for out-of-hours services, out-of-stock drugs and drugs that are not included in the NHIS scheme. In Sierra Leone, while there is overall a reasonable degree of implementation of the policy, fees for vaccination, ITNs and some drugs appear to remain quite common. In general, informal charges are likely to emerge where staff feel their conditions have deteriorated as a result of fee reform, and therefore again, to reflect the failure to co-ordinate policies

Policy implications

The first and most obvious point is that, as is now well recognised in the user fee literature, co-ordination of health financing and human resource policies is essential. This appears less well recognised in the human resources literature. There is a particular onus on development partners to ensure that initiatives supported by different partners are well co-ordinated. In order to support (whole or partial) free health care policies, investment needs to be made in pay and recruitment, and in particular to ensure that relative conditions of employment do not worsen for rural areas.

Generalised pay increases in the context of an increasing imbalance of workloads in urban and rural areas may not be sufficient.

Second, in some countries (Zimbabwe and for health workers other than doctors in Sierra Leone), generalised low pay across the levels and geographical distinctions of the health system applies and requires to be addressed. However, in other countries, pay may be higher than is strictly necessary to secure commitment and retention.

Third, replacement of user fee income is only part of the solution to the management of the introduction of free health care. Demand side financing approaches better replicate the positive aspects of the incentives embedded in user fee systems, and appear to work well in Nepal. However, they may not work everywhere. They clearly can only work where reliable funding is maintained, as did not happen in Ghana. They may also require particular capacities of administrative systems, not always present, and it is noteworthy that the Nepal programme has been intensively supported with externally funded technical input, its management has not been integrated with general health system management and the challenge to achieve greater integration is now recognised. A careful analysis of the incentives embedded in alternative mechanisms of user fee replacement is required everywhere for the most effective system in its context to be designed.

Fourth, as is generally good practice, these policies need effective monitoring systems that focus on the realities of their implementation as well as their impacts. Failure to undertake the policy recommendations above is likely to result in the emergence of informal charges. It should be ensured that the monitoring strategy adopted is sufficiently sensitive to identify this early.

Removing financial barriers to access reproductive, maternal and newborn health services: the challenges and policy implications for Human Resources for Health (HRH)

Literature review

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December 2011

Introduction

A paradigm shift in global health policy regarding user fees has been evident in the last decade with a growing consensus that user fees are regressive and undermine equitable access to essential health services (Yates, 2009). In particular, a concern that pregnant women and children under five are negatively affected by such financial barriers has prompted many low and middle income countries to reconsider levying user charges by ensuring either more thorough implementation of exemption or waiver mechanisms, significant reduction in fee levels or their abolition altogether (Campbell et al. 2011; Witter 2010). Such a policy shift will undoubtedly have consequences for the health system across a number of dimensions, including the search for replacement revenue and ensuring quality in responding to the changes in utilization, reflecting increased numbers and patterns of utilization (Yates 2009; UNICEF 2009). Both of these anticipated consequences raise specific concerns for human resources for health (HRH), yet this issue has been frequently overlooked until recently. Campbell et al. (2011) suggest that demand side support, ensuring that access is no longer constrained by payment for services, requires balance with support for the supply side in terms of capacity and quality of care. This research responds to this concern. This paper reviews the evidence in the literature of the consequences that fee removal, exemptions and waivers have had on HRH.

Methods

A review of the current literature on the removal of, exemption from or waivers of user fees in low and middle income countries in relation to Reproductive, Maternal and Newborn Health (RMNH) and the consequences for human resources for health working in RMNH was undertaken.

Criteria for inclusion

First, to be included, studies had to address either the removal of user charges or the application of exemptions and/or waivers in order to facilitate access to Reproductive, Maternal and Newborn health (RMNH) services in low and middle income countries. The user fee and exemption mechanisms at national, provincial, district level were explored. The second criterion for inclusion was consideration of the effect of these financing instruments on RMNH health personnel, including cadres of skilled birth attendants including nurses, midwives, doctors and clinical officers and the paramedical, support and ancillary staff.

The scope of the literature search encompassed a range of research methodologies including randomized trials, and qualitative, observational and descriptive studies. The product of this search included original papers, literature reviews, baseline studies, preliminary studies, country reports and publications investigating relevant interventions at varying levels of implementation. Grey literature that looked into the various aspects of user fees in low and middle income countries was also considered.

The final criterion was publication date, which was restricted to 2001 to 2011, with some exceptions, where studies on the introduction of user fees from the 1980-90s were included for historical

context. Only those studies and reports in English language were collected, collated and consolidated in the bibliography. The following databases and sources were searched: PubMed, Popline, SCOPUS, Science Direct, Web of Knowledge, Human Resources for Health Journal, Equinet, MNCH knowledge portal, ELDIS, HRH Global Resource Centre, World Health Organization, Alliance for Health Policy and Health Systems Research, and Google Scholar.

The above were searched using the following key words and terms:

‘abolition’
‘access’
‘allowances’
‘ancillary’
‘appropriate skill’
‘availability’
‘bonus’
‘career structure’’
‘cadre’
‘clinical officer’
‘competence’
‘conditions’
‘contribution’
‘coverage’
‘deployment’
‘developing countries’
‘demand’
‘distribution’
‘doctor’
‘employment’
‘equity’
‘exemption’
‘expenditure’
‘free’
‘health worker’
‘health’
‘honorarium’
‘housing’
‘human resources’
‘human resources in health’
‘incentives’
‘integration’
‘job satisfaction’
‘maternal’
‘midwife’
‘motivation’
‘newborn’
‘performance’
‘personnel’
‘planning’
‘productivity’
‘provider’
‘provision’
‘quality’
‘recruitment’
‘recurrent’
‘removal’
‘resources’
‘remuneration’
‘reproductive’
‘responsiveness’
‘retention’
‘revenue generation’
‘revenue utilization’
‘reward’
‘service’
‘skill mix’
‘skilled attendance’
‘skilled birth attendants’
‘staff development’
‘staff’
‘staffing’
‘stipend’
‘supervision’
‘support’
‘supplement’
‘terms’
‘training’
‘task shifting’
‘top up’
‘user charge’
'user fee'
‘utilization’
‘work load’

'nurse'	'work'
'paramedic'	'worker'
'pay'	'working condition'
'payment'	'working hours'

Truncation (*) was used in some of the above terms wherever needed. In addition the terms were also used in combinations.

In the initial search, 500 articles were identified out of which 267 were shortlisted based on the keywords above; the abstracts were then reviewed independently by two researchers and 115 were shortlisted. Following a further refinement of the search parameters, in which the keywords were narrowed to exclude any articles not including reference to human resources engaged with RMNH activity, a final list of 67 were included and the full articles were included and reviewed. Similarly the grey literature search furnished 200 documents and 35 were included following the aforesaid procedure.

Background

In the mid 1980s, many low and middle income countries (LMICs) were encouraged to introduce user fees as a response to declining national health budgets. Austerity programmes, demanded by the international financial institutions and northern donors from the 1980s onwards, had resulted in significantly reduced public expenditure on social services. In this climate, user fees were presented as a means of cost recovery of public health expenditure, as well as enhancing efficiency and equity by deterring non-essential use with the potential to improve service quality of and access to peripheral health facilities for poor people (Yates, 2009; McPake 1993). The Bamako Initiative, put into action by African Ministers of Health, followed on closely in 1987. It included user fees among its instruments, amid assertions that it would produce quality improvements in services through the local retention of generated revenue (UNICEF 2009; McPake 1993).

However, after more than two decades of global user fee experience, these objectives have been rigorously critiqued (Gilson and McIntyre 2005; Witter 2005; James et al. 2006) with Witter arguing that fees have "not fulfilled the expectations set for them when they were established" (2005:1). In particular, it was widely observed that the utilisation of services had an inverse relationship with user fees (Abdu, et al. 2004; Pearson 2004; Mubyazi, et al. 2006). As the regressive nature of user fees has come under close scrutiny (Yates 2009; Gilson and McIntyre 2005; WHO 2008), many countries, such as Burkina Faso, Ghana, Nepal, South Africa and Uganda, have taken steps to either reduce or abolish user fees in their health facilities or to apply exemptions or waivers from fees for specific groups or services more consistently (Meesen et al. 2009; Witter et al. 2011; Ridde and Haddad 2009).

The role of fees has particular relevance to utilisation levels of maternal and newborn health care with financial constraints often identified as the main barrier to access (Lee et al. 2009). As the next section shows, these two issues are closely entwined.

Reproductive, maternal and newborn health

The slow progress in reducing the high levels of maternal and neonatal deaths in low income countries has led to a renewed commitment to improve provision and access to reproductive, maternal and newborn health services (RMNH) (Yates 2009). More than 500,000 women and 3.5 million newborns continue to die each year from causes related to pregnancy and childbirth (Hoope-Bender et al. 2006). Hofmeyr and colleagues put the situation into global perspective: "an enormous obstetric care coverage gap disadvantages the world's poor—60 million births occur annually outside of hospitals, 52 million of these without a skilled provider. At least three-quarters of neonatal deaths and a similar proportion of maternal deaths occur in these suboptimal care settings" (2009: S22). Lawn et al. similarly noted the shared fates of maternal and neonatal deaths, commenting that "the time of greatest risk of mortality and morbidity for both the mother and baby is at birth" (2009a: S10). Progress in MDG5 is clearly of concern given these figures, but progress in MDG 4 is significantly affected by the continuing high level of neonatal deaths, which is "now [in 2008] 42% of under-5 deaths compared with 37% of under-5 deaths in 2000" (Lawn et al. 2009a:S5): the relative decline in under-5 mortality at different ages is constituted from the later childhood years.

The need for a combined strategy was reinforced in the Joint Statement on Maternal and Newborn Health (WHO et al. 2008) and the UN Secretary General's Strategy for Women and Children's Health (2010), which highlighted quality, universal access, skilled attendance and equity. Three of the seven action points from the Joint Statement are particularly relevant to this review:

- "Scale-up quality health services to ensure universal access to reproductive health, especially for family planning, skilled attendance at delivery and emergency obstetric and newborn care, ensuring linkages with HIV prevention and treatment;
- Address the urgent need for skilled health workers, particularly midwives;
- Address financial barriers to access, especially for the poorest."

Donors too have highlighted the necessity to act, exemplified by DFID's 'Framework for Results for Reproductive, Maternal and Newborn Health' (DFID 2010), citing four pillars for action[12]. Pillars 2 and 3, addressing the supply of services, have significant interactions that need to be better understood, particularly the effect of fee removal on the supply of quality services by the RMNH workforce (Campbell et al. 2011).

User fees are cited as a considerable financial barrier to women's care-seeking during and following their pregnancy. In a study of DHS data from 41 countries undertaken by Lee et al. (2009), "the most common obstacles to seeking obstetric care included financial barriers (>50%), challenges with transport (37%), and distance (37%)" (p. 567) to a health facility. Witter et al. (2007a) reported that, in Ghana, before the delivery fee exemption policy began in 2003, pregnant women would be

[12] "**Pillar 1: empower** women and girls to make healthy reproductive choices and act on them
Pillar 2: remove barriers that prevent access to quality services, particularly for the poorest and most at risk
Pillar 3: expand the supply of quality services, delivering cost effective interventions for family planning, safe abortion, antenatal care, safe delivery and emergency obstetric care, postnatal and newborn care – delivered through stronger health systems with public and private providers
Pillar 4: enhance accountability for results at all levels with increased transparency." (from DFID 2010: 2)

required to pay "an average of $12 for vaginal deliveries in public hospitals…while caesareans cost an average of $68" (p. 2).
Borghi et al.(2008) constructed Table 1 which shows costs associated with obstetric care in range of settings.

Table 1: Expenditures incurred by households (mean) giving birth in a government hospital, US$, 2006

Country (year of costs)	Type of facility	Financing system	Source	Normal Delivery				Delivery-Related Complications			
				Transport costs	Drugs	Other facility charges	Total cost	Transport costs	Drugs	Other facility charges	Total cost
Benin (2002)	1 urban teaching hospital	General taxation plus user and unofficial fees	Borghi *et al.* 2003	1.88	21.12	25.93	49.16	2.23	53.26	179.03	246.37
Ghana (2002)	1 urban teaching hospital	General taxation plus user and unofficial fees		2.35	9.27	15.13	27.92	3.75	66.64	70.98	154.39
Ghana (2004)	Unspecified health facility/ hospital		Asante *et al.* (2007)	-	-	16.88	42.09	-	-	155.02	195.00
Tanzania (1997)	1 urban hospital	General taxation, official exemptions for MCH care	Kowalski *et al.* 2002	6.98**	3.86		10.84	6.98**	4.86	2.49	14.33
Bangladesh (2002)	1 rural hospital	General taxation plus user fees and unofficial charges	Borghi *et al.* 2006a	-	-	-	-	2.54	141.24	37.64	181.42
Bangladesh (2001)	2 rural hospitals		Afsana 2004	9.87	7.90	13.81	31.58	39.46	197.32	157.86	394.66
Bangladesh (1995)	4 urban hospitals		Nahar & Costello, 1998	8.57	16.28	17.20	42.05	25.71	84.83	44.36	154.90
Bangladesh (1994)	1 urban teaching hospital		Khan 2005	40.20	24.82	20.24	85.26	59.94	85.91	34.71	180.56
Nepal (2003)	8 rural hospitals	General taxation plus user fees	Borghi *et al.* 2006b	37.22	26.90		64.12	37.22	92.24		129.46
Burkina Faso (1995)*	12 referral hospitals	General taxation plus user fees	Sondo *et al.* 1997	-	-	-	-	24.23	37.69	20.20	82.11
Pakistan (1994 Pakistani Rupees)	3 urban hospitals	General taxation plus nominal user charges in facilities, and unofficial payments for drugs and medical supplies	Kadir *et al.* 2000	-	4.07-7.49	7.22-13.36	11.29-20.84	-	48.00	24.75	72.75

' Assuming 490 FCFA to the Dollar in 1995
'*Assume one companion

Source: Borghi et al. (2008)

As the movement to eliminate fees for maternal health services appears to be gathering momentum across low income countries, the financial barrier presented by fees is being reduced even though other costs continue.

Of particular interest to this review is therefore the recent emphasis on fee removal for delivery and newborn health care; Table 1 shows a selection of countries that have pursued fee removal or exemption policies for delivery care and/or caesarean section.

Often the decision to remove user fees for RMNH care represents an attempt to realise wider coverage for maternal and neonatal health care and achieve greater equity by removing the financial barrier to access. For many, this is clearly 'good news': as Yates (2009) declares "countries can reverse the negative effect of user fees by merely abolishing them" (p. 2079). Several studies note an immediate positive impact on utilisation of services for delivery care (El Khoury et al. 2011; Witter et al. 2010; Meesen et al. 2009; Altaras 2009; Yates 2009; Witter et al. 2007b; Burnham et al. 2004) and, in some cases, show that "service usage increases more within poorer quintiles than richer quintiles when such fees are abolished" (UNICEF 2009:11).

Most studies reviewing utilisation following the abolition of user charges for deliveries and other related maternity care have observed a rise in assisted deliveries and caesarean sections at health facilities (Meesen et al. 2009; Penfold et al. 2007; McIntyre et al. 2005). In Ghana, Witter et al. (2007b) noted a 12% increase in women delivering at facilities, while in Haiti, the access of women to maternal health services increased as a result of both the full fee removal and partial exemptions/reduced fee policies piloted by an international NGO from 2006 in several regions (Altaras 2009). Following the introduction of an exemption policy for delivery fees in Senegal (2005-06), increases in facility-based deliveries rose "from 40% to 44% of expected deliveries over 2004-5 ($P<0.0001$) and an increase in caesarean section rates from 4.2%...in 2004 to 5.6% in 2005 ($P<0.0001$)" (Witter 2010: 389). In Mali, "institutional deliveries and caesarean section rates in Mali have increased" (El Khoury et al. 2011: xii) following fee removal for caesarean sections in public hospitals in 2005.

Campbell et al. (2011), however, present another perspective in acknowledging the challenges now presented by fee removal: "what is the net benefit of increasing access to 'free' health services if there is no qualified health worker available to provide care, or where you may queue all day only to be afforded an ineffectual consultation which undermines respect, trust, privacy and confidentiality? Such are the realities in many low-income countries, particularly in rural and remote areas, where health workers are drastically in short supply, and often over-burdened and/or under-resourced" (p.1). Lee et al. (2009) concur arguing that "strategies to increase demand for services need to be accompanied by actions to ensure the supply side can cope with the increased demand" (p.114).

Table 1: Countries that have removed fees or introduced exemptions for RMNH

COUNTRY	AUTHOR	REMOVAL/ exemption	CATEGORY/ SERVICE
BENIN	Witter 2010	Free	Caesareans
BURKINA FASO	Meesen 2009	80% subsidy-2006	Delivery and Caesarean
BURUNDI	Nimpagaritse 2011	Exemptions	Delivery care Under 5s
CAMEROON	Witter 2010	Vouchers	Delivery care
ETHIOPIA	Witter 2010	Exemptions	Maternal health
GHANA	Agyepong 2011; Meesen et al. 2009; Penfold 2007 Witter 2007a,b	Exemptions	Delivery care
KENYA	Chuma et al. 2009	Fee removal 2007	Delivery care
LIBERIA	Meesen et al. 2011	Suspension of user fees 2006	Primary care
MALI	El-Khoury et al. 2011	Fee removal 2005	Caesareans
NEPAL	Witter et al. 2011	Fee removal 2009	Universal free delivery
NIGER	Meesen et al. 2009	Fee removal 2006	Caesareans
SENEGAL	Witter et al. 2010	Fee removal 2006	Caesareans
SOUTH AFRICA	McIntyre et al 2005	Fee removal 1996	
SUDAN	Witter 2009b	Fee removal	Caesarean
UGANDA	Nabyonga-Orem 2008 Deininger & Mpuga 2005 Burnham et al. 2004	Fee removal 2001	Primary care, inc delivery
ZAMBIA	Cheelo et al. 2010	Fee removal 2006	'Baseline services'

UNICEF (2009) has highlighted a list of critical issues to be considered in undertaking fee removal, including political commitment (Box 1). Similar to the transitional steps noted by UNICEF, recent reviews of the growing trend to abolish or suspend user fees highlight that for these policies to be effective "careful planning and management on the supply side" is required "in order to ensure that health providers are able to meet the increase in demand" (UNICEF 2009:14). Studies by Meesen et

al. (2011), McPake et. al (2011), Ridde and Morestin (2011), Witter et al. (2009, 2007b), and Gilson and McIntyre (2005) have sought to identify critical lessons that could guide the process of planning and implementing fee removal, including the need for strong leadership, a rigorous situation analysis, setting clear priorities and objectives, involve and communicate with relevant stakeholders particularly the workforce, and monitoring and evaluation. McPake et al. (2011), in more practical vein, suggest that the "impact of fee removal on utilization" needs to be met by a thorough "estimation of additional requirements for human resources and drugs, and mobilization of additional financial resources" (2011: S105); Witter et al. (2009) add three more pragmatic lessons: "facilities must be adequately… reimbursed for their costs; staff must be motivated to provide appropriate care to all; and attention should be paid to improving quality of care" (2009:3-4).

Box 1

"Prerequisites for a smooth transition away from user fees include: strong leadership to initiate and sustain policy changes; an analysis of the existing role of user fees in health financing – particularly at sub-national level – as a basis for formulating measures to avoid the potential negative effects of their removal; supply-side investments in health services to meet increased demand and improve the quality and geographical coverage of services; an increase in the health budget to compensate for the loss in revenue from user fees as well as to meet increased demand; dialogue with health sector staff and, where necessary, improvements in staffing, to provide for increases in workload accompanying increases in service utilisation; buffer funds and pre-stocking of drugs to ensure availability; strengthening of public financial management systems so that funds reach health centres in a timely and predictable fashion; improvements in health sector efficiency and 'value for money' through a stronger focus on preventative and simple curative services at primary health care level; and monitoring of the policy change, beginning with an accurate baseline assessment" (UNICEF 2009: 14).

Following UNICEF (2009) and Witter et al. (2009), the literature review will examine to what extent studies on fee removal, exemption or waivers address 1) the use of fee revenue particularly at sub-national level; 2) reported impact of increased utilisation of RMNH services on staff, including the implications of lost fee revenue for human resources at district facilities and replacement strategies; and 3) capacity of staff to provide quality RMNH care.

1) Use of fee revenue for human resources at district facilities

The literature generally underplays the important contribution that fee revenue plays on a small scale. As McPake et al. (2011) note "the loss of revenue from the removal of fees will be limited at national level but could be more substantial at district or facility level" (ii108). In Senegal, for example, at the higher levels of the system, user fees made up 37% of the revenue of the regional hospital and 43% of the Centres de Santes, whereas the health post (Poste de Santes) "derived most of their income from user fees (95-96%)" (Witter et al. 2010: 388). In situations where fee revenue was retained by the district or sub-district facility, it also allowed some autonomy and flexibility for the district health management team or the Health Centre in-charge to respond to gaps in funding

(Steinhardt et al. 2011). As Cheelo et al. (2010) suggest, "user fees offer the health system a fungible and sometimes substantial source of financing," (p.2) particularly where delays in government funding might be routinely experienced. Such discretionary funding would often supplement low salaries, cover delays in receiving salaries or cover the costs of community or support staff (Cheelo et al. 2010; Steinhardt et al. 2011; Witter et al. 2010; Ssengooba et al. 2007; Burnham et al. 2004).

Supplementing staff salaries was a common use of fee revenue. Before the abolition of fees for all primary care services in Uganda in 2001, fee revenue had routinely been used to supplement low staff salaries (Ssengooba 2007; Burnham et al. 2004); such salary supplements could range from "50-150% of the salaries, and were the main financial support covering the daily living costs of staff" (Kipp et al. 2001: 1035). In Zambia, for example, prior to the abolition of user fees in 2006-7, several district level innovations for locally retained fee revenue were noted by Cheelo et al. (2010) at different facilities: 1) the DHMT allowed health centres to allocate 10% of health centre fee revenue to staff bonuses; 2) health workers not yet on the government payroll (which was considered a lengthy process) could be taken on contract by DHMT; and 3) staff could be paid overtime allowances. In Burkina Faso, RMNH staff received 20% of the delivery fee, which was based on a sliding scale depending on level of complication (Meesen et al. 2009). Several studies also describe the important role such incentives had on staff motivation: Kipp et al. (2001), for example, reported that staff in Ugandan facilities "were spending more time at work than previously and felt that the quality of service delivery they offered to their patients had improved" (p. 1035).

Often technical and community support staff received wages or small bonuses: in Afghanistan (Steinhardt et al. 2011), Uganda (Nabyonga-Orem et al. 2008) and Zambia (Cheelo et al. 2010), community health workers (CHWs) or other community workers were frequently paid allowances from fee revenue. In Senegal, the *matrones* who performed normal deliveries and the stretcher bearers working at the *Cases de Sante* were paid out of general facility revenue plus a share of delivery fees (Witter et al. 2010).

2) Impact of increased utilisation of RMNH services on staff

Across the studies, the rise in utilisation invariably led to an increase in staff workloads; in several countries this was anticipated with a concomitant rise in salary; mention of specific associated attempts to increase recruitment is less frequent. One source indicates a recruitment of an additional 1300 staff in Zambia (Masiye et al., 2010) but it is not clear that this was directly related to user fee removal. In others recruitment is a continuous emphasis – before and after change in financing policy – and salary improvement is seen as the main initiative that can contribute to this effort. However, in other countries a lack of preparation and planning compounded the problem of staff shortages and difficulties with rural allocation and retention leading to significant low morale.

- **Increased workload**

Most studies reported that health staff considered their workload to have increased since the new policies on fee removal or exemptions commenced (Steinhardt et al. 2011; Nimpagaritse and Bertone 2011; Meesen, 2009; McIntyre et al. 2005; (Walker and Gilson 2004), Burnham et al. 2004). Masiye et al. (2008) used a calculation to estimate staff workload based on "the total number of patient visits divided by the total number of staff per day" (12) but most other studies, Witter

(2007a) is one exception, did not define or use a formal workload calculation. Burnham et al. (2004) reported that the workload for health workers increased by an average of 47%. In Zambia, health workers complained that patients were making unnecessary use of the health centre now that they no longer paid a fee, thus adding to their workload. The HMIS data, on the other hand, suggested that, even with a rise in utilisation in some health centres of 50%, 'their workload did not increase significantly" (Masiye et al. 2010: 749); unfortunately, the authors do not provide further explanation why this disparity exists.

Change in service utilisation was noted in Uganda – prior to fee removal in 2001, public hospitals were used more frequently than health centres. After fee removal, preference shifted to health centres. Although the study is silent on the impact this might have on HC health workers, it can be inferred that this would increase the workload of HC staff (Nabyonga-Orem et al. 2011).

Much of the impact of the increased utilisation in Senegal, according to the study's authors, would have fallen on the *matrones* (at the Cases de Sante) as " most facility deliveries at district and sub-district level *(were)* carried out by semi-trained '*matrones*'" (Witter et al. 2010: 391) but no data are available to confirm this. Witter et al. report a 12% increase in workload on midwives in two regions of the study. Workload increases varied across the regions: at one regional hospital, 27 to 31 deliveries per midwife per month were reported, while the other declined from 11 to 8. At district level, deliveries per midwife per month ranged between 12 to 125. A 33% increase in workload was observed in one year: "the average increased from 53 per month in 2004 to 73 in 2005" (ibid: 389).

Nimpagaritse and Bertone (2011), reflecting on the situation in Burundi following the unexpected announcement introducing free health services for children under 5 and deliveries in 2006, recounted that all health and administrative staff "saw their workload increase almost hour by hour" (p. ii66) - not just from the increased utilisation following the announcement but also from the complex reimbursement procedures.

Concomitant with increased workload, various studies report declining morale - in Burundi (Nimpagaritse and Bertone 2011), South Africa (McIntyre et al. 2005), and Uganda (Burnham et al. 2004). In Zambia, although a separate policy from fee removal, "rural hardship allowances were also scrapped, which has demotivated rural health workers" Cheelo (2010:26); other non-monetary incentives such as transport and lunch allowances for outreach were no longer possible. Just under 41% of the health workers in Uganda said they had a 'negative attitude' towards their work following the removal of user fees (Burnham et al. 2004).

- **Compensation for increased workload**

With the implementation of fee removal or exemption for delivery services, the loss of discretionary funds might be reimbursed in some form of payment or compensation by the government but, if not, or if insufficient to fully replace the fee revenue, facility staff would need to institute their own form of coping strategies or forego the expenditure. In both Zambia (Cheelo et al. 2010; Masiye et al. 2010) and Uganda (Nabyonga Orem et al. 2011; Xu et al. 2006; Yates et al. 2006), additional funding was released by the Ministries of Health to the districts to "compensate for the loss in revenue from user fees" (Nabyonga Orem et al. 2011: ii43). This method of 'compensation' appears to have been more successful in Uganda than in Zambia. In the former, according to Nabyonga-Orem et al. (2011), flexibility in how these funds were to be used was allowed although Ssengooba et al. (2007) suggest that the additional funds did not directly compensate staff. Whereas in Zambia, few guidelines were provided by the Ministry of Health about what the 'user fee replacement grants' could be used for

(Cheelo et al. 2010), in Uganda, measures taken to 'counter' the effects of the fee removal policy included transfer of US$526,315 from the Finance Ministry to the districts (for drug purchases).

For many districts in Zambia, the user fee replacement grant, first initiated by the government in 2006 and later supported by DFID, appeared to make little difference (Cheelo et al. 2010). Minimal transfers were made to districts in the first year, while in the following years it was allocated as a general top-up of districts' operating budget, but the entire grant was allocated to the district hospitals rather than health centres (ibid). Masiye et al. (2010) comment that the funds given to facilities were often less than they generated from user fees, but more disappointing was the loss of their relatively limited but useful autonomy regarding small expenditures; Burnham et al. (2004) also notes this for Uganda. For many health centres in Zambia, the consequences were that services were scaled back or stopped; in this situation, government health workers no longer received a bonus and outreach and remuneration to community and casual workers were reduced significantly. Some Zambian health centres put in place a range of coping strategies, including income generating activities but not all were keen to become micro-entrepreneurs (Cheelo et al. 2010).

The loss of financial autonomy provided by user fees was also experienced in Burundi. Before the announcement by the President of Burundi introducing free health services for children under 5 and free deliveries in 2006, hospitals retained all user fees and were expected to be relatively self-sufficient (Nimpagaritse and Bertone 2011). Following the abolition of fees for these services, delays in reimbursement affected hospital and health centre functioning as they now could not pay for their own supplies. Complicated administrative arrangements were also introduced for user registration which further added to staff workloads (ibid.). In Burkina Faso, the 20% bonus formerly received by RMNH staff for deliveries from the user fee was retained in a cash payment for all related delivery costs based on a centrally determined lump sum; with no guidance on how to calculate from which price they should take the 20% from the Ministry of Health payment, health centres throughout the country developed their own calculation (Ridde et al. 2011; Meesen et al. 2009).

In Nepal and Burkina Faso, reimbursement tariffs were decided centrally by the Ministry of Health. Nepal's national free delivery policy (Aama programme), has retained incentive payments to health workers of the earlier scheme as well as the cash payment to women who choose to deliver in health facilities (Witter et al. 2011). The tariffs in Nepal varied according to facility type and degree of obstetric complication as specified by the Ministry of Health and Population. The tariff also includes a uniform "small incentive to health workers" (ibid: ii86), recommended at NRs 300. However, some flexibility appears to be possible, with modifications by geographical region and by cadre. As an example of the first, two districts in more remote locations (Jumla and Sasapur) offered a much higher incentive (ibid) – NRs 500 and NRs 7-800 respectively. For the second, Witter et al. note that there appears to be significant variety in who receives the incentive payment: "sometimes just to the nurses, sometimes to a range of staff including support staff and administrators," other times "to fund additional support staff positions" (2011:89). Notably, the authors of the study found that the Nepali facilities were much financially better off from the new policy. The incentive policy has also been used to address work attendance at the national referral hospital by stating that staff would not be eligible for an incentive payment if they took more than two weeks leave (Witter et al. 2010).

In Niger, the additional administrative and clinical workload experienced by health workers created by increased utilisation was acknowledged and a payment of a monthly bonus ($45) supplemented their salary ($140) (Ridde and Diarra 2009).

Community and support staff often had to be let go once facilities no longer had discretionary funds from fee revenue. This occurred in Uganda (Nabyonga-Orem et al. 2008). Some of the *Cases de Santes* community staff in Senegal were given a fixed monthly allowance – which for some represented an increase, while others received a decrease (Witter et al. 2010). Witter and Diadhiou (2008) suggest this was possible by increasing the charges for other services, "cross-subsidising from other sources, reducing investment, and/or soliciting more local government support" (p.101).

3) Capacity of staff to provide quality RMNH care

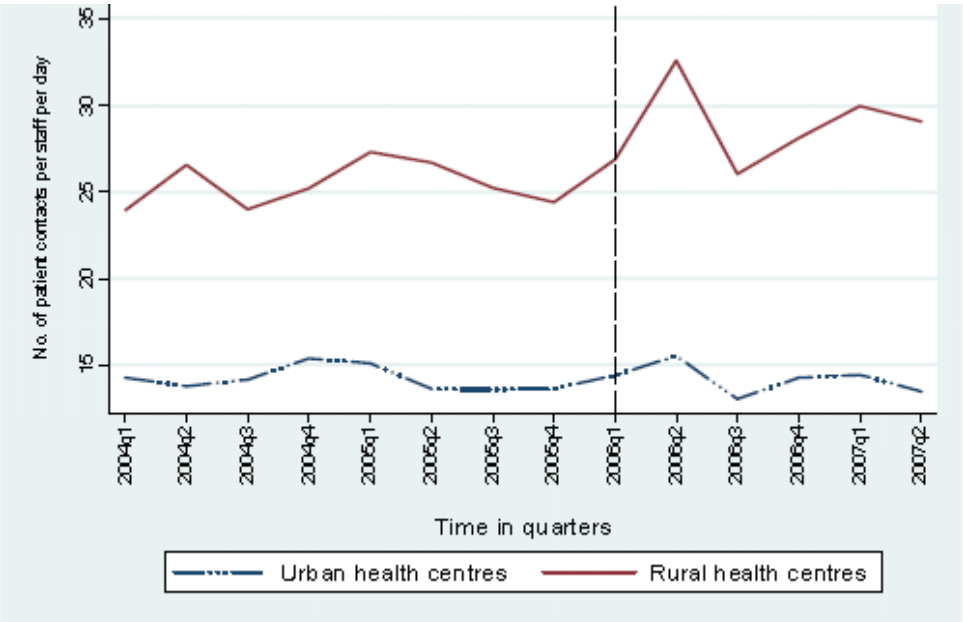
Masiye et al. (2010) suggest that, in Zambia, "the lack of serious adverse consequences for quality of care is likely to be due to the careful planning for fee removal undertaken … planners predicted that utilisation would increase by 40% and estimated the additional staff, drugs and equipment that would be required to cope with this increased utilisation" (p. 749). The increase in utilisation ranged from 2% to 95%, with the average at 55% - thus exceeding the 40% anticipated. With limited evidence, it can be inferred that the sub-national facilities that exceeded the projected 40% utilisation rate had significant difficulties. According to the study by Cheelo et al. (2010), the fee replacement grant and the enhanced district budget supported by DFID discussed above were considered unreliable and inconsistent by the facilities. In Uganda, such planning was also noted as wages for health workers were increased following fee removal by 14-63% across different cadres; payroll management was also improved to assure more timely salary payment (Nabyongo Orem et al. 2008).

Impact of fee removal on HRH characteristics

- HRH concentration

Figure 2 shows that, following the removal of fees in the rural areas for primary care, including deliveries, in Zambia, staff workload was considerably higher in rural than urban areas (where fees remain), "reflecting a concentration of health human resources in urban areas" (Masiye et al. 2008:12). The graph shows a 'spike' in the workload of rural staff in the first two quarters of 2006 following fee removal, which Masiye et al. (2008) suggest was shortlived; however, a gradual increase is also indicated following the third quarter, thus worsening relative rural-urban inequities of workload and fuelling further "maldistribution characterized by urban concentration and rural deficits" in HRH (WHO, 2006: xviii).

Figure 2 – Changes in staff workload: rural versus urban 2004-2007



Source: Masiye et al. 2008

- **HRH Stock**

Shortage of health workers was noted in South Africa (McIntyre et al. 2005); Senegal (Witter et al. 2010); Nepal (Witter et al. 2011); Uganda (Nabyonga Orem et al. 2008); and Zambia (Masiye et al. 2010). Nabyonga Orem et al. (2008) suggests a 'human resource crisis' in some centres resulted; however, they note that health facilities were able to accelerate the recruitment of health workers although it is not clear the source of funds that facilitated this. A later analysis by Nabyonga-Orem et al. (2011) cites the increased recruitment to establishment posts: "from 33% in 1999/00 to 69% in 2005/5" (p.ii43). This was similar to Zambia in which the Ministry of Health estimated that 1600 new staff would be needed to respond to increased utilisation, of which 1300, mainly nurses, were recruited (Masiye et al. 2010). It is not clear from this paper exactly when these health workers were recruited or to where: they may have played some role in the reduction of workloads in both urban and rural areas in early 2007.

Very few studies identified the cadres affected by fee removal or exemptions. Witter et al. (2010) cite a shortage of midwives in Senegal and in Nepal, however the staff noted to be associated with delivery care in Nepal "remained stable or increased during period of the study" (Witter et al. 2011: 89). None of this was directly related to user fee policy with the later increases associated with general policies intended to support workforces increases.

Delivering quality RMNH care

Having opened the gateway to enable greater access to RMNH services by removing one of the main constraints to access, the challenge to deliver quality RMNH service is considerable. Many would agree with Campbell et al.'s (2011) statement in relation to services for maternal and child health that "the existing stock, competencies and distribution of the health workforce may not be able to respond to increased demand for services while maintaining and improving the quality of the services it provides" (p.2). Hoope-Bender et al. (2006) raises similar concerns that countries "with high MMRs are characterized by an overall lack of qualified staff, inequitable distribution of providers, high levels of absenteeism, and decreasing numbers of skilled workers due to the impact of HIV/AIDS and regional/international migration" (2006:229).

