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Human Resources for Health in Maternal, Neonatal and Reproductive Health at Community Level

A Synthesis of the Literature with a focus on the Asia and Pacific Regions

Human Resources for Health in Maternal, Neonatal and Reproductive Health at the Community Level: A Synthesis of the Literature with a focus on the Asia Pacific Region

2010

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ISBN

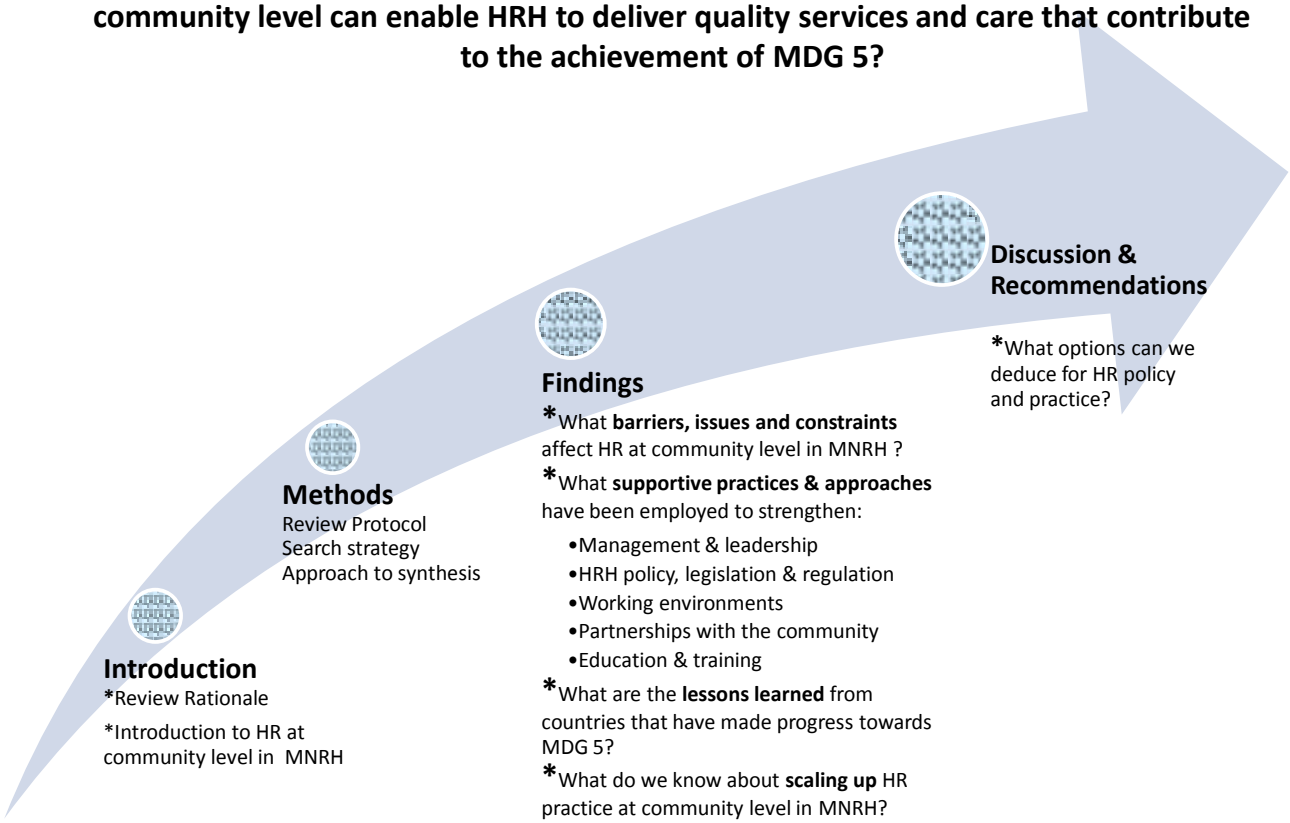
Photos credits from top right:

Photo from Fiji Government webpage www.fiji.gov.fj/uploads/

Vy Sovanna, a midwife working with PSI Cambodia, promotes a local clinic, to be held the following day, providing birth control for local women.
http://www.flickr.com/photos/sockeyed/3219025735/

Community health workers collect information from barrack residents so that local health centres can identify common health issues. Photo : *IRC/Peter Biro*

What human resource practices in maternal, newborn and reproductive health at community level can enable HRH to deliver quality services and care that contribute to the achievement of MDG 5?



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Acronyms

AAAH	Asia and Pacific Action Alliance for Human Resources for Health
AIDS	Acquired immune deficiency syndrome or acquired immunodeficiency syndrome
AMREF	African Medical and Research Foundation
AMTSL	Active management of third stage of labour
ANC	Antenatal Care
ANM	Auxiliary nurse midwife
ART	Anti Retroviral Therapy
ASHA	Accredited social health activist
ASW	Adherence support workers
AWW	Anganwadi Worker
BEmOC	Basic Emergency Obstetric Care Centre
B-EMONC	Basic Emergency Obstetric and Newborn Care
BPHS	Basic Package of Health Services
CAPA	Community-Based Child Survival Approach
CBHP	community based health personnel
CEmOC	Comprehensive Emergency Obstetric Care Services
C-EMONC	Comprehensive Emergency Obstetric and Newborn Care
CHNs	Community health nurses
CHW	Community Health Worker
CMMNC	Community-Managed Maternal and Newborn Care
CMW	Community health midwife
CNV	Community health Volunteer
CPDMS	Clinical Performance Development and Management System for Nurses and Midwives
COC	Combined oral contraceptive
CSBA	community-based skilled birth attendant
CSW	Commercial sex workers
DFID	Department for International Development
DWU	Divine Word University Lutheran School of Nursing
DMPA	depot-medroxyprogesterone acetate
EmONC	Emergency Obstetric and Neonatal Care
ENBC	Essential Newborn Care
EOC	Essential Obstetric Care
FBO	Faith Based Organisations
FCI	Family Care International
FIGO	International Federation of Gynecology and Obstetrics
FGD	Focus group discussions
FHI	Family Health International
FWA	Family welfare assistants
FWV	Family welfare volunteers
GAVI	Global Alliance for Vaccines and Immunisation
GHWA	Global Heath Workforce Alliance
HEWs	Health Extension Workers
HIV	Human immunodeficiency virus
HNPSP	Health, Nutrition and Population Sector Program
HR	Human resources
HRD	Human resource development
HRH	Human resources for health
HRM	Human resource management
IC	Improvement collaborative
ICM	International Council of Midwives

ICN	International Council of Nurses
ICPD	International Conference on Population and Development
ICT	Information Communication Technology
IMNCI	Integrated Management of Newborn and Child Illness
IMPAC	Integrated Management of Pregnancy and Childbirth
ITN	Insecticide treated net
IUCD	Inter uterine contraception device
JICA	Japan International Cooperation Agency
LBW	Low birth weight
LHW	Lay health workers
LMICs	Low middle income countries
MCH	Maternal and newborn health
MDG	Millennium Development Goal
MMR	Maternal mortality ratio
MN	Maternal Newborn
MNH	Maternal Newborn Health
MNRH	Maternal Neonatal and Reproductive Health
MoE	Ministry of Education
MoH	Ministry of health
MSH	Management Sciences for Health
MTCT	Mother to child transmission of HIV/AIDS
MW	Midwife
MWA	Midwife assistant
NGO	Non government organisation
NIPORT	National Institute of Population Research and Training
PAC	Post abortion care
PAHO	Pan American Health Office of the World Health Organisation
PAU	Pacific Adventist University
PDM	Performance Development Management
PHC	Primary health care
PHCW	Primary health care worker
PHRHA	Pacific Human Resources for Health Alliance
PI	Performance Improvement
PLA	Participatory learning and action
PM	Performance management
PMTCT	Prevention of Mother to Child Transmission of HIV
PPTCT	Prevention of Parent to Child Transmission of HIV
PPH	Post Partum Haemorrhage
QA	Quality Assurance
QI	Quality Improvement
RCT	Randomised control trial
RH	Reproductive Health
SBA	Skilled Birth Attendant
SEARO	South East Asia Regional office of the World Health Organisation
SRH	Sexual Reproductive Health
STI	Sexually transmitted infection

TBA	Traditional Birth Attendant
T & L	Teaching and learning
UNFPA	United Nations Population Fund
UNICEF	United Nations Children‘s Fund
UOG	University of Goroka
UPNG	University of Papua New Guinea
USAID	United States Agency for International Development
VCT	Voluntary counselling and Testing
VHC	Villages health committee
VMW	Village Midwives
WHO	World Health Organisation
WPRO	Western Pacific Regional Office of the World Health Organisation

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Executive Summary

Addressing the barriers and constraints faced by health workers and managers is a key component in health system strengthening and improving the quality of health care in low and low middle income countries in the Asia and Pacific regions. A number of reports (de Savigny 2009; WHO 2009) have highlighted the lack of knowledge available to policy makers and practitioners concerning tools and approaches that have proved useful in addressing HRH challenges in similar contexts. Such knowledge serves to support informed decision making and help countries prioritize the limited resources available for systems strengthening. There is therefore a need to understand what tools work in specific settings and to identify lessons from successful (and unsuccessful) reform efforts that can be applied by countries with comparable objectives. However, assessing what constitutes a successful HRH intervention and the extent to which it translates into enhanced management, team and individual health worker performance that impacts upon health outcomes at community level depends on coordinated approaches and efficient monitoring and evaluation systems.

Knowledge of successful HRH practice in maternal, neonatal and reproductive health (MNRH) at community level is critical. Millennium development goal 5 (MDG 5) is the goal towards which least progress has been made. Maternal mortality remains unacceptably high in many developing countries, with 61% of women delivering alone or with an unskilled attendant and access to reproductive health services including family planning remains limited.(UNDESA 2009). The community is often the first point of contact women and their families have with the health system and it is at the household level that the activities of the health sector are ultimately directed (Wagstaff 2004). People centred health care is a key principle of primary health care (PHC) and health workers and human resources for health (HRH) management processes have an important role in ~~–e~~nabling people to increase control over, and to improve, their health" (WHO 1986). The community level has received renewed attention due to the revitalisation of PHC. Primary health care reform has highlighted the need to better link community level care with district level services (WHO 2008) improving the support of HRH and strengthening referral mechanisms.

This literature review provides examples of lessons learned in the planning, implementation and evaluation of HRH interventions in MNRH at the community level in the Asia and Pacific regions. The review outlines interventions in the areas of HRH policy, management and education and training. It synthesises what are considered effective ways of working with the community and ways towards building supportive environments for health workers. Important HRH experiences from countries that have made progress towards MDG 5 are discussed as well as country experiences of scaling up HRH interventions in MNRH and proposed models practice. Finally approaches to the assessment of individual health worker, team and HRH management performance are presented in the context of health system strengthening and the achievements of Millennium Development Goal 5 (MDG 5).

Introduction

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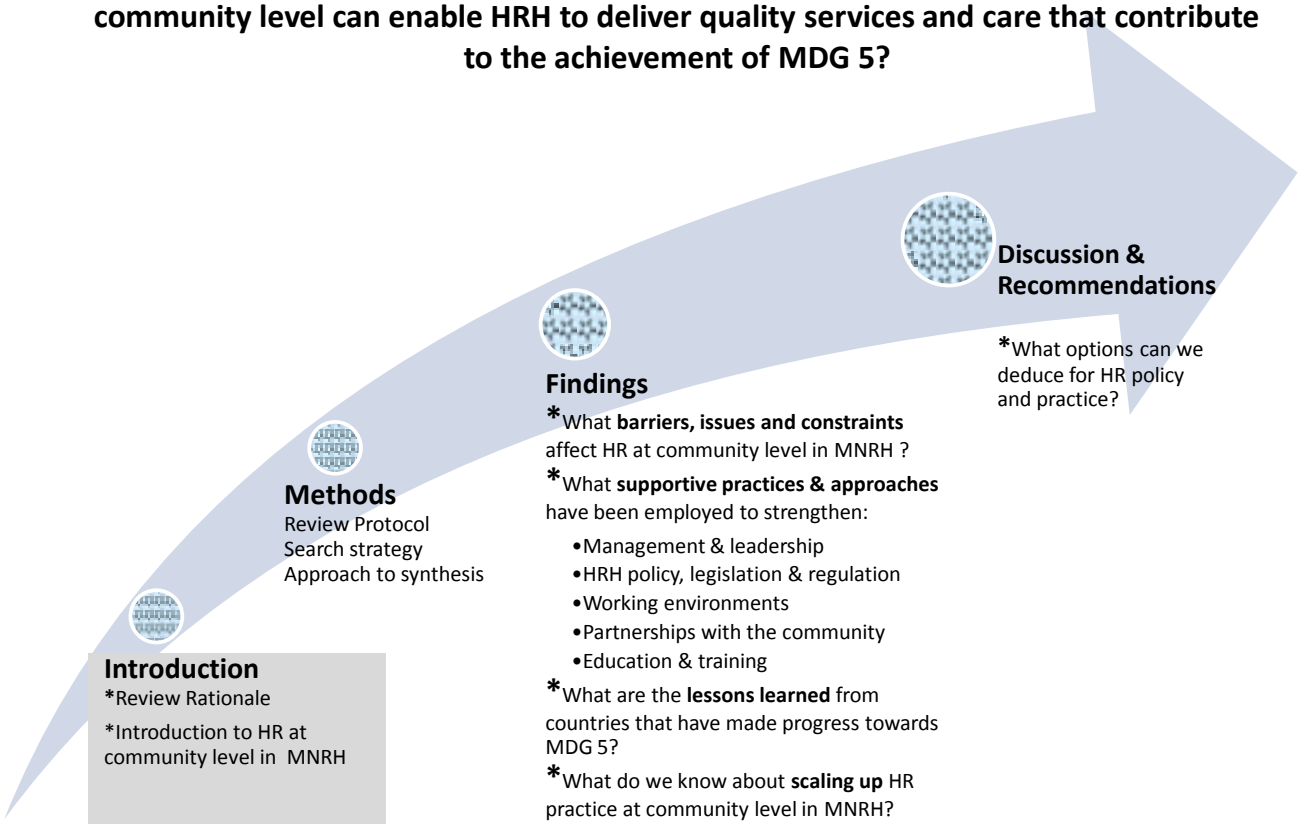

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Rationale and definitions

Purpose of this literature review

Millennium Development Goal (MDG) 5 commits the international community to reducing maternal mortality by three-quarters and ensuring universal access to reproductive health by 2015. Despite the evidence-based interventions required to improve maternal and reproductive health being well established, MDG 5 is the goal towards which least progress has been made. Maternal mortality remains unacceptably high in many developing countries, with 61% of women delivering alone or with an unskilled attendant, and access to reproductive health services including family planning remains limited (UNDESA 2009).

Human and financial resource interventions have the potential to address a large part of the maternal health burden (Prata, Sreenivas et al. 2009) and therefore evidence concerning what works is urgently required by countries. The purpose of this review is to identify evidence of effective community based human resources (HR) practices in maternal, newborn and reproductive health (MNRH) that enable HRH to deliver quality MNRH services and care and thereby contribute to the achievement of MDG 5.

The need for this review

The return to PHC has signalled a renewed interest in service delivery in community settings and highlights the challenges to delivering quality MNRH care and services. One major health system bottleneck is human resources. Although research in HR for the provision of basic MNRH care at this level is limited, it depicts a context where staff are often unequally distributed across communities, imbalances occur in the available skills mix, and there are high levels of staff turn-over, poor remuneration and a lack of leadership. Specialist services for quality emergency obstetric care are rarely available in communities and cannot be provided by existing human resources for health (HRH) due to poor technical knowledge, lack of equipment and commodities, legislative restrictions, and the inaccessibility of health facilities for efficient referral.

Details of the strategies and approaches that have been adopted to address these HRH issues at community level, and the effect they have had on the quality of MNRH care and services, are not readily available to decision makers. There is a need to identify, synthesize and disseminate what is currently known about the roles, competencies, management, coverage and working environment of HRH in resource poor settings. This information will provide policy makers with evidence about best practice and what strategies may be the most appropriate to adopt in their own context so that communities can access basic MNRH care and services. Such knowledge will also inform a research agenda in this area.

Review Questions

1. What HR approaches in MNRH at community level are practiced in countries that have made significant progress towards MDG 5a and 5b?
2. How can or have these HR practices be scaled up?
3. What barriers and constraints inhibit community-based HR practice in MNRH?
4. How can community-based MNRH health workers be better supported to improve performance & deliver accessible evidence based interventions?
5. What indicators might be used to determine the effectiveness of the community health workforce in MNRH in various settings?

Geographic focus of the review

This review will give special focus to low and lower middle income countries in the World Health Organisation's (WHO) South-East Asia and Western Pacific region. There are 38 WHO member countries in these regions (2008). According to the World Bank (2008) twelve of these nations (see table 1) are categorised as low income countries (LIC) with a 2007 gross national income (GNI) per capita of $935 or less. Fourteen nations are categorised as lower middle income countries with a 2007 GNI per capita of $936 - $3,705. The aid dependant nations of Cook Islands, Nauru, Niue and Tuvalu are included in this review but are not categorized into income groups and are therefore excluded from the computation of aggregate indices by income group (WHO 2008).

Table 1 Low and Lower middle income countries in Asia Pacific region

Low income countries	Lower middle income countries	
Bangladesh	Bhutan	Tonga
Cambodia	China	Vanuatu
Democratic People's Republic of Korea	Fiji	
India	Indonesia	
Lao PDR	Kiribati	
Mongolia	Maldives	
Myanmar	Marshall Islands	
Nepal	Micronesia, Fed. Sts	
Papua New Guinea	Philippines	
Timor-Leste	Samoa	
Solomon Islands	Sri Lanka	
Vietnam	Thailand	

Concepts and their use in this review

MNRH and its meaning in this study

This review will identify and evaluate the effectiveness of current human resource practices for a range of community-based maternal, newborn and reproductive health services that are integral to the equitable achievement of MDG 5, including the promotion and provision of:

- Effective family planning
- Safe medical abortion and referral for safe surgical abortion
- Gender empowerment programs
- Quality antenatal care (including nutritional advice and supplements, intermittent preventive treatment (IPT) and bednets for malaria prevention, tetanus vaccination and prevention of parent to child transmission (PPTCT) for HIV)
- Skilled attendance at birth
- Postnatal care for the mother and her baby (including advice and support for breastfeeding, routine immunisations, and access to effective family planning for birth spacing)

It is important to note that although this review focuses on health worker practice in relation to MDG 5 there is a relationship between health care in maternal and reproductive health with other areas that are linked to other MDGs. For example maternal mortality strongly affects newborn mortality and progress on MDG 5 will also influence the efforts to reduce child mortality (MDG 4). Gender inequality is one of the social determinants at the centre of inequity in health. Progress in achieving MDG 3, promoting gender equality and women‘s empowerment, will help in achieving MDG 5. Increasing primary education (MDG 2) for girls and eradicating extreme poverty and hunger (MDG 1) are means to empower women and will positively influence the achievement of MDG 5. Progress on MDG 5 is also related to MDG 6, which focuses on combating HIV/AIDS and malaria that are two important indirect causes of maternal death. As health workers roles are not always narrowly defined and PHC focuses on the continuum of care and comprehensive approaches, this review recognises the linkages between HRH and their roles across neonatal health, gender empowerment and HIV/AIDS.

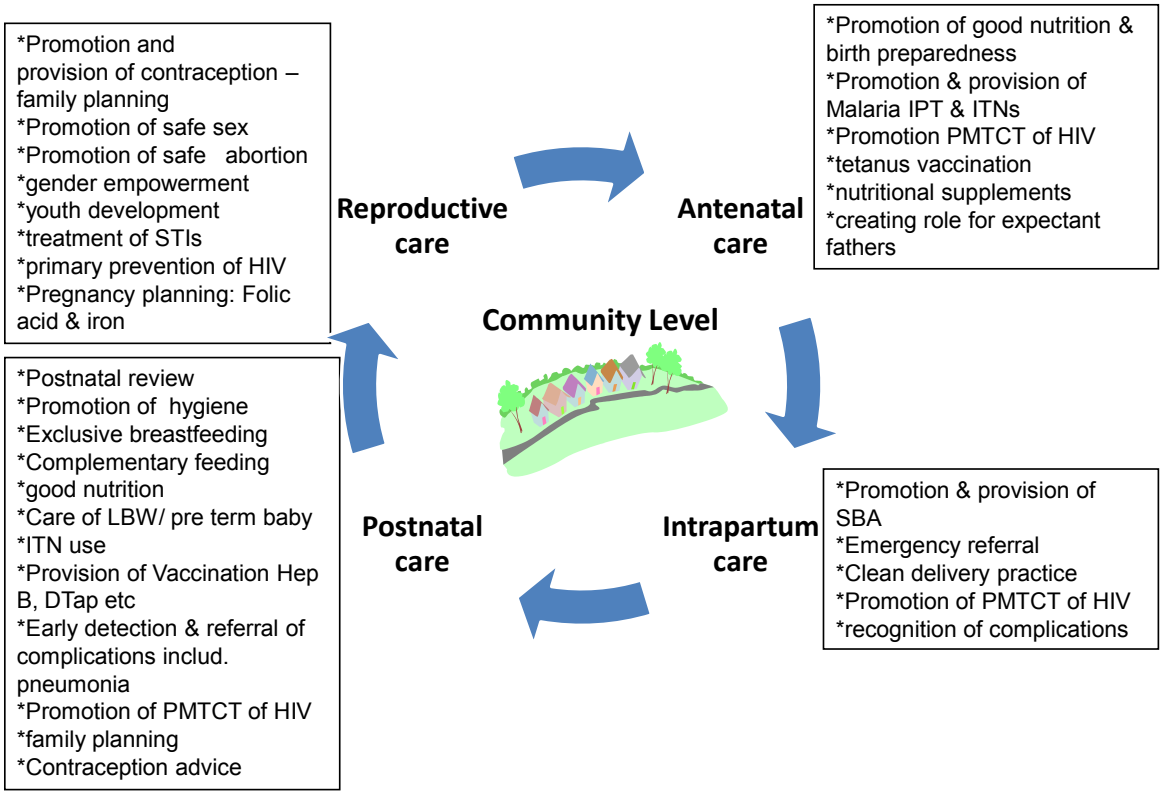
The role of community health workers in promoting the role of male partners in reproductive, maternal and newborn health will also be considered, as will the distribution of commodities for the above services at community level. To the extent that services for the prevention, diagnosis and treatment of sexually transmitted infections (STIs) and HIV are integrated with maternal and reproductive health services at the community level, these will also be considered. However, specialised targeting of STI and HIV prevention, diagnosis and treatment services to marginalised populations, the procurement of reproductive and maternal health commodities at the provincial and national levels, and emergency obstetric care that does not occur at the community level are beyond the scope of this review.

Effective HRH practice and quality health care

The contribution of effective HRH practice to quality health care

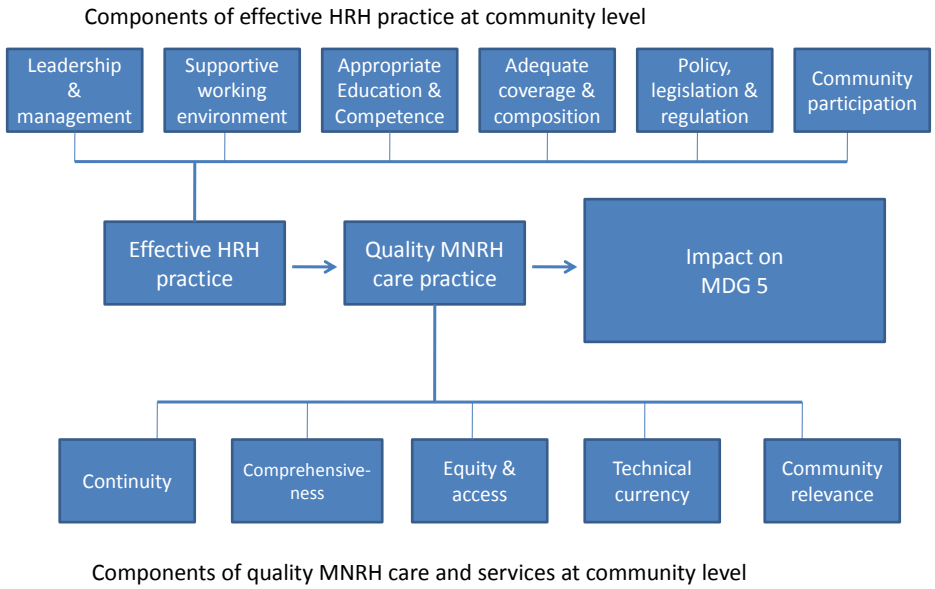
Human resources are engaged at community level in delivering various interventions to improve MNRH. MNRH care and services can be regarded as a continuous cycle comprised of four components. These are outlined in Figure 1 along with the possible interventions undertaken by HRH.

Figure 1 The continuum of care and possible interventions undertaken by HRH at community level



The continuum of care is a core principle of MNRH programmes and enables the efficient delivery of eight packages of care (Kerber 2007) throughout the life cycle and across health facilities through the health system (Mathai 2008). It is also the conceptual framework of the Partnership for Maternal, Newborn and Child Health, a global alliance of approximately 300 organisations advocating for the achievement of better health outcomes for women, infants and children (PMNCH 2009). The goal of this approach is to provide integrated, accessible and on-going care that is informed by the latest research evidence. However this is only possible if delivered by a competent, motivated and well managed workforce operating within a functional health system. Figure 2 outlines the core components of effective HRH practice that facilitate quality MNRH practice which, in turn, improves reproductive and maternal health outcomes.

Figure 2 Effective HRH and quality MNRH practice



Although other aspects of the health system, including efficient information systems, appropriate financing models, infrastructure, technology development, and commodity supply (including essential medicines), also contribute to the delivery of quality MNRH care and services, the operationalisation of these health system components depend on the capacity of human resources for health. The review acknowledges the importance of this whole of health system approach but the discussion of health system components beyond HRH is outside the remit of this work.

The community level – what do we mean?

The term _ommunity' refers to a group or category of people who have something in common with each other. For the purposes of this review, a community is defined as a vulnerable population who experiences a high burden of ill-health and resides in settings such as geographically isolated villages, urban slums or on borders. Communities may also be marginalised due to religion, ethnicity or culture. In this review, community based care is defined as the care provided by primary health workers and structures to community groups in these settings. This can also be expressed as –ommunity orientated primary health care" (see Glossary) which integrates the concept of primary health care aimed at individuals with population based services by including clinical services, epidemiology and health promotion as elements of community based _are'(van Weel, De Maeseneer et al. 2008).

In line with its primary health care focus, community health offers a comprehensive approach to health directed at the whole person and their whole community. For this reason, the way community health services are structured, organised and practised depends on the needs of each particular community or locale. Just as there is no one definition of a community, there

is no single prescribed set of ways that community health should be practised. However, in most settings, community health workers provide first line health care to keep people healthy and treat them promptly. Health workers at this level also play a key role in empowering community people to participate in the planning and implementation of their own health care.

When operating in its pure form, community health care is then linked to other levels of care such as health centres at sub district level and hospital care through mechanisms for referral and supervision. Figure 3 outlines this relationship; the arrows indicate the directions of referral and supervision.

Figure 3 A schematic model of the ideal health care pyramid, linking the three levels - family and community, health centre, and district hospital

(WHO 1997)

Levels of community health practice

It is important to recognise that community-based care itself operates at a number of levels. Home-based refers to care and services that are delivered in the patient or consumer‘s home. This may include births that take place in a woman‘s home or visits made to the family home to distribute family planning commodities. Outreach includes visits that are made by health workers who reside in one village or community to another community, or the visits that midwifes or auxiliary nurses make to communities. These outreach services are delivered at a central point in the community such as a community meeting place, a youth centre, or a market. Care and services at the aid post or clinic level are delivered in a purpose-built facility that provides dedicated work space for health professionals.

The different levels at which community health practice may operate, the care and services provided at these levels, and the staff who may be involved are summarised in Table 2 below.

Table 2 Levels of community health practice, possible care and services and staff involved

Level	Possible care and service in the community	Staff
Home-based	Normal delivery by skilled birth attendant including basic obstetric and newborn care, and referral if needed Family planning Commodity distribution (e.g. condoms, other contraceptives, insecticide-treated bednets (ITNs) Health education during pregnancy (including sexual & reproductive health education) & birth preparation Postpartum/postnatal care for mother & baby Identifying/referring newborn illness	Resident in community
Outreach	Normal delivery by skilled birth attendant including basic obstetric and newborn care, and referral if needed Antenatal care, vaccination Family planning Diagnosis and treatment of sexually transmitted infections (STIs) Commodity distribution (e.g. condoms, other contraceptives, ITNs) Health education during pregnancy (including sexual & reproductive health education)& birth preparation Postpartum/postnatal care for mother & baby Identifying/referring newborn illness	Visiting Public, private & NGO
With the possible addition of:		
Health facility (Aid Post or Clinic)	Normal delivery by skilled birth attendant including basic obstetric and newborn care Basic emergency obstetric care and referral Basic emergency newborn care and referral Voluntary counselling and testing for HIV and prevention of parent to child transmission (PPTCT) Antenatal care Postpartum/postnatal care for mother & baby Community-Managed Maternal and Newborn Care CMMNC Referral for abortion if legal	Facility based Public , private, NGO, franchise

*See Glossary for definitions of all acronyms

Service availability is dependent on size of the community, its location and status. Table 3 outlines different types of health facilities and their features that have relevance for community health.

Table 3 Classification of health centres

Type	Name	Characteristics
I	Dispensary Health Aid post Health sub-centre	• limited ambulatory and curative services • community development • no beds - possibly one maternity bed • staffed by auxiliary nurse midwife • population served <10,000
II	Health Centre/ Clinic	• ambulatory and curative services • health promotion, prevention and education • support for sub-centres • maternity and observation beds • May have outpatient operating room • staffed by multidisciplinary team of professional and auxiliary health workers • population served - maximum 100 000

(WHO 1993)

Areas of community health practice

Community health practice is holistic and covers preventive, promotive and clinical health care and services targeted at individuals, families and communities. This enables multi-sectoral engagement in the health sector such that community members, educators and community development professionals are all able to contribute to the provision of health information and care as illustrated by Figure 4.

Figure 4 Areas of Community Health Practice

(Green 1994)

This broad inter-sectoral approach to community health practice is based on primary health care principles which are receiving renewed attention. This has been prompted by the WHO World Health Report –Primary Health Care (Now More Than Ever)" (WHO 2008) and replaces a recent focus on vertical programs, disease centred approaches and the domination of health sector reform agenda that aims at the economic rationalisation of health care. Although some have argued that primary health care has simply been added as another appendage to the assortment of vertical programs directed at the population without attention to cultural values and existing traditional health care systems (Mosley 1983), an understanding of context is essential for the provision of MNRH care and services at community level.

Despite the critical importance of primary health care at community level in order to progress towards MDG5 this has not been achieved in all countries highlighting among many factors weak health systems which includes HRH issues.

An introduction to HR and MNRH at the community level

Progress towards improving MNRH

Indicators of progress

Over the last decade, the Millennium Development Goals have shaped the international development agenda. From the perspective of countries, donors, and advocates, the six targets under MGD 5 are therefore central to measuring success in MNRH. Assessment of HRH performance in MNRH, in turn, is also tied to these targets. Parts a and b of MDG5 are outlined in Figure 5 below.

Figure 5 Millennium Development Goal 5: Improve maternal health

Global targets for skilled attendance at birth are not specified within the Millennium Declaration but were established by the United Nations International Conference on Population and Development + 5 (ICPD+5) in 1999. This agreement set a goal of 40% of all births to be assisted by a skilled attendant by 2005, with 50% coverage by 2010 and 60% by 2015 among countries with very high maternal mortality. Globally, the goal is to have 80% of all births assisted by skilled attendants by 2005, 85% by 2010 and 90% by 2015 (United Nations Commission on Population and Development 1999).

Current country progress

Country progress towards MDG5 is monitored by the Countdown to 2015 Initiative. Ten of the twenty six low or low middle income countries in the SEARO and WPRO are off track for reducing maternal mortality by three quarters. The on and off track status of countries in the Asia Pacific region are listed below while a more detailed overview of country status for each of the MDG5 target areas can be found at appendix 1. Despite the achievement of some countries the pace of scaling up is slow and coverage gaps for key interventions remain wide (Countdown 2008 Equity Analysis Group 2008).

Table 4 MDG 5 Country status in the Asia Pacific Region

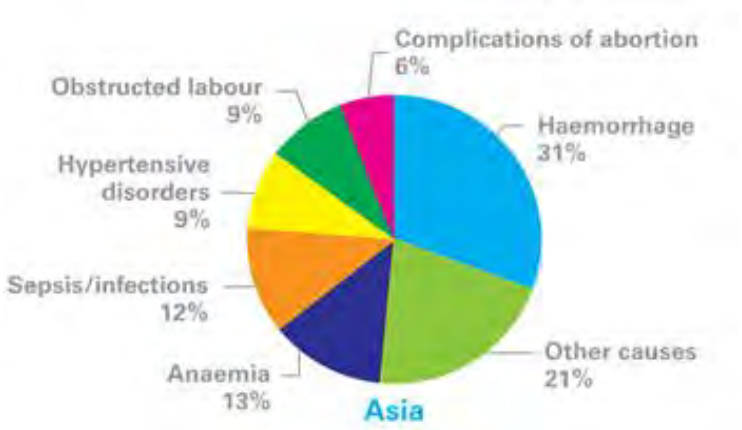
On track	Off track
China	Bangladesh
Fiji	Bhutan
Kiribati	Cambodia
Korea DPR	India
Maldives	Indonesia
Marshall Islands	Lao PDR
Micronesia, FS	Myanmar
Mongolia	Nepal
Philippines	PNG
Samoa	Timor-Leste
Solomon Islands	
Sri Lanka	
Thailand	
Tonga	
Vanuatu	
Vietnam	

(UNICEF 2008)

What are the key determinants of MNRH?

The most common proximal causes of maternal mortality are haemorrhage and hypertensive disorders, both of which are major contributors to MMR in developing countries. Haemorrhage was the leading cause of maternal death in Asia in 2006 (30·8%, 5·9–48·5; 11, 16 089) (Khan, Wojdyla et al. 2006).

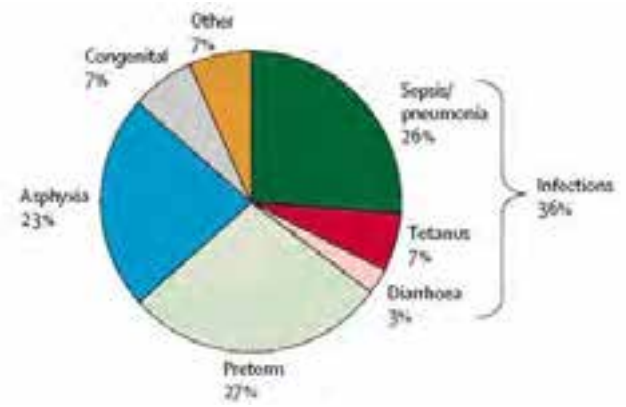
Figure 6 Causes of maternal mortality



(UNICEF 2007)

Neonatal deaths are largely attributed to infections, complications arising from pre-term delivery and asphyxia (see Figure 7). It is important to note that 50% of neonatal deaths are attributable to delivery and therefore amenable to maternal health interventions.

Figure 7 Causes of neonatal mortality



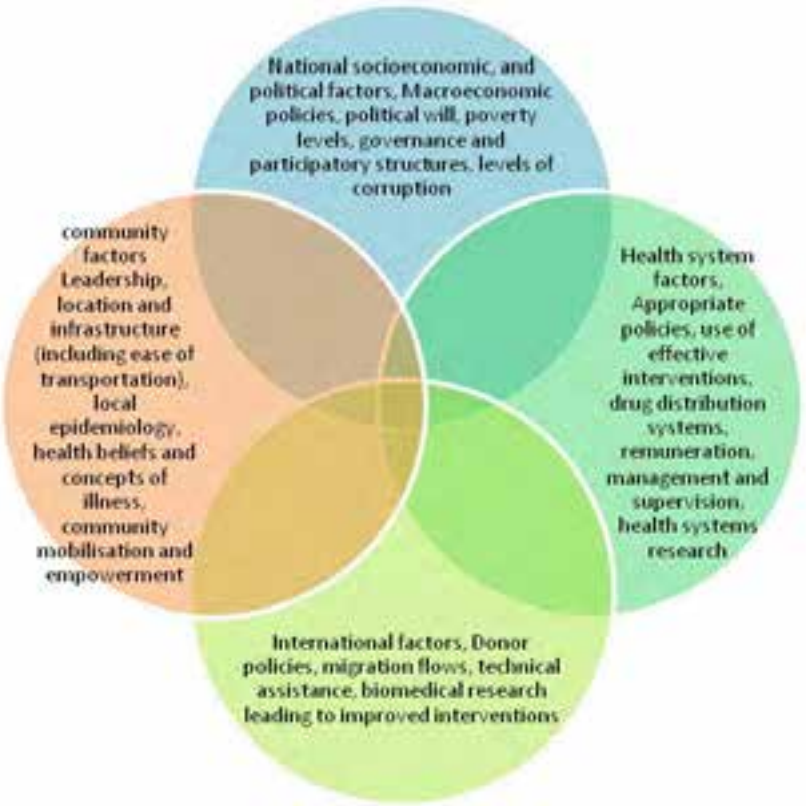
(UNICEF 2007)

However, the road to death is a long one, and socio-cultural factors play an important role. Examples of socio-cultural factors include early childbearing due to early marriage, lack of access to contraceptives leading to too early or late childbearing, too many and too closely-spaced births, and unwanted pregnancy; poor nutrition of girls and women, especially during pregnancy and after childbirth; and low utilisation of health services due to limited decision-making power, traditional beliefs about the causes of ill-health, and lack of knowledge about service availability. Other factors include the generally lower educational attainment and low social status of women as well as limited physical and financial access to health-care services. Certain vulnerable groups such as religious, ethnic and linguistic minorities, people affected by armed conflict and the very poor experience high maternal mortality and high unmet need for reproductive health services.

Factors influencing MNRH and HRH at the community level

The ability of health workers to facilitate progress towards MNRH at community level is affected by a complex interaction of factors, many of which are largely beyond their control and include lack of political commitment and governance, government and donor funding priorities, weak health systems, a lack of infrastructure at the community level, and socio-cultural factors that impact upon health seeking behaviour. These factors, outlined below in Figure 8, are interrelated and affect the impact and sustainability of community health programmes.

Figure 8 Examples of factors that influence the impact and sustainability of community health programmes



(Haines, Sanders et al. 2007)

In many communities, there is a underinvestment in basic obstetric care (AMDD Working Group on Indicators 2002; 2002; 2003; 2003; 2004) and a move towards hospital births (Stanton, Blanc et al. 2006). Although facility-based births will reduce maternal mortality for those who can access it, the need to access facilities that are outside the community can place additional stress and financial burden on women. In many locations access to facilities is not possible for socio-cultural, geographical and financial reasons. Many studies have already shown that use inequity results when care is not accessible to all women (Houweling, Ronsmans et al. 2007; Anwar, Sami et al. 2008), leading to the suggestion that in resource poor countries it may be more cost effective and equitable to prioritise basic obstetric care at community level and improve referral systems. This is also consistent with primary health care principles and the Commission on Macroeconomics and Health (2001) which advocated for increasing health funding to provide a package of basic ‗close to client' services alongside referral systems for emergency obstetric care. It estimated that, among other benefits, this basic package would reduce child mortality by two-thirds, maternal mortality by three-quarters.

A number of steps are purported to improve access to MNRH care and services. Physical accessibility and the availability of human and material resources are of major importance (see Figure 9)

Figure 9 Eight Steps to Effective Use of Health Services by the Poor

Adapted from Claeson and others 2003 in (Yazbeck 2009)

The achievement of these steps requires a supportive health system and policy environment driven by the MDGs (Freedman, Waldman et al. 2005). Shiffman (2007) has identified a number of factors required for governments to prioritise maternal mortality reduction: donor provision of financial and technical resources, cohesion among national Safe Motherhood policy communities, advocacy, and credible evidence and clear policy alternatives. In order to achieve these factors, policies relating to maternal, neonatal and reproductive health need to be strengthened alongside HRH policies and strategic plans.

Both WHO offices in the Western Pacific and in South East Asia have regional HRH strategies (WHO WPRO 2005; WHO/ SEARO 2006). The efforts required to develop the capacity of HRH in MNRH, particularly in nursing and midwifery at the primary health care level, feature in both of these plans. There are a number of SEARO resolutions that are very pertinent to this area:

- strengthen resource policies for health systems and development of appropriate HRH for PHC (SEA/RC30/R12-1977),
- training of voluntary health workers (SEA/RC29/R9-1976),
- community-based orientation in medical education (SEA/RC29/R9/1976) and SEA/RC42/R5-1989).

A recent SEARO meeting called for member states to ~~re~~visit their existing health workforce development plans in line with the strategic directions on strengthening the community-based health workers and community health volunteers through the ”revitalization of PHC approach” (WHO/SEARO 2009). WHO/SEARO has pledged technical support for this task

However there is a need to go beyond regional strategies and for countries to develop HRH policies adapted to their own contexts (Dussault and Dubois 2003). Many countries in the Asia and Pacific regions are moving towards this.

Overview of community level HR in MNRH

The Alma-Ata declaration (WHO 1978) outlines the importance of competent HRH working together at community level to achieve health outcomes. Primary health care…

> Relies, at local and referral levels, on health workers, including physicians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community

In an effort to quantify HRH numbers the WHO has suggested that a density of greater than 2.5 doctors, nurses and midwives per 1000 population is needed to implement essential health interventions to reach the MDGs (WHO 2006). However, human resources are most stretched at community level where medical practitioners are rarely found and midwives may also not be common. There are, however, a range of other health workers across a number of sectors in the formal and informal workforce who do operate at community level. This profile will vary depending on the resources, geography and socio-cultural context of the community.

Figure 10 below provides an overview of the diverse nature of those involved in providing MNRH care and services at community level. Health workers may be employed by the Ministry of Health, NGOs, the church, or be private practitioners. They may reside in the community and visit homes, or provide outreach services at a designated place. In a well resourced setting there may be a basic purpose-built clinic. A number of terms are used to describe those who work at community level including low-level cadres (Dovlo 2004), auxiliaries (Elliot 1975), lay health workers (Lewin 2005), paramedical personnel (World Health Organization 2001), professional and non professional workers (Bechtel 1980) or health professional and other community workers (WHO 2006).

Figure 10 Overview of HRH at community level

In this review, human resources at community level are broadly categorised into three main groups: community health workers, nursing and midwifery cadre, and traditional or cultural practitioners. The term ‗skilled birth attendant' is generally applied to workers in the nursing and midwifery cadre although in some circumstances community health workers may have received specialised training in midwifery qualifying them as SBAs. One example could be the plans that Papua New Guinea has for up-skilling CHWs (Government of Papua New Guinea 2009). In addition, workers in other sectors may be involved in the provision of MNRH care and services including school teachers and community development workers. This section will briefly describe the roles of these groups.

Community health workers

Designations and roles

The community health worker group is perhaps the largest and most difficult to define as it covers a range of workers with a number of designations, roles and training. Practitioners in this group are often referred to as basic or lay health workers (LHWs) however their role is far from simple and is sometimes unclear across countries and regions. This can be problematic (Doherty 2005), particularly if decisions are to be made concerning the large scale implementation of interventions by this cadre. Other terms such as community based health personnel (CBHP) is an ―umbrella term" used to describe practitioners who are often ―selected, trained and work within the communities from which they come" (Lehmann 2004). It is impossible to define CHWs or create a standard set of functions for them as CHW tasks are assigned according to the local conditions (WHO 1989). Table 5 provides some examples

of community health workers employed to provide MNRH care and services in a number of countries in the Asia and Pacific regions.

Table 5 Examples of Community health workers in MNRH the Asia Pacific region

Country	Designation	Role in MNRH	Reference
Bangladesh	Community health worker	Make ANC home visits to promote birth and newborn-care preparedness, and postnatal home visits to assess newborns and refer or treat sick neonate	(Baqui 2008)
Bangladesh	Family welfare assistant	Supply condoms and contraceptive pills during home visits. May act as SBAs if trained by MoH	(MoHFW Bangladesh 2009; Mridha 2009)
Bangladesh	Shasthya Sebika	Female volunteers who disseminate family planning messages, register pregnancy cases	(Ahmed 2008)
Cambodia	Expert patient or advocate	Peer health education	(Standing and Chowdhury 2008)
Nepal	Female Community health volunteer	Provide family planning, maternal care, child health, vitamin A supplementation/ de-worming and immunization coverage	(Sood 2003) (Shrestha 2003)
India	Mitanin	Female volunteers in villages trained to dispense drugs ie IPTp from specially designed kit	(Government of India 2004)
India	Sahiyyas	Women who facilitate integrated mother and child health care, encourages ANC, institutional delivery, and immunization. Provides family planning advice and first aid.	(Government of India 2004)
Burma	Mobile Obstetric Maternal Health Worker	Skilled birth attendants, community mobilisers	(Teela, Mullany et al. 2009)
Vanuatu	Peer health educator	Deliver reproductive health information	(Walker 1998)
Indonesia	Village family planning volunteers	Promote family planning, organise meetings, provide information, organise income-generation activities, give savings and credit assistance, collect and report data and deliver other family welfare services	(Utomo, Arsyad et al. 2006)
Indonesia	Peer health educator	Deliver reproductive health information	(Senderowitz 1998)
Indonesia	kaders	IMC-trained community health workers	(Bowen 2006) (Bailey 1996)
Marshall Islands	Health assistants	Health promotion	(Keni 2006)

The roles outlined in Table 5 indicate the broad range of tasks that CHWs undertake in MNRH which can be classified as curative, preventive and promotive functions. These include health education and promotion, advocacy, community mobilisation, dispensing reproductive health commodities and drugs, and basic clinical interventions and referral. CHWs may be employed to perform a mix of tasks or focus on one particular area. For example, CHWs may focus on supporting pregnant women and / or assisting during labour and in the postnatal period and / or may have a role in reproductive care as well. Some CHWs may assist during births, some without training and legislative mandate, and others with specialised midwifery training. Female CHWs may direct more attention to maternal and child health and family planning, while males take care of other functions (Ofosu-Amaah 1983). In addition, CHWs perform a mix of health service functions and development

functions, the latter involving mobilising the community to improve their social and economic as well as health status.

CHWs have also been described as a ―bridge between the community and the health service" (Kuhn 1990), and cultural brokers (Willis 1999) however their role goes beyond this. According to Bender and Pitkin CHWs are the cornerstone of PHC work (1987). CHWs often reside in the community and therefore have an intimate understanding of community needs, issues and the socio-cultural context. Community members have a degree of trust and confidence in them and therefore CHWs ―can become rallying points for the positive social transformation of communities"(Were 2008). However, they are also vulnerable and their recruitment and ability to function can be constrained or dictated by power relations or socio-cultural beliefs (Werner 1977; WHO/SEARO 2007).

Coverage

A conference in Beijing (AAAH 2007) and in Chiang Mai (WHO/SEARO 2007) indicated that CHWs are a ubiquitous cadre. However little data is available on the numbers and distribution of community health workers in the Asia Pacific region (AAAH 2008; WHO 2009). National data do not reveal coverage within countries. Density is purportedly low due to geographic constraints in some countries (PHFI 2008). Prasad (2007) states that there is diversity in coverage and asks what the optimal coverage might be bearing in mind the different care and services that CHWs provide. In Sri Lanka for example a CHW covers as little as 10 households offering a set of MCH related services (UNICEF, 2004). On the other hand, there are countries such as India, where a CHW is responsible for about 1000 households providing family planning advice.

Contribution of CHWs to improving MNRH

Systematic reviews of the evidence from randomized controlled trials on the effects of lay health worker (LHW) interventions in improving MCH in LMICs (Flottorp 2008; Lewin, Dick et al. 2009) found evidence of their contribution to child health. There was evidence of moderate to high quality of the effectiveness of LHWs in improving immunisation uptake in children and in reducing childhood morbidity and mortality from common illnesses, compared with usual care. This however is also the result of the successful implementation of largely vertical immunisation and IMCI programmes. LHWs are also effective in promoting exclusive breastfeeding up to six months of age.

Specific program evaluations such as the Lady Health workers program in Pakistan have also found positive benefits of CHWs. Lady Health workers substantially reduced infant, child and maternal mortality within a year. They also generated positive perceptions of family planning in the communities (Barzgar 1997) and increased the use of oral contraceptive pills condoms use among rural women (Douthwaite 2005). Other studies show that contraceptives including injectable Depo Provera (depot-medroxyprogesterone acetate (DMPA)) can be safely provided by CHWs (Ministry of Health Kenya 2007; Stanback, Mbonye et al. 2007). CHWs have also been shown to have an impact upon preventing neonatal deaths (Bari,

Mannan et al. 2006; Baqui 2008; Baqui, El-Arifeen et al. 2008) and recovery rates of mothers who had post natal depression (Rahman, Malik et al. 2008). In addition CHWs have been shown to effectively retain health records (Kuhn and Zwarenstein 1990) and show adherence to simple clinical practice guidelines (Haines, Sanders et al. 2007).

Peer health educators have also been found in some studies to contribute to increased health knowledge and to some extent improved attitudes and sexual behaviours (Maticka-Tyndale 2006). A study of adolescent girls peer health educators (PHE) in a factory in Thailand, for example, demonstrated improvements in knowledge and enabling skills (such as discussing contraception and the need to take responsibility for it). There efforts were more successful than those of their counterparts in either adult health educator-led sessions or in sessions using materials only. The peer-led group also exhibited the largest increase in perceived vulnerability to HIV infection, but the smallest degree of fear because they learned how to protect themselves (Weiss 1996; Cash 1997). There is a large literature in this area that describes various levels of success with respect to the effectiveness of PHEs.

