

Conducting a Sexual, Reproductive, Maternal, Newborn and Adolescent Health Workforce Assessment

A Handbook



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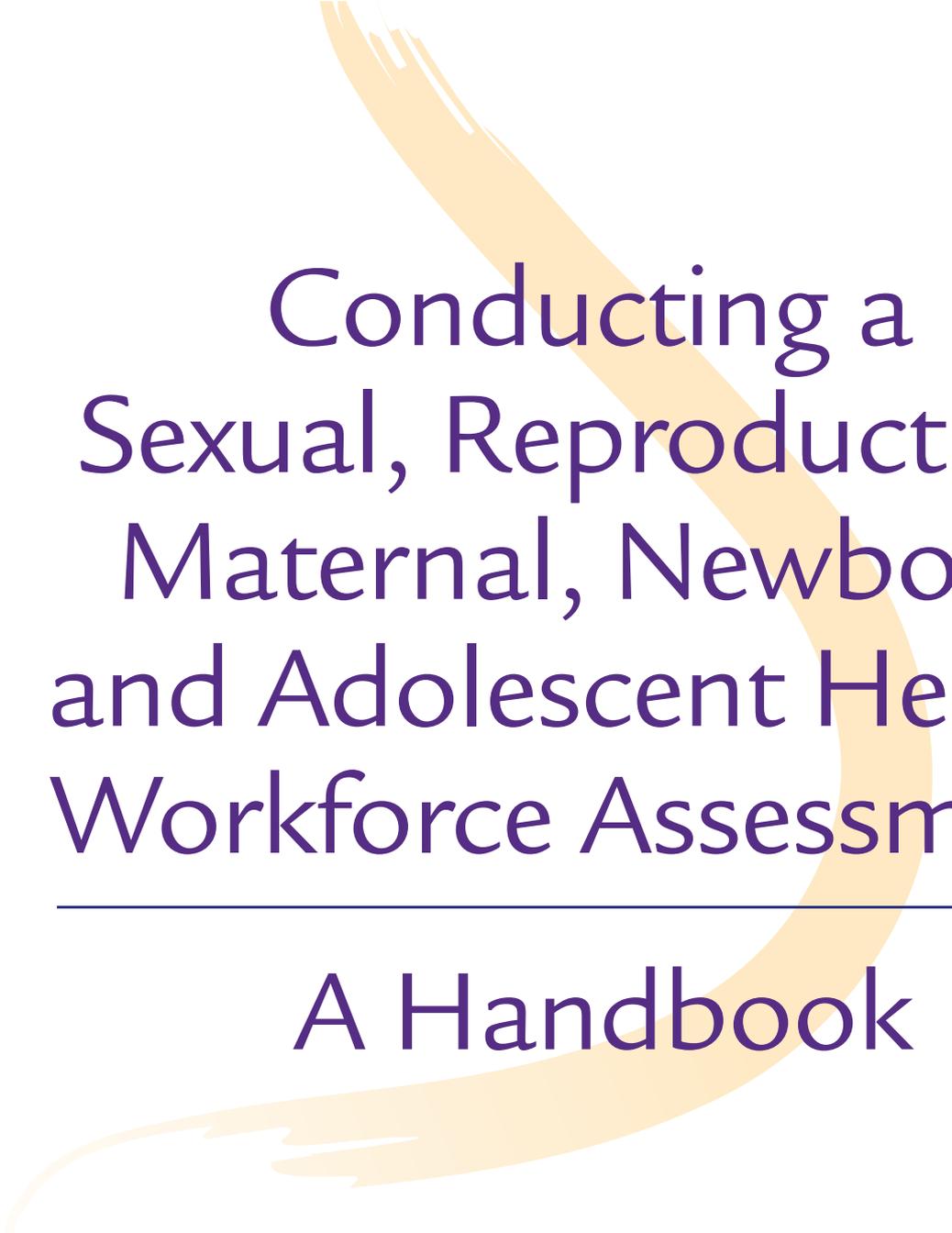
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Foreword

The United Nations Secretary-General's *Global Strategy for Women's and Children's Health* launched in 2010 led to a huge boost in the international momentum to improve maternal and newborn health, with a focus on countries lagging behind progress towards international targets. The launch of the H4+ High Burden Countries Initiative (HBCI), and the Greentree meeting in 2011 hosted by the H4+ and the International Women's Health Coalition, were other key milestones on this path. These events reaffirmed the consensus of health ministers, leaders of UN agencies, health professionals and civil society that health workers form the backbone of effective and resilient health systems, and that a lack of critical information on the health workforce is hampering efficient planning and programming, preventing access to skilled care, and leading to the deaths of women and newborns. The State of the World's Midwifery reports in 2011 and 2014 and the more detailed HBCI RMNH workforce assessments are among the first pieces of work that identify the health workforce requirements to make RMNH services available, accessible, acceptable and of high quality for women and their families in low- and middle-income countries.

This Handbook explains clearly and comprehensively the methodology which will enable countries to better understand and present their workforce data, fill in any gaps in those data, and conduct evidence-based policy and planning for their sexual, reproductive, maternal, newborn and adolescent health (SRMNAH) workforce. Its publication could not be more timely, as workforce issues take centre stage with the Global Health Workforce Alliance's *Global Strategy on Human Resources for Health* to be presented to the World Health Assembly in 2016, and the *Global Strategy for Women's, Children's and Adolescent's Health* to be launched in September 2015, aligning with the adoption of the Sustainable Development Goals (SDGs) by the United Nations General Assembly.

In the post-2015 world, this Handbook will be an invaluable tool, allowing Ministries of Health to effectively address the place of SRMNAH workers as a major element in their efforts to improve health systems, with the goal of providing high quality services centered on women, newborn and population health needs, and to work towards fulfilling the fundamental human right, enshrined in the SDGs, of universal health coverage.

List of abbreviations and acronyms

ASFR	age-specific fertility rate
BEmONC	Basic Emergency Obstetric and Newborn Care
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
GHWA	Global Health Workforce Alliance
GIS	geographic information system
H4+	Health 4+ (UNAIDS, UNFPA, UNICEF, UN Women, WHO and the World Bank)
HRH	human resources for health
ICM	International Confederation of Midwives
LiST	Lives Saved Tool
MCDA	Multi-Criteria Decision Analysis
MDGs	Millennium Development Goals
MoH	Ministry of Health
NGO	non-governmental organization
PMNCH	The Partnership for Maternal, Newborn & Child Health
RMNCH	reproductive, maternal, newborn and child health
SRMNAH	sexual, reproductive, maternal, newborn and adolescent health
SARA	Service Availability and Readiness Assessment
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UNICEF	United Nations Children’s Fund
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
WHO	World Health Organization
WISN	Workload Indicators of Staffing Need



Michelle Rumsey

Introduction and Background

Despite remarkable progress in addressing maternal and child mortality, Millennium Development Goals (MDGs) 4 and 5 will not be met in most developing countries by 2015 (1), where women and infants continue to die from preventable causes (2,3).

Background

To step up progress towards meeting MDGs 4 and 5, the United Nations Secretary-General initiated the Every Woman Every Child campaign in 2010 (4). The Commission on Information and Accountability and the independent Expert Review Group (5,6) set up in support of this campaign have called for strengthening of health information systems in countries to monitor progress towards maternal and newborn health goals. Key global reports such as the *Third Global Forum on Human Resources for Health Report* (7), the *State of the World's Midwifery 2011* (8) and the *State of the World's Midwifery 2014* (9) have stressed the need for better data on the availability, accessibility, acceptability and quality of the health workforce. This Handbook provides an in-depth exploration of the workforce, aligned with these global recommendations.

What is a Sexual, Reproductive, Maternal, Newborn and Adolescent Health Workforce Assessment?

The aim of a Sexual, Reproductive, Maternal, Newborn and Adolescent Health (SRMNAH) Workforce Assessment is to answer the following question at country level¹:

What is the appropriate SRMNAH workforce, and how is it best deployed, to equitably deliver essential SRMNAH interventions at scale and quality, and what (including costs) needs to be put into place to achieve universal access?

A SRMNAH Workforce Assessment is a process of convening and discussing policy on SRMNAH

¹ Please note that, although this Handbook refers to a “country” or “national” assessment, the same process can be applied at a subnational level.

workforce issues, which brings with it international and national funds to support the assessment. It helps a country understand who does what and where, and to explore why the workforce is configured in this way, including historical, financial and policy influences. It also provides a future projection and policy options to support workforce planning for a resilient health system. This methodology has been developed for the assessment of the SRMNAH workforce; however, the same principles can be applied to other segments of the health workforce, or as a gateway to a comprehensive health workforce analysis. The data collected in the assessment can be integrated into the broader process of national strategic health planning using the OneHealth Tool for planning, costing and impact analysis (10).

What does a SRMNAH Workforce Assessment do?

A country-level SRMNAH Workforce Assessment:

- i. describes existing policies, guidelines and regulations regarding the SRMNAH workforce;
- ii. describes the current performance of the SRMNAH workforce as well as factors influencing this (education, working environment, management, policies and financing);
- iii. identifies gaps in and opportunities to improve universal access to a qualified SRMNAH workforce;
- iv. identifies promising practices to improve the performance (availability, competencies, responsiveness and productivity)² of the SRMNAH workforce;
- v. formulates scenarios and costed policy options addressing the SRMNAH workforce to improve quality, equitable access, efficiency and utilization of SRMNAH services at the community level;
- vi. develops strategies to engage stakeholders and inform policy dialogue and impact

² Based on the WHO framework for health workforce performance formulated in the *World Health Report 2006*, p. 71 (45).

decision-making mechanisms at national level.

The process of undertaking a SRMNAH Workforce Assessment and the findings are directly applicable to policymakers at local and national levels, as the entire process and outcomes of the assessment are focused on engaging key stakeholders and informing evidence-based policy- and decision-making.

Availability, accessibility, acceptability, quality—the underpinning framework

A SRMNAH Workforce Assessment uses the Tanahashi framework as a conceptual framework (11,12) (Figure 1) for considering the four critical dimensions of human resources for health (HRH): **availability**, **accessibility**, **acceptability** and **quality**.

The availability, accessibility, acceptability and quality dimensions are at the core of the concept of **effective coverage**, the right to health (13), and the social protection floors agreed by International Labour Organization Member States; collectively, they reinforce the **universal health coverage** agenda.

A SRMNAH Workforce Assessment examines these four key areas:

- **availability** – the sufficient supply and appropriate stock of health workers, with competencies and skill mixes that correspond to the health needs of the population;
- **accessibility** – the equitable distribution of health workers in terms of travel time and transport (spatial), opening hours and corresponding workforce attendance (temporal), the infrastructure’s attributes (physical – such as disabled-friendly buildings), referral mechanisms (organizational) and the direct and indirect cost of services, both formal and informal (financial);
- **acceptability** – the characteristics and ability of the workforce to treat all patients with dignity, create trust and enable or promote

demand for services; this may take different forms such as a same-sex provider or a provider who understands and speaks one's language and whose behaviour is respectful according to age, gender, religion, social and cultural values etc.;

- **quality** – the competencies, skills, knowledge and behaviour of the health worker as assessed according to professional norms (or other guiding standards) and as perceived by users.

Without health workers there can be no health services. The availability of health workers is therefore the primary determinant of and a necessary condition for effective coverage, but the principles of the right to quality health services and people-centred or woman-centred care (14) also require proper attention to accessibility, acceptability and quality.

People-centred care means that women and newborns should be at the centre of service provision, which requires a focus on gender equality and the provision of respectful and dignified care in line with human rights principles, covenants and legislation, such as the International Covenant on Civil and Political Rights (1996, Article 2) and the Respectful

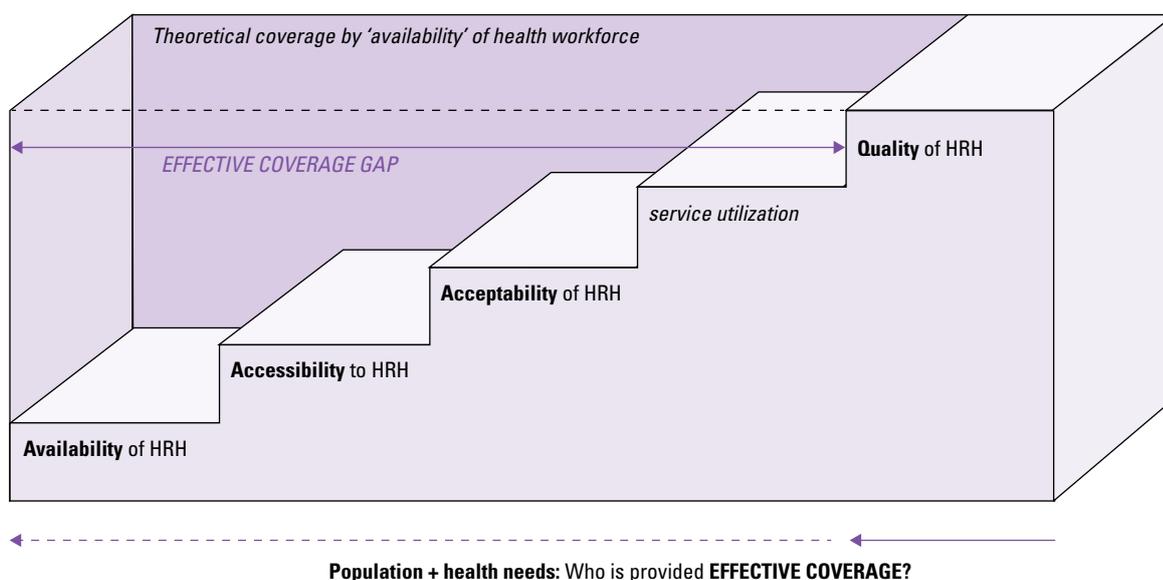
Maternity Care Charter (15). Gender equality is also a necessary component in any assessment of the SRMNAH workforce, as many providers are themselves women and potentially subject to discrimination, gender-based violence and poor working conditions.

Although all four dimensions are equally important, there is a logical sequence for addressing them, as Figure 1 implies. Without sufficient availability, accessibility to health workers cannot be guaranteed; and even if availability and accessibility are adequate, without acceptability, the population may not use the services; finally, if the quality of health workers is inadequate, the effects on services in terms of improving health outcomes will be suboptimal. The result of the causal chain is evident: if any of these dimensions falls short, the proportion of the population obtaining effective, high-quality care in relation to need will be reduced.

This framework underpins a SRMNAH Workforce Assessment in the following ways:

- Phase 1: Collects documents that provide information about the availability, accessibility, acceptability and quality of the SRMNAH workforce;

FIGURE 1: **Effective coverage of human resources for health: availability, accessibility, acceptability and quality**



Source: Adapted from Campbell et al. (11) and Campbell et al. (16).