There is little evidence of the impact of fee removal on quality of care. In Ghana, quality was found neither to have improved or reduced after the maternal health exemption policy, but generally to be problematic (Bosu et al., 2007) and it is worth pointing out that increasing access to a service of poor quality may not benefit users and may even cause harm.

While Hoope-Bender et al. (2006) argue that "most primary health care (PHC) frontline workers are not sufficiently skilled to deliver a minimum MNH service package" (p. 230), others are more hopeful that a process of careful planning for task shifting could produce sufficient skills in lower cadres to meet the need, including caesarean sections (Lawn et al. 2009b). Given the current density of health professionals in the countries surveyed in table 3 (for those countries removing fees for RMNH) this will be essential to meet current RMNH demand.

Finally, the life chances of a woman during pregnancy and when giving birth are closely intertwined with her child. As noted above, the need for a combined strategy is essential: while MDG 5 is the only goal with a specified professional as its indicator, ie the proportion of births attended by skilled health personnel, it is often the same health worker(s) who cares for both mother and newborn. Unfortunately, there was no mention of newborn health or postpartum complications in any of the studies reviewed. As Lawn et al. (2009a) note "postnatal care is also a critical, yet neglected, gap in low- and middle-income countries, and coverage is even lower than skilled birth attendance and much lower than prenatal care" (p S12).

Removing financial barriers to access reproductive, maternal and newborn health services: the challenges and policy implications for Human Resources for Health (HRH)

Ghana case study

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December 2011

Acknowledgements

We would like to thank Ijeoma Edoka and Tuan Nguyen for assistance with analysis of data.

Abbreviations

ADHA	Additional Duty Hour Allowance
ANC	Antenatal care
CSO	Central Statistics Office
DHMIS	District Health Management Information System
DEP	Delivery Exemption Policy
GLSS	Ghana Living Standards Survey
GPRS	Growth and Poverty Reduction Strategy
HIPC	Highly Indebted Poor Country
HRH	Human Resources for Health
IMF	International Monetary Fund
IGF	Internally Generated Funds
LI	Legislative Instrument
MDG	Millennium Development Goals
MoH	Ministry of Health
MPS	making Pregnancy Safer
MMR	Maternal Mortality Ratio
NHIA	National Health Insurance Authority
NHIS	National Health Insurance Scheme
OPD	Out-patient
RMNH	Reproductive, Maternal and Newborn Health

SWAp	Sector Wide Approach
SSNIT	Social Security and National Insurance Trust
TBA	Traditional Birth Attendant

Introduction

Ghana has been selected as a case study for this research as it has actively engaged in a number of policy reforms in recent years to increase the financial accessibility of reproductive, maternal and neonatal care. In 2004, exemptions were introduced for delivery care, first in five regions and then across the country. This policy was later superseded, in 2008, by free coverage of all pregnant women within the National Health Insurance Scheme (NHIS), which had started in 2005. While the first phase has been relatively thoroughly evaluated, there is less understanding about the impact of the recent NHIS reforms in terms of access to RMNH services. Ghana has also faced a number of challenges in relation to HRH, not least caused by its high level of medical training, links to European markets and consequent brain drain of doctors and nurses. In addition, retaining qualified medical staff and specialists in rural areas remains a challenge, despite recent improvements to public sector pay. Reproductive health indicators, while improving, remain poor in key domains, as well as unequal across the country and across socio-economic groups. Understanding the implications of the recent financing reforms for HRH supply and performance and access to quality RMNH services is very policy-relevant in Ghana today.

Ghana has made significant progress in health outcomes: infant mortality has reduced (from 77 in 1988 to 50 in 2008), and fertility rates have come down (from 6.4 in 1988 to 4 in 2008) (DHS figures). However, much targeted effort is required to ensure maternal health outcomes in particular are improved. Maternal mortality remains high, though it has declined in the past two decades from 740 per 100,000 live births in 1990 to 451 in 2008. HIV prevalence amongst pregnant women has dropped slightly from 3.2% in 2006 to 2.9% in 2009, while family planning acceptor rates have been climbing (from 25% in 2006 to 31% in 2009). ANC coverage remains high at around 92% in 2009. Skilled deliveries have remained fairly constant, at around 45% in 2006-9 (though with annual fluctuations). Roughly half of women receive post-natal care (56% in 2009) (GHS 2010). Neonatal deaths account for 60 percent of the deaths in infancy (DHS 2008). Despite progress, Ghana is still off track on both MDG4 and MDG5.

Research methods

The case study is based on secondary sources.

Literature and policy analysis

A thorough review of literature was undertaken on the themes of health financing policy, user fees, reproductive health and human resources for health in Ghana. The literature review included searching peer-reviewed and grey literature in recognized electronic databases and websites. Key policy documents relating to user fees and HRH were also obtained and analysed.

Secondary data analysis

National data sets relating to staffing, staff remuneration and conditions, utilisation of services and other relevant indicators such as poverty and income levels were sought and analysed. Sources for these included the DHMIS, the database held by the Department of HR in the MoH, and nationally

published statistics produced by the CSO. Data from these sources was retrieved into an Excel spreadsheet, disaggregated to the lowest level permitted by the data (district, where possible – if not, to the region).

Data analysis

Quantitative data were collated and analysed using Excel. The WHO tool produced by MPS was also used to project staffing needs and gaps.

The findings from the literature review and policy analysis, as well as the secondary data, were triangulated to reach overall conclusions and recommendations.

Workforce policies

Post independence, human resource for health reforms in Ghana were a response to changing trends in remodelling the health system and economic and structural changes. The changes in the health sector led to: increasing access to health care provision through primary health care; multiple financing systems ('free health care'; 'cash and carry'; 'health insurance') and fiscal and managerial decentralisation of health services. In the light of this, the health sector went through a number of changes in the areas of planning, training, management and deployment and financing of health workforce.

The early years – production, followed by downsizing

Post Independence governments realized the importance of human resources to overall development of the country and instituted a policy to increase the number of highly qualified personnel and critical professionals in the country. This resulted in the establishment of many educational facilities, including nursing training colleges, to boost production at all levels of the education system. All these changes in education helped to increase the supply of skilled health professionals in Ghana.

In 1978, as a response to the Alma Ata declaration, the government of Ghana designed a primary health care model with three levels of care (National Health Planning Unit, 1979), including three types of community level health workers. In 1987, the Ministry of Health established a national program to train Traditional Birth Attendants (TBAs) and Community Clinic Assistants (CCAs) with support from USAID. This led to the training of approximately 12,000 TBAs and a system of continued education for lower level health workers in all the regions. Under this program, TBAs were also trained in family planning. Around this same period, it was estimated that the public health sector had about 22,000 unskilled workers who were engaged in various health facilities country-wide. Realising that labour cost constitutes the highest share of the health sector budget, about 8,000 unskilled health workers were dismissed from the public sector (World Bank Report (1994). This policy shift was in response to demands from the International Monetary Fund (IMF) to cut spending through downsizing of public sector workers in order to ensure fiscal discipline in government expenditure.

The Sector Wide Approach (SWAp) and brain drain challenge

A five Year Program of Work (5YPOW) that had a strong human resource management component was introduced in 1996 and the first Sector Wide Approach Strategy (SWAp) to planning in the health sector was introduced in 1997. The five year programme of work (5YPOW) spelled out the policy and implementation guidelines of health human resources in the public health sector (Ministry of Health, 1996). The strategic framework sought to abolish old human resource principles and introduced new principles of human resource management in the public health sector, such as shifting to planning for long-term goals in recruitment, development and training through comprehensively established payment schemes and conditions of service for health workers.

This was the period when more nurses and doctors were leaving the country for the United Kingdom and United States. Table 1 shows the cumulative loss of doctors over that period.

Table 1 Cumulative loss of medical doctors in Ghana

Medical Doctors	1990	1991	1992	1993	1994	1995	1996	1997	1998	2000
Cumulative loss of medical doctors	95	200	358	528	619	632	838	1083	1118	1300

Source: (Awases et al. 2004)

Some of the measures adopted by Ghana Ministry of Health to respond to the *'brain drain'* were to train multi-skilled staff such as community health nurses to ensure skill mix of staffing and also to augment the work of professional nurses (Dovlo, 1997). Key health workers like nurses and midwives were bonded to take up mandatory services in the public sector for a period before they could leave the public service (Ministry of Health 2002). To compensate health workers for the extra hours associated with staff shortage, the Ministry of Health instituted a financial compensation scheme: the Additional Duty Hour Allowance (ADHA) in 1998. The ADHA was designed to compensate for any additional hours worked and was a percentage calculation on basic salary.

Recent human resource reforms

Most public health facilities experienced shortages of health workers as a result of emigration and other factors in the 1990s. This resulted in increased workload of health workers, and weakened general health systems. In 2002, the Ministry of Health developed a five year human resource policy and strategic framework to provide guidance on the management of human resources in the health sector. The strategies adopted in this document were in line with the pro-poor agenda of the Ghana Poverty Reduction Strategy (GPRS) and aimed at reducing the equity gap in access to health services in the country (Ministry of Health, 2002).

Financial incentives

At the end of the 1990s, doctors' lobbying and strike activity secured payment of the Additional Daily Hours Allowance (ADHA) that quickly extended to all doctors irrespective of their daily hours and had the effect of an approximate doubling of salary level. This allowance was then consolidated into the salary scale in 2006, as part of a rationalisation and job evaluation process (the Health Sector Salary Scheme). Nurses and other health professionals also secured large pay increases as part of the same process.

The Ministry's aim was to continue with the ADHA but address inherent administrative challenges such as delays in payment of allowances. However, the challenges persisted with increases in the ADHA which affected the overall health sector wage bill (Independent review team 2006). This was again evident in the health worker productivity mapping in 2006 which showed that in 2005 as a result of the ADHA, payments and salaries in the health sector accounted for 97% of total government expenditure on health excluding support from donors (Ministry of Health, 2007). These concerns made the scheme seemingly unsustainable.

A major reform that aimed at improving health worker accessibility in rural areas was the provision of financial incentives. In line with the other human resources reforms the government instituted the deprived area incentive scheme to retain key health professionals working in deprived areas and to attract new health workers to fill vacant positions in those areas. The financial incentive (20-25% of basic salary) was introduced in June 2004 with 55 selected districts benefiting. At the end of November 2004 a total of one million cedis had been released from the Highly Indebted Poor Country (HIPC) benefits to the 55 districts for disbursement to 2,864 critical staff (Doctors, Nurses, Midwives, Pharmacists, Medical Assistants and Medical Diagnostics) in those districts.

Non-financial incentives

The 2002 HRH policy also focused on the provision of non-financial incentives in the form of hire purchase saloon cars and tax waivers for imported saloon cars; the '*brain gain'* initiative funded by the International Organisation for Migration in 2005 to provide opportunities for Ghanaian health professionals in the diaspora to work on a short term basis in Ghana during their vacation; increase in fellowship budget to provide opportunities for health workers to improve their careers; and a number of initiatives by agencies such as Komfo Anokye Teaching Hospital and Ghana Health Service to provide housing schemes for their staff.

Boosting mid-level production

On production, the Ministry policy shift was to increase intake into all health training institutions including the Medical schools. This resulted in a 50% increase in admissions into health training institutions and a 20% increase in admissions into medical, nursing and pharmacy education (Ministry of Health, 2007). One reform in HRH production was the introduction of new programmes in midwifery, under which high school leavers could directly enter midwifery training whereas before direct entry was to basic nursing training only, with midwifery training a further 'post basic' course.

Around this same period, there was a policy shift on the mix of health workers which led to the reinstatement of mid-level health workers training. It was intended that this group of workers would be able to support high level professionals and could manage certain medical situations in the absence of those professionals. This brought about the introduction of the Health Assistants programmes, aimed at re-introducing mid-level workers to support health professionals such as nurses, midwives and physiotherapists. The establishment of six new schools in this category for nursing and midwifery in 2006 resulted in an initial enrolment of 400 students for the Health Assistants programme (Ministry of Health, 2007).

The new Medical Assistants programme was part of the mid-level training policy. As with midwifery, direct access to Medical Assistant training for high school leavers was introduced. One of the basic assumptions made in this policy shift was that health worker availability in rural and remote areas would improve with the training of mid-level health workers (Ministry of Health, 2007).

Health sector salary rationalisation

The Health Sector Salary Scheme was instituted after evaluating jobs and skills of all categories of health workers and workers were placed into salary bands. Initial evaluation of the health sector salary rationalization demonstrated improvements in the salaries of health workers. Witter et al (Witter, Kusi, & Aikins 2007) showed that the lowest paid public health worker earned almost ten times the average gross income (GNI) per capita while a doctor earned 38.5 times (GNI) per capita.

The Ministry of Health reviewed its policies and strategies on human resources for health and in 2007 adopted a new strategic framework on health human resources. This strategic plan sought to improve and sustain the health of the population of Ghana by supporting appropriate human resource planning, management and training (Ministry of Health, 2007). Currently, the Ministry is in the process of reviewing the 2007 policies. According to the Ghana Health Workforce Observatory (2010) about 34% of health workers are approaching the retirement age of 60 years. They are mostly midwives, medical assistants, enrolled nurses and medical specialists. This suggests that the majority of staff working in reproductive and maternal health services are near retirement age. Since highly trained health workers such as doctors, nurses and midwives often refuse posting to rural areas, the quality of maternal health services in rural areas may be undermined.

The Human Resource Policies and Strategies (2007) projections indicate shortfalls in human resources, especially those workers who are involved in reproductive and maternal health services in Ghana. Table 2 below gives estimated gaps in medical doctors, nursing and midwifery professions. The gaps were calculated based on required population ratios and staffing norms.

Table 2 Shortfalls in staffing, key cadres, Ghana, 2007

Professional category	Number at post 2006	Attrition rate (%)	Number required 2011
Medical Doctors	2,026	1.5	3,732
Nurses & ENs	10,260	2.5	19,181
Midwives	2,810	1.5	8,205
Community Health Nurses	3,246	1.0	12,934

Source: Ministry of Health; HRH Policies and Strategies (2007)

User fee policies

User fees in recent decades

User fees at public health facilities in Ghana were abolished at independence in 1957, but reintroduced in 1969 and increased in 1985, as part of a structural adjustment package and in response to declining government budgets. After the Hospital Fees Legislation of 1985 and the 'cash and carry' policy introduced in 1992, patients paid in part for consultations and tests and in full for drugs. The fees were to be graduated, increasing from rural health centres through to teaching hospitals and distinguishing between rural and urban areas as well as adults and children (Coleman 1997). Although the user fees were initially paid into a central fund, this was soon altered so that facilities retained the revenue, divided into drug funds (to purchase replacement drugs) and other user fees (to be used at the discretion of the in-charge, to improve the quality of services).

From the mid-1980s there were a number of categories of exemptions (see Table 3), but studies found that these were not effective, especially as facilities were not adequately reimbursed for patients who had been exempted and so were not motivated to offer exemptions, which would reduce facility revenue. The complexity of categories also led to confusion over entitlements by health workers and communities. Social workers were found to be lacking in most institutions to carry out assessments of poverty status, and definitions of terms such as 'pauper' varied widely. The vast majority of those eligible were thought not to have received exemptions, and some who were exempted were still paying informally. In addition, funding for exemptions was being used for other purposes in some regions (Coleman 1997; Garshong et al. 2001; Nyonator & Kutzin 1999).

The most significant category for exemptions in practice has been health workers themselves. One study in Volta Region in 1990 found that of the 20% ceiling on the value of drugs which health facilities could exempt, 98-99% were going to MoH staff (Waddington 1992). A later study in Volta recorded that 72% of exemptions were going to health staff – a factor held responsible for depleting the revolving drug funds (Nyonator et al. 2006).

Table 3. User fee exemption categories, Ghana, 1983-2005

Year	Exempted categories
1983-5	Paupers Lepers TB patients Health workers Some communicable disease patients pay only for drugs
1989	Psychiatric patients Immunisation Treatment at Child welfare Clinics

	Antenatal/postnatal service
1995	Refugees Children under 5 Pregnant women Over-70s Disabled Emergency cases Government officials Malnourished children
2003	All delivery care in four regions (extended to all 10 in 2005)

Some studies noted that decentralisation, which was introduced in 1988, had led to uneven implementation, with local authorities setting charges independently of central directives and not following the principles of gradation (so that district hospitals, for instance, were charging more than regional hospitals, for OPD and for drugs). Decisions on pricing were made mostly at facility (45%) or district (45%) levels (Coleman 1997). This failure to comply with the letter or the spirit of the user fee legislation is attributed to four factors: lack of awareness by health managers; lack of awareness by the general public; incentives to maximise revenue at the facility level; and the absence of sanctions applied from above to rule-breakers.

Against the background of declining real funding for the health sector from government, user fees proliferated in the mid-1990s. A study in the mid-1990s in Volta found four types of fees: fees for drugs ('cash and carry'); nationally sanctioned fees; locally sanctioned fees; and informal fees to providers and intermediaries. It concluded that facility managers were very active in setting and collecting fees and in using the revenues to purchase essential inputs. Fee revenues accounted for between two-thirds and four-fifths of the non-salary operating budget of government health facilities, and virtually all of the resources for non-salary operating expenses in mission hospitals. However, exemptions for the poor were largely non-functional - less than one in 1,000 patients were granted exemption in 1995 (Nyonator & Kutzin 1999).

Mark-ups on drugs and fees for services were variable, and hospitals were able to compete for custom with health centres by offering higher quality with relatively small price differentials. Lack of transparency for patients, poor receipting, and weak monitoring by government opened the system to abuse. The increase in internally generated funds (IGF, or user fees) funds over the period 1992-5 appeared to tally with a shift in government funding from non-salary to salary payments. For facility managers, IGF revenue was preferable to government funding as they had greater control over its use. The bulk of the IGF revenues were for purchase of drugs. The cash and carry policy appeared to have increased the availability of drugs in facilities, as well as contributing to continuing low (and even declining) utilisation of services and to continuing poly-pharmacy.

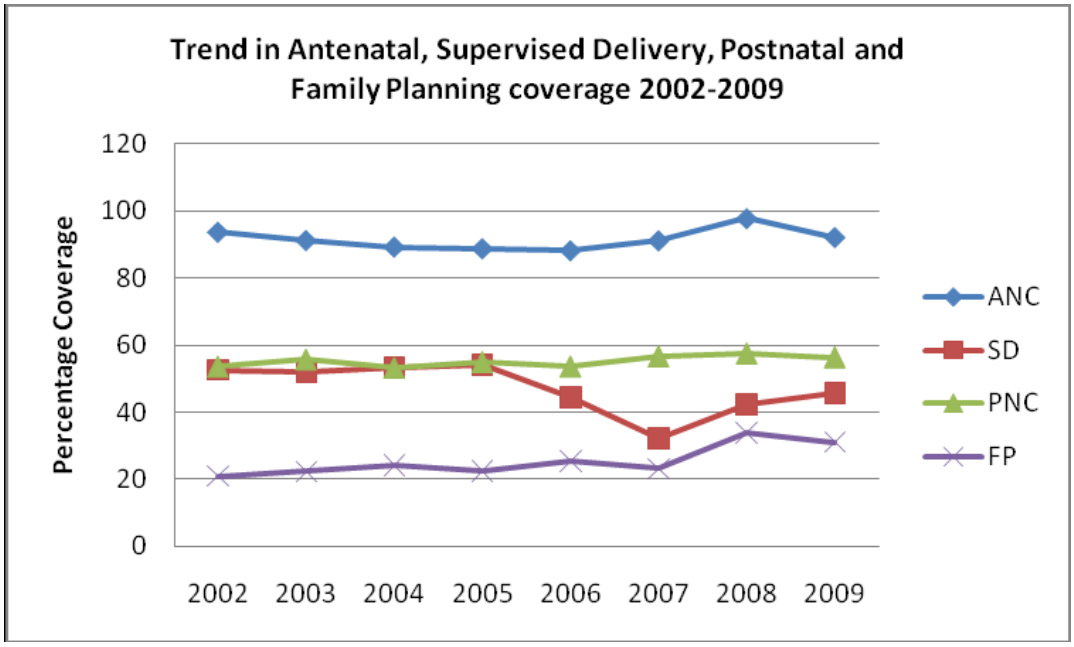
Recent reforms – (1) the delivery exemption policy (2004-2006)

The background to the Delivery Exemption Policy (DEP) which was launched late in 2003 was the on-going problems with underfunded exemptions and concerns about stagnating maternal health indicators and continuing inequalities. Institutional data indicated that Ghana had persistent unacceptably high maternal mortality ratios, estimated to range from 214 to 800 per 100,000 live births (UNFPA & Ministry of Health 2004).

Poverty levels had been declining in Ghana but remained high – it was estimated that 40% of the population was poor and 27% 'extremely poor' (World Bank 2003). 70% of Ghana Living Standards Survey (GLSS) respondents cited cost as the reason for the low and declining use of health facilities (World Bank 1999). Nationally, 46% of births occurred in health facilities, with 36% in public health facilities and 9% in private health facilities. More than half of births (53 %) occurred at home (Ghana Statistical Service; 2004). 47% of births were attended by medically trained personnel (80% in urban areas; 31% in rural); 31% by TBAs and 19% by friends or relatives. There are also significant regional variations. The three northern regions had the highest levels of poverty and MMR and lowest levels of supervised deliveries.

Service use was unequally distributed between different socio-economic groups. The poor had a lower uptake of antenatal care (ANC) than the relatively rich. For example, less than 10% of pregnant women in the poorest quintile of the population saw a doctor, compared to 45% in the richest quintile (Ghana Statistical Service 2004). The poor were also shown to be at a disadvantage in terms of the proportion receiving both ANC and professional delivery care. Only 15% of the poorest women received both ANC and professional delivery care, whereas 90% of women in the richest quintile received such care.

Figure 1 Trends in reproductive and child health coverage, Ghana, 2002-9



Source: Ghana Health Service annual report 2009

Ghana's MDG goals included a commitment to reduce maternal mortality by two-thirds between 1990 and 2015. This was also reflected in the GPRS goals and indicators (World Bank 2003), which included a target for reduction in MMR from 200 per100,000 in 2000, to 160,000 by 2004. One of the strategies for achieving this was to raise supervised delivery rates. This would also be expected to improve neonatal mortality rates, which have been fairly stable over the past decades, while child and infant mortality have been declining (GHS, 2009).

In response to these challenges, Ghana introduced exemptions for deliveries in four regions in 2003. In 2004, the Ministry of Health announced that this exemptions policy was being extended nationwide, using funding from the Highly Indebted Poor Countries (HIPC) initiative (Ministry of Health 2004).

The exemptions scheme covered:

- All normal deliveries
- Management of all assisted deliveries including caesarean section and
- Management of medical and surgical complications arising out of deliveries, including the repair of vesico-vaginal and rector-vaginal fistulae.

The funds, which were to be available for all public and private facilities other than the teaching hospitals (which are directly managed by the Ministry of Health), were to be claimed retrospectively, based on the number of exemptions granted, from district assemblies. A tariff for different procedures and different facility types was drawn up (Ministry of Health 2004). There were no other accompanying measures and no particular changes linked to the potential impact on HRH.

Recent reforms (2) – the NHIS and exemptions for pregnant women

The NHIS in Ghana grew out of an election promise made in 2000 by the incoming New Patriotic Party to abolish user fees (traditionally known in Ghana as 'cash and carry') (Agyepong & Adjei 2008). As a proportion of total public sector funding, user fees constituted 13-14% in 2005 (Ministry of Health 2006). Act 650 and the subsequent Legislative Instrument (LI 1809) of 2004 do not specify the goals of the policy, but the original focus from the party manifesto was clearly on removing financial barriers to utilisation of health care.

It was designed as a mandatory health insurance system, with risk pooling across district schemes, funded from members' contributions and a levy on the value-added tax (VAT) charged on goods and services, from which a broad minimum package of care could be funded (Witter & Garshong 2009).

The vast majority of NHIS registrants were exempt from making any financial contribution. In this context, it is less surprising that the rate of growth of membership has been so high. In 2005 28% of registrants were contributors (via payroll or informal sector premia). This had risen to 36% in 2008, but this is still only around a third of the total. Large population groups are entitled to free care and this entitlement is being extended. In July 2008 all pregnant women were offered a free annual membership, following a Presidential announcement in May. This was funded in part from a bilateral UK grant of £42.5m to Ghana, though there was some debate about whether this was 'new money'. There are also plans to extend coverage to all children (decoupling them from parental membership,

which was required in the original Act). This supports universal coverage, but present challenges for financial sustainability (Witter & Garshong 2009).

While the benefits package is broad (including an estimated 95% of all treatments), family planning is not included, and clients currently face a small charge for family planning commodities and services. The coverage for pregnant women includes antenatal care, post natal care and delivery care, including all emergencies arising from delivery. In addition, the baby can benefit from the mother's registration for up to three months.

Analysis of implementation

The initial delivery exemption policy in Ghana was under-funded, causing debts at facility level and intermittent implementation of the scheme (Witter & Adjei 2007). This was exacerbated by the rapid scaling up of the exemptions policy, which was extended from four poorer regions in 2004 to the whole country in 2005, before an evaluation of early results could be conducted. The inadequate funding flows created friction between communities and health staff and between facility managers and higher levels of the health system (Witter et al. 2009).

For the NHIS, early studies found evidence of similar problems with fund-flow, related to the design of the scheme and the system of transfers to district offices (Witter & Garshong 2009). However, membership has been growing, not least thanks to the large numbers of exempt members. In 2010, 72% of the population was registered, of which pregnant women formed just under 8% (Table 4). However, the number of active members[13] is much lower, at 33% (NHIS presentation 2010).

[13] Members who have gone beyond registration to purchase a card, and who are therefore entitled to benefits

Table 4 NHIS registrants, by category, 2010

Category	Number of Registrants as at Dec. 2009	Percent of Total Registrants	Number of Registrants as at Dec. 2010	Percent of Total Registrants
Informal	4,266,051	29.4%	5,282,258	29.3%
SSNIT Contributors	884,666	6.1%	1,036,882	5.8%
SSNIT Pensioners	76,974	0.5%	89,639	0.5%
Under 18 years	7,175,085	49.4%	8,709,389	48.3%
Pregnant women	804,450	5.5%	1,394,445	7.7%
70 years and above	967,401	6.7%	1,140,549	6.3%
Indigents	337,150	2.3%	378,204	2.1%
Total	**14,511,777**	**100.0%**	**18,031,366**	**100.0%**

Source: NHIA annual report 2010

Analysis of impact

Delivery exemption policy

An evaluation by IMMPACT found that the exemptions were effective in raising utilisation significantly, with some modest equity gains (Penfold et al. 2007). Overall public expenditure on the policy was $22 per delivery (of all types), or $62 per additional delivery (Witter, Adjei, Armar-Klemesu, & Graham 2009). The IMMPACT evaluation found that facility costs formed the largest proportion of overall household costs for deliveries in Ghana, particularly for more expensive procedures (40% of costs for normal deliveries but 80% for caesarean sections prior to the exemptions policy) (Asante et al. 2007). However, the evaluation found that facility-based costs for women were not reduced to zero by the exemption policy – the reduction was of a magnitude of 28% for caesarean sections and 26% for normal deliveries (Witter, Adjei, Armar-Klemesu, & Graham 2009).

Analysis of funding flows found that while funding was available from the national level, facilities benefited from the exemption scheme, gaining a more reliable stream of funding (Witter, Aikins, & Kusi 2006). However, these benefits were lost when funds ran out.

A separate component of the evaluation considered the impact on staff. In Ghana, staff reported working long hours (79 hours per week for public midwives, 109 for doctors, and 129 for medical assistants, who are in sole charge of health centres around the clock). However, the increase in workload over the period of policy introduction (which was largest for public midwives – an increase

of 27% in terms of working hours) was indirectly compensated by a rising general health worker pay level (Witter, Kusi, & Aikins 2007).

The evaluation included a number of components investigating quality of maternity care, all of which concluded that the exemption policy had not led to a deterioration, but that quality of care - before and after - was an area of concern (Bosu et al. 2007). A look at scores obtained for five care components of labour and delivery care at health centre level revealed that when compared with their respective maximum expected scores, the lowest scores were obtained for management of the first stage of labour, use of the partograph, and for immediate post partum monitoring of mother and baby (Deganus & Tornui 2006). Confidential enquiry techniques also found that women received poor quality care in hospitals, resulting in potentially avoidable deaths (Tornui et al. 2007). However, health systems factors, such as availability of consumables and basic equipment for providing comprehensive emergency obstetric care, were generally found to be adequate. Qualitative investigations found very variable relationships between health workers and clients, ranging from very positive to very antagonistic. If fee exemptions are to be effective in improving health, these quality issues have to be addressed (Witter, Adjei, Armar-Klemesu, & Graham 2009).

NHIS

There has been little research to date on the impact of the NHIS in relation to household care seeking and expenditures, particularly as the NHIS has increased in scale. However, one study has compared baseline data in two districts, before the NHIS (in 2004) and after (in 2007) (Sulzbach 2008). Its findings suggest that there has been an increase in access to formal care amongst members, as well as a significant decrease in out-of-pocket expenditure. However, there was no difference in use of maternal care (ANC, deliveries or caesareans) between the intervention and control group, which is an unexpected finding. In addition, the study showed that enrolment in the NHIS remained pro-rich.

Reports of informal payments were rare in the years before the NHIS, with user fee collection closely controlled at health facility level (Garshong, Ansah, Dakpallah, Huijts, & Adjei 2001). Since then, reports of informal payments to health workers have grown. Examples of reported informal payments by clients include:

- Charging for services out-of-hours
- Asking patients to pay for drugs which are said not to be in stock
- Asking patients to pay for 'better' drugs, said to be not provided under the NHIS

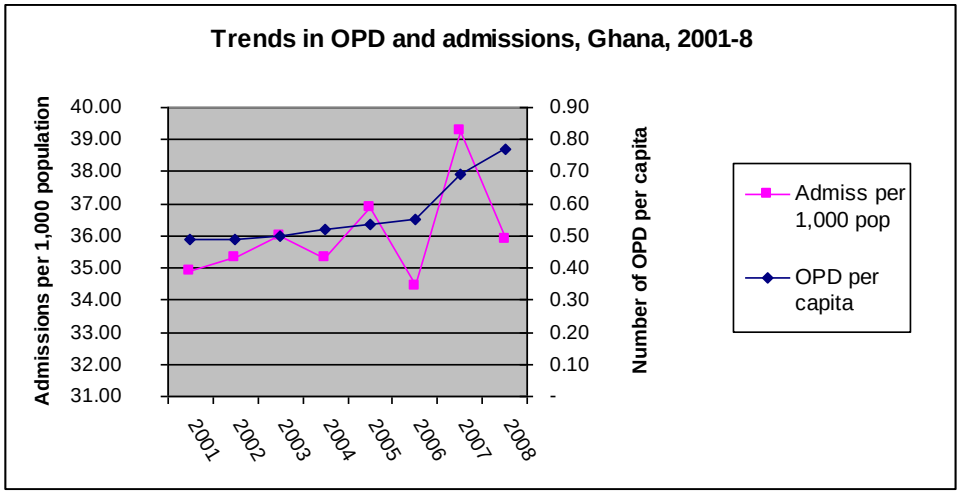
One of the factors may be the increased workload for staff resulting from the NHIS – they have experienced a growth in work without any compensation (except for midwives, who do get a small allowance per delivery, according to key informants, at least in some areas). Consequently, they may feel justified in charging small amounts for what they see as 'extra' services. Another factor may be the delays in reimbursement to facilities (Witter & Garshong 2009).

There is no link between NHIS payments and staff remuneration – staff remain salaried by government and their pay is not linked to revenues generated at facility level. However, there is

currently some discussion of whether performance-related payments should be introduced at facility level, with the ability to pass on some form of performance-related pay to staff.

While there is no public information on trends in out-patient (OPD) services by insured patients specifically, OPD use for the population as a whole shows a marked increase from 2005 onward, compared to stable (low) use before (Figure 2). The timing and pattern correlated with growth in NHIS membership, indicating that the NHIS has indeed increased service use (Witter & Garshong 2009). According to an ILO paper of 2006, utilisation for the insured was then at around 0.9 OPD per capita – almost twice the non-insured rate (then at 0.49 visits per capita) (Leger 2006). It is interesting to note however that overall admissions have not experienced consistent growth between 2005-8. This might reflect the benefits of early intervention through better access to outpatient care.

Figure 2 Trends in OPD and admissions, Ghana, 2001-8



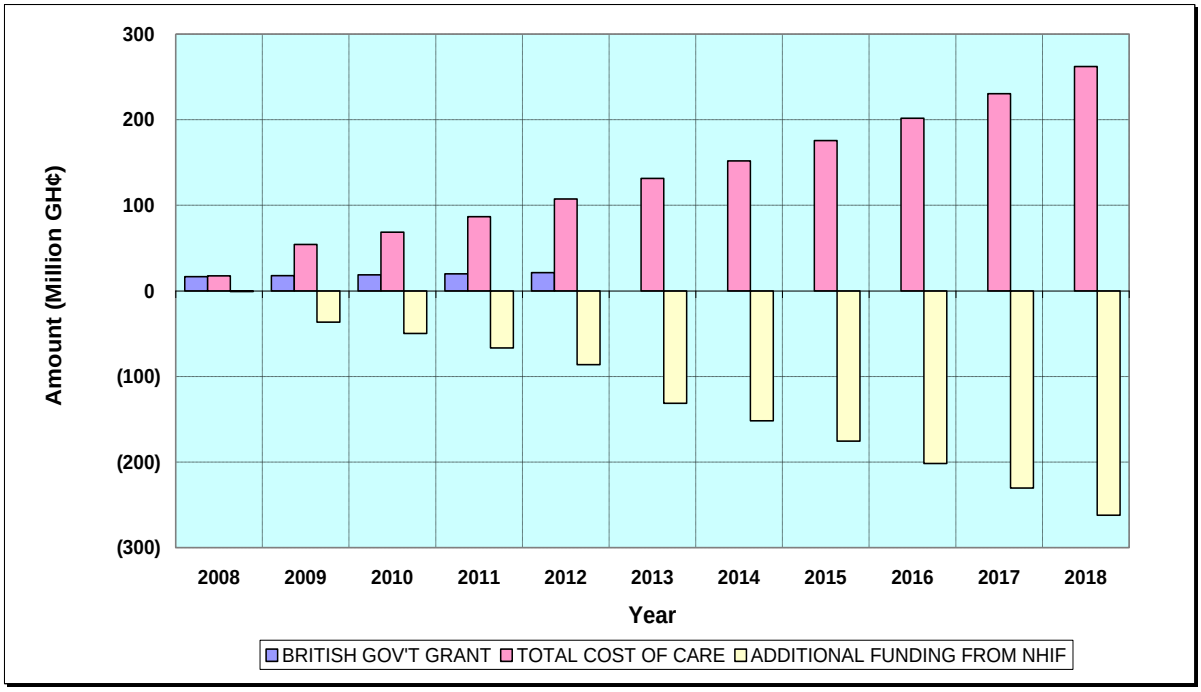
Source: (Witter & Garshong 2009)

In 2008, the fixed transfer to district schemes per exempted member was 14 Ghanaian cedis (GhC). Overall figures for claims and expenditure are lacking to assess the adequacy of this subsidy, but in the case of pregnant women, the NHIA tariff for ANC, normal facility delivery and PNC at the lowest level of facility would cost just over GhC 14. Any additional complication, illness during pregnancy or seeking care at higher levels would therefore push the cost over the subsidy level. Analysis of financial impact at the facility level has been lacking (Witter & Garshong 2009).

The overall financing of the free coverage of pregnant women is unclear. While the first period was supported by a grant from the British government, this by no means covered the full costs (see Figure 3 for estimated costs, set against the grant). The estimated increase in costs – based on assumptions about additional members and also current coverage rates – are largely driven by ANC and PNC, as these achieve the highest coverage at present.

Figure 3 Estimated cost of free delivery care under the Ghana NHIS

Comparison of Estimated Cost of Free Maternal Care and British Government Grant (2008 – 2018)



Source: Author's estimates

Source: (Asenso-Boadi 2009)

No specific evaluation or analysis of the impact of the new version of the pregnant women's exemptions programme (using the NHIS funding channel) has yet been undertaken, though one is planned for 2012.

Distribution and skill mix of the RMNH workforce

The current numbers of doctors and nurses reflect a substantial increase in their number since 2003; 50% for doctors, 182% for midwives and 4% for nurses. There are currently 2,799 doctors in the public and private sector (80% in the public sector), 4,800 midwives (80% in the public sector) and 19,517 nurses (91% in the public sector) in post across the country (Table 5).