Nursing and midwifery personnel

The nursing and midwifery cadres are central to community health. In Kiribati and PNG nurses are the only health workers in the rural and remote areas; in Samoa 99.5% of all health care is provided by nurses (WHO 2001; Duffield 2008). "Nursing and midwifery personnel is a collective term used for a wide variety of health workers" (WHO/SEARO 2003). Table 6 below outlines the range of titles, each of which represents a different role and training. For example, a nurse practitioner in Fiji must hold a 3 year diploma while a Certified Nurse Practitioner undertakes a 4 month training program.

Table 6 Examples of nursing and midwifery cadres in the Asia and Pacific regions

Country	Designation	Reference
Fiji	Nurse Practitioners	http://www.anmc.org.au/wpsear
Thailand	Certified Nurse Practitioner	
Vanuatu	General nurse	http://www.anmc.org.au/wpsear
	Auxiliary nurse	
Mongolia	Feldsher (community nurse)	http://www.anmc.org.au/wpsear
India	Village health nurse	(Government of India 2004)
Nepal	Auxiliary nurse midwife	(Piedade 2004)
Solomon Islands	Registered nurse midwife, Clinical nurse midwife	http://www.anmc.org.au/wpsear
Cambodia	Primary midwife, Secondary midwife	http://www.anmc.org.au/wpsear/

The term nurse is a broad one and "encompasses autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all

settings"(ICN 2009). They may be involved in the provision of MNRH care and services, but are not necessarily in attendance at births. Midwives are engaged in the provision of support, care and advice during the pre-pregnancy period, as well as during pregnancy, labour and the postpartum period. This includes attending births in normal and complicated situations and providing counselling, education and family planning services. A midwife is someone who has successfully completed a course in midwifery and who is legally licensed to practice (ICM 2005). Auxiliary or assistant midwives provide more ~~in~~direct patient care activities" (Hasson 2005). They are often the first formally trained midwife cadre that women see at community level and can provide a bridge between traditional and biomedical models of care (Warren 2007).

Midwifery practitioners are skilled birth attendants (SBAs), however, not all nurses have midwifery skills and are therefore not automatically classified as SBAs. The term SBA is defined as:

> an accredited health professional — such as a midwife, doctor or nurse — who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns (WHO ICM FIGO 2004)

Traditional birth attendants (TBAs) (described in more detail below), whether trained or not, are excluded from the category of skilled health workers (World Health Organization, 2004). Minimum and additional skills have been specified for SBAs which have improved understanding of training requirements and the broader context required for skilled attendants to function effectively (Safe Motherhood Inter-Agency Group 2000; WHO ICM FIGO 2004).

Contribution of SBAs to improving MNRH

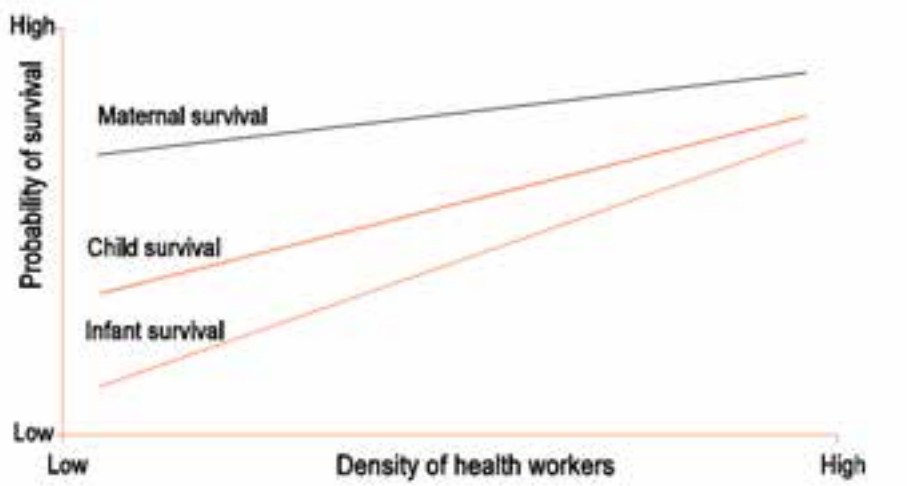
SBAs have been shown to be critical to improving maternal health outcomes. A systematic review conducted in developed countries found that, compared to other models of care, midwife-led care:

- Leads to fewer antenatal hospitalisations and instrumental vaginal deliveries
- Decreases the use of pain killers during labour
- Leads to more spontaneous vaginal births, and
- Probably has little or no effect on foetal and neonatal deaths, augmentation or induction of labour, Caesarean sections, and postpartum haemorrhage (Hatem 2008).

However this review was undertaken in HIC and availability and quality training needs to be taken in consideration when understanding this in the context of LMIC.For example where EmOC is not accessible for women who birth at home in a LMIC context, antenatal hospitalisations for high risk women may be a useful step.

In almost all countries where SBAs attend more than 80% of births, MMR is less than 200 per 100,000 (World Bank 1999). However about 61% of women still deliver their babies without a SBA. The importance of this correlation has led to the adoption of the proportion of births attended by a SBA as a MDG 5 indicator with the target defined at the ICPD+5(1999). Figure 11 below illustrates the probability of survival by density of workforce. The effects of this on maternal mortality is greater than in child survival even with low numbers of health workers due to the intervention of SBAs (Anand and Bärnighausen 2004-2005). Caution must be exercised in the correlation between maternal mortality and skilled attendance. Reductions in MMR have not occurred in Malawi for example where rates of institutional delivery have increased to 57% but MMR has risen almost three fold since 1990. This is partly due to HIV infection and improved reporting of death (Costello, Azad et al. 2006).

Figure 11 The relationship between density of health workers and child, maternal and infant survival



Source: WHO (2006). *The World Health Report 2006 – Working Together for Health*. Geneva, World Health Organization

The percentage of maternal mortality that a SBA can prevent has been calculated according to various causes as outlined in Table 7 below.

Table 7 What Skilled attendants can do to prevent and manage direct causes of maternal mortality

Causes of maternal mortality	What SBAs can do	What SBAs can do to manage	% mortality prevented by SBA
Post-partum hemorrhage	Active management of third stage	Oxytocics, uterine massage, manual removal of placenta, fluids & blood	30%
Eclampsia	Early identification & management of pre-eclampsia	Magnesium sulphate antihypertensive, delivery	20%
Obstructed labour	Use of partograph	Caesarean section,* symphysiotomy	70%
Puerperal sepsis	Use aseptic technique	Antibiotic therapy, removal of infected material	50%

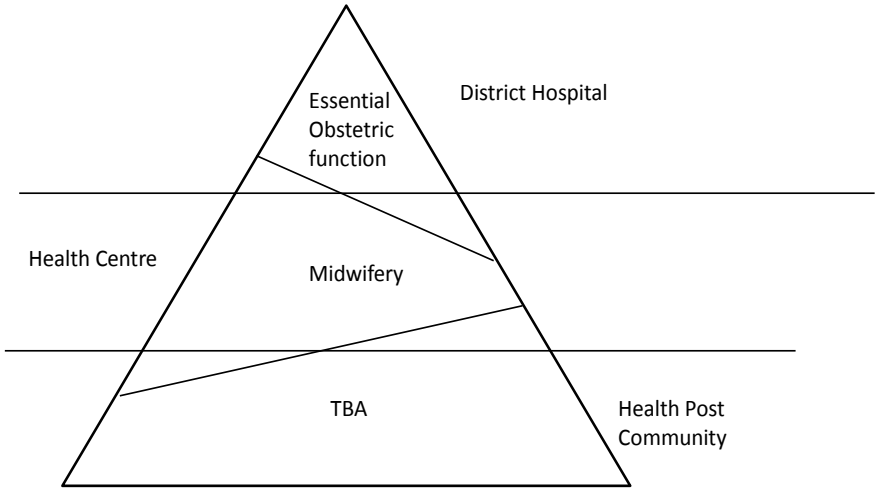
(Safe Motherhood Inter-Agency Group 2000)

*This intervention is not likely to occur at community level.

Two models of maternal care at the time of birth are potentially available in most communities (Koblinsky, Campbell et al. 1999). Deliveries may be conducted at home by a community member who has received brief training or deliveries may take place at home but are performed by a skilled professional. In very well resourced environments deliveries may also take place in a basic essential obstetric care facility overseen by a skilled professional.

The ideal relationship between the provision of essential obstetric functions and midwifery is presented in the schematic model below (WHO 1990). Midwifery is centred on the health centre with some services available at community and hospital level. However, in most low and middle income countries the ideal pyramidal representation in the figure below is more of an hour glass, with receding midwifery at the mid level, increasing prenatal, maternal, perinatal, and family planning services at the community and decreasing emergency obstetric function (Kwast 1995).

Figure 12 Rel



(WHO 1990)

Traditional Birth Attendants (TBAs)

The practice of TBAs is based on the socio-cultural and religious context of the communities in which they work. Their practice is imbued in the prevalent beliefs concerning health, illness, disability and its aetiology. Traditional or cultural practitioners are independent of the health system and considered alternative or complementary to Western medicine. TBAs are not formally employed but receive direct payment from their clients in the community. This may include money as well as various goods and services. In addition TBAs are not-formally trained but they may undertake short training courses from NGOs or other agencies including the Ministry of Health. The proportion of births that TBAs attend varies and it has been estimated that they assist in approximately 24% of births in resource poor settings (Lewin 2008).

TBAs have been described as ―a person who assists the mother during childbirth and who initially acquired her skills by delivering babies herself or by working with other TBAs" (Leedam 1985). They tend to be older women and their status may vary depending on the community. TBAs may be the only worker that women in poor villages may access or they may prefer to see TBAs in line with social and cultural expectations. Different countries may have particular names for TBAs as shown in Table 8.

Table 8 Designations of traditional birth attendants in the Asia Pacific Region

Country	Designation	Reference
Pakistan	Dais	(Bhutta, Memon et al. 2008)
Bangladesh	Dais	(Rozario 1995)
Fiji	yalewa vuku	(Morse 1981)
Philippines	Hilots	(Mangay-Angara 1981)
Malaysia	Biden Kampung	(Chen 1976)
Indonesia	Dunkun Bayi	(Chen 1976)
Thailand	Mohtamyae	(Chen 1976)

Traditional healers may also be involved in MNRH such as herbalists, homeopathic practitioners or unregistered village doctors or unique groups such as in Bangladesh namely Kabiraj, totka and faith healers like pir or fakirs (WHO 2009) or Kru Khmer in Cambodia (PATH 2002). There are conflicting views regarding the effectiveness of the traditional healer (Harper 2004; Barker 2006). Although training programmes and networking have reportedly improved practice (Courtright 1996; Somse 1998; Poudyal 2005), this has not been demonstrated in the area of MNRH.

Contribution of TBAs to improving MNRH

A systematic review of the literature on the impact of TBA training on health behaviours and pregnancy outcomes (Sibley 2007) did not find any strong evidence that the practice of trained TBAs had an impact on maternal mortality. There is mixed evidence concerning the effectiveness of trained TBAs to manage haemorrhage, puerperal sepsis, and obstructed labour as well as their impact upon the referral of mothers with complications of pregnancy and childbirth. It is also unclear what impact TBAs have on appropriate infant feeding. However there is some indication that TBAs may reduce perinatal and neonatal deaths and stillbirths (Sibley 2007).

TBAs may also be able to play a role in the improving maternal health through the provision of contraception and antenatal care however there is currently little evidence that supports this. A programme in Uganda found that TBAs and traditional healers were able to successfully distribute condoms and oral contraceptive pills (OCPs) (Kalemba 1996). Training TBAs in sexual and reproductive health promotion in India led to increases in numbers of women referred to services (Reedzu 1996). TBAs may also assist in the provision of care to vulnerable groups such as pregnant women with HIV in terms of pre natal checks and advice concerning nutrition (Peltzer 2006).

There is currently a great deal of debate concerning the investment of limited resources in supporting TBAs. Bergström calls for a low prioritisation of TBA training and to ~~"~~make the best use of TBAs while simultaneously planning for replacement with skilled attendants" (2001). However the importance of TBAs in the provision of socio-cultural support to women is well documented in the Pacific (Townsend 1986; Lukere 2002) and South East Asia (Hamid 1983; Rozario 1995; White 1996).

Peripheral or informal health care workers

Workers outside the health care sector who are engaged in the provision of commodities, information, education, support and care in the context of MNRH can also be considered health care workers in an informal sense. Omaswa argues for expanding the professional category of formal health care workers to include home-based informal caregivers, political

community leaders, shop vendors of health products, and traditional health practitioners (2006). Other informal workers are doulas, assistants who provide various forms of non-medical and non-midwifery support (physical and emotional) in the childbirth process. School teachers also play a role in the provision of sexual and reproduction education. Mother have been referred to as health care workers (Chaudhuri 1991) highlighting the need to improve their knowledge and skills as well as those of fathers and their peer group.

Clinical guidelines for skilled birth attendance and pregnancy produced by Family and Community Health (2002) outline appropriate roles and functions for the SBA as well as the woman, family member, TBA and volunteer (see Appendix 2). In addition, community people have been included in human resource development plans in HIV MCH programmes (McLean 2005) highlighting the importance of resources within the community itself.

Summary

Knowledge of all aspects of the workforce engaged in MNRH at the community level is critical as it is often the first point of contact women and their families have with the health system. Ensuring the effective delivery of community care and emergency referral to facilities requires decision making which is informed by assessments of staff numbers, their performance and the environment in which they work. Improving the performance of staff at community level is needed alongside the strengthening of other aspects of the health system in order to achieve MDG5.

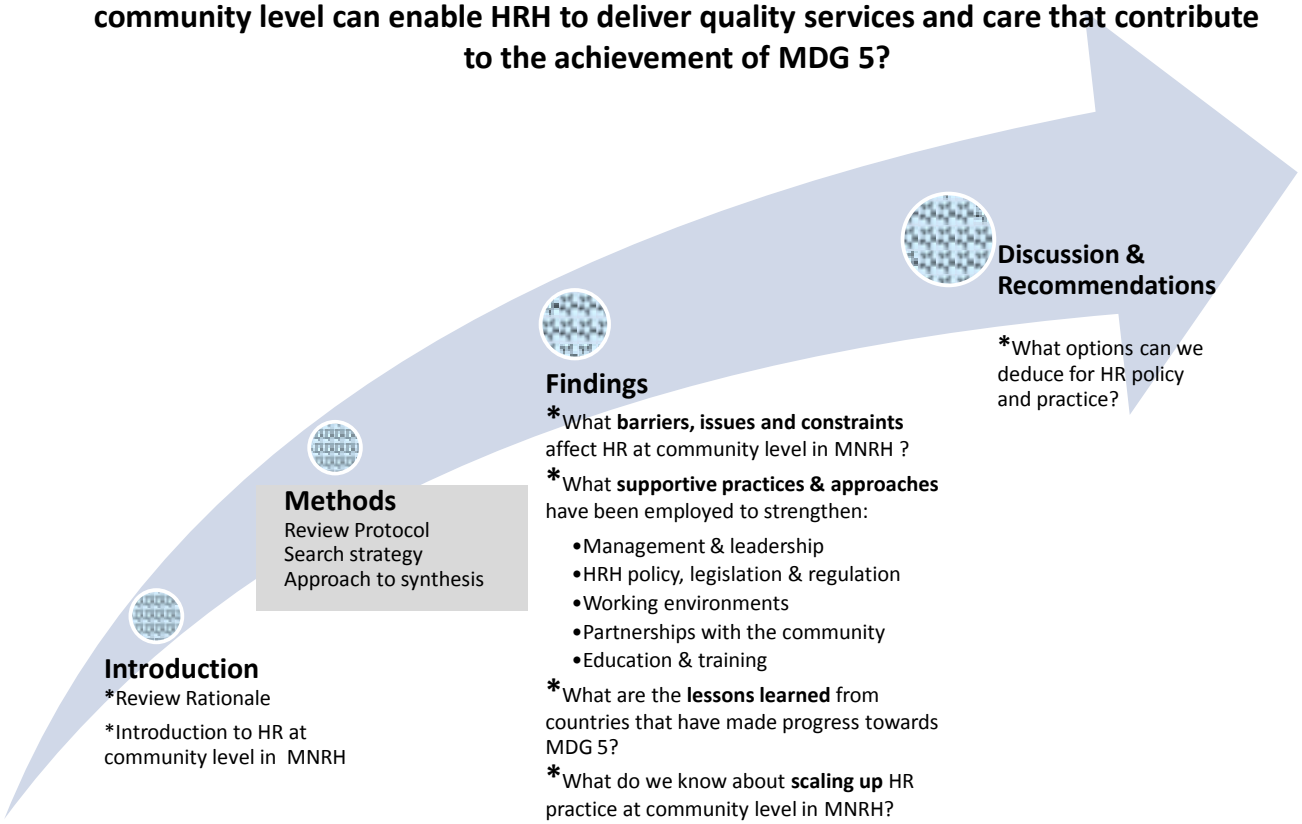
This section has established the following

- Cadres in MNRH at community level can be grouped by the categories of nursing and midwifery, community health workers, traditional and cultural practitioners and lay or peripheral workers.
- There is some evidence that demonstrates the important contribution that these cadres have made to MNRH. However there are a number of gaps.
- Little is known about: how these practitioners are managed and trained, what interventions enhance their performance, at what levels and areas these interventions should be targeted, the support and resources required to implement them and how they can be scaled up.
- There is a need for rigorous documentation of HRH practice in MNRH at community level so success stories can be shared and transferred.

Addressing knowledge gaps will contribute to enhanced planning for HR in MNRH at community level and help to justify the need for change and additional resources.

Methodology

What human resource practices in maternal, newborn and reproductive health at community level can enable HRH to deliver quality services and care that contribute to the achievement of MDG 5?



Introduction

*Review Rationale

*Introduction to HR at community level in MNRH

Methods

Review Protocol
Search strategy
Approach to synthesis

Findings

*What **barriers, issues and constraints** affect HR at community level in MNRH ?

*What **supportive practices & approaches** have been employed to strengthen:

- Management & leadership
- HRH policy, legislation & regulation
- Working environments
- Partnerships with the community
- Education & training

*What are the **lessons learned** from countries that have made progress towards MDG 5?

*What do we know about **scaling up** HR practice at community level in MNRH?

*What indictors & tools can be used to **assess effective HR performance** at community level in MNRH?

Discussion & Recommendations

*What options can we deduce for HR policy and practice?

The review protocol

Specific resources such as databases and meta-indexes were searched in order to obtain materials. Documents were identified using specific keywords and combinations of these. The usefulness of these documents was then assessed according to criteria which were based upon relevance to the review questions.

Search strategy

The Cochrane handbook for the systematic review of interventions (Higgins 2008) was consulted for guidance on searching for studies. The handbook recommends that the search process be clearly documented. In line with this, the full strategy for each search and the total number of hits retrieved by each search strategy was recorded. A table outlining where all material was retrieved is available at Appendix 3 and a summary is given at Table 9 below. This approach enables others to replicate the search with similar results.

The search strategy adopted six approaches.

1. Subject specific and specialized databases were identified and searched.
2. Relevant non-indexed and indexed journals were identified. Those not included in the database searches above were then hand searched to ensure comprehensiveness.
3. The search for fugitive literature also makes use of directories such as electronic gateways to indicate organizations undertaking topic-specific research and development. The websites of a number of key organisations were searched for relevant documentation.
4. Materials were also gained through hand searches and snowballing from the references of key documents.

Table 9 Search terms used for the selection of documentation for this review

	Criteria: Relevance / trustworthiness
Focus: and/or	human resources for health, manpower, community health worker primary health care worker, skilled birth attendant, traditional birth attendant, midwife/ery maternal, neonatal, reproductive, family planning
Setting	Low or middle income country focus (as per World Bank definition)
or	Asia Pacific
or	~~–D~~eveloping countries"
or	Papua New Guinea, Solomon Islands, Vanuatu, Fiji, Timor-Leste, Indonesia, Philippines, Cambodia, Laos, Bangladesh
Authorship:	Official government document
or	Commissioned report Unilateral and bilateral reports
or	Presentation by published ~~–e~~xpert" at international meeting / conference
or	Peer reviewed review
or	Peer reviewed qualitative or quantitative research study
Date of publication	1979-2009

Inclusion and exclusion criteria

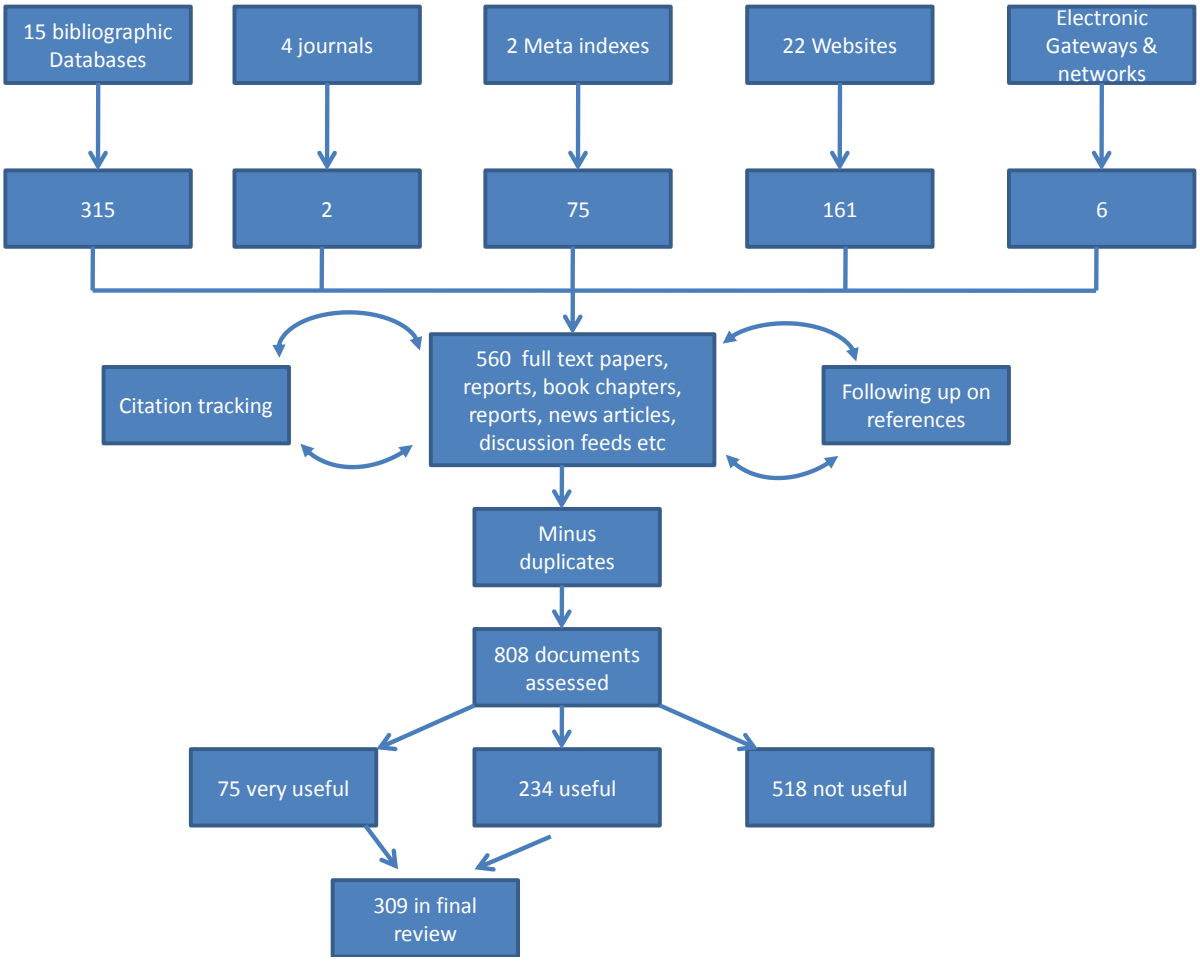
A preliminary scoping exercise revealed that the majority of material in the area of HRH in MNRH at community level is grey or un published material. As a result a criteria based upon methodological appraisal is inappropriate and is likely to exclude a large number of relevant texts. A criteria was developed based upon the review questions as outlined below and all items were classified accordingly (see Table 10).

1. Very useful: Highly relevant to the study area and addresses all criteria
2. Useful: Relates to three of the 4 areas outlined in the criteria
3. Somewhat useful: Directly related to 2 of the 4 areas
4. General background: One or none of the criteria apply

All items classified in 1,2 & 3 must have an HRH element. All documents those that scored a 1 or 2 were included in the review. A summary of the sources, document numbers and process in this review is provided in Figure 13.

Table 10 Method of classification of documentation

Rating	**Criteria** In the field of Maternal Neonatal Reproductive Health	Focus on Human Resources for Health at community level	In Resource poor setting/ developing country	Addresses review questions	
1 Very useful:	✓	✓	✓	✓	All 4
2 Useful	✓	✓ or	✓	✓	3 of 4
3 Somewhat useful	✓	✓ or		✓	2 of 4
4 General background	✓or	✓			1 of 4



Approach taken to the synthesis of data in this review

The analysis was undertaken according to the framework for the conduct of narrative synthesis described in (Popay 2006) which is also known as a textual narrative approach. The literature was first classified according to the review questions it best answered. Analysis then involved identifying patterns in the findings through tabulation and textual description. The characteristics of the documentation are described along with their context, quality, and

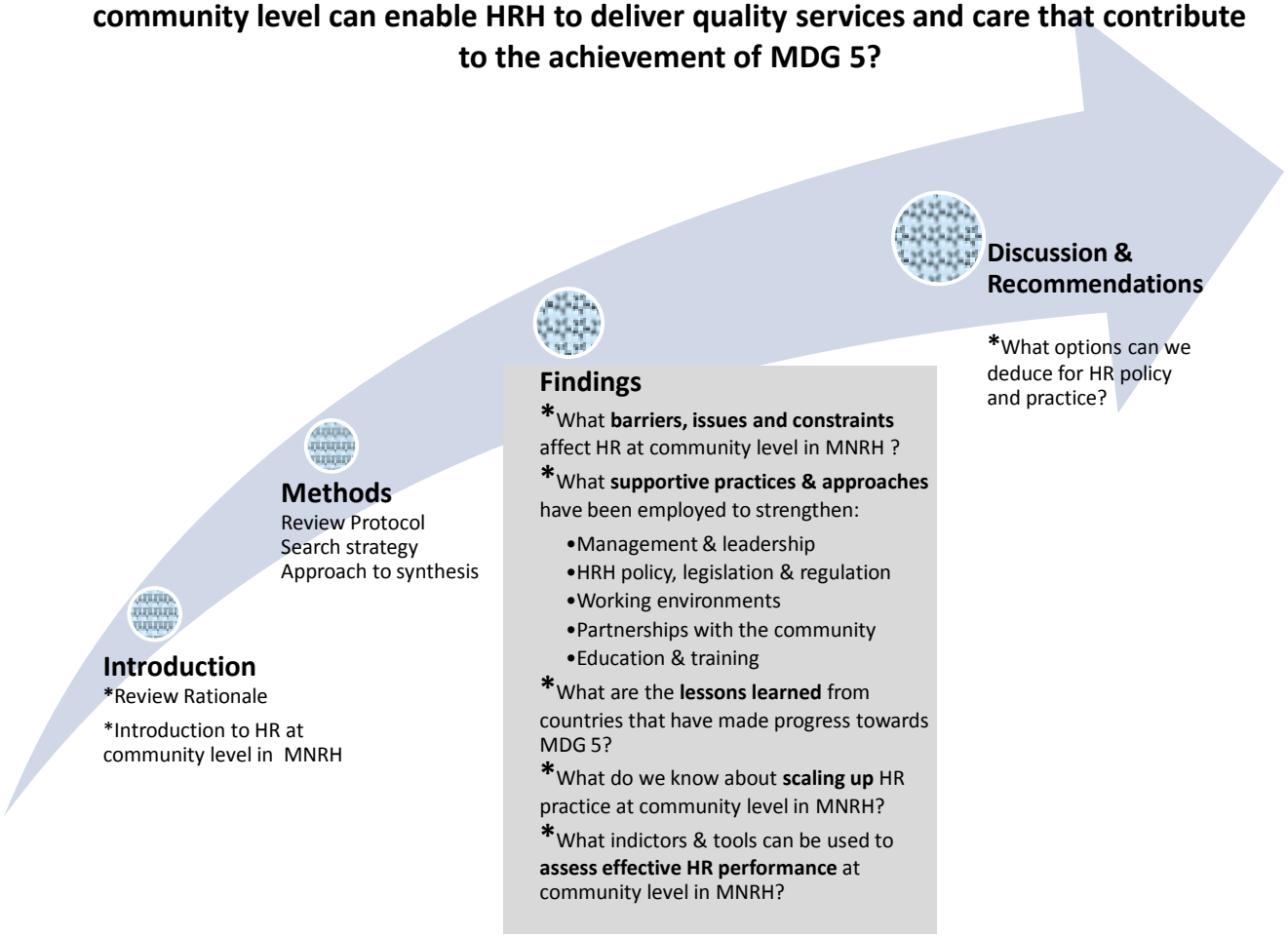
findings. Differences and similarities among studies and reports are used to draw conclusions across the literature.

The strength of this approach lies in its ability to expose the heterogeneity of the literature in terms of the range of documentation that reports on HR interventions in MNRH in LMIC community contexts and the array of methods of investigation, reporting and findings. The approach allows knowledge gaps to be exposed and patterns revealed across a range of literature. Limitations of this approach however lie in the lack of in depth analysis that is achievable due to the volume and spread of documentation. Further synthesis is therefore required which is beyond the scope of this review. In addition not all decisions concerning the choice of studies selected for synthesis is explicit due to the subjective nature of the method that relied on judgements although informed ones.

A critical realist perspective is adopted for this review which acknowledges that there are multiple descriptions and explanations of phenomena that are the result of the interaction of complex factors involving structures and ideologies. The knowledge that is analysed in this review is regarded as co-determined by a myriad of causal factors which lead to variations in experiences that are constantly emerging and changing (Collier 1994). The objective of the literature review therefore is to obtain an understanding of the causal conditions, powers and interactions relevant to HRH at community level so that adequate judgements can be made about possible scenarios that may unfold.

Findings

What human resource practices in maternal, newborn and reproductive health at community level can enable HRH to deliver quality services and care that contribute to the achievement of MDG 5?

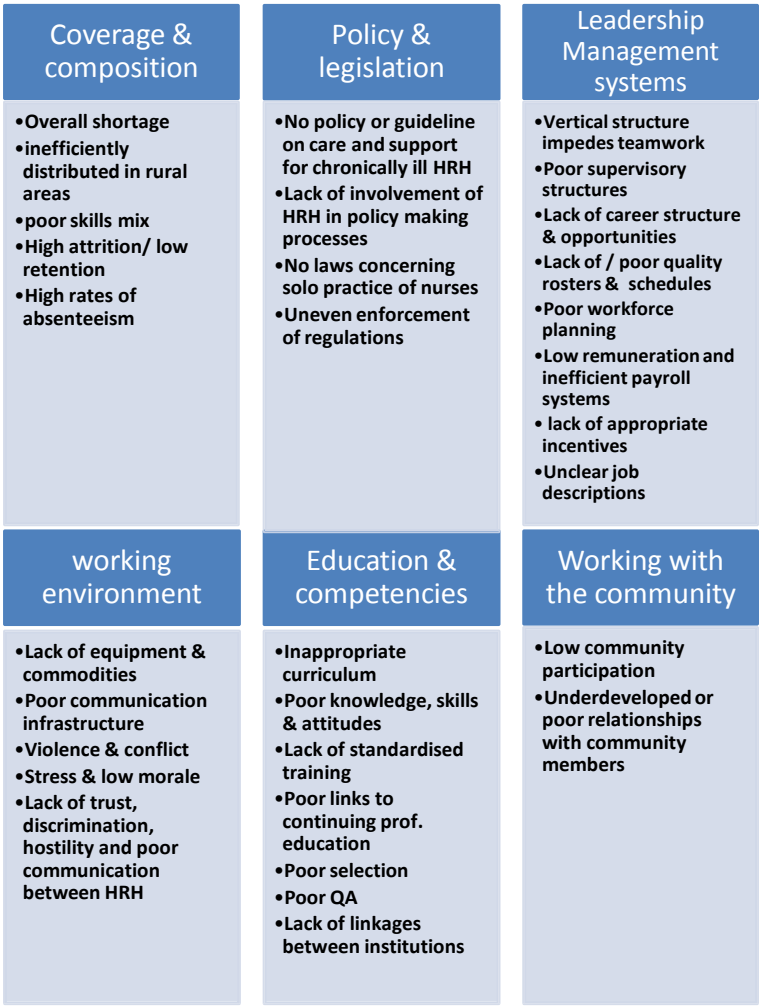


Barriers and constraints to HRH practice in MNRH at community level

The literature collected for this review outlines a variety of barriers and constraints to HRH performance at community level. Constraints limit practice, they may not prevent health workers from delivering care and services but they will restrict the type of services offered, their quality and frequency. For example in Pakistan female health workers often experience disrespect from a male dominated management and require male relatives to escort them in their work around the village. Female health work may therefore be constrained by the their low empowerment and the availability of a male relative to act as a chaperone (Mumtaz, Salway et al. 2003). Barriers prevent health workers from carrying out their work however they can be addressed through interventions within the current 3-5 year planning cycle. A number of constraints may act as a barrier to prevent women becoming health workers. In Pakistan recommendations such as the need to instigate clear career paths for women and establish female identified management positions may be implemented to help ameliorate this barrier.

HRH barriers and constraints can be broadly arranged into six categories as listed the boxes in figure 14 below.

Figure 14 Barriers issues and constraints to HRH practice in MNRH at community level



It is important to note that these barriers and constraints do not operate in isolation, and often a combination of factors may affect the delivery of MNRH care and services. For example, nursing shortages and a lack of drugs and commodities have resulted in the closure of many of PNG's 2000 rural Aid Posts (Duffield 2008). Appendix 4 provides a list of the barriers and constraints alongside references to documents with useful examples. These are discussed by category below followed by examples illustrating how these factors interact to affect health care

Poor coverage and composition

There is a chronic shortage of all cadres of staff in MNRH at community level. This is the result of poor workforce planning where too few skilled graduates are trained and deployed as well as high attrition. Poor pay, working conditions and motivation often leads to migration away from rural and underserved communities to urban centres, to other countries, to other careers or to better paid positions in well funded programmes or jobs in NGOs or UN organisations. This affects both the numbers of staff available in the labour force and their distribution across a geographic area or sector.

Figure 15 outlines the shortages of doctors, nurses and midwives, by WHO region indicating the numbers of countries in the SEARO and WPRO regions with shortages and the 50% and 119% increase required in the respective regions. Numbers of CHWs are not available.

Figure 15 Estimated critical shortages of doctors, nurses and midwives, by WHO region

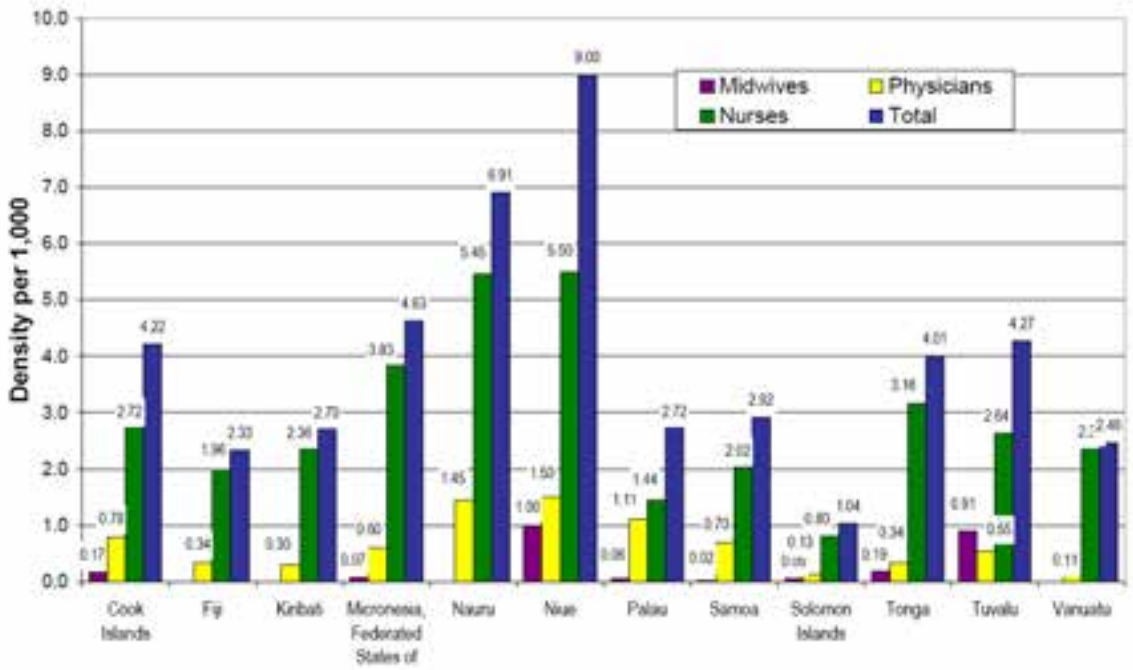
WHO region	Number of countries		In countries with shortages		
	Total	With shortages	Total workforce	Estimated shortage	Percentage increase required
Africa	46	36	590 198	817 992	139
South-East Asia	11	6	2 332 054	1 164 001	50
Western Pacific	27	3	27 260	32 560	119
Americas	35	5	93 603	37 886	40
Europe	52	0	NA	NA	NA
East Mediterranean	21	7	312 613	306 031	98
World	192	57	3 355 728	2 358 470	70

(WHO 2006)

A ratio of 2.28 doctors, nurse and midwives has been suggested as the optimum number per 1000 people to facilitate the delivery of essential interventions to address the MDGs (Speybroeck 2006). This proportion has not been applied to other cadres such as CHWs or

PHEs. In the Pacific the density of midwives to population is low as illustrated in the table below with all countries having densities below 1 per 1000 population. The density of nurses appears to be somewhat higher with countries such as the Fiji, Solomon Islands, Palau, Vanuatu just on or below the 2.3 density mark.

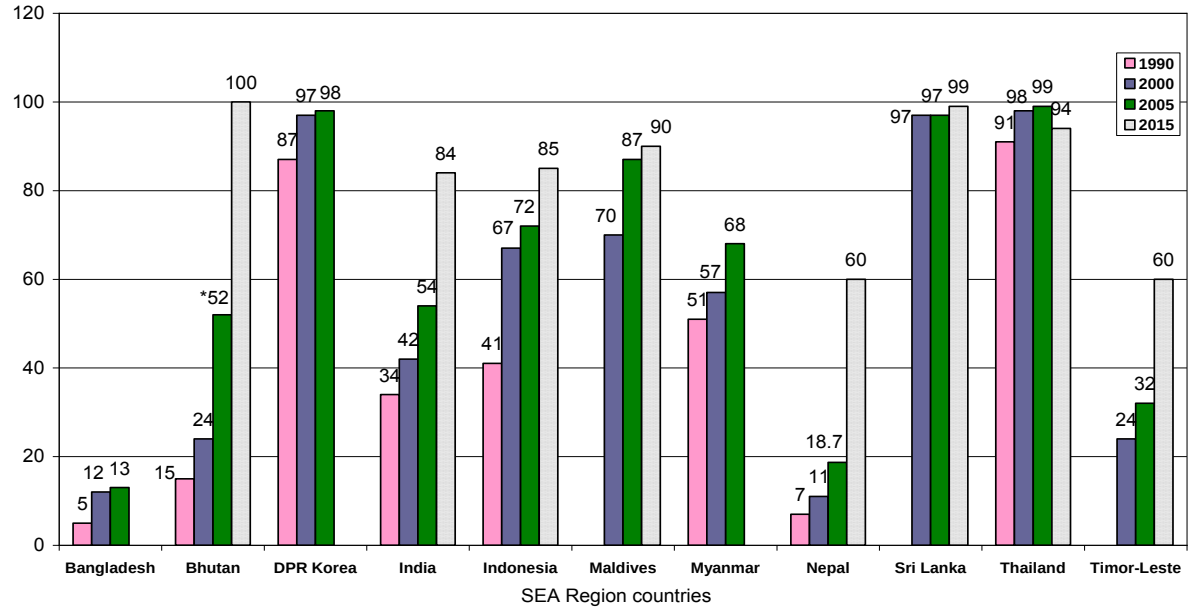
Figure 16 Density of health workers (doctors, nurses and midwives) in the Pacific



(Halcomb 2007)

The International Confederation of Midwives (ICM) and the International Federation of Gynecology and Obstetrics (FIGO) have proposed a target of one person with midwifery skills for every 5,000 people, assuming that the attendant is only providing obstetric care. In a developing country setting, this would translate into one skilled attendant assisting at 200 births every year (FCI 2002). Progress towards the skilled birth attendance indicator of 80% at 2005 globally and 40% in countries with high MMR under MGD 5 (UNCPD 1999) shows varying results across countries. Figure 17 outlines the trends of proportion of births attended by skilled attendant from 1990 to 2005 by country in the SEARO region. Most of the countries are making progress, although some need more accelerated progress. Bangladesh and Nepal had the proportion of less than 20% SBA in 2005, while Timor-Leste had 32%, Bhutan 52% and India 54%. For countries with a very low proportion of deliveries assisted by skilled attendants usually the major problem is lack of SBAs at the community level. Often, the existing health-care providers for MNH at community level do not have the required skills, essential equipment/support and back-up referral services (Suchaxaya 2009).

Figure 17 Trends in proportion of births attended by SBAs 1990-2005 and projection for 2015 in SEARO countries



Annual Health Report 2007 SEARO

The relationship between HRH coverage, service delivery and health outcomes can be illustrated in Bangladesh where the attrition of Family welfare workers (FWW) and Family welfare assistants (FWA) has been accompanied by a reduction in the contraceptive prevalence rate for modern methods and household-visits by FWVs or FWAs (Mridha 2009). There is a shortage of SBAs in Bangladesh and despite a new initiative designed to bolster numbers by training FWAs as community skilled birth attendants (CSBAs) the gap will not be filled by 2015 given the slow production of CSBAs and relatively-low usage by women for delivery (Mridha 2009). In 2006, it was calculated that, if Bangladesh continues to develop CSBAs at the current rate and deploy them in the community, the CSBAs will be able to cover only 5% of all births in 2015 (Koblinsky, Matthews et al. 2006; Mridha 2009). Despite there being shortages in some countries others identify surplus health workers that form part of the export market as in the cases of Philippines or the result of weak workforce planning. In Indonesia for example there are differences in availability and need with the projection of HRH between 1982-2010 indicating a surplus of 15,00 nurses per year (Suwandono 2005).

There are also differences in distribution of health workers with particular skills at community level. This affects the skills mix of the health team and the care and services that they are able to provide. Such differences in distribution of staff may reflect differences in health needs or inequitable access to MNRH. Wide ranges in the proportion of staff to population have been reported. For examples the home visits by CHWs with health facility support in the Asia Near East Region to population ratio was reported in a study of post

partum services as being from 1:60 to 1:5000 (ESD Project 2008). Another study in northern Tanzania of staff with emergency obstetric skills found that the most qualified staff are concentrated in a small number of centralized locations, while those remaining are inequitably and inefficiently distributed in rural areas and in lower-level services. Voluntary agency facilities in rural districts were found to have more staff than the government facilities. A statistical correlation was identified between availability of qualified human resources and use of services, but the availability of qualified human resources did not translate into higher availability of qualified emergency obstetric care services. The authors call for increasing access to high-quality health care through increasing the numbers of qualified staff instead of distributing low-quality services widely.

Weak policy, legislation and regulation

According to the WHO there is an evidence–policy gap in HRH. Policymakers are not fully using existing evidence on the effectiveness of nursing and midwifery services to target individual and community interventions (WHO 2001). As a result many HRH policies are not evidence informed or inclusive of the community level. However other authors have indicated that HRH policy development is also limited by a lack of HRH data and evidence of what works (Pick 2008). Clearly there is a need for an increase in the high quality evidence that must be made available to decision makers for policy development.

Gender has been highlighted as an area of neglect in HRH policy (Standing 2000) as well as the lack of coordination between policies. For example the introduction of new drug policy in Kenya was not aligned with HRH capacity building. A study of health workers in communities in rural Kenya revealed confusion about appropriate timing, and lack of direct observation of IPTp highlighting the need for training (Ouma, Van Eijk et al. 2007). WHO has identified the lack of involvement of CHWs nurses and Midwives in policy and planning (WHO 1989; WHO/SEARO 2003). Involving staff in policy development helps ensure buy in and ownership of policy which facilitates the implementation and evaluation of policies.

The lack of legally binding conditions for health professionals affects the ability of professional associations and the government to regulate practice and apply quality control at community level. In Indonesia regulation has been affected by health reform. The ability of Indonesia Ministry of Health‘s to regulate midwifery training and practice has declined since decentralization in 2001(Harvey, Blandon et al. 2007). This is due to the rise of private solo nurse practitioners who practice illegally at community level (Heywood and Harahap 2009). Delays in legislation process can also affect the progress of continuing health education. Despite the establishment of a code of ethics by the Medical Council of India stating that members should complete 30 hours of continuing medical education every five years in order to re-register as doctors, only 20% of India's doctors follow comply as it is not legally binding (Majumder 2004). New laws can have a detrimental effect on service delivery.

Outlawing TBA practice for example in rural Costa Rica may have improved maternal mortality but it also affected links with the community and led to loss of cultural support approaches (Jenkins 2003).

One of the barriers to the successful shifting of tasks to lower cadres such as moving the responsibility of injecting contraceptive to CHWs has been a lack of both a regulatory framework and proper financial mechanisms to sustain it. A regulatory framework is essential to ensure government support, protection of patients and health workers and sustainability as well as resource flow. According to a WHO consultation the existing barriers to task shifting must be identified and minimised (WHO 2007).

Challenging working environments

The delivery of quality care and services depends upon the support of partnerships between members in a PHC team, or across the health care sector with state and non state providers, cultural or traditional providers or at various levels linking the community to facilities. A review of CHWs identified few studies that have brought out the importance of building healthy ~~–in~~ter-relationships" and ~~–tr~~ust" among health professionals in building an effective feedback and referral systems in place (Prasad 2007). There are however a number of studies that have highlighted various problems in teams and partnerships.

Poor PHC team work has been found to be affected by low levels of HR trust in CHWs which has led to poor intersectoral collaboration (Sauerborn 1989; Cruse 1997). Midwife and nurse cadres attitudes towards CHWs and TBAs has been documented as disrespectful (Iyun 1989; Replogle 2007) and paternalistic (Walt, Perera et al. 1989) which contributes to poor communication and the perceived low status of these cadres (Walt 1990; FIGO 2009). Low levels of traditional and biomedical collaboration have been documented particularly between midwifes and TBAs (Kaboru 2006). In Indonesia this is affected by competition between midwifes and TBAs (Utomo 2008).

The socio-cultural context of the community can pose a number of challenges to health workers. Authors have outlined a number of gender-based barriers to primary health care provision in Pakistan which includes harassment of female workers and the imposition of conditions on their practices such as the need to be accompanied by a male relative (Mumtaz, Salway et al. 2003). Health workers at community level may also face challanges delivering services that deal with sensitive issues that may not normally be discussed or are not acceptable. For example a survey of the status of community-based postpartum care and postpartum family planning services implemented by MotherNewBorNet member organizations in the Asia Near East region found that health care workers in some contexts are afraid to discuss family planning with some clients because of fear that they will tell their

husbands who oppose family planning use (ESD Project 2008). The geo-political environment may also pose difficulties to health workers including conflict and long or hazardous distances that must be traversed with poor transport. The functionality of the health system determines health worker access to drugs and equipment that are frequently not available at community level (Sauerborn, Nougtara et al. 1989; Tsu and Free 2002).

There is a lack of workplace policies and guidelines that consider the health and welfare of staff or endeavour to provide family friendly work places. Despite HIV/AIDS being a major health issue in Zambia there are no guideline on care and support for nurses and midwives with HIV/AIDS. There are no light duties for chronically ill nurses and midwives, care or support facilities in HIV/AIDS that currently incorporates nurses (Chikampa 2003). According to WHO more than 70% of workers are not covered by occupational health provisions (WHO/SEARO 2008).

Difficult working environments impact upon health worker retention. In PNG for example the most common reason for village midwives ceasing work is family pressure or lack of support (Bettiol 2004). A lack of workplace support includes poor supervision and high workloads which are often the result of low numbers of qualified staff and high case loads. In addition there may be added pressure resulting from the integration of MNRH with HIV and IMCI and various other programs. Research in this area is scant and requires attention.

Weak HRH leadership and management systems

Without efficient management of the workforce quality services and care at community level is compromised which affects equity and access to MNRH. Human resources for health management (HRM) is often implemented in a ~~"~~less than optimum" way (Dussault & Dubois, 2003), because of a lack of knowledge and skills in HRM among health care managers and the use of a traditional personnel management approach to HRM. Current human resources management need to be improved and a reorientation towards a comprehensive approach to addressing staff supply, performance management and personnel relations. Tools and skills are also needed to implement human resources management activities.(Dieleman 2006). Some examples of key barriers and constraints in HRM are outlined below.