- Phase 2: Examines the presence of availability, accessibility, acceptability and quality across health facilities offering SRMNAH services and across the SRMNAH workforce policy, financing, education and management systems;
- Phase 3: Examines the impact of the effective coverage framework on the stock and supply of and the demand for the SRMNAH workforce.
- newborn health: the health of newborn infants and neonates (children under 28 days of age). During these first 28 days of life, the child is at highest risk of dying (21);
- adolescent health: the health of young people between the ages of 10 and 19, including sexual and reproductive health (22).

Who are the SRMNAH workforce?

The SRMNAH workforce includes health-care workers whose primary functions include providing health care to women and adolescents relating to sexual and reproductive health, pregnancy, labour and birth, and to mothers and babies in the postnatal period (17).

The different components of SRMNAH examined in this Handbook are:

- sexual health: “a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free from coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled” (18);
- reproductive health: “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so” (19);
- maternal health: “the health of women during pregnancy, childbirth and the post-partum period” (20);

For the purpose of this assessment, the SRMNAH workforce may include, for example: midwives, nurses, nurse-midwives, generalist physicians, specialist physicians (such as obstetrician/gynaecologists, neonatologists, paediatricians), non-clinician physicians, auxiliary staff, community health workers, and support workers (including traditional birth attendants, if relevant to the country context). They can be employed by different types of facilities or organizations, such as a government, a private health-care provider or a non-governmental organization (NGO).

The workforce in this assessment can work at the community level or the primary health-care level, or provide next-level care at referral sites.

To categorize different types of health-care workers, the national assessment team should use the cadre titles and classification of health workers used in their country.

Please note that this will not allow the comparison of one country’s workforce with that of other countries, as there can be extensive cross-country variation in education, roles and responsibilities between health worker cadres with similar names (9). For international comparability, it is necessary to use an international classification of types of health workers, such as the International Standard Classification of Occupations (23). For the purposes of this national assessment, however, the national classification is sufficient.

What interventions does the workforce deliver?

A SRMNAH Workforce Assessment uses the essential interventions for reproductive, maternal, newborn and child health (RMNCH)

as identified by The Partnership for Maternal, Newborn & Child Health (PMNCH) to map which cadres of health-care workers are providing SRMNAH services across the continuum of care.

These essential interventions cover 46 recommended practices across family planning, pregnancy, childbirth and postnatal (mother and newborn) care, utilizing best available evidence on where and how these interventions can be delivered (24). The matrix of essential interventions is found in Figure 2.

However, it is important to recognize that it is not just these interventions that the SRMNAH workforce delivers. The complete maternity care framework needs to be considered, which includes, but is not limited to, the essential interventions (25).

How was the SRMNAH Workforce Assessment process developed?

The SRMNAH Workforce Assessment process builds on a number of recognized approaches and tools that have been adapted to describe the country context, understand population needs and address supply and demand accordingly (26–33). The approach is linked to delivering effective coverage across the life cycle of women's needs, thus accelerating progress towards universal health coverage.

The process was developed as part of the High Burden Country Initiative and supported by the United Nations Population Fund (UNFPA) on behalf of the Health 4+ agencies (H4+). The initial process responded to an invitation from Ministers of Health to rapidly develop and support national assessments in eight countries. A Technical Working Group was established in November 2011 comprising UNFPA, the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the Joint United Nations Programme on HIV/AIDS (UNAIDS), the Global Health Workforce Alliance (GHWA), Jhpiego, the Royal Tropical Institute, the University of Southampton, the International Federation of Gynecology and Obstetrics (FIGO) and the International Confederation

of Midwives (ICM). The secretariat of the Technical Working Group was ICS Integrare.

An assessment framework and operational guidance were developed and originally tested in Ethiopia in early 2012. Since then, the assessment framework has been used in a number of countries including Afghanistan, Bangladesh, Mozambique and Tanzania.

This Handbook takes the experiences and learning from these assessments and provides a framework to help countries lead their own SRMNAH Workforce Assessments.

The Handbook has been developed primarily for Ministries of Health and policymakers and will also inform health leaders and managers, decision makers in educational institutions and regulatory agencies, international donor agencies, and funders of health services and health workforce education.

Phases of action

The SRMNAH Workforce Assessment framework provides a phased approach to data collection, analysis and synthesis which can be adapted to the specific context of each country. The framework is based on existing evidence and conceptual frameworks from the WHO, UNFPA, ICM, PMNCH and GHWA in relation to the essential interventions for maternal and newborn health, and for HRH. The data are collected under this framework using existing tools across the areas of interest. This approach minimizes the potential for duplication in data collection efforts, enables flexibility to focus on key areas of concern, and enables faster data collection and subsequent analysis and synthesis into policy options and costings.

The SRMNAH Workforce Assessment framework is divided into three phases of action.

This Handbook takes the experiences and learning from these assessments and provides a Framework to assist countries to lead their own SRMNAH Workforce Assessments.

Phase 1: Preparation

The objectives of Phase 1 are to implement the start-up process for the SRMNAH Workforce Assessment, including identifying representatives from the Ministry of Health (MoH) and partners, conducting a desk review to gather available data, identifying gaps in these data and planning for data collection in Phase 2. A report should be prepared at the end of the Phase 1, and a national expert workshop should be conducted to discuss the knowledge gaps and the need for additional research to complete the assessment. The reports from Phase 1 and the workshop will form the foundation of the final assessment report.

Phase 2: Population of the core data set

Phase 2 is designed to fill the information gaps identified during Phase 1 by collecting new information and data in the field. A number of modules have been developed to help national assessment teams collect and collate new data.

Phase 3: Data analysis and synthesis

The final phase of the assessment framework involves analysing and synthesizing the data, identifying disparities between the state of the SRMNAH workforce and country need, and providing policy options and costed scenarios to develop the SRMNAH workforce. This phase will include a stakeholder consultation to conduct an

FIGURE 2: **Matrix of the essential interventions for reproductive, maternal, newborn and child health**

Continuum of Care	Adolescence & Pre-Pregnancy	Pregnancy (Antenatal)	Childbirth
All Levels Community Primary Referral	<ul style="list-style-type: none"> Family planning (advice, hormonal and barrier methods) Prevent and manage sexually transmitted infections, HIV Folic acid fortification/ supplementation to prevent neural tube defects 	<ul style="list-style-type: none"> Iron and folic acid supplementation Tetanus vaccination Prevention and management of malaria with insecticide treated nets and antimalarial medicines Prevention and management of sexually transmitted infections and HIV, including with antiretroviral medicines Calcium supplementation to prevent hypertension (high blood pressure) Interventions for cessation of smoking 	<ul style="list-style-type: none"> Prophylactic uterotonics to prevent postpartum haemorrhage (excessive bleeding after birth) Manage postpartum haemorrhage using uterine massage and uterotonics Social support during childbirth
Primary and referral	<ul style="list-style-type: none"> Family planning (hormonal, barrier and selected surgical methods) 	<ul style="list-style-type: none"> Screening for and treatment of syphilis Low dose aspirin to prevent pre-eclampsia Antihypertensive drugs (to treat high blood pressure) Magnesium sulphate for eclampsia Antibiotics for preterm prelabour rupture of membranes Corticosteroids to prevent respiratory distress syndrome in preterm babies Safe abortion Post abortion care 	<ul style="list-style-type: none"> Active management of third stage of labour (to deliver the placenta) to prevent postpartum haemorrhage (<i>as above plus controlled cord traction</i>) Management of postpartum haemorrhage (<i>as above plus manual removal of placenta</i>) Screen and manage HIV (if not already tested)
Referral*	<ul style="list-style-type: none"> Family planning (surgical methods) 	<ul style="list-style-type: none"> Reduce malpresentation at term with External Cephalic Version Induction of labour to manage prelabour rupture of membranes at term (initiate labour) 	<ul style="list-style-type: none"> Caesarean section for maternal/foetal indication (to save the life of the mother/ baby) Prophylactic antibiotic for caesarean section Induction of labour for prolonged pregnancy (initiate labour) Management of postpartum haemorrhage (<i>as above plus surgical procedures</i>)
Community Strategies	<ul style="list-style-type: none"> Home visits for women and children across the continuum of care Women's groups 		

expert review of the data and findings and to collect additional evidence for the assessment.

Stakeholder consultation

The stakeholder consultation should include relevant policymakers, influencers and experts in SRMNAH and HRH, including representatives of the MoH and other key ministries if appropriate (finance, education, etc.), professional associations, United Nations agencies, civil society organizations, development partners and the private health sector.

The aim of the consultation is to discuss the findings of the data collection and synthesis and

to complete Modules 8 and 10. In Module 8, stakeholders will assess effective coverage of the SRMNAH workforce. Module 10 will take stakeholders through an exercise to select the policy options that should be prioritized and costed. More information on the process is available in the relevant chapters of this Handbook.

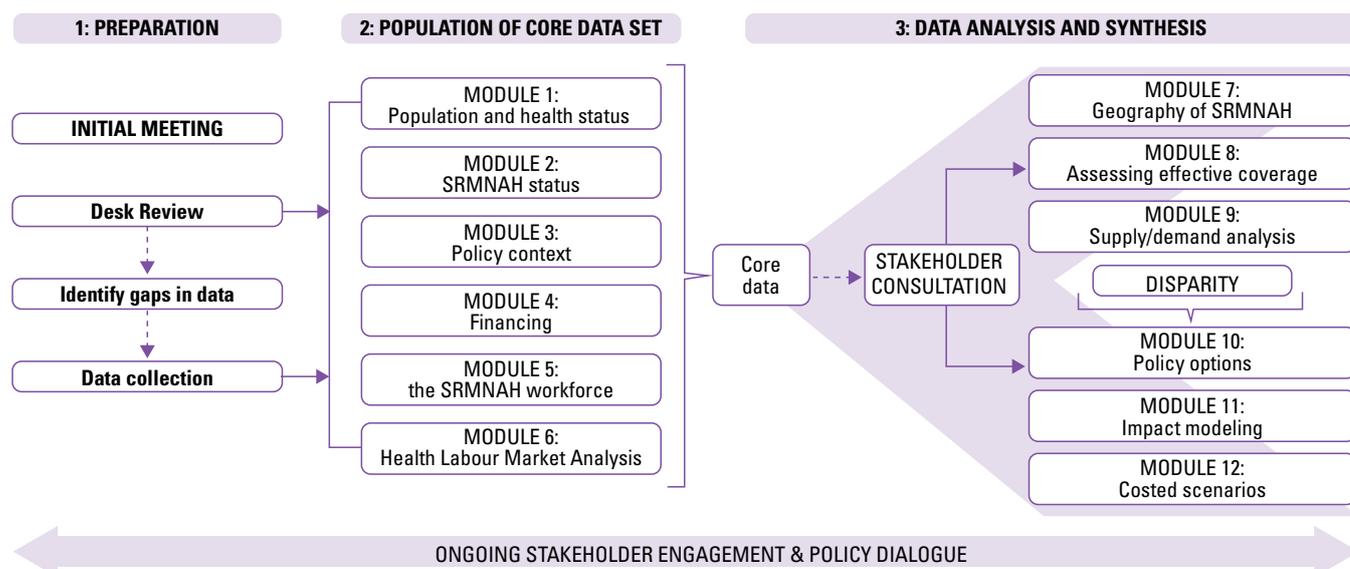
Using this Handbook

The Handbook is based on the SRMNAH Workforce Assessment framework and its three phases of action (Figure 3). It has been designed to guide national assessment teams through a staged process in order to answer the central question for each country conducting a SRMNAH Workforce Assessment.

Postnatal (mother)	Postnatal (newborn)	Infancy & Childhood
<ul style="list-style-type: none"> Family planning advice and contraceptives Nutrition counselling 	<ul style="list-style-type: none"> Immediate thermal care (to keep the baby warm) Initiation of early breastfeeding (within the first hour) Hygienic cord and skin care 	<ul style="list-style-type: none"> Exclusive breastfeeding for 6 months Continued breastfeeding and complementary feeding from 6 months Prevention and case management of childhood malaria Vitamin A supplementation from 6 months of age Routine immunization plus <i>H.influenzae</i>, meningococcal, pneumococcal and rotavirus vaccines Management of severe acute malnutrition Case management of childhood pneumonia Case management of diarrhoea
<ul style="list-style-type: none"> Screen for and initiate or continue antiretroviral therapy for HIV Treat maternal anaemia 	<ul style="list-style-type: none"> Neonatal resuscitation with bag and mask (by professional health workers for babies who do not breathe at birth) Kangaroo mother care for preterm (premature) and for less than 2000g babies Extra support for feeding small and preterm babies Management of newborns with jaundice (“yellow” newborns) Initiate prophylactic antiretroviral therapy for babies exposed to HIV 	<ul style="list-style-type: none"> Comprehensive care of children infected with, or exposed to, HIV
<ul style="list-style-type: none"> Detect and manage postpartum sepsis (serious infections after birth) 	<ul style="list-style-type: none"> Presumptive antibiotic therapy for newborns at risk of bacterial infection Use of surfactant (respiratory medication) to prevent respiratory distress syndrome in preterm babies Continuous positive airway pressure (CPAP) to manage babies with respiratory distress syndrome Case management of neonatal sepsis, meningitis and pneumonia 	<ul style="list-style-type: none"> Case management of meningitis

* Family planning interventions at Referral level include those provided at the Primary level

FIGURE 3: **SRMNAH Workforce Assessment Framework: Phases and modules**



The Handbook contains a step-by-step guide to conducting a SRMNAH Workforce Assessment. Each phase of action builds on work conducted in the previous phase, and each step should therefore be followed in order.

- **Phase 1** provides guidance on collating existing SRMNAH workforce data: by conducting a document review, identifying partners and members of the national assessment team, and developing plans to add to existing information through in-country primary data collection.
- **Phase 2** presents a set of modules (Modules 1-6) to guide the in-country data collection process in each domain of investigation. Key questions and a core set of indicators guide and inform data collection and presentation. These are included in Modules 1-6, along with space to record data sourced either from the Phase 1 document review or from the Phase 2 primary data collection process, in table or matrix form. A set of qualitative tools is also included (in Annex B) and referenced within Modules 1-6. Completed tables, matrices and qualitative instruments will form the core data set and can then be taken forward into the data analysis and

synthesis phase (Phase 3) of the assessment framework.

- **Phase 3** (Modules 7-12) provides guidance on analysing, synthesizing and reporting on data gathered in Phases 1 and 2, and on conducting the stakeholder consultation.

The comprehensive approach of this Handbook is designed to support workforce planning for a resilient health system, taking into account all the key systemic elements that impact on the population's access to a qualified SRMNAH workforce. The modules can also be applied on an individual basis if required for a specific planning exercise; however, for the aforementioned reasons, the comprehensive assessment approach is recommended. Ideally, the assessment should be integrated into the national HRH planning cycle, to avoid duplication of data collection efforts and to ensure that the findings can be incorporated into the established policy and planning processes. For the development of national costed health plans, countries can incorporate the data collected for this assessment into their planning processes by using the OneHealth Tool for planning, costing and impact analysis, developed and approved by the UN InterAgency Working Group on Costing (IAWG-Costing) (10).