Table 5: Medical staff by region in 2010 (public and private sector)

	Public Sector				Private Sector				Total (Public and Private)			
Region	**Doctors**	**Nurses**	**Midwives**	**Total**	**Doctors**	**Nurses**	**Midwives**	**Total**	**Doctors**	**Nurses**	**Midwives**	**Total**
Ashanti	613	2,843	660	4,116	113	161	213	487	726	3,004	873	4,603
Brong Ahafo	150	1,469	363	1,982	12	23	57	92	162	1,492	420	2,074
Central	99	1,600	302	2,001	28	37	66	131	127	1,637	368	2,132
Eastern	184	2,225	471	2,880	29	67	75	171	213	2,292	546	3,051
Greater Accra	850	4,181	816	5,847	311	367	316	994	1,161	4,548	1,132	6,841
Northern	107	1,459	296	1,862	10	25	20	55	117	1,484	316	1,917
Upper East	35	1,083	193	1,311	12	48	19	79	47	1,131	212	1,390
Upper West	23	693	147	863	4	55	65	124	27	748	212	987
Volta	88	1,665	357	2,110	7	25	30	62	95	1,690	387	2,172
Western	84	1,373	252	1,709	40	118	82	240	124	1,491	334	1,949
National	2,233	18,591	3,857	24,681	566	926	943	2,435	2,799	19,517	4,800	27,116
%	80%	95%	80%	91%	20%	5%	20%	9%	100%	100%	100%	100%

Source: Ministry of Health aggregated payroll data, 2011

There is some variation in the provision of medical staff relative to population. Unsurprisingly there is a clustering of doctors in Greater Accra and also Ashanti regions in both the public and private sectors (Table 6). The ratio of doctors to population is more than twice the national average in both these regions. The distribution of nurses in the public sector also exhibits variation, although far less than for doctors.

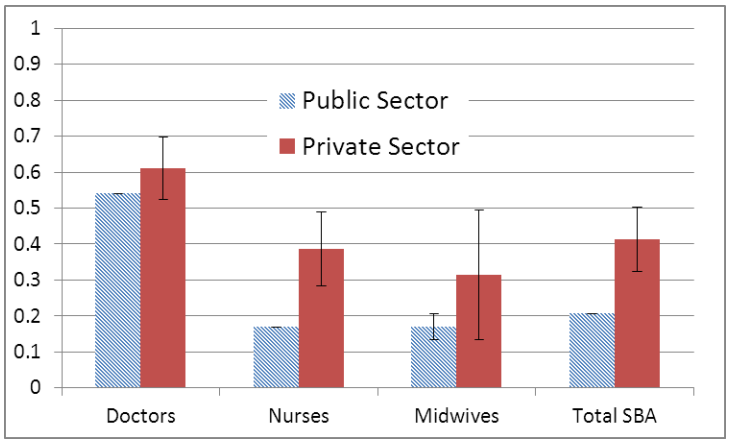
Table 6: Medical workers per 100,000 population

Region	Public Sector				Private Sector				Total (Public and Private)			
	Doctors	**Nurses**	**Midwives**	**Total**	**Doctors**	**Nurses**	**Midwives**	**Total**	**Doctors**	**Nurses**	**Midwives**	**Total**
Ashanti	13.0	60.2	14.0	87.1	2.4	3.4	4.5	10.3	15.4	63.6	18.5	97.4
Brong Ahafo	6.6	64.4	15.9	86.8	0.5	1.0	2.5	4.0	7.1	65.4	18.4	90.9
Central	4.7	75.9	14.3	95.0	1.3	1.8	3.1	6.2	6.0	77.7	17.5	101.2
Eastern	7.1	85.7	18.1	110.9	1.1	2.6	2.9	6.6	8.2	88.3	21.0	117.5
Greater Accra	21.7	106.9	20.9	149.5	8.0	9.4	8.1	25.4	29.7	116.3	29.0	175.0
Northern	4.3	59.1	12.0	75.4	0.4	1.0	0.8	2.2	4.7	60.1	12.8	77.7
Upper East	3.4	105.0	18.7	127.1	1.2	4.7	1.8	7.7	4.6	109.6	20.6	134.8
Upper West	3.4	102.2	21.7	127.3	0.6	8.1	9.6	18.3	4.0	110.4	31.3	145.6
Volta	4.2	79.3	17.0	100.5	0.3	1.2	1.4	3.0	4.5	80.5	18.4	103.4
Western	3.6	59.0	10.8	73.5	1.7	5.1	3.5	10.3	5.3	64.1	14.4	83.8
National	9.2	76.7	15.9	101.9	2.3	3.8	3.9	10.1	11.6	80.6	19.8	111.9

Source: Ministry of Health aggregated payroll data, 2011

The concentration index and accompanying concentration curve further quantify the relatively equitable distribution of midwives and nurses in the public sector. Districts were ranked according to population density in order to discover whether there is any apparent pro-urban bias in the distribution of staff. For midwives and nurses an index of 0.16 suggests small but statistically significant pro urban bias in their distribution. This bias is larger in the private sector (Figures 4, 5 & 6). The strategy to distribute public midwives proportionally across the country appears to have paid off with little variation in their number relative to population across the regions outside Accra.

Figure 4: Concentration index for medical staff by type and sector



Note: Bars represent confidence intervals (CIs). CIs are missing for some staff since the algorithm in STATA for computing standard errors did not converge.

The concentration of doctors in the cities of Accra and Kumasi lead the large concentration indices (greater than 0.5) for both public and private sectors.

Figure 5: Concentration curve for public sector medical staff (ordered by population density)

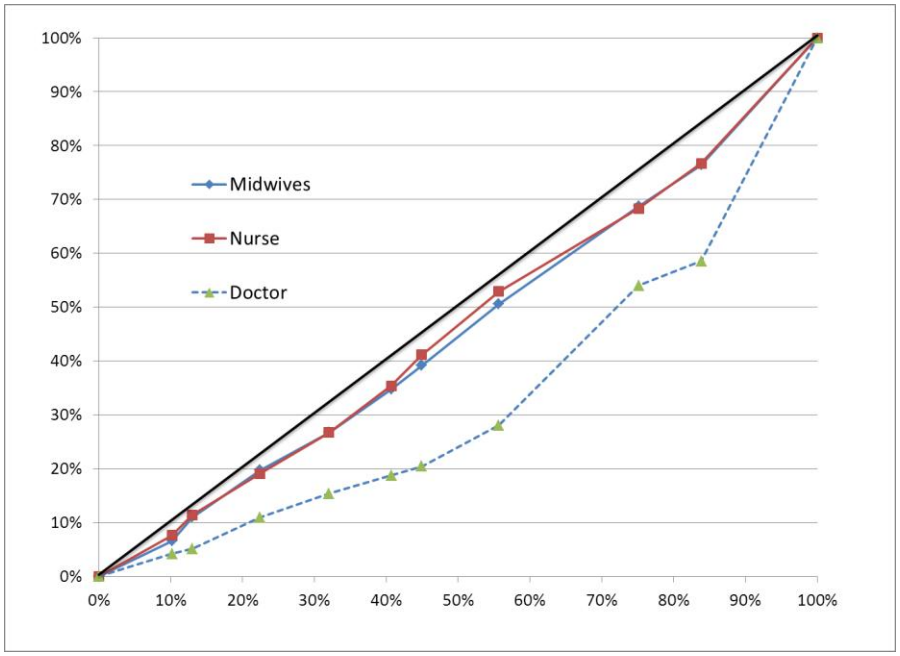
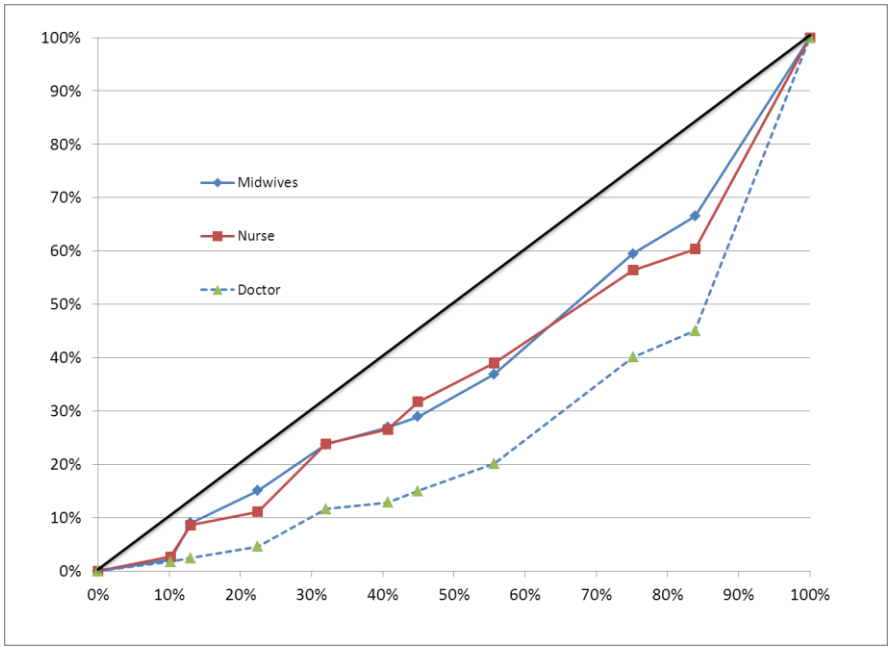


Figure 6: Concentration curve for private sector medical staff (ordered by population density)



Workload

Across the country there were 74 births per midwife, well within the WHO suggested maximum workload of 175 (Table 7). This falls further to just 13 births if all nurses are included as skilled birth attendants. It is, however, unclear what proportion of the current nursing workforce would qualify as skilled attendants. There is variation across the country. In particular, Northern region has a much higher ratio of births to midwives, although still within the WHO maximum, largely due to a higher crude birth rate.

Table 7: Births per SBA, midwife and doctor

		Current deliveries			Total births		
	Birth rate (per 1000 population)	Births /SBA	Births / Midwife	Birth / Doctor	Births /SBA	Births / Midwife	Birth / Doctor
Ashanti	28.80	13	66	79	30	156	187
Brong Ahafo	32.80	19	96	248	36	178	462
Central	43.20	22	130	376	43	247	717
Eastern	28.80	13	71	183	25	137	351
Greater Accra	20.00	5	33	32	11	69	67
Northern	54.40	25	153	414	70	425	1,148
Upper East	32.80	13	84	379	24	160	720
Upper West	40.00	10	47	369	27	128	1,004
Volta	30.40	12	65	265	29	165	672
Western	33.60	17	100	268	40	234	630
National	32.70	13	74	127	29	165	283

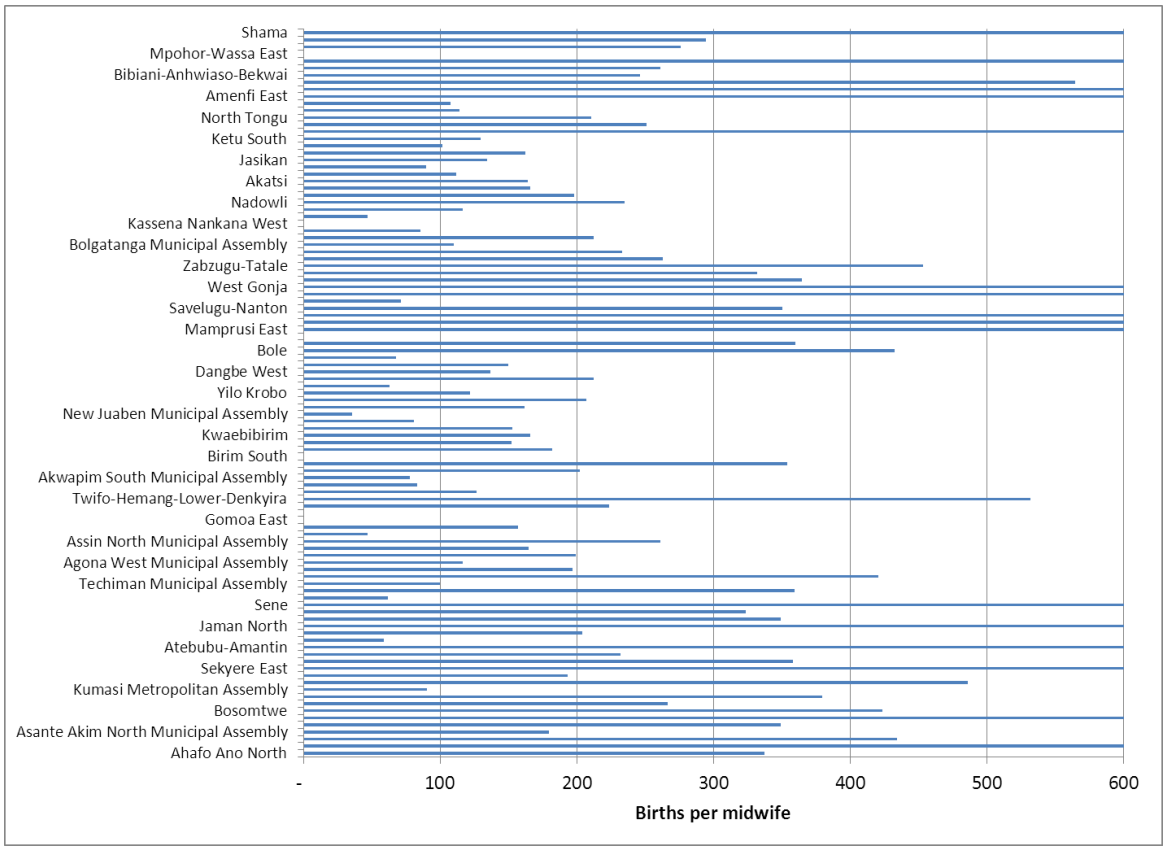
Source: Ministry of Health aggregated payroll data and private sector data, 2011; HMIS 2010

The data suggest that there are sufficient midwives to provide care for all births with 165 births per midwife across the country (this increases to 205 if only public sector midwives are included). It is clear, however, that several regions have insufficient staff with Brong Ahafo, Central, Northern and Western all exceeding the maximum threshold of 175.Two regions, Northern and Upper West, also have more than 1,000 deliveries per doctor.

The foregoing analysis suggests that although there are inequalities in staff across the countries, particularly for doctors, the distribution outside Accra and Kumasi is relatively equitable.

Furthermore, staff numbers appear to be adequate not only to provide for the current level of deliveries with a skilled attendant but also to provide for the majority of deliveries that currently not receive skilled medical support. There are however important variations within regions (Figure 7). While the main districts in each region, which have the majority of births, are well served by midwives, peripheral districts frequently have fewer midwives that necessary to accommodate the current level of births. In total, 59% (60 out of 101 districts) have more than 175 births per midwife and nine districts have more than 1000 births per midwife.

Figure 7: Births per midwife by district



Remuneration and terms and conditions

Most allowances have been integrated into salary scales under the recent pay reforms. The only exception is a 10% 'on call' allowance, payable to doctors only. Table 8 shows the bottom, midpoint and top of the scales for 5 cadres of health worker, with the 10% on call allowance added into the primary care doctor's salary estimate.

Table 8: Salaries including allowances for 5 cadres of health worker (Ghana cedis per month)

Cadre	Bottom	Midpoint	Top
Registered nurse	522	1173	1823
General midwife	522	1173	1823
Primary care doctor	1712	2124	2534
Pharmacist	1017	1602	2187
Lab technician	522	843	1163

Source: MoH payroll data, 2011

Using the midpoints of the scale, table 9 shows the value of salaries in international dollars[14] and expressed as a ratio of salary: Gross National Income per capita in international dollars, 2010[15]

Table 9: Salaries expressed in international dollars and as a ratio of salary: GNI per capita

Cadre	International $	Ratio salary: GNI per capita
Registered nurse	2,171.30	15.70
General midwife	2,171.30	15.70
Primary care doctor	3,932.50	28.43
Pharmacist	2,966.67	21.45
Lab technician	1,560.19	11.28

Health workers are well paid relative to the average income level: midpoints range from more than 10-fold to nearly 30-fold GNI per capita.

Projected need for RMNH workforce

The future need for skilled birth attendants and doctors was projected based on the figures collected on current staffing levels, births and coverage rates for attended/facility delivery. Initially the aim was to use the Making Pregnancy Safer tool (MPS), produced by WHO, which provides a simple and graphical analysis of the quantity and cost of skilled birth attendants and doctors as coverage is scaled up from the current levels[16]. The MPS tool was, however, based on a forecast of baseline staffing based on current levels of health worker attended deliveries and assumed targets for the

[14] **PWT 7.0 Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 7.0, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, May 2011.** http://pwt.econ.upenn.edu/php_site/pwt70/pwt70_form.php (accessed 15th December 2011)

[15] http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD (accessed 15th December 2011)

[16] The original model (http://mps.projection.free.fr/mdg5-hrsu.html) is available as an online and offline web-based. For the purposes of this study, the model was converted to excel and adapted to permit variations in the base and target years and differences in attrition rates and salaries for doctors and nurses/midwives.

number of births per SBA and doctor: around 1,000 deliveries per doctor and (a user adjustable) 175 deliveries per skilled birth attendant. We modify this approach by starting from the actual baseline for health workers that are assumed to assist at delivery. Using the MPS assumption of target deliveries per health worker we then extrapolate the number of additional workers required to meet a near universal coverage target of 95% by 2015.

The model is quantity driven. It assumes that the current level of staff is just sufficient to provide the current level of skilled deliveries. Any increase in coverage requires additional SBAs and doctors based on standard ratios: around 1,000 deliveries per doctor and (a user adjustable) 175 deliveries per skilled birth attendant. The model permits users to specify levels of attrition for staff and salaries and assumed salary increases to permit cost projections. The number of births is based on demographic projections for each country.

The presumption that coverage can be increased by adding staff in a fixed ratio to deliveries is an important one. It assumes that the main constraint to increasing attended deliveries is one of supply. Yet it is clear from the analysis of actual data that in some areas high levels of attended deliveries are possible with a relatively small staffing whilst in other areas a high level of staffing is associated with a modest level of attended deliveries. Various factors may account for these differences including:

- Staff may be busy with other activities and only able to devote a small proportion of time to delivery care. This is dealt with by focusing on full time equivalents at least for the additional staff required.
- Staff may not be motivated to provide services
- Staff have insufficient resources to provide adequate care
- Human resources are available at a facility but women are impeded from seeking care due to inaccessibility or high cost of transport and lack of knowledge about when to seek care. Both these factors are known to be associated with levels of delivery.

These factors could mean that a much higher ratio of staff to deliveries may be required in order to achieve universal access or indeed that targets are unattainable unless other barriers to use of services are addressed. Conversely, it may be that current staffing levels are sufficient to deal with more deliveries but that other factors prevent scale up.

Box 1: Summary Assumptions for Ghana

	Deliveries per year	Baseline salary (US $)	Growth in salaries	Annual attrition
SBA	175	8604	3%	2%
Doctor	1000	15576	3%	2%

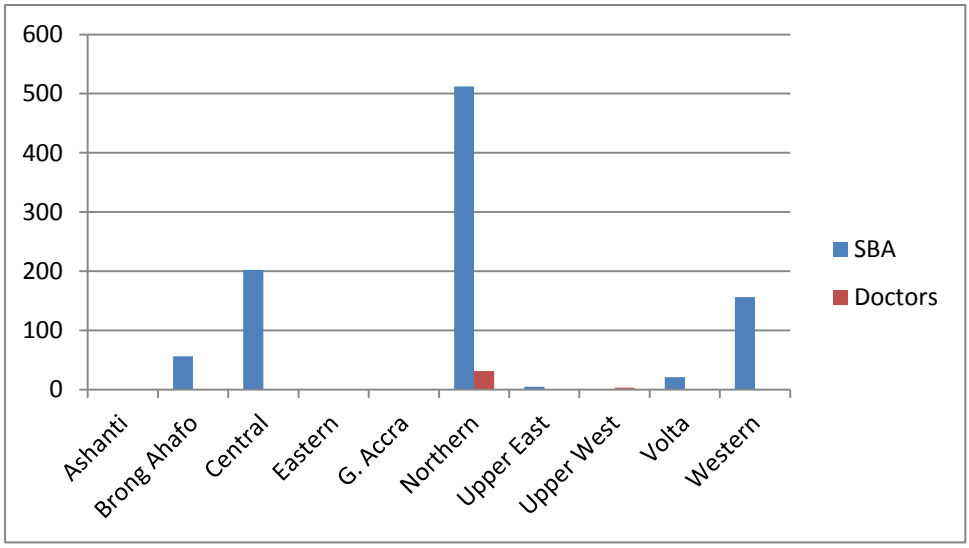
The MPS model focuses on the additional full time equivalent workers required for scale up. The scale up to 95% coverage is modelled over the period 2010 to 2015 using country assumptions (See Box 1). Salary midpoints (2010) for registered nurses and doctors are used for the projection of recurrent cost and these are expected to increase by 3% per annum (in dollar terms). An initial level of coverage of 50% is assumed which corresponds to the HMIS data collected for this study.

The projections, based on regional data, suggest that a scale up from 50% to 95% by 2015 will require a total of 4,717 midwives and 825 doctors by 2015. Data from Ghana Health Services suggest

that in 2010 there 4,800 midwives and 2,799 doctors in the country. On the face of it would appear, therefore, that the numbers of staff is not a constraint to scale up of services. The annual cost of skilled attendance, doctors and midwives, is expected to increase from $211 million to $227 million between 2010 and 2015.

At a regional level, (Figure 8), three regions, Central, Northern and Western, have significant staff deficits in skilled birth attendants in relation to those needed to provide 95% coverage by 2015. Only one region, Northern, has a significant deficit of doctors, with a second, Upper West, facing a small deficit of 3 additional doctors needed by 2015. This suggests, therefore, that factors other than overall deficit of trained staff account for the persistently low levels of skilled attendance in most regions. Other factors may include cultural barriers (traditional beliefs which militate against facility deliveries), and problems of transport and physical access to facilities.

Figure 8: Additional midwives and doctors required to achieve 95% coverage by 2015



It should be noted that this model does not reflect the contribution of the Medical Assistants, who also assist with deliveries. Currently there are about 712 and they are located mostly (70%) in rural areas. They will mitigate the specific regional doctor shortages noted above.

Conclusions

Despite some improvements in overall health indicators, Ghana faces a situation of plateau in relation to access to some key reproductive, maternal and newborn health services. Despite two major policies in the last seven years to increase financial access, skilled attendance at delivery has remained fairly constant and low, according to GHS figures[17].

[17] The recent DHS suggests a more optimistic picture. It is not clear why there are discrepancies, but it may be in part that the GHS figures do not reflect the deliveries at teaching hospitals and in some parts of the private sector.

Changes to HRH policy – expansion of mid-level workers, increases in pay, changes to systems of deployment – have all taken place independently of changes in relation to health financing, driven more directly by emigration of key staff and unionised pressure. Attempts to solve distribution challenges through incentive schemes (such as the deprived area allowance) were piloted but not sustained.

Policies to increase financial access have struggled to provide a reliable flow of funds to facilities. While the Delivery Exemption Policy and the current policy of free membership of the NHIS for pregnant women both incentivise services by paying per episode, the former faced funding constraints and under the latter there are reports of informal payments. Costs to patients have not reduced to the extent foreseen, and other barriers (cultural, physical access etc.) remain. In addition, the few studies addressing the question of quality of obstetric care suggest concerns about low standards of care in hospitals, before the recent policies and after, which will limit the health benefits of increased access.

Staffing for RMN health services is dominated by nurses and midwives, the vast majority of whom are employed in the public sector. They are relatively equitably distributed. Doctors are more concentrated in Accra and Kumasi, but as they are a small part of the SBA numbers, the overall concentration index remains quite low at 0.2. Births per midwife are acceptable nationally and for all regions. If coverage was full, the numbers would rise above the recommended threshold for Northern Region in particular, for both midwives and doctors. Within regions, peripheral districts are facing challenges.

Pay has been rising and midwives now receive an average of 16 times national GNI per capita, while doctors receive around 30 times. Modelling of overall requirements suggest that staff numbers are adequate, although the cost of supporting them is high. There are considerable inequalities across and within regions, however, and these inequalities match to a large extent with areas of lower staff density. Northern Region, for example, had a facility delivery rate of 26% in the DHS of 2008, compared to a national average of 57%.

This analysis suggests that the main policy priorities should now be to focus on the distributional challenge – improving terms and conditions for staff working in rural areas, and particularly where specific shortages are evident (including for categories which were too small to be analysed here, such as obstetricians). At the same time, issues of competency and an appropriate working environment should be addressed to ensure that quality of care is improved. This should go alongside maintaining and reinforcing current policies on reducing financial barriers for mothers and infants, ensuring that family planning is added into the NHIS package of care, ensuring overall competitive terms and conditions for mobile health staff in particular, and continuing to focus on training mid-level cadres. Other important strands include improved flexibility on hiring and management, and addressing managerial blockages such as delays in adding staff onto payroll.

Removing financial barriers to access reproductive, maternal and newborn health services: the challenges and policy implications for Human Resources for Health (HRH)

Nepal case study

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Acknowledgements

We would like to thank Ijeoma Edoka and Tuan Nguyen for assistance with analysis of data; and Mr Roshan Karn and Mr Sabin Sharma of the Ministry of Health and Population for assistance with sourcing and interpreting data in Nepal.

Abbreviations

AA	Anaesthesia Assistant
ANM	Auxiliary Nurse Midwives
ANC	Ante natal care
ARV	Antiretroviral
BEOC	Basic Emergency Obstetric Care
CEOC	Comprehensive Emergency Obstetric Care
CSO	Central Statistics Office
DHS	Demographic and Health Survey
DHMIS	District Health Management Information System
EHCS	Essential Health Care Services
FCHV	Family and Child Health Volunteers
GoN	Government of Nepal
HDI	Human Development Index
HRH	Human Resources for Health
HP	Health Post
HFMC	Health Facility Management Committee
HMIS	Health Management Information System
MDG	Millennium Development Goals
MPS	Making Pregnancy Safer
MDGP	Medical Doctor - General Practice
MoHP	Ministry of Health and Population
MIS	Maternity Incentives Scheme
NLSS	Nepal Living Standards Survey
OPD	Out patient department (visit)

PMTCT	Prevention of Mother to Child Transmission
PHCC	Primary Health Care Centre
PM	Professional Midwife
PNC	Post natal care
SHP	Sub-Health Post
SBA	Skilled Birth Attendants
SDIP	Safe Delivery Incentive Program
TB	Tuberculosis

Introduction

Nepal has been selected as a case study for this research as it has recently committed itself to providing essential health care to all, in its interim Constitution of 2007, and has introduced a variety of strategies to improve financial access to health care. Progress has also been seen in terms of health indicators and reduced inequalities. At the same time it faces a variety of challenges including difficult terrain, poor social inclusion of certain population groups, variability in population density, recent political instability, unequal development, and inadequate health funding. The public sector has struggled to maintain adequate staffing of safe delivery services, particularly in rural health facilities.

According to Demographic and Health Survey (DHS) data, the maternal mortality ratio declined from 539 in 1996 to 281 in 2006. This has been attributed to a number of factors, including a fall in fertility, legalisation of abortion (in 2002), increase in family planning acceptance, increases in ante-natal care and immunisation, and a three-fold increase in nurse-assisted deliveries in rural areas (Pant et al. 2008). Preliminary data from the 2011 DHS estimates neonatal mortality at 33 per 1,000, down from 45 per 1,000 in 2001. However, major challenges remain. Despite an increase in national rates of coverage, the overall proportion of women delivering with a skilled health professional remains low (36% according to preliminary data from the 2011 DHS, with 28% delivering in a health facility). Poverty and difficult terrain, with limited access to facilities for many households, continue to demand innovative policy measures if Nepal is to reach its MDG targets (a maternal mortality ratio of 134/100,000 live births and neonatal mortality target of 15 per 1,000 live births).

Research methods

The case study is based on secondary sources.

Literature and policy analysis

A thorough review of literature was undertaken on the themes of health financing policy, user fees, reproductive health and human resources for health in Nepal. The literature review included searching peer-reviewed and grey literature in recognized electronic databases and websites. Key policy documents relating to user fees and HRH were also obtained and analysed.

Secondary data analysis

National data sets relating to staffing, staff remuneration and conditions, utilisation of services and other relevant indicators such as poverty and income levels were sought and analysed. Sources for these included the DHMIS, the HR database (HuRIS) held by the Ministry of Health and Population (MoHP), and nationally published statistics produced by the CSO. Data from these sources was retrieved into an Excel spreadsheet, disaggregated to the lowest level permitted by the data.

Data analysis
Quantitative data was collated and analysed using Excel. The WHO tool produced by MPS was also used to project staffing needs and gaps.

The findings from the literature review and policy analysis, as well as the secondary data, were triangulated to reach overall conclusions and recommendations.

Workforce policies and challenges

The 2003-2017 Strategic Plan for Human Resources[18] was intended to specify the direction and growth of human resource volume, outline human resource objectives for the medium term, and identify short-term policy actions for the Ministry of Health and Population. The Plan projected a 71 percent increase in the public sector workforce by 2017 and proposed the following staffing standards related to safe delivery:

Primary Health Care Centre (PHCC):	1 doctor, 1 nurse, and 2 ANMs
Health Post (HP):	1 nurse and 2 ANMs
Sub-health Post (SHP):	2 ANMs

The Safe Motherhood Programme managers recognise that the current government health workforce is inadequate to reach the desired levels of improvement in access (RTI International 2008). Most Auxiliary Nurse Midwives (ANMs), staff nurses, and doctors lack skilled birth attendant (SBA)) skills. There are too few doctors with obstetrical, surgical, and anaesthesiology skills and too few staff nurses. Many skilled staff emigrate from Nepal. Sanctioned staff posts with appropriate career paths do not exist for key categories of staff, such as Medical Doctor - General Practice (MDGP) and Anaesthesia Assistant (AA). Budget constraints have prohibited meaningful increases in staff salaries, incentives, and staffing levels. Staff deployment and rotation require improvements to counteract the severe staffing gaps, particularly in rural facilities. Basic human resource management systems remain weak at both central and local levels, and absenteeism rates are high.

Two key documents stress the importance of increasing the number of SBA competent health providers. They are the 2006 *National Policy on Skilled Birth Attendants* and the *National In-Service Training Strategy for Skilled Birth Attendants 2006-2012*.[19] The National SBA Policy defines who can be considered a Skilled Birth Attendant in Nepal. It lists the core competencies required of all SBAs and the advanced competencies of selected SBA categories. Short-, medium- and long-term measures to improve the workforce are identified. Short-term measures include:

- Competency-based core skills training or assessment of competencies and SBA certification (as appropriate) for ANMs, staff nurses, and doctors working in Basic Emergency Obstetric Care (BEmOC) sites

[18] This plan is currently being revised, but has not yet been finalised.
[19] The 2006 National Essential Maternal and Neonatal Health Care Package is a third key document. It defines the Essential Maternal and Neonatal Care Services for Nepal.

Advanced SBA training for doctors working in Comprehensive Emergency Obstetric Care (CEmOC) sites

Post-basic midwifery training for all staff nurses working in PHCCs and maternity units of district hospitals.

Restructuring the current ANM pre-service course as a two-year course is a medium-term measure; introducing a new cadre of Professional Midwife (PM) is a long-term one.

Following the recommendations of the 2003 human resources plan (MoHP 2003), the SBA Policy states that by 2017, each health post will be staffed by one staff nurse and two ANMs and each sub-health post by two ANMs. These health workers are to be technically supervised by a nurse midwife or a professional midwife, working at the district hospital or PHCC.

The shortage of trained staff is not the fundamental reason for shortage of staff nurses and medical officers in rural health facilities in Nepal (RTI International 2008). Public and private medical schools and training programmes produce substantial numbers of graduates every year. The root cause of the staffing problem with these cadres (and others) is the inability of the government to attract and retain sufficient numbers of trained staff in the publicly funded health system.

The ANMs are the most stable of staff category. The majority of sanctioned posts for ANMs in rural facilities are filled and the majority of the ANMs filling these posts are working. Staff nurses are significantly absent at the PHCC level and even district hospitals are far from having their sanctioned posts filled. Medical officers in district hospitals are largely freshly graduated on scholarship bonds. Their total number is more than adequate to staff district hospitals, but they lack caesarean section skills and technical support and supervision. They also appear reluctant to remain in government service after receiving their full license.

Specialist doctors - obstetrician/gynaecologists, anaesthesiologists and MDGPs - are the one category in overall short supply. Increasingly, these valuable specialists are lost, not only to the domestic private health sector, but through migration.

At the district hospital level, the main skill problem is the lack of caesarean section skills, coupled with poor anaesthetic capability. Many hospitals lack a complete C/S team (a doctor with C/S skills, a health worker capable of giving anaesthesia and a nurse with SBA capacity). Health workers who have been trained as Anaesthesia Assistants, appear to have different interpretations of the conditions under which they are allowed to provide anaesthesia. The legal framework for their practice seems not to be clear. All relevant cadres of staff lack SBA capacity. This is not surprising, given the very recent start of SBA training in Nepal. Ultrasound skills are also in short supply.

Issues related to the lack of career ladder and further study and promotion possibilities are now a severe deterrent for MDGPs. They would likely be a similar hindrance for diploma-graduates accepting and remaining in district hospital posts. The situation is likely to be even worse than for MDGPs, given the large number of unfilled vacancies for obstetrician/gynaecologists in higher level hospitals. Lack of staff housing, continuing education opportunities and communication emerged as particular important de-motivating factors for health workers in rural areas.

Underlying the problems are two critical issues. The first is the overall lack of a functioning human resource management system and skills at every level of the government health system. The second is the very rigid nature of Nepal's civil service (RTI International 2008).

Overall, per capita availability of physicians in the country appears to be declining (RTI International, 2010); the number of doctors per 100,000 population declined from 5.3 in 2001-02 to 5.1 in 2006-07. Physician availability in public health institutions is particularly low in the mid-Western Region where only about 60% of sanctioned doctor positions are filled.

User fee policies and financial access

The Interim Constitution of Nepal in 2007 stated that every citizen has the right to access basic health services. Initially, the Government of Nepal provided emergency and inpatient services free of charge to poor, destitute, disabled, senior citizens and Female Community Health Volunteers (FCHVs) in district hospitals (of up to 25 beds) and PHCCs (Decision of December 15, 2006). From mid-January 2008, free care for all citizens at SHP/HP level across the country was added (decision of 8 October, 2007). From mid-January 2009, in a third phase, the Government of Nepal declared all services at district hospitals (of up to 25 beds) free for targeted groups, but with listed essential drugs available freely for all citizens. In essence therefore, all citizens across the country now have free access to primary care (treatment and drugs), with some targeted groups also benefiting from protection for secondary care costs. In order to implement this effectively, the Ministry of Health and Population (MoHP) has introduced operational guidelines and a monitoring toolkit in 2009.

For deliveries, in November 2008, the GoN declared under the new Aama policy that institutional deliveries in all public facilities and some private ones would be free to all, with government reimbursements to providers. The policy started from January 2009. However, abortion services are not free; they are charged at all levels of institutions according to published rates (NPR. 500 per abortion).

These policies added to the existing public health activities, for which users were not charged at point of service, and have since been augmented by fee removal for other specific services.

Table 8 describes the content of the Essential Health Care Services (EHCS) in the current health plan, with existing elements and elements which may be added.

Table 8 Content of EHCS

Programme	Currently included	Planned
Reproductive health	Family planning Safe motherhood	Safe abortion Prevention and repair of uterine prolapse
Child health	EPI IMCI Nutrition	Community-based newborn care Expanded nutritional care
Communicable disease control	Malaria Kala-azar (leishmaniasis) Japanese encephalitis Snakebites and rabies TB Leprosy HIV/AIDS/STDs	
Non-communicable diseases		Community-based mental health Health promotion for NCDs
Oral health		Promotion and prevention
Eye care	Promotion and prevention Surgery Trachoma	
Rehabilitation of disabled		Promotion, prevention, rehabilitation, surgery and therapy
Environmental health		Promotion and prevention
Curative care	Outpatient care at district facilities	

Source: NHSP-IP 2

Funding of these different components varies. For public health activities, budgets are set according to population and coverage targets. Under the Aama programme, health facilities are reimbursed according to monthly activities, with a fixed tariff according to delivery and facility type. Facilities with 25 and more beds receive NRs. 1,500 per normal delivery, while health facilities with less than 25 beds receive NRs. 1,000. Complicated deliveries are reimbursed at NRs. 3,000, while caesarean sections are paid at NRs. 7,000. These tariffs are intended to cover the cost of all required drugs, supplies, instruments, and a small incentive to health workers.