Comprehensive performance improvement processes that include performance management of staff have been cited as a major constraint to improving health (IntraHealth International 2008). A study that included nurses working at community level in Malawi found that the weak performance management resulted in: inadequate continuous education and career progression strategies, a lack of performance appraisal and the provision of job descriptions as well as inadequate supervision and little feedback on performance. Health workers reported that this had a major impact upon their motivation levels however managers were

unaware of these deficiencies in the system (Manafa, McAuliffe et al. 2009). A lack of clearly defined roles and responsibilities has been identified by a number of studies (Campos 2004; Creati, Saleh et al. 2007; ESD Project 2008). This has led to confusion in the community with low levels of knowledge reported regarding the scope of practice of various health workers in Bangladesh (Pathfinder International 2005).

Workforce planning is an essential part of HRM but plans are often poorly conceived and implemented. In 2001, the Bangladesh MoH initiated a programme to train the Government's community workers (Family Welfare Assistants and Female Health Assistants) to provide skilled birthing care in the home. However, these plans have been too meagre, and their implementation is too weak to fulfil expectations in terms of increasing the use of skilled birth attendants, especially for poor rural women.(Mridha 2009). HRH planning is not always undertaken in an integrated manner. Mridha (2009) describes the problems with the lack of attention to HRH in the roll out of the Health, Nutrition and Population Sector Program (HNPSP) in Bangladesh. In the first phase of the HNPSP (2003-2006), the Family Planning and Health Services wings were separated after previously being integrated, and the community clinics were closed. Their separation prevented integration and left grassroots-level workers of both the wings in a state of confusion about their roles and responsibilities. (Mridha 2009). Other examples of HR planning disconnect at community level can be illustrated from experience in Indonesia. A large World Bank study found that community health or *Puskesmas* facility improvements and even construction of new facilities are not linked to central staff planning and supervision and the provision of supplies. The report questions whether there is really a need for more facilities, or whether the needs relate to improving efficiency since a large number of *Puskesmas* are underutilized (World Bank 2008b) in (Rokx 2009).

Marquez and Keene (2002) outline the typical barriers to effective supervision including community level workers in developing-country health systems. They report that health workers are often supervised by staff at facilities who do not always visit the community. This may be the result of poor management support including the lack of available transport for visits to the field. In PNG for example, the provincial health office does not provide support to districts to undertake supervision, and districts do not provide support to the community and health post level (Burnet Institute 2007). Funding for supervision is therefore necessary however 43% of respondents in a survey of Community-Based Postpartum Care Services in MotherNewBorNet Member Programs reported that there were no funds or resources for supervision of outreach providers. (ESD Project 2008). Supervision can also be seen as a method of control or inspection rather than supportive and educational performed by a colleague or member of the PHC team. Staff may not know who their supervisors are or they may be inappropriate. For example in Bangladesh FWAs are female and all family-planning inspectors are male, who have never worked as FWAs. As a result they have difficulty supervising the FWAs in their day-to-day home-visit activities.(Mridha 2009)

Remuneration for CHWs, nurse and midwifes in the public sector is regarded as low and there can be frequent delays in receiving pay (Oxford Policy Management 2002) which impacts upon motivation and retention (Ofosu-Amaah 1983; WHO/SEARO 2003; McCoy, Bennett et al. 2008; Pillay and Mahlati 2008). This has led some health workers to obtain employment in other sectors resulting in dual practice (Ferrinho, Van Lerberghe et al. 2004)which has implications for work load and practice. There are also a number of issues related to incentives for health workers at community level. In terms of financial incentives many allowances such as those given for petrol, clothing allowance have been perceived by CHNs to be inadequate(Kingma 2003). Peer health educators have reported that their performance has been affected by too many out of pocket expenses that have not been reimbursed or where there has been a long delay (Senderowitz 1998). Non-financial incentives on the other hand have not always accounted as a motivating factor for performance among CHWs (Dieleman, Cuong et al. 2003).

Education and competencies

The quality of pre and in service education and training is a major contributor to health worker competence. Many authors have identified poor quality education and training programmes in a number of countries (UNFPA 1996; Hull 1998; Khanum 2008; Wakabi 2008; FIGO 2009; Manafa, McAuliffe et al. 2009). The non standardisation of training contributes to this (Doherty 2005) along with poor selection and recruitment of students. (Stekelenburg 2003) / (WHO/SEARO 2003).

Several countries have experienced changes in the in the training of various cadres that has had major implications for MNRH care and services at the community level. In Bangladesh the recruitment and training of FWVs and FWAs were stopped in 1994 (Mridha 2009) and both primary and secondary midwifery courses were stopped from 1996 to 2002 in Cambodia (Sherratt 2006). This resulted in staff shortages and increased workloads for those remaining providers. In PNG a number of problems arose when midwife training was transferred to university level. Clinical experience was downgraded with clinical/classroom ratio changing from 70/30 to 15/85. The PNG nursing council refused to register the graduates as midwives as they did not fulfill the statutory (legal) requirements for registration in terms of the numbers and diversity of procedures they had performed under supervision during their training. There are currently 9 graduating classes with this midwifery degree program who cannot be registered by the Nursing Council. After considerable negotiation the University of Papua New Guinea has agreed to revise curriculum (Natera 2009).

There are a number of studies that have documented poor SBA competence (Harvey 2004; Srinivasan K 2006; Harvey, Blandon et al. 2007; Darmstadt 2008; Hatt, Stanton et al. 2009). These studies of SBA skills and knowledge in Egypt, Indonesia, Benin, Ecuador, Jamaica and Rwanda indicate a gap between current evidence-based standards and provider competence to

manage selected obstetric and neonatal complications. A number of studies have found TBAs to lack the ability to adequately recognise and manage complications and refer (Darmstadt 2008; Thatte, Mullany et al. 2009). The poor non clinical skills of all community providers including TBAs, VHWs and CHWs are also well reported in the literature. These range from a lack of record keeping skills (Chaulagai 1993; Umar 2003), advocacy and negation skills (FIGO 2009), local language skills (Replogle 2007). Howver central to clinical and non clinical roles of providers at community level are communication skills which have been found to be lacking in a number of studies (Tlebere, Jackson et al. 2007) (QAP 2000; Bossyns and Van Lerberghe 2004; FCI 2005). Health workers need to maintain and upgrade their skills through practice and in service education and training. In PNG CHWs and SBAs in Indonesia have reportedly lost their clinical skills due to a lack of case load which has been the result of the less than optimum deployment of these staff (Ashwell and Freeman 1995; Utomo 2008) despite their skills being in high demand at community level.

Provider attitudes towards women are critical to equitable access and quality care. A systematic review of obstetric care in LMIC found that women were dissatisfied with care as skills are perceived as lacking and patient provider relationships are poor. This affects the care seeking behaviour of women. Other health worker attitudes such as a fear of HIV infection (Dovlo 2005; Nguyen, Oosterhoff et al. 2009) and judgemental attitudes concerning STI (Passey 1996) also affect the delivery of care. Authoritarian attitudes of staff were found to negatively impact upon referral. In a study in rural Niger Health workers were reluctant to refer and encourage patients to act upon referral for fear of loss of power and prestige (Bossyns and Van Lerberghe 2004; PNG NDoH 2009). At the extreme end of the scale health worker attitudes were found to manifest in violence towards women (d'Oliveira 2002).

Working with the community

The community remains one of the major stakeholders in need of inclusion. Often lacking are formalised arrangements for community representatives to monitor activities at the facility level and demand feedback on service provision. This represents a serious limitation in the quest for accountable, quality health care delivery, both in terms of human resource performance and the management of medical resources (Dussault 2009). Community knowledge of HRH is often low. Sherrat for example found that community members in Cambodia did know what a professional midwife was and, what midwives do and did not know that there was a shortage in midwives (2006). Low levels of knowledge are often the result of the lack of community involvement in decision making processes including policy making and health sector reform. The lack of community involvement in health sector reforms has been found to impact upon poor sexual and reproductive health service accountability and inequitable service provision(Murthy 2004).

Supportive HRH strategies and approaches in MNRH at community level

This section is concerned with proposed strategies as well as implemented and evaluated interventions to address the range of HRH issues in MNRH at community level. The complex nature of MNRH at community level and the multiple issues that affect of HR practice demand a multifaceted approach. Health worker performance and health outcomes can be improved by interventions such as supervision and audit (Rowe 2005) as well as training in combination with defined roles and tasks, incentives and community support (Haines, Sanders et al. 2007). Haines identifies several gaps in health systems knowledge in reference to CHWs and child survival. This includes a poor understanding of the conditions under which programmes for CHWs be implemented. This chapter will also identify the contextual factors that impact upon the success of HRH interventions at community level. Strategies are described under six broad areas and case studies from research studies are presented in order to provide evidence based examples of approaches in situ designed to improve HR management practice and health worker performance.

Approaches to strengthening HRH in MNRH at community level

The Capacity Project, a five year USAID funded project led by IntraHealth has developed an approach to strengthening HRH. This is based on 1. Improving workforce planning and leadership to ensure that the right type and number of health workers are deployed to the right locations, 2. Developing better education and training programs so that health workers have the knowledge and skills to meet the needs of their communities, 3. Strengthening systems to support workforce performance and encourage workers to remain on the job. This is outlined in the Figure below and indicates areas of action and potential strategies that also apply to HRH in MNRH at community level.

Figure 18 The Capacity Project approach to strengthening HRH

(Capacity Project 2009)

However this approach does not distinguish by levels of interventions and therefore no special mention is made of the community level. MNRH is regarded as a priority health area and the outcomes highlighted in the project‘s 5 year report present some ways forward that are incorporated in this review. The three areas of the Capacity Projects approach have been integrated under the areas discussed below.

Strengthening HRH policy legislation, regulation

Policy is critical to guiding HR practice in MNRH at community level. National policy should inform those at district level that are key to the management of community level staff. The WHO/SEARO (2003) guidelines for strengthening midwifery and nursing in the south east Asian region state that national employment policies that are implemented for the nursing and midwifery workforce should be ~~–~~gender-sensitive, based on healthy and safe work environments and conditions, provide for equitable rewards and recognition of competencies, and are linked to a transparent career structure". The development of National HRH policies is been regarded as a top priority by the AAAH (2008) and the PHRHA in their 2010 plan.

WHO has developed a set of guidelines is to support countries o formulate, develop and review HRH situations, policies and plans. The primary target group includes HRH managers in the Ministries of Health, health facilities and other government ministries such as Education, Planning and Civil or Public Service agencies dealing with the HRH development (WHO 2004). This generic document takes a collaborative approach but does not include MNRH at community level as an area of specific policy attention. There are few instances where ccommunity level HRH have been highlighted in the Asia and Pacific regions as areas of need for policy development. One exception is at a WPRO meeting (2008) where the quality and qualification of community health workers was regarded as a key policy area for China. Health workers also need to be engaged in policy making ensuring buy in which helps to ensure policy implementation. A study in Botswana found that health worker participation in MCH policy making enhanced productivity (Fako 2002).

Legislations and regulatory frameworks

Licensure is one approach to applying standards to ensure levels of individual and health service quality. Established to protect basic public health and safety, licensure standards address the minimum legal requirements or qualifications healthcare professionals and organizations need to operate. They also guarantee appropriate adoption of new medical practices and provide a framework to accommodate amendments to existing practices.

Licensure programs for individuals may involve examination of credentials, inspection of educational programs, testing of professional qualifications, reciprocal granting of licenses to applicants of other countries, issuance of regulations establishing professional standards of practice, and investigation of charges of violations of standards. In most countries healthcare facilities must be licensed to provide care or services to patients. Governments or regulatory authorities grant licenses when facilities meet defined levels of quality or provide certain

services. Studies clearly show that, in community areas, nurses, midwives, community health workers and volunteers are taking on many responsibilities beyond their skill level and without legal support. Shifting tasks to community health workers involves the consideration of regulatory issues such as the scope of practice, standard of care, training, licensure, and supervision. Additionally, political buy-in and commitment from the Ministry of Health, medical universities, and professional councils and associations are necessary for long-term development (Frehywot 2010). Improving the skills and legalizing the practice will improve the provision of health services in remote and rural areas. (Rokx 2009). TBAs are often not recognised one exception is in Samoa where TBAs work closely with nurses and midwives and are legally recognized as allied health workers (WHO 2008).

Ethical standards

The International Confederation of Midwives (ICM) has produced documents that define who a midwife is and with how midwives relate to others; how they practise midwifery; how they uphold professional responsibilities and duties; and how they are to work to assure the integrity of the profession of midwifery.

FHI have produced a code of ethics for PHEs (Family Health International 2005) however there is no evidence of these being applied in programmes. These ethics cover the following areas:

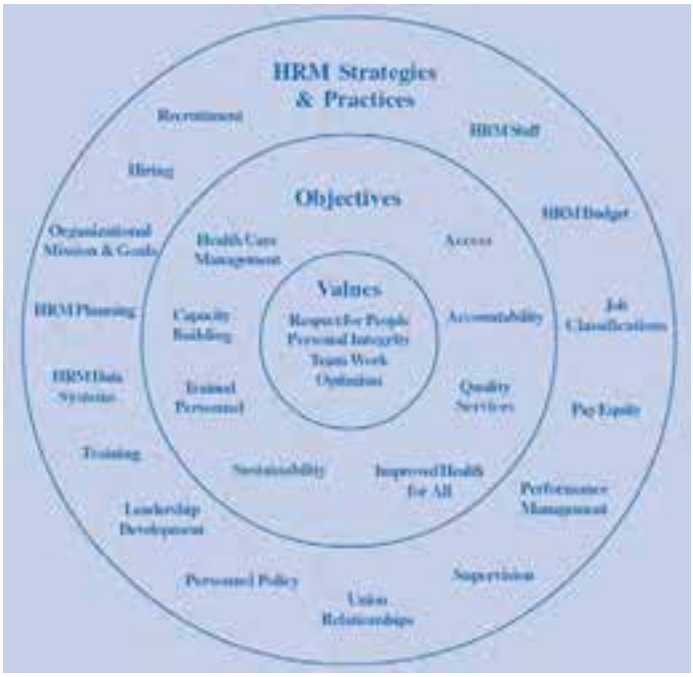
- Respect, promote, and protect human rights.
- Show cultural sensitivity.
- Respect diversity.
- Promote gender equality and equity.
- Assure and protect confidentiality.
- Promote self-examination of values; do not impose values.
- Avoid personal misrepresentation, while respecting disclosure boundaries.
- Provide updated, correct, and unbiased information.
- Be aware of individual limits and how behaviour affects peers.
- Refrain from abusing one‘s position with peers or the peer education programme.

Strategies to improve Human resources management and leadership

Approaches to Management practice

Health managers are those with primary responsibility for organising the various aspects of the health service, implementing systems and coordinating resources and partnerships to deliver quality care and services at the community level. A WHO framework suggests that quality management depends on ensuring an adequate number of managers at all levels of the health system, ensuring managers have appropriate competences, creating better critical management support systems and creating an enabling working environment (WHO 2007). There are a range of Human resources management (HRM) strategies and practices that are directed by focused objectives and underpinned by employee orientated values. The figure below outlines these areas. This section of this review will consider the strategies and practices in the outer circle of the diagram. These can be grouped into three key areas: performance management, personnel administration and employee relations and thirdly staff supply (Dieleman 2006).

Figure 19 The strategies, objectives and values of HRM



Adapted from Hewlett- Packard Company's –HPs Way" Letts et. al 1999 in (MSH 1999)

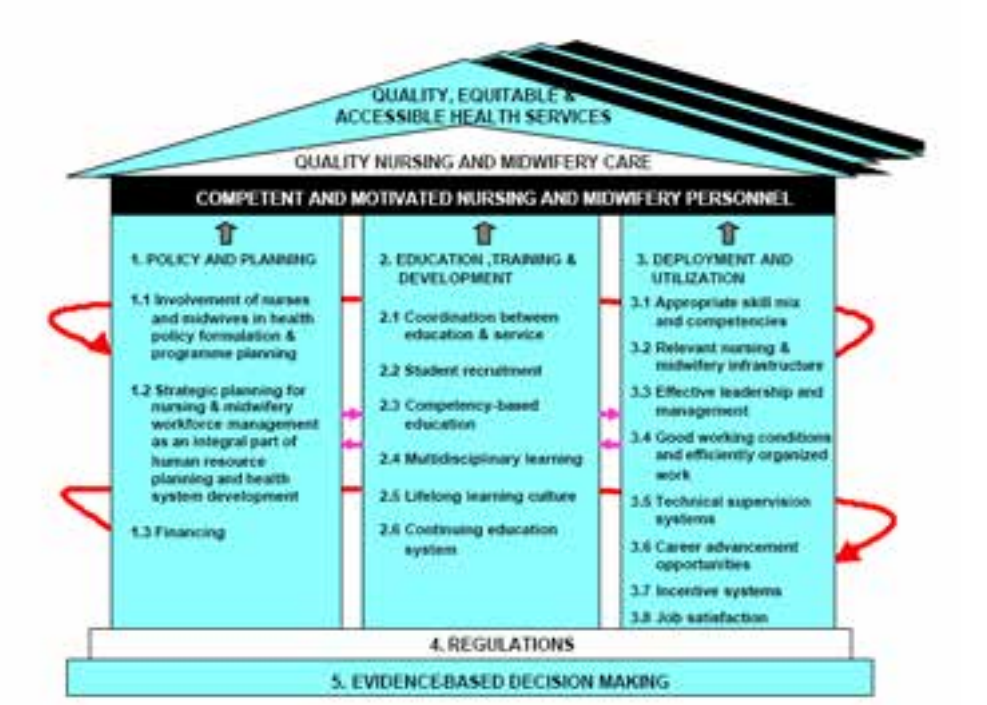
Management from a staff or professional perspective

Staff working at the community level can be directed and supervised by a range of managers depending on the cadre, employer, regulation and legislation governing their scope of practice. As a result there are many management structures that impact upon health worker practice. Nurse and midwives employed with the public health system may receive direction from heads of sub-national health services such as district medical officers or those in charge of health sub-districts, or programme/project managers. Nurse/ midwife auxiliaries may be co managed by registered nurse and midwives at sub district facility and / or outreach services level. CHWs may also be managed and supervised in this way although those employed by NGOs may report to managers at district, province or even country level depending on the size of the enterprise. Within the community depending on how they are compensated VHW, lay care givers and TBAs may be answerable to village health committees, MoH staff or the patients themselves. Solo practice private nurses, midwives and TBAs may be self managed.

As nurses and midwives are often the backbone of MNRH providers at community level management practices that affect them are probably the most influential in this context. WHO/ SEARO have designed a framework to guide the development of effective management of nursing and midwifery that has implications for practice at community level. This focuses on the provision of: effective and efficient workforce policy and planning, effective and efficient education, training and development of nursing and midwifery personnel and effective and efficient deployment and utilization of personnel. This model emphasises the multi dimensional nature of management systems and acknowledges that

there are interrelationships between an individual and the organizational culture, policies and structures, and enabling strategic capacity for linkages between a number of issues such as information, ethics, awareness, motivation and behaviour. There is however no discussion of how this can be implemented and the implications for HRH at community level. A pilot of the use of this framework in MNRH at community level may be useful.

Figure 20 Conceptual framework for effective management of nursing and midwifery



(WHO/SEARO 2003)

Management from the provider or facility perspective

The management of health workers and services within the state system is largely driven by the way in which the health system is organised which is often hierarchical. In Vanuatu for example 180 active Aid Posts in villages are staffed by volunteers and supervised by a general nurse at the dispensary level who in turn is supervised by a nurse practitioner, who also acts as manager, a midwife and general nurse in the Health Centre (Ministry of Health Vanuatu 2004).

In Indonesia Integrated Service Posts (Posyandu) are managed by staff from the community (kader desa); the Village Maternity Clinics (Polindes) are managed by the village midwife (bidan desa) and the Community Health Centers (Puskesmas) by a doctor if available or midwife. Puskesmas are affected by insufficient resources and a lack of management autonomy. A recent research project sought to explore the effects of autonomy on performance (Adyas 2009). A management model was developed that consists of 3 components: (a) financial, human resources, facility, (b) organizational structure and (c)

service diversification. The implementation of management autonomy in two Puskesmas demonstrated improvement in planning, budgeting, service quality, service diversification as well as staff job descriptions. Improvement also observed in human resources skill and overall system performance. This model is worthy of further exploration and possible scaling up in Indonesia as well as trialling in other community contexts.

Managing staff in the informal or lay health workers who are often community based and not part of the formal health sector can be complex. Country experiences can provide useful insights into ways of incorporating these workers in the health system to help maximise their performance. Magongo outlines a framework from South Africa that includes procedures for selection, monitoring and reporting systems of community health work. Its aim is to provide guidelines, policy context and assist programme managers in setting up systems that will promote the use of community health workers in the province (Magongo 2004).

Lessons learned from international health organisation and programme efforts can be useful in developing new HRHM strategies. The Capacity project‘s 5 year report suggest that selecting only one service delivery or management issue helps to focus performance support efforts. In addition successful efforts may be enhanced through a workplace initiatives that promote regular skills update in management practices combined with action planning, supportive supervision and infrastructure improvement (Capacity Project 2009). However despite their possible transferability, these lessons are not based on experience in MNRH at community level. Other documents that have considered HR management interventions to improve health workers' performance such as Deilman et als. review have not included the community level (2009) indicating a gap in this area.

According to Ambegaokar and Lush (2004) there are many management lessons to be learned from the family planning and sexual health sector but their paper describes the general management of RH programmes and does not provide details on HRHM area. An evaluation of a RH project in Kenya found that interventions may need to focus on assisting on-site supervisors/managers and providers to effectively manage change by strengthening innovative decision-making and problem-solving approaches (Rawlins 2003)

Tools to guide management practice

A number of tools have been designed for managers and planners involved in decentralizing maternal and newborn health care to the community level. These include guidance on the implementation and maintenance of mechanisms for HR management. The tools identified found in this review as having the most applicability to HRH in MNRH at community level are outlined in the table below.

Table 11 Tools for managing HR in MNRH at community level

Tool	Community HRHM Focus	Reference
Care of Mother and Baby at the Health Centre: A practical Guide	Guide for training, supervision and continuing logistic support for community-based care, provided by TBAs & CHWs, referral & linkage from health centre and community support systems	(WHO 1993)
Clinical Performance Development and Management System(CPDMS)	A managerial tool aiming to improve the quality and productivity of nurses and midwives at both health facilities and community settings for quality health services.	(Hennessy, Hicks et al. 2006; FK-UGM/WHO 2009)

The Care of Mother and Baby at the Health Centre: A practical Guide provides a number of suggestions for managing HR including those at the community level. These include the grouping of related and similar tasks in order to facilitate the efficient delegation of tasks, health workers confidence and the maintenance of important skills. For example a health worker who has been trained to insert IUCDs could also master the extra skill involved in the manual removal of placenta to stop a postpartum haemorrhage or uterine evacuation for an incomplete abortion. However it is recommended that these decisions must be weighed against the potential risks of misuse and the costs of training and equipping health workers. Other HR management guidance is described under institutional support mechanisms and includes training materials and approaches, jobs and tasks, the development of standard management protocols, teamwork and supervision, management, communication and interpersonal skills. These sections are very brief and lack practice steps for implementation. This document suggests using a number of management indicators for monitoring maternal care but HR indicators are not included. This manual like others including guides such as Managing Maternal and Child Health Programmes: a practical guide (WHO/WPRO 1997) contain only a passing reference to HRH instead focusing on the general management of programmes and the clinical management of health issues.

A more comprehensive and focused HRH management tool is the Clinical Performance Development and Management System for Nurses and Midwives (CPDMS). This has been well received in hospitals and community health centres in 35 districts in nine provinces in Indonesia. The approach focuses on providing clear standards and the dissemination of those standards to providers; adapting job descriptions to local circumstances; clear performance indicator-based monitoring systems and group discussions. It further contributed to the review of the midwifery diploma curriculum in 2002 (Hennessy, Hicks et al. 2006). There are 5 components to the implementation of CPDMS.

1. Training of trainers (TOT) component
2. Strengthening the capacity of the Ministry of Health to co-ordinate the system
3. Classroom teaching of the performance system and management skills to ward managers and senior nurses and midwives from Health Centres

4. Monitoring and coaching
5. research and development activities to support the system, including strategic and incentive issues

The evaluations of this system has indicated increased HR motivation due to the development of clear standards and job descriptions and access to continuous learning. This has included staff engaged in MNRH in community centres.(FK-UGM/WHO 2009) which is discussed below. A strategic action plan for the next five years is currently being developed. The CPDMS managerial tool could have potential use in other contexts in the Asia and Pacific regions and could be applied to other cadres at community level.

There are two important tools for HRM that have been developed by Management Sciences for Health (MSH 2003; MSH 2003) based upon a earlier tool the HRH assessment tool (MSH 1999). The HRM Rapid Assessment Tool for Public and Private Sector Health Organisations and the HRM Rapid Assessment Tool for HIV/AIDS Environments are step by step guides based on the HRH Assessment tool. However despite being very HRM focused they are generic and do not focus on MNRH at community level. These tools are reportedly easy to use and widely applicable however they do not measure the productivity level of employees. The MSH MRM Rapid Assessment Tool was used to improve retention and performance in the Family Life Education Programme (FLEP), a reproductive health program that provides community-based health services through 40 clinics in five districts of Uganda (O'Neil 2008). The implementation of the action plan showed promising results that focused on professionalising HRM management within the organisation. WHO has produced a number of resources managers on HR that although not specially aimed at the community level or MNRH have some applicability in this context and with adaptation may be useful (WHO 1993). The District Health Management Team Training Module 3 (Chatora 2005): on Health Resources planning, recruitment, selection and placement of Staff .conducting meetings, promoting staff motivation, performance appraisal, supervision, continuing education , managing interpersonal conflict and discipline.

Other generic assessment tools may be useful to managers in crisis settings at community level that could be adapted to include HRH engaged in MNRH. These include McDonnell and Yassin‘s tool which includes an assessment of HRH as one of it‘s four core (2007) and the WHO Guide to health workforce development in post-conflict environments (Smith 2005).

There appears to be a lack of tools for managers with HRH responsibilities at community level in MNRH. Available tools focus on facility and programme management with only passing reference to HRH or they are generic HRH tools with no reference to MNRH context.

Performance management

Effective management practices help to create an environment in which people are enabled to perform to the best of their abilities. It involves a systems approach which includes the development of clear job descriptions, employment selection procedures, negotiated requirements and accomplishment-based performance standards, outcomes, and measures as well as quality orientation, education and training. Performance management can occur at the individual health worker level, the team level or the community health service level. Performance standards, indicators and measures that make up the performance management system will be discussed in the final findings section of this review. According to Dieleman et al. performance management is often weak in the public health sector in resource-poor settings and research in the area is limited, often focusing only on particular areas such as supervision (2006).

Martinez (2001) suggests there organisational or internal pre-requisites for the establishment and maintenance of performance management in health care organisations and that environmental or external factors also play a role. External political pressures and health care reforms as well as pressures from professional bodies, patients and budgetary concerns can affect how performance management is undertaken and the indicators used. Internal factors include staff support for and participation in quality improvement. Four components of a performance management system are depicted in the figure below which illustrates how performance measures and standards are used to establish performance targets and goals. Although the context is generic the four components could be adapted and applied to HRH in MNRH international, community settings. Introducing this system involves various costs this and the conditions that facilitate the successful introduction of a PM system are outlined by Hornby and Forte (Hornby 2002)

Figure 21 Performance Management System

(Public Health Foundation 2003)

Studies that have included health workers at community level have found a link between motivation and performance management in particular job descriptions, supervision, continuous education and performance appraisal (Furth 2005; Dieleman, Toonen et al. 2006; IntraHealth 2008). The results of one study in Mali showed the importance of adapting or improving upon performance management strategies to influence staff motivation by matching performance management activities to motivators identified by operational research (Dieleman, Toonen et al. 2006). This highlights the importance of contextual knowledge and stakeholder analyses before the implementation of performance management activities.

Research into the factors affecting the performance of maternal health care providers in Armenia found that training in the use of the clinic tools, receiving recognition from the employer or the client/ community and receiving performance feedback in postpartum care are factors strongly associated with performance (Fort and Voltero 2004). They suggest that a performance review is critical for health workers who function in less structured environments such as community outreach.

The table below outlines key tools developed for performance management that have applicability to HRH in MNRH at community level. Each tool has it strengths depending on the focus required however little is known about the efficacy of each in the field and more rigorous evaluation would help to guide the user on strengths and weaknesses of the tool design and its implementation.

Table 12 Performance management tools

Tool	Focus	Reference
Performance Development Management (PDM)	Clinical staff in community health centres. 4 instruments to compose: job descriptions, standards & guidelines, performance indicators, to conduct reflection case discussion & to conduct monitoring and evaluation	(FK-UGM/WHO 2009)
CHWs Performance management Tool	MCH at community level. Tool includes recruitment process; the CHW role; initial training; ongoing training; equipment and supplies; supervision; performance evaluation; incentives; community involvement; referral system; professional advancement; & documentation/ information management.	(Crigler 2009)
PRIME II Performance Improvement (PI)	RH setting including community level. Includes community level. (1) clear job expectations; (2) timely performance feedback; (3) adequate environment and tools; (4) internal motivation and/or external incentives; (5) knowledge and skills; (6) Organizational support	(Luoma 2002)

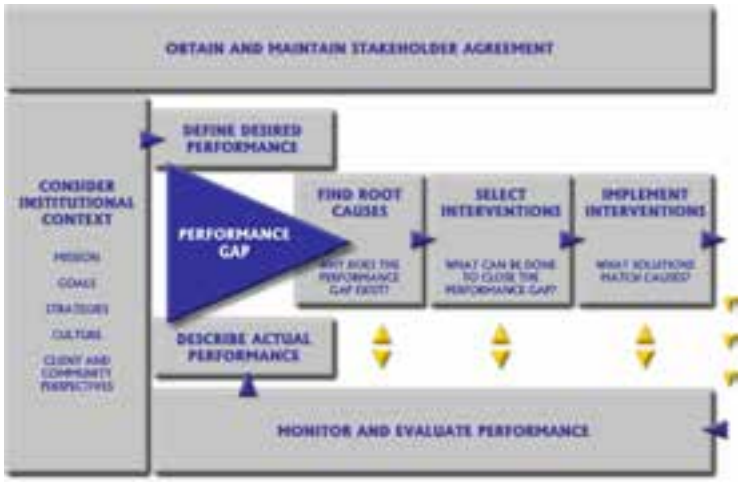
The Health and Family Planning Manager's Toolkit: Performance Management tool	RH setting but egs of community level given. Divided into 3 parts 1. Performance Planning and Review System, 2. Developing Performance Objectives, 3. Developing Job Descriptions	(MSH 1998)
FHI Performance Improvement for PHEs	Preparing for, defining, documenting, analysing, selecting, taking action and monitoring PI of staff	(FHI 2006)

The PDM is an adaptation and refinement of the CPDMS tool that was trialled in three community health centres in Indonesia. The focus is on 4 instruments to measure clinical skills. The specific context is not MNRH although it could be applied in this setting. However the tool does not assess health education, promotion and information activities of the health worker that are a key part of MNRH. The evaluation found that successful implementation of this approach depends on a supportive system from district health offices, supportive district government policy and commitment from managerial and clinical staff. This evaluation, although undertaken in a rapid time frame shows that the PDM instrument development has the potential to improve the clinical performance of all the clinical staff in community health centre however further research is necessary. It could be adapted to MNRH contexts to include health promotive skills and extended to community outreach settings.

At the request of the USAID MCH team, the Health Care Improvement (HCI) Project developed a tool that defines a set of key elements that are needed for community health worker programs to function effectively and measures how well programs meet these criteria. The tool is applied in an easy-to-implement assessment process that provides rich opportunities to identify ways to further develop programs to enhance their effectiveness and impact on maternal and child health goals. The tool examines 12 programmatic components that CHW programs should consider as important to successfully supporting CHWs. These include: recruitment process; the CHW role; initial training; ongoing training; equipment and supplies; supervision; performance evaluation; incentives; community involvement; referral system; professional advancement; and documentation/information management. In applying the tool, each component is rated with a four-point scale ranging from non-functional to highly functional. In addition to being part of functional systems, CHWs must be providing services in MCH. A list of interventions, adapted for the CHW role from the key MCH interventions listed in USAID's 2008 Report to Congress is also included in the tool. This resulting instrument can be applied in a stakeholder meeting to assess the current status of a specific program and determine if the program as a whole is functional. Health workers within that program are then considered to be functional. Evaluations of this tool in LMICs could not be located and as a result its merit is unknown.

A broader tool for Performance management developed for family planning and reproductive settings but not specifically the community level is the PRIME II Performance Improvement (PI) tool. PI helps to ensure that selected interventions are supported and sustained by involving a stakeholder group from the start of the process and ensuring staff actively participation in each step of the process. The steps are summarized in the figure below. The PI facilitator considers the entire human performance system by looking at the desired performance of workers and the organizations they work for.

Figure 22 Steps in the PRIME II Performance Improvement process



(Crigler 2009)

The PI approach has been employed at community level in a number of settings. PRIME II partnered with BASICS, JHPIEGO, MSH, Population Council and other agencies in Senegal and the West Africa region to apply PI in IMCI, community-based family planning and PAC programs. (Blyth 2001). Another project at community level used the PI approach to develop functioning partnerships between primary providers and the communities they serve in order to scale-up prevention of mother-to-child transmission (PMTCT) of HIV services (Cooney 2003).

The Health and Family Planning Manager‘s Toolkit Performance Management tool was developed for a family planning context and examples of job descriptions of HR at the community level are provided in the kit. No comprehensive independent evaluations or reports on the use of this tool could be located.

The FHI Performance Improvement: A Resource for Youth Peer Education Managers is a unique resource in that it targets the often voluntary community based cadre of PHEs. The tool kit contains a guide to the six steps of PI that are no dissimilar from the PRIME II model above and provides a tool for self-assessment, group resolution, and action planning with sample activities from the field. It also includes notes on management activities for PHE such as clarifying job responsibilities and facilitating recognition and career development, as well

as a guide to mentoring, delegation, encouraging teamwork and leadership. Documentation detailing experiences using this tool were not found in this study.

Supervision

The role of a supervisor is to motivate staff to achieve goals and support them through a process of change in order to realize quality care and services and meet client's needs. This supportive approach to supervision is ~~–a~~ process that promotes quality at all levels of the health system by strengthening relationships within the system, focusing on the identification and resolution of problems, and helping to optimize the allocation of resources promoting high standards, teamwork, and better two-way communication" (Marquez and Kean 2002).

There are a number of general reviews of supervision in International health contexts but few of them focus at community level or include research studies indicating a need for more rigorous studies in this area. A comprehensive overview by Marquez at al reviews the function, process, barriers and approaches to improving supervision (2002). Another review highlights methods of supportive supervision at PHC level and the need for flexible supervisory materials that address the participatory nature of PHC (Rohdes 2006).

PHC and services in MNRH are generally managed from the district level and supervision may involve visits to PHC facilities and community sites. Were (2008) describes the optimum structure for CHWs supervision in the public system involving mid level cadres who are attached to the first referral facility in order to ensure CHW access to support and guidance and links for referral. On site supervision is not always possible at community level however for those attached to community health facilities this may be required depending on the services offered. An evaluation of reproductive health services in Kenya found that supervision was considered to be adequate if there was an on-site supervisor actively overseeing family planning and reproductive health service delivery and the site had received an external supervision visit in the last year (Rawlins 2003).

The supervisory structure in the non state sector may be very different. A Pathfinder report describes an NGO approach in Kenya where an NGO employs a small cadre of CHW supervisors, most of whom started as CHWs themselves. Each supervisor oversees from 10 to 20 CHWs, accompanying them on home visits or in groups during public events and facilitating monthly oversight meetings, in which progress is reviewed, reports are compiled, plans are developed and refresher training is provided as needed. The Project Coordinator or Director for each NGO often joins the supervision meetings and visits, in addition to conducting periodic, direct supervision of CHWs. Additionally, the Coordinator/ Director

conducts monthly or bi-monthly meetings with all CHW Supervisors, again, for reporting, planning and continuous refresher training (Csaey 2005).

Supervision of voluntary cadres is often weak and vulnerable to changes caused by reform. A study in Indonesia revealed that after decentralisation family planning field staff chose to move to other government positions with better status and payment. This left village family planning volunteers with no supervisors or on-going training. (Utomo, Arsyad et al. 2006) The supervision of these cadres should be considered in any reform which may be assisted by clear, available and up to date information of the supervisory structures at this level. A FHI standards toolkit provides some guidance for the supervision of PHEs. It calls for supervisor training and the need for supervisors to ensure that PHEs have received adequate preparation (through training and skills acquisition/practice), that motivation and ethical behaviour is continually reinforced, group dynamics are managed and team building is encouraged and that responsibility is shared with PHEs (Family Health International 2005).

The supervision of TBAs can vary and depends on the amount of government support they receive. Various models include supervision can be undertaken by the community such as in some African countries where the TBA participates in a village health committee. In the Philippines some well performing TBAs have been trained as supervisory staff, while in Brazil and to an extent in Senegal, literate TBAs staff maternity centres (Walt 1986). Educated health professionals normally perform a supervisory role in the formal health sector. Examples are the supervision of village dais by auxiliary nurse midwives in the Varanasi District of Uttar Pradesh, India (IntraHealth 2002).

Supervision and health worker performance

According to the Cochrane database a systematic study is currently being undertaken to assess the impact that supervision outreach visits have on the quality of primary health care in low- and middle-income countries. However no results are available as yet (Bosch-Capblanch and Garner 2009). Despite this the findings of various studies and evaluations suggest that health worker performance is improved when supervision is linked to a range of supportive activities. A review of issues relating to the performance of community-level health and nutrition functionaries in India found that the quality of their work improved when supervision is:

- undertaken as an extension of training and supports the training content,
- provided by monthly review meetings focused on well-defined output indicators for effective monitoring,

- received from outside the routine public health system, such as from NGOs or community groups,
- monitored through a system that holds supervisors and those above them responsible and accountable (IntraHealth 2008).

The connection to education and training is also reported by other studies. The combination of on the job training and supervision has been found to improve the confidence and maintain the skills of auxiliary nurse midwives in a Prime II project in India (IntraHealth 2001) and CHWs engaged in a child health project in rural Boliva (Charleston 1994). In crisis contexts harnessing opportunities for supervisory activities include staff meetings, observations and field visits, one-on-one meetings, and group supervision (Ehrlich 2004). In Samoa supervision is promoted by linking it to accreditation required for all PHC health staff, so there is a strong imperative to be involved in in-service training (Burnet Institute 2007). Suh et al. found in Senegal that formative supervision can improve the quality of reproductive health services, especially in areas where there is on-site skill building and refresher training. This approach can also mobilize communities to participate in improving service quality. (2007). Supervisors themselves require training in the provision of appropriate support and guidance and the management of the performance system. Were states that CHW –supervisors should have training on monitoring processes, relationships, inputs (whether information or materials) as well as outputs indicative of an improving situation" (2008).

Clear criteria have been developed for the selection of supervisors of community level staff in MNRH. The supervisors of lady health workers in Pakistan require at least an intermediate (Class 12) pass, however in practice most supervisors are considerably better qualified. More than half of the supervisors have graduated or completed higher degrees (Oxford Policy Management 2002).

The need for regular, on-going constructive feedback emerged from a Tanzanian study at PHC level. One auxiliary respondent stated:

> When the re-supervision is done for the second time, there should be feedback from the first supervision so that we can recognize where we went wrong and correct our mistakes. There should also be feedback of the problems identified from the previous supervision. It is not easy to think the supervisors are useful when reported problems remain and no feedback is given (Manongi, Marchant et al. 2006)

The recognition of good performance by supervisors during feedback sessions contributes to health worker morale and motivation and is therefore critical (Willis-Shattuck, Bidwell et al. 2008).

The involvement of community groups and NGOs in health worker supervision has been highlighted as a useful way forward in some contexts. In Papua New Guinea the issue of VHV supervision and support at Aid Posts and community health posts may be better achieved with NGOs, faith based organisations and international project staff such as those from GAVI Alliance (Government of Papua New Guinea 2009). The findings of a study of the performance of CHWs in Colombia indicated that feedback and rewards from the community have a greater influence on work performance (defined as degree of perceived goal attainment on job tasks) than do those stemming from the health system. The authors suggest a health system participation model that would focus management support on the worker-community interface rather than the worker-health service interface (Robinson 1990).

Participatory approaches to supervision have been found to be more constructive than a top down model. A study in Zimbabwe that included the observation of nurse supervisors in mobile community clinics indicated that a participatory approach to supervision that incorporated problem solving and action planning would benefit nurses. In addition the study recommended that supervision could be strengthened through training and job aides (Kim 2000). A practice known as educational outreach involving visits from trained individuals who may be supervisors to health workers in their practice has been found to improve health worker performance in Indonesia and Thailand (O'Brien 2007). Bi annual supervisory visits by mobile district health teams to VHV and TBAs in a project in Laos were used as an opportunity for problem solving, professional development and promotion. This provided an opportunity to combine on the job training with the delivery of clinical services (Perks 2006). The importance of action planning and good relationships between community health workers and supervisors is highlighted in a PRIME II project in Senegal. The final evaluation of the two-year activity found that 89% of the 69 CBHWs sampled felt at ease with their supervisors, 81% had a performance work plan (compared to none prior to the intervention), and 94% stated that supervisory feedback had contributed to improved performance (IntraHealth 2004).

A project in Mexico that piloted participatory supervision and self assessment for doctors focusing on the improvement of their interpersonal communication (IPC) skills (Kim 2002) may be transferrable to a community context where regular visits are difficult. In this project, supervisors were assisted by job aids and engaged in a participatory manner with the doctors being supervised. The doctors, who had received IPC training, periodically audio-taped and self-assessed their own consultations as part of the intervention. The audio-taped assessments may be useful in a community context where supervisory site visits may be affected by long distances or geographical barriers. Resident health workers who may have low literacy skills may find this approach helpful as a way of recording and reflecting on practice. Mobile technology may also be useful in this context.

The isolated nature of much community health work has resulted in some innovative approaches to supervision involving peers. A peer support project in Honduras was designed to encourage visits among nurses who were working alone in remote health posts and meeting infrequently with their formal supervisors. Rural nurses came together every so often to review their performance, solve problems, and mutually reinforce their knowledge and skills in family planning and reproductive health (IntraHealth 2003). The Extending Service Delivery (ESD) Project has documented the Kenya Private Nurse Midwives Networks as a promising practice in the delivery of sustainable RH services to underserved communities (Extended Service Delivery Project 2007). The midwives networks are formally organized groups of private clinics and nursing homes operated by nurse midwives. They are grouped together in a given locality for the purposes of facilitating peer support supervision for quality service provision. Networks have a governance system which are managed by an elected executive committee and membership to the network is by application. In terms of peer supervision members consult one another in the management of complicated or challenging cases. The nurse midwives evaluate one another‘s facilities using set standards and provide feedback and recommendations for action and follow-up on the implementation of recommendations. In some networks, non-compliance is penalized. The report suggests that this initiative has contributed to an increase in the use of RH services.

There is a paucity of research studies that provide insight into cost effective approaches to supervision that ensure quality care and service delivery. Loevinsohn et al (1995) found in the Philippines that systematic supervision using clearly defined and quantifiable indicators can improve service delivery considerably, at modest cost. It is also difficult to gauge the appropriate level of supervision including the number of required visits to the field. A study in Piaui State in northern Brazil found that regular quarterly supervision of community based reproductive health distribution workers was cost effective and did not compromise quality of the service (Foreit 1984).

Tools for supervision

The following tools and guides outlined in the table below have relevance for the supervision of individual and teams of staff at community level in MNRH although they were not all developed specifically for this context.

Table 13 Tools and guides for supervising staff in MNRH

Tool	Focus	Reference
Facilitative Supervision Handbook	RH context outlines facilitative approach, roles and characteristics of supervisors, skills and knowledge required, involving staff in QI, information and training, supplies logistics & infrastructure	(EngenderHealth 2001)
The Health and Family Planning Manager‘s Toolkit: Supervisor Competency Self-Assessment Inventory	RH	(MSH 1998)
Clinic supervisor's manual	RH	(MSH 2006)
A team approach to supervision	RH	(MSH 2006)
Private Health Sector Quality Improvement Package: Implementation Guide for Midwives.	For Midwives in independent practice. Includes a supervisors guide that can be used to score the midwives QI self-assessment responses to the questions	(Segall 2006)
Supervising Healthcare Services: Improving the Performance of People	MNRH Manual and course handbook	(Caiola 2004)
Skilled Care Supervision	MNRH Provides definitions of supervision and checklists	(FCI 2005)

The EngenderHealth Facilitative Supervision Handbook developed especially for a reproductive health context helps supervisors to develop leadership qualities, attitudes of empathy, openness and flexibility, communication skills and skills in the facilitation of empowerment and teamwork. The handbook includes descriptions of the facilitative approach to supervision and the roles and characteristics of facilitative supervisors in involving staff in the QI process, leading staff through change, creating a non-threatening environment, and helping staff use data for decision making. The community or primary health care level is not specified in the document and many examples are in a clinic setting. Salem (1996) discusses an approach to evaluating this approach. Facilitative supervision and management are included in the COPE (Client-Oriented, Provider-Efficient Services: A Process and Tools for Quality Improvement in Family Planning and Other Reproductive Health Services) tool books (2003; 2004; 2005) which provides a number of questions designed to identify problems and solutions in the areas of reproductive health, PMTCT HIV/AIDS and cervical cancer.

A number of MSH documents focus on supervision and provide tools and pointers for good practice including team supervision (MSH 1993; MSH 2006) and establishing a responsive supervisory system (MSH 1999). The MSH HRM Assessment tools includes supervision as a key component (MSH 1999; MSH 2003; MSH 2003).

Private Health Sector Quality Improvement Package includes a chapter that enables supervisors to rate a private practice midwife‘s QI self-assessment responses to the questions. Supervisors are also able to record the practice midwife‘s action plans in order to monitor

progress over time. This tool and the action plan is now available in an electronic format and is being piloted in Uganda with the Uganda Private Midwives Association (UPMA).

The JHPIEGO manual by Caiola provides a supervisor with guidance on working with site staff and members of the community to set site standards, determine if standards are being met, identify reasons why standards are not being met, and design and implement learning, motivational and environmental interventions to improve performance. The package was field-tested in Kenya and is most appropriate for supervisors of medium to large facilities and district-level supervisors. A handbook for participants accompanies the manual and outlines a competency-based training course including the course objectives, course schedule, pre-course questionnaire and learning exercises. The final tool in the table above is the Skilled care supervision (FCI 2005) guide which contains four performance areas. These are focused on assessment of facility in collaboration with staff.

Job descriptions

Clear job descriptions are necessary to define job duties, responsibilities, and limitations. They are important for recruitment, selection and performance management. Ministries of health often have manuals which provides job description for all categories of public health staff (Datta 2009). Several initiatives have started addressing the quality and performance issues by improving the link between job description and performance of health workers at community level. An evaluation in 2003 of the Indonesian Development of Performance Management (DPM) model (described above) showed that there was an increase in performance of nurses and midwives many working at community level after they joined DPM activities (Rokx 2009). Clear job roles ensure roles for TBAs that link them with the health system to better facilitate referral and support (Lawn, Manandhar et al. 2007).

Job descriptions need to be tailored to the special contexts in which people will be working. Ehrlich outlines the need for descriptions that clarify not only the special skills and knowldge required but the involvement of staff in difficult situations such as gender based violence settings, the limits of their authority and the referral mechanisms available (Ehrlich 2004). Reviews of job descriptions help to identfy gaps and needs by comparing existing knowledge and skills to the knowledge, skills, and abilities that are clarified when job descriptions were written. This allows gaps to be identified along with possible strategies to address these such as training and recruitment.

A recent review of nursing in PNG involved the collection and analysis of position descriptions and job specifications including that of the community nurse to determine their suitability and relevance to the role and responsibilities of nursing staff (Duffield 2008). The

reviewers recommended that the diverse roles and responsibilities of nurses employed in public health facilities be properly recognised. They suggest that the existing nurse classification structure be replaced and definitions with a new structure designed to encourage nurses to acquire additional skills. In addition they also recommend that nurses be remunerated for the acquisition and use of such skills. This would require significant changes to nurse job descriptions.

CHWs and VHVs often have nonexistent or very fluid job descriptions. A synthesis on CHWs cases studies recommended that the ~~"t~~raining of CHWs needs to be locally responsive in both content and form and should be closely linked to the job descriptions" (PHFI 2008). This is based on a call from Indian delegates at the SEARO CHW meeting in 2007 in Chaing Mai to develop job descriptions and training for Accredited Social Health Activist (ASHA) workers at community level (WHO/SEARO 2008).

Training

The organisation of staff training, the development of management and leadership capacity and the need to develop links with the community and to pre-service training are necessary aspects of this area. Conn (1996) has highlighted a need for managers to gain skills and knowledge in community participation at district level as part of overall management strengthening in the context of decentralisation. There are a number of available curricula that could be adapted to address this such as the SEATS programme (SEATS 1992). Education and training innovations and strategies at community level are described in more depth in a later section in this review.

Career pathways and advancement

Attracting individuals to careers in MNRH at community level and rewarding performance through promotion contributes to improved coverage, retention and the motivation (Willis-Shattuck, Bidwell et al. 2008) of the workforce. Career progression is a key component towards the empowerment of staff at community level which is critical to health system strengthening and the achievement of quality care (Fauveau, Sherratt et al. 2008). A human resources strategy with career paths that encourage skilled staff to stay in the government service is therefore required as noted in a review of safe motherhood in Nepal (Barker, Bird et al. 2007). A career framework for HR in MNRH at community level can support individuals and organisations to develop careers and career pathways and inform and support health workforce development and planning. Debate concerning career frameworks for those who work in MNRH at community level is absent from the literature and may be an area of work at national level and for regional and professional bodies. The health workforce framework New Zealand may provide a useful model or starting point (Ashton 2008).