Conducting the assessment will require national expertise combining competencies in the areas of HRH, SRMNAH and statistical analysis. The MoH's Human Resources Department is best placed to lead this exercise, with support from Ministries of Education/Higher Education, Public Administration and Finance. National public health, research, regulation and/or education institutions as well as health-care professional associations could be contracted for the desk review, data collection and analysis. External expertise or support may be necessary, particularly to conduct Phase 3 of the assessment.

The technical expert organizations that have contributed to the development of this guidance can be contacted for further information and support (see Annex D for contact details).

A budget for the assessment will also need to be prepared, with estimated costs for the different elements of the process, including: desk review,

data collection, meetings and workshops, data analysis and technical inputs. Where possible, using national teams and resources will be preferable and more cost effective. In countries where information systems established by the MoH/HRH department are collecting routine data on the health workforce, there will be less need to rely on external expertise, which will greatly reduce the costs of the assessment. For this reason, an important policy outcome of the process may be to highlight the need for reliable and regularly updated health information systems.

Once the assessment is completed, other resources should be used to implement the recommendations and strengthen SRMNAH services. An example of an implementing tool is the Midwifery Services Framework developed by ICM (forthcoming publication in 2015). A full discussion of implementation is, however, beyond the scope of this Handbook.



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THE
ASSESSMENT
FRAMEWORK

Phase 1: Preparation

Objectives of Phase 1

The objectives of the preparation phase are to identify and engage MoH representatives (workforce, SRMNAH and other relevant departments), the H4+, possible in-country partners and other relevant national stakeholders to form a national assessment team, gather available SRMNAH workforce data, and plan for in-country data collection (Figure 4).

Before Phase 1 can commence, a national assessment team with a focal point must be formed to start and manage the process. Government ownership and leadership of this team is critical.

Outputs of Phase 1

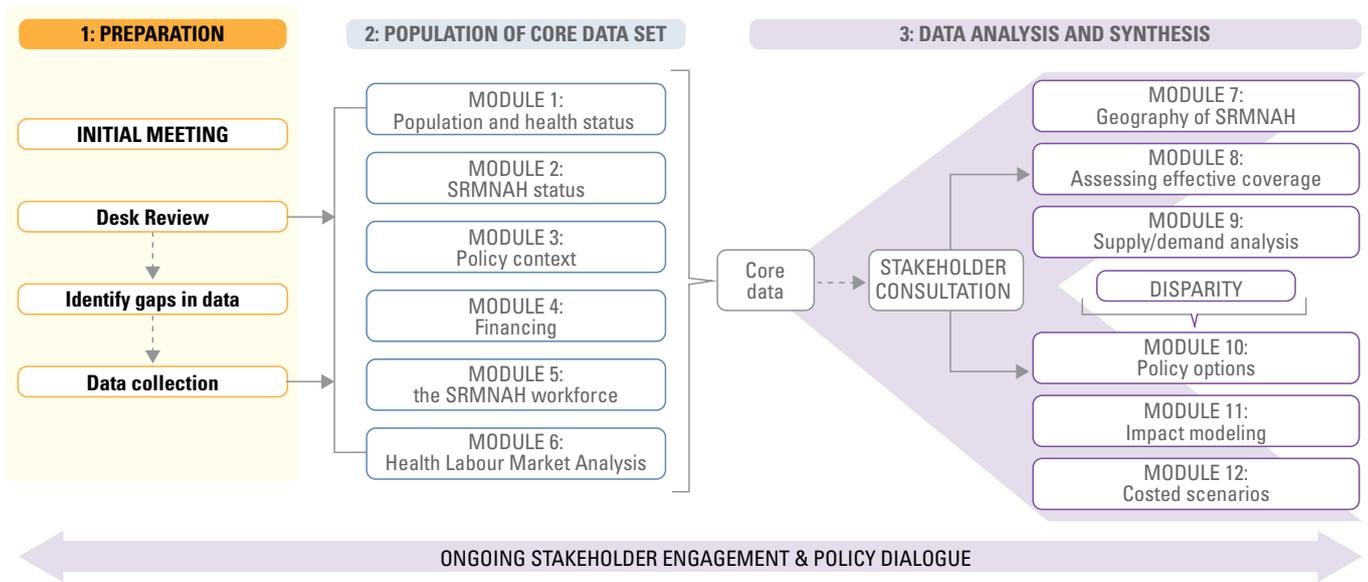
The anticipated outputs of Phase 1 include a partial core data set, a country background paper, and a concrete plan to proceed to Phase 2 in-country data collection.

Phase 1 activities

Start-up process

A start-up process to convene national stakeholders is required at the outset. The MoH will lead the SRMNAH Workforce Assessment and be the focal point. If available in the country, the HRH Committee or HRH Observatory of the MoH should lead this process, and use the emerging findings to inform the planning process. Where required, the MoH should seek

FIGURE 4: SRMNAH Workforce Assessment Framework Phase 1: Preparation



development partner support in order to undertake the SRMNAH Workforce Assessment.

This may require technical support from H4+ regional or headquarters offices and/or other agencies or organizations, depending on the country, its capacity, and the data collection and assistance needed.

The SRMNAH Workforce Assessment needs to be owned and driven by the country’s government through the MoH. The start-up process should engage other national stakeholders, identify the relevant in-country partners, and inform them of the SRMNAH Workforce Assessment and their role. This should include the identification of on-going activities that may impact on the Assessment or influence its data collection and outcomes.

An initial meeting, led by the MoH, with the country stakeholders is required to:

1. Identify members and agree the roles and responsibilities of the national assessment team. Ideally, national assessment teams will comprise policymakers and development partners, professional associations (midwives, nurses and doctors), regulatory bodies (medical, midwifery or nursing councils and

boards) and health workforce and SRMNAH experts in the government.

2. Decide who else to involve (e.g. H4+ and other development partners, technical assistance providers, technical working groups, etc. In some countries this can include national working groups on topics such as Safe Motherhood, HRH or maternal and newborn health).
3. Review and refine the assessment framework to ensure it is relevant to the country context.
4. Agree plans and timelines for the document review process and context analysis components of Phase 1. This must include accountability and responsibility for actions and activities. An action log approach should be developed to track the accountability and responsibility.

Document review

The national assessment team will identify existing information by conducting a document review (see the list of possible document sources below) during which publicly available documentation will be collated and summarized, based on the questions and indicators

in the assessment framework. It is anticipated that much data and information will already be available in the grey and published literature, or held within the country.

This process will enable the compilation of the core data set needed for the SRMNAH Workforce Assessment. Data collected during the document review may be added to the data collation tables and matrices provided throughout Modules 1-6. This will help the national assessment team both to manage data, and to identify information gaps to be filled during Phase 2.

Possible sources of documents:

- National Health/SRMNAH/HIV/HRH policies, strategies, plans, (evaluation) reports and surveys, such as the Demographic and Health Survey, HRH census report, district health service reports and SRMNAH services evaluations.
- Unpublished national policies, plans, strategies and evaluations; information from the National Health Account; the National Health Management Information System; the National Human Resource Information System and the national payroll; registers from professional organizations and councils; and registers from education and training institutions.
- Reports from health-care professional associations, regulatory organizations, education institutions and other institutions, such as

HRH committees or task forces, and relevant civil society organizations.

- H4+ sources (see Annex B).
- Reports from bilateral donors, NGOs, global health projects and initiatives (USAID, Jhpiego, GHWA, HRH Global Resource Center).
- Scientific articles from e.g. the journal *Human Resources for Health*.
- Geographic population datasets from the World Pop project: <http://www.worldpop.org.uk/>.
- EmONC needs assessments: www.amddprogram.org.

Based on the review of publicly available documents, the national assessment team may make a specified request for additional (unpublished) information. This will enable the development of a background paper, which should be as complete as possible before the next steps in the SRMNAH Workforce Assessment are taken.

Some examples of a desk review are available at: http://integrare.es/wp-content/uploads/2012/09/Afg_DR_Gap_Analysis_20May12.pdf.

Context analysis

As part of the document review a context analysis should be carried out to identify ongoing activities related to the SRMNAH workforce.

Context Analysis	
Coordination of SRMNAH workforce activities (at all levels)	Which government body/ministry/department is responsible for coordinating the SRMNAH workforce at the national level? Are different coordinating mechanisms involved at national/subnational/district levels?
Partners involved in SRMNAH workforce activities	Are external partners (e.g. NGOs, international organizations, donor organizations, civil society associations) involved in SRMNAH workforce planning and activities? What is the form of their involvement? (e.g. financial, service provision, education, training, policy development etc.)
SRMNAH workforce activities at district and facility levels	Are any external (non-MoH) groups coordinating workforce activities between community and facility, or facility and district levels?

As a preparatory step, the national assessment team needs to undertake a stakeholder mapping of who is doing what and where, in order to improve the SRMNAH workforce. This could involve mapping coordination, involvement of partners and support at subnational levels. Context analysis data may be included in the table below for later reference by the national assessment team.

Plan for Phase 2 data collection

Once the national assessment team has conducted the document review and context analysis, any gaps in the SRMNAH workforce data will be revealed, and a plan is needed to fill these gaps through quantitative and qualitative research in Phase 2 of the SRMNAH Workforce Assessment. The following steps provide a guide to planning for the next phase of work.

1. Identify and prioritize knowledge gaps with stakeholders.
2. Identify and source any additional existing in-country data.
3. Clearly define the data required, likely sources, and tools and methodologies best used to generate this information. The tools suggested in the modules below will help in this task.
4. Develop a timeline and a plan. This may include the identification of data collection sites and key informants, the method of conducting in-country data collection, and the development of a schedule of activities.
5. Explore options for the reporting structure, including the dissemination of results and responsibilities related to national and international communication strategies.
6. Identify who will conduct the data collection and analysis, keeping in mind the value of developing local research capacity.



Save the Children/Ayesha Vellani

THE
ASSESSMENT
FRAMEWORK

Phase 2: Population of the core data set

Objectives of Phase 2

The primary objective of Phase 2 is to finish populating the core data set by filling gaps in information identified through the document review and context analysis of Phase 1.

Phase 2 starts after the scope of the country-level data collection has been established and the in-country partners have been identified. During Phase 2, the national assessment team will work closely together to collect the data.

Separate modules for each step of the data collection process are included below.

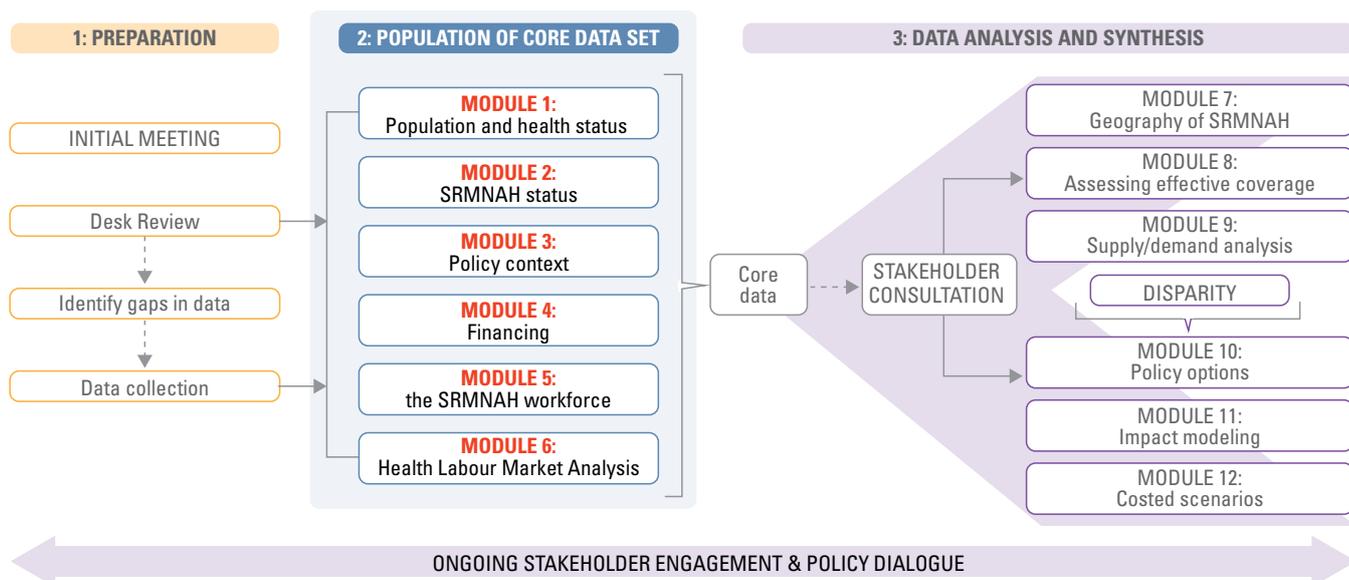
Output of Phase 2

The anticipated output of Phase 2 is a complete core data set, which can be analysed and synthesized in Phase 3.

Phase 2 activities

Phase 2 has six modules (Modules 1-6). These should be completed with the data collected during the Phase 1 document review or, where these data are unavailable or could not be sourced, through a primary data collection process following the instructions contained in each module.

FIGURE 5: **SRMNAH Assessment Framework Phase 2: Population of the core data set**



- Modules 1-4 are designed to provide an understanding of the country context as it relates to the SRMNAH workforce in each setting, and the need for SRMNAH services. Key questions relate to the sociopolitical environment, and concern health policy and management systems, population status and SRMNAH status, as well as the accessibility, equity, quality, efficiency and utilization of SRMNAH services.
- Modules 5 and 6 focus on the production and performance of the SRMNAH workforce. Key questions relate to pre-service education and in-service training capacities in the public and private sectors and the availability, accessibility, acceptability and quality of health workers. The modules also include

an analysis of the labour market, and the distribution, attrition, remuneration and productivity of the health workforce.

Each module contains a clear outcome objective and explains key concepts needed to conduct that particular step of the SRMNAH Workforce Assessment. The key assessment questions, core indicators and suggested assessment tools (both quantitative and qualitative) are then provided, together with illustrative country examples. Priority data elements that are essential for the workforce modelling in Phase 3 of the assessment are highlighted throughout the modules. Finally, post-assessment consideration points are included to encourage reflection on the data, in preparation for data analysis and synthesis in Phase 3.

Country context: Population health status

Overview

The first step to conducting a SRMNAH Workforce Assessment is to collect and collate information on the health status of the population in the country context.

MODULE 1 OBJECTIVE:

To **collate** key **information** related to **population health status**, both generally and for **SRMNAH**.

Applying the module

Key Question 1.1: National context

1. What are the key demographic characteristics of the population?
2. What are the key socioeconomic characteristics of the population?
3. What is the health status of the population?

Data collection

The following population and development indicators will provide the national assessment team with important contextual information. A period for carrying out future projections must be chosen; this may be 10, 15 or 20 years, or another period suitable to the national and policy context.