The Department of Health Services (DoHS) allocates funds to the districts on the basis of the estimated number of institutional and home-based deliveries attended by skilled health workers. The Health Facility Management Committee (HFMC) formed at each health facility puts in monthly claims for reimbursements to their District (Public) Health Office (D(P)HO, using customised forms.

The Aama programme is currently functioning in 1,000 health institutions in the public sector, ranging from central hospitals to peripheral level health facilities. In addition it has started to enrol most not-for-profit institutions (community, mission and NG0-run hospitals). The programme intends to expand to the private sector eventually. This is required to fill gaps in provision and access. Currently, there are 80 MoHP facilities in 53 districts able to provide BEmOC, including complications not requiring surgery. In addition there are 46 MoHP facilities in 33 districts able to provide CEmOC including caesarean sections (MoHP 2010).

For correcting prolapsed uteri, the care providers receive NRs 13,000 in the Terai, NRs 14,000 in the hills and 15,000 in the mountains.

Curative care is also funded according to actual utilisation, with facilities receiving support in the form of drugs and (limited) funds. At SHP level, there are 22+3 essential drugs provided; at HP 32+3 (the +3 depending on whether delivery services are offered or not); and at PHCC and DH 40. These are provided based on previous utilisation. In addition, sub-district facilities receive NRs 5 per OPD at HP/SHP level and NRs 15 per OPD at PHCC and DH level. Inpatient visits were NRs 100, but are now incorporated in a lump sum budget (Witter & Prasai 2010).

For clients, all treatment and listed essential drugs at SHP, HP and PHCC are free. At DH level, poor and vulnerable categories are exempted from all treatment and drug costs, while all can benefit from the 40 listed drugs. However, tests, non-listed drugs and tertiary costs are payable, unless special exemptions are given. All services at district hospitals are provided at heavily subsidized prices to all.

Assistance with catastrophic costs

In addition to the services which are offered without user fees to all or specified groups, there is a fund for assistance with secondary and tertiary costs, which is focussed on those who are destitute or poor, but also those requiring chronic and high-cost treatment, such as renal dialysis, coronary diseases, Parkinson's, cancer and neurosurgery. NRs 50,000 is the maximum that can be paid on behalf of an individual per year. The budget for this programme in 2010/11 was NRs 100 million (Witter & Prasai 2010). Those seeking assistance from the fund have to apply to a district committee, chaired by the district chief. Their situation and diagnosis are reviewed. Funds are paid not to patients but direct to the accredited public and private institutions providing care. Districts request funds according to their need; however, the budget is never sufficient to meet all requests.

Hospitals are also required to set aside some sums to help people who are unable to afford to pay. A guideline was prepared in 2008 on free care at referral hospital level. The screening of patients is done using a tool designed for the purpose and those who unable to pay the fees are exempted. According to a field report, about one third gets free or partially free care in referral hospitals (Witter & Prasai 2010).

Demand-side financing

In addition to free care, demand-side finance arrangements for different patient groups have been proliferating in Nepal.

Aama Programme: Previously known as the Maternity Incentives Scheme (MIS) and then Safe Delivery Incentive Program (SDIP), this programme is being implemented by the GoN in order to mitigate the high financial cost of childbirth through the provision of financial incentives to women seeking institutional deliveries and health care providers. It was launched by MoHP as a nationwide "Priority 1" (P1) programme on 17th July 2005. Guidelines issued in 2005 were revised in 2008 and 2009, based on the findings of an evaluation (Powell-Jackson et al. 2008). As per the new guidelines, women get benefits irrespective of their parity and choice of government or private facility is given to women. To help with transport costs, women who have institutional deliveries receive NRs 500 in the Terai, NRs 1,000 in hill areas and NRs 1,500 in mountain regions. Since January 2009, all service costs are removed for all women in all areas of the country. Implementation has been improving, and recent reports suggest that 90 percent of women received incentives for institutional deliveries (DoHS, 2009).

Incentives for 4+ ANC visits: In addition to the delivery incentives, women who complete their 4th ANC visit get a lump sum of NRs 400 at the time of delivery. This helps to transfer the ANC clients to institutional deliveries and is also expected to improve delivery outcomes. The scheme was initiated in July 2009. The payment of the incentive is made along with the incentive for safe delivery in order to reduce the transaction costs. A claim form and ANC card is taken as evidence for the completion of 4 ANC visits. Anecdotally, there has been a large response, but also concerns about fraud, as the ANC card is easily reproduced.

Incentive for 3 PNC visits: In addition to the incentives for ANC and deliveries, a woman gets NRs 300 if she completes 3 PNC visits. The scheme has been piloted in 10 districts since 2009 and has not yet been evaluated. It is a part of the Community-Based Newborn Care Programme funded by USAID. The Child Health Division has developed a separate monitoring system. Thus these incentives are not included in the regular recording and reporting of the HMIS system.

Incentive for treatment of prolapsed uterus. Prolapsed uterus is a major problem for some women and expensive to correct. In July 2008, an incentive programme was introduced for women with this condition (and providers – see above). Women who are diagnosed can seek care from public or private providers. They receive the same level of incentives as for the Aama programme - Nrs 500 in the terai, NRs 1,000 in the hills and NRs 1,500 in the mountains. The management responsibility was given to the respective regional health directorates, with monitoring done by the Family Health Division.

Incentives also exist for the treatment of kala-azar,

Other: In addition to this, there are a number of other incentives schemes, including for:

- PMTCT for women with HIV/AIDS
- people on ARVs
- opportunistic infection management of HIV/AIDS patients
- cash transfer of NRs 1,400 for all TB patients to cover transport for treatment
- some in-kind nutrition benefits for pregnant women and infants in some zones
- kala-azar
- treatment of multi-drug resistant TB

Incentive payments to providers

In recent years, there has also been a proliferation of incentive payments to providers for different services. A summary of known existing schemes is given here:

- Under the Aama programme, health workers are meant to be paid NRs 300 per delivery at a health facility (paid out of reimbursement from the government). A recent study suggested that the amounts vary considerably in practice, from 0 – NRs 800 in some facilities (Witter et al. 2011). Payments were also shared between staff in different ways in the facilities surveyed.
- In addition, NRs 200 is paid per attended delivery at home, although this amount has been reduced (it was NRs 300 under the SDIP) and is also harder to claim, requiring two counter-signatures at local level. This has led to a reduction in payments to health workers for home deliveries.
- For sterilisation, health workers receive NRs 100 for the team.

- For repair of prolapsed uterus, health workers receive from NRs 1,000 to NRs 1,500 (facilities have some discretion about the actual amount).
- A pay-for-performance approach to motivating staff to stay in rural areas is being piloted (paying a fixed amount – NRs 50 per additional OPD consultation over a fixed minimum number per day, and up to a maximum ceiling – for doctors, with some allowances for nurses too). GIZ and WHO are supporting this in 6 districts. WHO Management Division is developing a manual for district-based management of pay-for-performance.
- USAID is also piloting payments for FCHVs – NRs 500 if she brings her client to 4 ANC check-ups, institutional delivery, and PNC. This has been introduced in 12 districts, working with the Child Health Division.

In a study, some key informants expressed concern about the perverse incentives that these incentive payments have introduced and their demotivating effects on other (non-rewarded) health workers (Witter & Prasai 2010).

Review of research on effectiveness of policies

A monitoring framework was prepared both for the Aama programme and the ECHS package (MoHP, 2008). In both cases a range of approaches were used, including:

- monitoring through field visits (supervision)
- monitoring through routine statistics (HMIS, LMIS and Aama software)
- social audits
- health facility surveys
- independent rapid assessments
- household surveys

Overall results are encouraging across the ECHS and Aama strands, though with ongoing challenges. The latest round of facility survey for free care (RTI, 2010), for example, found that:

- The budget allocated for free care increased by 24 percent between FY 2007/08 from US$ 9.2 million to $11.4 million in FY 2008/09.
- The facilities' average number of filled positions increased slightly, reaching 92 percent
- HPs and SHPs with stock-outs of essential drugs lasting more than a week decreased by 16 percent, whereas stock-outs decreased by 17 percent at hospitals and PHCCs.
- The average time for drugs to reach health facilities from the regions and districts decreased for all types of health facilities, except district hospitals.
- In HPs and SHPs, use by Dalits and Janajatis increased, and although Dalits continue to use services at HPs and SHPs proportionally higher than their numbers, Janajatisstill utilize services at rates below their population proportion. The proportion of Madhesi users did not change significantly. Use by Muslims fell during the period, with their service utilization falling below levels proportionate to their share in the total population.
- 60.1 percent of interviewed clients reported they were fully satisfied with existing services, 38.9 percent said they were partially satisfied, and 1 percent were not satisfied.
- The average cost for drugs per outpatient visit decreased by 2 percent.

- The health facility fully dispensed 54 percent of medications, while another 37 percent were partially dispensed.

However, there are ongoing concerns from managers, including that:

- Funds did not flow smoothly from the MoHP to all the health facilities.
- Delays in depositing the subsidy in the health facilities' accounts continue to be a problem.
- There are insufficient funds for the transport of drugs resulting in delivery delays.
- The drug supply does not reflect the actual number of orders because of the push system.
- 22 of 168 health facilities reported understaffing because of absenteeism without notice, or secondments.
- More managers complained about the lack of diagnostic equipment and crowding by people who are not seeking treatment.

In the latest household survey on the Aama programme (Powell-Jackson et al. 2010), the findings also suggested improved performance in relation to the old (cash incentive) element and reasonable effectiveness of the new (free care) element. In relation to cash incentives it found that:

- Women's awareness of the cash incentive during pregnancy had risen from 14 percent in July 2005 to 64 percent in February 2010.
- The proportion of facility births in which the woman received the cash incentive had risen from 20 percent in July 2005 to 67 percent in February 2010.
- Delays in receiving the money had fallen from an average of 93 days to 2 days over the same period. This improvement had coincided with efforts by the Family Health Division to reduce fraudulent claims and improve governance structures.

In relation to fee exemption, results indicated that there has been substantial, albeit incomplete, implementation of the free delivery care policy:

- In the three low Human Development Index districts, 87 percent of facility births were free of charge in the most recent period (July '09 – February '10).
- In the three high HDI districts, 58 percent of facility births were free of charge in this period.
- There was no indication of pro-rich inequality in who benefits from free delivery care. In fact, in the low HDI districts the opposite was true – poorer women were more likely to receive free care.

In terms of impact, it found that:

- As expected, since the start of the Aama programme, household costs incurred at the health facility have fallen.
- However, there has been no fall in expenditures on drugs and medical supplies bought outside of the health facility, probably reflecting drug supply problems in the public sector.
- Over the past five years, there has been a substantial increase in the proportion of women giving birth in a health facility. In the high HDI districts, the rate of institutional delivery care has

increased 21 points from 33 percent to 54 percent in the five year period. In the low HDI districts, the rate has increased 15 points from 6 percent to 21 percent over the same period.

- Trends over time by wealth group show that inequality in facility births has fallen substantially.
- It is also the case that marginalised castes have seen large increases in utilisation over the past five years.

DFID funded 80% of the Aama programme's cost for its first 18 months. However, this contribution is planned to diminish over time, shifting the burden to the MoHP and other donors. For the period of 2010/11 to 2016/17 a total of £39.4 million is estimated to be required (MoHP 2010). In addition to funding, DFID has provided technical assistance for implementation and monitoring. Six regional coordinators have been established to supervise the programme, and a series of rapid assessments have been conducted to provide feedback to the MoHP.

Overall, despite the progress, access to health care remains unequal. The NLSS showed that about 43% of the poorest did not seek care for their previous episode compared to 27% among the richest (Government of Nepal, 2010). The significantly positive concentration indices confirm that in general the better off incur more out of pocket expenditure for health care (Adhikari, 2010). This distribution was more skewed toward richer households in NLSS 2003/04 than NLSS 1995/96. Similarly, the significantly positive Kakwani index indicates that the rich spend a higher proportion of their income out of pocket – an indicator of progressivity but also possibly of non-use by poorer households.

Distribution and skill mix of the RMNH workforce

In 2011 there were 1,750 doctors in post across the country, 3,042 nurses and 2,505 auxiliary nurse midwives (ANMs) (Table 9). The majority of doctors and nurses are in the non-government sector while two thirds of ANMs are in the government sector. Government staff are more dominant in the remoter Mid Western and Far Western regions while the private sector dominates Central and Western Region.

Table 9: Medical staff by development region (2011)

	Government	Non-Government	Total	
Doctors				%
Eastern Development Region	50	59	109	6.2%
Central Development Region	126	1201	1327	75.8%
Western Development Region	51	195	246	14.1%
Mid Western Development Region	46	0	46	2.6%
Far-Western Development Region	22	0	22	1.3%
Total	295	1455	1750	100%
%	16.9%	83.1%	100%	
Nurses				
Eastern Development Region	232	49	281	9.2%
Central Development Region	550	1333	1883	61.9%
Western Development Region	229	415	644	21.2%
Mid Western Development Region	142	0	142	4.7%
Far-Western Development Region	92	0	92	3.0%
Total	1245	1797	3042	100%
%	40.9%	59.1%	100%	
ANMs				
Eastern Development Region	365	143	508	20.3%
Central Development Region	562	310	872	34.8%
Western Development Region	353	361	714	28.5%
Mid Western Development Region	250	0	250	10.0%
Far-Western Development Region	161	0	161	6.4%
Total	1691	814	2505	100%
%	67.5%	32.5%	100%	

Source: Constructed from HURIS Database 2011

There is substantial variation in staffing relative to population across the country (Table 10). The extremes are most evident for doctors where the number of doctors per 100,000 population varies from 0.73 in Far Western to 11.9 in Central, a ratio of 161. The ratio is 5.6 for nurses and 2.2 for ANMs, suggesting some success in ensuring that midwives are distributed relatively equitably across the country.

Table 10: Medical staff per 100,000 population by development region (2011)

	Government	Non-Government	Total
Doctors			
Eastern Development Region	0.71	0.83	1.54
Central Development Region	1.14	10.84	11.97
Western Development Region	0.84	3.21	4.05
Mid Western Development Region	1.13	-	1.13
Far-Western Development Region	0.73	-	0.73
Total	0.94	4.64	5.59
%			
Nurses			
Eastern Development Region	3.28	0.69	3.98
Central Development Region	4.96	12.03	16.99
Western Development Region	3.77	6.83	10.60
Mid Western Development Region	3.49	-	3.49
Far-Western Development Region	3.03	-	3.03
Total	3.97	5.74	9.71
ANMs			
Eastern Development Region	5.16	2.02	7.19
Central Development Region	5.07	2.80	7.87
Western Development Region	5.81	5.94	11.76
Mid Western Development Region	6.14	-	6.14
Far-Western Development Region	5.31	-	5.31
Total	5.40	2.60	8.00

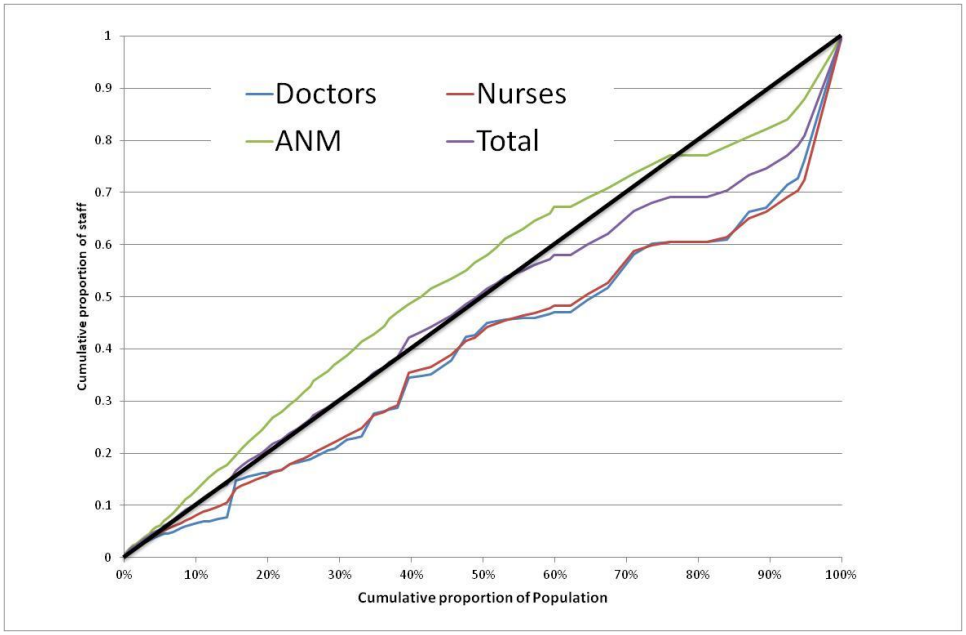
By 2011, 116 doctors and 2574 ANMs had received training in obstetric skills (Table 11) as part of the *National In-Service Training Strategy for Skilled Birth Attendants*. If an annual rate of attrition from the health sector) of 5% is assumed then this suggests that around 2,289 ANMs and 81 doctors with SBA skills should now be in place. It should be noted, however, that relative to population, many more staff have been trained in the relatively developed Central and Western Regions.

Table 11: Trained SBAs 2011 (with and without attrition)

	Trained		With attrition	
	Doctors	ANMs	Doctors	ANMs
Total SBA trained				
Eastern Development Region	14	517	8	456
Central Development Region	74	704	56	630
Western Development Region	16	598	10	530
Mid Western Development Region	9	426	5	381
Far-Western Development Region	3	329	2	292
Total	116	2574	81	2289
SBA trained per 100,000				
Eastern Development Region	0.20	14.56	0.23	5.94
Central Development Region	1.05	19.82	1.59	8.21
Western Development Region	0.23	16.84	0.28	6.90
Mid Western Development Region	0.13	11.99	0.14	4.96
Far-Western Development Region	0.04	9.26	0.06	3.80
Total	1.64	72.47	2.30	29.82

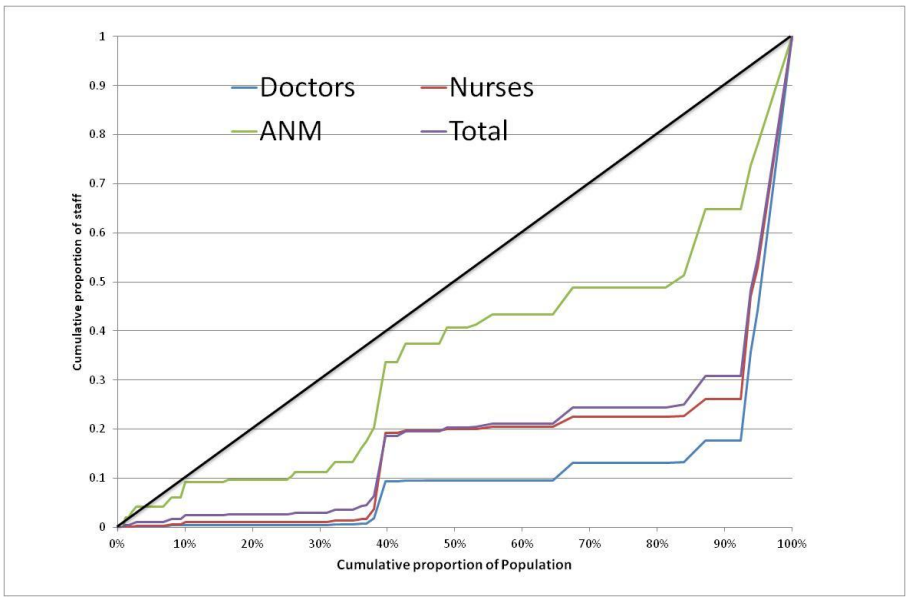
The distribution of health workers across the country can be graphically illustrated by a concentration curve and corresponding concentration index (CI). Districts are ordered by increasing population density, with sparsely populated districts in, for example, the western region on the left and densely populated districts such as Kathmandu on the right. A hypothetical situation where health workers are distributed equally in proportion to population across the country would correspond to a concentration curve that matches the 45 diagonal and the CI will then be zero. In a situation where the distribution favours densely populated areas, the curve will lie below the diagonal while the index will be greater than one. Maximum, pro-urban, concentration is where all staff based in the largest urban area and the corresponding CI is one.

Figure 8: Concentration Curve for Government Health Workers (2011)



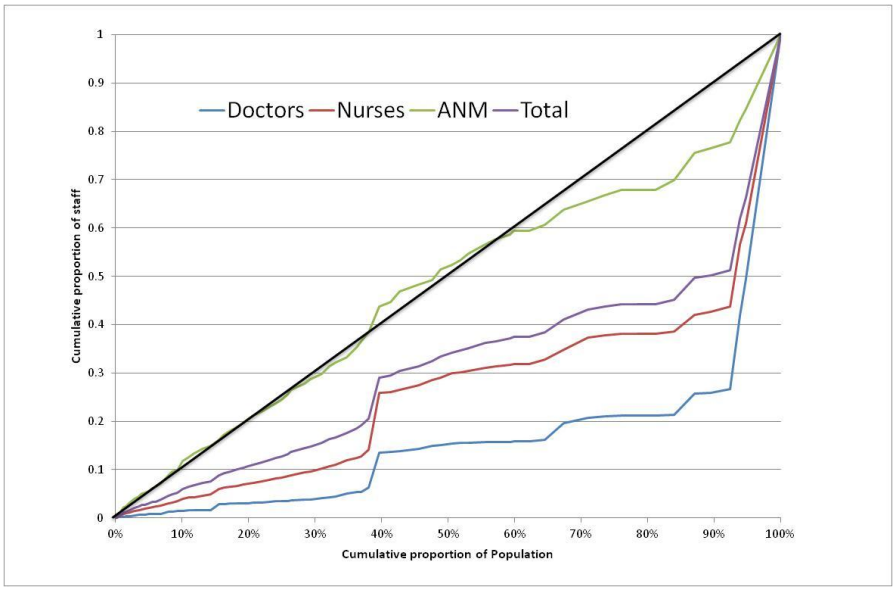
Source: Constructed from HURIS Database 2011; Census extrapolations, Central Bureau of Statistics, Government of Nepal

Figure 9: Concentration Curve for Non-Government Health Workers (2011)



Source: Constructed from HURIS Database 2011; Census extrapolations, Central Bureau of Statistics, Government of Nepal

Figure 10: Concentration Curve for all health workers (2011)

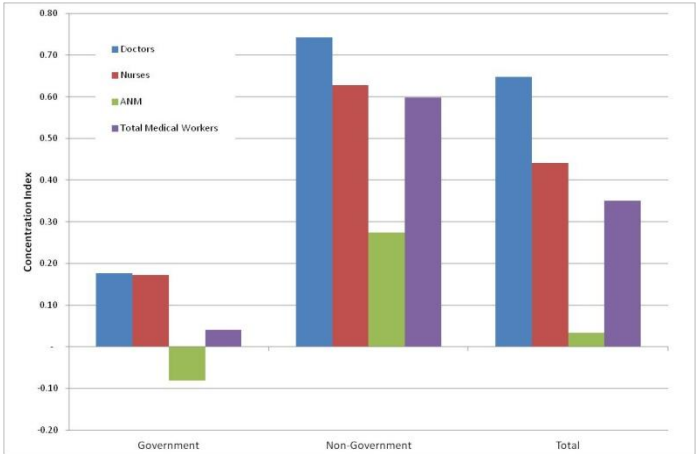


Source: Constructed from HURIS Database 2011; Census extrapolations, Central Bureau of Statistics, Government of Nepal

The concentration curves and indices show that non-government health workers are all strongly concentrated in urban areas (**Figure 9** &

Figure 11). The concentration index for both nurses and doctors is above 0.6 suggesting considerable inequality across the country between rural and urban areas. As suggested by the earlier population ratios, government workers are much more equally distributed. The concentration index for Government ANMs, a key input in improving accessibility to maternal care, is negative suggesting that their distribution is mildly biased in favour of rural areas. It might be argued that promoting uptake of safe delivery care in less accessible areas will mean that policy will have to be more vigorous in redistributing all categories of health workers in favour of remote areas in the future.

Figure 11: Concentration Indices for health workers (2011)



Source: Constructed from HURIS Database 2011; Census extrapolations, Central Bureau of Statistics, Government of Nepal

Workload

Across the country there are currently around 132 births per ANM and 189 births per doctor (Table 12), well within the targets of 175 per SBA and 1000 per doctor suggested by WHO, although there are only sufficient ANMs if they can dedicate 75% of their time to maternal health services. Across the country there appear to be sufficient doctors to provide emergency support for all births if staff were distributed evenly. The distributional information shows this not to be the case. Most doctors work and live in Kathmandu and other Central Region urbanised areas in non-government facilities. Three regions have insufficient doctors to provide care for all obstetric complications. Nine districts have no government doctor and emergencies must be referred to neighbouring districts. The topography of the country means that travel times for even short distances can be substantial.

Table 12: Births and deliveries per doctor and ANM

	Current deliveries		Current births	
	Per ANM	Per Doctor	Per ANM	Per Doctor
Eastern Development Region	158	737	338	1,576
Central Development Region	149	98	299	196
Western Development Region	76	220	207	600
Mid Western Development Region	166	901	447	2,428
Far-Western Development Region	153	1,121	517	3,781
Total	132	189	309	443

Remuneration and terms and conditions

Table 6 shows the monthly salary and allowances of doctors and nurses (Nepal Rupees).

Table 6: Monthly salaries and allowances (Nepal Rupees)

Cadre	Monthly salary	Monthly Allowances	Monthly remote area allowance*	Total monthly remuneration	Salary midpoint
Doctor (grade 9/10)	22750-24740	insurance 200/	Rs 1290 - 8270	22950 - 33210	28080
Nurse (grade 7/8)	19770-21080	insurance 200/ + health hazard allowance 500/ uniform allowance	Rs 1010 - 6815	20470 - 28595	24532

*Based on 5 different levels of remoteness.

The salary scales are highly compressed with only a 60% increment between the best paid doctor and the least paid nurse. Using the midpoints of the scale, table 9 shows the value of salaries in international dollars[20] and expressed as a ratio of salary: Gross National Income per capita in international dollars, 2010[21].

Table 9: Salaries expressed in international dollars and as a ratio of salary: GNI per capita

Cadre	International $	Ratio salary: GNI per capita
Doctor	4408.1633	40.196018
Nurse	3851.2559	35.117835

Health workers are well paid relative to the average income level. At the midpoint of the doctors' salary scale, salaries are over 40-fold average GNI per capita and at the midpoint of the nurses' salary scale, salaries are over 35-fold average GNI per capita.

Projected need for RMNH workforce

The future need for skilled birth attendants and doctors was projected based on the figures collected on current staffing levels, births and coverage rates for attended/facility delivery. Initially the aim was to use the Making Pregnancy Safer tool (MPS), produced by WHO, which provides a simple and

[20] **PWT 7.0 Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 7.0, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, May 2011.** http://pwt.econ.upenn.edu/php_site/pwt70/pwt70_form.php (accessed 15th December 2011)

[21] http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD (accessed 15th December 2011)

graphical analysis of the quantity and cost of skilled birth attendants and doctors as coverage is scaled up from the current levels[22]. The MPS tool was, however, based on a forecast of baseline staffing based on current levels of health worker attended deliveries and assumed targets for the number of births per SBA and doctor: around 1,000 deliveries per doctor and (a user adjustable) 175 deliveries per skilled birth attendant. We modify this approach by starting from the actual baseline for health workers that are assumed to assist at delivery. Using the MPS assumption of target deliveries per health worker we then extrapolate the number of additional workers required to meet a near universal coverage target of 95% by 2015.

The model is quantity driven. It assumes that the current level of staff is just sufficient to provide the current level of skilled deliveries. Any increase in coverage requires additional SBAs and doctors based on standard ratios: around 1,000 deliveries per doctor and (a user adjustable) 175 deliveries per skilled birth attendant. The model permits users to specify levels of attrition for staff and salaries and assumed salary increases to permit cost projections. The number of births is based on demographic projections for each country.

The presumption that coverage can be increased by adding staff in a fixed ratio to deliveries is an important one. It assumes that the main constraint to increasing attended deliveries is one of supply. Yet it is clear from the analysis of actual data that in some areas high levels of attended deliveries are possible with a relatively small staffing whilst in other areas a high level of staffing is associated with a modest level of attended deliveries. Various factors may account for these differences including:

- Staff may be busy with other activities and only able to devote a small proportion of time to delivery care. This is dealt with by focusing on full time equivalents at least for the additional staff required.
- Staff may not be motivated to provide services
- Staff have insufficient resources provide adequate care
- Human resources are available at a facility but women are impeded from seeking care due to inaccessibility or high cost of transport and lack of knowledge about when to seek care. Both these factors are known to be associated with levels of delivery.

These factors could mean that a much higher ratio of staff to deliveries may be required in order to achieve universal access or indeed that targets are unattainable unless other barriers to use of services are addressed. Conversely, it may be that current staffing levels are sufficient to deal with more deliveries but that other factors prevent scale up.

[22] The original model (http://mps.projection.free.fr/mdg5-hrsu.html) is available as an online and offline web-based. For the purposes of this study, the model was converted to excel and adapted to permit variations in the base and target years and differences in attrition rates and salaries for doctors and nurses/midwives.

Box 1: Summary Assumptions for Nepal

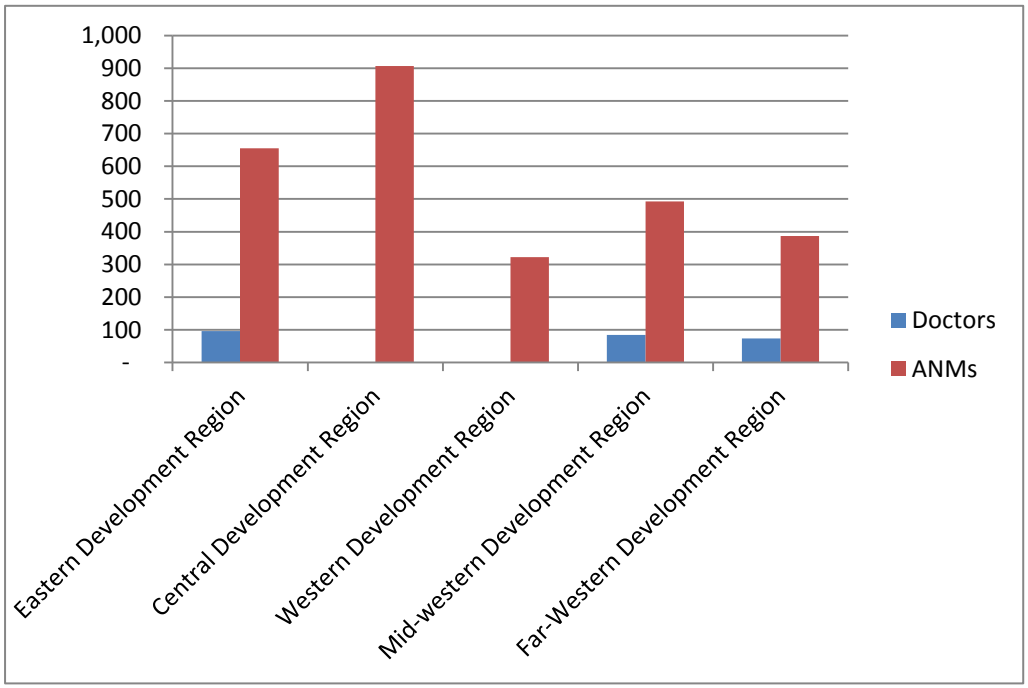
	Deliveries per year	Baseline salary (US $)	Growth in salaries	Annual attrition
SBA	175	3468	3%	5%
Doctor	1000	3972	3%	5%

The model focuses on the additional full time equivalent workers required for scale up. The scale up to 95% coverage is modelled over the period 2010 to 2015 using country assumptions (See Box 1). Mean salaries (2010) for registered nurses and doctors as calculated above are used for the projection of recurrent cost and these are expected to increase by 3% per annum (in dollar terms). An initial level of coverage of 43% is assumed which corresponds to levels reported in the HMIS for 2011. The figure is higher than in the DHS 2011 which refers to a five year period prior to 2010.

The projections based on data by development zone, suggest that a scale up from 43% to 95% by 2015 will require a total of 2,763 midwives and 254 doctors by 2015 (**Error! Reference source not found.**). Data from the Ministry of Health and Population suggest there were 2,505 Auxiliary Nurse Midwives (ANMs) and 1,750 doctors across the government and non-government sector. Further growth in the number of ANMs beyond this is required to allow for ANMs other activities. It is clear from the earlier section, however, that the distribution of doctors is extremely skewed. The scenario assumes no redistribution of doctors. If doctors could be reallocated from urban to rural areas and doctors in the private sector were willing to provide delivery care to then the need for additional doctors would largely be eliminated. These are, however, strong assumptions and it is more plausible to plan on the basis that new doctors will need to be recruited for the hard to reach areas. Across the country, the model suggests deficits of doctors in all regions with the exception of the Central Development Region and Western Development region.

For midwives, the model implies a deficit in all regions although the numbers are lowest in the Western Region.

Figure 12: Deficits of doctors and Auxiliary Nurse Midwives relative to requirements for 95% coverage in 2015



The annual cost of skilled attendance, doctors and midwives, is expected to increase from $15.6 million to $22.5 million in the context of the growth of the workforce required for 95% skilled attendance by 2015.

Conclusions

Despite improvements in some key indicators, Nepal faces continued challenges, including high neonatal mortality and low supervised delivery rates.

Despite clear HR plans relating to the staff needed for RMNH services, the Government of Nepal faces challenges in filling posts in remote areas and retaining staff there. Specialists are also in overall short supply. Availability of doctors in public health institutions is particularly low in the mid-Western Region where only about 60% of sanctioned doctor positions are filled. Pay for doctors and nurses is high in relation to GDP per capita, but with little difference between the cadres.

The government has introduced strong pro-poor policies in recent years, including the SDIP/Aama programme, which started in 2005, and incrementally since 2007 various forms of free care, particularly for services at district level and below. These are mostly funded according to reported activities, with fixed tariffs per act (and, in some cases, additional payments for health workers and for clients to cover some of their access costs). Although early studies found implementation problems, these appear to have been addressed over time, with a high proportion of cash incentives, for example, reaching the women delivering in health facilities, and much reduced delays in facilities receiving funds. There have also been equity gains: trends over time by wealth group show that inequality in facility births has fallen substantially.

ANMs provide the bulk of reproductive care. Unlike doctors (only 14% of whom work in the public sector), they are focussed in the public sector and more evenly distributed across the country. Non-public staff are concentrated in urban and richer areas. While overall numbers may be adequate, Eastern, Mid-Western and Far-Western regions do not have enough doctors to cover current deliveries, never mind if coverage rises to 95%. Under that optimistic scenario, ANMs would be inadequate in all regions. Scale-up would require additional doctors, or a redistribution of doctors away from the Central and Western regions, and a substantial increase in ANMs (almost doubling from 2010 to 2015). The annual cost of skilled attendance, doctors and midwives, is expected to increase from $8.16 million to $21.7 million.

The analysis here suggests that the policies pursued by the Government of Nepal – in terms of addressing supply and demand-side constraints simultaneously – have been appropriate and well managed, resulting in tangible gains. However, maintaining and deepening those gains will be a challenge. One of the factors behind the success of the SDIP/Aama policy has undoubtedly been the intensive material and technical support of DFID, which is due to reduce over the next few years. The government will require continued financial support and will need to institutionalise the good practices in managing and monitoring the various free care policies if it is to meet the needs highlighted here for increased ANMs and better distributed doctors.

Removing financial barriers to access reproductive, maternal and newborn health services: the challenges and policy implications for Human Resources for Health (HRH)

Sierra Leone case study

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September 2011

Acknowledgements

We would like to thank Ijeoma Edoka and Tuan Nguyen for assistance with analysis of data; and Yatta Kosia, Joseph Edem Hotah and Elvis Gama for assistance with sourcing and interpreting data in Sierra Leone.