At national level, countries may have their own structures through which various cadres can be promoted. Most information is available for nurses. In Tamil Nadu for example, village health nurses can progress to community health nurses and to District Maternal and Child Health Officers through a process involving training and experience (Datta 2009).

The reluctance of staff to work in communities or in remote areas suggests that career development in this area is one that deserves attention but there are few documented examples of successful strategies. Incentives may be useful to attract staff. The Thai Career development incentives scheme which involved a special quota for specialty training for rural doctors (Wibulpolprasert 2003) could be applied to cadres working at community level. A number of reviews of nursing and midwifery curricula have called for specialised training in community health such as in Cambodia (Herem 2000). This would help to establish this area as a potential career focus for midwives. Laos' SBA plan contains strategies for developing the community midwife cadre through the ddevelopment of a curriculum for new 2-year Community Midwifery Education Programmes at Advanced Certificate level as direct entry, with option for Assistant Nurses, Auxiliary Nurses and PHCWs to enter (Lao People's Democratic Republic Ministry of Health 2009).

Community members in a study in Cambodia regarded community midwifery as a worthwhile career (Sherratt 2006). The value such communities place on midwives ensures their high status. This has the potential for offering career aspirations to girls and young woman which may contribute to efforts to address gender inequity (Fauveau, Sherratt et al. 2008). Attracting midwives to live and work in communities may not only depend on the recruitment of individuals who have cultural and familial ties to these areas but also attracting midwives early in their careers (Ensor, Quayyum et al. 2009).

Performance management is clearly linked to career developed through promotion which may lead workers in community health away from this context which is problematic. According to a WHO recommendation job mobility towards tasks that remove CHW from villages should not be encouraged (WHO 1989). However alternatives need to be considered such as incentives to retain CHWs and ensure they are motivated and performing. At a SEARO meeting on community health workers in 2007, participants from Sri Lanka and Bhutan identified the need to design career development paths for community based health workers (WHO/SEARO 2008).

Staff supply

Workforce Planning

Workforce planning for the community level must be connected to planning at other levels and vice versa. Planning the workforce in MNRH at community level is addressed in some countries by specific national level plans that focus on SBAs such as the Laos plan (Lao People's Democratic Republic Ministry of Health 2009) or more broadly through HRH plans and MNRH or population health strategies and plans. However the cadres often missing from this planning is the community health and volunteer workforce. In Fiji's workforce plan for example these groups are assumed under "other cadres" but not specifically defined (Ministry of Health Fiji 1997). As TBAs are not often recognised by governments despite attending a large number of births in some countries they are often not included. One exception is Afghanistan's National Policy On Human Resources Development for Health which includes all cadres (Transitional Islamic State of Afghanistan Ministry of Health 2003).

Workforce planning in countries excludes areas where data is not collected. This includes sectors of illegal practice such as solo nurse practitioners at community level in Indonesia (Heywood and Harahap 2009). Often the non state sector is not included in national planning despite heavy dependence on them for MNRH care and services in countries such as Papua New Guinea.

Much has been written about the need to involve staff and community members in workforce planning to identify and implement solutions to problems (Srisuphan 1998; Dieleman, Gerretsen et al. 2009). However a paucity of knowledge is available on approaches to planning at community level in developing contexts or reports documenting planning experiences. The move to replace TBAs with SBAs requires workforce planning based upon data (Kamal 1998) but it is not well understood how countries have approach this challenge. In addition it is not clear how countries have projected needs and upon what calculations. For example Nursing Staff ratios in the community are often measured by community visits (O'Brien-Pallas 1997). The WHO's workload indicator of staff needs(WISN) tool was used at in one study in South Africa to determine HRH requirements for PHC (Daviaud and Chopra 2008). Average values were calculated to give an average time per type of consultation including child and antenatal consultations. The tool was found to be useful in this context as it could be adapted to help to better deploy staff between facilities, a kind of optimum management of scarcity, but can also help quantify the gaps to inform planning, training and allocation decisions at local level.

Information on workforce planning in MNRH at community and PHC level is mostly available from developed nations particularly the UK. Hurst's study provides some insight into planning in the UK at PHC level that may be applicable to developing contexts. Primary and community care managers were provided with information, allowing them to: (a) evaluate the size and mix of their workforce; and (b) develop knowledgeable and skilled teams to meet the demands of growing and changing services. Hurst concludes that

evaluating and adjusting the size and mix of teams using empirically determined community demand and performance variables based on the area‘s socio-economic characteristics is feasible (Hurst 2006). Two tools were located which may be adapted for developing settings.

Table 14 Tools for workforce planning in MNRH at the community level

Tool	Focus	Reference
Birthrate Plus	Midwifery at community level	(Ball 1996)
Maternity Workforce	Midwifery in developed context included community, contains workforce planning checklists, together with case studies & FAQs	(NHS 2007)

Birthrate plus is a method of workforce planning developed specifically for midwifery services. The book includes data and experience gained from working in different health authorities with varying patterns of midwifery care. It provides a hands-on practical guide to workforce planning for midwifery services in both hospital and community settings. The NHS Maternity Workforce resource pack includes examples of good practice and the contact details of teams working in maternity services in the UK.

Selection and recruitment

There is much discussion concerning the selection and recruitment of staff at community level from the actual communities that they will serve. Recruiting staff from the areas where they are posted and work may improve retention and possibly effectiveness (IntraHealth 2008). This also provides a strong link to communities which is important for the empowerment of the community as well as the health worker (Chaya 2007). Local recruitment helps to address issues of socio-cultural appropriateness including language and gender ensuring equitable access to care and services. In Bolivia for example local women were more likely to speak with female family planning staff than men suggesting that a female providers may be more appropriate in this context (Velasco 1997). Youth female peer health educators in Thailand were found to provide socially legitimate ways of discussing HIV and safe sex (Cash 1997). Socio-cultural representativeness was regarded as an important component of successful pre natal peer heath education programmes (Warrick, Wood et al. 1992). Training locals also helps to ensure that programmes are links to specific motivators for health behaviours that can facilitate role modelling and appropriate actions. This is a well used strategy in India where for example adolescent girls have been trained to mobilise the community to use health services (Government of India 2004).

According to Playford et al. prior rural background is a significant predictor of rural work. Rural practitioners of both urban and rural origin who undertake voluntary rural placements are more likely to enter rural practice and consequently mandatory placements may not be

helpful to increasing the rural workforce (Playford, Larson et al. 2006). There is consistent finding from observational studies but no controlled or randomised trials in this area (Chopra 2008). Administrative mechanisms can also be used in order to ensure recruitment of staff to rural areas. Thailand‘s experiences of bonding contracts for 2 to 4 years of public sector employment that were used for doctors but they could also be applied to nurses and midwives (Wibulpolprasert 2003). However there is no conclusive evidence concerning the success of compulsory placements of health professionals in rural community locations (Chopra 2008). The study of motives may be useful for the recruitment and retention of participants in community mobilization. A study of CHWs in Mexico found that women's CHNs motives fall into four categories: getting out, serving, learning, and women's betterment. These motives blend personal and public motives (Ramirez-Valles 2001) and could be used to promote careers in MNRH at community level.

A common mechanism used to select CHWs is the village health committee (VHC) (Lehmann 2007). In India for example Sahiyyas are democratically selected by the community and approved by the VHC (Government of India 2004). However clear criteria guiding the selection of CHW is necessary (Were 2008). In cases where CHWs have become unemployed usually as the result of funding shortage or the completion of a project the retraining and reactivation of existing groups of community health workers was found to be a useful strategy in a RH programme in Kenya (Csaey 2005). Priority was given to CHWs who had demonstrated ability in working effectively and building good relations within their community. Many were recommended by local health facilities and were already involved in community activities. According to a WHO document the motivation of individuals for community service should be included in the selection criteria of CHWs (WHO 1989). Recommendation 6 from this report calls for the establishment of national selection guidelines that encourage the long term commitment of CHWs to their tasks and providing access to vulnerable groups.

A report outlining the lessons learned from a Community Midwives (CMWs) Programme in Uttar Pradesh highlighted that the selection criteria for CMWs must be strong and give a bias to those with health service experience. The report also recommended that they pay a deposit for the course ensuring they do not drop out, repayable after they serve their community for a certain time. In addition the involvement of the community was necessary in the selection process and the applicant‘s residency in the community should be verified by an independent authority (PROD 2009). Lady Health Workers in Pakistan must have a class 8 education in order to qualify for selection and demonstrate motivation for the job. A community representative is appointed to the selection committee. An evaluation of the programme showed that there was compliance with this criteria (Oxford Policy Management 2002).

There are a number of difficulties in recruiting CHWs from communities. Leadership politics can influence the selection process and the decisions made. Ehrlich suggests making efforts to ensure that all community members have access to recruitment information and have the opportunity to apply for the position (2004). Recruiting health workers from outside the community may help to ensure better services particularly when confidentiality is required or issues are taboo or sensitive. Goude documents the importance of outreach community health services in rural Ghana and the role of the outsider in service provision. (1997). Clearly a balance is required between local health workers and those from outside who are well known to the community and accepted by them.

The key factors to consider in the recruitment of peer health educators is described in a Family Health International Tool book outlining the Standards for Peer Education Programmes (2005). These including the need to: identify sources and channels for recruiting peer educators, decide on criteria for peer educator selection, set clear expectations and establish a standardized and transparent interview and selection process. Four broad categories to develop criteria for the selection and recruitment of youth to be involved in reproductive health programmes are outlined in a Pathfinder International report (Senderowitz 1998) based upon those employed in a CDC American youth Prevention Marketing Project (AED 1997). They are:

- Descriptive: characteristics include age, sex, ethnicity, education level, socioeconomic status, area of residence and family constellation.
- Skills-based: relevant work or volunteer experience, leadership qualities, skills in working with peers, experience working with adults or within committees, communication skills
- Constituency-based: membership or affiliation with a particular group considered to be a program partner or target audience or one whose members possess characteristics desired by the planned program. For example gang members, slum dwellers or commercial sex workers or members of youth, religious or school-related groups.
- Target-audience based: criteria would be the same as selecting the target audience or determining eligibility for receipt of program services

Selection criteria for PHEs is also discussed in an IPPF document (IPPF 2004) which highlights appropriate age, commitment and willingness, tolerance and dynamic nature. A study of 21 peer education projects supported by AIDSCAP in Africa, Asia and Latin America, reported that project managers look for certain characteristics in their selection of peer educators. They seek young people who are: accepted and respected, good at communication, literate and charismatic, able to understand health problems and interested in self-enhancement, peer selected, and willing to be volunteers (Flanagan 1996). The recruitment of PHE can occur through youth agencies or groups and through advertisements in the local media.

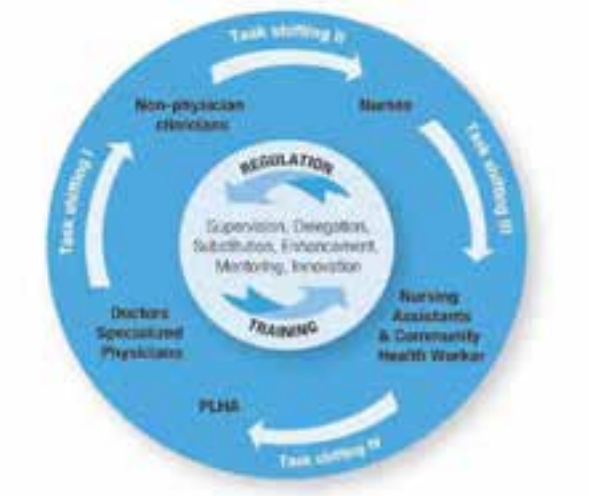
The decisions to recruit and employ particular groups and individuals at community level will depend on knowledge of the current workforce composition and workforce plans. At community level it may be useful to identify the appropriate gender, age and cultural mix. Elson and Evers checklist identifies specific questions regarding the gender balance of the composition of the workforce in health institutions and particularly in policy-making posts (Elson 1998). This, although untested in LMIC community contexts may be useful to strive for the appropriate socio-cultural mix in the MNRH workforce.

Task shifting

A key strategy that has been employed to address the lack of specific skilled staff at community level in MNRH has been task shifting. This is defined as ―the allocation of tasks in health-system delivery to the least costly health worker capable of doing that task reliably" (McPake and Mensah 2008). This according to Lehmann has gained currency again mainly in the use of community health workers (2007). However task shifting requires adequate upgrading of competencies and supervision to ensure quality (Figueroa-Munoz. 2005; Koblinsky. 2006). This is necessary particularly if approaches to scaling up as outlined by Van Damm are adopted. Training institutions too will have to modify their curricula and approaches focusing on specifically defined competency profiles and the acceleration of training output (van Damm 2008). In addition task shifting involves the standardised streamlining of several tasks and functions and may be opposed by professional associations and require changes in legal frameworks. Task shifting is ―not a panacea" (Berer 2009) for weak health systems which must be strengthened.

The WHO (2008) has produced number of recommendations and guidelines on task shifting which were developed from a Addis Ababa declaration in January 2008. This emphasises the essential requirements of quality assurance, regulatory frameworks, sustainability and the involvement of service users. The figure below indicates the cadres that may be affected by task shifting and the HRH considerations in the centre. Nurses, assistants, CHW and PLWHA are those most involved in community level MNRH care and services.

Figure 23 The Task Shifting Process and requirements



(Samb 2008)

A recent AMREF report draws from the WHO recommendations and calls for Ministry of Health and Professional Medical Association policies in Africa to allow task shifting to lower cadres of health workers. It highlights task shifting to cadres with basic clinical and community health competencies, such as enrolled nurses and clinical officers at community level in order to bring services closer to the PHC level. Donors should support these polices and the increases in health worker responsibility should be accompanied by increased salaries and other incentives (Hall 2007). Bluestone‘s review of task shifting outlines the steps required and highlights the need to gather client and community perspectives to ensure that skill mix changes will be acceptable to those that they are supposed to serve. This includes consideration of gender, age language, ethnicity and geography (2006).

The literature reporting on experience of tasking shifting in MNRH at community level is limited but indicates that specific tasks can be transferred to lower cadres. Task shifting the administration of injectable contraceptives to community-based health workers has been found to result in safe and effective practice (Stanback, Mbonye et al. 2007; WHO/USAID/FHI 2009). In the last decade, CHWs have provided three-monthly injectable contraceptive depot-medroxyprogesterone acetate (DMPA) to women in more than a dozen countries, including Afghanistan, Bangladesh, Bolivia, Guatemala, Ethiopia, Haiti, Madagascar, Malawi, Nepal, and Uganda. Nurse auxiliaries have also been found to be effective providers of intrauterine devices for contraception in Guatemala and Honduras (Vernon 2009). A key study in RH found that task shifting to nurses of first trimester abortion care to be a successful approach. The results demonstrated that manual vacuum aspiration abortions performed by government-trained and accredited nurses, midwives and mid-level health-care providers in South Africa and Viet Nam were comparable in terms of safety and acceptability to those performed by doctors (WHO 2008). A recent forum on task shifting identified a number of examples in MNRH at the community level (HRH Exchange 2009). In India a number of tasks have been shifted to ASHAS who have been given responsibility for

mobilizes the families for institutional deliveries. Community volunteers known as Jan Mangal Worker sin Rajasthan have been engaged in the community distribution of condoms and oral pills. TBAs in Zimbabwe are willing to expand their scope of work regarding activities related to PMTCT. However first there is a need to reinforce their knowledge on MTCT prevention measures and better integrate them into the health system (Perez, Aung et al. 2008). In 1980 a change in legislation and an addition 6 months of training enabled community health nurses to take on greater responsibilities including normal labour and delivery of babies and the insertion of intrauterine contraceptive devices. Two studies by the Korean Institute of Population and Health and the Korean Development Institute reported that the primary care services provided by nurses were not only of the same quality as those provided by physicians (WHO 2008).

Other forms of task shifting can involve student health workers engaged in service delivery under supervision as part of their actual training. A programme in Lebanon involves nurses in a voluntary capacity along with community members, academics and administrators. The programme known as Opération 7ème jour allows the students to consolidate their competencies and knowledge, while providing direct services to the population. It also facilitates their becoming active citizens and members of their respective communities. Student nurses provide a range of services including antenatal, post natal and family planning services (WHO 2008).

A study in South Africa describes some problems related to shifting the task of cervical screening to nurses at PHC level (Kawonga 2008). Sub optimal coverage has been linked to a lack of consideration for adequate training, supervision and motivational issues. Kawonga and Fonn emphasise the need for supportive national policy, workforce development and health system strengthening to ensure the success of task shifting efforts. They indicate that further task-shifting to enrolled nurses and enrolled nursing auxiliaries is a possible policy option, but this should be coupled with appropriate HRM strategies that address training, increasing demands on personnel, attrition, and skills mix and a comprehensive workforce development strategy.

Much of the focus has been on HIV/AIDS, however lessons can be learned from this experience particularly in the area of community PMTC. Torpey et als study in Zambia provides some useful insights into the effectiveness of adherence support workers‘ (ASWs) who are community volunteers trained in adherence counselling, treatment retention and addressing inadequate human resources at health facilities (Torpey 2008). They found that tasks shifted to ASWs were successfully undertaken without compromising the quality of counselling. Follow-up of clients by ASWs within the community is necessary to improve retention of clients on ART.

Substitution

Substitution is different from task shifting in that it involves the enhancement of existing work roles by the: substitution of one type of worker for another, delegation of functions up or down the traditional role ladder; innovation in designing new jobs, transfer or relocation of particular roles or services from one health care sector to another (Krupp and Madhivanan 2009)

Research suggests that the quality of care is maintained and in cases improved when of nurses is subsisted for doctors. In addition organisational costs are maintained or reduced by increasing the role and deployment of clinical nurse specialists, nurse practitioners and clinical nurse-midwives.(Brown 1995; Kinnersley 2000; Dovlo 2004). Patient outcomes as well as and care processes were found to be similar for nurses and doctors however patients were more satisfied with care from nurses than from doctors.(Horrocks S 2002). However Lewin and Dick caution against the use of lay health professionals instead of professionals stating that the evidence is mixed with different outcomes favouring either professional or LHW interventions (2009). More research is therefore required in this area.

A study in PNG indicates that the CHW is being viewed by some health managers as a substitute for the nurse aide (Ashwell and Freeman 1995). The CHW has been trained specifically to improve the access to essential primary health care services of people living in rural areas, especially in preventive and maternal and child health care. The research found that they were not all practicing in this capacity and as a result were not utilising their skills. Only 8% of the CHWs studied used all the skills obtained in their basic training. This substitution is problematic as it leaves a gap at the community level in MNRH care and services. The use of CHWs at facility level has left Aid Posts unstaffed leading to their closure. This situation is being addressed through a revitalisation of community health posts through increased intakes of CHW, focused MNRH training and re deployment at the community level (Government of Papua New Guinea 2009).

Guidance on the delegation of tasks and functions in MNRH at community level is provided by Nasah (1992). The general principles in delegation of responsibility are reviewed and the functions to be delegated are presented together with minimal criteria for training to acquire required skills. Problems arising from delegation are reviewed as well as possible solutions which include modification of some standard procedures. Conclusions are drawn from case studies that effective delegation needs strong leadership of maternal health teams sustained by national political, professional, and community support.

New Cadres

The establishment of new cadres in MNRH at community level has often resulted when task shifting cannot be undertaken or delegation or the substation of one cadres for another is not possible. This is often necessary when programmes are being expanded or new ones initiated such as in scaling up operations in order to address high MMR. A number of lessons can be identified from the experiences of establishing new cadres in MNRH at community level. These include the need for wide consultation, formative evaluation and on-going monitoring.

A new cadre of private providers at the community level: the Community Midwives (CMW) was established in 4 districts of Uttar Pradesh. Early involvement and partnership with regulatory bodies responsible for the curriculum, such as the state nursing council, proved essential for success (IntraHealth 2004). In Tanzania, as part of an expansion of family planning and reproductive health services, an extensive pilot was undertaken to formulate a strategy for the effective participation of a new cadre of family planning and reproductive health (Yumkella 1996). A needs assessment found a number of factors that could be adapted to assess workforce suitability in MNRH at community level. It was found that health attendants due to their residence in communities and long service experience would form a stable and dependable work force. Most health attendants had undertaken half of a 2 year course in family planning and reproductive health demonstrating their commitment to the area and training as well as the existence of an establish course and institution that could undertake training in. In addition there was a balance of male and female attendants, and appropriate skills mix. They were well received by community members and favourably recommended by family planning providers. Other important service delivery factors were also present such as the existence of a local family planning and reproductive health infrastructure and the potential for integration with other services as a result of networks and relationships.

An evaluation of a new cadre of SBAs known as Health Extension Workers (HEWs) introduced as part of the Health Service Extension Programme (HSEP) in Ethiopia showed promising results from the perspective of the community (Negusse, McAuliffe et al. 2007). A structured interview survey of 60 female heads-of-households indicated that HEWs were preferred over Traditional Birth Attendants for assistance with labour. However knowledge was poor regarding major communicable diseases indicating a need for continued health promotion and behaviour change communication approaches.

When a Basic Package of Health Services (BPHS) was rolled out in Afghanistan in 2003 community Midwives were introduced to undertake a key role in MNRH (Health and Fragile States Network 2009). CMWs undertake an18-month standardised, competency-based pre-service training course. After graduation, CMWs follow a competency based job description

which was developed in 2002. This was finalised and approved in 2004 by the Ministry of Public Health (MoPH) and accredited by the National Midwifery Education and Accreditation Board in 2005. Currently 21 community midwifery training programmes are being implemented by various NGOs in collaboration with MoPH. After an initial pilot was completed in 2004, the first official training round was completed in 2006, tripling the number of midwives to 1500. By 2009 Afghanistan had increased the number of CMWs to 2,300 still far short of the 5000 midwives required. CMWs play a pivotal role in the provision of essential obstetric and newborn care and thereby reducing maternal and neonatal mortality. According to the 2006 Household Survey, antenatal care increased from 4.6% in 2003 to 30.3%, skilled birth attendance increased from 6% in 2003 to 18.9 % and the contraceptive prevalence rate from 5.1% in 2003 to 15.4%.

Another approach that has been utilised in order to improve the coverage of midwives has been to encourage the retired workforce to return to practice. In Malawi the retired workforce was encourage back into the public system (MoH Malawi 2004) while in Tanzania private practice was initiated. Deregulation of midwifery practice in Tanzania allowed _new' workforce of _later life entrepreneurs' including retired government employed nursing officers or those approaching retirement to establish their own facility-based services. (Rolfe 2008). In 2007 there were approximately 60 _maternity homes' located mainly in rural or peri-urban areas. Despite bringing increased services to communities which was of comparable quality to those provided by the government communities were reluctant to pay for it. Private midwives also found the costs associated with start up, maintenance and registration prohibitive. The authors suggest possible solutions such as on-going financing arrangements such as micro-credit, contracting, vouchers and franchising models require consideration.

One approach to supporting private midwifes to undertake a particular function is the development of revolving loans. The Summa Foundation was created as part of USAID's Promoting Financial Investments and Transfers (PROFIT) project (1991-1997) to facilitate private sector involvement in family planning. In Indonesia. The project created a revolving loan fund that provided loans to midwives for the expansion and establishment of their private practices to provide family planning and reproductive services. The collaboration between the public and private sector included the Indonesia Midwives Association (IBI), Bank Rakyat Indonesia (BRI), and the National Family Planning Coordination Board (BKKBN) (The Summa Foundation 2006). The programme was successful in sustain lending to midwives and shift family planning clients from the public to private sector. However the wide reach from national to community levels and the multiple partners involved in the programme proved challenging. This approach may be transferable to other contexts to support private HRH to increase MNRH care and services at community level.

Personnel administration

This area of HRM includes budgeting, discipline termination and grievance procedures, compensation and benefits, the management of union relationships and compliance with labour laws and procedures. Remuneration and incentives is a key aspect of personnel administration that is critical to staff motivation and performance.

Remuneration

The payment of HR in MNRH is dependent on their cadre, role, level of seniority, experience, location and employer. Payment may be in cash and/or in the form of goods or services. Government, NGO and faith based employees will receive a salary most likely supplemented by allowances to cover expenditure such as fuel for travel, accommodation and uniform. Some of these may be used as incentives to attract workers to the community level. Cadres such as TBAs, VHV and CHNs may receive payment in cash or kind from the community and the government. Appropriate compensation for community health workers leads to increased productivity (Pathfinder 2006) This can also motivate volunteers such as in India (Jaju 1983) and Nigeria (Adeniyi 1987). A WHO document recommends that fee for service is not appropriate for CHWs as it emphasises curative rather than preventative and promotive activities (WHO 1989). A fee-for-service can also encourage over consumption and increase cost to the patient. Other approaches to paying health workers other than salaries can involve payment by case, by bonus or capitation payment for services and drugs to patients who have choices over their providers (Bennet 1997).

Wages of health workers are often low, inequitable and not sufficient motivators for retention and quality performance. A review of nurses in PNG recommends that ~~n~~urses receive an annualised salary which incorporates new wage rates, an allowance in recognition of a requirement to work additional hours and that also includes the payment of the existing Nursing Services Allowance and the Domestic Market Allowance" (Duffield 2008). Increasing salaries of community workers has been found to not only improve quality service but also reduce costs at the patient level. A study of community-based distribution programmes in Tanzania found that increasing the remuneration of community based distributors of family planning commodities reduces costs per visit, because the number of agent visits increases, thereby spreading out supervision and training costs over a larger number of visits (Janowitz 2000). The alternative approach to improving performance at community level may be transferable to other contexts.

Health workers have found strategies themselves to supplement their incomes. A review of HRH incomes in Africa found that 8.4% of community health officers income in Nigeria was supplemented through agricultural work, 4% through commerce and petty trade, 2.5% through clinical work, 6.7% home health service, 5% sale of medicines (McCoy, Bennett et

al. 2008). Dual practice is another approach where clinicians combine salaried, public-sector clinical work with a fee-for-service private clientele (Ferrinho, Van Lerberghe et al. 2004). This private practice may erode the quality of public services, be illegal and involve corruption. A village-based health survey in Vietnam found for example found that 70% of the drug sellers were also working as government workers and using their links to the health system to purchases drugs (Chen 1994). This raises questions concerning health worker performance and what constitutes the right balance between financial and non financial incentives that are required to achieve and maintain quality practice.

Incentives

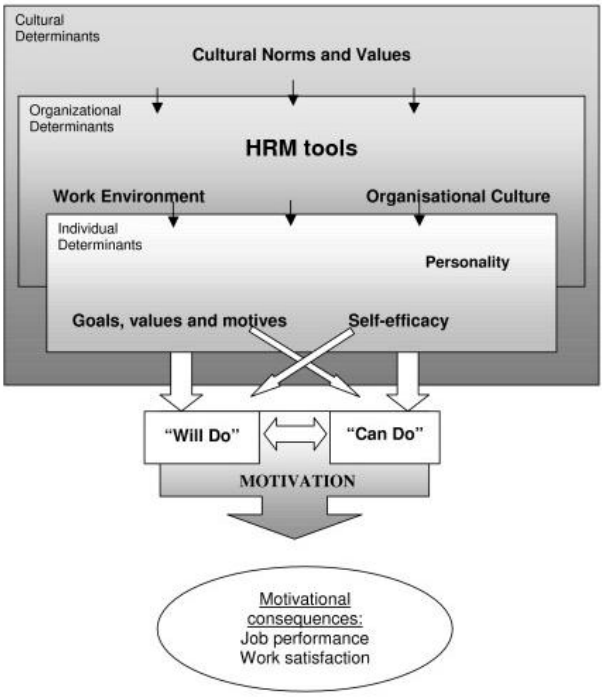
Incentives involve the development of additional inputs to improve retention of staff and attract staff to jobs at community level and to improve performance. Recruiting and maintaining health workers at community level particularly in rural and remote areas is challenging. This is identified in the Kampala Declaration, that called on governments to "assure adequate incentives and an enabling and safe working environment for effective retention and equitable distribution of the health workforce" (GHWA 2008). In response to this the WHO has established a special programme on improving retention of health workers in rural and remote areas and guidelines on incentives for the retention and recruitment of health professionals have been published (GHWA 2008). The development of effective incentives schemes/motivation mechanisms for community health workers is also one of the nine key strategic action areas that SEARO member countries have pledged to focus on (WHO/SEARO 2008).

Inventiveness can be provided at the individual health worker level, health facility level or health system level (Dieleman 2006). They have been classified into direct (e.g. subsidized education, additional leave, insurance benefits) and indirect (e.g. better working conditions, access to professional support network, greater participation in decision-making bodies). In addition non financial incentives have been divided into those which concern management and the supportive environment, regulatory interventions, educational interventions (Dolea 2009). Henderson and Tulloch describe various approaches to incentives including those that are performance based, those that are designed to encourage return migration and restrictive measures and sanctions (Henderson 2008). These various types and approaches to encouraging the workforce may be employed as separate strategies or packaged together in various configurations to maximise impact. The success of incentives to enable health workers to meet their personal and the organizational goals is highly dependent on the context in which they are delivered and the motivations of health personnel.

Mathauer and Imhoff provide a useful conceptual framework for understanding the factors that determine motivation and identifying what areas might be targeted using incentives in

HRM (See Figure 24). Knowing the context is critical. For example Kingma‘s study on economic incentives for community nurses found agreement by key informants that incentives must come from within the nurses' value systems (2003).Selecting the right incentive for the context requires evidence justifying such an approach. This may involve a situational analysis from a number of perspectives including HRH, the community, labour market and the health systems. Scenario modelling may also be useful in this context (Lawrence 2009). The choice of incentive will depend on well it ―fits" with the criteria developed from this analysis and the feasibility and potential of the strategy demonstrated from formative evaluation and input from stakeholders.

Figure 24 Motivational determinants and processes



(Mathauer 2006)

Various authors have summarised various incentive programmes. Buchan lists the aadequacy of incentives in the SEARO region based on WHO Country Reports (Buchan 2004) indicating that no country has yet achieved such an satisfactory package. A large review of incentives for CHWs provides insight into how strategies from case studies from Afghanistan, El Salvador, Honduras and Madagascar have been used to improve motivation, retention, and sustainability (Bhattacharyya 2001). However the literature review and interviews in the study focused primarily on CHWs working in child health, rather than other types of development workers, such as family planning workers, traditional birth attendants, or agricultural outreach workers.

The table below provides an overview of incentives from the various categories targeted at staff working in MNRH at community level.

Table 15 Incentives in MNRH at community level

Incentive	Details	Context	Reference
Financial			
Cash incentive to SBAs for attending deliveries	Increase in skilled birth attendance, but lack of skilled staff greater constraint than health infrastructure to increased utilization	Nepal	(Barker, Bird et al. 2007; Powell-Jackson 2008)
Cash incentive to TBAs for referring to SBA & assisting	Dukun given up to IDR 100,000 (US12$) for referral from MoH funds	Indonesia	(Analen 2007)
Delivery fee exemption scheme	MoH set reimbursement rates according to the type of delivery, increased demand for public health services, sustained health worker income and morale	Central & Volta regions Ghana	(Witter, Kusi et al. 2007)
Loans for private midwives in communities	Increased family planning services but unwieldy implementation due to scale	Indonesia	(The Summa Foundation 2006)
Profit from commodities & service	Shasthya Sebikas profit from *s*ales of condoms, charges for pregnancy identification as a volunteer in the community also eligible to receive a concurrent govt. second loan	Bangladesh	(Ahmed 2007)
	Sales of commercial contraceptives motivated Indigenous Medicine practitioners to offer family planning counseling	India	(IntraHealth 2005)
Community payment fund	Each household contributed one *birr* (US$0.15) a year to support the community health agents (CHAs) and TBAs. Provided stipend for all trained CHAs and TBAs & the attrition rate fell from 85% per yr to 0	Gumer District, Ethiopia	(Wubneh 1999)
Compensation & travel allowance for PHE	76% of projects surveyed give some type of compensation, including 19% which support salaries and 52% provide travel allowances	Global	(Flanagan 1996)
Management support			
Internet connection & telehealth at PHC centres	Family health worker team support in rural areas for consultation, reference and education	Rural Brazil	(Campos 2006)
Mobilizing community resources to reward satisfactory performance of duties through feedback	Undertaken as part of establishing and supporting a cadre of community workers to provide home visits, detect pregnancies, assess health needs & provide primary level care;	Maharashtra, India	(IntraHealth 2008)
Improved management system & environment in community family planning clinics	Increased employee satisfaction & motivation due to introduction of personnel policy procedures & manual Personnel files & job descriptions were updated. Supervisors were trained, PI was instituted.	Uganda	(O'Neil 2008)
Regulatory interventions			
1 year compulsory community service before registration	Doctors must complete one year of community service, usually within in a rural area before they gain their first professional post. District hospitals and community health centres received 45% of the doctors. Job descriptions, supervision & accommodation need to be improved	Rural South Africa	(Reid 1999; Omole 2005)
Deregulation of maternity service provision	Retired midwives re entered practice increases SBA in underserved communities but very costly to set up & access	Tanzania	(Rolfe 2008)
Rural bonding contracts	bonding contracts for 2 to 4 years of public sector employment for Drs	Thailand	(Wibulpolprasert 2003)
Contracts with PHE	Attrition minimised though 12-18 contracts	Colombia	(Senderowitz 1998)
Education interventions			
Job aides & training	Counseling cards and workshops to CHWs who also undertake family planning. Community members regularly consult activistas for family planning advice	Madagascar	(Gottert 2000; Bhattacharyya 2001)

Many of the incentives to health workers in MNRH at community level are focused on increasing skilled birth attendance and family planning services. These range from rewarding health workers for attending births or referring women to a facility of SBA, incentives to increase SBA and Family planning service such as loans to midwives, deregulation or compulsory community service for doctors. Financial incentives to health workers have been found to increase access to services at community level but little is known if this has increase equity of access. A systematic review of the impact of pay-for-performance on health outcomes did not provide any strong evidence for the improvements in health outcomes although it may provide improved access for community services (Petersen 2006). These findings however do not address HRH in MNRH at community level in LMIC settings.

Schemes aimed at the provision of incentives to service providers to improve health such as those outlined by Bitrán et. al (2003.) will also have a flow on to health workers. A case in point is a performance based reimbursement scheme developed as part of a USAID funded NGO Service Delivery Program involved in delivering primary health care services including MNRH through an umbrella of NGOs in Bangladesh (Chao 2006). In order to encourage NGOs and clinics to make significant efforts to serve the poor as well as to improve cost recovery payments were made to service equity funds and bonuses were distributed according to the services performance. The successful pilot of the scheme involved the payment of 25% of bonuses received directly to high performing health workers (Chao 2006). Another approach to performance based incentives is a programme in Zambia where high achieving teams, rather than individuals were awarded non financial performance trophies. The success of the pilot of this scheme on staff motivation differed in 2 sites according to the strong leadership and performance management systems in place. This confirms the importance of appropriate incentives alongside good HRM systems (Furth 2005). Kipp et als. study also indicates that other factors may also be influential in the success of incentive schemes such as an improved drug supply to health facilities and increased public identification with community projects in remote areas (Kipp, Kamugisha et al. 2001). There is some evidence to show that incentives such as loan repayments, direct incentives and medical resident-support programmes to encourage rural placement have highest service completion rates and physician retention rates (Chopra 2008).

Relationships with the community including feedback from them on performance is regarded as an important motivator in Vietnam (Dieleman, Cuong et al. 2003). In a community MNRH context incentives that reward innovative partnerships and action between midwives and women that involve the local community have been highlighted as critical in Cambodia (Sherratt 2006). Community inputs into the selection of health workers may also motivate workers to perform by establishing in them a sense that they are a representative of the community and creating a feeling of responsibility to the community (IntraHealth 2008).

There are a number of untried incentive proposals for improving coverage at community level which would impact upon MNRH. Lu for example outlines a micro credit system of supporting programmes that could be used to develop resources to recruit and provide more health professionals directly to the community level. This could involve the capacity building of health training institutions in low income countries and community involvement in the training, employment and retention of health workers (Lu 2009). Surveys of health workers provide insight into what incentive might attract personnel to remote and underserved areas. A study in Indonesia indicated that midwives felt that they were able to sustain an adequate income in remote areas but non financial issues were the major factor in relocation such as husbands work, children's school and separation from family (Ensor, Quayyum et al. 2009). The authors suggest that the focus of incentive policy should be on developing contracts for midwives who are from underserved communities or who may not yet be settled in a community with a husband and children. Another study indicated that opportunities to upgrade professional qualifications, government housing and the increases in net monthly pay had the greatest impact on nurses' employment choices in Malawi (Mangham and Hanson 2008). Kingma's study of Community health nurses in Geneva and London demonstrates how complex the issue of incentives is and differs according to context (2003). While financial rewards are important so are subsidized sabbatical/study leave and tuition indication that a package or bundle of incentives need to be considered.

HRH Information systems

Data on community level providers is scarce and aggregating this data according to role and function in MNRH is difficult. The WHO Atlas on health workers provides incomplete data on CHWs (WHO 2009; WHO 2009). Some information is available from a small number of countries indicating the distribution of midwives and nurses by rural or urban location but no data is available on PHC workers. Ministries of Health do not always include data on CHWs. For example the MoH in India has excluded from their estimates of HRH roughly 1.5 million CHWs , for whom a distinct occupational code is not included in the current classification (although it is possible that some of these workers are assimilated under nursing and midwifery personnel) (Dal Poz 2009). The recent development of minimum data set for HRH (WHO UTS 2008) identifies the PHC level although this focuses on nursing and midwifery cadres and excludes CHWs, TBAs and VHWs.

At country level there is a great need to build national capacity in HRIS systems. The Capacity Project (2009) has undertaken much work in this area along with the USAID Health System 20/20 Programme (Kombe 2008) however work in MNRH and HRIS has been limited. In Malawi there has been efforts to link information systems to track the deployment and training of family planning/reproductive health human resources including those at community level (Schenck-Yglesias, Lacoste et al. 2003). Stanton et al point out a number of improvements that could be made in the collection of data on skilled attendance. Their detailed analysis of the coding of country-specific providers and facilities in the survey data

files suggests that more careful attention needs to be paid in international survey programmes to accurately classify the type of health care provider and type of health care facility used for delivery. This is especially true where country-specific cadres of providers and facilities (such as doctor‘s assistants and clinical officers, or maternities and dispensaries) are used. The skills and training of various cadres of providers, as well as the basic or comprehensive obstetric care capacity of various types of facilities, should be documented to assist in the assessment of birth attendants as ‗skilled providers‘ as defined by WHO. (Stanton, Blanc et al. 2006)

Leadership

Managers are required to enable staff to deal with challenges in complex conditions. The personal attribute that facilitates this is referred to as leadership. Leadership approaches are often culturally determined and very influential at community level. A review of leadership models in the Pacific provides insight into the context that affects decision making in community health practice(Mcleod 2007). No specific HR leadership programmes in MNRH at sub district level could be identified in this review. There are however a number of programmes that have been implemented at district and national level which have had an impact upon the community health workforce.

The Partnership for Maternal Newborn and Child Health has produced as document that presents various case studies of successful leadership at country level (PMNCH 2008). It is intended to inspire leaders to take action towards MDGs 4 and 5 and mentions community mobilisation and training in Nepal and Senegal. However there is no information regarding community level leadership and the contribution of HRH at this level.

A key international programme in leadership is the ICN ―Leadership for Change" initiative. This is aimed at assisting senior nurses at a country or organisational level to influence health policy and decisions; be effective leaders and managers in nursing and health services; and prepare other future nurse managers and leaders for changing health services. The programme is based on action-learning principles. The LFC programme has been implemented in various regions including the South Pacific, Bangladesh, Myanmar, Nepal, Mongolia, Vietnam, Singapore. The principles of effective leadership espoused by this programme are outlined in a newly published book (Shaw 2007). Shaw argues that leadership development programmes should be evaluated according to the three criteria of relevancy, effectiveness and efficiency. A list of potential outcomes of effective leadership programmes in nursing are provided and illustrated in the figure below.

Figure 25 Leadership outcomes focused on human resource development

(Shaw 2007)

MSH has developed a leadership and management framework (MSH 2001) to assist organisation achieve outcomes in this area. Despite the fact that this tool provides no special context for HRH in MNRH at the community level they have been used in these contexts with reported success. The Challenges Program in the Nampula Province of northern Mozambique used simple management and leadership tools including the MSH framework to assist the health units and their communities to address health service challenges in family planning, maternal and child health. One outcome measure of this programme one unit included an increased the percentage of attended births from 25% to 35%; (Perry 2008).

Community health personnel in the municipality of Aquiraz in the *state of Ceará, in Brazil's northeast* participated in a leadership development program funded by the Department for International Development (DFID). This focused on reducing infant mortality in the 37 poorest performing municipalities. The program brought together mayors, community leaders, health care managers and providers. Each team developed an action plan to address the problem of high infant mortality in the municipality, and teams were encouraged to work with other sectors including the private and education sectors. Between 2000 and 2004, 70% of the municipalities reduced their infant mortality by as much as 50% (MSH 2008).

Summary

HRH management covers a wide range of interventions from performance management, to workforce planning, task shifting, selection and recruitment processes remuneration and incentives. There are some useful lessons that have been learned with respect to HRM at community level in MNRH that may be transferable to other contexts in the Asia and Pacific regions. These are summarised below:

- Management autonomy at community level as demonstrated in two Puskesmas in Indonesia can lead to human resources skill and overall system performance.
- Performance management tools such as Clinical Performance Development and Management System for nurses and midwives (CPDMS), the CHWs Performance management tool (Crigler 2009) and the FHI Performance Improvement for PHEs(FHI 2006) may have wider applicability and further evaluation is required.
- Supervision should be linked to a number of supportive activities and involving mid level cadres who are attached to the first referral facility in order to ensure health worker access to support and guidance and links for referral. In addition participatory approaches may be appropriate at community level involving community members and peers. Training for supervisors is required and a number of tools may be adapted for use at community level in MNRH.
- Improved data collection is required at community level in order to enhance workforce planning. Training and participatory approaches will improve the quality of information and engage health workers and communities in MNRH decision making
- The recruitment and early placement of health workers from the local community has been found to lead to better retention. Selection criteria should be transparent and bonding arrangements may be useful.
- Shifting tasks to lower cadre workers that involve small extensions of their current remit along with supportive training, incentives, supervision and legislation may improve MNRH service.
- Appropriate compensation for health workers leads to increased productivity. Bundles of financial and non financial incentives may be used based on good knowledge of health worker motivational drivers and MNRH service imperatives.

Strategies to develop supportive working environments

Although HRM systems are important in the creation of a work climate that is conducive to quality performance there are a number of other practices that contribute to a supportive environment. Manzi et al in their study of work place trust in Tanzania highlights the importance of workplace relationships to health worker motivation and performance (Manzi 2004). Health worker relationships affect team work which can take place within a PHC team, between community out-reach workers and those with in a facility, between staff employed by the public and non state sector and/or beyond the health sector. In response to this FIGO calls for the development of guidelines for multidisciplinary collaborative practice that allow for shared competencies and appropriate skill mix (FIGO 2009). This requires the sharing of responsibility between the various cadres of health and community workers involved in MNRH.

In addition to team work, workplace environments can be enhanced thought the provision of initiatives that address issues related to the socio-cultural background of staff, their family situation as well as health and welfare and factors such as availability of transport, equipment and tools. The table below outlines a number of Initiatives that contribute to supportive work environments in MNRH at community level.

Table 16 Initiatives that contribute to supportive work environments for HRH

Initiative focus	Details	Context	Reference
Building PHC teamwork			
Core competencies	To increase the responsiveness of PHC teams	Americas	(PAHO 2009)
Peer support	Private midwife network developed to provide supportive peer supervision in Post abortion care	Kenya	(Nelson 2002; Dohlie 2003; ESD Project 2007)
Peer support	FP volunteers & FP field worker collaboration among 72% of volunteers in Yogyakarta 64% in Central Java 53% in West Java.	Indonesia	(Utomo, Arsyad et al. 2006)
Peer review	Improving FP counselling with self-assessment and peer review	Indonesia	(Kim 2002)
Curriculum development manual	module 7 covers collaborative RH work with other PHCW & community development workers	Global	(IntraHealth/Prime II Project 1997)
Linking in with HRH beyond PHC team			
ICT	Family health worker team support in rural areas for consultation, reference and education		(Campos 2006)
~~-e~~atalytic agent"	committed individual at district level who can provide assistance		(IntraHealth 2008)

Initiative focus	Details	Context	Reference
Public private partnerships / collaboration			
Regular meetings	6 monthly gathering for Sahiyyas to share their experiences with NGOs, MoH, MoE, FBO	India	(Government of India 2004)(Mavalankar 2008; Mavalankar, Singh et al. 2009)
Formal agreement	Official agreement with schools to allow PHE students to fulfill a public service obligation by training other youth in family planning issues. An arrangement with youth groups allowing participating members to retain their group identity while serving as PHE	Colombia	(IPPF 1995)
TBA / traditional practitioner collaboration			
TBA	Midwife Hilot partnership Guidelines and strategies	Phillipines	(Recio 1985; DoH 2005)
TBA	Health personnel value local Maya midwives primarily for their role in furthering the goals of biomedicine.	Guatemala	(Hinojosa 2004)
SEARCH model	CHW collaborates effectively with a TBA; the former cares for the baby, and the latter cares for the mother	India	(Bang, Bang et al. 1999; Bang, Bang et al. 2005)
TBA	Links with lady health workers & Dais	Pakistan	(Bhutta 2008)
TBA	Mayan auxiliary obstetric nurses & comadronas partnership development	Guatemala	(Replogle 2007)
TBA	Partnership to improve the health of mothers and babies	Eritrea	(WHO 2008)
Support to address socio-cultural issues			
Female PHE recruitment participation & retention	Improve of females through involving parents, communicating clearer expectations of work, recognising achievements, gender recruitment equity criteria	Mozambique	(Badiani 2006)
Infrastructure, logistics equipment & tools			
Provision of bicycle or moped	supporting village health nurses to increase reach by improving Mobility of Village Health Nurses	Tamil Nadu, India	(Joseph 2004)
Job aides	Cards with supporting information on the integration of FP and HIV/STI services for auxiliary nurse-midwives	Uttar Pradesh India	(IntraHealth 2005)
Job Aides	Cards to help FP educators prompt patients to ask questions, cards to help health workers self assess their performance in client communication	Indonesia	(Kim 2002)
Job Aides	Prevention of PPH, The following in Vietnamese: Emergency Contraception, Sexually Transmitted Infections contraceptive Choices for Young People Options for Unintended Pregnancies	Cambodia, Vietnam	(PATH 2004; Srimuangboon. 2005; PATH 2008)
Job Aides	HIV PTMC & breastfeeding counselling cards	Kenya	(QAP 2007)
Job Aides	Obstetric care: clinical definition, recommended management & several clinical management flow charts. Communication job aid	Global	(FCI 2008; FCI 2008)
Job Aides	COC, DMPA, emergency contraceptive pills, female & male condom, IUD, Lactation Amenorrhea Method, Norplant, FP counselling card	Global	(Pathfinder 2003; Pathfinder 2007)

Initiative focus	Details	Context	Reference
Health and welfare of staff			
Care and treatment for staff with HIV/AIDS	Swazi Wellness Centre for HRH well received	Swaziland Malawi	(Dlamini 2008) (MoH Malawi 2004)
Poor eyesight of midwives	Eye testing and provision of glasses improved performance	Ghana	(IntraHealth 2002)
OH&S	guidelines for integrating safe disposal of —sharps" PMTC training guide includes notes on cleaning sterilizing & disposing of infectious materials & managing occupational exposure Training guide that includes consideration of pregnant health worker & exposure	Africa Global	(WHO 2002; ICN 2006; World Bank 2009) (WHO 2004) (Engender Health 2004)
Advocacy & lobbying	to ensure that occupationally acquired HIV/AIDS is accepted as a work-related disease for which nurses & midwives will be compensated	Global	(ICN 2006)
Family friendly work policy			
Mother & baby friendly policy	Employers of midwives to provide flexible working conditions and policies so that midwives are enabled to return to work after maternity leave as soon as appropriate without compromising either their relationship with their own infants or optimum breastfeeding	Global	(ICW 2008)

PHC teamwork

Team work at community level can involve a partnership of CHWs with or as skilled birth attendants working in an enabled environment where quick referral to facility is available. This is regarded an effective way forward for safe motherhood (Graham 2001) and together with mobilised volunteers a route to achieving MDG 5a (Phillips 2006). An example of this team practice is the partnership between community health workers in India where Sahiyyas work who alongside the Anganwadi Worker (AWW) and Auxiliary Nurse Midwifes (ANM) (Government of India 2004). Effective teamwork requires a greater understanding of group processes and team development however this review has noted a paucity of research documenting team work at community level in MNRH in LMIC. In contrast to this there is a great deal of work in developed contexts which can inform strategies for effective team working in primary care (Kroll 1994; While, Shah et al. 2005; Thomas, Sexton et al. 2006; O'Neill 2008). This may have some applicability to resource poor settings however more work is required along with insight into skill mix at PHC level in LMIC with most work relating to North America and Europe (Buchan 2004).

Peer support networks have been found to be an important means of providing supervision to staff at community level (IntraHealth 2003) and have contributed to improved performance. Fako reports from a study in Botswana that nurses who relied on peers for information were productive (Fako 2002). A review of the nursing curriculum in Cambodia resulted in a recommendation to establish community support groups for local midwives in rural areas. It is argued that this will particularly help midwives not from the area, to feel a sense of connection with the community and may result in better retention of staff (Sherratt 2006). Laperrier reports upon how community health nurses, in contexts of extreme poverty and conflict in Brazil developed ties of solidarity and belonging. These ties soon developed into

informal, mutual-help action groups for professional support and health advocacy (Laperriere 2007).