The indicators listed in the table below draw upon country and United Nations population data. The final column may be used to record data collected by the national assessment team. Please note that the suggested sources are indicative only: the latest and most accurate data should always be used, and may be obtained from different national or international sources, e.g. the latest national census, household surveys, etc.

Priority data requirements for the modelling in Phase 3 are highlighted with an * in the table below.

	Indicator	Suggested sources	Data from primary or secondary sources
1*	Population size (current year)	United Nations, Department of Economic and Social Affairs, Population Division, <i>World Population Prospects</i> http://esa.un.org/wpp/	
2*	Projected population size (for each year until end of projection period)	United Nations, Department of Economic and Social Affairs, Population Division, <i>World Population Prospects</i> http://esa.un.org/wpp/	
3*	Women of reproductive age: 15-49 years (current and projections to end of period)	United Nations, Department of Economic and Social Affairs, Population Division, <i>World Population Prospects</i> http://esa.un.org/wpp/	
4*	Youth: under 15 years of age (current and projections to end of period)	United Nations, Department of Economic and Social Affairs, Population Division, <i>World Population Prospects</i> http://esa.un.org/wpp/	
5*	Rural population, % (current and projections to end of period)		
6*	Total fertility rate: urban/rural (current and projections to end of period)	United Nations, Department of Economic and Social Affairs, Population Division, <i>World Population Prospects</i> http://esa.un.org/wpp/ The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
7*	Pregnancies per year: urban/rural (current and projections to end of period)	National sources Pregnancy projections 2012-2030 available for 73 countries featured in the <i>State of the World's Midwifery Report 2014</i> at: http://integrare.es/wp-content/uploads/2015/02/Pregnancies_2012-2030.xlsx	
8*	Caesarean sections, %: urban/rural or by subnational distribution (map) (current and projections to end of period)	Gibbons L, Belizán JM, Lauer JA, et al. The global numbers and costs of additionally needed and unnecessary caesarean sections performed per year: overuse as a barrier to universal coverage. In: <i>World Health Report 2010</i> . Geneva: WHO, 2010 The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
9*	Deliveries per year (current and projections to end of period)	Live births and stillbirths Potential source for stillbirths data: Cousens S, Blencowe H, Stanton C et al. National, regional and worldwide estimates of stillbirth rates in 2009 with trends since 1995: a systematic analysis. <i>Lancet</i> 2011; 377: 1319–30.	
10*	Live births per year (current and projections to end of period)	United Nations, Department of Economic and Social Affairs, Population Division, <i>World Population Prospects</i> http://esa.un.org/wpp/	
11*	Neonatal mortality rate (and number of deaths per year)	WHO, Global Health Observatory http://www.who.int/gho/child_health/mortality/neonatal/en/ The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	

	Indicator	Suggested sources	Data from primary or secondary sources
12*	Maternal mortality ratio (and number of deaths per year)	WHO, UNFPA, UNICEF and World Bank. <i>Trends in Maternal Mortality: 1990 to 2013</i> . Geneva: World Health Organization, 2014. The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
13*	Proportion of adults testing positive for HIV (male/female)	UNAIDS, <i>AIDSinfo</i> database http://www.unaids.org/en/dataanalysis/datatools/aidsinfo/ The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
14*	Number of HIV-related deaths among women who were pregnant or had given birth in the preceding six weeks	UNAIDS, <i>AIDSinfo</i> database http://www.unaids.org/en/dataanalysis/datatools/aidsinfo/	
15	Median age at marriage: urban/rural	United Nations, Department of Economic and Social Affairs, Population Division, <i>World Marriage Data</i> http://www.un.org/en/development/desa/population/publications/dataset/marriage/wmd2012.shtml The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
16	Life expectancy at birth (male/female)	United Nations, Department of Economic and Social Affairs, Population Division, <i>World Population Prospects</i> http://esa.un.org/wpp/	
17*	Mortality rate by 5-year age group (male/female)	United Nations, Department of Economic and Social Affairs, Population Division, <i>World Population Prospects</i> http://esa.un.org/wpp/	
18*	Population living in malaria-endemic areas, %	WHO, <i>World Malaria Report 2013</i> http://www.who.int/malaria/publications/world_malaria_report_2013/en/	
19*	Number of presumed and confirmed malaria cases	WHO, <i>World Malaria Report 2013</i> http://www.who.int/malaria/publications/world_malaria_report_2013/en/	
20*	Prevalence of smoking	WHO, Global Health Observatory http://apps.who.int/gho/data/view.main.TOB_30011	
21	Gross national income per capita (US\$)	World Bank data http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD	
22	Population below poverty line, %	World Bank data http://data.worldbank.org/topic/poverty	
23	Expenditure per capita on health (% of public and % of private expenditure on health)	WHO, Global Health Observatory http://www.who.int/gho/health_financing/per_capita_expenditure/en/	
24	Literacy rate (male/female)	World Bank data http://data.worldbank.org/indicator/SE.ADT.LITR.ZS The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	

Country context: SRMNAH status

Overview

Module 2 will guide the national assessment team through the process of collecting and collating information on the country's SRMNAH status and the requirements for SRMNAH care.

MODULE 2 OBJECTIVE:

To collect and **collate** key **information** related to the **SRMNAH status and SRMNAH care needs**

This module provides indicators and questions to ensure that the national SRMNAH assessment is informed by important contextual information. This important knowledge will inform later modules and help map the geography of the SRMNAH workforce and so enable planning of future policy options.

Key concepts

BEmONC (Basic Emergency Obstetric and Newborn Care)

BEmONC covers seven “signal functions”: the interventions which must be available to all women at the time of birth in order to address the most common causes of maternal and newborn mortality. The seven signal functions for BEmONC are:

- parenteral treatment of infection (antibiotics)
- parenteral treatment of pre-eclampsia/eclampsia (anticonvulsants)
- parenteral treatment of post-partum haemorrhage (uterotonics)
- manual vacuum aspiration of retained products of conception
- vacuum-assisted delivery
- manual removal of the placenta
- newborn resuscitation.

CEmONC (Comprehensive Emergency Obstetric and Newborn Care)

CEmONC covers the seven signal functions for BEmONC listed above, as well as the following two functions:

- surgical capability (caesarean section)
- blood transfusion.

Applying the module

Key Question 2.1: Background SRMNAH status and SRMNAH care needs

What is the background SRMNAH status in this country?

What is the need for SRMNAH care in this country?

Data collection

The table below provides a set of indicators that will help the national assessment team understand the background SRMNAH status and need of the population served by the country's SRMNAH workforce. Please note that the suggested sources are indicative only: the latest and most accurate data should always be used, and may be available from different national or international sources. Priority data requirements for the modelling in Phase 3 are highlighted with an * in the table below.

The final column has been left blank for data to be recorded as it is sourced.

	Indicators/questions	Suggested sources	Data from primary or secondary sources
1*	Unmet need for family planning, %	United Nations Statistics Division, Millennium Development Goals Indicators http://unstats.un.org/UNSD/MDG/Data.aspx The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
2*	Contraceptive prevalence rate (modern methods, urban/rural), %	WHO, Global Health Observatory http://apps.who.int/gho/data/node.main.531?lang=en The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
3*	Contraceptive method mix: condom, pill+injectable, IUD, female sterilization, %	Seiber E, Bertrand J, Sullivan T. Changes in contraceptive method mix in developing countries. <i>International Family Planning Perspectives</i> 2007; 33: 117-23 http://www.guttmacher.org/pubs/journals/3311707.pdf The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
4*	Skilled attendance at birth³ (urban/rural), %	United Nations Statistics Division, Millennium Development Goals Indicators http://unstats.un.org/UNSD/MDG/Data.aspx The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
5*	Number of women of reproductive age needing antiretroviral therapy (ART)	UNAIDS, <i>AIDinfo</i> database http://www.unaids.org/en/dataanalysis/datatools/aidsinfo/	
6*	Number of pregnant women tested for HIV	UNAIDS, <i>AIDinfo</i> database http://www.unaids.org/en/dataanalysis/datatools/aidsinfo/ The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
7*	Number of pregnant women living with HIV and needing ART to prevent mother-to-child transmission (PMTCT)	UNAIDS, <i>AIDinfo</i> database http://www.unaids.org/en/dataanalysis/datatools/aidsinfo/	
8*	Proportion of HIV-exposed infants receiving ART for PMTCT	UNAIDS, <i>AIDinfo</i> database http://www.unaids.org/en/dataanalysis/datatools/aidsinfo/	

³ This Handbook uses the WHO definition of a skilled birth attendant (SBA). An 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” (65).

BACKGROUND SRMNAH INDICATORS (continued)

	Indicators/questions	Suggested sources	Data from primary or secondary sources
9*	Female incidence of syphilis, gonorrhoea, chlamydia, trichomoniasis (per 1000 women of reproductive age)	WHO, Global incidence of selected curable sexually transmitted infections by region, 2008 http://apps.who.int/iris/bitstream/10665/75181/1/9789241503839_eng.pdf?ua=1	
10*	Incidence of gestational hypertension (per 1000 women of reproductive age)	Dolea C, AbouZahr C. Global burden of hypertensive disorders of pregnancy in the year 2000. Evidence and Information for Policy, WHO, 2003 http://www.who.int/healthinfo/statistics/bod_hypertensivedisordersofpregnancy.pdf	
11*	Incidence of pre-eclampsia (% births)	Dolea C, AbouZahr C. Global burden of hypertensive disorders of pregnancy in the year 2000. Evidence and Information for Policy, WHO, 2003 http://www.who.int/healthinfo/statistics/bod_hypertensivedisordersofpregnancy.pdf	
12*	Incidence of eclampsia (% births)	Dolea C, AbouZahr C. Global burden of hypertensive disorders of pregnancy in the year 2000. Evidence and Information for Policy, WHO, 2003 http://www.who.int/healthinfo/statistics/bod_hypertensivedisordersofpregnancy.pdf	
13*	Incidence of preterm premature rupture of membranes (pPROM) (% deliveries)	WHO, Global survey on maternal and perinatal health, 2005 http://www.who.int/reproductivehealth/topics/best_practices/GS_Tabulation.pdf?ua=1	
14*	Preterm birth rate (% live births)	Healthy Newborn Network, Global and national newborn health data and indicators http://www.healthynewbornnetwork.org/resource/database-global-and-national-newborn-health-data-and-indicators	
15*	Incidence of breech malpresentation (% deliveries)	WHO, Global survey on maternal and perinatal health: statistics on breech presentations, 2005 http://www.who.int/reproductivehealth/topics/best_practices/GS_Tabulation.pdf?ua=1	
16*	Incidence of post-partum haemorrhage (per 1000 women of reproductive age)	Dolea C, AbouZahr C, Stein C. Global burden of maternal haemorrhage in the year 2000. Evidence and information for policy, WHO, 2003 http://www.who.int/healthinfo/statistics/bod_maternalhaemorrhage.pdf	
17*	Incidence of puerperal sepsis (per 1000 women of reproductive age)	Dolea C, AbouZahr C, Stein C. Global burden of maternal sepsis in the year 2000. Evidence and information for policy, WHO, 2003 http://www.who.int/healthinfo/statistics/bod_maternalsepsis.pdf	
18*	Newborns requiring resuscitation, %	OneHealth Model: Interventions treatment assumptions, 2013 http://futuresinstitute.org/Download/Spectrum/Manuals/Intervention%20Assumptions%202013%209%2028.pdf	Global estimate: 1% Note: update if better evidence available
19*	Newborns with jaundice, %	Teune MJ, Bakhuizen S, Gyamfi Bannerman C et al. A systematic review of severe morbidity in infants born late preterm. <i>Am J Obstet Gynecol</i> 2011; 205: 374, e1-9	Global estimate: 1.85% Note: update if better evidence available
20*	Newborns with bacterial infection, %	Singh S, Darroch JE, Ashford LS. Adding it up: the need for and cost of maternal and newborn care: estimates for 2012. Guttmacher Institute, 2013 http://www.guttmacher.org/pubs/AIU-MNH-2012-estimates.pdf	Global estimate: 20% Note: update if better evidence available
21*	Newborns with respiratory distress, %	Rodriguez RJ, Martin RJ and Fanaroff AA. Respiratory distress syndrome and its management, Chapter 19. In: Fanaroff, AA, Martin RJ, Walsh NC. <i>Neonatal-perinatal medicine: diseases of the fetus and infant</i> . St. Louis: Elsevier Inc, 2011 http://www.thoracic.org/education/breathing-in-america/resources/chapter-19-respiratory-distress-syndr.pdf	Global estimate: 1% Note: update if better evidence available
22*	Live births with low birth weight, %	UNICEF and WHO. Low birth weight: country, regional and global estimates. New York: UNICEF, 2004 http://www.unicef.org/publications/files/low_birthweight_from_EY.pdf	
23*	Number of estimated safe and unsafe abortions (per 1000 women of reproductive age)	Sedgh G, Singh S, Shah IH et al. Induced abortion: incidence and trends worldwide from 1995 to 2008. <i>Lancet</i> 2012; 379: 625-32	

continued

BACKGROUND SRMNAH INDICATORS (continued)

	Indicators/questions	Suggested sources	Data from primary or secondary sources
24*	Recommended caesarean section rate (% deliveries)	WHO. Statement on Caesarean Section. Geneva: WHO, 2015.	Global assumption: 10% Note: update if better evidence available
25*	Pregnancies extending beyond week 41, %	OneHealth Model: Interventions treatment assumptions, 2013 http://futuresinstitute.org/Download/Spectrum/Manuals/Intervention%20Assumptions%202013%209%2028.pdf	Global estimate: 5% of pregnancies Note: update if better evidence available
26	What are the five leading causes of maternal mortality and neonatal mortality at national and subnational levels?		
27*	Proportion of women receiving four antenatal care visits	United Nations Statistics Division, Millennium Development Goals Indicators http://unstats.un.org/UNSD/MDG/Data.aspx The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
28	Delivery in facility % urban/rural or by subnational distribution (map)	The DHS Program, Statcompiler http://dhsprogram.com/data/STATcompiler.cfm	
29*	Proportion of women for whom active management of the third stage of labour was applied at their last birth		
30*	Proportion of mothers and proportion of newborns with postnatal check-up within 48 hours of birth	WHO, Global Health Observatory http://apps.who.int/gho/data/node.main.531?lang=en	

Key Question 2.2: BEmONC/CEmONC status of health facilities

What is the BEmONC/CEmONC status of health facilities?

Data Collection

The answers to the following questions will help the national assessment team understand the status of SRMNAH in the country. The indicators in the table below are adapted from the WHO, UNFPA, UNICEF and AMDD Handbook for Monitoring Emergency Obstetric Care (27), together with additional indicators.

The following indicators may draw upon country and United Nations health data, such as EmONC needs assessments,⁴ and should be available at national level. The final column can be used to record information collected by the national assessment team.

⁴ <http://www.amddprogram.org/content/emoc-needs-assessments>.