Abbreviations

CHC	Community Health Centre
CHO	Community Health Officer
CI	Concentration Index
CHP	Community Health Post
CMS	Central Medical Stores
DHMT	District Health Management Team
DMS	District Medical Stores
FHCP	Free Health Care Policy
GoSL	Government of Sierra Leone
HIB	Health Information Bulletin
HRH	Human Resources for Health
MCHP	Mother and Child Health Post
MCH	Mother and Child Health
MOHS	Ministry of Health and Sanitation
MPS	Making Pregnancy Safer
NHSSP	National Health Sector Strategic Plan
OPM	Oxford Policy Management
PBF	Performance Based Financing
PHU	Peripheral Health Unit
PRSP	Poverty Reduction Strategy Paper
RoSL	Republic of Sierra Leone

Introduction

In trying to understand the interrelationship between fee removal and Human Resources for Health (HRH) challenges, Sierra Leone is a useful case study. It is unusual in that the link between the removal of fees (for pregnant women, lactating mothers and children under 5) under the Free Health Care Policy introduced in 2010 and the incomes of health workers was explicitly addressed.

Sierra Leone has some of the worst maternal and child mortality statistics in the world with 857 maternal deaths per 100,000 live births and 140 child deaths per 1,000 live births, according to the DHS 2008. A recently published study reporting the situation with the quality and availability of maternal and newborn care services in 2008 shows that there were sufficient comprehensive emergency obstetric care facilities in the country but they were poorly distributed so not accessible to a sizeable proportion of the population. Obstetric care facilities were characterised by severe staff shortages, equipment and supplies shortages and absence of utilities and consequently poor qualify of services. Demand for services was low, likely both because of quality problems and because of high and unpredictable costs of seeking care (Oyerinde et al., 2011)

The second Sierra Leone Poverty Reduction Strategy Paper (PRSP II), *Agenda for Change*, identified as a priority the need to address high levels of child and maternal mortality and morbidity. This led to the development of the Health Sector Strategic Plan 2010-2015, the introduction of a Basic Package of Essential Health Services and concern to reduce the financial barriers to seeking care. The government decided to remove user fees for some elements of the Basic Package, specifically reproductive, maternal and child health care services. This was announced by President Koroma at the United Nations General Assembly in September 2009 and launched, as the Free Health Care Policy (FHCP) on 27 April 2010, the 49th anniversary of Sierra Leone's independence. Under the FHCP, pregnant and lactating women and children under five are treated in public facilities free of charge.

In its first year, the FHCP was expected to cover 230,000 pregnant women and around one million children under five. It appeared to have immediate effects on utilisation, particularly for children. Liaqat and Ferry (2011) find that health utilisation by children under five had a sharp and statistically significant increase across Bombali District. It is too early to tell whether there are impacts on the ultimate outcomes such as reducing the rate of maternal mortality.

The FHCP enjoyed strong political leadership and there were attempts, in conjunction with donors, to tackle key problems. This included the system of drug procurement and distribution and efforts concentrated on the number and pay of health workers.

While there was some systematic planning in advance of the launch of the FHCP, the Government was caught unprepared in some ways. Six weeks before the launch date, health workers went on strike for better pay and conditions. While the Government had always intended to increase pay, it was forced to bring this forward, breaking the deadlock by committing Government funds and attracting donor funding.

The Government negotiated a substantial increase in pay for all 'technical' health workers, in a 'salary uplift', commencing in March 2010. The new pay scale incorporates all standard allowances and provided an increase of 200% or more, depending on grade. DFID is largely financing the new salary structure but the plan is for the Government to generate or identify other funding sources. However, the Government is already over-committed. According to the Free Services Framework document (Government of Sierra Leone, 2009) the total cost of the FHCP in 2010 is $91 million, which already faces a funding gap of $20 million.

Research methods

This case study is based on secondary sources. A visit was made to Sierra Leone in September 2011 which enabled the tracing of relevant literature on the FHCP and access to data on utilisation and numbers and distribution of health workers. These proved challenging to access with the effect that it was not possible to undertake interviews with key policy makers or health workers, or explore the informal aspects of policy further.

Literature review: A review of the literature on user fees, health financing and human resources for health in Sierra Leone was undertaken. Searches were conducted for academic and grey literature on recognised databases. During fieldwork, key policy documents were obtained.

Secondary data analysis: datasets concerning staffing, staff remuneration, and utilisation of services were obtained from the Monitoring and Evaluation section of the Ministry of Public Health and Sanitation. Where possible, data were obtained at district level. However, as detailed at relevant points below, the completeness and quality of many data, particularly relating to deliveries and health worker numbers, were discovered to be very poor.

Workforce policies

HRH was one of six 'pillars' of the *National Health Sector Strategic Plan (NHSSP) 2010-2015*, which recognises the extent of staff shortages in the country (ranging from 40-100% of the required staff by cadre) and the level of maldistribution of human resources in the country. The problems of the concentration of midwives in the Western region of the country, and the reliance of the rest of the country on MCH aides, insufficiently equipped to provide services above community level, are specifically recognised in the plan. The main issues and challenges to which the plan responds include lack of incentives, especially for hard to reach areas; poor career development and cumbersome and bureaucratic recruitment processes, making it hard to attract and retain health workers. Additional problems identified include poor conditions of service and low motivation, weak HR planning and management systems, and weak capacity in the county's HRH training institutions.

Table 1 summarises the strategic objectives of the NHSSP in relation to HRH and the results of a progress review in 2010 which suggests that after one year, steps have been put in place towards implementing the components of the plan. Among elements at least partially achieved are the putting in place of the policy and plan and the revision of the salary structure for the whole health

workforce, although the implementation of a remote area allowance has taken lower priority. Training has been scaled up in some areas and performance based financing has been established at primary care level under which each Local Council together with the DHMT signs an agreement - 'Tripartite Performance Based Financing (PBF) Agreement' - with each service provider (health facility) for provision of the PBF interventions. This agreement specifies the quantity and quality indicators, the formula on which PBF payments will be based and procedures for supervision, verification and dispute resolution. In addition, not addressed in the table, a payroll cleansing exercise in 2010 helped address human resource irregularities such as ghost employees (Amnesty International, 2011).

Table 1: Progress on 2010 targets of the Human Resources for Health pillar of the NHSSP

Strategic objectives	Targets	Actual progress
Provide and maintain a policy and strategic framework to guide HR development and management	A comprehensive HRH policy in place that is in harmony with major HRH stakeholders and national policies by 2010	Partially achieved
	A revised HRH strategic plan in place that is based on flexible and sustainable HRH projections by 2010	Partially achieved (HRH strategic plan is being reviewed by the Directorate of HRH)
	Fast track the recruitment process and improve retention for HRH, including special packages for hard to reach areas	(Partially achieved) revised the salary structure of entire health workforce and subsequently scaled up recruitment for the implementation of the Free Health Care Initiative in 2010; remote area allowance to be implemented under the Global Fund project
	Develop and implement a comprehensive training plan	Not achieved
Strengthen institutional capacity for HR policy, planning and management	An integrated HRH information system as part of the HMIS in place whereby health managers at appropriate levels keep the HR inventory up-dated and maintained	Not achieved (only a scoping mission complete)
Enhance capacity and relevance for training of health workers, in partnership with other stakeholders	Strengthen the capacities of health worker training institutions/ programmes and introduce accreditation schemes	Partially achieved
	Strengthen training management capacity at national and institutional levels in collaboration with partners in human resource development	Not achieved
Upgrade and enhance competencies and performance of health workers	Health worker motivation schemes, including defined career paths and incentive packages institutionalised at central level and all DHMTs	Partially achieved (Performance Based Financing established at primary health care level); health worker scheme of service has been developed but is yet to be finalized by HRMO
	Continuous training programmes introduced in various priority areas of work	Not achieved
	On-the-job training, mentoring and skills development schemes introduced and implementation commenced in all DHMTs	Partially achieved
Promote research into HRH interventions to provide evidence-based information for the improvement of service delivery	Establish functional partnership with research institutions and other relevant stakeholders	Not achieved

Source: Draft Health Sector Performance Report, June 2010

The latest development in the remuneration of health workers in Sierra Leone is the introduction in 2011 of a Performance Based Financing (PBF) system in Peripheral Health Units (PHUs), to be implemented during 2012 (MoHS, 2011). PHUs will receive PBF funds according to their achievement of six output based measures and performance against a number of clinical and cross cutting quality factors. The six output based measures are: active users of modern family planning methods; pregnant women completing four ANC visits; safe deliveries in a facility attended by skilled

health workers; postpartum women and babies completing three PNC visits; children under 1 completing an EPI immunisation course; and outpatient visits of children under 5.

The PBF funds received by PHUs are to be divided between incentives for technical health staff (up to a maximum of 60% of the total) and 'investment' funds (the remaining 40% or more) which may be spent on payments to non technical staff, operational costs and minor investments at the facility. Division of the incentive payments between PHU staff is to be according to a precise points system and sharing formula in which different cadres are allocated different points and there is an 'in charge' bonus for the most senior health worker.

While apparently carefully designed, it is too early to tell whether the PBF system will succeed in its stated objective to 'help change the behaviour of health providers at facility level for them to deliver more quality services and to increase their productivity under the free health care policy' (MoHS, 2011, 61).

User fee policies

Prior to the introduction of the Free Health Care Policy, Sierra Leone pursued a number of different health care policies.

Following the Bamako Initiative, user fees were introduced in Sierra Leone as a means of strengthening district health systems, implementing primary health care self-financing mechanisms and encouraging social mobilization for community participation (GoSL, 2006). The cost recovery program was launched in Bo, Pujehun and Bombali in 1987. By 1990, the program was functional in all thirteen districts of the country.

Patients were required to pay for consultations, drugs and diagnostic tests. All 'vulnerable groups', defined as children under five, schoolchildren, pregnant and lactating women, the disabled and those over 60 years of age, were exempted and received free health care services. However, there were many examples of exempted patients having to pay registration and consultation fees before seeing a doctor or nurse.

During the war, many districts became inaccessible to central government and the public health care system collapsed in much of the country. Humanitarian organisations continued to provide emergency care in some districts but most people resorted to private providers.

Provision of health services, including medicines, was free of charge for the first three years following restoration of peace but, in 2002, the government made an attempt to re-introduce the medicines cost recovery scheme. Initially, the target for cost recovery was 80% of the cost of medicines, later reduced to 40%. Mark-ups over the original cost of medicines were permitted with the resultant revenues being retained at each level. The National Cost Recovery Strategy specified a 30% mark-up from the Central Medical Store (CMS) to District Medical Stores (DMS) or hospitals, 15% from DMS to Peripheral Health Units (PHU) and 15% from PHUs to patients or 30% from hospitals to patients (GoSL, 2006).

However, there were no clear policy guidelines on cost recovery of other health services, exemptions and financial management. Furthermore, the scheme swiftly ran into difficulties when the government pronounced that provision of treatment and medicines would be free to all vulnerable groups but they constituted over 60% of the users of the health facilities. This created a huge tension between the need to raise local revenue and the commitment to provide drugs to patients in need at minimal cost. In most cases, it appears that the need to ensure continued cash flow to facilities tended to override the notional requirement to exempt particular groups from payment (OPM, 2008).

A further cost recovery policy was introduced in 2006, developed alongside the National Health and Medicines Policy and a decentralised structure for the delivery of primary care. The stated objectives were:

- To improve the quality of health care delivery services at the different levels
- To improve the quality of health services through regular and sustainable provision of essential medicines and medical supplies at affordable cost at all levels
- To supplement the annual Government Budgetary allocation for health services
- To attain optimal and cost-effective utilization of available health services at the different levels of the health delivery system
- To increase community participation in health services delivery

A comprehensive health services cost recovery system was to be implemented at all levels of the public health delivery system. The aim was to recover 100% of the cost of medicines and to charge flat rates for other services. The tariffs for services were to be determined and issued by the Ministry of Health and Sanitation annually, in consultation with representatives of Local Councils and Hospital Boards. The National Pharmaceutical Procurement Unit was to determine and issue price lists of medicines and medical supplies. User fees were to be charged for all services provided at hospital level. Exemptions were to be determined by the Local Council, Hospital Boards and the community on a case by case basis but 'may include the following criteria' of destitution, treatment of certain cases such as HIV/AIDS, tuberculosis and leprosy, and emergency cases. Antenatal care and treatment of children under five was to be levied at a flat rate minimal fee.

Approved uses of the revenues from the cost recovery policy included:

- Replenishing of medicines and medical/surgical supplies
- Maintenance and repair of health care facilities
- Provision of incentives to health workers
- Coverage of incidental costs related to the cost recovery programme
- Transportation
- Support of health related programmes
- Emergency services, including transport for referred cases

It is not clear whether this comprehensive and carefully designed system ever operated as intended. Most facilities did not receive regular drug supplies from the Central Medical Store after 2006. Many PHUs continued to employ their own cost recovery schemes, purchasing medicines from private sources, applying their own mark-up and then selling on to patients (OPM, 2008). Uniform guidance

on fee levels across Sierra Leone does not appear to have been issued or, if so, to have been acted upon.

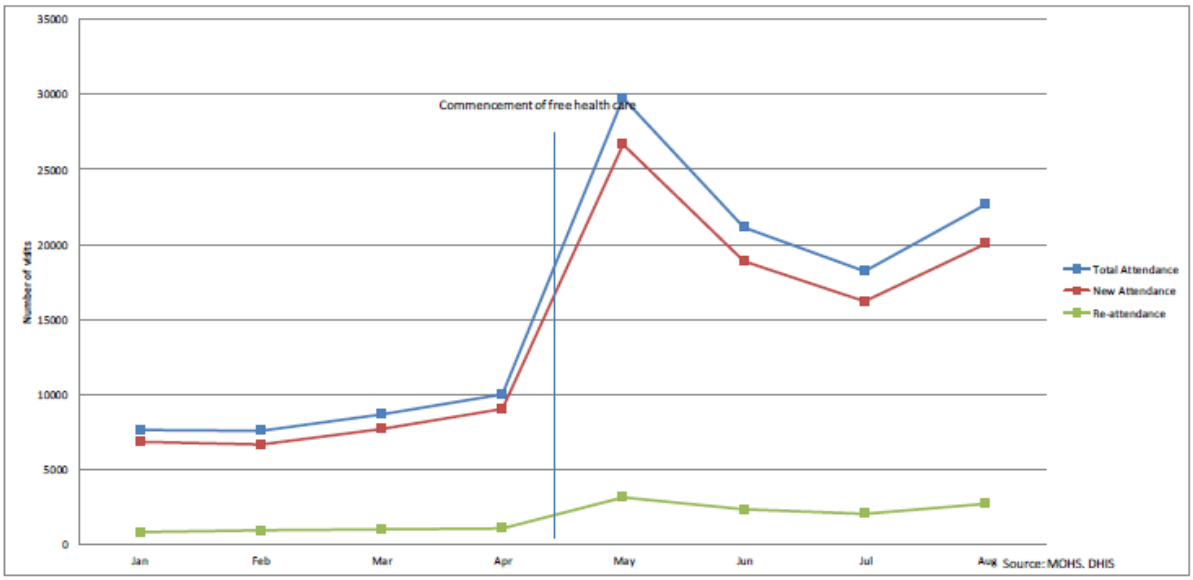
A survey in 2006 found that charges varied considerably across the country (IRCBP, 2007). At PHU level, in 2008, users reported average charges of Le2800 ($0.93 at contemporary exchange rates) for a child contact, Le3400 ($1.13) for a family planning contact, and Le12500 ($4.16) for a delivery, despite the fact that most of these services were supposed to have been exempt from charges since 2006 (RoSL, 2007). A survey in 2007 found between 60% and 70% of pregnant women, lactating women and children under 5 being charged for services although all these were exempt categories of users (IRCPB, 2007). In terms of benefit incidence, in 2006, the poorest quintile of the population utilised both primary and secondary care substantially less than those in higher income group. The poorest 20 percent benefited from around 14% of total spending while the top 20 percent benefited from around 25% of spending (although there was no clear income gradient for the other quintiles) (OPM, 2008).

The most recent National Health Accounts (RoSL, 2007) show that total health spending in Sierra Leone was $63 in 2006, 23% of GDP per capita, a very high figure. Spending was dominated by out of pocket payments, making up 69% of the total, much of it spent on drugs. Private insurance accounted for less than 1% of total health expenditure. A large proportion of public health spending, more than 70% in 2006, was donor funding, from external development partners.
The 2006 cost recovery system is still important because, at least in theory, it remains in place for those services not covered by the Free Health Care Policy.

The FHCP introduced in April 2010 removed charges for health services for pregnant and lactating women and children under five, aiming to increase availability and utilisation of quality health care services. Liaqat and Ferry (2011) undertook an early review of the policy and found that overall it had been implemented effectively in Bombali district where they undertook fieldwork, and parents of under 5s understood that care should be free and had often been able to access care without charge. However there were gaps in implementation. Some charges were found to be in place, most notably for immunisation, insecticide treated bednets and some drugs, particularly injectable drugs. Some parents reported that free care was only available to children under 2, or that the policy had not been introduced until 6 months after its intended introduction.

The quantitative evidence suggests a significant initial increase in utilisation by children under 5 where charges were removed (and no similar trend in a mission hospital in the same district in which charges were not removed) (figure 1) immediately after the introduction of the FHCP. For immunisation of children under 1, 88% of children were fully immunised pre FHCP but this had fallen to 76% post FHCP. Possible reasons suggested include breakdown of existing cold chain systems, increased numbers of new facilities without cold chain, and reduced frequency of outreach activities (DoHS, HIB, 2:3).

Figure 1: Trends in PHU attendance for children <5 years in Bombali District, Jan - Aug 2010



Source: Liaqat and Ferry (2011)

Despite an overall positive evaluation of the early experience of the policy, a number of problems were reported in relation to policy impact and implementation. There was inconsistent evidence concerning the effect on drug availability which some respondents, both patients and health providers considered had worsened as utilisation increased, however others disagreed and it seems that complaints related mainly to the early phase of implementation. While workloads were considered to have increased by health workers, mostly they were satisfied that this was compensated for by improved pay, and was manageable. However volunteer workers who did not benefit from increased (or any) pay were an exception. Previously they had charged, for example for vaccinations and one volunteer vaccinator interviewed considered that he would no longer be able to continue, while the loss of volunteer health workers to the system was recognised by a wider range of health workers. Besides the explanation offered above, this could explain the fall in immunisation levels from pre to post FHC.

DoHS data suggest that the impact of the FHCP on utilisation has been very mixed (DoHS HIB, 2:3). For outpatient visits of children under 5, there was a marked increase in the number of consultations in the twelve months post FHCP (April 2010-March 2011) compared to the last year before the FHCP (April 2009-March 2010): from 933,349 to 2,926,431. However, this conceals a gradual downward trend in numbers since September 2010.

For maternal health, DoHS data suggest that there was a significant increase in the number of pregnant women making at least one ANC visit. 126,477 deliveries were conducted in the first twelve months of the FHCP compared to 87,302 in the preceding twelve months, an increase in 45%. There was an initial increase in the number of PNC consultations but a slight reduction towards the end of the first year. The number of new acceptors of modern family planning methods increased by about 140% in the first 12 months of the FHCP (DoHS, HIB, 2:3).

Since the introduction of the Free Health Care Policy, there has been a major communication campaign to inform people of the right of the FHCP target groups to free care and health workers

have been informed of sanctions in place for continued charging of patients. A survey by the Health for All Coalition and Save the Children of public perceptions of the FHCP (Mambu, 2011), as well as providing evidence of the successes of the Policy, also identifies a number of persistent problems. Among respondents from the general public, 1400 people were asked to participate, 100 from each district. 4.7% were not aware of the policy but in one district the figure was 18% and in another 11%. Almost 20% of respondents did not correctly identify the three categories of beneficiaries (pregnant women, lactating mothers and children under 5). In one district, only 35% of respondents knew the beneficiary categories. This suggests that although awareness of the policy is high overall, at 95%, real understanding of what the policy involves is lower, with implications for the number of people able to fully realise the benefits of the policy.

Asked if the respondent or any member of their family who are pregnant, a lactating mother or a child under five had fallen sick in the past 12 months, the vast majority of respondents, over 90%, answered yes. Only 13 people did not go to any health facility, and only three indicated lack of money as the reason. 95.7% of those who went to a health facility used a government facility rather than a private facility although in three districts the proportion was 90% or less.

Those who went to a government facility were asked if they paid for treatment. Of those who answered this question, 20.4% said they had paid even though under the policy they should not have had to do so. Asked if they were satisfied with the treatment they received at a government facility, 28.5% said they were not satisfied.

Distribution and skill mix of the RMNH workforce

The public health care system is made up of three main layers. Primary care is led by a District Medical Officer (DMO) and District Health Management Team (DHMT) responsible for the Peripheral Health Units (PHUs) in each district. PHUs in turn are made up of Community Health Centres (CHCs) usually managed by a Community Health Officer (CHO), Community Health Posts (CHPs), and Mother and Child Health Posts (MCHPs) staffed by an MCH Aide.

There are one or two secondary care hospitals per district. Bo, Makeni (in Bombali District) and Kenema are the main provincial referral hospitals, covering the Southern, Northern and Eastern Regions respectively. Most tertiary care is delivered in Freetown (in Western Area). A survey of health facilities in 2006 found that 8% of all government facilities, including PHUs, were in Western Area but the corresponding figures for NGO/FBO facilities and private facilities were 26% and 59% respectively (MoHS, 2006b). In 2010, there were 23 government hospitals and 17 other hospitals although no breakdown by district is available (GoSL, 2010).

Table 2 indicates the number of staff by cadre in 2009, and the identified gaps in posts. Overall, only 39% of posts were filled, and the more highly skilled roles are particularly challenging to fill. For example, there was only one paediatrician in the whole of Sierra Leone in 2009. This may justify the disparities in increments to pay under the 'salary uplift' agreement.

Table 2: Health staff and gaps, by cadre, Sierra Leone, 1991-2009

Cadre	1991	2003	2009	Total posts	Gap 2009	% posts filled
Medical Officers	207	71	75	534	459	14%
Paediatricians	16	4	1	54	53	2%
Midwives	132	111	95	300	205	32%
Dentists	15	6	5	52	47	10%
Psychiatrists	1	1	1	8	7	13%
Obs/gynaecologists	23	6	5	54	49	9%
MCH Aides	0	530	825	2000	1,175	41%
Public Health Sp.	33	18	24	30	6	80%
SR Nurses	625	266	685	1386	701	49%
Surgeons	13	7	5	54	49	9%
Pharmacists	23	13	17	30	13	57%
Sp. Physicians	17	6	3	10	7	30%
Total	1,105	1,039	1,741	4,511	2,771	39%

Source: Framework document, 2009

Table 3 shows the distribution of population medical officers and SRNs in public service (whereas table 2 includes staff in public and private sectors) by district in 2010 and the number of medical officers per 100,000 population. Numbers are extremely low. In some districts one or two medical officers served populations of up to 500,000, and in most districts numbers of SRNs were no better or only slightly better. If these data are correct, there were no SRNs in Bonthe district.

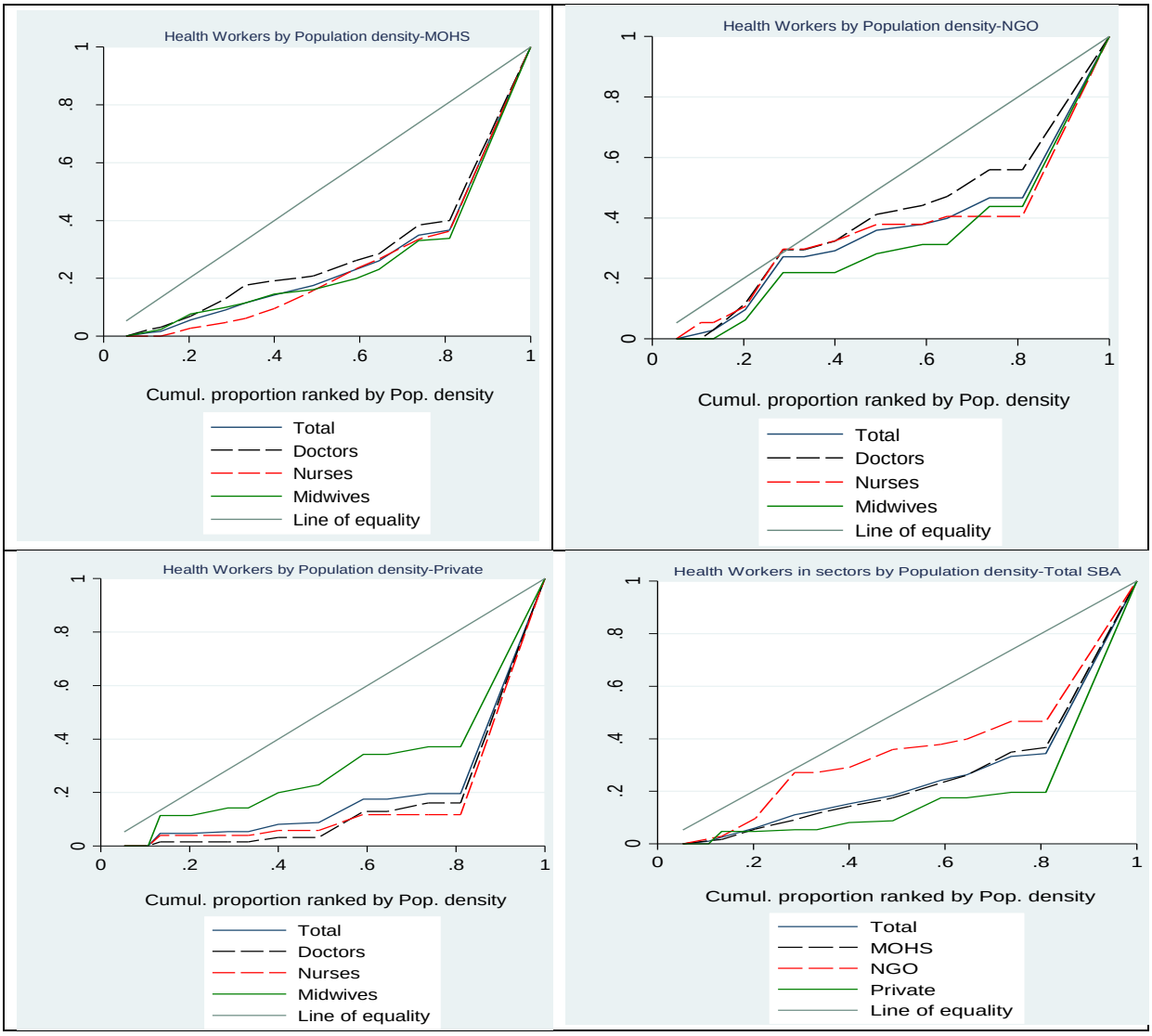
Table 3: Distribution of population 2011 medical officers and SRNs by district, 2010

District	Population, 2011	MOs, 2010	MOs/100,000 population	SRNs, 2010	SRNs/ 100,000 population
Kambia	433,203	2	0.46	2	0.46
Koinadugu	612,276	3	0.49	6	0.98
Pujehun	608,730	3	0.49	3	0.49
Port Loko	404,244	2	0.49	7	1.73
Bombali	518,307	3	0.58	7	1.35
Moyamba	317,958	2	0.63	3	0.94
Kailahun	314,412	2	0.64	3	0.95
Tonkolili	312,048	2	0.64	1	0.32
Kenema	461,571	3	0.65	4	0.87
Kono	256,494	2	0.78	3	1.17
Bo	300,228	3	1	9	3
Bonthe	156,615	3	1.92	0	0
Western	1,219,233	24	1.97	109	8.94
Total	5,910,000	54	0.91	157	2.66

These data suggest that the availability of higher level professional health cadres outside Western Area is extremely low and confirm the reliance of all other districts on MCH aides for the delivery of reproductive, maternal and newborn health care. We could not obtain data on the numbers and distribution of MCH aides. These staff are not considered skilled birth attendants according to international standards (Oyerinde et al., 2011).

We could not obtain data for midwives in 2010 and as a result, have used data from 2007 to analyse the distribution of health workers across the country. These are not directly comparable, resulting from different sources and exercises, so we do not seek to derive time trends from a direct comparison. This can be graphically illustrated by a concentration curve and corresponding concentration index (CI). Districts are ordered by increasing population density, with sparsely populated districts – Koinadugu (Northern Region), the most sparsely populated, then Moyamba (Southern Region) and Bonthe (Southern Region) - on the left and densely populated districts – Western Rural and, the most densely populated Western Urban (Freetown) - on the right. A hypothetical situation where health workers are distributed equally in proportion to population across the country would correspond to a concentration curve that matches the 45 diagonal and the CI will then be zero. In a situation where the distribution favours densely populated areas, the curve will lie below the diagonal while the index will be greater than zero. Maximum, pro-urban, concentration is where all staff based in the largest urban area and the corresponding CI is one.

Figure 2: Concentration curves for Government, NGO & Private workers (2007)



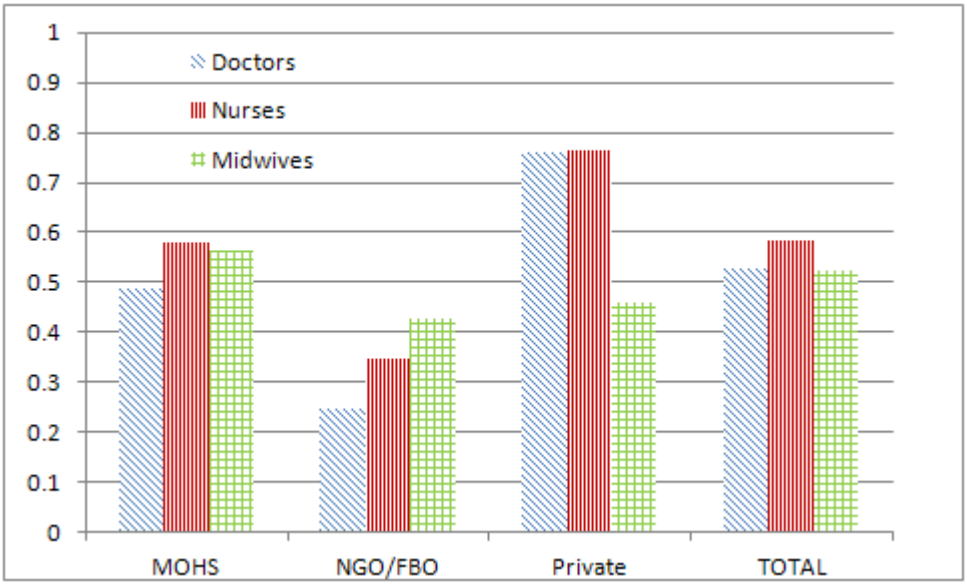
Source: Ministry of Health

Concentration curves demonstrate strongly unequal distribution of all health workers across the country (

Figure **2:**2). Ranking districts by population density suggests that the distribution of Ministry of Health and private sector staff is strongly biased to densely populated, urban areas. The unequal distribution of medical staff across the country is brought out strongly when districts are ranked by population density: concentration indices for all categories of staff in the state and private sector exceed 0.4 (

Figure **3:**3). Staff in the NGO sector appear to be more equally distributed which reflects the strong rural presence of NGO and FBO hospitals and clinics.

Figure 3: Concentration Indices for health workers (2007)



Workload

The small number of doctors and midwives in the country is reflected in the ratio of current (facility based) deliveries and staffing numbers (Table 6). Across the country there are currently around 242 deliveries per doctor but there is a concentration of doctors in Freetown and in several districts there are far more than the 1000 deliveries per doctor suggested as a maximum to provide comprehensive obstetric coverage. None of the districts, with exception of Western Area (Freetown) could provide sufficient medical backup for all births.

The situation with midwives is similar to that with doctors. Currently births with MCH aides, CHOs and nurses as well midwives and doctors are counted as 'attended' births. If only midwives are counted, then there are currently 320 deliveries for every midwife, considerably more than the 175 maximum suggested by WHO. Most districts have considerably more than this, There is no district that currently has a sufficient number of midwives to provide care for all births in their area.

Table 6: Deliveries and births per midwife and doctor MOHS, NGO and Private sector, 2007

	Deliveries per midwife	Deliveries per doctor	Births per midwife	Births per doctor	Deliveries per midwife	Deliveries per doctor	Births per midwife	Births per doctor
	MOHS				**NGO**			
Kailahun	4,627	2,314	17,415	8,708	-	-	-	-
Kenema	1,535	1,097	4,917	3,512	7,676	7,676	24,586	24,586
Kono	721	1,443	4,146	8,291	-	2,885	-	16,583
Bombali	1,515	568	6,285	2,357	909	758	3,771	3,142
Kambia	704	939	3,467	4,623	-	2,816	-	13,868
Koinadugu	-	-	-	-	-	-	-	-
Port Loko	1,934	1,934	11,504	11,504	1,934	1,289	11,504	7,669
Tonkolili	440	616	2,722	3,811	1,541	1,027	9,528	6,352
Bo	470	470	1,734	1,734	1,526	2,035	5,635	7,514
Bonthe	2,294	2,294	7,135	7,135	-	2,294	-	7,135
Moyamba	1,969	1,313	6,647	4,431	-	-	-	-
Pujehun	1,715	572	6,135	2,045	-	-	-	-
Western Area	175	193	408	450	836	1,004	1,950	2,339
Total	484	484	1,822	1,822	1,967	1,851	7,403	6,967
	Private				**Total**			
Kailahun	-	-	-	-	4,627	2,314	17,415	8,708
Kenema	1,919	1,279	6,146	4,098	768	548	2,459	1,756
Kono	1,443	2,885	8,291	16,583	481	721	2,764	4,146
Bombali	4,545	-	18,854	-	505	325	2,095	1,347
Kambia	-	-	-	-	704	704	3,467	3,467
Koinadugu	-	-	-	-	-	-	-	-
Port Loko	3,867	-	23,007	-	773	773	4,601	4,601
Tonkolili	-	-	-	-	342	385	2,117	2,382
Bo	6,105	3,053	22,541	11,270	339	339	1,252	1,252
Bonthe	574	2,294	1,784	7,135	459	765	1,427	2,378
Moyamba	-	-	-	-	1,969	1,313	6,647	4,431
Pujehun	-	-	-	-	1,715	572	6,135	2,045
Western Area	684	290	1,595	675	119	104	279	242
Total	1,799	1,015	6,768	3,821	320	279	1,202	1,048

Source: Ministry of Health

Remuneration and terms and conditions

A Revised Scheme of Service was introduced, involving a substantial increase in the pay of health workers, the 'salary uplift' scheme. The salary increase applies to all health technical and clinical staff. It does not apply to administrative or support staff but the intention is that their salaries will be reviewed as part of the wider Public Sector Pay Reform.

The Revised Scheme of Service employs a 14 point pay scale although technical health workers occupy only 13 of these, 2-14 inclusive (booz&co, 2010). All standard allowances have been consolidated into basic pay. The previous structure of salary spine points/increments has been abolished such that all staff at the same grade now receive the same salary. It is intended that the Health Services Commission will review both the consolidation of allowances and abolition of increments. Both may be reintroduced. The salary increases for technical health workers do not appear to have been based on any evidence of the pay levels needed to recruit and retain staff,

perhaps not surprisingly given the short timescale in which it was negotiated and implemented, just weeks before the introduction of the FHCP.

Information on the pay of the lowest technical health worker grade (2, which includes maternal and child health aides, who are responsible for most deliveries at PHUs) is not available. Nevertheless, the pay increases are highly skewed towards staff on higher grades. Health professionals on grade 14 were awarded an increase which took their take home pay to 705% of their previous minimum pay while for those on grade 3 the corresponding figure was only 314% (booz&co, 2010). It should be noted though that the percentage increases for all grades are upper estimates since they are based on the previous minimum rates of pay and exclude the previous four types of allowances (rent, transport, medical, other) which were paid on top of basic salaries before the pay uplift. The sizes of these allowances are not known with any accuracy.

Salary increases are significantly greater for doctors than for other health professionals, which does not reflect relative scarcity. Table 2 suggests that the largest gaps between posts available and posts filled for the main cadres are for registered nurses and midwives and for maternal and child health aides. Concentration on doctors for the most significant pay increases may reflect greater salary pressure there from the private sector which may have accounted for the desertion of the public sector by medical officers in Western Area, suggested by Table 3. One study suggests that previously there was a 4 to 7 fold difference between the salaries of senior medical officers in faith based organisations compared to their equivalents in government service (OPM, 2008).