A number of tools or instruments have been developed to assess teamwork performance with 15 being designated as ~~–b~~est measures" by Heinemann and Zeiss (2002). However none of these tools has been developed for use in LMIC at community level in MNRH or trialled in this context.

Health worker partnerships across sectors

While existing government community based health workers (CHW) will have a role in the community-based efforts, they are unlikely to be adequate. A well designed program also needs to involve the targeted use of CHWs recruited by NGOs, and informal private sector providers.(NIPORT/ Mitra and Associates/Macro International 2009). Intersectorial collaboration is therefore necessary to quality care and performance (WHO 1989).

Intersectorial collaboration requires health personnel from multiple organisations to work together. Gordon et al reports on some lessons learned from experience in this area which may have some applicability for HRH in MNRH at community level (Gordon, Kavanagh et al. 1998). These lessons include the consideration of the need to

- effectively integrate multi-organizational perspectives and resources;
- communicate effectively to a range of audiences;
- work with different styles of leadership and approaches to problem solving, and decision making
- align the missions of various partners to deliver a more appropriate mix of resources to communities

These challenges are no where better illustrated in the context of bilateral donor programmes such as the provision of Cuban health workers to countries such as Timor Leste (Anderson 2008).

Partnerships with professionals outside the traditional health sector such as in education are important in order to provide access to accurate information on health and linkages for referral. Teachers are key to providing reproductive health education in primary and secondary schools. However little is known about how teachers and health workers actually work together to support the delivery of sex education in schools. Some insight is provided from a study of teacher and health workers perceptions of a large scale programme in Egypt (Arab Int. Centre for fighting against AIDS 2002) which found that this approach to health education is acceptable to both professionals. Training for school teachers in HIV/AIDS life

skills and prevention education has been developed by UNESCO (2005) and evaluated in 12 Asia countries. Despite this teacher training on HIV/AIDS tends to be short term and in-service and a recent study found that only Papua New Guinea, Thailand and Vietnam run pre-service training on these issues (Smith 2003). There is a reported high turn over of peer health educators that are often youth people and school students. A project in Colombia has moved to address this through the development of agreements with schools and youth organisations to provide a more supportive working environment for PHE (IPPF 1995).

The Sahiyya Movement in Jharkhand India serves as a useful example of health worker partnerships in action. Every six months there is a Sammelan (gathering) for the Sahiyyas to share their experiences with other stakeholders including NGOs, faith-based organisations and departmental officials from health and other convergence departments. Results of the programme as of end January 2006 indicated that approximately 1,000 VHCs have been formed and 1,000 Sahiyyas chosen (). Seven NGOs have joined the scheme and are working in 34 blocks supporting VHCs and Sahiyyas, There is already better convergence between the health, social welfare, public health education and rural development departments. A number of future activities planned including: (i) Strengthening of a Sahiyya Working Group which include officials from health department, NGOs and faith-based organisations. (ii) Involvement of other departments for example social welfare and education, to promote better convergence. (iii) Development of guidelines for Sahiyya as well as communication aids (IEC) for her use in the villages and training materials. (iv) Identification of more NGOs for implementation. (v) Orientation of district and block health service providers. (Government of India 2004)

In crisis setting strategies the process of building supporting networks and ownership of a programme of intervention was reported by lay maternal workers to be critical to service provision (Teela, Mullany et al. 2009). This study in Burma provides a unique insight into maternal health workers who can provide EOC at community level facilitated by strong relationships with TBAs and CHWs. This study documents a ~~–b~~alanced community-based, rights-based approach to healthcare that allows for __pragmatic solidarity‘‘ and challenges the burden of human rights violations and lack of facility-based healthcare in eastern Burma”(p. 1339). The need for collaboration in crisis settings at community level in the provision of MNRH care is highlighted in Lees study in a conflict setting in Maguindanao province, southern Philippines (Lee 2008). Collaboration between health workers, NGOs, community groups and government agencies can not only result in health care and services but finding peaceful solutions for resolving conflict.

Collaboration with traditional and cultural practitioners

A close working relationship with traditional practitioners such as TBAs and herbalists helps to ensure appropriate referral and comprehensive care including socio-cultural support.

Building relationships with cultural practitioners provides in roads to communities strengthening links in order to provide care that is more responsive to the needs of the community. Traditional practitioners are often consulted independently of CHWs (De Francisco 1994) but efforts are being made to work with traditional practitioners in a team where care can be shared and referrals made (Nakyanzi 1999; de Vaate, Coleman et al. 2002). Traditional and Western approaches to care should be viewed as complementary (WHO 1989) which necessitates partnership between practitioners (Replogle 2007).

In Uganda, THETA (Traditional and modern health practitioners together against AIDS and other diseases), is promoting collaboration between traditional and biomedical health workers in the prevention and care of STIs including HIV. THETA is working with CHWs to establish women's information needs and cultural practices that affect their health (HealthLink 1999). A study by Kaboru et als in Zambia indicates that both traditional and biomedical practitioners are interested in collaborative practice but there is a low level of experience in overt collaboration (Kaboru 2006). Most partnerships concerned issues of safe delivery but intersectoral contacts addressing STIs and HIV/AIDS care issues were less common. A similar project in South Africa was designed to question PHC clinic nurses and traditional healers including TBAs about their attitudes toward collaboration and working together within PHC services. Various recommendations emerged confirming that successful collaboration is based on respect and a positive attitude toward traditional healers and to explain the aims of the project (Troskie 1997). A Cambodia study also affirmed that TBAs are willing to collaborate with the public health care providers and are keen to be a part of a TBA Association (Parco 2000).

Involving TBAs in the government health care delivery system enables them to give their best possible performance (Peng 1979). This enables them to work closely with community health nurses who are responsible for their supervision and skills update. Effective partnerships with TBAs are not only dependant on stable relationships with other workers at community level but on further trained and be more successful integration into the health system (Perez, Aung et al. 2008). Kapoor outlines ways in which TBAs have been integrated into family planning programmes in Bangladesh, Pakistan and India through the development of relationships and training (1994).

In Eritrea a partnership to improve the health of mothers and babies was developed between nurses, midwives and traditional birth attendants. The traditional birth attendants, who are seen as community opinion leaders, are encouraged to promote health-seeking behaviour in the community and refer pregnant women to health facilities for delivery. The ministry of health has established programmes to recruit and train people from local communities on a range of issues, including the need to end harmful traditional practices such as female genital mutilation. The programme has identified the need to improve the relationship between

health workers and community opinion leaders including TBAs. This depends on the recognition of the TBA‘s value within the health system, and on the need to overcome the communication and transport barriers that face nurses and midwives who provide outreach services. The introduction of the concept of self-reliance and the community‘s acceptance of this has improved community and health worker motivation. This has been enhance through the provision of led to regular refresher courses for volunteers and TBAS as well as greater involvement in outreach services as part of the hospital team, award of certificates, and provision of supplies. This has promoted health-seeking behaviour, established better working relationships and strengthened continuity of care from household to health facility. (WHO 2008).

A self instruction manual for trainers of TBAs and MCH workers at community level in PPC emphasises a community assessment in order to equip trainers with adequate information about the context in which they are to work (Carlough 1999). Knowing this context contributes to the design of appropriate training curricula for TBAs. Although this is not emphasised in this learning material this will help to build good working relationships between staff.

Socio-cultural issues

The socio-cultural context can affect the gender roles that men and women have in the health workforce as well as their access to entitlements and how they are able to perform their duties. There are a number of inequalities affecting women at the level of the workforce, including poorer employment conditions and discrimination with regard to opportunities for promotion, can result in higher attrition among female staff and the loss of trained and valuable employees. An example from Pakistan has already been discussed above where female health workers were found to experience disrespect from a male dominated management and require male relatives to escort them in their work around the village (Mumtaz, Salway et al. 2003).

An evaluation of a peer health reproduction education programme in Mozambique identified issues with low female recruitment, fewer numbers in leadership roles compared with male colleagues and a high attrition rate of female PHE that affected the quality of the programme. In addition female PHE felt their approach to peer education was undervalued, their achievements not recognised and their roles misunderstood by parents and family members. Pregnancy was also cited as a reason for leaving a PHE role as it was seen to conflict with the safe sex message they were to deliver (Badiani 2006). A new programme protocol was developed as a result. In terms of recruitment this involved: greater sensitization of parents to encourage understanding and support of the PHE work; Clear expectations communicated to prospective peer educators, including the voluntary character of the work; Inclusion of criterion related to prior experience; recruiting of girls from existing social and community

groups; encouraging recruitment through friends; recruiting more girls than boys. The new approach to training emphasised the concept of gender, involved parents and increased opportunities for recognizing girls‘ achievements. More support was provided for the PHE including concerted efforts to provide positive feedback to girls (Badiani 2006). The new protocol resulted in greater retention of girls in the program (about five times more than earlier procedures) as well as boys which was accompanied by increased productivity. However gender issues continue to persist in the female PHE actions but continued implementation of planned interventions could enable empowerment to be built and enhanced over the program‘s lifespan.

Infrastructure, logistics equipment and tools

One of the greatest barriers to health worker performance in MNRH at community level is access essential to medical supplies. This includes drugs such as Misoprostol and Oxytocin, equipment ie needles, syringes and sterile gloves and reproductive commodities oral contraceptives, condoms, IUDs and DMPA. Ensuring these are available requires appropriate systems of supply, procurement and distribution. In addition health workers need to undertake their work in suitable premises. Communities often contribute to the provision of work spaces for health practitioners. In Ghana resident health care providers work out of health compounds that are donated and constructed by the community (Nyonator, Awoonor-Williams et al. 2005). Transport and accommodation are other forms of necessary infrastructure. In Indonesia the Ministry of health provides village midwives with financial support for accommodation, transport, and field activities (MoH Indonesia 2003). District Medical Management Team (DHMT) and community leaders in Ghana are responsible for the support and supervision of the community health officer who travels from compound to compound via motorcycle providing care to approximately 3000 people. Communication systems are also necessary to provide a link to facilities for referral and support. Equipping midwives and TBAs in birthing homes in Indonesia with transport and 2 way radio communications was found to facilitate efficient referral (Alisjahbana 1995; Kwast 1996). Infrastructure assessments may be useful at community level to identify gaps for improved planning. The EngenderHealth COPE tool books (2003; 2004; 2005) provide a number of questions designed to identify problems and solutions in the area of reproductive health, PMTCT and cervical cancer care and services. These may be helpful in maternal and neonatal health services as well.

Health and welfare of staff

Little documentation could be located concerning the provision of a safe, supportive and healthy workplace for staff in MNRH at community level. There are some descriptions of occupational health and safety initiatives with respect to HIV/AIDs. WHO has produced general manuals and training courses (Forst 1998) as well as a manual for PHC workers (WHO/EMRO 2001). However there are few initiatives that which focus specifically on MNRH. Calls have been made for special ARV programmes for teachers and health workers

in order to ensure access to drugs and improve the health of professionals so that essential services can be maintained (Health Development Network 2004) but no examples of this is practice could be located.

Family friendly work environments

Family friendly work environments recognise the positive effects provided by enabling staff to balance the many demands of their personal and/or family lives with the challenges of work. This requires policy as well as the provision of leave (ie maternity, parenting, compassionate and carers) flexible hours, work sharing and electronic or home based work. The only material that was located in this area concerns the Mother and baby friendly policy of the International Confederation of Midwives (ICW 2008). However governments are may have their own specific policies that relate to this area.

Multiple interventions to improve workers environment

The Capacity Project worked with the Ministry of Health to select and pilot simple, low-cost work climate improvement interventions in ten rural facilities over a period of one year. The primary purpose was to positively impact motivation and job satisfaction and help sites retain their valued staff. Actions taken include more frequent team meetings for sharing information and problem-solving, community outreach days, inexpensive renovation of hospital facilities, purchase of new equipment, more equitable staff shifts, managing inventories to avoid stock depletion, lounges with free beverage facilities for staff, servicing vehicles previously considered unserviceable, introducing safe waste disposal measures, improved signage within several facilities, organized patient flow procedures, less littered yards and cleaner toilets and facilities. New resource centres at each site help to create a culture of continuous learning. A follow-up survey indicated an improvement in worker morale. Nearly all (90%) staff in the ten sites expressed high satisfaction with their work environments, up from 60% at the beginning of the pilot. Most workers said they had no intention of leaving or transferring from their facilities (Adano 2008)

The Laos SBA development plan 2008 – 2012 contains two general objectives for strengthening the Working Environment for SBAs at all levels (Lao People‘s Democratic Republic Ministry of Health 2009). These are:

- Develop and disseminate standards of Midwifery Practice for clinical practice areas and a mechanism for regular and periodic auditing of standards, for quality assurance and improvements
- Ensure all facilities have essential equipment and essential drugs, including mechanism to prevent drug stock-out and transportation and communication systems for referral

Summary

This section has identified a range documentation that outlines in-country experiences of programmes and policies to develop supportive work environments for HRH. There are few examples in MNRH at community level highlighting the need for further research in order to document in country practice in the areas of :

- team work,
- the provision of infrastructure, medicines and logistics,
- strategies to address gender and cultural imbalance in the community workforce,
- strategies to address the health and welfare of staff,
- approaches to promote family friendly work places.

Building supportive work places requires policy guidance and management support and is most likely to be the result of the implementation of a number of initiatives.

Improving working partnerships with the community

The PHC approach acknowledges the resourcefulness of communities and the importance of community participation in their own health care. Many commentators have called for the provision of care through a community-based participatory approach, not through narrow technocratic vertical programs (Bang and Bang 1989). Community-based participatory interventions have been found to reduce neonatal mortality rates (Manandhar, Osrin et al. 2004) and contribute to maternal and reproductive health (Amin, St. Pierre et al. 2001; Kidney, Winter et al. 2009) and improved child mortality (Bhuiya and Chowdhury 2002). However their implementation is partially dependent on HRH who: have strong relationships with community members, participate in community activities and have insight and understanding of the socio-cultural context. For example HR community involvement which included attending community health committee meetings improved productivity (Fako 2002). As a result community development is an important part of HRH work which may also involve motivating and facilitating the development of community structures i.e. the VHC. This is part of the enabling environment of HR and part of their work (Twumasi 1985). Mduduzi found that the frontline work context had a greater influence on worker performance in knowledge transfer than did workers' individual characteristics (Mduduzi 2008) which highlights the importance of this context.

HRH work is therefore greatly affected by the commitment that organisations demonstrate towards engaging the community in health work. Various organisations have different levels of commitment to participatory practice and areas of emphasis. A study of family planning providers in Kenya reported that the providers and supervisors interviewed said that MOH and faith-based facilities were more likely to involve the community in management of facility operations than private/parastatal facilities. Of the RH providers and supervisors employed at private/parastatal facilities, 58% claimed that their facility was not associated with a community management committee (Rawlins 2003). A review of 18 World Bank project information documents on health sector reform initiatives in Asia reveals that in six the emphasis on community participation is weak, and in six community participation is stressed mainly for strengthening mobilization of resources (finance, labour and time). Nevertheless, a few health sector reforms espouse a commitment to community participation in health programme management (determining local health needs and health services, within a given policy context) and in policy formulation (Murthy 2004).

Professional organisations such as the International Confederation of midwives (ICW 2008) make their position very clear as to the participatory basis of their work which is informed by a partnership between women and midwifes. According to the ICM the advancing the midwifery profession will be premised on:

- the health care needs of women and their newborn
- the involvement of women in the process of identification of those needs

- encouraging midwives to proactively have women, as the consumers of midwifery care, participate in the activities directed at the provision of quality care
- encouraging midwives‘ associations to involve women and consumers in their activities (ICW 2008)

HRH play an important role in facilitating community engagement in the design and delivery of health care. There is evidence that community mobilisation is an effective method for promoting participation and empowering communities in MNRH (Rosato 2008). However the current extent to which the community is organised and motivated affects HRH output and performance (Mangelsdorf 1988). The need for leadership within the community itself is regarded as critical to any social and behavioural change endeavour to improve health over and above health workers.

> The issue is not to deploy twice as many village-level health workers to speed community improvements through family planning, neither is it to supply a multipurpose worker to each village to be a spokesman of "integrated development". First and foremost, it is the promotion and acceptance of an indigenous political economic leadership in the 65,000 villages of Bangladesh -- a leadership that understands the need for the potential of self-help and self-reliance in creating a better life for the members of the community. (Demeny 1975) in (Amin, Ahmed et al. 1994)

In addition community acceptance and support of the health worker is important. This was found to be critical in the Ghana Community-based Health Planning and Services Initiative (Nyonator, Awoonor-Williams et al. 2005) and in a safe motherhood project in Tanzania (Ahluwalia, Schmid et al. 2003). In Colombia community support in the form of feedback and rewards for rural health promoter was found to have considerable impact upon effective performance (Robinson and Larsen 1990).

The successful implementation of community based health interventions and the provision of MNRH care and services therefore depends upon HRH and community members their relationships their context and the participatory processes they engage in. The factors that affect the interaction between HRH and community members are outlined in the diagrams below. A rights-based process should underpin this interaction which is necessary for scale up of MNRH care (Knippenberg, Lawn et al. 2005).

From the health worker perspective there are a number of factors that can help to facilitate partnership building. Most importantly is management support for engagement which might include community participation as a key aspect of performance management and the provision of in-service training in areas such as community development. Community structures also need to be functional and receptive so that there are points through which health workers can engage. Health workers need to be motivated and culturally competent and participate in community meetings where health issues are discussed. Health worker commitment is often expressed through voluntary contributions to communities particularly if health workers reside in or close to the community. This may be in the form of committee

membership, lobbying on behalf of the community or contributing labour to the building of structures etc.

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Community members on the other hand can play a role in HRH management process, the development of policy and the education and training of health workers. This is facilitated by HRH management processes and functional community structures. Figure 27 outlines a number of ways that community members can contribute allowing people to play an active role in enhancing their own health care delivery as well as supporting their community. This involves the community in the co-production of MNRH care and services based on strong partnerships between public sector professionals and community members.

Figure 27 Ways in which community members can be involved in HRH processes

Tools and guides to assist HRH to work with communities

A number of tools have been developed to assist communities and health workers to work together. These include tools listed in table 17 that aim to build and strengthen: partnerships, leadership and management practice and facilitate participatory community assessment in maternal and child health. They focus on fostering better relationships between health staff and communities, and provide boundaries and a focus for discussions (Bhattacharyya 1998).

Table 17 Tools to assist HRH and community members to work together

Tool	Summary	Reference
MCH participatory planning	Training in working with communities to develop MCH plan	(BASICS 1999)
CAPA Handbook	Includes section on participatory situational analysis	(BASICS II 2004)
Cope model	build partnerships with community	(EngenderHealth 2002)
Cope model	Engaging Men at the Community Level	(EngenderHealth 2002)
Guide for community leaders	Guide for training community leaders to improve leadership and management practices	(MSH 2008)
Guide for Muslin leaders	Mobilizing Muslim Religious Leaders for Reproductive Health and Family Planning at the Community Level: A Training Manual	(ESD Project 2008)
Basics Of Community-Based Family Planning Training Curriculum	Includes strategies for community mobilisation	(USAID 2009)
Guide for Private Midwives	Community Mobilization for Private Midwives: Curriculum and Guide for Trainers	(Mantz 1997)
Handbook on counselling for MNH	Includes section on linking with the community	(WHO 2009)
PLA training course	Participatory techniques for community-based programme development	(Jhpeigo 1998)
Child health Participatory planning	Participatory Community Planning for Child Health	(Bhattacharyya 2001)
Community development manual	guide to community development for nurses in UK	(Royal College of Nursing 2002)

These tools range from those that focus on training community members to those that deal with building the skills of health workers. The first seven tools have the former focus while the guide for private midwives and the counselling training course are concerned with training providers. The American College of Nurse-Midwives (ACNM) and the Africa Regional Office of the SEATS Project developed The Community Mobilization Curriculum and Guide. This aims to increase the effectiveness of private midwives by expanding their active involvement in the community. The Business Management Skills guide aims to increase the sustainability of these private-sector delivery points and emphasizes the relationship among continuing education, improvement in the quality and scope of reproductive health care (RHC) services, and business viability. Although originally designed for private sector midwives in Uganda, both guides are relevant to private sector RHC providers and services throughout the developing world.

Little documentation could be sourced that provides insight into the effectiveness of these tools. One RCT study found that the use of educational programmes in building the capacity

of community leaders improved the competencies required for the promotion of a health living environment (Hien, Takano et al. 2008). This study revealed that the participatory-style and intersectoral collaboration approach facilitated educational processes thereby improving learning outcomes for community people.

Tools that have been employed in child health may provide some useful models in MNRH. These include the Catchment Area Planning and Action (CAPA) handbook which aims to empower community members to take an active role in improving the health of their children in areas of immunization, nutrition, and malaria. Other tools such as those from developed contexts such as the community development manual for nurses in the UK could also provide useful insights.

HRH & the consideration of socio-cultural issues in the community

A number of approaches can be employed to assist and support HR to provide the most appropriate care and services to meet the socio-cultural needs of communities but the evidence is limited. Three systematic reviews provide insight in HIC settings however their transferability to LMIC may be limited by the limited functionality of health systems. A study by Lewin et al. found strong evidence to suggest that training providers in patient centred care can increase the patient centredness of consultation processes, as indicated by a range of measures related to clarifying patients‘ concerns and beliefs; communicating about treatment options; or levels of empathy (2001). Another systematic review that focused on interventions and the health care of ethnic minorities found that tools such as tracking systems to follow up patients, provider education, and simultaneous translation for patients with limited English proficiency and task shifting had an effect on improved health care and services (Beach 2006). A third review examines the quality of interaction between women and providers and did not find strong evidence that interventions (i.e. antenatal testing information, computer-assisted history taking, woman-held maternity records, and provision of informed choice leaflets) improve women‘s knowledge and understanding, women‘s satisfaction, or their health outcomes (Rowe 2002).

Table 18 Examples of HRH initiative addressing socio-cultural considerations in the community

Initiative focus	Details	Context	Reference
Training			
Cultural training	Training and support of ANMs to work in tribal areas and work with the community	Karnataka India	(IntraHealth 2008)
Gender training	Course to improve provider and women relationships & communication to improve abortion care. In-service gender training to strengthen awareness amongst health providers	South Africa	(Varkey 2006)
Gender sensitivity	Training & tools in FP & RH	Global	(IntraHealth/Prime II Project 2003)
Communication training	Comprehensive counselling for RH course, Part II focusing on providers attitudes & provision of care to specific client groups (unmarried women, men, adolescents)	Field tested Bangladesh, Kenya, Jordan, Ghana	(EngenderHealth 2003)
Socio-cult training	designed to improve gender and culturally sensitive care among provider teams in SRH	Bolivia	(FHI 1998)
Counselling training	With reference to socio-cult b/g of clients in *FP *Adolescent MRH	Global	(ESD Project 2008) (FCI 2008)
FGM training	Professional & ethical implications of FGM	Global	(WHO 2001)
Tools			
Materials	culturally relevant materials for midwives counselling		(ESD Project 2008)
Selection & recruitment			
Female health workers	Ensure adequate numbers of female workers to provided socially legitimate ways of discussing reproductive health issues with female clients	Thailand	(Cash 1997; Velasco 1997)
PHE as commercial sex workers (CSW)	Significant changes in knowledge, attitudes, & self-efficacy of CSWs & managers & improvement in STI clinic attendance	Philippines	(UNAIDS 1999)

Case studies: Examples of community and health workers working together

A number of initiatives and approaches can work to ensure HRH involvement and community mobalisation. This can include the development of participatory planning and evaluation methods, harnessing existing or developing new community structures such as village health committees (VHC), establishing new cadres of worker to better link the community and health services as well as supervising and training lay health workers.

Table 19 Examples of initiatives involving HRH and community partnerships for MNRH

Initiative	Context	Reference
Community-Based Problem Solving: Improving the Health of Women and Children	Guatemala	(González 2001)
Community-Based Post Abortion Care Services in MotherNewBorNet Member Programs	Bolivia, Peru and Egypt	(ESD Project 2008)
VHC in family planning	Guinea	(Diakite 2009)
Local initiative programme for Reproductive & Child Health	Uttaranchal, India	(Government of India 2004)
Indonesia BIDAN SIAGA	Indonesia	(Thaddeus 2001; JHUCCP 2003; Palmer 2004)
Women's health groups to improve perinatal care	Rural Nepal	(Morrison, Tamang et al. 2005)
Mitanin Programme	Bangladesh	(Mishra 2004)
capacity-building program for community leaders	Vietnam	(Hien, Takano et al. 2008)
Home based Life saving skills (HBLSS)	Ethiopia	(Sibley, Buffington et al. 2004)

Ways of working

In Guatemala a community-based problem-solving methodology for improving the health of women and children was developed in the format of an agenda for application to monthly community meetings. Health workers and community members worked together to design new ways of presenting health data so that the public could understand the information and be able to identify problems. The participants then developed an agenda for the community meeting. Agendas varied among communities depending on their traditions. The problem solving methodology, including identifying problems and setting priorities for and seeking causes and solutions to the problems, was introduced into the agenda as agreed by the participants. The end result of the community meeting was the development of an action plan based on the problem identified for resolution. This methodology could be transferred to other contexts

Another example of community and health workers interaction can be illustrated by the USAID funded ESD community PAC model which was piloted in Bolivia, Peru and Egypt. The community PAC activities emphasize increasing the communities‘ awareness of where PAC services are available, recognition of the danger signs associated with complications of miscarriage and incomplete abortion, and the importance of utilizing family planning methods in preventing unwanted pregnancies and practicing healthy timing and spacing of pregnancies for better health outcomes. By involving the community in the mobilization effort, the power dynamics between community members and groups that influence the issues in the community are altered, thus, providing opportunities for positive change. In Egypt a range of people were involved in the mobilisation efforts they included community leaders in each community, including religious leaders (Coptic priests and Muslim *sheiks*), community

educators, agricultural workers, primary care physicians and nurses, Community Development Associations (CDAs), *dayat* (traditional birth attendants) and the media. A series of meetings enabled these groups to explore the health issues and set priorities through a series of meetings. This resulted in action plans that were collaboratively undertaken and evaluated. An evaluation indicated increase in knowledge and services related to PPC (ESD Project 2008).

Partnerships between adults and young people are emphasised as a core aspect of youth development/sexual health programming (Pittman 1995). Joint efforts at problem solving can be difficult due to power dynamics which are rooted in socio-cultural norms concerning how each should relate to one another. Health professionals can underestimate the knowledge and creativity of youth; they are often used to making decisions without their input while youth can be accustomed to being largely ignored. Evaluations of YouthNet Projects in Zambia and Cambodia that were designed to improve reproductive health and prevent HIV among young people suggest that a participatory learning and action approach to a needs appraisal helped adult health workers overcome stereotypes of youth and allowed a broader array of program responses (James-Traore 2002).

Mobilizing the community through training & development of new cadres

A complex community based MNRH initiative in India which was modelled on a programme in Bangladesh illustrates the importance of the creation of new cadres of staff to success and the transferability of approaches. The Rural Development Institute (the rural outreach arm of the Himalayan Hospital Trust) set up a Local Initiative Program (LIP) as a pilot Reproductive & Child Health (RCH) project in northern India. The aim was to provide outreach services by enhancing community ownership. It did this by:

Recruiting Lady Medical Officers (LMOs), stationed at its headquarters, to hold satellite/mobile camps in the outreach areas to supplement the health care infrastructure.

- Training more than 400 female village nominated community health volunteers (CHVs) in Eligible Couple (ECLO) mapping and basic RCH services
- Forming 400 VHCs
- Identifying and training more than a 100 ~~-p~~eer educators
- Developing a Behavioural Change Communication (BCC) strategy (Government of India 2004)

Involving young people as program leaders and as educators and counselors can sometimes yield better outcomes than adult health professionals as adolescents often prefer receiving

information and advice from peers (Senderowitz 1998). Youth peer health educators (PHE) are a cadre that are often formally established as part of health programmes at community level and health workers have an important role in their education. There are a number of training courses that have been developed in reproductive health for youth including training for trainers of PHE (Family Health International 2002; Family Health International 2005) and training to develop a PHE programme (International HIV/AIDS Alliance 2005). Health workers can also act as mentors and supervisors which not only provides support and structure for PHE but can ensure effective referrals to health services (Flanagan 1996).

Little documentation could be located concerning how adult health workers interact with and support peer health educators. The literature focuses on the development of these cadres and their role rather than their relationships with other health workers. Two examples of youth engaged in health work are given below. The first describes youth in a peer health education capacity and the other shows how adolescent girls can be involved in supporting maternal and reproductive health in the community.

Indonesia

A peer education programme forms part of ―Lentera" an adolescent sexual health project of the Indonesian Planned Parenthood Association (IPPA). This programme reaches high school students, sex workers, gay youth and transvestites. The high school peer program involves 13 schools in Yogyarkarta and works to promote: knowledge about sexual health, abstinence for adolescents not yet sexually active, condom and contraceptive use among sexually active youth and responsible behaviour among young people in general. Peer educators, selected by their schools, undergo a 3-day training that includes participation in planning and goal setting for their future activities. These young people then provide information to their peers on a one-on-one basis or in larger programs they facilitate in their schools. A key program mechanism uses university students as volunteers to monitor the school programs and provide support to the peer educators. The programme has contributed to an increase in the use of IPPA services by young people (Senderowitz 1998).

India

In India adolescent girls have been trained to encourage the community to use health services particularly reproductive services. The programme selects non-school going adolescent girls (aged 15 to 18) from the villages and trains them at block headquarters for 5 days – three days at first, then a refresher day after 6 months and another refresher day after another three months. The training includes information on personal hygiene, menstrual hygiene and other problems for adolescents as well as about conception, antenatal (AN) care, danger signs during pregnancy and the importance of institutional deliveries and postnatal (PN) care. The girls are also taught about maternal and child health issues, empowering them to take care of/support pregnant women, following the advice of the Village Health Nurses (VHNs –

Tamil Nadu equivalent of Auxiliary Nurse Midwives). They are also told who to contact if they fear a villager is contemplating killing a female child. Each girl is then expected to take care of 5 to 6 pregnant women and 5 postnatal women in their village, providing advice on diet, regular consumption of Iron and Folic Acid (IFA) tablets and the benefits of breastfeeding, as well as persuading them to use institutional services. The programme has yet to be evaluated but will be monitored with a monthly review on the number of visits made by the adolescent girls to pregnant women; the number of women taking IFA; number of cases referred to VHNs/other hospitals; number of women having AN/PN care; number of newborns referred and number of infants fully immunised (Government of India 2004).

Partnerships with CHVs or Lay health workers

There are many examples of HRH community partnerships that highlight the importance of the need for appropriate training, supervision and support of lay and volunteer workers. In India the Mitanin programme has resulted in increased post natal care visits and immunisation due to the strong linkages developed between women, community structures, (womens groups), volunteer health workers (Mitanins), Auxiliary Nurse Midwifes (ANM) and Anganwadi Workers (Mishra 2004; Society for Community Health Awareness 2005).

The development of clear roles for health worker, family and support person during birth may help to demark areas of responsibility to ensure quality care and collaboration. An example of the various roles that women, TBAs volunteers health workers and families can play and the interventions that they can deliver is outlined at appendix 2 (Family and Community Health 2002). Another approach is the HBLSS programme in Ethiopia. This targets a homebirth team consisting of all of those who can be expected to be present at a birth, namely, the pregnant woman, her family caregivers, and the birth attendant. Health education was delivered to the team by the TBA who also in most cases was the birth attendant. There was improved performance in management of postpartum hemorrhage but weakness in the management of newborn infection. Exposure to HBLSS training in the community was estimated at 38%, and there was strong community support (Sibley, Buffington et al. 2004).

The transference of mobilisation and engagement strategies to other communities is highly depended on the socio-cultural context. However support for lay health workers who often form the link between the community and the health sector is necessary. A number of factors need to be considered if intervention effects are to be transferable to other settings. This includes:

- financial support for lay health worker programmes;
- the availability of routine data on who might benefit from the intervention (e.g.children whose immunization is not up-to-date);

- resources to provide clinical and managerial support for lay health workers;
- the availability of drugs outreach for family planning (Flottorp 2008)

Partnerships with Village Health Committees

VHCs in Guinea were essential players in bridging the physical and attitudinal gap between families and health services in order to increase family planning and contraceptive uptake. Met need for family planning rose from 24 to 61 percent after just 4 years and uptake continued high through mid-2008, 2 years later. Other successful initiatives involving village health committees, women's committees and nurse midwife engagement (Mubyazi 2007). (IntraHealth 2001). A project in South Africa that included health workers in MNRH initiated a process to strengthen the relationship between the community Liaison Officers and health advisors working within Nelson Mandela Bay Municipality and the community health committees of Sub-district B (Uitenhage and Despatch). (Boulle 2008). Health workers conducted a three-day Participatory Reflection and Action (PRA) workshop with thirty representatives from community health committees and key stakeholders, intended to strengthen community participation and deepen an understanding of the roles and responsibilities of community health committees.

Working with community based organisations

Health worker support of Women's health groups was an important component of the establishment and maintenance of these groups which were developed to improve perinatal care in rural Nepal. (Morrison, Tamang et al. 2005). Close linkages with community leaders and community health workers improved strategy implementation. Regular meetings were organized in co-ordination with the local Female Community Health Volunteer, an unpaid community based health worker. Village health workers were trained to visit newborn infants in their homes and identify and treat neonatal sepsis. This intervention appeared highly successful as a drop in neonatal mortality of 62% occurred. Village health workers were intensively managed and supported by the research team, and therefore large-scale implementation may be difficult.

Partnerships for commodity distribution

Collaborative partnerships between HRH and community have proved to be successful in the distribution of MNRH commodities. A study in West Java Indonesia found that midwives and community health workers successfully worked together with women, TBAs and community volunteers to distribute and encourage the use of Misoprostol to prevent post partum haemorrhage (Sanghvi 2004). A non-randomised community trial assessed a new delivery system of IPTp through traditional birth attendants, drug shop vendors, community reproductive health workers and adolescent peer mobilisers (the intervention) compared with IPTp at health units (control) in Uganda (Mbonye, Bygbjerg et al. 2007). This trial found that the community-based system was effective in delivering IPTp, whilst women still accessed

and benefited from essential care at health units. Despite these successes it is important to note that many community members who distribute MNRH commodities are also driven by their own personal agendas and interests in getting ahead in life. This can be at odds with the goals of the MNRH programme. HRH knowledge of distributors motivations can help to provide more realistic expectations from such programmes and improve relationships between the two (Kaler 2001).

Partnerships with fathers

A key component of the MNH Program which commenced in 1998 in Indonesia was the community partnership developed through the SIAGA campaign. This programme began with as a mass media campaign that focused on increasing the husband‘s role in preparing for delivery. The success of the programme led to an enlarged remit including interventions to reduce post partum haemorrhage. SIAGA (an acronym for ready, take transport, be on guard) became associated with the concept of shared responsibility which is central to the Indonesian value of Gotong Royong or self help (Palmer 2004). The village midwife was promoted as a skilled friendly provider who was willing to help. The BIDAN SIAGA campaign encourages pregnant women and their husbands to consult a bidan for maternal health services and encourages the bidan to proactively approach the community to offer support. An evaluation of the programme found that the campaign played an important role in making Indonesian women, their husbands, and their communities more prepared for complications during pregnancy and delivery.

Summary

Experiences from LMICs highlight a number of factors that contribute to the strengthening of relationships with communities which facilitates a partnership approach to the delivery of MNRH care and services. This includes the need for a motivated health workers who are cultural competent and willing to engage with existing community structures. Likewise, HRH depend on communities that are well organised with strong leadership that can mobilise local women and traditional power holders. The co-production of health outcomes in LMIC, therefore, is a shared responsibility between health workers and communities and enabled by HRM systems with mechanisms to support this community engagement. Despite much documentation that describes the need for participatory approaches there is little description of actual health worker experience applying these approaches and the strategies applied when faced with various obstacles.

Strengthening Education and competencies

This section outlines initiatives that have led to the strengthening of health worker education and training including pedagogical aspects and graduate competencies. Approaches to large scaling up efforts in education and training have been discussed previously in this review but the details of these and other initiatives are discussed here. There are a number of documents that have attempted to review the education and training of health workers engaged in MNRH at community level. A Global review of CHW training surveyed CHW curriculum presents a study of trainer characteristics, training strategies used, monitoring and evaluation and the cost of the selected programmes (Li, Goethals et al. 2006/2007). Sibley et. als systematic review focuses on the impact of TBA training (Sibley 2007) while a review of training initiatives for essential obstetric care in developing countries examines curriculum approaches, tools used to assess training and evaluation lessons (Penny and Murray 2000).

Crisp and Sharp have outlined some of the key aspects involved in the improvement of education and training. This emphasises the need for a comprehensive approach that looks beyond traditional ways of delivering education and training.

Figure 28 l

(Crisp and Sharp 2008)

A collaborative approach to education training

There are a number of benefits in that stem from a partnership approach to health worker training The Pan American Health Office (PAHO) calls for the development of cooperation mechanisms between training institutions (universities and schools) and health services to ensure that workforce training reflects a universal and equitable model of quality care that meets the health needs of the population (PAHO). Collaboration helps to ensure that curriculum is developed and delivered according to certain standards and with the input of technical experts, practitioners, learners and community members themselves. One example

of this is the decentralized national clinical training network for reproductive health and family planning (Vollmer 1996; Huicho, Davila et al. 2005) in the Philippines. This led to standardised curricula and increased number of graduations. Partnerships also contribute to maintaining a link between pre and in-service training curriculum and can help facilitate inter professional learning which may strengthen team work and clinical practice (Reeves 2008).

A partnership approach involves private sector, civil society and philanthropic organizations working together to design, deliver and evaluate education and training. Some examples of a partnership approach with respect to training for HR in MNRH at community level are noted below.

Table 20 Examples of Partnership approaches to training

Partnership	Reference
Govt / Professional association partnership	
PMCT program partnered with the Kenya Obstetric and Gynecological Society to develop clinical guidelines for PMCT. The National AIDS Council has adopted these guidelines, which have helped to set national standards for PMCT care.	(Rutenberg 2002)
American College of Nurse-Midwives (ACNM) and Save the Children field-tested the Home-Based Lifesaving Skills program	(Sibley, Buffington et al. 2004)
Private Sector / Professional association partnership	
Bidan Delima Midwife Training Program with Johnson & Johnson & Indonesian Midwives Association	(IFPMA 2009)
Bayer Schering Pharma & Family Planning education programme with Asia Pacific Council on Contraception	(IFPMA 2009)
MoH / UN partnership	
Bangladesh has also organized community-based skilled birth attendant (CSBA) training programme on behalf of Government of Bangladesh from 2003 with UNFPA and WHO support	(UNFPA/DFID/ WHO/Govt. India/UNICEF 2008)
2 WHO Collaborating Centres in Nursing and Midwifery Development in Chiang Mai and Mahidol University, Thailand are in the process of translating WHO guidelines on acute respiratory distress syndrome for training of nurse-midwives at the primary health care units and community health volunteers	(WHO/SEARO 2009)
With WHO support, Bangladesh, Bhutan and Timor-Leste reviewed and revised pre-service midwifery training. India carried out refresher midwifery training for staff nurses/auxiliary nurses midwives and revised the pre-service midwifery curriculum, while Indonesia and Sri Lanka addressed provision of maternal and newborn care in remote and conflict areas respectively	(WHO/SEARO 2008)
MoH / Donor partnership	
850 Timorese students studying medicine with Cuban trainers	(Anderson 2008)
Australia-Pacific Technical College (APTC) is an Australian Government initiative APTC School of Health and Community Services (SHCS) provides course in community child welfare has campuses in Fiji and Vanuatu	(APTC 2009)
MoH / NGO partnership	
Family health volunteers trained by Health Alliance international in Timor	(Mize 2006)
Rotary Club of Morialta Inc, Infancy, Midwifery, Obstetrics & Gynaecology Aid Programme IMO. Training for midwives at community health centres	(Mahmood 2009)
MoH Private sector	
Thai adolescents Sexual & Reproductive Health Program partnership with Organon, a part of Schering-Plough Pharmaceutical company, the Thai Dept. of Health, the Institute of Health Research of the Chulalongkorn University and the Rajabhat Bansomdej Chaopraya University in Bangkok	(IFPMA 2009)
HIC University / LMIC university collaboration	
Memorial University of Newfoundland, University of Indonesia The project aims to strengthen the capacity of the faculty of nursing at the University of Indonesia to develop a comprehensive model for women's and community health services for rural Indonesia and to establish a management and monitoring system to ensure the sustainability and success of women's health projects.	(UPCD 2003)

Integrated training activities

Partnerships facilitate the integration of training activities which can be more cost effective than running stand alone training activities. In India, the MOH adopted an integrated approach to train 200,000 health workers on emergency contraception pills (ECPs) to lower the cost. ECP training was integrated into the Reproductive and Child Health training program under which paramedics undergo three days of training. All paramedics were then reoriented in the new service, through a two-hour session on ECPs. ECPs have now been included in the MOH Contraceptive Technology Update (CTU) manual (Hossain 2009).

Curriculum review and development

There are a number of documents that outline changes that have been made or need to be made to HRH curriculum for cadres working at community level in MNRH. These revisions and additions are necessary in order to ensure that the courses are responsive to community needs and are technically current. Learner needs analysis and curriculum reviews necessary part of on-going improvement of education and training and health worker performance. Specific priority areas have been identified at the community level including: training in recognition of complications among women, families, and TBAs to promote timely referrals (Sibley and Armbruster 1997) and training for integrating HIV prevention and care into maternal and child health care settings(Rutenberg 2002). Others have highlighted communication training (QAP 2000), advocacy and negotiation (FIGO 2009), management (Howard 2002) and the need for business skills for private midwifes (Segall 2006). The ICM has defined core competencies that are of value to those developing pre-service and continuing education for community healthy personnel however the competencies required depend on models of care that is adopted (Koblinsky, Campbell et al. 1999).

There is little discussion in the literature regarding the competencies needed for international health workers in MNRH at community level. An article on the competencies for Australian health professionals working in international health (Akbar 2005) does not examine the specific graduate requirements for work in this context but provides a list of 9 core competencies derived from key informant interviews and an analysis of job descriptions.

The table below provides some examples of studies undertaken to establish the curriculum required to prepare health workers to practice in MNRH at community level in LMICs.

Table 21 Learner needs analysis and curriculum reviews

Participants/ curricula	Method	Findings / Description	Reference
CHWs, VHV and TBAs Asia and near East	Survey	Need for training and refresher training for community based newborn & PPC & FP	(ESD Project 2008)
Indonesia 332 midwives in 3 provinces, hospital & community range of grades	psychometrically valid training-needs instrument	The most-educated midwives recorded training needs for 24 tasks, while the less-educated had training requirements for all tasks, which suggests that new training programmes are effective. Few differences in training needs were revealed between hospital and community midwives	(Hennessy, Hicks et al. 2006)
East African Nurses Including CHNs		Questionnaire for Educational Needs Assessment for East, Central and Southern Africa College of Nursing in Member Countries	(The East 2006)
Kenya nurse midwives	Baseline needs assessment- survey	Ninety-six percent of the facility in-charges reported an interest in training & other support to enable them to meet the demand for PAC. The 2 facility in-charges who declined participation in the PAC initiative cited the following reasons for lack of interest: patients' inability to pay for the services & counselling post-abortion patients was too time consuming	(Yumkella 1996)
Botswana: Nurse & midwifes	Multivariate analyses of performance	High performance of midwives suggests that all nurse be trained as midwives rather than upgrade nurse aids to RNs	(Fako, Forcheh et al. 2004)
Curriculum reviews			
Auxiliary nurse midwife: India	Curriculum review	Content change to align with epidemiological situation, disease pattern, approach to the client, programs, policies and rules. Job descriptions updated but issues with agreement by all parties educational needs assessment in conflict settings necessary	(Government of India 2004) (Ehrlich 2004)
East Timor: nurse and village health worker	needs analysis	Reestablishment of training programmes in remote villages, upgrading education standards, twinning programmes with Australian institutions	(McAuliffe, Grootjans et al. 2002)
Cambodia: nurse midwife	Curriculum review	Address current skills deficit, specifically the need to increase support to Primary Midwives	(Sherratt 2006)
Cambodia: nurse midwife	Curriculum review	Recommendations for a Community Health Option in actual & possible advanced practice programs	(Herem 2000)
India: Aux nurse midwife	Curriculum review including workshops & consultation	Revised content & job descriptions	(Government of India 2004)
India: CMWs	Curriculum review	content was updated and content was added to strengthen clinical exercises & cover PPC	(Murphy 2008)

Participants/ curricula	Method	Findings / Description	Reference
LMIC: WHO Safemotherhood midwive course	Curriculum evaluation: Questionnaire survey & FGD a 2wk clinical skills course & 8 day orientation to using the modules	Feedback received for improving modules overall modules have the potential to strengthen and support education	(O'Heir 1997)
PNG FP education & training	Review	need for comprehensive Training Needs Assessment in Family Planning involving all levels of health workers, including the under-graduate and post-graduate training of health personnel	(UNFPA 2008)
PNG Midwifery education	Review of 4 Mw training facilities & curricula (UPNG, PAU, UOG, DWU), stakeholder & key informant interviews	Need for improved T&L resources, teachers who are academically & clinically competent, increase clinical component of courses, develop set of clinical skills minimum standards that each institution must incorporate into their curricula, Conduct a review of the registration procedures & set min. standards for entry, register students who have graduated since 2004	(Kruske 2006)
PNG Midwifery education	Overview of situation 2000-2008	Keep clinical focus in clinical training programs, Clinical teachers must continue to practice to maintain skills and credibility	(Natera 2009)
India Junior Public Health Nurse education in Kerala.	Curriculum review	Conducting job analyses, redefining curriculum objectives, listing and prioritizing content, designing methodology, structuring sessions, and devising evaluation methods for training	(Sandeep 2006)
Mexico: obstetric nurses, professional midwives and general physicians	Curriculum analysis	3 curricula measured against the 214 indicators of knowledge & ability in ICM guidelines, Midwife curricula most complete.	(Cragin, DeMaria et al. 2007)
All cadres: Africa	HIV & MCH consultation	Integrate PMCT into the curriculums of medical and nursing schools to ensure that all students receive adequate exposure to PMCT	(Rutenberg 2002)
	1. qualitative Delphi study; II: descriptive survey	list of basic (essential) and additional competencies for midwives who have been educated in keeping with the ICM/WHO/FIGO international definition of the midwife was developed	(Fullerton, Severino et al. 2003)

Approaches

There are a number of approaches that can be taken in the design and delivery of health worker curricula. Ensuring that training curricula is pedagogically sound is necessary for effective learning and performance. There is insufficient evidence to assess which lay health worker training or intervention strategies are likely to be most effective (Lewin, Dick et al. 2009).

Table 22 Some approaches to the design and delivery of MNRH curricula for community based workers

Participants/ cadre	Method / document type	Findings	Reference
Performance orientated			
Tanzania: HRD training system for all cadres	case study evaluation	HRD & training system played a role in the success of the National family planning program. This approach has helped the MOH and NGO partners to increase the use of FP/reproductive health services dramatically over a 10-year period, from under 7% in 1989 to an estimated at 17% in 1999.	(Ingras 2001)
Competency based			
Ethiopia: women, families & birth attendants	Programme evaluation	Home-Based Lifesaving Skills program (HBLSS) is a family- and community-focused, competency-based program improved performance in management of postpartum haemorrhage	(Sibley, Buffington et al. 2004)
Problem Based			
Philippines TBAs	RCT	Interactive learning is a preferred method by TBAs	(Singhal 2001)
Cascade training			
CHWs			(IntraHealth 2002)
rural health workers (Tecnicos) & village health promoters (Promotores): Guatamala	prospective trial: interactive Kader method, developed in West Java, Indonesia, was compared with traditional didactic training	Kader method for rapid tiered training of health workers has applicability	(Bailey 1996)
maternity staff at district hospital & post staff to train TBAs, CHWs to train community	Performance of CHWs TBAs was assessed pre-& post-training. Management of MN complications by women, families, and homebirth attendants was assessed post-training.	Increase knowledge in most areas, reinforcement in newborn areas required. Improved management of PPH indicates that home-based management of signs of PPH by unskilled attendants, including HBLSS guides, is promising	(Sibley, Buffington et al. 2004)
Health care providers Asia & near East	Survey – question included lessons learned	Cascade approach has increased the number of trained service providers since funding and Ministries of Health cannot afford to train all health care workers	(ESD Project 2008)
village birth attendants & community sexual health educators PNG	Report	Training for trainers of 320 women volunteers to become village birth attendants and community sexual health educators in the East Sepik Women and Children‘s Health Project,	(Cox 2003)
Learning by doing/ experiential			
Community-Level Health and Nutrition workers: India	Systematic review	training methodologies that provide hands-on training and experiential learning show better outcomes	(IntraHealth 2008)
CHN	Expert report	people orientated, practical	(WHO 1974)
TBA	Review	Should be nondirective, dialogical, & experiential & integrate into community activities	(Estrada 1983)

Participants/ cadre	Method / document type	Findings	Reference
Inter professional learning			
PHCWs	Cluster evaluation	Community based interprofessional education dependent on motivated learners and close partnerships with communities that take structural & operational factors into consideration	(El Ansari 2001)
Pictorial methods			
Nigeria: TBAs	Programme evaluation	Cards and posters used in training sessions	(Matthews, Walley et al. 1995)
TBAs	Curriculum guide	How to develop visual training materials	(Schieber 1993)
Matrons & CHWs	Project description	pictographic referral forms were developed and pre-tested for comprehension and acceptability for PAC	(IntraHealth 2003)
TBAs/ CHWs	As above	As above Use of pictorial action cards and songs	(Sibley, Buffington et al. 2004)
Role playing			
Village midwives	Quasi experimental	Plays and skits the focus of teaching rather than formal classes. Of 32 VMWs trained 24 were still practicing < of 1% in attended births	(Alto, Albu et al. 1991)
Distance learning			
	Description of programme	Using email to improve knowledge of RH http://www.advanceafrica.org/Compendium/PracticeDetail.asp?ID=368 1 of	
CHWs Senegal	Project description	Design for a distance learning progarmme using radio	(JHUCCP 2005)
Combination of approaches			
Phillipines/ Hilots	quasi-experimental design	combination of training methods (lectures, audiovisual demonstrations, and role playing) significantly increased both test and field performance in recruiting FP acceptors	(Morisky 1985-86)
		learning through peer-educators, interactive communications, role-playing & hands on practice	(Ohnishi, Nakamura et al. 2007)
Indonesia: Midwives	Knowledge test & clinical observation	Midwives from the intensive in-service that combined competency-based skill training with peer review & continuing education scored higher on the knowledge test & demonstration of the five key skills & reported managing complications better than midwives who attended no training & those who were trained via an intrenship	(McDermott, Beck et al. 2001)
Ghana Midwives	Project description	self-directed learning course, which combines self-paced individual instruction, peer support, and periodic facilitated group learning sessions	(IntraHealth 2001)

Participants/ cadre	Method / document type	Findings	Reference
Community education			
Doctors Thailand	Project description	training in rural health facilities and hometown placement	(Wibulpolprasert 2003)
Nurses Lebanon	Project description	Educating nursing students through community participation	(WHO 2008)
Nurses Thailand	Project description	Local student nurses undertake learning activities designed by local CH facilities	(WHO 2008)
problem solving approaches			
South Africa	Commentary	Problem solving approaches most appropriate	(Saunders 2001)
PNG	Commentary	Institutionalization of PBL	(Beracochea 1995)

Selection of learners

Selecting the most appropriate learners into MNRH education and training courses is normally guided in by policy and procedures with input from stakeholders. Encouraging local people to undertake education in training in health would help to build the capacity of the workforce numbers at community level particularly in rural communities where there are shortages. A number of studies have found that a rural background is a significant predictor of rural work (Playford, Larson et al. 2006; Chopra 2008) making rural recruitment a viable way forward. The section of local people into health worker education and training courses also helps to ensure that the workforce has a level of the socio-cultural competency (Warrick, Wood et al. 1992). Community involvement in the learner selection process can help to increase community participation in decisions making concerning their future health workforce. A study in Cambodia found that community members felt that they should be informed of midwives shortages, so they can try to encourage a member of the community to train as a midwife (Sherratt 2006).