	Questions	Data from primary or secondary sources
1	Are facilities assigned BEmONC/CEmONC status?	
2	Number of facilities designated BEmONC per 500,000 population (national level/subnational areas)	
3	Number of facilities designated CEmONC per 500,000 population (national level/subnational areas)	
4	Number of facilities actually providing BEmONC per 500,000 population (national level/subnational areas)	
5	Number of facilities actually providing CEmONC per 500,000 population (national level/subnational areas)	
6	Proportion of facilities doing deliveries that are located within 2 hours travel time (by usual transport) of a higher level facility	
7	Proportion of all births taking place in EmONC facilities	
8	Proportion of women with major direct obstetric complications who are treated in EmONC facilities	
9	Caesarean sections as a proportion of all births	
10	Direct obstetric case fatality rate	
11	Proportion of total facilities with functioning transport	
12	Proportion of facilities doing deliveries that have access to a functioning telecommunication network (landline, mobile phone, radio)	
13	What are the staff competencies, equipment, drugs and supplies needed to qualify for BEmONC/CEmONC status?	

Further in-depth investigation

Where this information is not available from existing resources, it may be necessary to generate new data. A number of tools are available to help the national assessment team collect and collate missing data on SRMNAH status. These should be chosen and adapted according to the gaps identified in the document review (Phase 1) and the feasibility of implementation for national assessments. The PMNCH Policy Compendium (www.pmnch.org) contains a number of tools to assist the collection of these data. Another possible source of information is the Service Availability Readiness Assessment (SARA) (see also Module 7), available at: http://www.who.int/healthinfo/systems/sara_introduction/en/.

To collect data on this key question, look for tools, questions or segments of tools in Annex B labelled Module 2: Key Question 2.2, and choose those most appropriate for this national assessment.

Module 2 post-assessment considerations

Now that key information on SRMNAH status has been compiled, it is important to consider the following questions and apply the answers in Phase 3 of the national assessment.

- What is the total need for SRMNAH interventions, and what is the capacity to deliver high-quality SRMNAH interventions to all those in need?
- Where are the gaps with regard to facilities, equipment and drugs, and staff?
- Which stakeholders need to be engaged, and which systems need to be strengthened?
- Which elements can be resolved in the short term and which ones will need longer-term investment?

Country context: Policy context

Overview

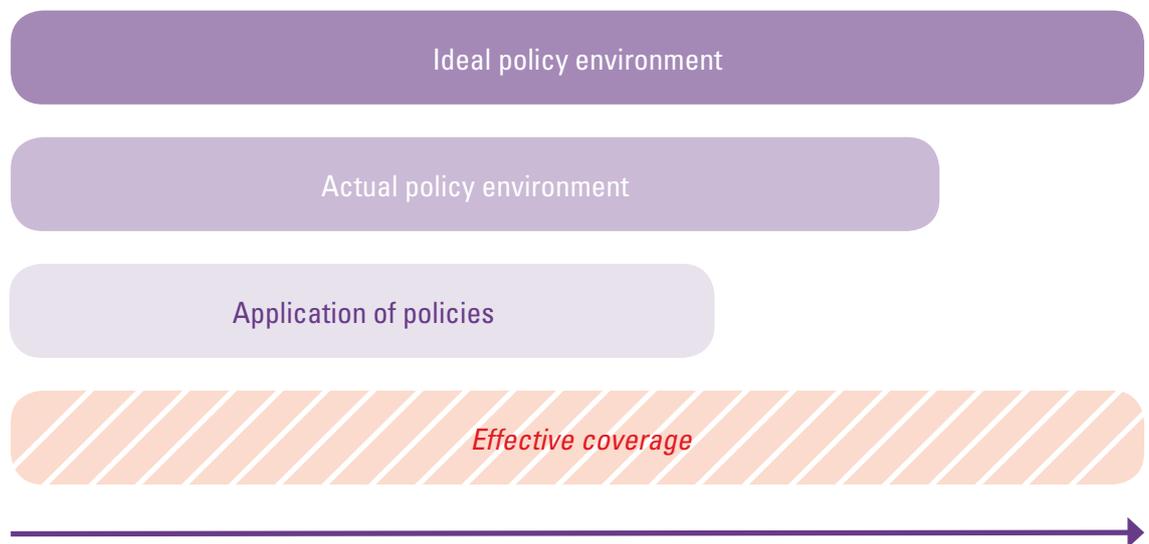
This module examines the policy environment for SRMNAH in the context of the country concerned. Policies represent a commitment for which decision makers may be held accountable if they fail to deliver. Policies can also help to coordinate different actors, both inside and outside of government, in order to reach a common goal.

SRMNAH policies are essential for ensuring that all women and children have the opportunity to achieve the highest standard of health, both by supporting the development of resilient health systems, and by creating environments that promote health more broadly (Figures 6 and 7).

MODULE 3 OBJECTIVE:

To **examine** key health systems related **policies** and **regulations** associated with the **SRMNAH workforce**.

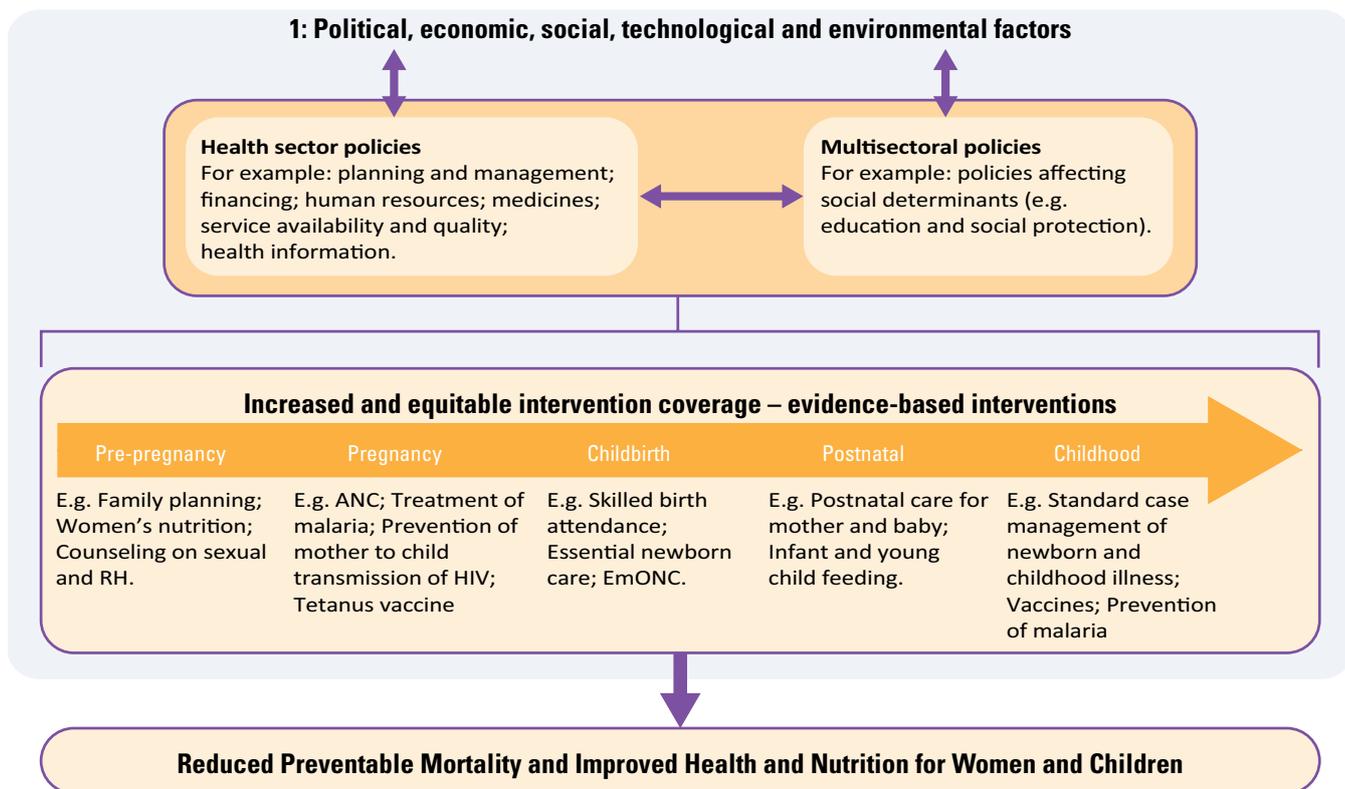
FIGURE 6: **The policy environment**



Key concepts

Supportive policies for SRMNAH

FIGURE 7: **SRMNAH policy environment**



Source: Adapted from WHO, UNICEF 2012 (34)

Applying the module

Key Question 3.1: SRMNAH plans and policy documents

What is the national policy landscape for the organization and delivery of SRMNAH services and the SRMNAH workforce?

Data collection

Please fill in the following table, listing all the plans, policies, standards and guidelines that are currently in place for organizing, delivering and monitoring SRMNAH services and workforce.

Policy, standard or guideline	Subject	Year or period



World Vision/Sopheak Kong

Key Question 3.2: SRMNAH policies

Do the current policies provide sufficient information for planning, resource-allocation and coordination in SRMNAH?

To what extent does the current policy environment help ensure universal effective access to SRMNAH services and interventions?

To what extent are current policies actually implemented?

Data Collection

The following policy information should be available at a national level, within the SRMNAH action plan or strategy, or the national health strategy. Some policy information may be contained in less official documents such as departmental directives, annual review reports, etc. Please complete the table as follows:

1. The first column lists the types of policy information that are important for planning, allocating resources to, and coordinating the implementation of SRMNAH interventions.
2. In the second column, specify where each type of policy information can be found, including the name of the policy document, the date when this document was published, and the page number within the policy, for future reference. Ensure that these documents are retained for future reference.
3. In the third column, note additional detail on the extent to which the existing policy ensures effective access to SRMNAH care for everyone. Suggestions are included, but these are not exhaustive, nor necessarily applicable to all contexts.
4. In the fourth column, show the extent to which this policy is applied in practice, and any particular circumstances or contexts in which it is not.

	Policy information	Is this information specified in a current policy document? (if so, provide name of policy, date, and page numbers)	To what extent does the existing policy promote universal and effective coverage?	To what extent is this aspect of policy applied in practice?
1	The list of SRMNAH interventions to be delivered		<p>Are all PMNCH essential interventions included? If not, why?</p> <p>Are these SRMNAH interventions guaranteed in the minimum benefits package? If so, how (are there fee exemptions? Automatic enrolment in insurance?)</p>	
2	Delivery channels of SRMNAH interventions		Does the policy also cover the private sector, e.g. by setting out strategies and guidelines for public-private partnerships?	
3	Target populations for SRMNAH interventions		Are any groups (e.g. urban poor, religious minorities) excluded? Are migrant or hard to reach groups specifically mentioned as a target group? Does the policy mention how these people will be reached?	
4	Time-bound targets for scale-up of intervention coverage		<p>Does the policy mention how it will measure progress towards these targets? Are these targets realistic?</p> <p>Has a scale-up path been specified (e.g. scale-up certain interventions or certain levels of the health system, or certain target groups first)?</p> <p>Are the coverage targets linked to workforce targets?</p>	
5	Costs associated with scale-up of interventions		<p>Are costs specified in a realistic way?</p> <p>Do policymakers know the extent to which these costs are funded in their current financial plan?</p>	
6	Share of SRMNAH expenses covered by public or pooled funding		<p>Does the policy specify that out-of-pocket expenditure is to be minimized for all essential SRMNAH services?</p> <p>Does the policy include a fee exemption strategy for SRMNAH services?</p>	
7	SRMNAH budget		<p>Does it specify the reporting of SRMNAH allocation and expenditure in a separate budget line?</p> <p>Does it allow for tracking of international development partner commitments and disbursements on SRMNAH?</p>	
8	Annual timeline for the planning and approval processes for SRMNAH budget and policy		<p>Does it specify involvement of key stakeholders, including civil society?</p> <p>Does it specify a dissemination strategy to key national and subnational stakeholders?</p>	
9	SRMNAH institutional arrangements		<p>Does it specify the presence of a parliamentary subcommittee on reproductive health and related activities?</p> <p>Does it set out institutional arrangements and coordinating mechanisms for:</p> <ul style="list-style-type: none"> • a multi-stakeholder coordination group to support and monitor the implementation of SRMNAH essential interventions? • a technical working group to review and update implementations plans of SRMNAH essential interventions? <p>Does it set out institutional arrangements for SRMNAH focal person(s) in the MoH and their role in planning, coordinating and managing SRMNAH activities?</p> <p>Does it describe mechanisms to ensure accountability for resources and results?</p>	

**Key Question 3.3: Human resources for health policies—
availability, accessibility and acceptability**

Do the current policies provide sufficient information to guide workforce development, especially the SRMNAH workforce?

To what extent does the current policy context help ensure universal access to an effective SRMNAH workforce?

To what extent are current policies actually implemented?

Data collection

The following policy information should be available at national level, within the HRH, SRMNAH action plan or strategy, or the national health strategy. Some policy information may be contained in less official documents, such as departmental directives, annual review reports, etc.

Please complete the following table as for *Key Question 3.2* above.

	Policy information	Is this information specified in a current policy document? (If so, provide name of policy, date and page numbers)	To what extent does the existing policy promote universal and effective coverage?	To what extent is this aspect of policy applied in practice?
1	Time-bound targets for HRH scale-up (especially in SRMNAH)		Does the policy specify how it will measure progress towards these targets? Are these targets supported by financial resources and country capacity? Are HRH targets linked to coverage of population needs goals?	
2	Overarching strategy to meet HRH targets (especially in SRMNAH)		Does the policy clearly lay out the strategies it is prioritizing (e.g. recruitment, retention, redistribution, skill-up) by cadre and time-scale? Does the policy quantify what the expected benefits of these strategies will be?	
3	HRH recruitment targets and strategies (especially in SRMNAH)		Does the policy break down the recruitment strategy by levels of the health-care system (referral, first level, community) and different geographic areas? Does the policy encourage the recruitment of local, minority, and ethnic students? Are recruitment targets aligned with future workforce targets?	
4	HRH retention targets and strategies (especially in SRMNAH)		Does the policy set out standards for retaining and motivating the SRMNAH workforce? Does the policy specify how the success of retention strategies will be measured?	
5	HRH distribution (especially in SRMNAH)		Does the policy specify the current and targeted distribution of the workforce by cadre, at all levels of the health-care system (referral, first level, community) and in all geographic areas? Does it identify feasible strategies to re-distribute the health workforce, if this is needed?	