There is no information available on updated terms and conditions consequent upon the introduction of the Revised Scheme of Service. Alongside the increase in pay for health workers, a recruitment drive was initiated. However, in the very short timescale in which this took place, a fast track hiring process had to be introduced and most of the new health workers were volunteers in district hospitals and clinics.

Table 7 shows the bottom, midpoint and top of the scales for 5 cadres of health worker, with the 10% on call allowance added into the primary care doctor's salary estimate.

Table 7: Salaries including allowances for 5 cadres of health worker (Leones per month)

	Old scales			New
Cadre	Bottom	Midpoint	Top	
State enrolled community health nurse	165626	195860	226094	624000
State registered nurse and staff/community midwife	205173	245717.5	286262	840000
Medical officer	525334	667845	810356	4620000

Source: booz&co, 2010

Using the midpoints of the scale, table 8 shows the value of salaries in international dollars[23] and expressed as a ratio of salary: Gross National Income per capita in international dollars, 2010[24]

Table 8: Salaries expressed in international dollars and as a ratio of salary: GNI per capita

Cadre	International $		Ratio salary: GNI per capita	
	Old midpoint	New	Old midpoint	New
State enrolled community health nurse	134.79	429.45	1.95	6.21
State registered nurse and staff/community midwife	169.11	578.11	2.44	8.36
Medical officer	459.63	3179.62	6.65	45.97

Under the old regime, health workers were poorly paid relative to GNI per capita, in comparison to health workers in comparable countries. However, the new pay regime provides much improved relative remuneration to the point that Sierra Leonean doctors will now receive more than 45-fold the average GNI per capita. At the bottom of the salary scales, they are still over six-fold average GNI per capita.

Projected need for RMNH workforce

The future need for skilled birth attendants and doctors was projected based on the figures collected on current staffing levels, births and coverage rates for attended/facility delivery. Initially the aim was to use the Making Pregnancy Safer tool (MPS), produced by WHO, which provides a simple and graphical analysis of the quantity and cost of skilled birth attendants and doctors as coverage is scaled up from the current levels[25]. The MPS tool was, however, based on a forecast of baseline staffing based on current levels of health worker attended deliveries and assumed targets for the number of births per SBA and doctor: around 1,000 deliveries per doctor and (a user adjustable) 175 deliveries per skilled birth attendant. We modify this approach by starting from the actual baseline for health workers that are assumed to assist at delivery. Using the MPS assumption of target deliveries per health worker we then extrapolate the number of additional workers required to meet a near universal coverage target of 95% by 2015.

The model is quantity driven. It assumes that the current level of staff is just sufficient to provide the current level of skilled deliveries. Any increase in coverage requires additional SBAs and doctors

[23] **PWT 7.0 Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 7.0, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, May 2011.** http://pwt.econ.upenn.edu/php_site/pwt70/pwt70_form.php (accessed 15th December 2011)

[24] http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD (accessed 15th December 2011)

[25] The original model (http://mps.projection.free.fr/mdg5-hrsu.html) is available as an online and offline web-based. For the purposes of this study, the model was converted to excel and adapted to permit variations in the base and target years and differences in attrition rates and salaries for doctors and nurses/midwives.

based on standard ratios: around 1,000 deliveries per doctor and (a user adjustable) 175 deliveries per skilled birth attendant. The model permits users to specify levels of attrition for staff and salaries and assumed salary increases to permit cost projections. The number of births is based on demographic projections for each country.

The presumption that coverage can be increased by adding staff in a fixed ratio to deliveries is an important one. It assumes that the main constraint to increasing attended deliveries is one of supply. Yet it is clear from the analysis of actual data that in some areas high levels of attended deliveries are possible with a relatively small staffing whilst in other areas a high level of staffing is associated with a modest level of attended deliveries. Various factors may account for these differences including:

- Staff may be busy with other activities and only able to devote a small proportion of time to delivery care. This is dealt with by focusing on full time equivalents at least for the additional staff required.
- Staff may not be motivated to provide services
- Staff have insufficient resources provide adequate care
- Human resources are available at a facility but women are impeded from seeking care due to inaccessibility or high cost of transport and lack of knowledge about when to seek care. Both these factors are known to be associated with levels of delivery.

These factors could mean that a much higher ratio of staff to deliveries may be required in order to achieve universal access or indeed that targets are unattainable unless other barriers to use of services are addressed. Conversely, it may be that current staffing levels are sufficient to deal with more deliveries but that other factors prevent scale up.

The model focuses on the additional full time equivalent workers required for scale up. The scale up to 95% coverage is modelled over the period 2010 to 2015 using country assumptions (See Box 1).

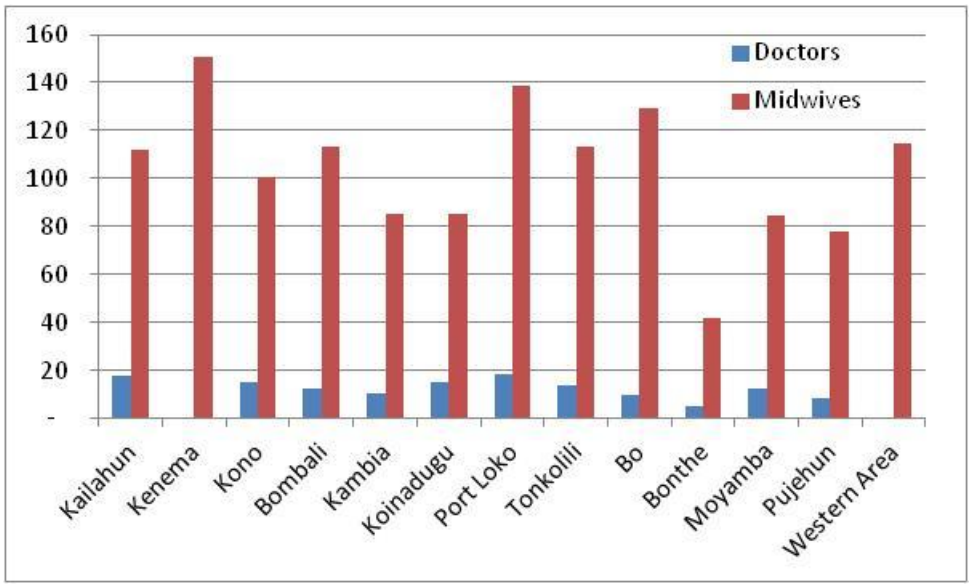
Box 1: Summary Assumptions for Sierra Leone

	Deliveries per year	Baseline salary (US $)	Growth in salaries	Annual attrition
SBA	175	679	3%	5%
Doctor	1000	1,847	3%	5%

Mean salaries (2010) for registered nurses and doctors are used for the projection of recurrent cost and these are expected to increase by 3% per annum (in dollar terms). An initial level of coverage of 44% is assumed which corresponds to levels reported by the Sierra Leone Ministry of Health (HMIS).

The projections, based on regional data, suggest that a scale up from 44% to 95% by 2015 will require a total of 1,409 midwives and 247 doctors. This compares with the current complement (2007 data) of 197 midwives and 226 doctors and suggests the need for a six-fold increase in the number of midwives, even assuming appropriate distribution can be achieved. Across the country, all regions require a substantial increase in staffing with the exception of Western (Freetown) where most of the doctors are based (Figure 4).

Figure 13: Additional midwives and doctors required to achieve 95% coverage by 2015



There remains some uncertainty about the baseline level of deliveries with a skilled health provider. The 2009 DHS suggests that the 42% of women receive delivery with attendance of a skilled provider (Statistics Sierra Leone and ICF Macro 2009). The definition of skilled provider include MCH Aides who probably do not possess adequate training to be regarded as skilled birth attendants (Oyerinde et al. 2011). The DHS suggests that around 11% of deliveries are undertaken by MCH aides, reducing the proportion with a skilled provider (doctors and nurses/midwives) to around 29%. Ministry of Health HMIS data also suggest that around 29% of deliveries are conducted by a trained provider but that this number includes MCH aides. Excluding MCH aides reduces the proportion to little more than 7%. It is unclear whether the discrepancy between HMIS and DHS data is caused by under-reporting to the HMIS or mis-reporting of MCH Aides as a nurse or midwife by women in the DHS survey. This uncertainty does not substantively change the overall number of staff required for scale up but it does suggest that existing midwives, who are largely based at hospitals, may be under-utilised. If professional midwives are currently attending only 7% of births, they can be estimated to be attending on average 84 births per midwife per year, about half of the WHO standard.

The annual cost of skilled attendance, doctors and midwives, is expected to increase from $0.5 million to $1.27 million.

Conclusions

While the FHCP already has clear achievements to its name, there are some question marks against the policy. By definition, the policy does not extend free health care to many in the population, men, non pregnant or lactating women, and older children. Moreover, the introduction of free health care appears to have displaced further consideration of other approaches to extending health care provision such as the introduction of social health insurance which was previously under debate in Sierra Leone (GoSL, 2010).

There are doubts about the sustainability of the FHCP. Utilisation is expected to continue to rise. There are plans for a second phase of the Policy in which free health care will be extended to all 'vulnerable groups'. There is consideration of extending the Policy to cover Faith Based

Organisations. As the recruitment programme introduced in parallel with the 'salary uplift' begins to deliver significant additional health workers, costs will rise. The very large increase in pay for technical health workers may have a number of adverse effects on health workers who are not on technical grades – as well as other public sector workers - which may require increases in their pay. All these developments will stretch government and donor resources.

Despite the problems of data quality it appears clear that the crisis of human resources in the remoter parts of Sierra Leone is extreme and that RMNH services are reliant on MCH aides, themselves in short supply, who are not considered skilled birth attendants by international standards. HRH policies seek to support the reduction of this problem but are unlikely to make a significant impact as the cadres in critically short supply in the public sector to resolve this situation: midwives and registered nurses are not the central focus of these policies. The FHC policy appears to be increasing demands on a system that is ill equipped to cope.

Doubts have been raised about the ability of the decentralised health care system to respond effectively to increased demands upon it. The recruitment of health workers, their acceptance into the civil service, and their pay levels all remain centrally controlled. Consequently, the lack of control over PHU staff prevents both facility and district managers from exercising full management control (OPM, 2008).

The study by Liaqat and Ferry (2011) in Bombali District and the survey by the Health for All Coalition and Save the Children of stakeholder perceptions of the Policy (Mambu, 20100) raise further concerns about the FHC policy. The strongest message to emerge related to problems with drug procurement and distribution. Stakeholders felt the Government should make this a priority because otherwise it threatened the achievement of the FHCP. Concern was also expressed about reports that many health workers across the country are still demanding payment for drugs that should be provided for free, reports which are confirmed by the survey of members of the public.

Removing financial barriers to access reproductive, maternal and newborn health services: the challenges and policy implications for Human Resources for Health (HRH)

Zambia case study

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September 2011

Acknowledgements

We would like to thank Ijeoma Edoka and Tuan Nguyen for assistance with analysis of data; and Caroline Phiri for assistance with sourcing and interpreting data in Zambia.

Abbreviations

CSO	Central Statistical Office
DHMIS	District Health Management Information System
DHS	Demographic and Health Survey
EMoC	Emergency Obstetric Care
GNI	Gross National Income
HMIS	Health Management Information System
HR	Human Resources
HRH	Human Resources for Health
HRHSP	Human Resources for Health Strategic Plan
LCMS	Living Conditions Measurement Survey
LSHTM	London School of Hygiene and Tropical Medicine
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
MoH	Ministry of Health
MPS	Making Pregnancy Safer
PRSP	Poverty reduction Strategy Paper
RMNH	Reproductive, Maternal and Neonatal Health
SBA	Skilled Birth Attendance
WHO	World Health Organisation

Introduction

The maternal mortality ratio (MMR) in Zambia has declined in recent years; however, it would need to drop another 45%, from its current level of 591 per 100,000 live births (DHS 2007), to reach the Millennium Development Goal (MDG) target of a 75% reduction. The proportion of births attended by a skilled birth attendant has remained virtually constant for almost two decades. There is a similar situation with peri-natal deaths, with a rate of between 30 and 40 deaths per 1,000 births over the last 15 years (DHS 1992, 1996, 2001/02, 2007).

A recent analysis examining the apparent contradiction between improvements in maternal outcome indicators and stagnation in utilisation indications found that there are strong urban-rural differences in access to services (Ensor et al. 2010). In rural areas maternal health utilisation appears to have deteriorated. Despite positive trends in contraceptive prevalence, fertility has increased whilst births with a skilled attendant and levels of surgical delivery have hardly changed. By contrast, in urban areas there has been a modest rise in skilled delivery, falling fertility and improved birth spacing. Treatment of maternal complications as reflected in caesarean section rates have increased substantially. De-urbanising trends across the country mean that the rural trends dominate the national picture.

The report authors suggest that factors behind the improvement may include:

- Increases in surgical delivery and EmOC although recent HMIS data also suggest that treatment of complications remains at a very low level.
- Improvements in the prevention and treatment of diseases known to be related to maternal health, particularly HIV/AIDS and malaria.
- Improvements in the economy contributing to increased access to emergency care
- Increased access to antibiotics

Research methods

The case study is based on secondary sources.

Literature and policy analysis

A thorough review of literature was undertaken on the themes of health financing policy, user fees, reproductive health and human resources for health in Zambia. The literature review included searching peer-reviewed and grey literature in recognized electronic databases and websites. Key policy documents relating to user fees and HRH were also obtained and analysed.

Secondary data analysis

National data sets relating to staffing, staff remuneration and conditions, utilisation of services and other relevant indicators such as poverty and income levels were sought and analysed. Sources for these included the DHMIS, the database held by the Department of HR in the MoH, and nationally published statistics produced by the CSO. Data from these sources was retrieved into an Excel spreadsheet, disaggregated to the lowest level permitted by the data.

Data analysis
Quantitative data was collated and analysed using Excel. The WHO tool produced by MPS was also used to project staffing needs and gaps.

The findings from the literature review and policy analysis, as well as the secondary data, were triangulated to reach overall conclusions and recommendations.

Workforce policies and challenges

The government has demonstrated strong commitment to addressing the country's HRH challenges, which is reflected in Zambia's Poverty Reduction Strategy Paper (PRSP), The Fifth National Development Plan 2006–2010, the 2006–2010 National Health Strategic Plan, and more specifically, in the 2006–2010 Human Resources for Health Strategic Plan (HRHSP) and the second HRHSP (2011 onwards).

Counting public and private sectors, as well as clinical and nonclinical cadres, Zambia has 1.05 health workers for every 1,000 people, which is less than Benin (1.11), Rwanda (1.22), Ghana (1.93), and India (1.95) (Herbst et al. 2011). Moreover, only just over half of the existing HRH staff in Zambia are clinical cadres. Of all clinical cadres, more than 60% are nurses, whereas the share of doctors is just over 7%. The number of doctors in Zambia is only 42% of the approved establishment, the number of nurses 46%, and the number of midwives 48%.

Factors contributing to low stocks include low production, but also low absorption capacity. In 2008 close to 40% of the established posts were not funded (Herbst et al., 2011). Meanwhile the not-for-profit and for-profit private sectors in Zambia remain small.

Aside from low levels of inflow, labour market exit, particularly of doctors, is another prime factor for low numbers of health workers in Zambia, and is primarily attributed to outmigration (due in part to dissatisfaction with low pay and, until recently, aggressive recruitment strategies). Data produced by Clemens and Pettersson (2006) found that the fraction of Zambian-born doctors working abroad was close to 60% compared to an average of 28% for all Sub-Saharan African countries combined. Aside from outmigration, premature death due to HIV/AIDS is also a considerable factor affecting attrition from the health labour force in Zambia (Herbst et al., 2011).

These challenges are highlighted by a recent Quality Service Delivery Survey, summarised in the Public Expenditure Review of 2009, which found that high staff vacancies (33.5%) especially of clinical workers (41.4%) are crippling facility operations (Picazo & Zhao 2009). Facilities are increasingly relying on expatriate staff (especially hospitals) and volunteer staff (especially health centres).

In terms of sectoral distribution of HRH, a recent World Bank report finds that the overwhelming majority of health workers in Zambia work in the public sector (close to 80% in 2006) although the private sector is growing. The not-for-profit t sector employs less than 20% of HRH, whereas the for-profit sector is extremely small, at less than 1% (Herbst et al., 2011).

Health workers, particularly doctors, are unevenly distributed in Zambia, particularly when benchmarked against international standards. Whereas Livingstone for example is home to 2.7 health workers per 1,000 population, a district like Chilubi is only home to 0.13 per 1,000. The problem is pronounced for higher-level cadres and less acute for mid- or lower-level cadres (a larger proportion of clinical officers, for example, are located in rural areas). On the whole, perhaps not surprisingly given that a large proportion of the poor live in rural areas, there is a strong pro-rich gradient in the geographic distribution of human resources in Zambia (Herbst et al., 2011).

The rural incentive scheme may have improved desirability to work in a rural area for some cadres in recent years. At the same time, facility managers in rural areas may not possess the negotiating skills required to attract centralized funding to fill vacancies (Herbst et al., 2011). Rural facilities are dependent on a centrally allocated and negotiated budget to attract and hire health workers. Picazo (2008) found that too much work, bad facility management, and a lack of fulfilment were complaints more prominently voiced by health workers in rural health centres than in urban health centres.

Absenteeism is particularly high among higher-level cadres, in the public sector, and in urban areas. A 2007 census found that 45.2% of doctors, 25.5% of medical assistants, and 22.9% of nurses meant to be on duty at the time of data collection were not at their posts. Another survey found 21% self-reported absenteeism and 43% self-reported tardiness (Picazo and Zhao, 2009). Inadequate management and accountability structures, including ineffective performance appraisal and non-merit-based promotion, may help explain high rates of absenteeism in Zambia (Herbst et al., 2011). One study found that 43% of staff interviewed in Lusaka, 30% in Kabwe, and 25% in Mumbwa reported earning extra income from another job. Heavy official workloads and income-augmenting activities take their toll on workers' time, and possibly well-being, contributing to high rates (44% of staff) of dissatisfaction among staff.

Competency on delivery of key interventions such as antenatal care is low. Zambia lags behind the average of its neighbours in the provision of four of six main components of antenatal care, including detecting informed signs of pregnancy, measuring weight and height and blood pressure of patients, and taking urine and blood samples. Weaknesses in pre-service and in-service training may in part explain inadequate competence levels (Herbst et al., 2011). Long working hours and high workloads attributed to scaling-up service response to communicable diseases (particularly HIV/AIDS) is also perceived to affect competence levels, leading to exhaustion and burnout.

The World Bank report finds that labour market dynamics are influenced by four overarching factors: (1) inefficient management arrangements and highly centralized decision making on HRH; (2) inadequate training capacity leading to low production of skilled workers; (3) inadequate work environment and conditions of service—including perceptions of low remuneration; and (4) morbidity and mortality related to HIV/AIDS. In terms of work environment and conditions of service, its analysis reveals that monetary compensation in the public sector is not as low as sometimes suggested when allowances are taken into account (although still lower than in the private sector). When benchmarking salaries and allowances against the average gross national income in Zambia, as well as regional benchmarks, doctors' remuneration compares relatively well in Zambia Doctors in Zambia earn 40 times the gross national income (GNI) per capita and nurses and midwives 9.6. This ratio for doctors is significantly higher than in Ghana, where doctors are generally known to be well paid (Herbst et al., 2011).

However, Picazo and Zhao (2009) found that salaries are highly compressed, reducing their effectiveness in providing incentives. The plethora of cash and non-cash benefits that government has provided to ease the incentive problem has become unwieldy; it also makes it ever more difficult to forecast fiscal implications. The incentive effect of salaries is further dampened by a number of salary management problems that afflict a not-insignificant number of staff: delay in the receipt of salaries (22% of staff); non-receipt of the full amount of salaries (about 15% of staff); unauthorized salary deductions (15.5% of staff); and staff payment of "expediter's fee" to obtain salaries (10% of staff).

Current HRH strategies focus on stepping-up the training and recruitment of graduates and scaling-up of the retention scheme. One such initiative is the Zambia Health Workers Retention Scheme (ZHWRS), which offers top-ups on salary to selected individuals in order to attract doctors and nurses to the most remote parts of the country. In addition, initiatives are underway to improve the performance of health workers through job descriptions and person-to-post matching, as well as the development of a HR information system to support planning, implementation and monitoring of interventions (Carasso et al. 2009).

User fee policies

History

Following a period of free services, user charges were introduced in Zambia in the beginning of the 1990s as part of a reform package (Government of the Republic of Zambia, 1991). The objective of the policy was to increase ownership of the health system through community participation and generate revenue in the light of economic decline and increasing demands on limited resources.

A flat registration fee – which included payment for consultation and drugs – was set by the districts in collaboration with the health centre staff and neighbourhood health committees based on the ability to pay of the catchment population. According to the policy, children under 5 years and adults over 65 years of age, patients with chronic diseases and those affected by epidemics such as cholera, pregnant women and those "unable to pay" were officially exempt from paying fees. However, exemption from paying based on poverty-criteria was in reality poorly functioning (Gilson et al., 2000, Masiye, 2003). In addition, all referral services to higher-level hospitals were provided free of charge when the patient presented a referral letter. Otherwise a by-pass fee was charged. The collected revenue was to be used to fund activities at the health facilities and communities in the catchment area, based on agreed health centre action plans. In addition, 10% of the income from user fees could be used for performance bonuses to staff in order to increase staff motivation and accountability.

An initial large fall in utilization was observed upon introduction of fees, although these were not sustained at such a degree (Kahenya and Lake, 1994, Blas and Limbambala, 2001, Gilson, 2000, Masiye, 2003). Utilization did remain relatively low due to both ineffective exemption policies and drug shortages at facilities (Geest et al., 2000, Gilson et al., 2000, Masiye, 2003). Some 22% of urban and 30% of rural households reported being unable to access care because of inability to pay (DHS 2001/2). At the same time, increasing the efficiency of the health sector was pursued by introducing

a basic health care package. Other reforms focused on stimulating the involvement of the private sector, decentralization of decision-making to district level, and a renewed focus on community involvement and accountability.

Recent reforms

In January 2006, the President of Zambia announced the abolition of user fees at health centres and level-1 hospitals in rural areas from April 1st 2006 onwards for all services in government and mission facilities. A User Fee Committee was set up immediately after the announcement of the new policy, tasked with facilitating the introduction of the new policy. This comprised drafting of guidelines and costing of the anticipated increased demand for free services (Government of the Republic of Zambia, 2006b).

In May 2007, the scope of the reform was broadened and facilities located in outlying areas of urban districts4 (municipalities and cities) were included as part of the user fees removal policy (Government of the Republic of Zambia, 2006c), and revised guidelines on the removal of user fees in government and mission health facilities in Zambia were published in May 2007 (Government of the Republic of Zambia, 2007a). This "second wave" of the policy officially took effect in June 2007.

The decision to change the policy appeared to have been brought about by a small group of political figures, whose joint interests brought them together and who in turn lobbied other stakeholders for the removal of fees. These discussions took place in a wider context favourable to the introduction of pro-poor policies, like the introduction of free ARVs, increased donor funding and Zambia reaching the HIPC completion point (LSHTM 2010a).

The official guidelines stated that user fees were to be removed 'for registration, consultation, X-Ray, laboratory tests etc.', which was later specified as 'consultation, admission and diagnostic services'. Charges for non-Zambians as well as 'by-pass fees' for those coming directly to the hospital without a referral letter were supposed to remain (LSHTM 2010a).

The guidelines state that loss of user fee revenue would be compensated through an earmarked monthly grant to the district which would then be passed on to the facilities, with the amount based on projected income and district action plans. In January 2006, the UK Department for International Development (DFID) confirmed a grant of £14.5m to support abolition of health user fees at public health facilities, to be disbursed over a period of 5 years (2006-2010) (Carasso, Palmer, & Gilson 2010).

User fee reform implementation

The Ministry of Health of Zambia was given less than three months to develop and disseminate clear guidelines that set out the change in policy, including information on which specific services should be provided for free. In the beginning it was also unclear to which rural areas the policy would apply. This resulted in some confusion and a wide variation between facilities in terms of what services were made free. Some hospitals stopped all charges whilst others only waived consultation fees (LSHTM 2010c).

In Zambia, it was found that user fee income could represent up to one third of resources available at some facilities (Cheelo et al. 2010). The removal of the income from user fees created a gap in

financing at the facility-level at a time when demand for services increased. In many facilities, this led to the activities previously funded with fees being scaled back or discontinued. The Government of Zambia, with the support of DFI D attempted to compensate facilities for this loss of income, but this compensation was only received 8 months after fee removal, and only by some facilities. In addition, the guidelines for the use of this additional money were not well understood: many districts used it for capital expenditure such as infrastructure repairs instead of it being channelled to facilities to cover recurrent expenses like fuel, food or cleaning material previously paid for by fees (LSHTM 2010c).

The removal of fees in Zambia was not accompanied by additional procurement of drugs or recruitment of staff to cover the anticipated increase in demand for services (MoH Zambia 2008) although one source (Masiye et al., 2010) indicates a recruitment of an additional 1300 health workers it does not provide detail of this, including the timing of this recruitment.

Although there was a systematic increase in the proportion of patients who benefited from free care after the policy change, in none of the 54 rural districts did all patients obtain free care, and in some districts less than half of them did not have to pay (LSHTM 2010a) Similarly, the case studies showed a large variety in services provided free of charge. All facilities visited waived charges for consultation, but fees for other services varied widely. In some facilities, non-Zambians were seen without having to pay, or no by-pass fees were charged. In others, charges still existed for the registration and lab tests, while it was unclear if patients should pay for admissions, surgery or ambulance. There was also evidence of informal charging, and interviews in the community showed that many people did not perceive care to be free of charge now.

Impact of user fee reforms

An analysis of facility records from the HMIS showed that removing user fees for primary health care services increased the number of outpatient visits in rural districts by patients over 5 years. However, there was a wide difference across districts, ranging from a fall of 39% to more than 100% increase in utilisation (LSHTM 2010a). Besides, the increase in utilisation was not always sustained over time and there was indication of crowding-out of children under 5, who already received care free of charge before the policy change. Authors of a related study based on a comprehensive national facility-based dataset found that utilisation increased among the rural population aged at least five years by 55%. Importantly, utilisation increases were greatest in the districts with the highest levels of poverty and material deprivation. Further, their patient exit interview survey at facilities in two rural districts revealed that although there was some evidence of a strain on drug supplies, perceptions of quality of health care remained fairly positive (Masiye et al. 2010).

However, analysis of the LCMS surveys did not confirm an increase in access to care. The analysis found no evidence that removing fees improved the probability to seek care when falling ill, even after adjusting for the varying degree of implementation of the policy across districts and showed that other factors, such as living in more rural areas, low education and living far from facilities still acted as obstacles deterring individuals from seeking care (LSHTM 2010a).

The case studies found that mechanisms set up to compensate facilities for the loss of income from fees did not translate into additional timely flexible cash at facility level. Most facilities visited

reported experiencing major problems to cope with loss of income from fees, and many services and activities previously funded with fees were either scaled back or discontinued. This included things like food for inpatients, fuel for the ambulance, cleaning material, hiring additional staff, and activities in the community (LSHTM 2010a).

The situation with respect to drug availability varied widely between facilities. All mission facilities received substantial drug donations and most had reasonable or good availability of essential medicines. Staff felt that drug shortages have been exacerbated as a result of the policy change, and made reference to drug hoarding and frivolous use. Patients also complained of leaving the centre with only prescriptions more often, or getting drugs that are less efficacious (LSHTM 2010a).

Overall, health workers felt that fee removal had made working conditions more difficult. Workload had increased while at the same time fewer resources and drugs were available, and the bonus from fees was discontinued. On the other hand, they also expressed fulfilment that the policy change allowed poorest patients to access health care (LSHTM 2010a). The health worker survey found that there was no difference in the level of staff satisfaction in facilities with or without fees that could be related to changes in the policy. The only significant difference was between health workers in mission facilities and those in government facilities. The former were significantly more positive about reward-related factors and their working conditions than their colleagues in government facilities (LSHTM 2010b).

One of the confounding factors in relation to fee removal was that in the same year (2006), the district grant from central government declined by 40%, even though overall funding to the sector increased by 11% (Civil Society Health Forum 2011). In addition, the policy measure was introduced in the context of prior severe staff shortages, which were not addressed. Since then this situation has become more difficult: following a corruption scandal in the Ministry of Health in 2009, nearly all major donors froze their aid for the health system almost immediately. Many have cut funds substantially since. DFID's replacement funding for the policy change also ended in 2010. Drug availability has improved slightly since 2006, partly due to the creation of a new Unit in the Ministry of Health to manage medicine procurement and supply. However, shortages of medicines and other challenges continue.

Distribution and skill mix of the RMNH workforce

An analysis of the availability and distribution of, and geographic access to emergency obstetric care in Zambia concluded that few Zambian health facilities provided all basic EmOC signal functions and had qualified health professionals available on a 24-hour basis. Of the 1131 Zambian delivery facilities, 135 (12%) were classified as providing EmOC. Zambia nearly met the UN EmOC density benchmarks nationally, but EmOC facilities and health professionals were unevenly distributed between provinces. Geographic access to EmOC services in rural areas was low; in most provinces, less than 25% of the population lived within 15 km of an EmOC facility (Gabrysch et al. 2011).

Table 13: Number of health workers by cadre and region

Region	Doctors		Clinical Officers		Midwives		Nurses		Total	
	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010
CENTRAL	42	41	133	143	303	259	493	668	971	1111
COPPERBELT	224	134	187	239	631	645	1625	1597	2667	2615
EASTERN	39	32	140	117	174	258	630	633	983	1040
LUAPULA	30	37	67	77	49	94	329	402	475	610
LUSAKA	298	370	226	297	438	539	1539	1641	2501	2847
NORTH WESTERN	29	29	56	81	46	98	327	621	458	829
NORTHERN	42	37	111	128	167	204	431	525	751	894
SOUTHERN	55	80	175	234	389	503	809	1114	1428	1931
WESTERN	46	33	93	84	80	128	400	494	619	739
Total	805	793	1188	1400	2277	2728	6583	7695	10853	12616

Source: Payroll verification 2004; Payroll Data 2011, Ministry of Health Zambia

The Zambian HMIS formats and database includes monthly information on staff in post. Unfortunately this is not filled out by most facilities. As a consequence the most reliable information on human resources for recent years is derived from the payroll held by the Ministry of Health. For 2004 data are taken from a payroll verification exercise carried out to obtain an accurate count of actual staff in post.

According to the 2010 payroll there were 12,616 doctors, clinical officers, nurses and midwives working in the public sector (Table 13). This represents a 16% increase in the number compared to 2004. The largest increase was for midwives. Overall staffing levels relative to population rose in most provinces between 2004 and 2010 (**Table 14**).

Table 14: Medical staff per 100,000 population by region (2004 & 2010)

Region	Doctors		Clinical Officers		Midwives		Nurses		Total	
	2004	2010	2004	2010	2004	2010	2004	2010	2004	2010
CENTRAL	3.13	3.05	9.91	10.65	22.57	19.29	36.72	49.76	72.33	82.76
COPPERBELT	11.77	7.04	9.83	12.56	33.17	33.90	85.42	83.95	140.19	137.46
EASTERN	2.25	1.84	8.06	6.74	10.02	14.86	36.28	36.45	56.60	59.88
LUAPULA	2.91	3.59	6.50	7.47	4.76	9.12	31.93	39.02	46.11	59.21
LUSAKA	17.59	21.84	13.34	17.53	25.86	31.82	90.85	96.87	147.64	168.07
NORTH WESTERN	3.70	3.70	7.15	10.35	5.88	12.52	41.77	79.33	58.51	105.91
NORTHERN	2.58	2.27	6.82	7.86	10.25	12.53	26.46	32.24	46.11	54.89
SOUTHERN	3.34	4.86	10.64	14.22	23.65	30.58	49.18	67.72	86.81	117.38
WESTERN	4.79	3.44	9.68	8.74	8.33	13.33	41.64	51.43	64.44	76.93
Total	6.33	6.23	9.34	11.00	17.90	21.44	51.74	60.48	85.30	99.16

Source: Payroll verification 2004; Payroll Data 2011, Ministry of Health Zambia

The distribution of health workers across the country is graphically illustrated by a concentration curve and corresponding concentration index (CI). Districts are ordered by increasing population density, with sparsely populated districts in, for example, the western region on the left and densely populated districts such as Lusaka and Kitwe on the right. A hypothetical situation where health workers are distributed equally in proportion to population across the country would correspond to a concentration curve that matches the 45 diagonal and the CI will then be zero. In a situation where the distribution favours densely populated areas, the curve will lie below the diagonal while the index will be greater than one. Maximum, pro-urban, concentration is where all staff are based in the most densely populated district and the corresponding CI is one.

The distribution of medical staff changed little between 2004 and 2009. The concentration indices for the distribution of midwives and nurses fell, implying some redistribution of these cadres to rural areas (Figure 14 & Figure 15). In contrast the distribution of doctors and clinical officers became slightly more pro-urban. The distribution of doctors in particular continues to remain strongly pro-urban, largely because of their concentration in industrialised districts of Copperbelt (Kitwe, Ndola and Mpongwe), Southern (Livingstone), Central (Kabwe) and Lusaka (Luangwa, Lusaka City).

Figure 14: Concentration indices for skilled medical workers 2004 and 2010 (ordered by population density)

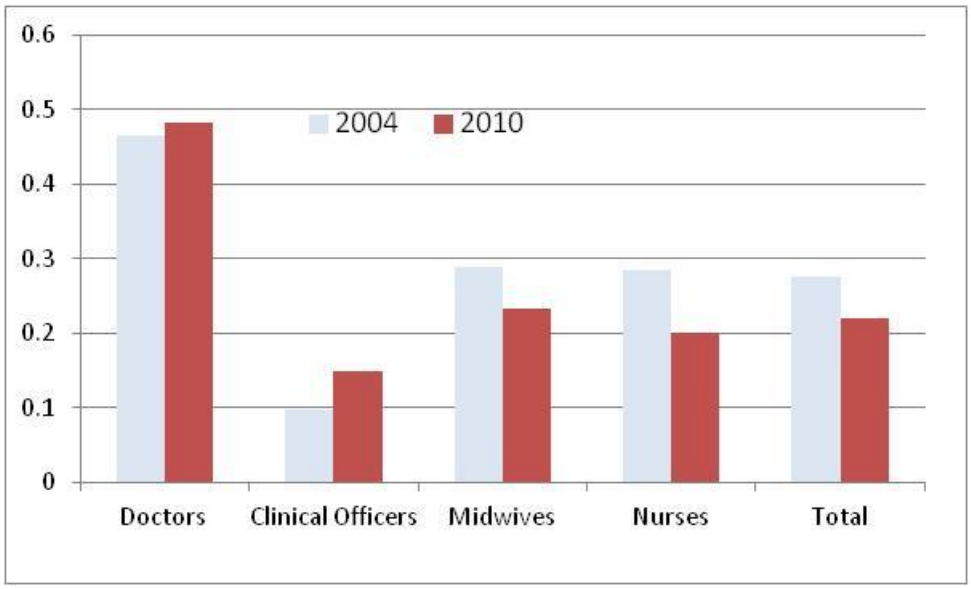
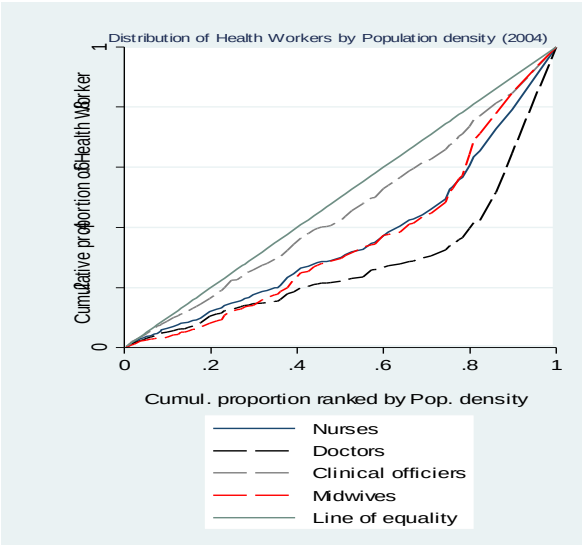
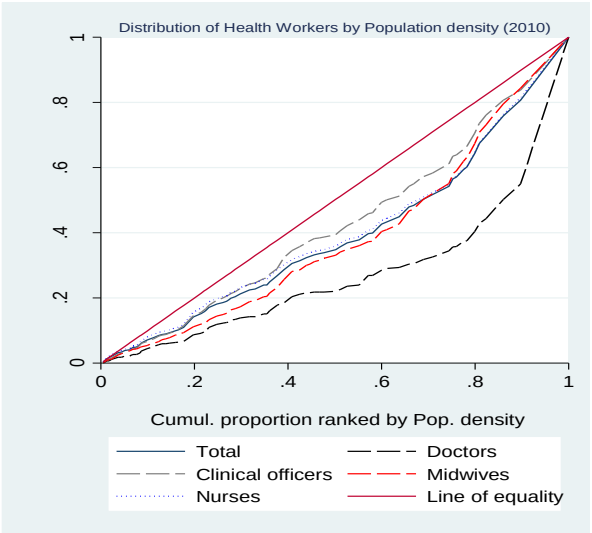


Figure 15: Concentration curve of health workers 2004 & 2010 (ordered by population density)





Workload

In total, HMIS data show that there were an estimated 632,356 births. HMIS recorded 278,677 normal deliveries and 18,461 assisted or surgical deliveries in health facilities; a facility delivery rate

of 46.9%. WHO suggest that 1 doctor is required for around 1,000 births[26], to provide emergency intervention where there are complications before, during and after delivery, while a midwife can provide care for 175 births per year. These translate into a need for full time equivalent health workers with midwifery training. It is, however, more difficult to compare these targets with the number of front line health workers. DHS assume that skilled birth attendants include doctors, clinical officers, midwives and nurses. Clinical officers have an obstetric placement and must conduct 25 deliveries during their training. Nurses spend four weeks of their three year training doing obstetrics including 1 week on a gynaecology ward, 1 week in an ANC clinic and two weeks on a labour ward. Furthermore nurses are multi-purpose workers and so only a small proportion of their time is likely to be available for obstetric care.