Local people may also be more motivated to undertake training so that they can better contribute to improving their community. A performance-based selection criteria was applied in a programme to train 320 women volunteers to become village birth attendants and community sexual health educators in the East Sepik Women and Children‘s Health Project, Papua New Guinea (Cox 2003). Despite this criteria, the authors note that well motivated women managed to attend the course despite not being selected. Motivation is key to learning and potential students may need to be given the opportunity to demonstrate this as part of the selection process. Encouraging local youth, especially girls to undertake careers in health may be a useful way to address appropriate workforce profile issues and community engagement but also increasing education, health and development of the whole community in line with the MDGs.

Accreditation and certification

The accreditation of education training institutions and programmes involves processes designed to assess whether minimum standards have been achieved in MNRH. These standards are usually established by relevant regulatory authority in countries and can cover clinical and promotive aspects of health care. Health workers who graduate from accredited programmes can then become certified for practice and registered with the relevant professional body. The Kampala Declaration calls for the development of rigorous accreditation systems for health worker education and training (Global health workforce alliance 2008) which includes pre service as well as in service training. This is a challenge at community level as not all cadres are represented by professional bodies and training for cadres such as TBAs and those categorized under the community health worker group can be ad hoc and run by a number of providers. As a result practitioners at community level may be poorly prepared for practice, receive no or irregular in-service training and work unlicensed and unregulated. This has implications for the quality of service provision across communities.

A number of organisations have undertaken work in the area of midwifery education accreditation. In Afghanistan Jhpeigo have worked with the Ministry of Public Health to develop 59 educational standards which will be used by the Midwifery Education Accreditation Board (Jhpeigo 2005). The Board oversees the process of external evaluation and formal accreditation of midwifery schools. The accreditation process employs both internal and external reviews using specific assessment tools that detail four areas of the national educational standards. The areas of focus include classroom and practical instruction, clinical instruction and practice, school infrastructure and materials, and school management. Midwifery schools also use the explicitly detailed standards to evaluate their own performance, define their needs and monitor their progress.

WHO has recently developed global standards for initial nursing and midwifery education(WHO 2008). These identify the essential, critical components of education and provide a guide for countries who may be revising or developing their own standards. A WHO and UNFPA South East Asian regional meeting on the accreditation of community-based skilled birth attendants provided a key forum for discussion on ways forward in the region(WHO/UNFPA 2005). The workshop enabled participants to analyze and share information on the challenges facing countries working on accreditation of skilled birth attendants at primary health care level and to consider the regional acceptability of WHO ICM guidelines on regulation and licensing of midwifery practitioners based on country experiences engaged in similar work. In addition the participants identified a number of gaps in the SEARO Standards of Midwifery Practice for Safe Motherhood for use in accrediting community-based skilled birth attendants. A common framework was finalised for

strengthening and establishing accreditation mechanisms for skilled birth attendants working at primary health care level including those who conduct home births.

There is little documentation that focuses on the accreditation of community health worker and TBA training. In the Philippines and Samoa Midwives (Republic of the Philippines Department of Health Office of the Secretary 1994; WHO 2008) are responsible for providing training to TBAs which is probably provided on the job and but it is not known if a standard approach is used that covers agreed competencies and is over seen by senior midwives. The variety of training TBAs received in the Philippines led to the development of a registry to track training coverage (Mangay-Angara 1981) in an effort to gauge the knowledge and skills of TBAS in various areas. In the Philippines Barangay Health Workers (BHWs) also receive a variety of in-service training. In Capiz for example 24 BHWs received training in IMCI from WHO in 2009 (Mañalac 2009). The Department of Preventive and Community Medicine (DPCM) of the University of the East Ramon Magsaysay Memorial Medical Centre includes education of 3rd year medical students to train BHWs (Ramon Magsaysay Memorial Medical Centre). Four hundred and fifty CHWs in the Community Based Health Care Program (CBHCP) were trained annually (6-8 month training (Barcelon 1990).

Evaluation of training

The evaluation of training programmes usually focuses on assessing individual skills and knowledge which can take the form of written tests or observing practice. Surveys are often used to determine the skills and knowledge of health workers which are compared against the competencies taught in national curricula and stated in national policies and legislation. Cross country comparisons are often difficult due to the different definitions of health workers particularly skilled birth attendants, community health workers, allied and support workers. Measure of skilled attendance (competencies) have been undertaken in a number of studies (Hussein, Bell et al. 2004; Harvey, Blandon et al. 2007) which have found competencies to be lower than expected.

The Quality Assurance Project (QAP) competency assessment tools have used to assess SBA competencies in hospitals and health centres but they may have applicability at community level. The QAP instruments for measuring knowledge and skills of birth attendants were tested in four countries: Benin, Ecuador, Jamaica and Rwanda. The instruments measured competency during labour, delivery, postpartum maternal care, and postpartum newborn care. Knowledge was measured with a 55-item test derived from several well-known sources, such as the WHO IMPAC guidelines. The skills test included two partograph exercises and six skill stations using mannekins and attended by expert clinicians. Locally appropriate standards were added to the tests in each country (McCaw-Binns 2004) (Gbangbade 2003; Harvey 2004; Harvey, Blandon et al. 2007).

An approach to assessing the impact of training on staff performance known as the Training Impact Evaluation (TIE) is outlined in an issue of the Family Planning Manager. This issue also offers practical suggestions for collecting, analyzing, and interpreting data on trainee performance in the workplace. It concludes with suggestions for ways that managers can use the information to make recommendations to decision makers, to improve training courses, or to seek management solutions to performance problems.

A number of studies have been undertaken to assess the impact of training programmes on the knowledge skills and performance of cadres who work in MNRH at community level in LMICs. The table below summarises the findings of theses studies among health volunteers, TBAs, nurses and midwives, cadres within the community health workers category and the cadres known as primary health care workers.

Table 23 Studies showing training impact

Participants / context	method	Purpose / findings	Reference
health volunteers			
Nepal	Semi structured questionnaire	To understand the effect of refresher training course on Knowledge & Skills on MCH / significant increase in knowledge and skills of the volunteers	(Joshi 2006)
Paraguay		Continuous training for healthcare personnel in rural areas contributes to an increase in their capacity to carry out community-based ANC program	(Ohnishi, Nakamura et al. 2007)
Kenya	Report	VHV trained in health promotion, synthesis biomedical and indigenous knowledge	(Kaseje 1986)
Myanmar	Qualitative interviews	Training for Women's health Volunteer Group members in RH, activities of the WVG have been gradually permeating into the villages progress affected by confidence of members and consensus	(Tsuchiya, Oguro et al. 2007)
TBAs			
Bangladesh	3 yr prelim evaluation	TBAs are conducting regular antenatal exams, teaching pregnant women about adequate nutrition and good hygiene practices, identifying and referring women with malnutrition and pregnancy complications, motivating women to seek immunization, promoting breast feeding, and advocating family planning	(Nessa 1995)
Pakistan Afgan refugee TBA	Survey	Improvements in knowledge and skills were demonstrated, and recommendations made by the trained birth attendants about breast-feeding, maternal nutrition, immunization and hygiene were generally followed by mothers before and after delivery. Fewer complications and deaths were associated with deliveries performed by trained TBAs than untrained	(Miller, Jami-Imam et al. 1995)
Cambodia TBAs & VHV	population-based surveys	Statistically significant changes over the 2-year period were apparent for tetanus, BCG, polio and DTP, supporting the positive impact the training intervention had on immunization coverage	(Main, Lower et al. 2001)
Gambia	Quasi experimantal	TBAS trained as part of PHC initiative. MM & NM rates fell but improved transport may have also contributed	(Greenwood 1990)
Gambia	qualitative, interviews FGDs	recognised complications such as retained placenta and excessive blood loss and were well aware of the need to refer these women to a health facility quickly	(de Vaate, Coleman et al. 2002)

Participants / context	method	Purpose / findings	Reference
LMICs	Systematic review	The potential of TBA training to reduce peri-neonatal mortality is promising when combined with improved health services. number of studies meeting the inclusion criteria is insufficient to provide the evidence base needed to establish training effectiveness	(Sibley 2007)
Community Paramedics			
Bangladesh	Evaluation	Difference between the knowledge levels of trained and untrained paramedics in both Child Survival Interventions & Reproductive Health is statistically significant. Utilization of clinic services had increased since the arrival of the trained paramedics, increase due to the higher quality of services delivered by the trained paramedic	(Sadana 2002)
Nurses & Midwives			
Gambia: CHNs	Questionnaire & analysis of records	Training in WHO Haemoglobin Colour Scale to screen for anaemia in pregnant women. 60% used scale, 6/9 patients with anaemia managed correctly. Simpler training procedure and a standard way of measuring observer performance are necessary	(Gosling, Walraven et al. 2000)
Senegal	Project evaluation	family planning counselling training contributed to increasing the % of women treated for postabortion complications who accepted a modern family planning method after counseling rose to 69% in May from just 17% in January 2003 at Sokone Health Center. Also included TBA & Community training in activating transportation and referral networks, informing women about where to obtain family planning, and identifying the danger signs of obstetric emergencies	(IntraHealth 2003)
Community Health workers			
Ecuador	Knowledge test & community assessment	Poor retention of CHW knowledge affected by community organisation CHW may not have been utilising their skills and knowledge due to the difficult environment therefore losing them .Poor health behaviours therefore persisted.	(Mangelsdorf 1988)
India	Knowledge & attitude survey	Knowledge and attitudes of Anganwadi workers about infant feeding in Delhi weak except in breastfeeding probably due to pre-placement training & mass media campaigns	(Bhasin, Kumar et al. 1995)
Nigeria	Multivariable analysis	The results suggest that breastfeeding education can enhance CHW professional recommendations on breastfeeding and should be extended to all categories of health workers	(Davies-Adetugbo 1997)
Malawi	RCT	Training led to greater uptake of IPTI but lowered ANC attendance	(Msyamboza, Savage et al. 2009)
Nepal	clinical skills assessment	MCHWs with appropriate training have an acceptable level of knowledge and skill, demonstrated in a practice situation, to meet the definition of community level skilled birth attendants	(Carlough and McCall 2005)
Primary health care worker cadres			
Nigeria CHEW & MWs	Observation 7 months after training	Lower cadres of primary health care workers can be effectively trained to use the partogram with satisfactory results	(Fatusi, Makinde et al. 2008)
LMIC	RCT trial Protocol only	To investigate the effectiveness of in-service training of health professionals on their management and care of seriously ill neonates or children in low income settings	(Opiyo and English 2009)

In terms of the countries in the Asia Pacific Region 92 documents that discussed community level training in MNRH were located specific to these regions literature. The table at

appendix 5 lists the numbers and references by country. This indicates a gap in knowledge regarding training in Pacific Island countries. There is considerable literature on TBA training with a lack of information available on professional midwifery training with the exception of Indonesia. The majority of training courses focus on improving skilled attendance at childbirth. There is a lack of information concerning competencies in reproductive health.

Family Care International's (FCI) Skilled Care Initiative provides a useful example of the implementation and evaluation of training within a comprehensive programme. This initiative aimed to test and evaluate strategies to increase skilled attendance at childbirth in four rural, underserved districts in Burkina Faso, Kenya, and Tanzania. The initiative included training over 300 maternity care providers in routine maternal health services (e.g. antenatal care, normal delivery care, and postpartum care), as well as essential obstetric skills, such as active management of the third stage of labour, use of the partograph, infection prevention, and management of obstetric complications (e.g. retained placenta, haemorrhage, abnormal labour, incomplete abortion, etc.). Training was also provided in interpersonal communication and counselling, with an emphasis on compassionate treatment of clients and birth preparedness counselling. To reinforce the training and to address the lack of standards and protocols, FCI worked with the Ministry of Health in each country to develop job aids and clinical reference tools on obstetric care (FCI 2007; FCI 2007). The programme evaluation employed a pre-test/post-test, quasi experimental design with purposively selected comparison zones. In addition to survey instruments used to gather information from managers facilities and clients, tools were developed to assess community level provider training, qualifications, supervision, knowledge, and stated practises (FCI 2005).

Although the evaluation found improvements in the training and deployment of skilled attendant cadres the shortages of skilled attendants had negative consequences for the availability and quality of maternity care. The findings highlight the need for quality pre-service training programmes to ensure that essential competencies of a skilled attendant as well as the need to address manpower shortages within the health system. The findings of the FCI Skilled Care Initiative concur with other studies that conclude that competency alone will not necessarily improve maternal health. Skilled attendants must be ~~–~~widely available, they must be allowed to do what they are trained to do, and they must have logistical and policy support ~~–~~(Carlough and McCall 2005).

Training appears to be a useful component of human resource strengthening however it is difficult to draw conclusions from the multitude of studies into HRH training due to issues with their quality particularly that of TBA training (Bergström 2001). Studies that linked improvements in mortality and morbidity are suspect as they require large numbers to show effect and there are many confounders. In addition training on its own is unlikely to bring about sustained change in MNRH outcomes. This highlights the importance of training

alongside health service improvement (Carlough and McCall 2005; Sibley 2007). Training does not take place in a vacuum and there are considerable socio-cultural aspects related to the provision of MNRH care and services. This indicates the need to involve all health workers including cultural workers such as TBAs who may serve as a valuable adjunct to healthcare delivery (Townsend 1986). Effective health programmes are multi faceted and include other interventions that along with contextual factors work together to affect health outcomes. The challenge is to identify what HRH interventions work together in particular contexts to improve health worker performance.

Interventions and evidence

The complexity of the context into which HRH interventions are delivered into makes it difficult to undertake research studies to ascertain the evidence based for certain interventions. According to Grobler there are no studies in which bias and confounding are minimised to support any of the interventions that have been implemented to address the inequitable distribution of health care professionals. He calls for well-designed studies to confirm or refute findings of various observational studies regarding educational, financial, regulatory and supportive interventions that may influence health care professionals' choice to practice in underserved areas (Grobler 2005). However quantitative studies such as randomised control trails may not always be the most appropriate to determine the outcomes of HRH interventions. Mixed methods are probably more useful as they provide insight into the ways in which the context (political, socio-cultural) interacts with HRH interventions, tools and approaches. HRH needs to be understood within the health system setting and the level of functionality of this system and work environment. This whole of context perspective includes the context of health system reform where changes in financial management and market forces may be taking place alongside decentralisation.

Raffety et als report (2005) summarises what is known about the relationship between human resources and organisational performance. They quote several broad findings from research studies in the business sector that identify practices that contribute to performance these include seven HR policies

- Employment security.
- Careful recruitment.
- Teamwork and decentralisation.
- High pay with an incentive element.
- Extensive provision of training.
- Narrow status differentials and barriers.

- Lots of communication (Pfeffer 1998) quoted in (Rafferty 2005)

An analysis of over 30 studies my Richardson and Thompson (1999) quoted in (Rafferty 2005) concluded that adopting a specified set of HR policies will not in itself lead to organisational success, some policies are not transferable and that the process of implementation is often more important than the intervention itself.

Research based Case studies of HR interventions in MNRH

Research studies were identified from the literature collected in the review and collated in order to understand the complexity of the context and the merit of packages of interventions on HRH practice in MNRH at community level. These studies are listed below.

Table 24 Research based studies of complex HRH intervention in MNRH at community level

Country / cadre	HRH Interventions	findings	Method	Reference
Bangladesh: TBAs, program organizers (PO)	TBA participation in antenatal care centres (ANCCs) observed in sites with and without BRAC supportive programme	process of social mobilization & pregnancy identification should be strengthened; training methods of the TBAs and Pos should be reformulated and intensified; effective follow-up and close supervision of the POs and TBAs needed	quasi-experimental design	(Afsana 1995)
Indonesia: the Tanjungsari regionalization project in West Java, 1989-1993: CMWs	10 Birthing homes (BH), 6 Mws posted to project areas only 2 living in villages with BH, 2 BH in homes of TBAs, 1 in village headmans house, communication & transport	use of BH closely tied to the presence of a midwife, raises question, whether a CMw who can give obstetric first aid together with a TBA & linked to a referral facility by radio & transport, would serve the community better	Project evaluation longitudinal	(Alisjahbana 1995; Kwast 1996)
PNG VMWs	Introduction of new cadre, training, monthly supervision, provision of delivery kit,	Of 32 trained 24 continuing, 11% births attended, referral of high risk births, may have contributed to low infant & perinatal deaths	Programme evaluation	(Alto, Albu et al. 1991)
PNG: CHWs	Training of CHWs, reorientating towards health promotion, Community development & health promotion interventions aimed to increase community support for attended birth and children‘s health.	Success affected by a local motivated and trained individual as the catalyst for change; empowered leadership through new community governance structure; effective practical visual tools; and village health volunteers linking the community & rural health workers	Project evaluation & analysis using PRECEDE-PROCEED,	(Ashwell 2009)
Vietnam: VHV	VHW trained and supervised monthly by Drs, given regular supplies	Base line information directed the design of implementation, no results yet	Baseline study	(Barrett, Ladinsky et al. 2001)

Country / cadre	HRH Interventions	findings	Method	Reference
Niger: Birth attendants including those at PHC	Standards, training, materials & equipment, supervision, job aids, QI: Team work, process analysis, use of data for improvement, client focus, IC	Correct performance of AMTSL rose from 25% to 97% in participating facilities	site register review of AMTSL, compliance with standards, PPH rate	(Boucar 2006)
Mongolia	Training, review of job descriptions for CHNs, MWs, GPs, ObGyns, standards of care introduced,	Decline in MMR	Descriptive analysis	(Buyanjargal 2009)
Bolivia: CHWs	Regular refresher training & supervision, drug re supply during visits, CHW asked to undertake a limited number of clearly defined tasks	community respect for CHWs has risen, reported improvements in child survival	Evaluation report	(Charleston 1994)
Bangladesh: CHWs	Training, supervision, Algorithm for assessment of neonatal illness	CHWs were able to identify a constellation of key clinical signs and symptoms of severe illness with a high level of validity in the context of routine, population-based household surveillance	CHW Assessment c.f Dr assessment	(Darmstadt 2009)
Botswana: nurses hospitals, clinics and health posts	Training, introduction of the Botswana Obstetric Record	Most competent nurse in completing the BOR was one trained as a midwife, working in an adequately equipped health facility, and who often consulted with peers as well as attended workshops and seminars	Multivariate analyses	(Fako, Forcheh et al. 2004)
Uganda: CRHW	Training, supervision,	well-trained community health workers can safely provide contraceptive injections.	Depo-Provera clients of CRHWs c.f clinic-based providers on 4 outcomes:	(Family Health International 2006)
Kenya:	training and supervisory support + essential equipment and supplies along & BCC in community	large improvements in the routine provision of both delivery care & postpartum care at mid- and lower-level health facilities not in EOC	pre-test/post-test, quasi-experimental design Population & facility based survey	(FCI 2007)
Tanzania: nurses, midwives, doctors, MCH Aides	training and supervisory support + essential equipment and supplies along & BCC in community	facility readiness for normal delivery care increased & SBA at facilities	pre-test/post-test, quasi-experimental design Population & facility based survey	(FCI 2007)

Country / cadre	HRH Interventions	findings	Method	Reference
Gambia	TBA CHN training, increase in staff, introduction of clinical schedules	Women more likely to be registered in prenatal care, mean hemoglobin level was higher, more likely to seek and receive medical care for minor and major conditions, fetal & perinatal death higher may have due to under reporting in the control area	RCT	(Foord 1995)
Armenia /nurse-midwives	real or simulated antenatal and postpartum/neonatal care clinical scenarios services, reflections on current HRH environment	performance of at primary posts was enhanced when they received training in the use of the clinic tools; and (b) receiving recognition from the employer or the client/ community, are factors strongly associated with performance, followed by (c) receiving performance feedback in postpartum care	Clinical observation & interview	(Fort and Voltero 2004)
Tanzania: PHC FP workers	HRD development approach: decentralised training system, FP policy & guidelines, national training strategy & training of service providers at all levels, standardised in service training curricula, on job training & supervision system	MOH & NGO partners increased the use of FP/reproductive health services over a 10-year period, from under 7% in 1989 to an estimated at 17% in 1999	Programme evaluation	(Ingras 2001)
Pakistan: TBAs, LHWs	In 3 talukas randomly assigned to the intervention group, TBA were trained & issued disposable delivery kits; LHWs linked traditional birth attendants with established services & documented processes and outcomes; & obstetrical teams provided outreach clinics for antenatal care. Women in the 4 control talukas received usual care.	Training traditional birth attendants and integrating them into an improved health care system were achievable and effective in reducing perinatal mortality	cluster-RCT	(Jokhio, Winter et al. 2005)
Indonesia: FP counsellors	a one week training for the providers in inter-personal communication, a low cost self-assessment protocol, and weekly peer review meetings	self-assessment and peer review interventions are effective strategies for reinforcing training in facilitative communication	RCT	(Kim 2002)
India: CHWs	CHWs trained to deliver packages of interventions for essential newborn care via collective meetings & 2 antenatal & 2 postnatal household visitations	neonatal mortality rate was reduced by 54[percent] in the essential newborn-care intervention	cluster-randomised controlled efficacy trial	(Kumar, Mohanty et al. 2008)

Country / cadre	HRH Interventions	findings	Method	Reference
Indonesia Surabaya -- The East Java Safe Motherhood Project, Community Midwives (CMws)	CMws training, antenatal risk score card	antenatal risk score card can function as a warning & education tool to recognize complications, risk scoring based mainly on demographic and reproductive factors will not convince women to use a system when they do not believe in the risk markers which allocate them to the high risk groups	Project evaluation	(Kwast 1995)
Ethiopia: Nurse midwives	Life saving skills training (LSST), health stations staffed with 1-2 staff with LSST, facility upgrade	Investments led to increased skills & use of EOC services. Need for consistent supervision and supply of drugs	Knowledge test, questionnaires, clinical observation, service data	(Laverentz 2006)
Phillipines/ Hilots	1 week FP training c.f 1 week training + Supervision, & training, supervision & Financial incentives	No significant difference was found in test and field performance most cost efficient scheme employs training plus supervision	quasi-experimental design	(Morisky 1985-86)
rural Paraguay/ nurses, auxiliary nurses, auxiliary midwives	learning through peer-educators, interactive communications, role-playing, and supervision provided in actual community services	The average scores of the participants‘ knowledge increased The enrolment rates of pregnant women in ANC increased from 2.2 times per pregnancy in 1996 to 3.4 times in 1998	quasi-experimental design	(Ohnishi, Nakamura et al. 2007)
Kenya, CHWs	Training, supervision, job aides	IPTp coverage increased from 19% in 2002 to 61% in 2005 for at least one dose & from 7% to 17% for two doses of SP	Community-based cross-sectional survey	(Ouma, Van Eijk et al. 2007)
Pakistan: Lady health workers (LHWs)	Introduction of new cadre, selection from local population, 15 month training, training allowance, monthly salary with increase after 2 yrs, basic kit of essential drugs and contraceptives to be replenished monthly, LHW can charge only for contraceptives, monthly supervision	Higher performing LHWs have higher levels of knowledge, are better supervised & supplied with drugs & equipment. They work longer hours than poor performing LHWs. Their supervisors also have higher levels of knowledge & more likely fully trained. Statistical models suggest that 2 important factors for increasing LHW service delivery are adequate supervision & supervisory transport	Evaluation: quantitative survey, economic analysis	(Oxford Policy Management 2002)
Pakistan, CHWs	Primary health workers were trained to deliver the psychological intervention 3 along with intensive monthly group supervision, in the control group untrained health workers made an equal number of visits to the depressed mothers.	Improved recovery rates of mothers who had depression, effect was sustained for 1-year of follow-up.	RCT	(Rahman 2008)

Country / cadre	HRH Interventions	findings	Method	Reference
Indonesia: midwives	In service training, deployment, supervision & participation in audit	increased skilled attendance & midwives skills & confidence	Project evaluation	(Ronsmans, Endang et al. 2001)
Cameroon	TBA training, nurse supervision	30 PMTCT-trained birth attendants in 20 villages counselled 2331 pregnant women tested 2310 (99.1%) for HIV. 82 women had a positive OraQuick HIV test (3.5%). 42 of these mothers were delivered byTBAs , with 88.1% of mothers and 85.7% of newborns receiving single-dose nevirapine prophylaxis. Nevirapine-treated babies tested after 15 months of age, & 2 of 13 HIV-exposed infants had positive rapid HIV antibody test (15.3% transmission rate with treatment)	quasi-experimental design	(Wanyu, Diom et al. 2007)

Clearly there is not one package or approach that best fits all situations and a coordinated approach which involves linking multiple interventions may be more conducive to enhancing performance. At community level this is dependent on linkages between the community providers and organisations which are based on strong relationships and partnerships. The process of implementing these interventions is therefore critical requiring shared understanding and responsibility for health care and services.

Comprehensive training and supervision are required in addition to adequate equipment and commodities which facilitates the enhanced performance of health worker and therefore quality MNRH services. This confirms Bhutta et als findings that strategies to improve quality of care require the upgrading the skills of community cadres in conjunction with health systems strengthening and the facilitation of referrals. This comprehensive approach has shown demonstrable impact on perinatal mortality (Bhutta, Darmstadt et al. 2009).

Summary

This section found lack of evidence for strategies and regard for complexity possibly due to the scarcity of studies that pay attention to rigorous methodology. Information about the context is difficult to glean and not always included in discussion need for rigorous evaluation, indicators and tools for assessment.

Lessons learned from countries that have reduced MMR

Experience has shown that improvements in maternal, newborn, and child health outcomes in Iran, Malaysia, Sri Lanka, Thailand and China, and from projects in countries such as Tanzania and India have been the result of the incremental delivery of integrated evidence – based packages of cost-effective health-care implemented in accordance with the capacity of health systems (Ekman, Pathmanathan et al. 2008). However, there has been little examination of the HRH implications and responses at community level that have contributed to the improvement of MNRH outcomes in these contexts. This knowledge may provide important strategies for decision makers that can be transferred or modified for use in other settings.

Sweden

In the 19th and 20th centuries many countries that are now considered to be developed saw a marked drop in maternal mortality rates. In Sweden innovative HRH practices contributed to rapid declines in comparison to other countries such as the UK (Högberg 2004). Midwife training was improved and their status elevated so that midwives and doctors provided complementary roles in maternity care. In addition midwives were involved alongside doctors in setting public health policy which led to the registration and licensing of midwifery practice. An increase in the coverage of well trained, regulated and empowered midwives at community level meant that midwives were able to provide emergency obstetric and neonatal care when doctors were not available. Midwifery coverage was based on providing adequate care to an appropriate number of women balanced alongside geographical, cultural and financial concerns. The professionalization of community midwifery was enhanced by a system of supervision and continuing education. Midwives were required to regularly report to the county GP where an audit of practice was undertaken. Midwives were specially selected for their connections with the community and ability to bring about ~~–m~~odernisation" (Van Lerberghe 2001).There was also some monitoring of TBA practice in the nineteenth century several TBAs were prosecuted for providing unauthorised help during child birth (Romlid 1998) in (Högberg 2004).

Japan

Japan also made rapid progress in curbing maternal mortality in the mid twentieth century. Aiiku-Han activities at the community level helped to improve the planning and administration of MCH services. Aiihu-Han activities were initiated by the Imperial Gift Foundation in Japan in 1936. These highly organised activities involve a range of human resources in the collection and dissemination of information and provision of education on family planning and MCH. Key features are hierarchical training, reporting and supervision. Housewife volunteers report to a community worker, who is in charge of 10 volunteers. They in turn report to the community unit leader, who supervises 5-6 community workers. The unit leader is accountable to the community leader, who is in charge of 10-20 unit leaders and the community leader conveys information to public health officials or health professionals such as midwives. (Hirayama M 1993).

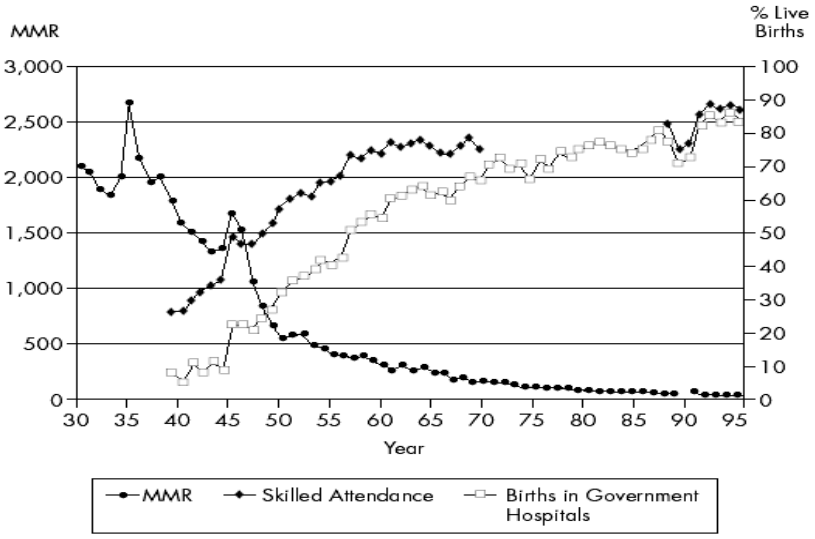
Japan has adopted this model in its development work through the Japan International Cooperation Agency (JICA) in an attempt to transfer its learning to LMICs. Projects have been undertaken in Indonesia, Malaysia, Nepal, the Philippines, and Thailand and involve field trips to Aiiku-Han activities in Japan. A large JICA project in Central Java involving over 10,000 participants is reported by Okamoto (1993). This project based on the Aiiku-Han model incorporated and built upon local organisational structures such as Dasa Wisma health activity.

Sri Lanka

Developing countries that have made progress towards MDG 5 have employed similar HRH strategies. In Sri Lanka the professionalization, broad coverage and use of midwives (Levine 2007) has been a central HRH approach in MNRH. Public health midwives (PHM) at community level cover a population of approximately 3,000 people and report to a supervising public health midwife at district level. PHMs are not only clinically competent but their status recognised them as credible and respected professionals (Rizzuto 2002). The Ministry of Health undertook a staged process of replacing TBAs by PHMs and discontinued TBA training in an effort to increase SBA at community level (de Silva 2007). National management processes ensured that strict training standards for midwives were maintained during the period of rapid expansion from 1930- 1950 and a supervisory structure maintained quality during this phase. PHM were also supported by equipment transport and allowances. In addition the employment of relatively low-cost PHMs in Sri Lanka as well as in Malaysia facilitated affordable access to maternal care at community level (Pathmanathan 2003).

The impact of this on MMR is visible in the figure below where MMR dropped from 250 per 100,000 births in 1935 to 58 in 2005 while SBAs assisted only about 30 percent of the births in 1940 rising to nearly 90% in 1995.

Figure 29 MMR and percentage of live births with skilled attendance, Sri Lanka, 1930 – 1996

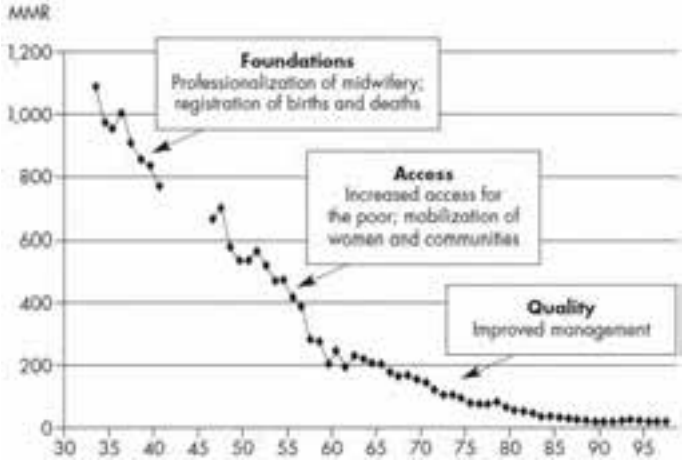


(de Silva 2007)

Malaysia

The sharp decline in maternal mortality in Malaysia from the 1930s from an MMR of nearly 1,500 per 100,000 live births to less than 58 in 2005 (UNDP 2007)(see figure 14) was the result of a number of factors including the establishment and regulation of a new midwifery cadre. Midwives were deployed as front-line community health workers to provide maternal care and the numbers of midwives that were registered doubled in 1971 and slowly increased over the next 10 years. In the late 1970s the eighteen month community midwife training was upgraded and expanded to include child health and basic outpatient care. The cadre became known as community health nurses (CHNs) raising their status and improving the range of MNRH care and services at community level (Pathmanathan 2003).

Figure 30 Phases of Health Systems Development for Maternal Health as Related to Reduction in Maternal Mortality Ratio,



(Pathmanathan 2003)

CHNs are supervised by certified nurse midwives (3 year basic training + 12 month midwifery course) or public health nurses (additional 1 year training) (Pathmanathan 2003) They used a competency-based approach, founded on protocols and manuals involving a written supervisory checklist that covered facility maintenance, record keeping, and interpersonal skills. Supervisors provide CHNs with regular on-the-spot feedback on clinical and programmatic issues (Rizzuto 2002). Supervisory midwives provided support for CHNs in emergency situations through either hands on clinical assistance or by facilitating referral to hospital.

Midwifery practice at community level was guided by a manual of procedures and clinical protocols produced in 1988. A colour coded risk approach for the referral of pregnant women was implemented in 1983 and in-service management training using problem solving approaches was used to overcome communication and attitudinal barriers between midwives and nurses in rural services and hospital staff. Midwives also received in-service training in clinical skills as well as in community mobilization. Despite a lack of evaluation studies showing an impact upon referral it is likely that the HR interventions contributed to the increase in the increase in hospital admissions for complicated cases (Pathmanathan 2003).

In Malaysia TBAs were included as part of the health care system, they receive training, a delivery kit and were registered. TBAs were also paid for each delivery they attended which they were required to report enabling their delivery kit to be re stocked. Midwives were trained to value these traditional practitioners and work alongside them. TBAs provided an important supportive role at community level including being present at births with CHNs, accompanying women to hospital and assisting with post natal and newborn care. This approach was successful in not only encouraging safe delivery practices but it hastened the move from TBA to midwife delivery (Rizzuto 2002). The ratio of government midwives to live births improved from more than 1:300 in 1960 to about 1:120 (Pathmanathan 2003).

India

Some important projects in India have also shed light on how improvements in HRH can be used to address MNRH at community level. Key HRH lessons can be learned from a 10-year multi-partner research program that aimed to improve the reproductive health of married and unmarried youth in India and strengthen community and government efforts to improve youth reproductive and sexual health. The project involved the creation of human resources within the community through mobilisation processes. Youth were recruited to provide education and information and adults involved in existing organisations and community groups were drawn in to create a supportive environment (Pande 2006). In addition the project team identified human resources, infrastructure and other assets that were not being used to improve health worker capacity in order to engage them more efficiently (2006).

Summary

The lessons outlined above from contexts where progress has been made with respect to MNRH indicate that the mobalisation of HR cadres such as midwives and CHWs with an emphasis on clinical performance and community participation is key at community level. TBAs experience shows that involving them in the continuity of care alongside SBAs addresses the socio-cultural needs of women. Certification and training might contribute to post natal and neonatal care but not to the prevention of maternal deaths. Successful HR approaches show that attention has been placed on the collaboration between health workers, regular supervision and surveillance, quality training and accountability. The professionalisation of midwifery or of a skilled birth attendant cadre at community level is an effective strategy alongside the creation of an informal sector of human resources for MNRH comprised on community members themselves. There is a clear need to develop and build upon current local organisational structures that are part of the social fabric of the community.

All these achievements were accompanied by on-going phases of health systems development with modest expenditures on maternal health care and services. It is important to note the contribution of policy at national level, poverty reduction strategies, gender empowerment, education and rural development initiatives. The reviews of country lessons

although supplemented with epidemiological evidence is weak due to a lack of RCTs and rigorous implementation studies and the reliance on descriptive and project evaluation studies (ten Hoope-Bender, Liljestrand et al. 2006).

Despite past experience illustrating the importance of community based HR practice for MNRH there is a trend towards facility based births. This has led to some improved outcomes (Stanton, Blanc et al. 2007) however it has been accompanied by the under investment in SBA at the community level and EOC. In Thailand this has led to the medicalisation of births with the majority taking place in hospitals and a 28% caesarean rate. Professional midwifery associations ceased to exist in the 1990s (Van Lerberghe 2001).

What is clear from the experiences of countries who have made progress towards MDG5 is that midwives and other health workers at the community level contribute to delivery of essential primary and reproductive healthcare and can deliver many of the needed interventions to address maternal and neonatal mortality (Campbell and Graham 2006). Continued investment is therefore necessary along with key HRH practices that emphasis partnership with the community, teamwork across cadres and sectors, professional practice and standards and sustained political and national support.

Scaling up Experiences

Scaling up refers to the transfer of knowledge from successful pilot or demonstration projects to larger public sector programmes and into policy with the aim of increasing impact, reach and sustainability of interventions at district, national or regional level. The literature that discusses scaling up HRH in MNRH at community level emphasises increasing SBA coverage, increasing the role of CHWs, expanding education and training interventions and other approaches such as the introduction of new cadres. There are few examples where nations have applied HR strategies that have been successful in a small number of settings to other community settings. This may be due to the perceived difficulty of such ventures and the high percentage of scale up efforts that fall short of expectations. These are largely the result of a lack of supportive communication, incentives and leadership (MSH 2007). In addition funding shortages have not enabled small pilot projects to be taken to scale. HRH scale up is particularly complex as it requires significant change and financial investment. There are many suggested models, guidelines and approaches to scaling up but much is untested.

Rigorous evaluations of scale up efforts are also largely unavailable. Simmons et al point out that this has not been an area regarded as worthy of research with the results of many projects being relegated to the grey literature (Simmons, Brown et al. 2002). The authors urge project planners and evaluators and policy makers to consider scale up possibilities as part of routine practice allowing the consideration of these issues from the outset.

Models and approaches of scaling up

The models and approaches that are recommended as ways forward for scaling up do not all take HRH issues into consideration nor is the community level and MNRH a focus. However

there are a number of approaches that may potentially be of use in HR in MNRH at community level and deserve attention and piloting in this context. The various approaches are outlined in the table below. These can be grouped according to three methods of collaboration, expansion and replication (Cooley 2006) as well as vertical, horizontal or combined approaches to scaling for sustainability (WHO 2008).

Table 25 Scaling up approaches that have applicability for HR in MNRH at community level

Scaling up approach	**Methodology / HR focus**	**Applicability at community level in MNRH**	**Reference**
Improvement Collaborative (IC)	Collaborative QA of norms of training, job aids, material and equipment, supervision	Network of community members & providers form a collaborative mgt. structure to deliver MNRH & monitor performance	(Bornstein 2007)
Management Systems International Framework	Structured and planned approach with M&E & advocacy	Community based approach in RH education piloted participants must have key skills	(Cooley 2006)
Expandnet/ WHO approach	9 step plan involving choices of types of scaling up, dissemination & advocacy plan, consideration of organizational process, costs, resources mobilization, M&E	Analysis of team at community level may lead to training, linking to reforms, working with leaders to gain acceptance, plans to address HR shortages	(WHO 2008)
MSH Change Approach	Based on diffusion of innovations	Change agents necessary at community level	(MSH 2007)
CARE India‘s IDEAS model	Emphasizes explicit, institutionally grounded strategy for replicating a tested, validated innovation	Need to involve leaders and champions at community level, social learning key	(Bailey 2005)
Van Damme ART models	Model A: No change to delivery model or HRH base ART scale-up gets increased funding and priority	Continued use of nurses & midwives in PMTCT activities	(van Damm 2008)
	Model B: Change in service model B1. focus on task shifting to lower cadres B2: lay providers or expert patients would take on much of the work	CHW and community personnel take on the bulk of work in PMTCT	
ECR Capacity Development	Emphasizes Human capital, Public sector institutional context, Networks and linkages, Social capital and community participation, Human resources policy reform.	Policy reform must consider community level in PMTC	(FHI 2009)

A technical meeting in Bangkok in 2007 concerning scaling up high impact family planning/MNCH best practices in the Asia/ Near East Region presented various methodologies for assisting countries in their scaling up efforts. These included the Improvement Collaborative approach (IC), Management System International (MSI) and the Expandnet/WHO‘s model. These are discussed below.

The Improvement Collaborative approach is an organized network of a large number of sites (e.g. districts, facilities or communities) that work together in teams for a limited period of time, usually 9 to 24 months, to rapidly achieve improvements in a focused topic area through shared learning and intentional spread methods (Nicholas 2007). This can involve joint ventures, alliances or communities of practice approach. The system, processes, quality and efficiency of care are the focus of improvement which involves training, monitoring and supervision. Bornstein (2007) gives an examples of CI in practice in EONC Niger. This involves the linking of the community level with the facility level and national policies and plans. Activities in the community to increase demand and access to EONC were connected with HRH procedures that enabled Referral and counter-referral, EONC continuous quality improvement teams and the Adaptation of services to the cultural needs of patients and families.

Management System International (MSI) is an expansion method that involves a three step strategic management framework for scaling up. This has been applied to scaling up successful innovations by NGOs in reproductive health in India, Nigeria and Mexico. Toolkits have been developed on Assessing Scalability, Advocacy for Scaling Up, Monitoring and Evaluation for Scaling Up (forthcoming), Building Scaling Up into Pilot Project Design (forthcoming).

The Expandnet/WHO approach is based on four key elements regarded as necessary for scaling up. They are: the innovation (novel approach), the resources team (the staff), the scaling up strategy (could include HRH strategies) and the user organisation. According to this framework a number of skills are needed by the team to scale up interventions. These are:

- health programme and policy analysis;
- research, monitoring and evaluation;
- management and organization development;
- human resource development, training and curriculum development;
- participatory approaches;
- clinical skills;

- supervision;
- health economics;
- resource mobilization and fundraising;
- advocacy and social communication;
- writing and editorial skills;
- fluency in the local, regional and national language(s).

A successful family planning scaling up effort in Brazil using this approach demonstrated that the resources needed to undertake the desired changes were generated from within the local health systems (WHO 2008). This enabled scale up through the optimal use of existing resources.

Other approaches are CARE India‘s IDEAS (Innovation, Documentation, External marketing, Assessment and capacity building, and Support) model (Bailey 2005). This model for demonstration and replication is based on efforts in reproductive and child health. These found that successful outcomes often depended on innovations that helped change behaviours, leverage to improve systems or expand availability of and access to services. The Management science for Health change approach (MSH 2007) outlines steps involved in scaling up in reproductive health they include the need for addressing the HRH requirements but there is no specific reference to the community level.

Van Damme and colleagues (2008) developed two scenarios to model scaling-up antiretroviral treatment in Southern African countries with human resource shortage. Model B has major implications for primary health care workers including auxiliary nurses and midwives, CHWs, VHWs and lay carers. In terms of MNRH lower cadres, community people and patients would be involved in the delivery of antiretroviral treatment and counselling to pregnant women and prevention of HIV infection in infants. This would require a mass training effort and the development of a supervisory network to ensure that this personnel were able to execute standard instructions. This approach is very different from the prevailing ART delivery models, and would require major changes in the way the medical professions are conceived and regulated.

It may be useful to conceptualise scaling up in a more comprehensive manner acknowledging the inter related nature of health workers with the health system and the community. Such an approach builds on linking services and providing a continuum of care between community and facility and between sexual, reproductive, maternal, newborn care. The systems based HRD Expanded Comprehensive response (ECR) to an HIV/AIDs epidemic Capacity

Development approach is an example of this (Family Health International 2009). Gaye et al emphasises three main factors in accelerating the process of scale up that need to be addressed despite the model or framework selected for scale up. This is the need to identify and nurture champions who can spread new information and best practices, engage stakeholders in order to promote dialogue and foster ownership and finally to ensure the ongoing coordination of training activities (Gaye and Nelson 2009).

An example of this linked approach can been seen in the scaling up efforts of the FHI youth PHE initiative known as Y-PEER. This involved mobilising PHEs by building NGO networks to link stakeholders, making tools and resources available for translation and adaptation, sponsoring international meetings and trainings to facilitate the sharing of experiences and lessons learned, and fostering youth participation and partnerships with adults. An electronic network and website links PHEs and enables them to interact and access training (Adamchak 2006).

MNRH workforce policy, planning and management and scale up

Scaling up MNCH at community level is reliant on establishing and implementing workforce action plans. A WHO policy brief (2005) highlights the need to ensure that any strategies implemented are; beneficial not harmful, comprehensive, take immediate effect as well as address the long term issues, take appropriate remuneration into consideration and make the HRH crisis a matter of national importance. A systems approach to workforce planning recognises the development of a vision, a framework for leadership, resource mobilization, sharing of information, training and service provision. A meeting on strengthening nursing and midwifery services in national health systems in Africa recommended that nurse and midwives be actively engaged in the development of policy and plans to ensure ownership and successful implementation (WHO 2007).

At the individual level the provision of quality healthcare during and after delivery depends on health worker competence, motivation and the available equipment as well as the way in which HR are managed. According to Koblinsky et al –what should be scaled up is a commitment to facilitating responsive management and organisation of services" (2006). The 2007 African meeting calls for the development and operationalization of supportive workplace interventions, including gender-sensitive recruitment policies and procedures, retention packages and clear career structures for nurses and midwives (WHO). These practices alongside other managerial approaches such as supervision and audit have been shown to impact upon health worker performance and health outcomes (Rowe 2005).

Scaling up skilled birth attendants

There are a number of key documents that outline how midwifery can be scaled up at the community level with reference to country experience. The 1st International Forum on

Midwifery in the community held in Tunisia in 2006 resulted in a Call to Action for all countries with high MMR to embark on urgent and intensified action to scale up midwifery care at the community level (UNFPA ICM WHO). Guidelines were also developed to assist national programmes in their expansion endeavours. These were in response to requests from countries for best practice examples of ways forward.

Seven topics were identified as key areas for consideration by program managers and policy makers when planning when considering scaling up human resources for health. These are outlined below in figure 30. A human rights framework should guide the development of policy, law and regulations that should place attention on the provision of universal care. Quality competency based pre and in- service education and training along with supportive supervisory mechanisms within an enabling environment where there are linkages and transport to facilities and essential commodities and drugs are available. Effective management practices ensure appropriate supply of resources are required along with a monitoring and evaluation systems that can identify gaps. Examples from LMIC are used to illustrate of best practice in each of these areas.

Figure 31 Issues for program managers and policy makers when planning when considering scaling up human resources for health

(UNFPA ICM 2006)

UNFPA‘s report on Scaling up the capacity of midwives to reduce maternal mortality and morbidity (UNFPA 2006) emphasises the two important areas that contribute to the achievement of quality midwifery through midwife compliance with professionally agreed standards. These are the role of regulation and professional autonomy and professional associations and regulations. The report recognises the unique challenges in scaling up midwifery and calls for a different approach that requires that midwives collaborate with others, in particular with the community, with a reasonable degree of autonomy and

flexibility in order to overcome gender equity, establish and maintain standards of good practice. (UNFPA 2006)

An examination of country experiences of scaling up SBAs can provide insight into the rational for scaling up at community level and the approach. These experiences include the expansion of the Community Midwifery programme in Kenya involving the scaling-up of home-based maternal and postnatal Care, including family planning, (Mwangi 2008) and the Indonesian experience of scaling up the village midwifery programme.