	Policy information	Is this information specified in a current policy document? (If so, provide name of policy, date and page numbers)	To what extent does the existing policy promote universal and effective coverage?	To what extent is this aspect of policy applied in practice?
6	HRH accessibility, targets and strategies (especially in SRMNAH)		<p>Do any of the policies specifically address how the country will reduce or remove financial, geographical and other barriers to accessing SRMNAH care?</p> <p>Do any of the policies specifically address how the country will increase access to SRMNAH care for vulnerable and disadvantaged groups, e.g. those living in remote areas, adolescents, ethnic minority ethnic groups, those living in poverty?</p>	
7	HRH acceptability, targets and strategies (especially in SRMNAH)		<p>Do any of the policies specifically address how the country will deliver SRMNAH care that is sensitive to social, cultural and traditional needs, e.g. in relation to age, gender, ethnicity, religion, language? (See the Respectful Maternity Care Charter (15) for standards of acceptability)</p> <p>Do any of the policies specifically address SRMNAH workers' perceptions and knowledge of respectful, dignified care?</p> <p>Do any of the policies specifically address how SRMNAH workers should provide care for women from vulnerable/marginalized groups, or women in a situation of abuse?</p>	
8	Costs associated with HRH scale-up		<p>Were costs specified in a realistic way?</p> <p>Do policy makers know the extent to which these costs are funded in their current financial plan?</p> <p>Does the policy outline strategies to maximize value for money from existing workforce resources?</p>	

Key Question 3.4: Human resources for health policies — quality

Do the current policies provide the right type of information to enable the delivery of quality services by the SRMNAH workforce?

To what extent does the current policy context help ensure that SRMNAH workers deliver quality services to all?

To what extent are current policies actually implemented?

Data collection

The following policy information should be available at national level, within the HRH, SRMNAH action plan or strategy (if applicable to the country concerned) or the national health strategy. Some policy information may be contained in less official documents, such as departmental directives, annual review reports, etc. Important sources of information regarding standards of care may be the relevant directorates of clinical services, as well as regulatory bodies for information on pre-service education, and professional associations for information on their own roles and functions. Please complete the following table as for Key Question 3.2 above.

	Policy information	Is this information specified in a current policy document? (If so, provide name of policy, date and page numbers)	To what extent does the existing policy promote universal and effective coverage?	To what extent is this aspect of policy applied in practice?
1	SRMNAH quality of care standards for referral-level, first-level and community-level facilities		<p>Is there a focus on woman- and newborn-centred care (person-centred care)?</p> <p>Do quality of care standards refer to the SRMNAH package of essential interventions (24)?</p>	
2	Quality standards for health facilities and availability of medical supplies/ equipment		<p>Are regular controls carried out to ensure facilities meet the required standards?</p>	
3	Quality assurance systems for education programmes, including accreditation and certification		<p>Do these systems apply to all schools, including private ones?</p> <p>Are quality assurance systems based on officially defined competencies and reviewed at least once a year?</p> <p>Are all schools accredited? Is accreditation reviewed on a regular basis?</p> <p>Are all schools certified? Is certification reviewed on a regular basis?</p>	
4	Guidelines for SRMNAH pre-service curricula, for all cadres		<p>Are the SRMNAH essential interventions incorporated into in- and pre-service education programmes and materials?</p> <p>Is the framework for quality maternal and newborn care (35) integrated into in- and pre-service education programmes and materials?</p>	
5	Guidelines for continuing professional development, for all SRMNAH cadres		<p>Do the guidelines specify criteria for quality of training for continuing professional development (effectiveness based on organizational and staff needs assessments, linked to registration, licensing and/or relicensing)?</p> <p>Does the policy aim to achieve equitable access to continuing professional development for all cadres, facility levels, genders, locations (urban and rural) and providers (public and private)?</p> <p>Are guidelines provided on the equitable provision of leadership and management development programmes for all SRMNAH cadres?</p> <p>Does the policy ensure that promotions are open to all?</p>	
6	Regulation of SRMNAH cadres		<p>Which organization, if any, is responsible for the regulation of practice of the SRMNAH cadres?</p> <p>Does the regulatory body cover all cadres active in SRMNAH care? Are there separate bodies for each professional group?</p> <p>What are the responsibilities of the regulatory body? (e.g. registration, sanctions for misconduct, standard-setting, professional ethics, advising the government on policy, accreditation of education providers, continuous professional development etc).</p>	

	Policy information	Is this information specified in a current policy document? (If so, provide name of policy, date and page numbers)	To what extent does the existing policy promote universal and effective coverage?	To what extent is this aspect of policy applied in practice?
7	Registration, licensing and relicensing mechanisms for each SRMNAH cadre, including monitoring and enforcement		<p>Are licensing and relicensing based on performance review and continuous professional development?</p> <p>Is malperformance identified and addressed effectively?</p>	
8	Functions of professional organizations/ associations		<p>Do the recognized functions include the following roles:</p> <ul style="list-style-type: none"> • Contribution to accreditation, licensing, registration or certification? • Policy advice to government? • Organized representation of health workers' interests (including salary issues, advising or representing members accused of misconduct)? • Continuous professional development for members? • Advising members on quality standards for SRMNAH care? 	
9	Performance management criteria and systems		Is performance management linked to regulatory mechanisms and sanctions?	
10	Supportive supervision standards established for SRMNAH clinical practice (referral-level, first-level, community-level)		Do standards include: supervisory responsibilities for different levels of staff; frequency of visits; linkages with other technical programmes; content; use of observation of practice and checklists; feedback and problem-solving methods?	
11	Career path		Does the job classification system identify families of jobs with distinct skills and allow for promotion (high, medium, low)?	
12	Authorization of service provision and guidance on task shifting/ sharing		Does the policy specify that in settings with limited health workforce, task shifting/sharing should be implemented alongside other strategies that are designed to increase the total numbers of health workers in all cadres and should not be seen as a substitute for other investments in HRH?	
13	Maternal death surveillance and response system		<p>Does the policy specify who has responsibility for maternal death surveillance and response?</p> <p>Does the policy set out the mechanisms by which findings of maternal death surveillance and responses will be used for improvement?</p>	
14	Data review process for HRH prioritization		<p>Are the characteristics and frequency of reviews specified (e.g. sector reviews, health surveys, labour market analysis, situational analysis, at national and local levels)?</p> <p>Is the use of data to identify priority areas for implementation and to develop strategic and implementation plans described?</p>	

Module 3 post-assessment considerations

Now that key information on policies related to SRMNAH and the SRMNAH workforce has been compiled, it is important to consider the following questions and apply the answers in Phase 3 of the SRMNAH Workforce Assessment.

- Are there specific “quick wins” (i.e. changes that are both important and immediately feasible) that could be made by modifying certain aspects of the policy environment?
- General ones could include:
 - improving coherence between specific policies (e.g. in terms of targets, costs or conceptual frameworks)
 - ensuring that policies are evidence based (e.g. in terms of which competencies or interventions save lives)
 - ensuring that strategies prioritize certain policy actions and provide a clear road map.
- Are there specific “quick-wins” that could be made by devoting resources to ensuring that certain aspects of policy are better implemented in future?
- What are the policy implications for the longer term?

The assessment team will already have commenced important policy dialogue with stakeholders. As stated for Phase 1, this will probably be an ongoing process, and information sourced for this module will help to guide these discussions.

Country context: Financing

Overview

An examination of the mechanisms for financing SRMNAH interventions is the next step. Financing is one of the most important factors affecting the level, distribution and performance of the SRMNAH workforce, and the national assessment team therefore needs to examine the availability of financing for salaries and other important inputs.

This module provides important indicators on SRMNAH budgeting and estimates, health financing, education costs, salaries and incentives. It will assist the collection and collation of important data to be applied in later modules of this Handbook.

MODULE 4 OBJECTIVE:

To **collect** and collate data on **financing mechanisms** for SRMNAH interventions.

Much of this information may already have been collected in order to report on tracking resource expenditure in women’s and children’s health (6,36). If not, this process will assist in collecting those data.

Applying the module

Key Question 4.1: Financing SRMNAH interventions

How are SRMNAH workforce development interventions financed?

Data collection

The following table provides questions to help the national assessment team collect information on financing SRMNAH interventions. The final column may be used to answer each question and record data to be used in later modules.

	Information	Data from primary or secondary sources
1	Does the National Health Account have a SRMNAH (and/or variant) sub-account, and if so, what percentage of the total health budget does it make up?	
2	Is there a separate budget line for SRMNAH interventions?	
3	What percentage of the SRMNAH budget is allocated to human resource management and human resource development annually?	
4	What system level unit costs need to be taken into account for skilling up, scaling up, or skill mix adjustment in the costed strategies?	
5	Are any other organizations providing funding for SRMNAH?	
6	Is the country preparing the transition to sustainable domestic financing of SRMNAH by 2030, in accordance with the guidance of the Global Financing Facility? (37)	

Key Question 4.2: Salaries and incentives

What salaries and incentives are in place for the SRMNAH workforce?

Data collection

Salaries and incentives are important determinants of the SRMNAH workforce's performance. The table below provides questions to guide data collection in this important area. Such information should be available at national level and may be entered into the final column by the national assessment team.

	Information	Data from primary or secondary sources
1	What are the average salary levels of each SRMNAH workforce cadre?	
2	What incentives/personal emoluments (in addition to salaries) are available for the SRMNAH workforce?	
3	How does location affect salary levels of the SRMNAH workforce? (Average salary ratio in rural:urban areas, by cadre)	
4	How does gender affect salary levels of the SRMNAH workforce? (Ratio of average male:female salary levels, by cadre)	
5	What are salary levels as a proportion of total recurrent government expenditure on SRMNAH programming?	
6	How do salaries compare to other public and private sector jobs (e.g. teachers, private hospitals)? (Ratio of SRMNAH workforce salary levels to comparable professionals)	
7	What formal or informal methods, monetary or non-monetary, are used to influence, encourage or reward worker performance or to motivate employees?	
8	What formal or informal methods, monetary or non-monetary, are used to influence, encourage or reward worker performance or to motivate employees to work in underserved areas?	

Key Question 4.3: Financing education

How is SRMNAH education financed?

Data collection

The final area of financing to be evaluated by the national assessment team concerns education. Answers to the following questions will provide important information for use in later modules of the SRMNAH Workforce Assessment. In estimating costs it is necessary to consider elements such as: buildings and classroom space, clinical practice labs, equipment and supplies, textbooks, access to journals and internet, staff and administrative costs, etc. For in-service training, consider the costs of location and the different training methods used.

	Information	Data from primary or secondary sources
1	What is the cost of pre-service education, disaggregated by cadre where possible (including fees and housing)?	
2	What is the cost of in-service training, disaggregated by cadre where possible?	

Module 4 post-assessment considerations

Now that key information on financing the SRMNAH workforce has been compiled, it is important to consider the following questions and apply the answers in Phase 3 of the SRMNAH Workforce Assessment:

- Do the available financing mechanisms cover the full needs of the development, deployment and retention of the SRMNAH workforce, and do they ensure quality of care?

Supply: The SRMNAH workforce

Overview

Module 5 examines the composition of the SRMNAH workforce and determines which cadres are doing what, through a series of key questions about policies, education and training, “stock”, skill-mix and functions of the SRMNAH workforce as they relate to essential interventions for maternal and newborn health. It provides guidance and tools which enable the national assessment team to generate data so that any information gaps identified during Phase 1 of the SRMNAH Workforce Assessment can be filled.

MODULE 5 OBJECTIVE:

To **examine the composition** (stock, skill-mix and functions) of the **SRMNAH workforce** across the **SRMNAH continuum of care**.

Key concepts

Cadre

A group of people specially trained for a particular purpose or profession.

Stock

Absolute numbers of health workers.

Full-time equivalent

A unit to measure employed persons in a way that makes them comparable although they may work a different number of hours per week, for example, if they work part time or across different hospital departments.

Skill mix

Skill mix can refer to the mix of posts in an establishment, the mix of employees in a post, the combination of skills available at a specific time, or the combinations of activities that comprise each role (rather than the combination of different job titles). Skill mix can be examined within occupational groups, or across different groups, such as nurses and doctors, or between different sectors of the health system.



Save the Children/Andy Hall

Applying the module: Conducting an assessment of SRMNAH workforce supply

Key Question 5.1: Policies for the essential interventions

How do existing policies on the provision of SRMNAH services align with the essential interventions list?

Do existing policies cover SRMNAH interventions not listed in the essential interventions? If so, which additional interventions are listed?

Data collection

Policy documents relating to the provision of SRMNAH services will probably be available at national level, and may have been sourced by the national assessment team for Module 3. It may be helpful to revisit these policies now and record below which areas of the essential interventions (see Figure 2 of this Handbook) are covered by each policy. For each SRMNAH area, also note any additional interventions not covered by the essential list.

	SRMNAH area covered by policy	Policy name and date (from Module 3)	Content (as per essential interventions list + any additional interventions)	Area(s) not covered by policy
1	Adolescence and pre-pregnancy			
2	Pregnancy (antenatal)			
3	Childbirth			
4	Postnatal (mother)			
5	Postnatal (newborn)			
6	Cross-cutting community strategies			

Further in-depth investigation

To provide further information on policies as they relate to the provision of essential interventions, it may be necessary to conduct qualitative research. Questions to ask policymakers or MoH representatives include the following:

- What strategic documents are available to guide the provision of SRMNAH essential interventions (e.g. National Health Plan, National SRMNAH Plan/Strategy/Roadmap, National HRH Plan/Strategy/Roadmap)?
- Have any strategies or strategic documents been developed to fill any identified gaps in these policies?
- Are there significant gaps between national policies on SRMNAH essential interventions and the actual provision of SRMNAH services in the country?
 - If so, for which interventions?
 - If so, what are the reasons for these gaps?

- Have any strategies or strategic documents been developed to fill those gaps?
 - Have any of these strategies been implemented
 - If so, what were the results?

Key Question 5.2: Curricula for the essential interventions

How do existing curricula for SRMNAH workforce cadres align with the essential interventions list?

Do existing curricula cover SRMNAH interventions not listed in the essential interventions? If so, which additional interventions are covered?

Data collection

It is important to map the education and training of SRMNAH workforce cadres against the list of essential interventions for SRMNAH. Curricula documents relating to SRMNAH workforce education will probably be available at national level, and may already have been sourced for Module 2. The assessment team can use the table below to record which areas of the essential interventions are covered by curricula for each cadre. Any additional interventions covered in curricula that are not in the essential list should also be recorded.

Cadre	Curriculum (by certificate/degree/course and provider)	Content of curriculum (as per essential interventions list + any additional interventions)

Further in-depth investigation

To provide further information on curricula for SRMNAH workforce cadres as they relate to the provision of essential interventions, it may be necessary to conduct qualitative research. Annex B provides qualitative research tools that will enable the national assessment team to collect this in-depth information, including questions the assessment team may ask of education and training programme managers. To collect data on this key question, look for tools, questions or segments of tools in Annex B labelled Module 5: Key Question 5.2, and choose those most appropriate for the national assessment.

Key Question 5.3: Competencies

Which competencies for each cadre are needed to provide the essential interventions?

Data collection

It is also important to know the competencies of each cadre in relation to the essential interventions they are providing. Competencies here include the scope of each cadre's work and the essential skills each health worker must demonstrate for certification, accreditation, registration, licensing and professional recognition. The following table can be used as a guide for compiling this information.