We use two measures of SBA. A narrow definition includes only midwives, doctors and clinical officers. A broad definition includes in addition nurses weighted for the proportion of obstetric workload in total health facility workload[27]. The distribution of staff remains extremely uneven and this means that many districts do not have sufficient staff to provide skilled attendance for all women. A met-need measure is defined as the proportion of births that occur with a trained health worker.

[26] The World Health Report, 2005 (p91) suggests that for a district with a birth rate of 30/1000 1 full time equivalent doctor is required for 3600 births. Gabrysch et al. (2011) translates this into 1200 births per doctor on the basis of 3 doctors required to provide 24 hour cover. The MPS model specifies 1000 births per doctor, and we apply this lower number which also seems to allow for professional development days, leave and sick leave.

[27] Obstetric workload is converted into bed-day equivalents as follows: normal delivery 1.25 days, caesarean section and other complications 4 days, postnatal and antenatal checks 0.2 bed-days (the same equivalence used for other outpatient visits). Lengths of stays and weighting for outpatients are based on a costing study undertaken recently in Kenya.

Table 15: Workload (births and facility deliveries) per doctor and SBA (narrow definition)

	Births /doctor	Births per SBA (narrow)	Births per SBA (broad)	Deliveries /doctor	Deliveries /SBA narrow
CENTRAL	1,343	124	96	638	59
COPPERBELT	734	97	72	400	53
EASTERN	2,746	216	180	1,413	111
LUAPULA	1,429	254	176	585	104
LUSAKA	242	74	51	121	37
NORTH WESTERN	1,343	187	117	728	101
NORTHERN	2,267	227	168	874	88
SOUTHERN	1,056	103	85	398	39
WESTERN	1,255	169	100	618	83
Total	798	129	96	375	60

Using the broad measure, there are 97 births for every SBA while based on the narrow measure the number rises to 129 births, both well below the maximum workload suggested by WHO. These aggregate figures are heavily influenced by the concentration of health workers in urban areas. Under both narrow and broad definition of an SBA, a substantial number of districts exceed the WHO target maximum number of births (175) per SBA (Figure 16& Figure 17) Based on the narrow measure there are 39 districts (54%) with an insufficient number of workers to provide skilled services for all deliveries while using the broad measure the number falls to 26 (36%). At current rates of facility based delivery there is sufficient staff at the national level compared to the benchmarks: 375 deliveries per doctor and 60 per (narrowly defined) SBA. However, in Eastern region there is more than 1,000 deliveries per doctor (Table 15) while in six districts there are more than 175 deliveries per SBA (narrowly defined). In 2009 13 out of 72 districts reported having no doctor in post while 41 districts in total had fewer doctors than required to provide for 1 for every 1,000 births while 39 districts had fewer than one SBA for every 175 births.

Figure 16: Association between use of skilled delivery care and deliveries per health worker (broad definition)

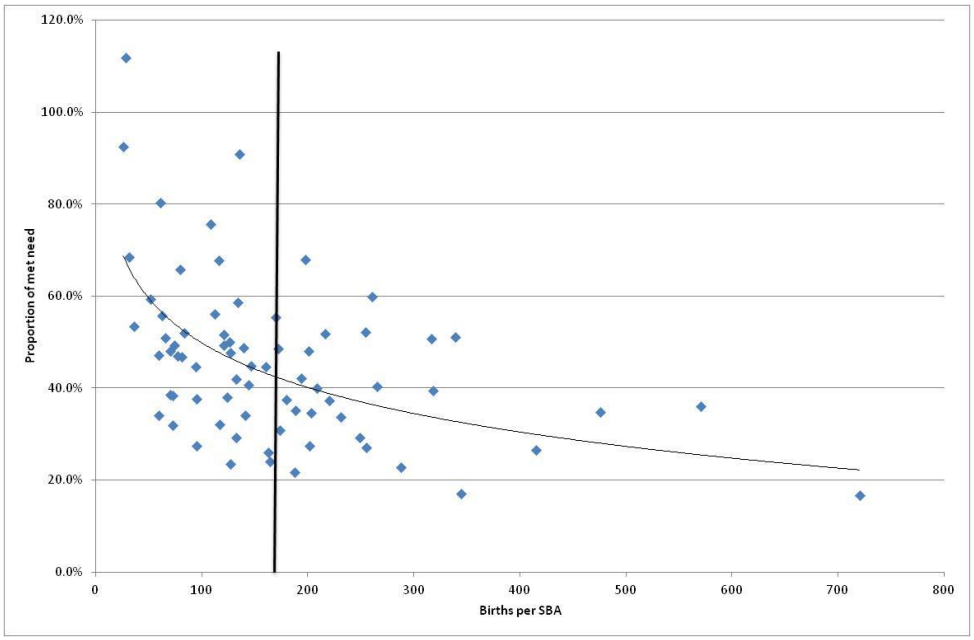
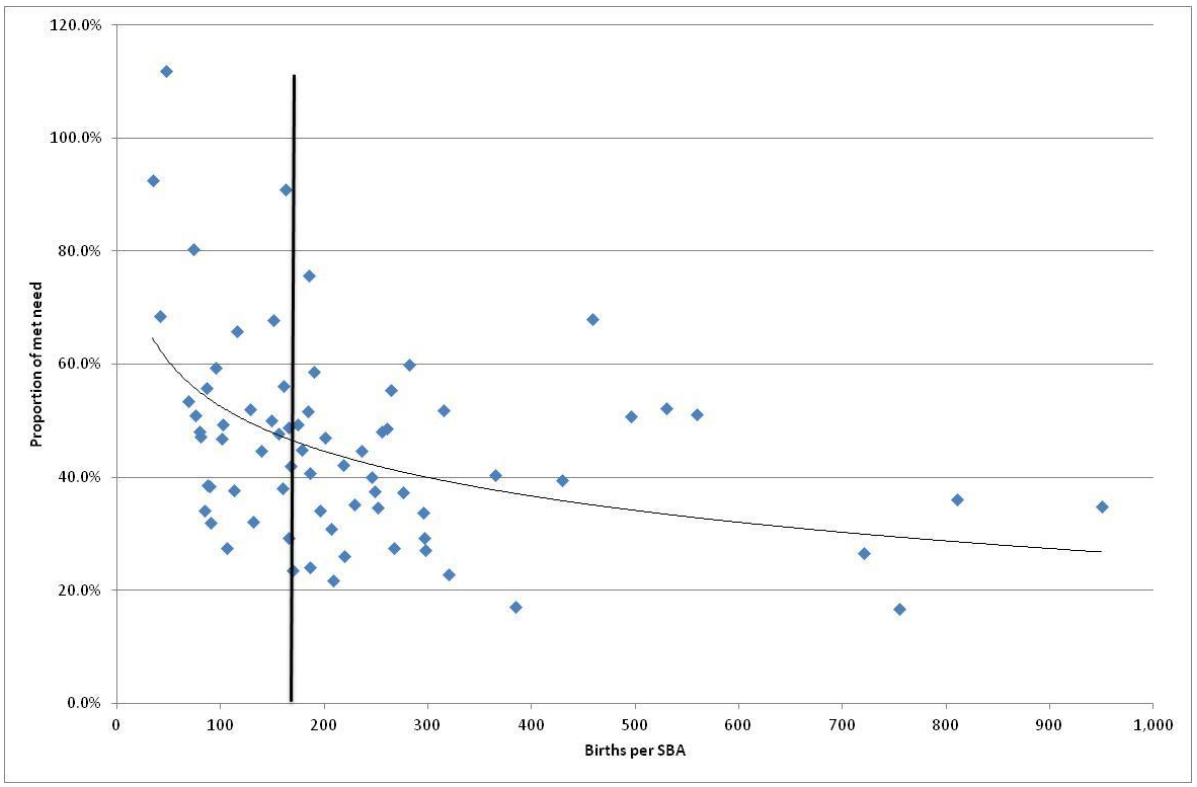


Figure 17: Association between use of skilled delivery care and deliveries per health worker (narrow definition)



There is a relatively weak but significant negative association between the proportion of met need and the number of births per SBA (Figures 3 and 4)[28]. It suggests that a decreasing number of births in the population per SBA is associated with greater met-need but that it gets increasingly difficult to increase skilled delivery rates as the number of workers increase. Only a couple of districts achieve coverage rates near or more than 100% (the latter implying that women come from neighbouring districts) both with births per SBA (narrow definition) of fewer than 50.

Remuneration and terms and conditions

Table 4 shows the bottom, midpoint and top of the scales for 3 cadres of health worker.

Table 4: Salaries for 3 cadres of health worker (Zambian kwacha/year)

Cadre	Bottom	Midpoint	Top
Nurse or clinical officer	23,262,328	43,422,278	63,582,228
Primary doctor (general medical officer)	90,762,216	92,324,664	93,887,112
Pharmacist	71,544,012	72,777,534	74,011,056

Source: The Public Service Management Division Circular No. B2 of 2010, released on May 5th 2010 by the Office of the President; The Public Service Management Division Circular No. 8 of 2010, released on May 5th 2010 by the Office of the President.

In addition, the following allowances are payable (monthly):

Table 5: Allowances paid (Zambian kwacha/year)

Cadre	Accommodation	Uniform	Night duty	Rural hardship	On-call
Nurse or clinical officer	3,360,000- 5,220,000	600,000	0-1,200,000	0-25% of salary	
Primary doctor (general medical officer)	8,640,000-11,040,000			0-25% of salary	0-52,800,000
Pharmacist				0-25% of salary	

These can be consolidated into the following overall annual pay rates:

Table 6: Consolidated Allowances and Salaries for 3 cadres of health worker (Zambian kwacha/year)

Cadre	Bottom	Midpoint	Top
Nurse or clinical officer	27,222,328	56,860,057	86,497,785
Primary doctor (general medical officer)	99,402,216	140,300,553	181,198,890
Pharmacist	71,544,012	82,028,916	92,513,820

[28] Adjusted R^2 is 0.2, $F<0.01$, logarithmic functional form.

Using the midpoints of the scale, table 7 shows the value of salaries in international dollars[29] and expressed as a ratio of salary: Gross National Income per capita in international dollars, 2010[30]

Table 7: Annual salaries expressed in international dollars and as a ratio of salary: GNI per capita

Cadre	International $	Ratio salary: GNI per capita
Nurse or clinical officer	25,999	18.84
Primary doctor (general medical officer)	64,152	46.49
Pharmacist	37,508	27.18

Health workers are well paid relative to the average income level. At the top of the primary care doctors' salary scale, salaries are over 45-fold average GNI per capita and at the bottom of the salary scales for clinical health workers, they are still over eighteen-fold average GNI per capita. This supports the view of Herbst et al. (2011): pay levels are relatively high..

Projected need for RMNH workforce

The future need for skilled birth attendants and doctors was projected based on the figures collected on current staffing levels, births and coverage rates for attended/facility delivery. Initially the aim was to use the Making Pregnancy Safer tool (MPS), produced by WHO, which provides a simple and graphical analysis of the quantity and cost of skilled birth attendants and doctors as coverage is scaled up from the current levels[31]. The MPS tool was, however, based on a forecast of baseline staffing based on current levels of health worker attended deliveries and assumed targets for the number of births per SBA and doctor: around 1,000 deliveries per doctor and (a user adjustable) 175 deliveries per skilled birth attendant. We modify this approach by starting from the actual baseline for health workers that are assumed to assist at delivery. Using the MPS assumption of target deliveries per health worker we then extrapolate the number of additional workers required to meet a near universal coverage target of 95% by 2015.

The model is quantity driven. It assumes that the current level of staff is just sufficient to provide the current level of skilled deliveries. Any increase in coverage requires additional SBAs and doctors based on standard ratios: around 1,000 deliveries per doctor and (a user adjustable) 175 deliveries per skilled birth attendant. The model permits users to specify levels of attrition for staff and salaries and assumed salary increases to permit cost projections. The number of births is based on demographic projections for each country.

[29] **PWT 7.0 Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 7.0, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, May 2011.** http://pwt.econ.upenn.edu/php_site/pwt70/pwt70_form.php (accessed 15th December 2011)

[30] http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD (accessed 15th December 2011)

[31] The original model (http://mps.projection.free.fr/mdg5-hrsu.html) is available as an online and offline web-based. For the purposes of this study, the model was converted to excel and adapted to permit variations in the base and target years and differences in attrition rates and salaries for doctors and nurses/midwives.

The presumption that coverage can be increased by adding staff in a fixed ratio to deliveries is an important one. It assumes that the main constraint to increasing attended deliveries is one of supply. Yet it is clear from the analysis of actual data that in some areas high levels of attended deliveries are possible with a relatively small staffing whilst in other areas a high level of staffing is associated with a modest level of attended deliveries. Various factors may account for these differences including:

- Staff may be busy with other activities and only able to devote a small proportion of time to delivery care. This is dealt with by focusing on full time equivalents at least for the additional staff required.
- Staff may not be motivated to provide services
- Staff have insufficient resources to provide adequate care
- Human resources are available at a facility but women are impeded from seeking care due to inaccessibility or high cost of transport and lack of knowledge about when to seek care. Both these factors are known to be associated with levels of delivery.

These factors could mean that a much higher ratio of staff to deliveries may be required in order to achieve universal access or indeed that targets are unattainable unless other barriers to use of services are addressed. Conversely, it may be that current staffing levels are sufficient to deal with more deliveries but that other factors prevent scale up.

The model focuses on the additional full time equivalent workers required for scale up. The scale up to 95% coverage is modelled over the period 2010 to 2015 using country assumptions (See Box 1). Staff attrition rates are based on a previous review of human resources in the country (Kombe et al. 2005). Mean salaries (2010) for registered nurses and doctors are used for the projection of recurrent cost and these are expected to increase by 3% per annum (in dollar terms). An initial level of coverage of 47% is assumed which corresponds to levels reported in the DHS 2007 and HMIS.

Box 1: Summary Assumptions for Zambia

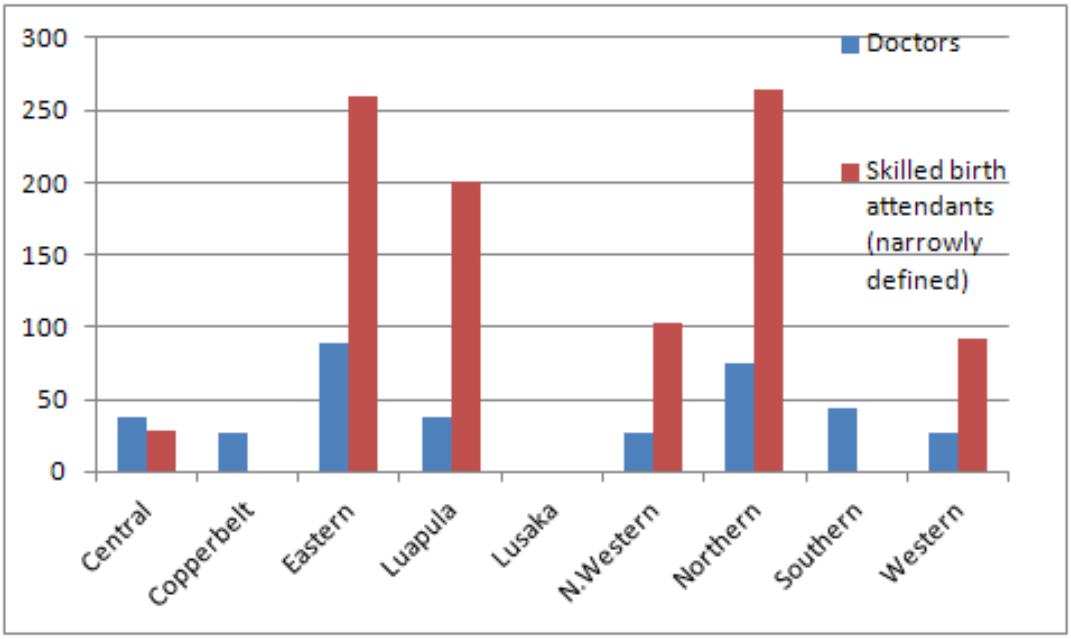
	Deliveries per year	Baseline salary (US $)	Growth in salaries	Annual attrition
SBA	175	8581	5%	5%
Doctor	1000	18246	5%	10%

Projecting requirements at national level suggests an overall need for an additional 698 (narrowly defined) skilled birth attendants and 213 doctors, largely the result of retraining required from attrition of workers. However, this would only be sufficient if the resulting workforce were distributed according to need. Considering the deficit region by region, there is an understaffing of 946 SBAs and 362 doctors compared to the levels needed to support 95% assisted delivery at birth in each region. The annual cost of the workforce required rises from US$49.89 m in 2010 to US$56.4m in 2015, when local currency salary levels are translated to US$ at current exchange rates.[32]

Achieving 95% coverage across the country implies substantially different achievement in each region in which assisted delivery rates vary from 37-54%. Additional midwives required vary from 260 in Eastern (Figure 5) to zero in Copperbelt, Southern and Lusaka. Eastern region also requires the highest number of additional doctors (88), followed by Northern (75).

[32] Current December 2011 using the conversion tool at: www.xe.com.

Figure 18: Additional midwives and doctors required to achieve 95% coverage by 2015



Conclusions

The withdrawal of user fees in rural areas has not resulted in greatly increased rates of skilled attendance: the proportion of births attended by a skilled birth attendant has remained virtually constant for almost two decades. This is despite at least some data suggesting that general utilisation of health services did increase. In part this appears to be because user fee policy was not well co-ordinated with human resource policy at the outset. While measures were taken as problems resulting from user fee removal emerged, these appeared to be largely 'too little and too late', and in some cases not implemented effectively at all. It appears that despite an intention to specifically target improvement of access to rural areas, it was staff in rural health facilities who found themselves most disadvantaged, and it is unclear whether the net effect was an improvement or worsening of rural access to services overall.

There are problems of both absolute shortages of HRH for RMNH and of maldistribution. Overall, the country needs to provide an additional 298 doctors required for the provision of obstetric care in the case of complications in 2015. On a broad definition of skilled birth attendants, Zambia has sufficient to provide 95% coverage of SBA at birth, but on a narrower definition, there is a need to train 1972 additional skilled birth attendants by 2015. Maldistribution significantly worsens this situation however. Assuming it is not possible to redistribute existing staff where there are more than required, deficits at a regional level imply the need for 2081 SBAs (narrowly defined) and 362 doctors to be trained by 2015. Least well served proportionately is North Western region which currently has only one doctor and a total of 61 professional health workers, but an estimated 38,942 births per year.

As a result, Zambia is characterised by significant inequities in access to suitably skilled staff for RMNH and in rates of skilled birth attendance at birth, and there is some correlation between the two. The relationship between the two suggests that increasing skilled staffing levels might produce

increases in SBA rates; but also that it may be increasingly difficult to achieve this as skilled staffing levels increase.

Absence of skilled staff and financial barriers to access are constraints to attended and facility based deliveries but are not the only ones, and as these constraints are relaxed, the data suggest that other constraints increase in importance. Other constraints include qualitative constraints on the supply side: the motivation of staff and the availability of complementary inputs such as running water and drugs; and demand side constraints including physical access to health facilities and the motivation of pregnant women to seek assistance in childbirth.

Current policies recognise these problems. For example, the Zambia Health Workers Retention Scheme focuses on tackling HRH shortages in rural areas. However, it represents a relatively small component of overall health workers' pay, perhaps insufficient to attract significant redistribution. Compensation grants for the loss of user fee income appear to have been insufficient and insufficiently well applied to redress rural health workers' sense that they were disadvantaged by the policy. Both policies need to be strengthened to tackle the two major issues undermining the performance of the Zambian health system. Further attention will likely still be needed to the specific further constraints to uptake of skilled attendance at delivery for the benefits of better supported policies to have impact on RMNH outcomes.

Removing financial barriers to access reproductive, maternal and newborn health services: the challenges and policy implications for Human Resources for Health (HRH)

Zimbabwe case study

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December 2011

Acknowledgements

We would like to thank Ijeoma Edoka and Tuan Nguyen for assistance with analysis of data.

Abbreviations

ART	Antiretroviral therapy
ANC	Antenatal care
CSO	Central Statistics Office
DOTS	Directly Observed Treatment Short course
DRC	Democratic Republic of Congo
FGD	Focus Group Discussion
HRH	Human Resources for Health
HSB	Health Service Board
MoHCW	Ministry of Health & Child Welfare
MoH	Ministry of Health
NHIS	National Health Information System
MCH	Maternal and Child Health
MPS	Making Pregnancy Safer
NHA	National Health Accounts
NPC	National Pharmaceutical Company
KI	Key Informants
PMTCT	Prevention of mother to child transmission
PNC	Postnatal Care
PMB	Provincial Medial Bureau
RMCH	Reproductive, Maternal and Child Health
RMNH	Reproductive, maternal and neonatal health
TBA	Traditional birth attendant
TB	Tuberculosis
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund

WHO	World Health Organisation
ZWD	Zimbabwean dollar
ZIMSTATS	Zimbabwe National Statistics Agency

Introduction

More than a decade of political conflict and economic collapse has created serious challenges for communities in Zimbabwe in accessing health care and also for retaining a skilled and well-distributed health workforce. Although Zimbabwe is alone amongst the case study countries in not having recently removed user fees in some form for Reproductive Maternal and Child Health (RMCH)services, it was chosen as a case study country for a number of reasons. First, it faces particular challenges, given the recent economic conditions and its worsening health indicators, which require urgent policy consideration. Secondly, it has received relatively little attention from international researchers to date. Thirdly, the dollarisation of the economy in 2009 has had implications which are important to understand both for Human Resources for Health (HRH) and for women and neonates, and these again are not yet well documented. Finally, it is believed to be considering changes to user fees to improve access to services.

Research methods

The case study is based on a mix of research methods.

Literature and policy analysis

A thorough review of literature was undertaken on the themes of health financing policy, user fees, reproductive health and human resources for health in Zimbabwe. The literature review included searching peer-reviewed and grey literature in recognized electronic databases and websites. Sources for the literature included the Ministry of Health & Child Welfare (MoHCW), DFID, USAID, WHO, health research institutions, mission umbrella organisations, the Centre for Disease Control and professional associations. Key policy documents relating to user fees and HRH were also obtained and analysed.

Secondary data analysis

National data sets relating to staffing, staff remuneration and conditions, utilisation of services and other relevant indicators such as poverty and income levels were sought and analysed. Sources for these included the National Health Information System (NHIS), the database held by the Department of human resources (HR) in the MoHCW, and nationally published statistics produced by Zimbabwe National Statistics Agency (ZIMSTATS). Data from these sources were retrieved into an Excel spreadsheet, disaggregated to the lowest level permitted by the data.

Key Informant interviews

Key informant interviews (KII) were carried out with a selected number of experts and practitioners in Reproductive Maternal and Newborn Health (RMNH) in Harare and one field site. Bindura was selected as the research district because of its proximity to Harare and the fact that it contains a variety of communities, including mining and farming and new resettlement areas.

A semi-structured questionnaire was drawn up for the KII. Although the tool was tailored to individuals, in total it covered the following topics: current policies on user fees; current policies on exemptions; plans to reform user fees; major constraints facing HRH; the interaction of fees and HRH; and any evidence on the impact of fees and the recent dollarisation on both users and staff.

The selection of the experts and practitioners was purposive. Table 1 shows the interviews which were conducted (13 in total).

Table 16 Key informants interviewed

Key informant interviews	Males	Females	Total
National level			
Director, Human Resources, MoHCW		1	1
Director, Human Resources, Health Services Board		1	1
Bindura District			
Matron, District Hospital	-	1	1
SIC Charge Maternity/FCH, District Hospital	-	2	2
Nurse in Charge, Health Clinics	-	3	3
Hospital Administrator; Hospital HR Officer	2	-	2
District Nursing Officer/ Acting District Medical Officer; District Health Services Administrator	2	-	1
TBA	-	1	1
Total number of participants	**4**	**9**	**13**

Focus group discussions

Focus Group Discussions (FGDs) were held in three different types of area in Bindura district:

1. Low income urban area
2. Communal area
3. New resettlement farming/resettlement community

The key target groups were users of RMNH services and service providers. We conducted five FGDs as follows:

1. Nurse trainees (based at the district hospital) (one group)
2. User groups consisting of women at the community level (identified through the Village Health Workers) (three groups – one per area)
3. One FGD with traditional birth attendants in a rural area

The total number of participants was 43 (all female, with one exception).

Topic guides were drawn up for the two groups. The topic guide for trainee nurse midwives asked about motivation for joining the profession; their views on user fees; and factors encouraging their retention and performance. The topic guide for the community level focussed on health seeking behaviour and views on quality of care; current payments for RMNH services and how affordable they are; and users' views on user fees.

Data analysis

Quantitative data were collated and analysed using Excel. The WHO tool produced by the Making Pregnancy Safer (MPS) department was also used to project staffing needs and gaps.

Qualitative data from the field were transcribed and analysed through categorisation of themes and content analysis. This was compared with findings from the literature review and policy analysis, as well as the secondary data, to reach overall conclusions and recommendations.

Background on Zimbabwe, its health system and financing

Zimbabwe inherited the Rhodesian health care system at independence in 1980. Health services were divided along racial lines and distribution of available resources were highly skewed towards hospital service provision for the small white population at the expense of black people and other minority populations. There were profound imbalances in the allocation of physical, financial and human resources in the health sector before independence (UNICEF, 1985; Agere, 1986; Manga, 1988; Herbst, 1990; Auret, 1990; Sanders, 1993).

After independence, the Government expressed the intention to focus its efforts on redressing the existing inequalities by investing especially in health services in rural areas. The government viewed health as an integral part of development and as a human right (GoZ, 1981) and this guided the post-independence government's health policy, resource allocation decisions and human resource development (Bijlmakers, 2003). By 1989 the number of rural health centres and clinics had increased from 247 at independence to 1062 (Auret, 1990) resulting in much better geographical accessibility of primary care services. In the 1980s and early 1990s these health centres were adequately manned with a doctor to patient ratio of on average 1: 6000 per year in public institutions (Chikanda, 2004).

Hit by low growth and an Economic and Social Adjustment Plan in the 1990s, the focus shifted from equity to cost recovery and greater efficiency. While the second *Health for all Action Plan* for the period 1991-95 maintained the focus of its predecessor on equity, the plan put more emphasis on quality of care, effective use of resources, value for money and appropriateness of services, including increased use of private sector facilities (MoH, 1991). This was accompanied by changes in the policy on user fees and HRH (see below).

The World Bank (2008) estimated that the gross national income (GNI) per head declined by 54% between 2000 and 2005. GDP declined by nearly 35% between 1999 and 2006, and the current estimated GDP per capita[33] of US$268 places Zimbabwe as one of the poorest countries in the world. A declining national income, a huge national debt, recurrent droughts, widespread HIV and AIDS all contributed to a weakening health system since 1990.

Whilst the 1980s showed a general improvement in most of the major health indicators and service utilization, attributable to the expansion and improvements in the area of primary health care (UNICEF, 1990 and 1994; Sanders, 1993), signs of deterioration were evident in the 1990s. The trends were a reversal of the gains made in the previous decade (Bijlmakers, 2003). Between 1990 and 2008, life expectancy at birth fell from 62 to 44 years (World Bank 2010). Under-five mortality (U5MR) and infant mortality (IMR) rose from 77 and 53 per 1,000 live births in 1992 to 94 and 67 in 2009. Tuberculosis incidence increased from 136 per 100 000 in 1990 to 557 per 100,000 in 2007. The deterioration in these indicators is also related to the high prevalence of HIV/AIDS in the country. However, on the positive side, in recent years HIV prevalence has been dropping, falling from 25% in 2003 to 15.6% per cent by 2007. This was partly due to changing sexual behaviour among young people (MoHCW, 2008). ANC coverage remains high, at 93% (Global Observatory, 2011). C-section rates were 4.8% of deliveries in 2006 (WHO Observatory, 2011). The contraceptive prevalence rate has increased steadily from 48% in 1994 to 65% in 2009 (MoHCW, 2009). This is now one of the highest rates in Sub-Saharan Africa. The total fertility rate has declined from 4.0 in 1999 to 3.8 in 2006 (ZDHS, 2005-6).

[33] At purchasing power parity.

Other reproductive health indicators are however concerning. Maternal mortality increased dramatically from 390 per 100,000 births in 1990 to 790 in 2008 (Global Observatory, 2011). Skilled attendance at delivery dropped from 73% in 1999 to 60% in 2009 (Global Observatory, which notes that the level of skill is not specified). Neonatal mortality rose and then fell over the period of 1990-2009, ending still higher than it started (29 per 1,000 births in 1990; 27 in 2009) (Global Observatory).

According to the Central Statistics Office (CSO, 2010), Zimbabwe has a population of circa 12.12 million. Approximately 65% of the population lives in rural areas while the remaining 35% live in urban areas. It has a population growth rate of approximately 0.7% and a population density of 29 persons per square kilometre. According to the poverty assessment report of 2003, 60% of the population was living in extreme poverty.

The health system is dominated by the public sector, which provides an estimated 65% of health care services in the country, although in rural areas the mission sector plays a major role, with 65% of rural bed capacity (Zimbabwe Health Workforce Observatory, 2009). The private for profit sector is focussed in urban areas. Some facilities are operated by municipalities, which receive block grants from government.

The Access to Health Care Services Study (2008) found that most communities live within a 5km radius from their nearest health facilities, whilst 23% live between 5 to 10 km and 17% are over 10km from their nearest health centre (Makuto and James, 2007)..

Assessing trends in health financing is complicated by the years of hyperinflation[34]. However, public health services were reported to constitute less than one percent of GDP in 2009, compared to an average for sub-Saharan Africa of 5.3% in 2006 (WHO 2008). Per capita public spending was reported to be $5.77 (MoHCW figures, reported in Osika et al. 2010).

Workforce policies and challenges

HRH development post-Independence

The expansion of the public health workforce in the 1980s was affected by the economic slow-down and adjustment period in the 1990s. Hongoro and Kumaranayake (2000) estimated that in 1996 about 45% of registered doctors in Zimbabwe worked full-time in the private sector. A number of measures have over the years been introduced as a way of trying to ensure health worker motivation and retention. In 1997, the government introduced bonding for nurses and doctors, for three years after qualification. Around the same time, the government lifted the ban on private practice by public health workers.

The health sector has also been threatened by the exodus of critical medical skills through migration to countries like South Africa, Botswana, United Kingdom, New Zealand among others (Moss, 2005). It is estimated that more than 80 percent of the doctors, nurses, pharmacists, radiologists and therapists who trained since 1980 have left the country (Chikanda, 2005). Consequently, service delivery has declined, mortality rates have increased and the public has lost confidence in public facilities. The shortage of doctors in Zimbabwe's public health institutions has also meant heavy

[34] The CPI index for health went from 100 in 2001 to 214 in 2002, 775 in 2003, 4,224 in 2005, 18,151 in 2005, and 595,497 in 2006, according to ZimStats Quarterly Digest, July 2011. Later figures are not yet published.

workloads for those medical practitioners remaining, particularly those at district hospitals (Chasokela, 2001; Chimbari et al, 2008).

An assessment of maternal and neonatal health services conducted in 2004 found that there were serious shortages of nurses and midwives at the primary levels of care: 40% of primary facilities had no nurse, and 50% no midwife at post (MoHCW, UNFPA, UNICEF, WHO, 2005). In order to manage complications beyond the midwives' capacity, a standard presence of 2 General Medical Officers is required at the secondary level health facilities. However, 20% of institutions at this level had no GMO at the time of the survey, and 30% had only one in post: patients presenting at these institutions would need to be referred to a higher level of care, thus increasing delays in receiving care. Furthermore, over 30% of secondary facilities did not have a Nurse Anaesthetist at post at the time, which precluded offering caesarean sections in those institutions. Shortages of laboratory technicians were also noted, and of specialists, such as paediatricians and obstetricians, at tertiary levels.

The economic depression and hyperinflation experienced in the mid-2000s, peaking in 2008, heavily affected the stability of health workers in the public sector. The Zimbabwe HRH profile reports that at the peak of the economic depression the MoHCW lost 3,588 staff through resignations. The capacity to produce health professionals in Zimbabwe was heavily impacted by the economic depression. Health training schools lost many of their teaching staff through international migration. Professional migration led to the closure of some schools in 2008.

Current stocks and gaps

Since 2005, the Health Service Board has been responsible for hiring public health workers. Responsibility for hiring lower level staff is decentralised to facilities and the Provincial Medical Directorate (PMD) can hire up to senior nurse level. Based on current established posts (which are based on a norm of staff to population) and a population growth rate of 0.7% per annum, the HRH profile has estimated a health workforce requirement of just under 20,000 nurses per year.

Numbers of health workers have been increasing in 2007-9, with the overall ratio of health workers to population reaching 2.25 per 1,000 population by 2009 (HRH profile). This is just below the overall WHO norm. Nurses (a category including midwives) reached 1.34 per 1,000. Nurses and midwives constitute the largest group within the Zimbabwe health workforce – 46% and 19% of the total respectively, while doctors constituted only 7% in 2009 (Gupta and Dal Poz, 2009). The Gupta and Dal Poz study also found that around 90 percent of the health workforce worked in government-operated facilities.

The average vacancy rate for critical cadres (such as doctors) over 2005-9 was 50%, although for most groups the vacancy rates dropped over the period (HRH profile). It stood at 20% overall for 2010 – not assisted by a hiring freeze which was introduced that year. For nurses, vacancies fell from 87% in 2005 to 44% in 2006, 28% in 2007 and 2008, 14% in 2009, and 10% in 2010 (HSB annual report 2010). Attrition rates also dropped over the period. However for some categories the vacancies remained very high – for trainee midwives, for example, there were 97% vacancies in 2010 – which was actually an improvement on 2006, 2008 and 2009 when it was 100% (and 49% in 2007) (HSB annual report 2010). Of the 8 posts for provincial MCH Medical Officers, two posts were filled in 2010, while for the Reproductive Health Programme, which was supposed to have 3 top staff, only one (the director) was in post. Key informants also highlight the lack of specialist staff – not one obstetrician/gynaecologist is listed in the posts for 2010, for instance (not even at central hospital level). In addition, the MoHCW and HSB emphasise the need for the establishment posts to be reviewed, in light of recent changes in needs and workload (HSB Strategic Plan 2011-14).

Although there are plans to re-attract health staff in the southern African diaspora, most key informants think it too early for this to be effective, given the general conditions in Zimbabwe. However, some foreign medical staff continue to be recruited, including from Cuba and DRC (HSB Annual Report 2010).