Scaling up the village midwifery program in Indonesia

Following the International Nairobi conference in 1987, at which governments pledged to reduce maternal mortality by half by 2000, the Indonesian government launched the Village Midwifery Program. This was in response to maternal mortality of over 400 per 100 000 live births and neonatal mortality of 32 per 1000 live births. The aim was to place a SBA in every village to provide MNRH care and services. Three years later in 1993, 60,000 community midwives had been deployed and about 20,000 maternity huts had been established with community participation (Utomo 2008). Midwife density increased from 0.2 to 2.6 per 10 000 people between 1986 and 1996 (Shankar, Sebayang et al. 2008).

Twenty years after its inception, progress towards reducing MMR and NMR has been made but it was not as large as expected. MMR in 2003 was 307 per 100 000 live births and the neonatal mortality ratio was 20 per 1000 live births. Despite its success in increasing density of SBA and reducing socioeconomic inequalities in professional attendance at birth, the focus on outreach services has meant that the poor particularly those in rural and remote areas experienced increasing difficulties in accessing emergency obstetric care in hospitals (Hatt, Stanton et al. 2007). This is probably the result of lack of responsive referral systems (e.g., transport), low cultural acceptability and the high out-of-pocket cost of emergency obstetric care (EmOC) services (Ronsmans, Endang et al. 2001). Despite the calculation that the ratio of village midwife per 2389 population would translate to roughly one midwife per 54 births per year (Hatt, Stanton et al. 2007) evaluations showed that midwives‘ obstetric workload was generally low as a result of the home based delivery system. This was affected by competition with TBAs and the wide geographic spread of households. As a result, midwives were not constantly using and improving their clinical skills. Midwives‘ case management skills were also generally sub-standard due to the rapid nature of the program and low quality pre-service training (Utomo 2008). Supervision and mentoring of midwives was not adequate and their varied duties and often vague job descriptions also meant that many midwives worked in isolation with few opportunities for job support or learning. This had a strong impact on retention (Shankar, Sebayang et al. 2008).

A number of modifications were made to the programme (summarised at figure 31) which coincided with contextual factors which significantly impacted upon the scale up. These included the economic crisis of 1997 which precipitated the introduction of social safety-net program for the poor and in 2003, decentralisation led to an increase in district level decision making (Utomo 2008). The programme modifications included lengthening the pre service midwife training and providing short in-service training and skills-based retraining (McDermott, Beck et al. 2001). Management practices were improved including performance management which incorporated supervision and career development (Hennessy, Hicks et al. 2006; FK-UGM/WHO 2009). Financial incentives were found to be sufficient to retain midwifes in remote areas although non financial reasons affected their relocation to these settings once established with their family (Ensor, Quayyum et al. 2009). Financial incentives were introduced for TBAs to encourage referral to midwives (Analen 2007). A Workload Indicators of Staffing Need (WISN) approach was introduced to improve work force planning and management in the newly decentralised context (Kolehmainen-Aitken 2009). This bottom up approach began with health centre midwives. Midwife training and selection was also improved led to better coverage and competence. (UPCD 2003; Hennessy, Hicks et al. 2006). These changes were made along with the development of EmOC, audits, and introduction of a comprehensive health policy in 2001that included a making pregnancy safer strategy (Utomo 2008).

Figure 32 Examples of structural and economic changes in Indonesia which impacted upon improved URH performance

Village midwifery programme: Indonesia

Structural changes

Advocacy & leadership: safe motherhood seminars in the mid-1990s involving President Suharto,
HRH coverage: SBA% increased from 34 to 62% by 1998
Improved education and skills: pre & in-service competency based
Monitoring & evaluation: clinical audits used to assess performance
Policy : MPS strategy 2001
Management Practice: National MoH midwife training & placement plan, Clinical Performance Development and Management System for Nurses and Midwives, WISN tool for workforce planning
Community participation: Village Integrated service post (posyandu)

Economic changes

Increased financial resources & coordination of finances : Extended salary support & formalised administrative oversight eased the transition to private practice
Procurements of drugs, equipment etc: District control through decentralization

Areas that require strengthening: clinical & communication training, mentoring & supervision, job description, ensuring adequate case loads, HIS on private providers & legality of solo private nurse providers

(Shankar, Sebayang et al. 2008; Utomo 2008; Heywood and Harahap 2009)

There are some key lessons that can be learned from the Indonesian village midwife scale up effort. Shankar (2008) groups these into ~~–~~essential elements and monitoring points for scaling

up skilled birth attendance". These and other elements are included in the figure 32 below. There are similarities with the UNFPA ICM model (2006) for scaling up community midwives with an emphasis on the pertinent HR aspects of certification, supervision, clear responsibilities and realistic workload. Community participation and engagement contribute to the enabling environment which is further supported by political and economic reform brought about by resource mobilisation and effective management and leadership. On-going monitoring and evaluation facilitates the modification of programmes to suit the changing environment contributing to the sustainability of interventions. Indonesia's experience shows that HRH efforts must be coordinated with an efficient health information system, financial commitment, the appropriate supply of medical products, vaccines and technologies, quality service delivery and leadership and governance. Shankar emphasises a systems top down and bottom up approach. This highlights the need for support from the existing health system in order to accommodate expansion that ensures quality as well as equity.

Figu

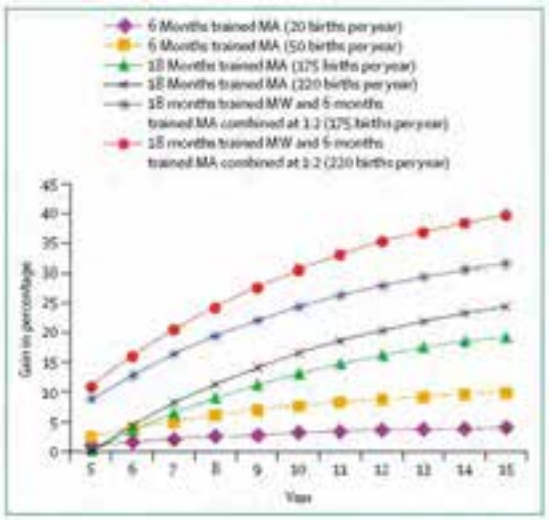
Adapted from (Shankar, Sebayang et al. 2008) and (UNFPA ICM WHO 2006)

Midwife deployment at community or facility level?

Koblinsky et al have undertaken modelling to investigate the most efficient approach to the deployment of SBAs (2006). Six scale up options were investigated and are outlined at figure 15. The results suggest that teams of midwives and midwife assistants working in facilities would be a more efficient means of rapidly increasing coverage rather than solo providers working in homes with assistants. They propose that this team approach will increase coverage by up to 40% by 2015. The paper argues that this can be a cost effective approach when case loads are high at the health centre level making it a less expensive option than home based births and normal delivery at hospital. This scale up would require investment in health centres and probably involve the move of midwifery staff from community to facility level. However a study in Matlab, Bangladesh, has provided evidence favouring a

community-based maternity-care delivery system. In this study maternal mortality decreased in intervention sites where number of skilled attendants increased, together with development of a referral chain and basic essential obstetric care (BEOC) facilities (Ronsmans 1997). The challenge is to retain a balance between ensuring access to care at community level where it is difficult to attract and retain staff and providing links to expensive tertiary facilities that require highly trained and well paid cadres.

Figure 34 Potential gain in percentage of skilled care at delivery under six scale up options:



MW=midwife. MA=midwife assistant (Koblinsky, Matthews et al. 2006)

This modelling and the experience of countries highlight the need for the scale-up of SBA care and services at community level to be driven by evidence gathered through monitoring and evaluation. As each community is unique scale up options should be easily modifiable to suit each context. The costs and benefits of scaling up should be weighed up for each location in comparison to other approaches, such as facility-based birth care.

Scaling up other workers at community level

The need to be sensitive to context in scaling up endeavours is also central to the success of CHW programmes. However Sundararaman (2007) points out the enormous difficulties in gathering data concerning the scale up and sustainability of programmes such as the Mitanin initiative in India. Evaluation of selection, training of Mitanins and community mobilisation activities was undertaken but community baselines, controls or sufficient sample sizes were not available to measure success against. In addition the diverse training, roles and working environments of CHWs can lead to a range of outcomes. A number of countries have grappled with these issues and successfully scaled up care and services at community level. These experiences can provide guidance for others.

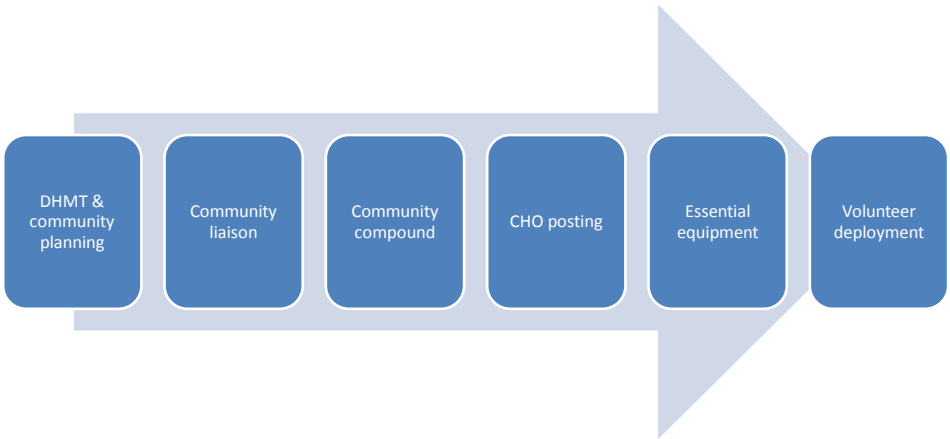
Scaling up of the Navrongo service model

The experience of Ghana demonstrates how strategies tested in the successful Navrongo experiment helped to guide national health reforms that resulted in the community-based Health Planning and Services (CHPS) initiative that has been rolled out across all districts in the country. CHPS involves mobilizing volunteerism, resources and cultural institutions in order to support community-based primary health care.

HRH are central to the success of these initiatives which hinge on mobile resident nurses delivering care in villages rather than outreach or facility based services. In response to poor services at community level, which was mostly due to the location of community health nurses (CHNs) in health clinics, the Navrongo experiment involved retraining, renaming and recertifying CHNs as Community Health Officers (CHOs). These resident health care providers worked out of health compounds that were donanted and constructed by the community. This accessible nursing care reduced childhood mortality by 16 percent during the five years of program implementation (Pence 2005). The CHPS adaption of this service model emphasises community mobilisation, ownership and the use of community structures for service delivery. The District Health Management Team (DHMT) and community leaders are responsible for the support and supervision of the CHO who travel from compound to compound via motorcycle providing care to approximately 3000 people with the assistance of community volunteers (Nyonator, Awoonor-Williams et al. 2005).

The principles of organisational change guided the process of scale up which was based on six objectives (Nyonator, Awoonor-Williams et al. 2005) which are listed at figure 34. Community and health sector partnership is central to each. The process involved consensus building, community ownership, health sector support at all levels, the engagement of advocates to facilitate change, the communication of success stories which helped to establish the credit

Figure 3



There are a number of HR issues that the CHPS programme has wrestled with. The Community-based Health Planning and Services (CHPS) Lead District Readiness Assessment (Killian 2007) encountered a range of problems such as a lack of nurses for deployment, some CHOs had no midwifery training, no training for volunteers, lack of motivation/incentives for CHOs, lack of logistics for CHO, volunteers and VHC. Ghana's human resources for health plan has attempted to address some of these issues including insufficient incentives for staff to accept rural postings and lack of true community ownership (GHWA Task Force 2006).

Scaling up CHWs in the Asia and Pacific Regions

A review of country case studies from two meetings in the Asia Pacific region (AAAH 2007; WHO/SEARO 2007) made a number of HRH recommendations to strengthen the CHW programmes (PHFI 2008). The report makes 10 recommendations that contributed to the successful implementation of CHW programmes which are depicted in the figure below. These are the benefits of CHWs being closely connected with and or resident in the communities they serve.

Figure 36 10 Rules for success

(Reddy 2008)

Haines points out that one of the greatest challenges to scaling up CHW practice is supervision. Particularly in rural communities supervisors may provide the only point of contact with the health system. Clear strategies and procedures for supervision need to be defined and the skills taught should encourage participation by supervisees. Peer support, through group meetings, may also make an important contribution to morale and motivation. (Haines, Sanders et al. 2007)

There is an ongoing debate concerning the issue of payment versus voluntarism. According to Walt et. al. large-scale community level volunteer programmes are characterized by high attrition and low activity rates and will only be sustainable under particular enabling

conditions (Walt, Perera et al. 1989) Most successful CHW programmes have therefore ensured that their CHWs receive adequate remuneration if their programme activities prevent them from gaining their livelihood in other ways (Standing and Chowdhury 2008)

Discussion concerning regulatory conditions for health workers in MNRH is absent from the debate on scaling up initiatives. The need to develop regulatory frameworks that demarcate the boundaries between CHWs and the professional health cadres and provide protection for patients as well as for health care has been discussed in relation to scaling up HIV efforts (Hermann 2009). There is little guidance concerning how these approaches should be implemented or the numbers required to undertake appropriate MNRH tasks. Should for example certain areas receive primary attention and the rest phased in over time? It is unclear how CHWs should be managed alongside SBAs. Scaling up TBAs is not considered appropriate at this point however the further training of CHWs with articulation in SBA programms may be an important consideration in an effort to professionalize birth attendants.

Scaling up education and training

A great deal of emphasis has been placed on the education and training of health workers for scaling up. The Kampala declaration calls for an immediate scale-up of the education and training of health care workers with a priority on community and mid-level health workers (Global health workforce alliance 2008). This includes pre and in service training of CHWs and SBAs followed by the gradual expansion of training of specialist training of groups such as obstetricians. The GHWFA Task Force for Scaling Up Education and Training for Health Workers recommends that countries develop 10-year scale-up plans, with short-term, medium-term and long term goals.

Country examples of this in action are part of efforts to upgrade lower-qualified clinical officers to mid-level assistant medical officers in Tanzania, or the educational scale-up operation that resulted in upgrading 22,000 community health nurses from enrolled status to registered diploma in Kenya (GHWA 2006). Many countries have stepped up efforts to train health workers by increasing their intakes at training institutions. The Ethiopian MoH is training 30,000 community based female health extension workers (Haines, Sanders et al. 2007) and in Pakistan 12,000 Community Midwives (CMWs) are to be trained in next five years (Hassan 2008). In Bangladesh there are plans to train an additional 15,000 community based SBAs (Chaudhury 2008). The Bangladesh Maternal Health Strategy (2001) recommended a community-based skilled birth attendant (CSBA) strategy to complement the facility-based strategy. This set a target of one six-month-trained CSBA for 6,000-8,000 people (Mridha 2009). Despite this Bangladesh is far off the target to increase SBA from 15% to 64% coverage. PNG is pursuing a trial of a re conceptualised form of community health posts staffed by two CHWs and plans to upgrade CHWs to auxiliary midwives (Government of Papua New Guinea 2009). This will require a large investment in training CHWs and nurses (Yambilafuan 2009).

Experiences from some countries in the Asia and Pacific regions provide some lessons for practice. Indonesia has gained some success in increasing midwife numbers through mass training efforts. The country increased its village midwife coverage from 15 000 in 1991, to 54 000 by 1997. This represents a ratio of one village midwife per 2389 population, or roughly one per 54 births per year which exceeds international recommendations of one midwife per 175 births (Hatt, Stanton et al. 2007). A competency based training programme was developed and then subsequently improved through the provision of short in-service training and skills-based retraining and lengthening the course for new midwives (McDermott, Beck et al. 2001).

Scaling up basic training of health workers needs to include essential competences, skills, and attitudes that can be adapted to fit changing needs and burdens of disease. This also requires greater investment in training schools and educators and tutors alongside innovative and pedagogically rigorous curriculum and processes (WHO 2007). In service or continuing professional development needs to be linked to regular certification and accreditation of providers to ensure maintenance of competencies and accountability (Koblinsky, Matthews et al. 2006)

Crisp et al outline some broad factors on scaling up education and training of health workers across all areas not just MNRH based the experience of ten countries that have or are implementing, a large-scale increase in their overall health workforce, or of a specific cadre (Crisp and Sharp 2008). These are listed in at figure 37 below. Political support, leadership, stakeholder commitment and financial investment are necessary to ensure the implementation of a plan of scaling up education and training. An information system is necessary in order to assess progress and make modifications which all need to be managed effectively. In addition the labour market must be considered so that staff is able to be absorbed and retained.

Figur

(Crisp and Sharp 2008)

The various pitfalls that have inhibited country success in scaling up education and training have been summarised by Gaye and Nelson (2009) which add to Crisp et. als. factors above. They also conclude that HIS and management are key but they also articulate the need for scaling up initiatives to be based on evidence gathered from performance assessments, institute standardised performance based curricula and link service education, in-service training and professional associations. They also point to ways of expanding training through technology or use of available networks and groups.

Education and training scale up efforts cannot occur in isolation and improving health worker performance is much more likely if coordinated with other MNRH expansion endeavours such as management practices and group processes.

More research is needed to determine the success of various scaling up measures and the transferability of strategies to different community contexts in order to see if they can be implemented within existing systems, infrastructure, and human resources. These evaluations need not only measure impact in terms of MMR but the acceptability, accessibility and quality of the HR practice. Maintaining quality at scale is an important issue that requires consideration.

Indicators of effective HRH Practice in MNRH at community level

Measuring the effectiveness of HRH interventions and the extent to which they translate into enhanced management as well as team and individual health worker performance that impacts upon health outcomes at community level depends on adequate monitoring and evaluation systems. However agreement is yet to be reached on:

- The definition of quality or standards in HRH practice,
- the indicators to be used to assess performance at the individual health care worker and the HRM levels,
- the process of tracking and reporting on which strategies really work to improve performance (in terms of attribution of results) and providing information on the equity and gender-related results of interventions
- ways of using the data to improve decision making and managing change.

This lack of agreement on terms and approaches is partly the result of difficulties with the complexity of measuring the impact of HRH interventions upon health outcomes and perceived quality of care by clients and staff. This is due to the fact that HR practices interact with and operate in conjunction with other interventions and depend on a functional health system. Effective HRH practice is therefore highly contextual and involves a number of stakeholders who are engaged in a range of activities.

However an analysis of the components of HRH practice in MNRH at community level and the conditions in which it is carried out provide insight into the factors that constitute success and therefore quality. This may in turn shed light upon standards, common indicators and appropriate evaluation approaches. The multifaceted interaction of various factors upon HRH performance requires that a variety of evaluation methods be employed to collect accurate data from a number of sources. Decisions concerning what standards should be measured, the indicators and processes to be employed can be addressed through the introduction of a performance management system that contributes to continual improvement in HRH.

It has been argued that due to the uniqueness of health worker contexts evaluations of performance should be done on a small scale (Bhattacharji 1986). However the results of performance management at the micro level can feed into a larger HRH quality improvement system that forms part of overall health system improvement and if appropriate scale up solutions. Many developing countries are beginning to adopt QA approaches, which will facilitate the introduction of performance management (Martinez 2001).

HRH Performance Standards

Health system standards are explicit statements of expected quality and can be categorised according to their technical and administrative features (QAP 2009). At the input level HRH performance standards such as administrative policies, rules and regulations and qualifications are labelled as administrative standards. Among the list of technical standards are job descriptions and specifications, or detailed descriptions of what is required of a product or service. An example of this in an HRH context might be the performance requirements and quality standards required in maternal health services such as that they are staffed 24hrs a day.

Table 26 Taxonomy of Health System Standards

System Components	Categories	
	Administrative	**Technical**
INPUT	Administrative policies Rules and regulations Qualifications	Job descriptions Specifications
PROCESS	Standard operating procedures	Algorithms Clinical pathways Clinical practice guidelines guidelines Procedures Protocols Standing orders
OUTCOME	Expected results	Health outcomes

At the process level standard operating procedures such as the payroll or grievance procedures can be considered administrative standards while a protocol on the management of patient care is technical. The measurement of the characteristics of these standards at the input and process levels can help shed light on outputs in terms of productivity and quality of care. This is where indicators play an important role in quality improvement, health worker accountability and linking inputs and interventions to outcomes.

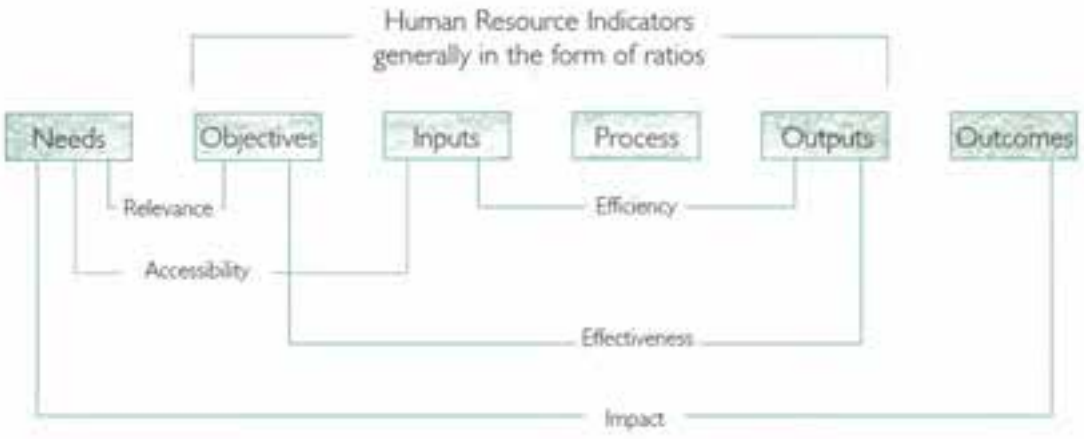
An example of the use of standards in performance evaluation is Jhpeigo‘s Standards-Based Management and Recognition (SBM-R) tool, a practical management approach for improving the performance and quality of health services (2005). Jhpiego has adapted SBM-R to a process for defining and achieving high-quality midwifery education in Afghanistan. The Ministry of Public Health, Jhpiego and partners developed 59 educational standards and supported the establishment of a Midwifery Education Accreditation Board. The schools used the explicitly detailed standards to evaluate their performance, define their needs and mark their progress. The Board oversees external evaluations and formal accreditation. Thus far, 13 of Afghanistan‘s 21 midwifery schools have achieved accreditation, and the remainder are continuing their process of performance improvement and anticipate accreditation soon.

HRH performance indicators

Indicators of HRH performance have been defined as ~~–a~~ measurable variable (or characteristic) that can be used to determine the degree of adherence to a standard or the level of quality achieved" (QAP 2009). In addition to providing important information for benchmarking and ensuring patient safety indicators and technical or clinical practice they can be used health service managers to help establish appropriate staffing levels and training needs to make certain that available resources are used in the most suitable way. HRH indicators also provide comparisons between different components of a health system (Hornby 2002).

Indicators can be understood in terms of the three levels (structure, process and outcome) upon which health care quality can be assessed (Donabedian 1988). Hornby and Forte provide a more detailed model that is specific to HRH (2002) which is outlined in the diagram below. HRH indicators on the structural level are concerned with the attributes of the setting, what resources are available and the needs. These include the skill mix of the staff, the available numbers of staff in relation to the case load and population, the associated staff costs in relation to the total health expenditure. These indicators are key inputs in the HRH system. Process level HRH indicators are concerned with efficiency. This includes the organisational environment in which people work had how it affects how people deliver care and services as well as how efficiently HRH are utilised in the service. At the individual health worker level this denotes the efficiency of care and services such as case management and patient satisfaction. This process area, although not discussed includes task performance measurement which focus on technical aspects and contextual performance of tasks outside core job practice such as involvement in village health committees (VHCs) (Michie 2003). Team and individual performance measures can also be included in this dimension.

Figure 38 Aspects of HRH Indicators



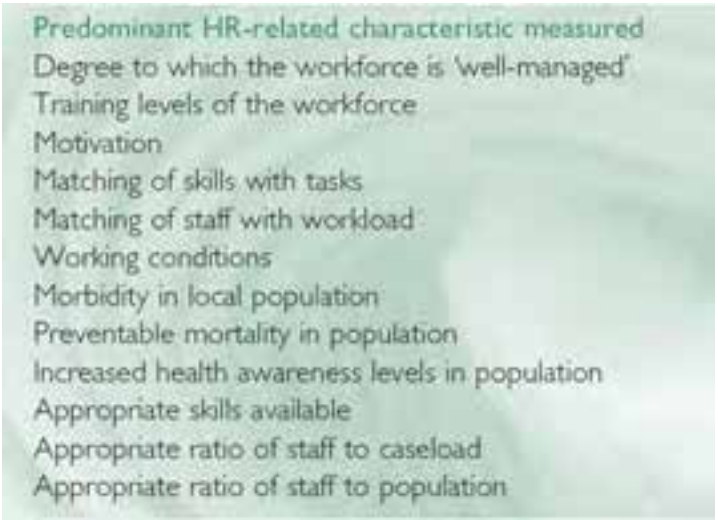
(Hornby 2002)

Hornby and Forte include indicators to denote the outputs or results of interventions and changes in the system. These indicators give an indirect picture of the effect of how health is affected by HRH. They give the example of trained nurses/ midwives per 1000 live births (Hornby 2002) another could be the percentage of births attended by skilled health personnel. These indicators have strong links with health outcomes such as MMR or the contraception

prevalence rate, however in order to make them more impact focused a comparison needs to be made involving health outcomes and the workforce. For example using Hornby and Forte's logic, an HRH outcome indicator might be the contraception prevalence rate in relation to family welfare workers staff employed in India or adolescent fertility rate in relation to number of PHEs. This combines population based data with service based data.

HRH indicators have been categorised according to 12 key areas listed below and a possible array of indicators were developed from this at a WHO meeting in 1997 (Hornby 2002).

Figure 39 Main HRH indicator categories



(Hornby 2002)

Indicators can also be developed from areas used for bases line assessment of HRH. MSH tools such as the Human Resources Management Rapid Assessment Tool for Public and Private Sector Health Organisations (2003) assess HRH according in six areas outlined in the diagram below.

HRM capacity	**HRH Data**
Budget	Employee data
Staff	Computerisation of data
	Personnel files
HR Planning	
Organisation mission/ goals	**Performance management**
HR planning	Job descriptions
	Staff supervision
Personnel policy and practice	Work planning and performance review
Job classification system	
Compensation and benefit system	**Training**
Recruiting, hiring transfer promotion	Staff training
Orientation program	Management and leadership training
Policy manual	Links to external pre service training
Discipline, termination and grievance procedures	
Relationships with unions	
Labour law compliance	

Dieleman and Harnmeijer present a framework (see table 28) for indicators in their literature review of promising HRH practices in resources poor settings which attempts to synthesise various authors‘ conceptions. Performance is seen as the outcome of a number of factors (the availability of staff, their competences, productivity and responsiveness) that when combined in various degrees of success. Process indicators are grouped together as effects that are related to the efficiency of HRH. Indicators categories such as matching of skills with tasks, matching of staff with workload, and the appropriate ratio of staff to caseload listed in figure 33 above could be included in the productivity section of this framework. The appropriate ratio of staff to population fits best under the availability section of effects. Outputs in this framework are related to effectiveness but health status is not included.

The review emphasises the need to measure indicators at both the effect and outputs levels with the process of the implementation of interventions being just as important as their results. Qualitative and quantitative indicators are regarded as of equal value however the framework does not refer to individual or team performance.

Table 27 Indicators of health worker performance

Factors	Examples of indicators
Outcome	
Performance	Composite of the four elements mentioned under effects. Improvement in these four elements indicate improved performance
Effects	
Availability	Waiting time, staff ratios, overtime, staff turnover, attendance of health workers
Productivity	Occupancy rate, outpatient visits and interventions provided per worker or facility. Patient contacts
Competences	Prescribing practices Adherence to protocol during diagnosis and communication with patients
Responsiveness	Client satisfaction Readmission rates and cross-infections Case fatality rates Proactive quality service, e.g. decubitus ulcers
Outputs	
Retention	Vacancies, posts filled, duration in job
Absence	Attendance of health workers, overtime
Being held accountable	Level of responsiveness Adherence to rules and standard operating procedures
Skills and knowledge	Level of skills and knowledge of practices
Motivation and job satisfaction	Level of job satisfaction Level of staff motivation
Working conditions	Availability of infrastructure, medications, supplies Communication procedures Decision-making processes

(Dieleman 2006)

Selected key indicators for monitoring and evaluation in HRH are outlined in a recent handbook (Dal Poz 2009). Indicators are classified according to:

- stock and distribution
- labour activity
- productivity
- renewal and loss

The table in Dal Poz et also handbook add important indicators relating geographical distribution, gender and age of the workforce and labour activity that is not covered in the work of the authors discussed above.

Criterion based approaches to measuring HRH performance

Audits are also used to assess HRH quality which involves criteria rather than indicators. Examples may be maternal deaths, provider care, or barriers to care (FCI 2002). Audit and

feedback have been found to be effective in improving health worker performance (Jamtvedt 2006).

In their study Kongnyuy and van den Broek (2008) identify a number of structural, process and outcome criteria that can be used for the clinical audit of women friendly care and providers' perception in Malawi. An example is provided in the table below which highlights criteria that are specifically related to the performance of health workers.

Table 28 Agreed criteria of HRH related standards for women friendly care

Objectives	Structural Criteria	Process Criteria	Outcome criteria
All staff have a positive attitude towards all clients	• staff with skills on interpersonal communication and counselling • staff with a positive attitude on labour ward, post natal ward, antenatal ward and clinic	• clients are welcomed • clients are greeted by name. • staff introduce themselves to clients by name • all procedures done (e.g. during labour or on the ward care) are explained by staff to the client • client is allowed to have a companion with her during labour and delivery. • clients are told how and where they can ask for assistance • patients are referred to & called by their name (and not by bed number, diagnosis etc) • staff are polite and use appropriate language	• client satisfaction of at least 80% • at least 80% of women understand the procedures undergone during labour, delivery and puerperium • at least 80% of women willing to deliver again at the at the same facility in a subsequent pregnancy • 95% of women will recommend the facility to other women • 95% of women will feel they are treated with dignity and respect

(Kongnyuy and van den Broek 2008)

Combining criteria and indicators

Another approach to the development of criteria and indicators that relates to HRH can be found in the USAID guide to the rapid assessment of health systems functioning (Islam 2007). The strengths of this approach are that HRH is seen as part of the health system and therefore connected to the context that affects performance. HRH is included as one of six areas that include: governance, health financing, health service delivery, and pharmaceutical management and health information systems. Five criteria are suggested as appropriate means of assessing system performance. These are:

- Equity: Are HR distributed equitably or in equitably?
- Access: Is access to care inhibited by lack of competent personnel in rural & distant facilities?
- Efficiency Is personnel use inefficient because of lack of HR planning & coordination?
- Quality: Is the quality of care affected by access to qualified personnel, provider behaviour or incompetence?
- Sustainability: Are personnel supported or given incentives? (ie through community financing system?)

In order to determine the answers to these questions above the manual lists 20 indicators under 5 topical areas that could be used to build a profile of HRH. This profile provides the evidence upon which statements concerning HRH strengths and weakness can be made and interventions planned in conjunction with other areas in the health system. This could be applied to cadres of HRH engaged in MNRH at community level linked to performance management and feed into health service quality assurance processes. These in turn will be linked to other aspects of health systems assessment and to the achievement of MDGs.

Component	Topical Area	Indicator Number and Content
Component 1	Human Resources (HR) Data	1. The ratio of five cadres of health care professionals to the population
Component 2	Planning	2. The distribution of health care professionals in urban and rural areas
		3. HR data—presence of human resources data system
		4. The existence of a functioning HR planning system
		5. HR dedicated budget
	Policies	6. Presence of job classification system
		7. Compensation and benefits system that is used in a consistent manner to determine salary upgrades and merit awards
		8. Formal process for recruitment, hiring, transfer, promotion
		9. Employee conditions of service documentation (e.g., policy manual)
		10. Presence of a formal relationship with unions (if applicable)
		11. Registration, certification, or licensing is required for categories of staff in order to practice
		12. Salary
	Performance Management	13. Job descriptions are present
		14. Supervision (especially clinical supervision)
		15. Percentage of supervision visits to health centers planned that were actually conducted
		16. There is a formal mechanism for individual performance planning and review
		17. Incentives, monetary and non-monetary
	Training and Education	18. There is a formal in-service training component for all levels of staff
		19. There is a management and leadership development program
		20. There are links and "feedback loops" between the organization and pre-service training institutions

(Islam 2007)

Developing indicators and criteria

An overview of the mechanics of developing and using human resource indicators is provided by Hornby and Forte (2002) which includes an assessment of the management situation in order to determine what HRH indicators best ―if" with current performance management needs. Kongnyuy and Van den Broek's study also highlights an evidence based approach to developing context specific criteria and indicators for HRH performance through a consultative process. Three workshops were held with stakeholders to establish standards for women friendly care. The first involved the collating evidence from existing guidelines

and agreeing on objectives and the structure, process and outcome criteria for each. In the second participants agreed on a final list of standards and criteria and the third workshop involved the selection of criteria to audit. This approach ensures ―buy in" from stakeholders and staff and ensures consensus and ownership which is probably conducive to the success of a performance management process.

The development of indicators and those selected depends upon the objectives of the evaluation itself and the perspective taken. Approaches can range from a focus on the economic viability of the workforce, a management perspective health systems approach to the use of a human rights framework to assess practice such as that suggested by Thompson (2004). There appears to be a lack of focus on linking HRH performance to other aspects of health systems strengthening and the MDG indicators.

Summary of findings

This narrative synthesis has examined a range of peer reviewed and grey the literature in order to address the following questions:

1. What barriers and constraints inhibit HR practice in MNRH at community level?
2. How can MNRH health workers at community level be better supported to improve performance and deliver accessible evidence based interventions?
3. What HR approaches in MNRH at community level are practiced in countries that have made significant progress towards MDG 5a and 5b?
4. How can, or have these HR practices be scaled up?
5. What indicators might be used to determine the effectiveness of the community health workforce in MNRH in various settings?

The key findings of this literature review are summarised below.

HRH barriers and constraints

A review of barriers found a lack of coordination, poor workforce planning and investment has resulted in chronic shortages of staff, poor workforce coverage and skill mix. In addition there are weak HRH policies, legislation and regulation, difficult working environments, a lack of HRH leadership and management systems, low clinical competencies, poor relationships with community members and weak community organisational structures.

Supportive HRH approaches in MNRH at community level

A number of examples have been drawn from the literature that highlight country experiences in the areas described below.

Improving policy, legislation and regulation

Strategies identified in the literature in this area include the provision of support for the development of HRH policy, models of HRH policy at community level, accreditation of education and training programmes, licensing of facilities, legal mechanisms to support task shifting to community health workers and TBAs, ethical standards of practice.

Strengthening Management and leadership

Examples of successful HRH management practice include the establishment of performance management systems, models of supportive supervision, the development of appropriate job descriptions. In addition examples of practice in the following areas are identified: career pathways, workforce planning, selection and recruitment, task shifting, substitution and delegation, development of new cadres, remuneration, incentives, HRH information systems, leadership support and training.

Building Supportive working environments

A number of experiences are outlined to promote supportive work envirnments including the promotion of PHC teamwork, health worker partnerships across public and private sectors, collaboration with traditional and cultural practitioners. Addressing gender imbalance in the workplace as well as other and other socio-cultural issues is described along with approaches to addressing issues connected with infrastructure, logistics equipment and tools. Examples of policy to improve the health and welfare of staff and to promote family friendly work environments is also presented.

Working with the community

Examples of tools and guides to assist HRH to work with communities are described as well as approaches to preparing HRH to work within the specific socio-cultural context of the relevant community. Case studies of community and health workers working together are outlined.

Strengthening Education, training and competencies

Information concerning collaborative approachs to education training, curriculum review processes and various approaches to learning and teaching is collated under the heading under education and training. Methods of selecting learners are described as well as experiences of training accreditation and certification and the findings of trainign evaluatios.

Evidence based interventions

The literature review identifies a wealth of experience in the implementation of HRH initiatives at community level in maternal health care with fewer in the neonatal and reproductive health areas. However there is an overall shortage of research studies which has resulted in a lack of detail concerning various initiatives including information about the interaction of contextual factors and the impact upon HRH performance. Studies often focus on the analysis of a single HRH intervention without a critique of the effect of other programmes, the health system or macro factors such as the geo-political, socio-cultural or economic context.

A lack of understanding concerning the complex interaction of contextual factors upon HRH interventions makes it difficult to draw conclusions about the transferability of these interventions to other contexts and the support that may be required. This complex environment demands more than one intervention and instead a package of HRH interventions maybe more appropriate. This is demonstrated by the number of research studies outlined in the review that provide evidence of efficacious approaches that combine a number of strategies. For example training and supervisory HRM initiatives often appear alongside strategies to improve logistics and strengthen the participation of community in their own health care. This shows a need for a comprehensive, integrated approach to HRH.

Health worker performance is therefore dependent on range of factors and a thorough understanding of the complex environment is required for informed HRH decisions making. Poor HRIS systems, weak monitoring and evaluation efforts and a lack of methodologically sound studies have affected the quality and depth of available knowledge which impacts upon decision making. This highlights a need for an increase in the quality of HRH studies and knowledge.

HRH Lessons from countries who have made progress towards MDG5

Lessons from a number of countries indicate that the mobilisation of HR cadres such as midwives and CHWs, with an emphasis on clinical performance and community participation, is critical at community level. Involving TBAs in the continuity of care alongside SBAs addresses the socio-cultural needs of women. Successful HR approaches show that attention must be placed on collaboration between health workers, regular supervision and quality training. The professionalisation of midwifery or of a skilled birth attendant cadre at community level is an effective strategy alongside the creation of an informal sector of human resources for MNRH comprised of community members themselves. There is a clear need to develop and build upon current local organisational structures that are part of the social fabric of the community. Experiences in Sri Lanka and Malaysia for example demonstrate this. However, all these achievements were accompanied by on-going phases of health systems development with modest expenditures on maternal health care and services. It is important to note the contribution of policy at national level, poverty reduction strategies, gender empowerment, education and rural development initiatives.

Scaling up HRH interventions

There is a dearth of material that documents scaling up experiences. Case studies from Indonesia and Ghana indicate a need for increasing skilled birth attendant coverage, expanding the role of community health workers and ensuring community ownership of the process. In the literature there is an emphasis on exploring models and frameworks for scaling up and a small number of controlled studies.

The scaling up experiences of countries can contribute to an understanding of how selected components of HRH practice can be expanded in unison with policy development, financial commitment and improved leadership. Structural and economic changes can both enhance HRH performance and constrain it. This requires rigorous monitoring and evaluation practice so that decision makers can be alerted to potential problems so that adjustments can be made.

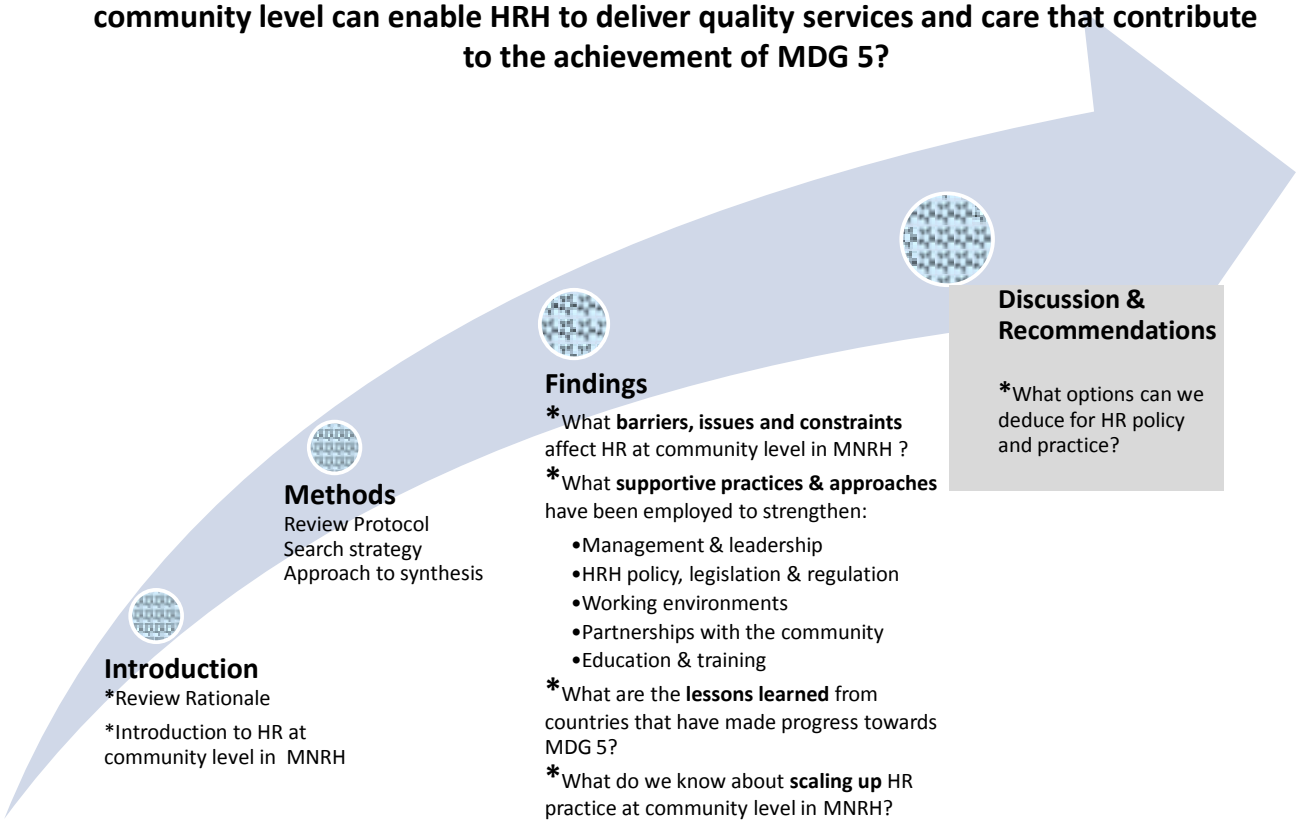
There is a need for more detailed and comprehensive information concerning scaling up experiences in country. Better monitoring and evaluation systems will help to shed light on HRH practices and the effectiveness of scaling up models in context.

Measuring HRH performance at community level

A number of authors have made suggestions concerning indicators of measuring HRH performance but there is little information concerning the specific context of HRH in MNRH at community level. In addition there is a lack of documentation outlining country experience in the development of HRH performance indicators at individual, team and management levels in all contexts including community settings. There have been limited attempts to link HRH to other aspects of health system or MDG5 with the focus being on base line assessment of HRH which are the first step in this process.

Discussion and Recommendations

What human resource practices in maternal, newborn and reproductive health at community level can enable HRH to deliver quality services and care that contribute to the achievement of MDG 5?



Introduction

*Review Rationale

*Introduction to HR at community level in MNRH

Methods

Review Protocol
Search strategy
Approach to synthesis

Findings

*What **barriers, issues and constraints** affect HR at community level in MNRH ?

*What **supportive practices & approaches** have been employed to strengthen:

- Management & leadership
- HRH policy, legislation & regulation
- Working environments
- Partnerships with the community
- Education & training

*What are the **lessons learned** from countries that have made progress towards MDG 5?

*What do we know about **scaling up** HR practice at community level in MNRH?

*What indictors & tools can be used to **assess effective HR performance** at community level in MNRH?

Discussion & Recommendations

*What options can we deduce for HR policy and practice?

There are two key areas under which the findings of this literature review can be discussed and from which recommendations emerge. The first area is concerned with the findings that have emerged from the experiences of countries that have made progress towards MDG5 and those that have successfully scaled up health workers at community level in MNRH. These experiences highlight the need for investment in HRH at community level. The literature review has also drawn attention to successful HRH practices which shed light upon the complex nature of planning, implementing and evaluating HRH. This raises a number of implications for HRH practice and the need for a more inclusive and comprehensive approach that is informed by evidence.

Investment at community level

Evidence based long term workforce planning, management and financial investment is necessary in the provision of MNRH care and services at community level. The finding of this review show that nations who have made significant progress towards MMR have invested in HRH at community level however in some countries such as Thailand and Malaysia this has led over time to a trend towards facility based services. This relocation of services from communities is often accompanied by the move of public sector community based workers to facilities or the private sector. This requires considerable financial investment which may not be viable in many resource poor countries. In PNG disinvestment at community level has resulted in the closure of community health aid posts requiring women to travel to facilities which may have contributed to the increase in maternal deaths. However there are plans to re focus attention at community level. Countries such as Indonesia have concentrated on the community level however the village midwife programme‘s emphasis on outreach services at the woman‘s home, has meant that the providing access to emergency obstetric care in hospitals has remained relatively neglected (Hatt, Stanton et al. 2007). Clearly appropriate attention needs to be given to both community and facility level. Expanding access to basic obstetric care by upgrading existing lower level facilities, increasing availability of such facilities, and improving emergency referral systems may be more cost-effective in achieving widespread coverage than focusing on increasing hospital-based births.(Stanton, Blanc et al. 2006).

Towards a comprehensive approach to enhancing HRH practice in MNRH

The achievement of improved reproductive, newborn and maternal health outcomes is reliant on effective HRH performance and quality MNRH service delivery. Yet, despite the importance of the relationship between HRH and MNRH care and services, there is little discussion concerning the complex interaction of the components of effective HRH and quality MNRH practice at the various levels. This includes an examination of contributing factors such as socio-cultural norms, health system structures, and ideologies that impact upon the accessibility, acceptability and quality of health services. An improved understanding of the interaction of these factors may enhance efforts to undertake a comprehensive approach to planning, implementing and evaluating health care. However a solid understanding of the context of HRH is necessary for effective decision making in this area which is dependent on the availability of quality information or evidence. This section

outlines how the HRH information base may be strengthened, and how success might be assessed in terms of HRH performance and beyond. This highlights key recommendations for planning, implementing and evaluating HRH practice in MNRH at community level.

Improving the quality of community level HRH information

HRIS systems and community level information

HRH information concerning those working in MNRH at community level is not comprehensively available from one source and the quality of the information is variable. This suggests that community level HRH information is not routinely collected in a consistent manner which highlights the need for standard indicators and improved reporting procedures. Such indicators could augment a national human resources for health information system (HRIS) and provide a more accurate picture of the current situation at community level so that additional resources can be properly justified. Indicators could be drawn from the main HRH components or areas of HRH interventions at community level. These areas are:

- Policy, regulation and legislation
- Management and leadership
- Education and competencies
- Supportive working environments
- Working with the community

HRH indicators that have been suggested by a number of authors are collated below in figure 41. These include quantitative and qualitative indicators and are categorised under the first three main headings with indicators concerning supportive working environments and working with the community woven through the list.

Figure 41 Indicator fields for HRH in MNRH at community levels

Policy / regulation / Legislation

Presence of national and district HRH policy that addresses community level & MNRH workers in private & non state sector
Presence of job classification system that includes community cadres & service functions
Compensation & benefits system used in a consistent manner to determine salary upgrades & awards
Formal processes for recruitment, hiring, transfer, promotion , disciplinary actions
Employee conditions of service documentation (e.g., policy manual)
Presence of a formal relationship with unions (if applicable)
Registration, certification, or licensing is required for categories of staff in order to practice

Management systems

Staff supply, retention & loss

Ratio of CHWs, nurse & midwives & TBAs at community level to population (2.28) (Speybroeck 2006)
The distribution of HRH in urban and rural communities
Distribution by age, Distribution of HRH by sector (state/non state), Distribution by sex
Distribution of HRH by occupation, specialization or other skill-related characteristic
Proportion of staff in dual employment / employed at more than one location
Number of vacancies, posts filled, duration in job, proportion of HRH unemployed
Hours worked compared with hours rostered
Presence of human resources information system
The existence of a functioning HR planning system
Days of absenteeism among health workers
Ratio of entry to and exit from the health workforce
Proportion of nationally trained health workers
HR dedicated budget and community services identified

Personnel administration / employee relations

Salary: average earnings, average occupational earnings & income among HRH
Health and safety in the workplace, standard operating procedures, protocols & manuals
Incentives, monetary and non-monetary, teamwork, practice, functional partnerships

Performance management

Job descriptions & duty statements are present
Supervision (especially clinical supervision) schedule
Frequency of supervision visits to the field planned that were actually conducted
There is a formal mechanism for individual performance planning and review
Peer review mechanisms
Level of job satisfaction, Level of staff motivation

Education , training & competencies

Existence of a formal in-service training component for all cadres
Existence of a management and leadership development program
Relative number of specific tasks performed correctly by health workers / adherence to protocol etc

Community / consumer engagement in HRH

Client satisfaction, No of Patient contacts
Frequency of community meetings attended & evidence of community participation
Presence of a formal relationship with community organisations
Mechanisms for involving community & HRH in pre and post service curriculum development & review
Community involvement in: policy development, recruitment & selection, pperformance management ie supervision

Monitoring HRH in MNRH at the community level

Regular monitoring of HRH would help to provide updated information concerning HRH performance at individual, team and management levels so that issues can be quickly identified and changes made. Monitoring using indicators that are drawn from a national HRH information system ensure consistency and comparability across a number of

communities. A collaborative approach to monitoring across the public and non government health sectors would assist in information sharing and may promote consistent HRH planning and implementation.

Quality HRH research

Improvements in the rigour of HRH research would provide a better understanding of the context of HRH and areas where findings can be generalisable. The review has identified a lack of focus in literature on workforce issues concerning reproductive health, neonatal care and cadres such as peer health educators. In addition there is a lack of discussion of adolescent reproductive health despite growing youthful populations in developing countries and increasing incidence of sexually infectious diseases. This indicates a need for a more inclusive approach to the study of workforce issues in this area.