Please note that this information forms part of the priority data requirements for the modelling in Phase 3 of the assessment.

Cadre	SRMNAH essential competencies (defined by regulating authorities, professional bodies, role definitions, policy documents etc.)	Specific SRMNAH essential interventions covered by these competencies

Further in-depth investigation

It may be necessary to conduct qualitative research, such as interviewing representatives of regulating authorities, professional bodies or policymakers, to obtain further information on the competencies of the SRMNAH workforce. Annex B provides qualitative research tools that will enable the national assessment team to collect this in-depth information. To collect data on this key question, look for tools, questions or segments of tools in Annex B labelled Module 5: Key Question 5.3, and choose those most appropriate for the national assessment.

Key Question 5.4: Roles and functions

What are the normative roles and functions of the SRMNAH workforce?

What are the actual roles and functions of the SRMNAH workforce?

Who are the cadres of health-care staff providing SRMNAH care across the essential interventions continuum of care?

How do these differ by facility level (primary, secondary, tertiary)?

Data collection

It is also important to determine which cadres of health workers are doing what within SRMNAH services so that policy options for scaling up or skilling up the health workforce can be formulated.

Below are two templates for compiling data on SRMNAH workforce cadres and the essential interventions which they are involved in providing. The first table focuses on the normative or officially recognized roles and functions of the SRMNAH cadres; the second table focuses on the roles and functions that the SRMNAH cadres actually perform, whether as part of their normative role or not.

These tables may be used as a guide to collect and present information, but should be adapted to the specific needs of this national assessment. For each cadre at each facility level, record the essential interventions that form part of their roles and functions at each stage of the SRMNAH continuum (adolescence, pre-pregnancy, pregnancy, childbirth, postnatal, cross-cutting community strategies). The PMNCH essential interventions are provided for reference in Figure 2 of this Handbook, but any other important interventions provided in the country should also be recorded.

Please note that this information forms part of the priority data required for the modelling in Phase 3 of the assessment.

Normative roles and functions

Facility level	Cadres	Adolescence and pre-pregnancy	Pregnancy	Childbirth	Postnatal (mother)	Postnatal (newborn)	Cross-cutting community strategies
Primary	<i>Cadre 1</i>						
	<i>Cadre 2</i>						
	<i>Cadre 3</i>						
Secondary	<i>Cadre 1</i>						
	<i>Cadre 2</i>						
	<i>Cadre 3</i>						
Tertiary	<i>Cadre 1</i>						
	<i>Cadre 2</i>						
	<i>Cadre 3</i>						

Actual roles and functions

Facility level	Cadres	Adolescence and pre-pregnancy	Pregnancy	Childbirth	Postnatal (mother)	Postnatal (newborn)	Cross-cutting community strategies
Primary	<i>Cadre 1</i>						
	<i>Cadre 2</i>						
	<i>Cadre 3</i>						
Secondary	<i>Cadre 1</i>						
	<i>Cadre 2</i>						
	<i>Cadre 3</i>						
Tertiary	<i>Cadre 1</i>						
	<i>Cadre 2</i>						
	<i>Cadre 3</i>						

Further in-depth investigation

To provide more in-depth information on each cadre's actual role in providing SRMNAH services, it may be necessary to conduct qualitative research. This may be done through interviews with health workers at different facility levels. Annex B provides a list of qualitative research tools that will enable the national assessment team to collect this in-depth information. To collect data on this key question, look for tools, questions or segments of tools in Annex B labelled Module 5: Key Question 5.4, and choose those most appropriate for this national assessment.

The *Last Ten Emergency Obstetric Patients' Pathways Mapping tool* (available in Annex B) may also provide valuable insights into the actual roles and functions of health workers within facilities.

Key Question 5.5: Skill mix

What is the recommended skill mix at primary, secondary and tertiary facilities to provide the essential interventions?

What is the actual skill mix at primary, secondary and tertiary facilities to provide the essential interventions?

Data collection

It is important to identify the recommended skill mix at different levels of service provision for the essential interventions. This information may be sourced at a national level from professional guidance or policy documents.

Below are templates for compiling data on skill mix. This matrix may be used as a guide to collect and present information but should be adapted to the specific needs of this assessment.

Facility level	Recommended skill mix (employees in post/skills available/activities conducted)				
	Adolescence and pre-pregnancy	Pregnancy (antenatal)	Childbirth	Postnatal (mother)	Postnatal (newborn)
Primary					
Secondary					
Tertiary					

Further in-depth investigation

To provide information on the actual skill mix available at different levels of service provision, qualitative research will probably need to be conducted at facility level. Annex B provides qualitative research tools that will enable the national assessment team to collect this in-depth information, and includes suggested questions such as:

- What team is in place to assist during (pre-) pregnancy, labour and delivery and in the postnatal period?
- Do the current staff at this facility have the skill mix needed to provide quality maternal and newborn health services? Why, or why not?
- Do the staff work as a team and coordinate their tasks?

To collect data on this key question, look for tools, questions or segments of tools in Annex B labelled Module 5: Key Question 5.5, and choose those most appropriate for this national assessment.

Key Question 5.6: Size and distribution

What is the “stock” (headcount) of the SRMNAH workforce?

Data collection

Understanding the “stock” (headcount) of the SRMNAH workforce is important. It is necessary to know the density levels of SRMNAH workforce cadres, and these are examined in indicators 1 and 2 below.

However, these numbers may mask differences in the distribution of human resources along age, gender, geographic, facility level, and sectoral lines. For this reason, indicators 1, 2 and 3 seek to discover distributional imbalances based on these factors. Such inequities in workforce distribution can bring about a number of negative health outcomes for SRMNAH target populations, and should therefore be considered here.

Indicators 4, 5 and 6 evaluate workforce distribution to other sectors and full-time equivalency, while indicator 7 provides important information on the management of the SRMNAH workforce. The following table presents these indicators, together with space for the national assessment team to record data collected. The data required to answer this key question are often available at national level.

Priority data requirements for the modelling in Phase 3 are highlighted with an * in the table below.

	Indicators	Data from primary or secondary sources
1*	Headcount of each SRMNAH cadre (all numbers to be disaggregated by age, gender and geographic location, facility level, and public/private/other where possible)	
2	Density per 1000 population of each SRMNAH cadre (all numbers to be disaggregated by age, gender and geographic location, facility level, and public/private/other where possible)	
3	Density per 1000 births of each SRMNAH cadre (all numbers to be disaggregated by age, gender and geographic location, facility level, and public/private/other where possible)	
4	Percentage of all active SRMNAH professionals working in the private sector, army or police	
5	Percentage of all active SRMNAH professionals in each cadre who are in part-time employment, by age group and facility type	
6*	Percentage of working hours spent by each cadre on providing SRMNAH services (estimates)	
7	Percentage of all active SRMNAH professionals of each cadre working at the administrative level (central, regional, district)	
8*	Statutory retirement age for each SRMNAH cadre	

Further in-depth investigation

Where information on these indicators was not sourced during Phase 1 of the national assessment process, it may be necessary to generate new data. A number of tools are available to help the national assessment team collect and collate missing SRMNAH workforce data. These should be chosen and adapted according to the gaps identified in the document review (Phase 1) and the feasibility of implementation for national assessments.

Annex B provides qualitative research tools to enable the national assessment team to collect this in-depth information. To collect data on this key question, look for tools, questions or segments of tools in Annex B labelled Module 5: Key Question 5.6, and choose those most appropriate for this national assessment.

Module 5 post-assessment considerations

Now that key information on the education and training, composition, skill mix, size and distribution of the SRMNAH workforce has been compiled, it is important to consider the following questions and apply the answers in Phase 3 of the SRMNAH Workforce Assessment:

- Are all essential interventions covered by current policies and curricula?
- Where current policies and curricula are not aligned with the essential interventions, what steps would address these discrepancies?
- What are the future considerations for a health benefits package provided in country?
- Are the current stock (headcount), skill mix and functions compatible with current and future prospects?
- Which cadres might it be best to skill up?
- Which cadres might need to be scaled up?
- Where are the gaps in coverage across the continuum of care?

Supply: health labour market analysis

Overview

This module sets out the first steps towards a health labour market analysis. The resulting data will be used for impact modelling in Phase 3.

A labour market analysis of the health workforce involves modelling and forecasting approaches to ensure the right balance between the supply of health workers, the demand and need for them and their expected compensation (wages and salaries). This involves considering how financial and capital inputs into the workforce can best meet expected health service outputs, and projected health outcomes, costs and equity goals. This module provides insights into:

- the flow of potential health workers from secondary education to the functional provision of services
- gaps in the flow where potential health workers leave for other education streams or professions
- the final supply of health workers.

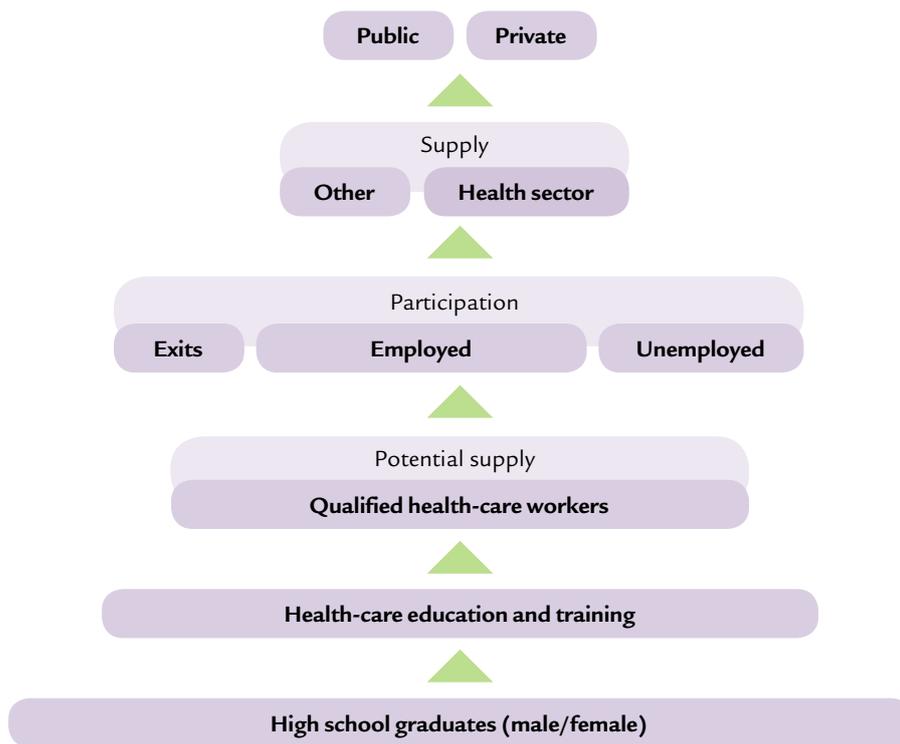
MODULE 6 OBJECTIVE:

To **examine** the **enabling factors, barriers** and **bottlenecks** in the pathways from entering **education** to becoming (and remaining) an employed health **professional**.



Jhpiego/Kate Holt

FIGURE 8: **Health labour market**



Source: Adapted from Vujicic and Zurn (38)

Key concepts

Health labour market analysis

This diagram shows the flow of high school leavers into health-care education, and then into the job market. The supply of qualified health workers can be affected by factors in the education and employment sectors.

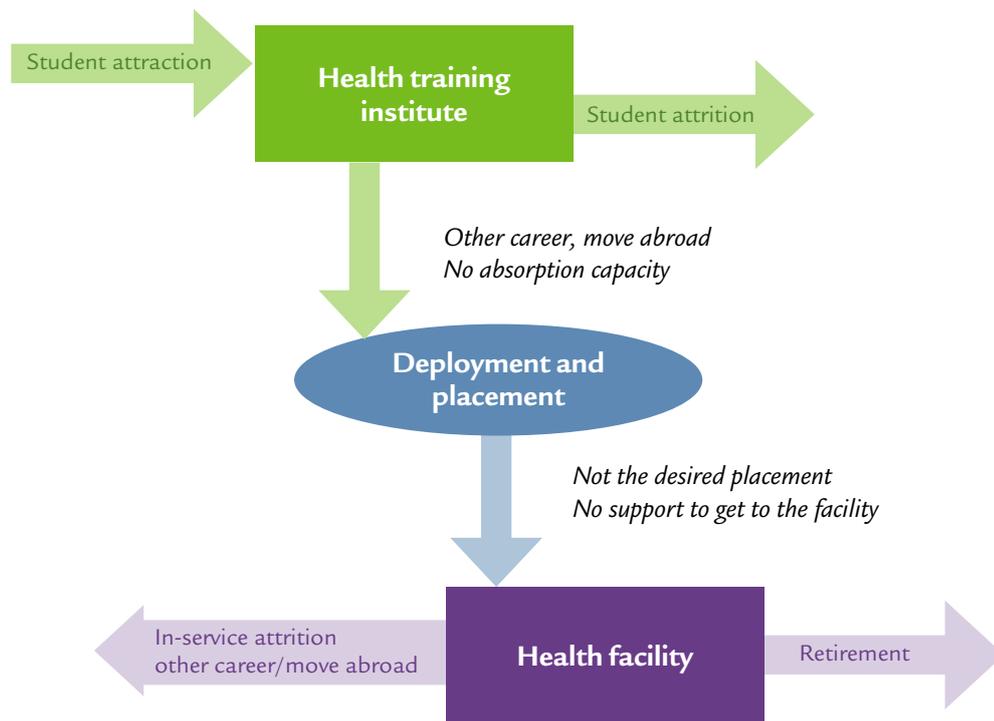
The potential supply of health workers is affected by decisions such as how many places are available for students on health courses, how many are enrolled, and how many complete the course without dropping out. This in turn determines how many graduates there will be.

Once qualified, graduates will either remain in-country or migrate to other countries. At this point factors in the employment sector come into play.

Those graduates who remain in the country will either move into a job in the health sector, move into a job in a different sector (possibly due to more attractive conditions), be unemployed but seeking work, or leave the workforce due to factors such as disability, retirement, or having children. The time it takes for new graduates to be deployed in a job is also important, as long delays result in loss of skills and competency.

Counting the numbers of graduates employed in the health sector allows the health-care workforce participation rate to be calculated. This rate depends on a number of factors, such as health workers' willingness to work, their age, gender, family situation and household income levels, and the salary offered compared with other employment sectors.

FIGURE 9: **Inflows and outflows from the health workforce**



We have defined the following terms below:

Labour market

A labour market is the place where labour services are voluntarily bought and sold.

Pipelines to the SRMNAH workforce

Pipelining provides a projection of the number of students needed to balance projected supply and demand in a given year.

Potential supply of HRH

The number of individuals who are qualified to work as health-care professionals within a country.

Workforce participation

The number of individuals qualified and willing to work within a country.

Supply of HRH

The number of properly qualified individuals who are willing to work in the health-care sector.