As well as gaps in established posts, there are also disparities between posts in rural and urban areas, and proportions of posts filled. Within urban areas, Harare and Bulawayo absorb a large proportion of skilled staff (Mudyarabikwa and Mbengwa, 2006). Mission facilities are also reported to have lower vacancy levels, presumably due to their reportedly higher levels of incentive payments (Osika et al. 2010).

Remuneration policies

HRH expenditure fell from 2005 through 2007, with a complete collapse in human resource spending in 2008, when human resources spending accounted for 0.3 percent of the public health budget (Osika et al. 2010). Realizing that the health sector was in crisis, the MoHCW and partners developed an Emergency Retention Scheme in 2008 to cover the whole public sector including council employees in rural and urban areas. The scheme involved topping up government salaries with retention payments. In March 2009, the government and its partners revised the retention scheme to only apply to grades C5 and above of the MoHCW posts. There seems to be evidence suggesting that the retention scheme, currently managed by Crown Agents, has brought some stability in the public health sector. The number of resignations in 2009 dropped to 84% (567) of the previous year (Zimbabwe HRH profile), although this may also be affected by the dollarisation introduced in 2009.

The top-up payments, funded by partners, were higher than base salaries for some grades. For example, a District Nursing Officer in 2008 received $250 as monthly salary and $280 as retention payment. The differential for higher grades was even greater. Moreover, mission facilities and municipal facilities, while they share the same base salaries as the MoHCW facilities, are able to provide higher retention payments and allowances, leading to a new form of internal migration. The current City Health Council salaries and benefits are reported to be three times the MoHCW ones (inclusive of the retention allowance) (HRH profile).

Gupta and Dal Poz (2009) found that dual employment was still common amongst health professionals (especially amongst physicians, of whom 41% were working in additional jobs to their public sector ones, while for nurses it was 7%, midwives 10%, others 8%, averaging 10% of all health workers).

In general, dollarisation has brought stability to incomes and prices but may also have increased the cost of living. The effects on health workers have yet to be studied. Comparisons of wages across the sectors are also not available on a systematic basis.

According to the HSB Annual Report for 2010, salaries for General Hands (support staff) were $127 per month, while State Registered Nurses received $176 and Junior Doctors $218. Meanwhile, the total consumption poverty line for a family of average size (5 people) was estimated at $533 in July 2011 (Zimstats Poverty Analysis). In addition to base salary, various allowances are paid as follows:

- Uniform allowance: $15 per month
- Residence: $150 per month
- Stand by/on call: 20% of salary
- Transport allowance: minimum of $8 per month.

Some loans are also available to help with housing and car purchase – however, the sums available were reported to be well below needs.

The overall level of remuneration is therefore very low, and the retention payments (currently funded by the Global Fund and only available to staff above C5 level) are being reduced by 25% each year, with the aim of phasing out in 2013. There are deep concerns about the effects which this may have on retention.

Plans for HRH development

The MoHCW, through the HSB, has developed a draft Human Resources for Health Policy and Strategic Plan 2011 – 2014. The HRH strategic plan includes broad strategies on HR planning and financing, production, training and development, deployment, retention, utilization, management and HRH information and research. Improving retention of staff is a key priority for both the MoHCW and the HSB, according to interviews.

User fee policies

History of user fees in Zimbabwe

User fees existed in Zimbabwe from independence. However, those with incomes of less than ZWD 150 per month qualified for free health care, and this covered an increasing proportion of the population as inflation reduced the real value of the threshold (Hecht et al., 1993). Facing economic pressures and pressures from the World Bank, collection of fees was more rigorously enforced from 1991. Measures were put in place by the Ministry of Health to strengthen cost recovery; revenue targets were set at facility level, manuals on service fees to be used health facilities were prepared, clerks were trained and monitoring systems were developed (Bijlmakers, 2003). The table below shows some of the main changes in user fees policy in the 1990s.

Table 17 Changes in user fee policy during the 1990s, Zimbabwe

Early 1991	Enforcement of user fee collection at all health facilities at the start of ESAP
November 1992	User fee exemption level raised from ZWD 150 to ZWD 400
January 1993	Temporary abolition of fees at rural health centres because of the drought
June 1993	Reinstitution of user lees at rural health centres
January 1994	Substantial increase in user fees at all health institutions
March 1995	Abolition of user fees at rural health centres and rural hospitals
October 1996	Increase in user fees at all referral hospitals: services at rural hospitals and health centres remain free of charge
January 1997	Start of the Health Services fund; retention of user fee revenues at the district and facility level: reinstitution of user fees at (some) rural mission hospitals
1998	No more health grants for the municipalities; higher than average increase in user fees
November 1999	Substantial increase in user fees at government health institutions

Source: Bijlmakers, 2003

In 1994, an estimated 49% of the total expenditure on health was private, mostly through out of pocket payments (Schwartz and Zwizwai, 1995). A study conducted in 1993/94 in two districts found that the majority of households were paying for health care: 62% in Chitungwiza urban district and 79% in Murewa rural district, even though household incomes were below the required thresholds

for exemptions. A quarter of households reported reduction in expenditure on medical care as a result of user fees and this was achieved mainly by reducing clinic/hospital attendance, so as to avoid paying clinic fees. Most reported that they did not seek treatment unless illness was serious, with some saying they would treat minor illnesses at home (Bijlmakers et al, 1996). Those not paying or not always paying either had medical aid, received employer-sponsored treatment or held letters which exempted them from paying the user fees. Patients obtained exemption letters through the Social Welfare Department, but it was a malfunctioning application system (Bijlmakers et al, 1996). Those who reported illnesses but did not seek treatment – 22% in Murewa and 10% in Chitungwiza - were all paying directly for health care (Bijlmakers et al, 1996). Lack of money was cited by 67% of the respondents as the main reason for not seeking treatment. In addition to user fees, informal fees are known to exist, though they are rarely quantified (Todd et.al, 2009).

The economic collapse of the early 2000s led to a sharp reduction in public funding for health, and inevitably a shift to private (largely out of pocket) funding. Government health expenditures as a percentage of total health expenditures declined from 36.8 percent in 1999 to 9.8 percent in 2005 (GOZ 2001 and Abt Associates 2005). In the same period, household out-of-pocket spending soared from 23 percent to 62 percent. Insurance, which had contributed 20% of health expenditure in 2001 shrank dramatically to 0.9% by 2005, according to NHA data. Donors absorbed some of the gap, but given the political problems, this was relatively limited: the share of donor funding increased from 13 percent to 19 percent over the period.

Spiralling inflation in the 1990s and the subsequent dollarisation will have affected the affordability of health care, through changes to incomes, prices of health care and the wider cost of living. In 2008, the 'Access to health services' study found that 59 per cent of respondents were charged for health care services, especially in urban, large-scale farming and mining areas. Of these, 36 per cent reported inability to pay. No studies to date have examined the overall effect on different segments of the population.

How user fees are now being applied for RMNH services

Exemptions
Accounts of which services should be free vary in the written sources. According to one source, the following services and groups are exempt (Osika et al. 2010):

- Antenatal care in rural and semi-rural areas
- Referrals to the next highest level of facility for services that the lower-level facility cannot provide
- Directly Observed Treatment Short course (DOTS) for TB
- Family planning
- Antiretroviral therapy (ART)
- Emergency outbreak services (such as the recent cholera outbreak)
- Health services for children under five, adults over 65, military veterans, health care providers, and individuals living below the poverty threshold (a designation that is very difficult to attain in practice)

Others state that the policy of free public sector care at rural clinics is still in force and that pregnant women, children under 5 and adults over 65 are exempt from fees up to district level (Equinet, 2008). However, all agree that implementation is patchy and confused. In the recent health system assessment, many providers were unaware of any policy on user fees.

Moreover, while the Ministry of Health and Child Welfare has a policy of free care at clinic level, this has not been applied uniformly by local government and mission clinics. Unless lost revenues are

replaced through some mechanism, it is unlikely that implementation will be effective, particularly in the non-MoHCW facilities.

The categories reported to be exempt during our fieldwork generally focussed on the under-fives and over-65s, and staff, but with local variations such the chronically ill (psychiatric patients) and lepers. Certain donor-supported national programmes are also free (such as ART treatment and TB treatment). It is not surprising that there is variation as there is a perception that charging policies can be locally determined.

There is a Social Dimension Fund Scheme, run by the Ministry of Social Welfare, which applies its own criteria for exemption. These include orphans and the elderly. Patients who cannot pay cannot be turned away but can be referred to this Fund. However, the money in the Fund is limited and so although the hospital presents claims for people who have been certified and treated for free, they are often not reimbursed as there are no funds remaining.

Levels of fee and ability to pay

Average consultation fees for adults, collected from a sample of facilities in 2009, increased according to level of care, with an average of $1 at rural health centres, $3 at mission hospitals, $4 at private health clinics, $4 at district hospitals, $5.5 at provincial hospitals and $9.75 at national hospitals (Osika et al, 2010).

An official price list is produced by the Association of Health Care Standards of Zimbabwe. However, the prices are high, and facilities produce their own price lists. In the hospital visited, prices for those with Medical Assistance (a small proportion of their clientele) were considerably higher than for those paying cash. The rural clinics used to be free but 1-2 years ago they decided to charge. Municipal clinics charge more and always have done so.

Prices for a sample of reproductive services are given below, based on our limited fieldwork.

Table 18 Prices quoted for selected RMNH services, Bindura

Service	Facility type	Facility price
FP – 4 cycles of pills	Government clinics	$0.5
	Municipal & RDC health clinics	$1
FP – Depo Provera injection	Government clinics	$1
	RDC health clinics	$2
	Municipal health clinics	$3
Booking for pregnancy – ANC etc	Government clinics	$5 for registration, routine monthly examinations and monitoring of weight
	Rural district council facilities	$10 for registration and booking for ANC and $2 for every ANC visit
	Municipal health clinic	$30 total
	Provincial/district hospital	$35 total
Ultrasound	Provincial/district hospital	$25
Normal delivery	Municipal health clinic	$35
Normal delivery	Provincial/district hospital	$50 (but with added items which patients have to buy, this is more likely to come to $100)
Caesarean section	Provincial/district hospital	$450 (simple CS) $600 (CS plus observation for six days)
Postnatal check-up	Provincial/district hospital	$10 (then $20 at six weeks)

Source: interviews with informants, Bindura district

Family planning supplies were seen as affordable but delivery care in facilities even in the absence of complications, was not. This is likely to be one factor behind the high rate of home deliveries, even though these are discouraged (and TBAs were nervous about speaking about their work as a result), and despite the fact that families have to bring newborn babies into health facilities to get a birth record.

Our small-scale fieldwork confirms that users are being charged for primary care in rural areas, not least because under the policy of decentralisation the majority of clinics are managed by local authorities, which are able to set their own charging policies. In the area we visited, the rural and urban clinics collect fees but do not retain them. They were reported to receive very little back by way of financial support from district councils and municipalities. They therefore suffer a double disadvantage of higher barriers for users and a lack of funds to reinvest in services.

Many try to avoid paying, so a variety of mechanisms are used to recoup health service costs (ultimately, the public sector at least is not allowed to turn away anyone). Upfront payments are taken for consultation. Patients' relatives are encouraged to pay, when visiting. People can be allowed to pay in instalments. In some rural areas they pay in kind. Debtors are followed up after discharge. For women who have delivered, the birth record (which is needed for the birth certificate) is withheld until payments are made. In the hospital we visited, staff reported very poor relations with clients over the issue of non-payment, with women being held in the hospital but in the corridor (as beds were needed) until they paid, or until they absconded.

Consequences of fees

The general view based on KII and FGDs is that user fees are unaffordable, especially those that are levied by the rural district council and the municipality. Fees levied at government-owned health facilities are reasonable and affordable. The most punitive aspect of the user fees regime at the council and municipality FCH centres, according to mothers who participated in FGDs and nurses in charge at FCH centres, is the requirement to pay the prescribed fee for every ANC visit. This is borne out by the fact that most mothers forego the routine ANC visits and only present for delivery. Late bookings are another manifestation of failure to afford payment of user fees and cases of booking at seven months were reported. In FGDs mothers reported that late booking was a mechanism to reduce costs that would ordinarily be incurred if one were to book at the recommended first trimester of pregnancy. Factors reported as encouraging home deliveries include long distances to health facilities, people's inability to afford user fees and fear of being tested for HIV during ANC visits.

Most mothers depend on regular income from formal employment or commercial agriculture to raise money to pay user fees for RMNH services. Not seeking medical attention due to inability to afford user fees is an option that mothers have to take sometimes, to avoid the humiliation that they meet if they present to health facilities without the required fees. Municipality FCH centres are strict and they do not entertain anyone without the requisite fees. The nurse in charge at the municipality FCH acknowledged that as a result of the strict requirement for payment upfront at municipality clinics there are cases of home deliveries in urban areas.

Home deliveries are common and more openly acknowledged in the rural, small scale and large scale commercial farming sectors than in the urban sector. Those who cannot afford the user fees at the FCH centre seek the help of Traditional Birth Attendants (TBAs) for deliveries and are charged a fee of $5 and one bar of laundry soap per delivery. During FGDs with TBAs and an in-depth interview with one TBA it emerged that even this lesser charge levied by TBAs was not always readily paid by mothers who were assisted during delivery. The TBAs observed that there were people who simply did not want to pay because they hold the view that TBAs are a community resource and hence should assist their neighbours for no charge.

From the staff perspective, user fees were a necessary evil as non-payment would in the first instance promote wasteful utilisation of health services and eventually lead to the collapse of the system, given the current low levels of government funding reaching them.

Wider health financing issues

Health clinics receive primary drug packs every three months under the 'push system'(supplied regularly based on central calculation of need). This is reported to be fairly regular and adequate (thus reducing the burden of paying for basic drugs at least for patients). Salaries are paid centrally.

However, financial support for the other running costs of district health services overall (outside the hospital) is very limited, if Bindura is typical. The district is reported to receive around $3,000 per month for activities (for a population of 155,000 – so some 23 cents per capita per year). This does not come in the form of cash, either, but as invoices which can be raised for items like fuel, to be paid centrally.

The provincial/district hospital receives a higher level of GoZ support than the district services, but it is unpredictable and varies month to month. User fees as a proportion of overall revenue were reported to contribute in the region of 10-15%. All other support comes from government, but it is not considered adequate and considerable debts have accrued to creditors. In theory 10% of the user fee funds are meant to go to support provincial health activities but the hospital usually lacks the money to pay this.

The hospital buys its drugs and supplies from the National Pharmaceutical Company, unless it does not have the items (which is commonly the case), in which case they buy from the private sector, at higher prices. As their budget is limited, they then buy fewer drugs and patients may have to take a prescription to a pharmacy to get what they need. ARTs, anti-malarials, TB drugs come free from the NPC (funded by donors) but all other drugs are purchased by the hospital.

Plans for reforms

The MoHCW has been carrying out a review of user fees. Given the financial constraints facing the sector, there are concerns about the feasibility of reducing financial barriers for users. However, in November 2011, Prime Minister Tsvangirai said it was his hope that the fee would be scrapped during the tenure of the inclusive government. He said that high user fees were limiting mothers and children's access to life-saving interventions[35].

Distribution and skill mix of the RMNH workforce

Data on human resource distribution is drawn from the regular regional returns to the Ministry of Health and only includes the public sector. District data are not available and the data do not separate midwives from other nursing staff.

In 2010, there were 17,756 nurses, midwives, clinical officers and doctors working in the public health sector (Table 19). Outside Bulawayo and Harare, nurses appear to be reasonably evenly spread relative to population varying from 95 per 100,000 in Manicaland to 151 in Matabeleland South.

Table 19: Distribution of medical staff by region (2010)

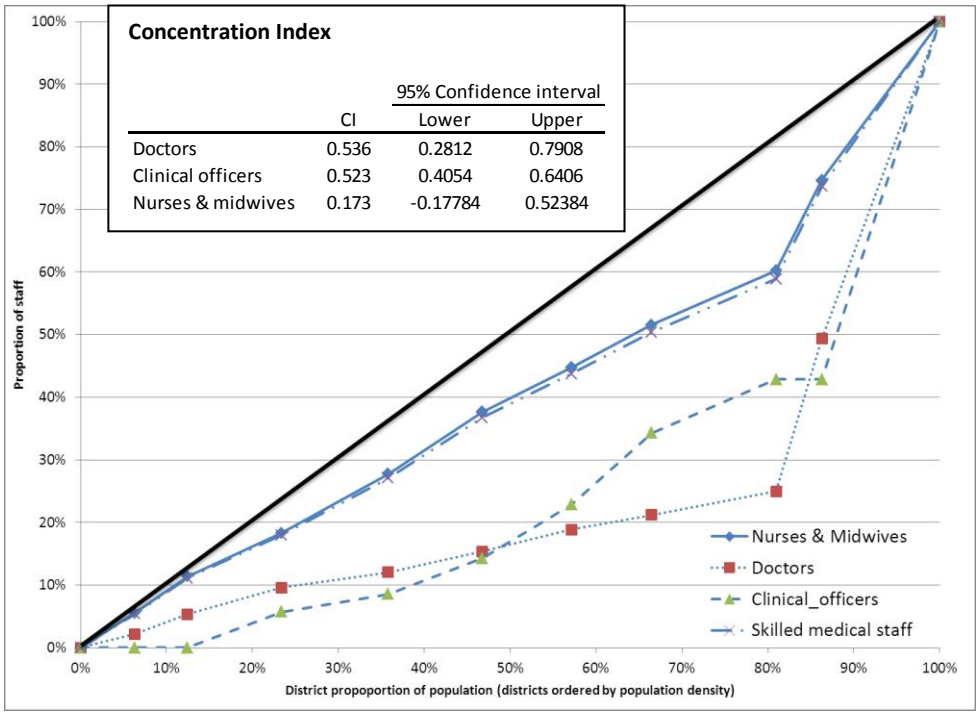
	Doctors		Clinical officers		Nurses		Skilled health workers	
Region	Number	Per 100,000	Number	Per 100,000	Number	Per 100,000	Number	Per 100,000
Bulawayo	168	29.57	-	-	2,460	432.98	2,628	462.55
Harare	349	23.92	20	1.37	4,309	295.38	4,678	320.67
Manicaland	26	1.68	3	0.19	1,476	95.60	1,505	97.48
Mashonaland Central	16	1.61	4	0.40	1,160	116.53	1,180	118.54
Mashonaland East	24	2.17	3	0.27	1,215	110.08	1,242	112.53
Mashonaland West	29	2.48	2	0.17	1,184	101.31	1,215	103.96
Masvingo	17	1.29	1	0.08	1,606	121.72	1,624	123.08
Matabeleland North	15	2.23	-	-	947	140.62	962	142.85
Matabeleland South	22	3.37	-	-	991	151.75	1,013	155.12
Midlands	23	1.97	2	0.17	1,684	143.89	1,709	146.02
TOTAL	689	6.47	35	0.33	17,032	159.85	17,756	166.64

Doctors are unevenly spread throughout the country. A concentration curve, and accompanying concentration index, for medical staff ordered by population density shows a strong pro-urban bias for doctors (0.53) and clinical officers (0.52) (

[35] http://allafrica.com/stories/201111010110.html

Figure 19). For nurses and midwives the distribution is much more evenly spread (the concentration index indicates that the distribution is not significantly different from a proportionality/equality).

Figure 19: Concentration curve for medical staff (ordered by population density)



Workload

There are currently around 7 deliveries for each skilled health worker and 184 for each doctor across the country (Table 5). If all births were to be conducted with assistance from a skilled health worker this number would increase to 18 per health worker or around 475 per doctor. WHO suggest that 1 doctor is required for around 1,000 births, to provide emergency intervention where there are complications before, during and after delivery, while a midwife can provide care for 175 births per year. Even taking account of the non-RMNH duties of skilled health workers, there are sufficient staff to provide for SBA. According to the most recent DHS, around two thirds of deliveries are undertaken in facilities with a skilled health worker (Zimbabwe National Statistics Agency and Measure DHS ICF Macro 2011). Masvingo, Midlands, Manicaland and Mashonaland Central currently have fewer doctors than required to provide care for the current workload in facilities. Across the country, there appear to be sufficient doctors to provide care for all births but the distribution means that only in Bulawayo, Harare and Matabeleland South are there sufficient doctors to provide cover for all births in the event of complications.

Table 20: Delivery workload relative to population and skilled staff

	Deliveries			Births		
Region	/100,000 population	/skilled health worker	/ Doctor	/100000 population	/skilled health worker	/ Doctor
Bulawayo	1,785.68	3.86	60.39	2,020.00	4.37	68.31
Harare	2,201.89	6.87	92.04	2,637.00	8.22	110.23
Manicaland	1,916.59	19.66	1,138.10	3,178.42	32.61	1,887.39
Mashonaland Central	1,665.45	14.05	1,036.15	3,240.18	27.33	2,015.85
Mashonaland East	1,788.83	15.90	822.66	2,986.36	26.54	1,373.39
Mashonaland West	1,813.08	17.44	730.67	3,296.51	31.71	1,328.49
Masvingo	2,239.04	18.19	1,737.81	2,977.45	24.19	2,310.92
Matabeleland North	1,972.13	13.81	885.40	3,001.73	21.01	1,347.63
Matabeleland South	2,094.49	13.50	621.73	2,925.26	18.86	868.34
Midlands	2,553.20	17.49	1,299.22	3,946.22	27.02	2,008.06
TOTAL	2,024.89	12.15	313.14	3,074.12	18.45	475.40

It is more difficult to evaluate provision of skilled birth attendants. The human resource statistics do not distinguish between midwives and other nursing staff. If all nurses are regarded as skilled birth attendants there are around 18 births per skilled health worker, ranging from 4.3 in Bulawayo to 32.6 in Manicaland. This suggests that there is ample capacity to provide for the existing number of deliveries and indeed permit a scale up. Yet this conclusion is too simplistic since whether the existing staff is sufficient to provide services to all deliveries depends on a number of factors including:

- how much of their time they devote to non-reproductive health services
- their distribution within each region
- the extent to which the skills of nurses currently qualify them to provide adequate delivery health services.

Since most nurses lack midwifery skills it is likely that number of medical workers considerably over estimates the capacity to provide midwifery care to an adequate standard.

Remuneration and terms and conditions

What are the main challenges in terms of HRH which affect access to RMNH services?

According to our fieldwork and interviews, the main challenges in relation to staffing are:

1. The HR establishment is not matched to their tasks – programmes and populations have grown but the establishment has not been adjusted accordingly. The staffing norms have not been adjusted since the 1980s and the MoHCW and HSB recognise that this is overdue. It is planning to revise using the WHO workload model, but it is hard to justify this exercise when existing positions remain vacant.
2. In addition, there has been a hiring freeze since mid 2010, so even the existing posts, if vacant, cannot be filled (except with permission from the MoF, which takes 6-7 months to obtain) and it is difficult to transfer staff.
3. The level of salaries is universally acknowledged to be too low – below the consumption poverty line for an average family.

4. Differentials between sectors add to difficulties for government facilities – a qualified midwife earns $300 in the public sector (up to $400 including all allowances), but can get $1,000 per month in Harare city facilities, according to one key informant.
5. The retention allowance is also low - $70 per nurse – and is sometimes delayed. In addition, it is not paid to the non-professional grades, which is demotivating. The allowance, currently funded by the Global Fund, is also reducing by 25% each year, and is due to phase out in 2013.
6. There is a shortage of specialists, including doctors, midwives and specialist nurses. 60% of nurses should have qualifications in midwifery, according to one key informant, but the actual level is far below that. Bindura Provincial Hospital, to cite one example, has no paediatrician, no obstetrician, and only one doctor and one surgeon. The last time they had a Zimbabwean specialist, according to the key informant, was over 20 years ago (they have hosted Cuban doctors, but these present language problems).
7. Migration, while reduced compared to the 'rock bottom years' of the mid-2000s, continues to drain trained staff, especially to South Africa and Botswana.
8. Maldistribution is also a recognised problem, reflecting poorer working conditions and earning opportunities. A rural allowance used to exist but was considered too low to be effective (25% of a small salary).
9. As a consequence of these factors, remaining staff are often overloaded, which contributes to demotivation.
10. Poor personal and working conditions are also mentioned by many staff – for example, lack of staff accommodation, lack of transport to work, dirty wards, lack of staff amenities, and no running water.
11. Shortages of key supplies (such as blood) and equipment at work also undermines their professional self-respect and ability to offer a reasonable quality of care
12. The lack of specialists denies remaining staff the opportunity to learn and improve their skills, while trainees mention the absence of senior staff to supervise them.
13. A result-based management system exists in theory, based on annual targets and appraisals, but the system is seen as cumbersome and the increments to reward good performance are too minimal to motivate.

Officially staff should get permission to do private practice or locum work, however, in these difficult times rules are bent and managers say they are not sure to what extent their staff are working elsewhere. However, some areas offer limited opportunities for private practice. Drugs are believed to be well controlled and informal payments are illegal and would, if found, lead to charges of misconduct, according to a key informant. Despite all the challenges, the health system has a strong residual legacy of professionalism and staff attempt to maintain standards.

Those working for local authorities and mission facilities are regarded as more fortunate in receiving top-up payments.

Dollarisation and other recent changes have improved the situation of the health workforce (who at the lowest point in 2008/9 were paid $1 per month). However, expectations of a continuous improvement have not been met. Looking ahead, there is concern about ongoing economic and political problems and fears that things may even get worse – if, for example, the health workforce is 'streamlined'.

What do staff think about the current charging policy? How does it affect them?

Staff are generally supportive of user fees, according to our fieldwork – they see fees as providing essential inputs into the running of services. There is no direct benefit – it is not legal for staff to

receive any of the funds – but indirectly, they benefit through maintenance of services. Besides 'people should make a contribution'.

However, staff in Bindura municipal facilities commented that the rates were too high for deliveries, and were putting women off coming there. They considered that should be reduced, not least because many of the funded public health programmes such as PMTCT rely on getting a high throughput of pregnant women in facilities.

Others comment that staff should be involved in the setting of fee rates. PNC, for example, is charged at a flat rate of $20 at Bindura hospital, when the supplies involved are minimal (one pair of gloves).

Salary levels

Table 6 shows the pay scales for 3 cadres of health worker in US$, and expressed as a ratio of salary: GDP per capita[36]. Appropriate purchasing power parity (PPP) conversion factors that would allow for the estimation in international dollars are not available for Zimbabwe. The most recent PPP data are for 2009 and convert Zimbabwe $. They do not therefore relate to the current use of US$. However, it cannot be assumed that the purchasing power of 1US$ is the same in Zimbabwe and the US.

Table 6: Salaries expressed in US dollars and ratio of salary: GDP per capita

Cadre	US$	Ratio salary: GDP per capita
General hand (support staff)	127	2.56
Registered nurse	176	3.55
Doctor	218	4.40

Source: HSB Annual Report (2010)

Health workers are paid above the much depleted average income level but not to the same extent as in other countries, and it is likely that the value of pay has fallen considerably since before the crisis. Doctors' salaries are about 4-fold average GDP per capita.

Projected need for RMNH workforce

The future need for skilled birth attendants and doctors was projected based on the figures collected on current staffing levels, births and coverage rates for attended/facility delivery. Initially the aim was to use the Making Pregnancy Safer tool (MPS)[37], produced by WHO, which provides a simple and graphical analysis of the quantity and cost of skilled birth attendants and doctors as coverage is scaled up from the current levels. The MPS tool was, however, based on a forecast of baseline staffing based on current levels of health worker attended deliveries and assumed targets for the number of births per SBA and doctor: around 1,000 deliveries per doctor and (a user adjustable) 175

[36] http://data.worldbank.org/indicator/NY.GDP.PCAP.CD , Accessed 15th December 2011

[37] The original model (http://mps.projection.free.fr/mdg5-hrsu.html) is available as an online and offline web-based. For the purposes of this study, the model was converted to excel and adapted to permit variations in the base and target years and differences in attrition rates and salaries for doctors and nurses/midwives.

deliveries per skilled birth attendant. We modify this approach by starting from the actual baseline for health workers that are assumed to assist at delivery. Using the MPS assumption of target deliveries per health worker we then extrapolate the number of additional workers required to meet a near universal coverage target of 95% by 2015.

The model is quantity driven. It assumes that the current level of staff is just sufficient to provide the current level of skilled deliveries. Any increase in coverage requires additional SBAs and doctors based on standard ratios: around 1,000 deliveries per doctor and (a user adjustable) 175 deliveries per skilled birth attendant. The model permits users to specify levels of attrition for staff and salaries and assumed salary increases to permit cost projections. The number of births is based on demographic projections for each country.

The presumption that coverage can be increased by adding staff in a fixed ratio to deliveries is an important one. It assumes that the main constraint to increasing attended deliveries is one of supply. Yet it is clear from the analysis of actual data that in some areas high levels of attended deliveries are possible with a relatively small staffing whilst in other areas a high level of staffing is associated with a modest level of attended deliveries. Various factors may account for these differences including:

- Staff may be busy with other activities and only able to devote a small proportion of time to delivery care. This is dealt with by focusing on full time equivalents at least for the additional staff required.
- Staff may not be motivated to provide services
- Staff have insufficient resources provide adequate care
- Human resources are available at a facility but women are impeded from seeking care due to inaccessibility or high cost of transport and lack of knowledge about when to seek care. Both these factors are known to be associated with levels of delivery.

These factors could mean that a much higher ratio of staff to deliveries may be required in order to achieve universal access or indeed that targets are unattainable unless other barriers to use of services are addressed. Conversely, it may be that current staffing levels are sufficient to deal with more deliveries but that other factors prevent scale up.

Box 1: Summary Assumptions for Zimbabwe

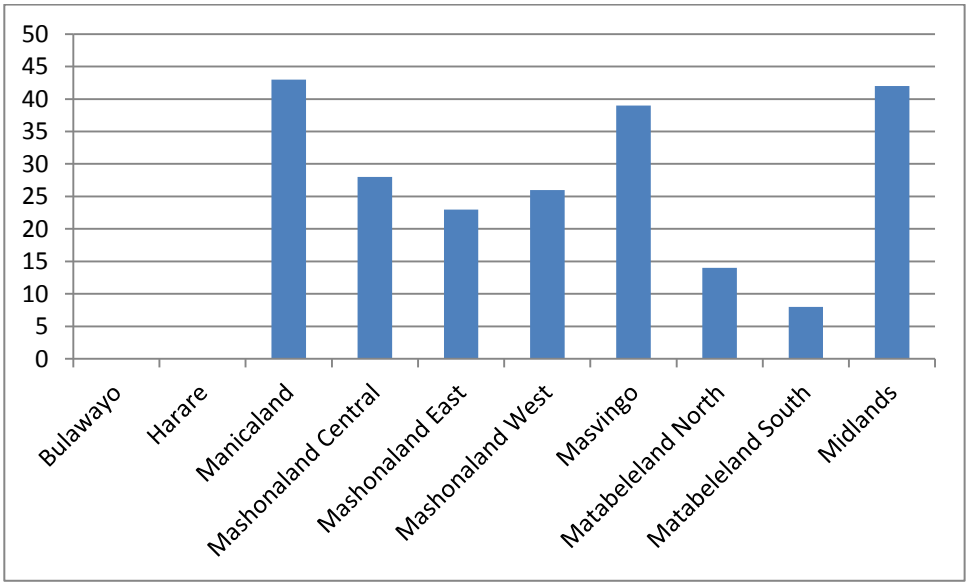
	Deliveries per year	Baseline salary (US $)	Growth in salaries	Annual attrition
SBA	175	2112	3%	10%
Doctor	1000	2616	3%	10%

The MPS model focuses on the additional full time equivalent workers required for scale up. The scale up to 95% coverage is modelled over the period 2010 to 2015 using country assumptions (See Box 1). Midpoint salaries (2010) for registered nurses and doctors as computed above are used for the projection of recurrent cost and these are expected to increase by 3% per annum (in dollar terms). An initial level of coverage of 66% of deliveries with a skilled health worker is assumed which corresponds to levels reported in the provisional DHS for 2010 and is consistent with the HMIS data analysed above (Zimbabwe National Statistics Agency and Measure DHS ICF Macro 2011).

The projections, based on regional data and factoring in attrition of staff, suggest that a scale up from 66% to 95% by 2015 will not require additional staff at national level, and even if we are correct about only 20% of those staff we have assumed have midwifery skills, or that as much as 80% of the time of skilled health workers is used for other roles, this remains the case. A total of 1,778 skilled birth attendants or midwives and 311 doctors are required to provide for 95% coverage. There are currently 17,032 nurses and 689 doctors in the country.

However, given the current distribution of the available staff, across the country the requirements for additional staff vary (Figure 2). In regions other than Bulawayo and Harare, scale up suggests the need for additional health workers. In Manicaland, for example, scale up from current coverage of around 60% to 95% is estimated to require a further 43 doctors from a current estimated need of 29 (statistics show there are currently 26 doctors in region). Figure 2 identifies the shortfall as 223 doctors required outside Harare and Bulawayo. The relatively high ratio of other staff classed as skilled attendants to births, and the relatively even distribution of other staff around the country ensure that there are sufficient skilled attendants other than doctors in all regions. At worst (in Manicaland and Mashonaland West), this would still apply if only 30% of those staff do indeed possess sufficient midwifery skills.

Figure 2: Gaps in numbers of doctors required by region



The model produces the odd result that the cost of the health workforce declines from 2010 to 2015. This is because it treats staffing as more than adequate for RMNH purposes and allows attrition at 10%, faster than salary growth at 3%, only replacing staff lost to the system when numbers fall below those required to deliver the target assisted delivery rate. The current cost of the workforce is estimated at $37.7m, falling to $25.8m in 2015. These figures are also influenced by the relatively low dollar salaries of medical workers and the low compression ratio between the salaries of doctors and other medical workers.

Conclusions

Zimbabwe has been hit by an economic crisis over the past decade or so, causing worrying deterioration in reproductive health indicators (sizeable increase in maternal mortality, reduction in facility deliveries, and a substantial rise in neonatal mortality, though this has improved in recent years). Public investment in health care is low, and poverty is widespread.

Staff numbers have been reduced through emigration to other countries and also internal migration to other sectors, though this is less well documented. There is a particular shortage of midwives and

of specialists, though for most groups in the past few years numbers have been increasing, while attrition rates have reduced. There are however discrepancies in vacancies across regions and sectors. Pay is recognised to be low – below the poverty line for an average family. There are also concerns about the effects of the ending of the emergency retention payments, which are due to be phased out shortly.

From a client perspective, the past decades have seen a shift in the burden of payments onto households. Implementation of the complex rules on exemptions is patchy and confused. In addition, non-MoHCW facilities (which include municipal and mission facilities) have complete discretion on charging. Family planning supplies are seen as affordable but delivery care in facilities considered hard for families to afford, even in the absence of complications.

Moreover the fees generated are not retained in municipal and rural district-run facilities, thus creating a vicious cycle of low utilisation and low investment in the services. Central funding of non-salary recurrent costs, especially for district services, appears to be very low.

Overall staffing is assessed to be adequate. Nurses and midwives are evenly distributed across the country (at least in the public sector, for which data is available), though doctors are not. (The overall CI is 0.19 – similar on average to Ghana's). This means that for some provinces (Masvingo, Midlands, Manicaland and Mashonaland Central), there are not enough doctors to provide more complex care, and only three provinces could provide cover in the event of all deliveries taking place in facilities. For midwives and nurses, there appear to be adequate numbers but the merger of categories means that assessing competence in obstetric care is hard and there are likely to be skills shortages for existing staff.

Health workers are paid above the much depleted average income level but not to the same extent as in other countries, and it is likely that the value of pay has fallen considerably since before the crisis. Doctors' salaries are about 4-fold average GDP per capita.

This analysis suggests that there are a number of axes of challenge in Zimbabwe, all of which hinge on improved economic fortunes. There is a strong case for reducing the financial burden on clients of RMN services and also a pressing need to improve the terms and conditions of key health staff. Numbers need to grow, and distribution is also a challenge, suggesting the need for differentiated policies in relation to rural areas, especially for doctors and specialists. The management of user fees should also be reviewed, particularly for non-MoHCW facilities which do not retain their revenues, and appear to receive limited investment in return from the municipalities and district councils. Overall public investment in the health system (including increased external support, if the political situation permits it) needs to grow.

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