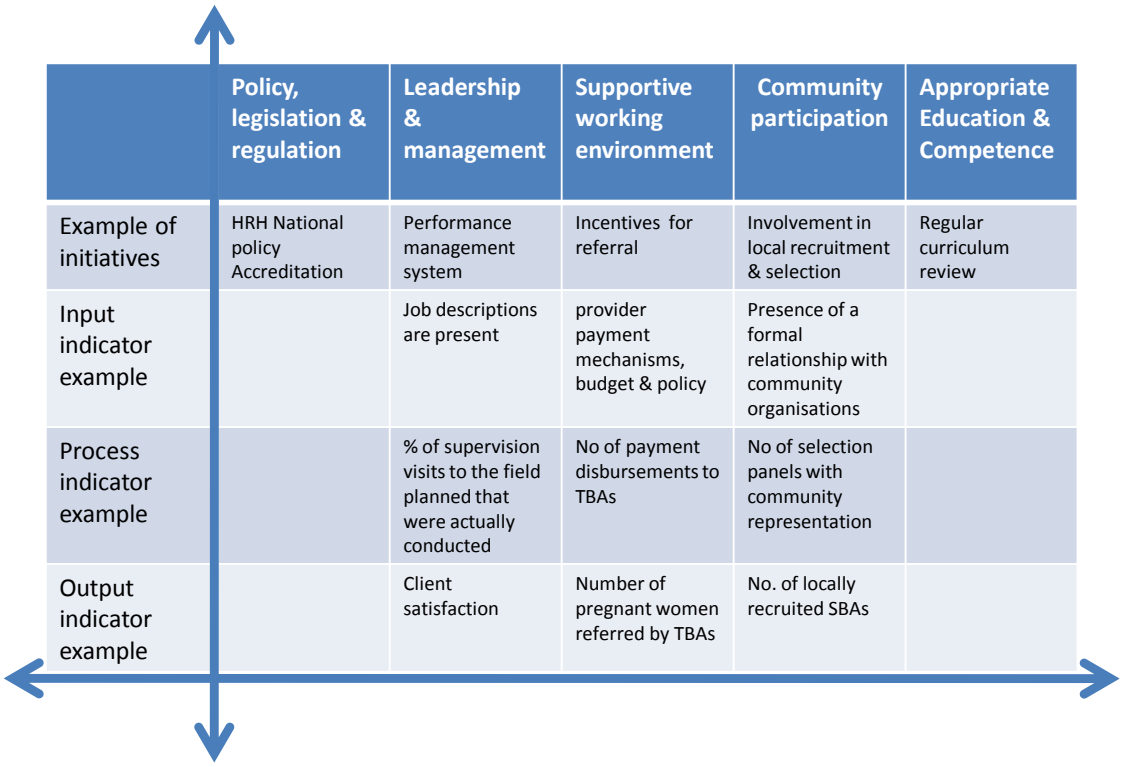
Strategic dissemination of knowledge

Sharing not just HRH information and research findings but knowledge as well is vital for improving policy and practice. However this is more than the provision of access to knowledge. For change to take place which involves the application of knowledge decision makers need to be engaged in dialogue about this knowledge. This enables the relevance, usefulness and cost effectiveness of various HRH approaches to be clearly understood and that the required support for implementation communicated to partners such as donors.

A comprehensive approach to assessing HRH performance in MNRH at the community level

The relevance, accessibility, efficiency, acceptability, effectiveness and impact of HRH performance can be approaches strategically and assessed at a number of levels. Indicators or measurable variables of performance can be drawn from the main components or areas of HRH practice as describe above. In order to achieve a strategic and comprehensive approach to performance assessment HRH practices and their respective indicators need to be aligned or horizontally integrated with other HRH components as well as vertically integrated with the HRH objectives of the organisation (Baird 1988). This includes the horizontal and vertical integration of input, process and output indicators for measuring HRH performance. Figure 42 provides some examples of how HRH interventions and related indicators can be linked across the HRH system in order to ensure the integration of the right mix of packages of interventions which are delivered in a co-ordinated manner. Linkages across other dimensions in the HRH system can also be considered. This includes the relationship between performance at the community district and national levels and HRH performance at the individual health worker, team and management levels. Effective implementation of these approaches requires that HR systems are acceptable to managers and health workers which is critical in ensuring enhanced performance outcomes (Guest 1997).

Figure 42 Horizontal and vertical integration of indicators across an HRH system



	Policy, legislation & regulation	Leadership & management	Supportive working environment	Community participation	Appropriate Education & Competence
Example of initiatives	HRH National policy Accreditation	Performance management system	Incentives for referral	Involvement in local recruitment & selection	Regular curriculum review
Input indicator example		Job descriptions are present	provider payment mechanisms, budget & policy	Presence of a formal relationship with community organisations	
Process indicator example		% of supervision visits to the field planned that were actually conducted	No of payment disbursements to TBAs	No of selection panels with community representation	
Output indicator example		Client satisfaction	Number of pregnant women referred by TBAs	No. of locally recruited SBAs	

However at a higher level if we are to consider HRH performance improvement in relation to health systems strengthening (horizontal integration) and MDG 5 (vertical integration), the perspective needs to be multidimensional. HRH and service delivery are also linked to information systems, the supply of medical products, vaccines and technologies, financing, leadership and governance. Table 29 provides some examples of indicators at input, process and output levels in reproductive health across the six building blocks of the WHO health systems framework. Plotting indicators in a matrix format provides an opportunity to see how indicators in each of the areas might relate so that appropriate measures can be selected for assessing performance across all areas. Indicators can be developed and selected according to the six criteria (relevance, accessibility, efficiency, acceptability, effectiveness and impact) mentioned above which ensures a coordinated approach to planning, implementation and evaluation.

At the process level the HRH indicators are concerned with efficiency and when they are linked in with the other building blocks of the health system contribute to strengthening efforts in a horizontal manner. Output level indicators focus on the effectiveness of HRH. This involves a more vertical approach to achieving the objectives of the organisations which include improving reproductive health outcomes as shown in table 29. These approaches are central to strategic human resource management and the ~~–~~fit" of HRH activities (Wright 1992) with the goals of health systems strengthening and achievement of MDG5.

Table 29 Examples of HRH performance indicators alongside others in the health system related to reproductive health

HRH	Service Delivery	Finance	Leadership and governance	Information systems	Supply of medical products, vaccines and technologies
Input level					
Percentage of female trainees provided with knowledge & skills on reproductive health in a given year	Number of service delivery points offering family planning services	Percentage of public sector expenditures on contraceptive commodities	Existence of national population and reproductive health policy & plans	Percentage of women 15–49 years currently using modern methods of contraception included in routine data collection	Percentage of service delivery points stocked with family planning commodities according to needs
Process level					
Proportion of CHWs trained in family planning & reproductive health	Percentage of clients given counselling on family planning during a year	Proportion of budget spent on contraceptives at community level	Use of national policy targets in monitoring and evaluation plans at community level	Collection of data according to national protocols at community level	Percentage of contraceptive supplies that are wasted
Output					
Percentage of CHWs trained in relation to the number of clients who received counselling	Percentage of clients expressing satisfaction with the counselling services received	Cost of contraceptive in relation to average family income	Number of targets met/ protocols followed as per policy	Number of routine data collections as per protocol in household surveys	Available number of contraceptives in relation to need

Selected Indicators adapted from (ESCAP 2003)

Key recommendations for planning, implementing and evaluating HRH practice

The literature reviewed in this study has identified a number of implications for HRH practice in MNRH at the community level. The review has found that enhancing HRH performance is a complex process that requires the use of a number of strategies across HRH as well as in other health system areas. It highlights the need for a more informed, rigorous and well coordinated approach to HRH planning, implementation and evaluation by linking activities across the health system. The following points summarise practical guidelines for enhancing HRH performance in MNRH at community level gleaned from country experiences.

- Appropriate long term investment in HRH at community level in MNRH is required
- Relevant indicators concerning HRH in MNRH at community level should be included in a national HRH information system
- Monitoring and evaluation systems must include the community level and employ rigorous methods drawing on perspectives from analytical studies including epidemiological evidence as well as qualitative research.
- Knowledge concerning HRH in MNRH at community level should be strategically communicated to facilitate stakeholder engagement and enhance opportunities for application and exchange.
- HRH practices and their respective indicators need to be aligned or horizontally integrated with other HRH components as well as vertically integrated with the HRH objectives of the organisation.
- HRH initiatives need to be horizontally aligned with other building blocks of the health system and vertically integrated with MNRH targets in order to achieve health system strengthening and progress towards MDG 5.
- HRH performance monitoring and evaluation must take context into consideration and performance in key areas that are linked to district, provincial and national objectives and at individual, team and management levels including the participation of community members.
- Structural and economic change is required to ensure successful implementation of HRH interventions. This must be well monitored, incremental and aligned with a whole of system approach to change that is both bottom up and top down
- Superstructure factors can have a major impact upon HRH; however, a whole of system approach may help to ameliorate this through effective monitoring and evaluation systems that facilitate on-going modifications.

Appendices

Appendix 1. MDG5 Country Progress

Appendix 2 Selected ~~–m~~arker" interventions of proven effectiveness and level of care provider

Appendix 3. Sources of all material retrieved in the study

Appendix 4: Barriers and Constraints to HRH Practice

Appendix 5 Literature that documents training for HR engaged in MNRH at community level in the Asia and Pacific regions

Appendix 1. MDG5 Country Progress

MDG indicator	**MMR 2005**	**Births attended by skilled health personnel (%)**			**Adolescent fertility rate (%)**		**Antenatal care coverage - at least four visits (%**			**Contraceptive prevalence (%)**			**Unmet need for Family planning**		
		%	Date	Note	%	Date	%	Date	Note	%	Date	Note	%	date	Note
Bangladesh	570	20	2006		135	2003	16	2004		58.1	2004		11.3	2004	C 6,25
Bhutan	440	51	2005		62	2000				30.7	2000				
Cambodia	540	44	2005		52	2003	27	2005		40	2004		25.1	2005	C 25
China	45	98	2006		3	2001				90.2	2004	f15			
Cook Islands		100	2005												
DPR Korea	370	97	2004		0	1993	95	2004		68.6	2002				
Fiji	210	99	2005	f16	35	2001									
India	450	47	2006	f4,f5	97	2004	51	2005		56.3	2006	f6	12.8	2006	C,3,25
Indonesia	420	66	2003	f7,f8	54	2001	81	2002		60.3	2003	f9	8.6	2003	C,1,25
Kiribati		90	2005												
Lao PDR	660	19	2001	f18	110	2005				32.2	2000		39.5	2000	C,43
Maldives	120	84	2004		8	2006	91	2004		39	2004				
Marshall Is.		95	2002												
Micronesia		88	2001		44	2000									
Mongolia	46	99	2005		28	2000				69	2003		4.6	2003	C,2,43
Myanmar	380	57	2001		29	1999	66	2001	f10	37	2001		19.1	2001	34,41
Nauru		100	2003	f19											
Nepal	830	19	2006		106	2004	29	2006		48	2006		24.6	2006	C 25
Niue		100	2006												
Palau		100	2006												
Philippines	230	60	2003		55	2001	70	2003		48.9	2003		17.3	2003	C 25
PNG	470	38	2005		77	1994									
Samoa		100	2004		45	2001									
Solomon Is.	220	43	2003	f23	72	1998									
Sri Lanka	58	97	2000		29	1996				70	2000		18.2	2000	C,37,44
Thailand	110	97	2006	f12, f13	70	1995	74	2003		71.5	2006	f14			
Timor-Leste	380	19	2003		49	1993	30	2003		10	2003		3.8	2003	C 4,38
Tonga		99	2004		17	2003									
Tuvalu		100	2002												
Vanuatu		92	2005		92	1999									
Viet Nam	150	88	2006		25	2000	29	2002		78.5	2002		4.8	2002	C 25

World Health Statistics http://www.who.int/whosis/.
http://mdgs.un.org/unsd/mdg/Data.aspx

Footnotes:
f4: Data from years 2005-2006
f5: Includes <5% of deliveries by cadres of health workers other than doctors, nurses and midwives
f6: Data from years 2005-2006
f7: Data from years 2002-2003
f8: Includes >15% of deliveries by cadres of health workers other than doctors, nurses and midwives.
f9: Data from years 2002-2003
f10: 3+ visits.
f12: Data from years 2005-2006
f13: Includes <5% of deliveries by cadres of health workers other than doctors, nurses and midwives.
f14: Data from years 2005-2006
f15: Data pertain to ever-married women of reproductive age.
f16: Institutional births.
f18: Includes <5% of deliveries by cadres of health workers other than doctors, nurses and midwives.
f19: Includes deliveries by cadres of health workers other than doctors, nurses and midwives - range not available.
f23: Institutional births.

C	Country Data	The figure is the one produced and disseminated by the country (including data adjusted BY THE COUNTRY to meet international standards)
1	Data refer to 2002-2003.	
2	Data refer to 1999-2000.	
3	Excluding the state of Tripura.	
4	Years of survey: 1992-1993.	
6	Years of survey: 1995-1996.	
25	Source: DHS.	
37	Source: Sri Lanka Demographic and Health Survey 2000.	
38	Source: Timor-Leste 2003 Demographic and Health Survey.	
41	The definition includes fecund married women, husband present, who are not using contraception, are not amenorrheic post-partum and who want a child after 2 years or want no more children. Currently pregnant women are included if they would have preferred the pregancy later or did not want any more pregnancies. Women who are uncertain about desire for more children or desired timing of the next child are not included.	
43	The definition includes women who are not using any method of contraception and do not want any more children or want to space their next birth. It also includes pregnant women whose current pregnancy was mistimed or unwanted, and amenorrhoeic women whose last birth was mistimed or unwanted. This follows the DHS definition, but the report does not make clear how those unsure about whether or when to have another child were classified or how infecundity was assessed.	
44	Women with unmet need include fecund married women who were not currently using contraception and who wanted no more births, wanted to postpone the next birth for at least two years or were undecided about whether to have another birth or the timing of that birth	

Appendix 2 Selected –marker" interventions of proven effectiveness and level of care provider

	Intervention/care provider (ordered to show interventions that can be carried out from individual/family level – to referral level facility with a doctor)	Individual woman, family member, TBA, volunteer	Health care worker without midwifery skills	Midwife (including nurse-midwife/ country equivalent)	Doctor with midwifery/ obstetric skills
1.	Women have social support during labour and birth	Yes			
2.	Exclusive breastfeeding is initiated one hour after birth	Yes	Yes	Yes	
3.	Every newborn is immediately dried and kept warm to protect against hypothermia	Yes	Yes	Yes	
4	The WHO antenatal care package is used for all pregnant women		Partial under supervision	Yes	Yes
5	Magnesium sulphate is used to treat severe pre-eclampsia and eclampsia		Partial - as directed, if skills allow	Yes	Yes
6.	A partogram is used to identify obstructed labour			Yes	Yes
7.	Oxytocin is used for all women as part of the active management of third stage of labour			Yes	Yes
8.	Antibiotic prophylaxis is used for women undergoing caesarean delivery			Yes	Yes
9.	Manual vacuum aspiration is used for management of incomplete abortion and safe induced abortion up to 12 completed weeks of pregnancy (in circumstances where it is not against the law)		Only if specifically trained	Only if specifically trained	Yes
10.	The kangaroo-mother-care of skin-to-skin contact is used for all low birth weight babies		Only specialist neonatal nurses	Yes	Yes
11.	Assisted delivery including caesarean section is performed in cases of prolonged and/or obstructed labour			If specifically trained	Yes
12	In specific situations such as when malaria is endemic or in areas of high HIV-prevalence, other '*marker intervention*' may be added: ▪ Pregnant women are offered intermittent preventive treatment (IPT); ▪ Pregnant and postnatal women and newborns sleep under insecticide-treated bednets; ▪ Pregnant women are offered voluntary counselling and testing (VCT) for HIV. Women who are HIV-positive are provided with specific interventions to reduce HIV transmission to their infant and relevant care and support. Women who are HIV-negative are counselled on how to remain uninfected.				

(Family and Community Health 2002)

Appendix 3. Sources of all material retrieved in the study

Data source	Keywords used in search	No. Items retrieved	No. items included in review
MNRH sources			
Bibliographic databases			
CINAHL	Community+health+worker+maternal	16	8
The definitive reference tool covering the English language journal literature for nursing and allied health disciplines.	Community+health+worker+neonatal	5	3
	Community+health+worker+reproductive	2	2
	Community+health+pregnancy+developing+country	11	2
	Human+resources+maternal+maternal	57	9
	Human+resources+maternal+reproductive	26	3
	Human+resources+maternal+neonatal	29	0
Global Health	Community health+workers (subject fields)	133	6
brings together the resources of two international databases - the Public Health and Tropical Medicine (PHTM) database, previously produced by the Bureau of Hygiene and Tropical Diseases (BHTD), and the human health and diseases information extracted from CAB ABSTRACTS1973-2009.	Community health+nursing	29	3
	Community health+midwives	26	2
	community health+family planning	31	3
	community health+pregnancy	41	4
	community health+neonatal mortality	0	0
	Human+resources	206	3
Biomed Central	Advanced search all journal and years 1997-2009		
BioMed Central is an open access publisher of peer-reviewed biomedical research. BMC publishes a wide variety of journals, both generalist and specialist, in biological sciences and medicine. The journals can be searched as a collection or individually.	**community** in *all fields*, and **health** in *all fields*, and **worker** in *all fields*, and **maternal** in *all fields*	178	52
	community in *all fields*, and **health** in *all fields*, and **worker** in *all fields*, and **reproductive** in *all fields*	137	12
	community in *all fields*, and **health** in *all fields*, and **worker** in *all fields*, and **neonatal** in *all fields*	81	2

Data source	Keywords used in search	No. Items retrieved	No. items included in review
EBM Reviews: Cochrane Database Of Systematic Reviews The Cochrane Database of Systematic Reviews (COCH) includes the full text of the regularly updated systematic reviews of the effects of healthcare prepared by The Cochrane Collaboration.	Community health+workers (keyword fields)	52	8
MEDLINE recognized as the premier source for bibliographic and abstract coverage of biomedical literature. MEDLINE encompasses information from Index Medicus, Index to Dental Literature, and International Nursing, as well as other sources of coverage in the areas of allied health, biological and physical sciences, humanities and information science as they relate to medicine and health care, communication disorders, population biology, and reproductive biology.	Primary Health Care/ma [Manpower]+Developing countries	40	8
	Community Health Nursing/ma [Manpower]	347	9
	Community Health Aides/ma [Manpower]	1	0
	community health services/ and family planning services/	27	7
	and maternal health services/		
PubMed Developed by the National Center for Biotechnology Information (NCBI). It was developed in conjunction with publishers of biomedical literature as a search tool for accessing literature citations and linking to full-text journals at web sites of participating publishers.	(maternal) AND (((community) AND (health)) AND (worker)) all fields	190	37
	("human resources"[Title/Abstract]) AND ("maternal"[Title/Abstract])	90	9
ScienceDirect Fulltext collection based on 1150 journal titles published by Elsevier.	TITLE-ABSTR-KEY(community health worker) and TITLE-ABSTR-KEY(maternal)	39	18
	TITLE-ABSTR-KEY(community health worker) and TITLE-ABSTR-KEY(reproductive)	24	6
	TITLE-ABSTR-KEY(human resources for health) and TITLE-ABSTR-KEY(maternal	48	15
	TITLE-ABSTR-KEY(human resources for health) and TITLE-ABSTR-KEY(neonatal	13	0
	TITLE-ABSTR-KEY(human resources for health) and TITLE-ABSTR-KEY(reproductive)	43	3

Data source	Keywords used in search	No. Items retrieved	No. items included in review
Web of Science The database covers over 8,000 journals across all disciplines worldwide, with about 22,000 articles being added weekly. The journals are selected as the most influential and relevant peer-reviewed titles across all disciplines.	Topic=(community health worker) AND topic=(maternal)	19	7
	Topic=(community health worker) AND Topic=(neonatal)	11	3
	Topic=(community health worker) AND Topic=(reproductive)	11	1
	Topic=(human resources for health) AND Topic=(maternal)	104	12
	Topic=(human resources for health) AND Topic=(neonatal)	25	4
	Topic=(human resources for health) AND Topic=(reproductive)	97	15
Social Sciences Index	(community health worker) <in> Smart Search AND maternal <in> Smart Search	35	10
	(community health worker) <in> Smart Search AND neonatal <in> Smart Search	17	5
	(community health worker) <in> Smart Search AND reproductive <in> Smart Search	14	0
	(human resources for health) <in> Smart Search AND maternal <in> Smart Search	32	0
	(human resources for health) <in> Smart Search AND neonatal <in> Smart Search	11	0
	(human resources for health) <in> Smart Search AND reproductive<in> Smart Search	30	0
Australian Digital theses http://adt.caul.edu.au/	Community health workers subject words	1	0
	Human resources for health subject words	38	0
	Birth attendant in abstract	2	1
	Community AND midwife in abstract	1	0

Data source	Keywords used in search	No. Items retrieved	No. items included in review
Proquest Dissertations and Theses With more than 2 million entries, PQD&T is the single, central, authoritative resource for information about doctoral dissertations and masters theses.	Advanced search Community health workers AND maternal Birth attendants AND community Human resources for health community	 21 73 7	 4 5 0
Sub total			**301**
Key Journals in the field			
Family planning perspectives	Searched through CINAL 1990-2009		
International family planning perspectives	Searched through CINAL 2000-2009		
Journal of midwifery + women's health	Searched through Science Direct 2000-2009		
Midwifery	Searched through Science Direct 1985-2009		
Journal of nurse-midwifery	Searched through Science Direct 1975-1999		
Public health nursing	Searched through Medline 1996-2009		
Maternal-child nursing journal	Searched through CINAL 1981 to 1996		
Newborn and infant nursing reviews	Searched through Science Direct 2001-2009		
Maternal and child health journal	Searched through Medline 1997-2009		
Birth	Searched through Medline 1996-2009		
Women and Birth	Searched through Science Direct 2006-2009		
Reproductive Health Matters	Searched through Web of Science 2000-2009		
Gender and Development	Human Resources for health community maternal	18	0
International journal of gynaecology and obstetrics	Searched through Science Direct 1982-2009		
British journal of obstetrics and gynaecology	Searched through CINAL 1983-2009		
Social science + medicine	Searched through Science Direct 1981-2009		
The Lancet	Searched through Science Direct 1993-2008		
Tropical medicine + international health	Searched through Medline 1996-2009		
New England journal of medicine.	Searched through Medline 1993-2009		
Bulletin of the World Health Organization	Searched through Web of Science 1961-2009		
Health Policy and Planning	Searched through Medline 2001-2009		

Data source	Keywords used in search	No. Items retrieved	No. items included in review
Journal of health + population in developing countries From 2004 known as World Health & Population	Human Resources for health community maternal neonatal reproductive care	20	1
Journal of health, population, and nutrition	Searched through Web of Science 2000-2009		
Community practitioner	Searched through CINAL 1998-2009		
Community Development Journal	Searched through Web of Science 1966-1994		
Community Development: Journal of the Community Development Society	Human Resources for health community maternal	1	0
Journal of Community Health	Searched through Medline 1997-2009		
Primary health care	Searched through Medline 2006-2009		
Primary health care research + development	human resources community maternal neonatal reproductive	23	1
Human resources for health	Searched through biomed central 1997-2009		
BMC health services research	Searched through biomed central 1997-2009		
BMC pregnancy and childbirth	Searched through biomed central 1997-2009		
BMC international health and human rights	Searched through biomed central 1997-2009		
BMC Pediatrics	Searched through biomed central 1997-2009		
BMC public health	Searched through biomed central 1997-2009		
Health research policy and systems	Searched through biomed central 1997-2009		
International breastfeeding journal	Searched through biomed central 1997-2009		
Reproductive health	Searched through biomed central 1997-2009		
Sub total			**2**

Data source	Keywords used in search	No. Items retrieved	No. items included in review
meta-indexes			
POPLINE The world's largest database on reproductive health, provides 350,000 citations with abstracts to articles, reports, books, & unpublished reports www.popline.org	Community health worker & maternal Community health worker & neonatal Community health worker & reproductive Human resources for health & maternal Human resources for health & neonatal Human resources for health & reproductive Skilled birth attendants Traditional birth attendants (focus by key countries)	56 4 12 7 0 6 38 322	1 0 4 3 0 1 17 22
Eldis knowledge services From the Institute of Development Studies, Sussex. Contains abstracted full text documents, resources guides, news feeds, newsletters http://www.eldis.org	Search of documents & Announcements only Community health worker community health worker maternal community health worker neonatal community health worker reproductive community human resources for health maternal	 341 29 9 38 22	 12 8 1 3 2
Sub total			**75**
Electronic Gateways			
Reproductive Health Gateway USAID funded INFO Project at John Hopkins provides access to 140 Websites on RH http://www.infoforhealth.org/RHGateway/index.shtml	Selected Websites searched as included in this table		
Implementing Best Practices (IBP) Knowledge Gateway http://my.ibpinitiative.org/	Human resources for health and community and maternal, neonatal and reproductive – filtered by Human Resources for Health (HRH) Exchange (94) & Maternal and Newborn Health Chapter (1)	95	4
Sub total			**4**

Data source	Keywords used in search	No. Items retrieved	No. items included in review
Research Networks			
Social science research network http://www.ssrn.com/	Human resources for health community	23	2
			2
Sub total			
Websites of Key Organisations			
The World Health Organisation WHO	Advanced search		
RHL Reproductive Health Library,	community health workers in title of text	18	2
http://www.who.int/reproductive-health/publications/maternal_newborn.en.html	Primary Health Care workers	2	0
	Traditional Birth attendant	4	1
http://www.who.int/reproductive-health/publications/healthsystems.html	Skilled Birth Attendant	11	2
The Partnership for Maternal Child Health	Resources->by topic->health systems ->	83	
http://www.who.int/pmnch/en/	Finding Solutions to the Human Resources for Health Crisis	7	4
			2
United Nations Population Fund (UNFPA)	All Publications searched		
http://www.unfpa.org	Human resources	10	0
	Community health worker	29	3
	skilled birth attendant	0	0
The Countdown for maternal newborn and child survival	Searched: reports	13	6
Collaboration to bring the best and most recent information on country-level progress towards the achievement of the Millennium Development Goals 4 and 5 http://www.countdown2015mnch.org/			

Data source	Keywords used in search	No. Items retrieved	No. items included in review
White Ribbon Alliance for Safe Motherhood international coalition of individuals and organizations http://www.whiteribbonalliance.org/	Resources->technical resources->skilled birth attendants	8	4
Family Care International (FCI) International RH NGO http://www.familycareintl.org	Human resources	4	0
	Community health worker	16	0
	Birth attendants	8	3
Family Health International (FHI) International RH NGO http://www.fhi.org	Human resources	355 of 3 best matches	1
	Community health workers	789 of 3 best matches	0
The Reproductive Health Response in Conflict (RHRC) **Consortium** http://www.rhrc.org/	Search human resources	132	2
Post abortion Care Consortium http://www.pac-consortium.org	Community resources searched	3	0
Guttmacher Institute http://www.guttmacher.org/	Human AND resources search on title & full text	0	0
	Community AND worker search on title	2	1
	Birth AND attendant search on full text	41	1
Best Practices Compendium http://www.advanceafrica.org/compendium/	Keyword search		
	human resources for health	0	
	community health care worker	4	1
	primary health care worker	1	1
	Traditional birth attendants	5	1
Marie Stopes International International RH NGO http://www.mariestopes.org	Searched resources	65	1

Data source	Keywords used in search	No. Items retrieved	No. items included in review
JHPIEGO international non-profit RH organization affiliated with Johns Hopkins University http://www.jhpiego.org	Human Resources for Health Publications	26	3
Elements of Family Planning Success Ten Essential Components of Family Planning Programs is a one year Web-based activity that the INFO Project runs out of John Hopkins University Centre for Communication Programs funded by USAID http://www.jhuccp.org/fpsuccess/	Publication site searches Well trained motivated staff + Asia Strong leadership and good management + Asia Search Job Aides Strong leadership and good management Well trained motivated staff	2 3 9 18	1 1 2 0
Prime II 5 year USAID funded program implemented by IntrHealth and Partners http://www.prime2.org/prime2/techreport/home/50.html	Voices Dispatches Technical leadership brochures Technical Reports	31 6 11 50	10 2 2 5
Pathfinder International RH NGO http://www.pathfind.org	Searched publications by community-based work	11	4
HRH Global Resources Centre http://www.hrhresourcecenter.org	community health worker maternal selected: Subject guides & following subjects: Community health worker+maternal child health Community health worker+reproductive health family planning Traditional Birth Attendants Midwives	12 hits 12 5 24 62	19 items sourced 11 4 21 37
Extending the delivery of reproductive health and family planning Project **http://www.esdproj.org**	Resources	54	3

Data source	Keywords used in search	No. Items retrieved	No. items included in review
The Asia Pacific Action Alliance on Human Resources for Health http://www.aaahrh.org/	Documents -> conference docs -> 2nd AAAH conference		13
Management for Health Sciences, International NGO The Health Managers Tool Kit http://erc.msh.org/toolkit/index.cfm?lang=1&CID=101	Searched Human Resource Management tools	13	4
	Community Health Services	14	2
AusAID http://www.ausaid.gov.au/	Search publications community health worker	23	0
	Midwives	0	0
	Birth attendant	28	0
Australian Development Gateway http://www.developmentgateway.com.au	Human resources maternal health	11	0
	Community health worker maternal	15	0
	Community health worker neonatal	9	0
	Community health worker reproductive	23	0
Sub total			**161**

Data source	Keywords used in search	No. Items retrieved	No. items included in review

Data source	Keywords used in search	No. Items retrieved	No. items included in review
Asia Pacific specific sources with MNRH materials			
Bibliographic databases			
Asia-Studies Full-text Online brings together thousands of full-text reports covering 53 countries on a variety of business, government, economic, and social issues.	Community health worker	5	0
	Birth attendant	16	0
Indonesian Learned Periodicals Database: PDIP produced by the Center for Scientific Documentation and Information - Indonesian Institute of Sciences (PDII-LIPI), is a bibliographic database that indexes articles and conference proceedings on the sciences in Indonesia, as well as seminar papers on science and technology that were organised in Indonesia.	Birth attendant	1	1
	community health workers in title & subject fields	0	0
	Human resources for health title & subject fields	0	0
	Community health Aides	2	2
	Midwives	44	1
Indonesian Research Report Database: PDIR produced by the Center for Scientific Documentation and Information - Indonesian Institute of Sciences (PDII-LIPI), is a bibliographic database that indexes research reports and survey reports in Indonesia.	community health workers in title & subject fields	0	0
	Human resources for health title & subject fields	0	0
	Birth attendant title & subject fields	0	0
	Community health title & subject fields	1	0
India Health Services reform database http://www.hsprodindia.nic.in/index.asp	Subject Area="Human Resources." Objective="Improved outreach services."	1	1
	Subject Area="Human Resources." Objective="Training."	5	3
	Subject Area="Community participation." Objective="Community health workers."	4	4
	Subject Area="Behavioural Change Communication." Objective="Community health workers."	2	2
Sub total			**14**

Data source	Keywords used in search	No. Items retrieved	No. items included in review
Websites of Key Organisations			
Cambodia Reproductive and Child Health Resource Center http://rc.racha.org.kh/	~~t~~raditional" and "birth" and "attendant"	2	1
	~~c~~ommunity" and "health" and "worker"	2	0
	"human" and "resources"	3	0
	"skilled" and "birth" and "attendant"	0	0
Sub total			**1**
Overall Sub Total			560
minus duplicates			512
Plus significant items uncovered in preliminary scoping, and hand searching			325
Minus duplicates			94
TOTAL included in the review			743

Appendix 4: Barriers and Constraints to HRH Practice

Area	Barriers & constraints in MNRH	Reference
Coverage	Too few skilled personnel:	(Gerein, Green et al. 2006; WHO 2006; Henderson 2008; Dogba and Fournier 2009)
	Too few Nurses/midwives at community level	(Kwast 1991)
	Oversupply of VHW	(Matomora 1989)
	Lack of female providers	(Naisho 1982)
	inefficiently distributed in rural areas-poor skills mix	(Olsen, Ndeki et al. 2005)
	High attrition / low retention rates (low pay + poor working conditions=migration, retirement, HIV, career change, move from rural areas, move to private sector)	(Ofosu-Amaah 1983; Pfeiffer and Pfeiffer 2003; Dovlo 2005; WHO 2005; Henderson 2008; Willis-Shattuck, Bidwell et al. 2008)
	Absenteeism can prevent hiring of other staff as the post is technically filled	(Berman 1984; Berman 1987; FIGO 2009)
Policy & legislation	Too much focus on Drs & nurses-other cadres need to be included	(Kruk, Prescott et al. 2009)
	Lack of government policies & support	(Singh 1994; Campos 2004; Haider, Adhish et al. 2008)
	CHW programs vertical not integrated	(WHO 1989)
	Lack of involvement of CHWs nurses & Midwives in policy & planning	(WHO 1989; WHO/SEARO 2003)
	No laws concerning solo practice of nurses	(Heywood and Harahap 2009)
	Uneven enforcement of regulations	(WHO/SEARO 2003)
	Outlawing TBAs affected links with the community & led to extinction of cultural support approaches	(Jenkins 2003)
	Unregulated small clinics undertaking surgery without appropriate infrastructure	(FIGO 2009)
	Use of employee facilities for private practice & personal gain	(Omaswa 2006)

Area	Barriers & constraints in MNRH	Reference
Leadership & management systems	Lack of CHW supervision	(Gilson, Walt et al. 1989; Stekelenburg 2003; Lehmann 2007)
	Poor quality supervision	(Gray 1988; WHO 1989; Tavrow, Kim et al. 2002; WHO/SEARO 2003; Manafa, McAuliffe et al. 2009)
	Lack of supervision for trained TBAs	(UNFPA 1996)
	Lack of replacement strategies for volunteers	(Chaulagai 1993)
	Lack of career structure & opportunities	(WHO/SEARO 2003; Haq 2008)
	Poor selection processes	(Ofosu-Amaah 1983; WHO 1989)
	Lack / poor quality rosters & work schedules	(Sringernyuang 1995; WHO/SEARO 2003)
	No performance Mgt	(Manafa, McAuliffe et al. 2009)
Remuneration Incentives	Low remuneration in public sector	(Ofosu-Amaah 1983; WHO/SEARO 2003; Ferrinho, Van Lerberghe et al. 2004; McCoy, Bennett et al. 2008; Pillay and Mahlati 2008)
	Frequent delays in receiving pay	(Oxford Policy Management 2002)
	lack of incentives for CHW to maintain records	(Stekelenburg 2003; Dovlo 2005)
	Non-financial incentives not accounted as a motivating factor for performance by CHWs	(Dieleman, Cuong et al. 2003)
	petrol, clothing allowance perceived by CHNs to be inadequate	(Kingma 2003)
	Too many out of pocket expenses for PHE	(Senderowitz 1998)

Area	Barriers & constraints in MNRH	Reference
Roles & functions	lack of clear roles and functions	(WHO 1989; Senderowitz 1998; Campos 2004; ESD Project 2008; Manafa, McAuliffe et al. 2009)
	Lack of community knowledge of HRH scope of practice	(Pathfinder International 2005)
	lack of a clear delineation of responsibility between health care professionals	(Creati, Saleh et al. 2007)
	TBA roles did not match actual practice	(Bisika 2008)
	Roles contradict societal and family norms	(Piedade 2004)
Supportive working environment		
Commodities, equipment & infrastructure	▪Lack of pregnancy related technology	(Tsu and Free 2002)
	▪Unavailability of HIV testing at commune level; shortage of antiretroviral drugs; lack of operational guidelines	Nguyen, Oosterhoff et al. 2009)
	▪lack of logistic support for CHW	(Stekelenburg 2003)
	▪Very large numbers of patients and the frequent reposting of health workers	(Naisho 1982)
	▪Isolation inability to communicate with families	(Haq 2008)
	▪Availability of drugs & cost of travel affect performance	(Sauerborn, Nougtara et al. 1989)
Occupational health and safety	Violence & Conflict	(Barcelon 1990; WHO/SEARO 2003; WHO 2005)
	HRH HIV/AIDS Burden	(Dovlo 2005)
	Stress	(Dovlo 2005; Haq 2008)
	low morale	(Stekelenburg 2003; Dovlo 2005)
	lack of protective materials, No policy or guideline on care and support for nurses/midwives with HIV/AIDS. No light duties for chronically ill nurses/midwives	(Chikampa 2003)
	Poor eyesight – lack of glasses	(IntraHealth 2002)

Area	Barriers & constraints in MNRH	Reference
Teamwork	▪Lower levels of HR trust in CHWs , lack of intersectoral collaboration will lead to bypassing CHWs for referrals	(Sauerborn 1989; Cruse 1997)
	▪Politicization of conflict between different providers	(Twumasi 1985; Doherty 2005)
	▪Poor interpersonal relations with the govt. health staff, community & professionals	(Singh 1994; Campos 2004; Haider, Adhish et al. 2008) (Izugbara, Ezeh et al. 2009)
	▪Disrespectful attitudes of HR towards TBAs	(Iyun 1989; Replogle 2007)
	▪Paternal relationships result in poor communication	(Walt, Perera et al. 1989)
	▪VHW face competition from other providers	(Kahssay 1998)
	▪Vertical relationships impedes teamwork	(Rowe 2005)
	▪Supervisors face hostility	(WHO 2005)
	▪Gender discrimination	
	▪perceived low status of auxiliary nurse midwives & CHW	(Walt 1990; FIGO 2009)
	▪Competition between midwives & TBA	(Utomo 2008)
Partnership	Lack of referral and partnership between traditional system and biomedical system	(Peltzer 2009)
Working with the community	Low community participation, villagers not involved in identification of problems	(Sauerborn 1989; Campos 2004)
	Donor support of VHW led to dependency on this finance	(Maclure 1995)
	Hostility towards CHWs, socio-cultural & political barriers to practice	(Stark 1985; WHO 1989; Simmons 1992) (Haider, Adhish et al. 2008)
	Poor links with VNC members	(WHO 1989)
	CHWs used as aides in facilities rather than communities	
Health worker Education & competence	Women dissatisfied with care as skills are perceived as poor & poor patient provider relationships this affects care seeking behaviour	(Dogba and Fournier 2009)
Attitudes (towards patients)	fear of HIV infection	(Dovlo 2005; Nguyen, Oosterhoff et al. 2009)
	fear and negative perceptions towards SP	(Nsimba 2006)
	poor attitudes in STI	(Passey 1996)
	staff insensitive to social-cultural context of patients	(Duke, Oa et al. 2005; Replogle 2007)
	Authoritarian attitudes	(Bossyns and Van Lerberghe 2004; PNG NDoH 2009)
	Attitudes manifest in violence towards women	(d'Oliveira 2002)
Knowledge	lack of knowledge on HIV & PMTC	Nguyen, Oosterhoff et al. 2009)(Piwoz, Ferguson et al. 2006; Bassey, Elemuwa et al. 2007; Peltzer 2009)
	poor knowledge of neonatal problems	(de Haas 1994; Ogunfowora and Daniel 2006)

Area	Barriers & constraints in MNRH	Reference
Skills	Poor communication skills	(Tlebere, Jackson et al. 2007) (QAP 2000; Bossyns and Van Lerberghe 2004; FCI 2005)
	Low literacy skills means growth monitoring problematic	(Oxford Policy Management 2002; Campos 2004)
	Poor neonatal clinical skills	(Awasthi, Verma et al. 2006; Darmstadt 2008; Eriksson 2009)
	Poor SBA skills	(Harvey 2004; Srinivasan K 2006; Harvey, Blandon et al. 2007; Darmstadt 2008; Hatt, Stanton et al. 2009)
	Poor TBA, VHW, CHW record keeping skills	(Chaulagai 1993; Umar 2003)
	Poor TBA delivery skills	(Darmstadt 2008; Thatte, Mullany et al. 2009)
	Losing skills through lack of use or case load	(Ashwell and Freeman 1995; Utomo 2008)
	Lady HW (Pakistan)& Aux nurse midwife (India) have not always the clinical skills to recognise & manage complications	(FIGO 2009)
	Poor negotiation and advocacy skills	(FIGO 2009)
	Lack of local language skills	(Replogle 2007)
Area	Barriers/ issues / constraints in MNRH	Reference
Education & training	Non- standardization / certification of CHW education	(Doherty 2005)
	Poor quality of education and training	(UNFPA 1996; Hull 1998; Khanum 2008; Wakabi 2008; FIGO 2009; Manafa, McAuliffe et al. 2009)
	Lack of exclusive midwife training & professionalization	(Mavalankar 2008)
	lack of standardised training for TBAs	(Narayanan 2004; Hussein 2005)
	Poor selection of trainee CHWs / midwives & nurses	(Stekelenburg 2003) / (WHO/SEARO 2003)
	Little / poor evaluation of training programmes	(Campos 2004; Sibley 2004)
	Linkages & interdependency between education and service sectors are absent or weak	(WHO/SEARO 2003)
	Continuing education is ad hoc	(WHO 1989; WHO/SEARO 2003)
	Indigenous skills not recognised	(Van Wagner, Epoo et al. 2007)
	Internship year for Drs in rural areas requirements from Medical Boards tend to specify a duration of attachment within a specialty rather than the attainment of competencies. Often trained by midwives or other COs on clinical mgt due to poor clinical training on posting	(FIGO 2009)
	Low status of Aux midwives has meant that they are not necessarily given access to patients in labor for learning, let alone the opportunity to practice the management of complications under supportive supervision	(FIGO 2009)

Appendix 5 Literature that documents training for HR engaged in MNRH at community level in the Asia and Pacific regions

Country/ cadre	No	Reference
TBAs		
India	6	(Lartson, Sodipe et al. 1987; Bang, Bang et al. 1994; IntraHealth 2000; IntraHealth 2002; Government of India 2004; Government of India 2004)
Cambodia	3	(Parco 2000; Main, Lower et al. 2001; PATH 2002)
Philippines	5	(Mangay-Angara 1981; Philippines. Department of Health. Division of Maternal and Child Health 1984; Morisky 1985-86; Ross 1986; Singhal 2001)
Indonesia	1	(Alisjahbana 1987)
PNG	2	(Townsend 1986; Alto, Albu et al. 1991)
Bangladesh	4	(Alisjahbana 1987; Afsana 1995; Nessa 1995; Rozario 1995)
Nepal	2	(Levitt 1988; Thatte, Mullany et al. 2009)
	23	
VHV		
India	5	(Government of India 2004; Government of India 2004; Government of India 2004; Government of India 2004; Mishra 2004)
Cambodia	2	(Main, Lower et al. 2001; PATH 2002)
Indonesia	1	(Okamoto 1993)
PNG	1	(Cox 2003)
Bangladesh	1	(Ahmed 2008)
Nepal	3	(McConnell and Taylor 1992; Shrestha 2003; Joshi 2006)
Myanmar	1	(Tsuchiya, Oguro et al. 2007)
	14	
CHWs		
India	4	(Bhasin, Kumar et al. 1995; Chatterjee 2006; Boone, Mann et al. 2007; Gupta, Dabral et al. 2008)
Cambodia	2	(PATH 2002; Phoung 2007)
Laos	1	(Ratnaike 1992)
Philippines	1	(Barcelon 1990)
Indonesia	1	(Bailey 1996)
PNG	2	(Ashwell and Freeman 1995; Samiak 2000)
Timor	2	(McAuliffe, Grootjans et al. 2002; Mahmood 2009)
Bangladesh	0	
Vietnam	2	(Ratnaike 1992; Barrett, Ladinsky et al. 2001)
Sri Lanka	2	(Gilson, Walt et al. 1989; de Silva 2007)
	13	
Midwives / nurses		
India	4	(Government of India 2004; Boone, Mann et al. 2007; Murphy 2008) (Government of India 2004)
Philippines	2	(Vollmer 1996; Segall 2006)
Indonesia	14	(Soh-Sanu 1989; Kwast 1996; Hull 1998; QAP 2000; McDermott, Beck et al. 2001; Ronsmans, Endang et al. 2001; Walker, McDermott et al. 2002; Fahdhy and Chongsuvivatwong 2005; Hennessy, Hicks et al. 2006; Hennessy, Hicks et al. 2006; Hennessy, Hicks et al. 2006; Analen 2007; Creati, Saleh et al. 2007; Hatt, Stanton et al. 2009)
Bangladesh	1	(Islam, Haque et al. 2006)
Timor	2	(Mize 2006; Mahmood 2009)
Fiji	2	(WHO 1995; O'Heir 1997)
Nepal	2	(WHO 1995; O'Heir 1997; Piedade 2004)
	27	
SBA		
Cambodia	1	(Yanagisawa 2006)
Bangladesh	2	(Parveen 2003; Blum, Sharmin et al. 2006)

Country/ cadre	No	Reference
Myanmar	1	(Mullany, Lee et al. 2008)
Nepal	1	(Barker, Bird et al. 2007)
	5	
PHCW		
PNG	1	(Beracochea 1995)
India	2	(Best Practices Compendium 2009; Best Practices Compendium 2009)
Bangladesh	2	(Sadana 2002; Murphy 2008)
Marshall Is.	1	(Keni 2006)
	6	
Asia		
PHCWs	1	(Bornstein 2007)
TBA	3	(Peng 1979; Alisjahbana 1991; Saxena 1994)
TOTAL	**92**	

Glossary

ANC Antenatal Care ideally includes:

- Pre-conception counselling
- Assessment of risk factors (including maternal health)
- Ongoing assessment of fetal well-being
- Ongoing assessment of complications
- Education about normal discomforts of pregnancy, emotional aspects (including post-natal depression), local antenatal classes, reducing risk of SIDS, parenting issues
- Discussion of birthing care options

Lancet 2001; 357: 1551-1564

BEmOC **Basic Emergency Obstetric Care Centre**
BEmOCs should provide the following services:
1. Parenteral administration of Antbiotics
2. Treatments for eclampsia (provision of anticonvulsants)
3. Parenteral administration of Oxytocics
4. Assisted Vaginal delivery (vacuum extraction)
5. Manual removal of Placenta and removal of retained products of conception (MVA)

B-EMONC Basic Emergency Obstetric and Newborn Care
Everything in BEmOC PLUS:

- Neonatal resuscitation with bag and mask
- Hypothermia Management (re-warming)
- Antibiotics for neonatal sepsis)
- Essential newborn care

CEmOC **Comprehensive Emergency Obstetric Care Services**
CEmOCs should provide all the BEmOC six services along with the following 24-hour services throughout the year:
1. Availability of blood and blood transfusion facility
2. Facility for Caesarean section for delivery of foetus in emergency cases.

C-EMONC **Comprehensive Emergency Obstetric and Newborn Care**
Everything in CEmOC PLUS

- Assisted ventilation

CMMNC Community-Managed Maternal and Newborn Care

Community-oriented primary care is systematic assessment of health-care needs in practice population, identification of community health problems, implementation of systematic interventions involving target population (eg, modification of practice procedures, improvement of living conditions) and monitoring effect of changes to ensure that health services are improved and congruent with community needs. Community-oriented primary care teams design specific interventions to address priority health problems. Team consisting of primary health care workers and community members assesses resources and develops strategic plans to deal with problems that have been identified. Community-oriented primary care integrates individual and population based care, blending clinical skills of practitioner with epidemiology, preventive medicine, and health promotion. By doing so, it tries to minimise separation between public health and individual health care. (van Weel, De Maeseneer et al. 2008)

EmONC Emergency Obstetric and Neonatal Care

ENBC Essential Newborn Care

EOC Essential Obstetric Care

IMNCI Integrated Management of Newborn and Child Illness
Treats infants from birth to 5 years
All of IMCI plus:

- Birth to 2 month module to include:
- Essential newborn care
- Emergency newborn care (i.e resuscitation)
- Assessment of young infants for infection and diarrhoea
- Treatment and referral when required
- Antibiotics (oral for pneumonia, oral plus injectable for very severe
- disease)
- ORT
- Extra care (Kangaroo mother care) for LBW infants
- Support for initiation of early and exclusive breastfeeding and correction of problems
- Home care practices and danger sign awareness for the sick newborn
- Home visiting

PMTCT Effective prevention of mother-to-child transmission (PMTCT) requires a three-fold strategy.

- Preventing HIV infection among prospective parents
- Avoiding unwanted pregnancies among HIV positive women
- Preventing the transmission of HIV from HIV positive mothers to their infants during pregnancy, labour, delivery and breastfeeding.

The last of these can be achieved by the use of antiretroviral drugs, safer infant feeding practices and other interventions.

Perinatal Period The period occurring "around the time of birth", specifically from 22 completed weeks (154 days) of gestation to 7 completed days after birth

Postnatal period This begins immediately after the birth of a child and then extends for about six weeks.

Neonatal period This refers to an infant in the first 28 days of life (less than a month old)

RH Reproductive health care in the context of primary health care should, inter alia, include: family-planning counselling, information, education, communication and services; education and services for pre-natal care, safe delivery and post-natal care; prevention and appropriate treatment of infertility; abortion as specified in paragraph 8.25 ,including prevention of abortion and the management of the consequences of abortion; treatment of reproductive tract infections; sexually transmitted diseases and other reproductive health conditions; and information, education and counselling, as appropriate, on human sexuality, reproductive health and responsible parenthood. Referral for family planning services and further diagnosis and treatment for complications of pregnancy, delivery and abortion, infertility, reproductive tract infections, breast cancer and cancers of the reproductive system, sexually transmitted diseases, including HIV/AIDS should always be available, as required. Active discouragement of harmful practices, such as female genital mutilation, should also be an integral component of primary health care, including reproductive health-care programmes.
The Programme of Action from the International Conference on Population and Development in Cairo in 1994

MMR Maternal mortality ratio is the number of death per 100,000 live births in one year

NMR Neonatal mortality ratio Number of deaths during the first 28 completed days of life per 1,000 live births in a given year or period.

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