Demand for HRH

The actual level of HRH that governments, institutions and individuals are willing to hire.

Applying the module: Conducting a health labour market analysis

Key Question 6.1: Secondary education pipeline

What are the secondary education pipelines to the SRMNAH workforce?

Data collection

Typical pathways to SRMNAH education require completion of secondary school, which may involve 12 years of study. However, the pathways vary greatly from country to country.⁵

The table below can help the assessment team collect the necessary information.

	Information	Data from primary or secondary sources
1	Requirements for entry into SRMNAH education from secondary education (academic scores, age, gender, interest in the profession, etc.)	
2	Processes and overseeing bodies	
3	Number of secondary students meeting requirements per year	

Further in-depth investigation

For further information on secondary education pipelines to SRMNAH education, it may be necessary to conduct qualitative research. Health workers might be asked why they chose this occupation, and whether there was sufficient awareness on the possibility of choosing this occupation. This may provide insights into what motivated secondary school pupils' career choices.

A full list of possible questions for health workers can be found in the qualitative research tools in Annex B. To collect data on this key question, look for tools, questions or segments of tools in Annex B labelled Module 6: Key Question 6.1, and choose those most appropriate for this national assessment.

Key Question 6.2: Health-care education pipeline(s)

What are the health-care education pipelines to the SRMNAH workforce?

What are the routes for entry to the SRMNAH workforce (prerequisite education)?

What is the number of admissions into health-care education institutes?

What are the rates of student attrition in health-care education?

Data collection

This part of the module involves gathering information to determine the health-care education and training take up rate. To guide data collection, a set of indicators is provided below. Priority data requirements for the modelling in Phase 3 are highlighted with an * in the table below.

⁵ For example, in Malawi, those wishing to study midwifery need to apply to the College of Nursing and Midwifery and pass an examination in order to gain a place. However, in Ethiopia, high school students with test scores in a certain range are assigned to midwifery courses without their knowledge and irrespective of their interest (66).

	Indicators/information	Data from primary or secondary sources
1	Number, type and location of schools for the SRMNAH workforce	
2*	Years of study required to qualify in each SRMNAH cadre	
3	Proportion of practical training (skills lab and on-site) in overall pre-service education for the SRMNAH workforce	
4	Estimated cost per student per course	
5	Proportion of the SRMNAH education workforce completing competency-led in-service training in the last year	
6	Presence of accreditation procedures for SRMNAH curricula and education institutions	
7	Availability of sufficient faculty to teach the necessary theoretical and practical skills	

Further in-depth investigation

To provide further information on pipelines to the SRMNAH workforce, and on each cadre's role in providing SRMNAH services, it may be necessary to conduct qualitative research. Annex B provides tools and questions to help the national assessment team undertake this further in-depth investigation. Questions the national assessment team might ask include:

- Which school did you attend and how many people were in your class?
- Do you have any recommendations for improving retention of SRMNAH students?

To collect data on this key question, look for tools, questions or segments of tools in Annex B labelled Module 6: Key Question 6.2, and choose those most appropriate for this national assessment.

Key Question 6.3: Potential supply

What are the numbers of health workers prepared to work (potential supply):

- by health occupation
- by gender
- by location (urban versus rural)
- graduates of education programmes
- immigration and emigration of workers?

What are the numbers of vacancies by health occupation, facility, public and private sector, gender, location (urban versus rural) according to:

- unfilled positions
- turnover
- time-to-hire?

What are the rates of attrition from potential supply to supply?

Data collection

Potential supply

Graduates of health-care education courses and in some cases migrants from other countries contribute to the pool of qualified health workers who make up the potential supply of the SRMNAH workforce. Data about this potential supply provide a good picture of those people who could be employed and participate in the workforce.

Below are examples of information that can be used to determine the country's potential supply and the actual supply of the SRMNAH workforce.

Priority data requirements for the modelling in Phase 3 are highlighted with an * in the table below.

Outflows from the workforce

	Indicators/information	Data from primary or secondary sources
1*	Number of student enrolments in SRMNAH education in the past 3 years, by cadre and school/education institution	
2*	Number of students in SRMNAH education for the past 3 years, by cadre and school/education institution	
3*	Number of new graduates from SRMNAH education in the past 3 years, by cadre and school/education institution	
4*	Projected number of new graduates from SRMNAH education in the next 3 years, by cadre and school/education institution	
5*	Number of students who enrolled in SRMNAH education in the past year who did not graduate as anticipated, by cadre, %	
6*	Number of graduates who are employed in the provision of health care, for each SRMNAH cadre, within one year of graduating, %	
7*	Number of immigrant workers, for each SRMNAH cadre and age group, entering employment in the past 3 years	

It is also important to consider outflows from the workforce due to retirement, resignation, dismissal, redundancy or death. This information might highlight particular issues: for example migration, an ageing workforce or the impact of HIV/AIDS.

Information about the number of vacancies and filled positions in SRMNAH per year will provide insight into the flow of health workers out of particular jobs and into others, by location, sector and facility. It will also reveal any shortfalls of workers.

The information called for in the table below will show the number of graduates entering jobs, by profession, the rate at which they leave and the overall ratio of incoming staff to outgoing staff.

Priority data requirements for the modelling in Phase 3 are highlighted with an * in the table below.

	Indicators/information	Data from primary or secondary sources
1*	Attrition numbers for each SRMNAH cadre	
2	Attrition numbers for each facility type	
3	Attrition numbers for public and private sectors	
4	Proportion of those leaving who are female	
5	Proportion of those leaving by different locations (urban versus rural)	
6	Time taken to hire by each SRMNAH cadre, facility type, public and private sector, gender and location (urban versus rural) per year	
7	Number of public sector positions available annually for each SRMNAH cadre.	
8	Unfilled positions for each SRMNAH cadre, facility, public and private sector, gender and location (urban versus rural) per year	
9	Rates of unemployment for each SRMNAH cadre, gender and location (urban versus rural)	

Further in-depth investigation

The supply of the SRMNAH workforce is affected by individual worker decisions that are the result of personal and employment sector factors. These include:

- Migration decision (stay in the country or go to another where there may be more attractive wages and living conditions)
- Employment decision (work or not due to family and personal circumstances)
- Sector decision (health care or other)
- Choice of children's schooling affects residential and employment location
- Location decision (urban or rural, village or city)
- Dual employment (private and public sector)
- Productivity (patient volume and quality of care)

The rates of actual supply will reflect the influence of these factors and any strategies that have been implemented to attract potential workers to employment in the health-care sector to deliver SRMNAH services.

To provide further information on the factors that affect health workers' participation in the workforce, tools provided in Annex B contain questions to better understand workers' decisions from their perspective. These include:

- What is the image and status of the professional assisting with childbirth in this country? Give examples and report statements heard.
- What is currently being done to ensure retention of SRMNAH workers?

To collect data on this key question, look for tools, questions or segments of tools in Annex B labelled Module 6: Key Question 6.3, and choose those most appropriate for this national assessment.

Some mechanisms that affect the deployment and employment of the SRMNAH workforce are considered next.

Key Question 6.4: Recruitment, contracting and deployment mechanisms

What formal processes for recruitment and contracting are in place?

- Are they based on established criteria?
- Are they processes documented and used consistently?

What formal mechanisms for deployment are in place?

- Do they include incentives for postings in rural, hardship or hard to reach areas?

Data collection

Workforce flows also depend on policy and management issues. Module 3 involved the collation of a number of HRH policies; the progress made with regard to their use and their effect on the SRMNAH workforce supply should now be examined.

This table can be used to collect that information.

	Policy Name	Examples
1	Recruitment	
2	Contracting	
3	Deployment ⁶	

Further in-depth investigation

A number of other tools are available to help collect data on this question and can be accessed online. Look for tools, questions or segments of tools in Annex B labelled Module 6: Key Question 6.4, and choose those most appropriate for this national assessment.

⁶ The Rapid Hiring Plan provides useful examples. For an example from Kenya, see: <http://www.capacitykenya.org/wp-content/uploads/2013/07/Rapid-Hire-focus-June-30-2013-final.pdf>.

Key Question 6.5: Attraction and retention mechanisms

What attraction and retention mechanisms are in place:

- for each health cadre
- for each facility type
- for the public and private sectors
- for different genders
- for different locations (urban versus rural)?

Data collection

Health workers respond positively to incentives that affect their participation in the labour market. These incentives can include the following:

Financial	Non-financial
Salaries	Working conditions (eg. health benefits, housing, pension, job security)
Bonuses/allowances	Promotion opportunities/career paths
Car/housing loans	Continuing education opportunities.

In order to understand the factors that persuade health workers to take up certain jobs, answers to the key questions above are needed. Complete the table below to clarify these issues (the data on salaries and other financial incentives collected in Module 4 may be useful here).

Attraction mechanisms

	Financial incentives	Data from primary or secondary sources
1	Are competitive salaries offered as an attraction mechanism?	
2	Are bonuses/allowances offered as an attraction mechanism?	
3	Are loans offered as an attraction mechanism?	
4	Are any other financial incentives offered (e.g. transportation/food vouchers, childcare, child education etc.)?	

	Non-financial incentives	Data from primary or secondary sources
1	Working conditions (e.g. flexible working hours, maternity leave, etc.)	
2	Promotion opportunities	
3	Continuing education opportunities	
4	Other non-financial incentives (e.g. wellness services, counselling, etc.)	

Further in-depth investigation

To obtain further information on attraction and retention mechanisms, use the tools in Annex B, including the questions about health workers' perspectives on their decisions. Look for tools, questions or segments of tools in Annex B labelled Module 6: Key Question 6.5, and choose those most appropriate for this national assessment.

Key Question 6.6: Actual supply—full-time equivalent, available working time, hours worked and absenteeism

What days and hours are worked by qualified health workers:

- by health cadre
- by facility
- in the public and private sectors, and in dual practice
- by gender
- by location (urban versus rural)?

What are the absentee rates for qualified health workers:

- by health cadre
- by facility
- in the public and private sectors, and in dual practice
- by gender
- by location (urban versus rural)?

Data collection

Answers to the questions in the following table will clarify how many days a year SRMNAH workers work, and what they do when they are working.

Priority data required for the modelling in Phase 3 are highlighted with an * in the table below.

	Indicator	Data from primary/secondary sources
1*	Average number of working days per week, for each SRMNAH cadre (disaggregated by gender, location, public versus private sector)	
2*	Average number of holiday days per year, for each SRMNAH cadre (disaggregated by gender, location, public versus private sector)	
3	Average number of days of sick leave per year, for each SRMNAH cadre (disaggregated by gender, location, public versus private sector)	
4	Average number of days of in-service training per year, for each SRMNAH cadre (disaggregated by gender, location, public versus private sector)	
5*	Average number of days of absenteeism per year, for each SRMNAH cadre (disaggregated by gender, location, public versus private sector)	
6*	Number of hours worked per day on average by health workers employed full time, for each SRMNAH cadre (disaggregated by gender, location, public versus private sector)	
7*	Percentage of available working time devoted on average by each SRMNAH cadre to health services activities: activities performed by all members of each cadre for which regular statistics are collected, see the Workload Indicators of Staffing Need (WISN) manual (39) (disaggregated by gender, location, public versus private sector)	
8	Percentage of available working time devoted on average by each SRMNAH cadre to support activities: activities performed by all members of each cadre for which regular statistics are not collected, see the WISN manual (39) (disaggregated by gender, location, public versus private sector)	
9	Percentage of available working time devoted on average by each SRMNAH cadre to additional activities: activities performed only by certain members of each cadre for which regular statistics are not collected, see the WISN manual (39) (disaggregated by gender, location, public versus private sector) (Optional: record data if available)	

There is a difference between the figure obtained by multiplying the number of workers by the number of hours they are contracted to work and the actual number of hours worked in practice. For example, health workers may not be available to work 40 hours a week due to a number of reasons, including dual practice in the public and private sector. This affects health worker performance and productivity.

Completing this table will reveal a fuller picture of the hours worked according to the interventions that the SRMNAH workforce must deliver. It can be used to gather information about health workers in both public and private facilities, male and female workers, and urban and rural health workers. Please refer back to the list of essential interventions in Figure 2 (page 6).

This information is a priority data requirement for the modelling in Phase 3 of this assessment.

Hours per week and intervention						
Cadre	Adolescence and pre-pregnancy	Pregnancy (antenatal)	Childbirth	Postnatal (mother)	Postnatal (newborn)	Cross cutting community strategies

Consider the following questions

- How many hours per week do the main SRMNAH worker categories work (including on-call hours)?
- How does this compare with the official number of hours per week?
- What are the trends in average numbers of patients seen weekly for each of the main SRMNAH worker categories?

Further in-depth investigation

Also relevant are factors that impact on SRMNAH workforce absenteeism. These could include:

- Voluntary absence due to annual leave or sick leave, dual practice, transport problems
- Involuntary absence due to social obligation rather than for personal interest.

To obtain further information about the time health workers spend on SRMNAH related activities use the tools in Annex B, including the questions about health workers' perspectives on their decisions. To collect data on this key question, look for tools, questions or segments of tools in Annex B labelled Module 6: Key Question 6.6, and choose those most appropriate for this national assessment.

Module 6 post-assessment considerations

Once this Module has been completed, consider the following questions:

- What are the key barriers preventing inflows at each stage in the supply process?
- What are the key barriers leading to outflows at each stage in the supply process?
- What policy solutions can help to overcome these barriers?

Reviewing this module will help to identify the barriers and possible solutions to bottlenecks in the SRMNAH workforce supply. Consider:

- At which stage in the supply process do the largest outflows of potential health-care staff take place?
- Which outflows have the biggest impact on availability of staff?

In the light of the information obtained, consider what factors might be preventing students from applying or being eligible for entry into SRMNAH courses, and what strategies might address these, e.g. programmes to ensure diversity (social, linguistic and ethnic) of high school graduates. Do the MoH, Ministry of Education, Nursing/Midwifery Colleges, Medical Colleges and/or other education institutions have plans to change secondary school entry requirements? Such changes could affect the numbers of eligible secondary school students in the education pipeline.

Breaks in health-care education pipelines to the SRMNAH workforce may involve factors affecting student retention, such as poor academic performance, financial constraints, and other personal circumstances including childbearing, health problems and inadequate housing. Useful strategies to prevent students leaving their course could include the provision of academic advice, tutoring for non-native speakers, affordable child care, financial aid, career counselling and guaranteed placement upon successful completion of studies. These strategies should be considered throughout the duration of the education course to help students complete their studies, and could be incorporated into existing policies related to admissions criteria and selection procedures.



Toussaint Mbaitoubam

THE
ASSESSMENT
FRAMEWORK

Phase 3: Data analysis and synthesis

Objectives of Phase 3

The objectives of Phase 3 are to analyse and synthesize the core data set gathered throughout Phases 1 and 2 of the Assessment, to identify the gap between the SRMNAH need and the workforce availability, and to formulate policy options and costed scenarios for SRMNAH workforce strengthening.

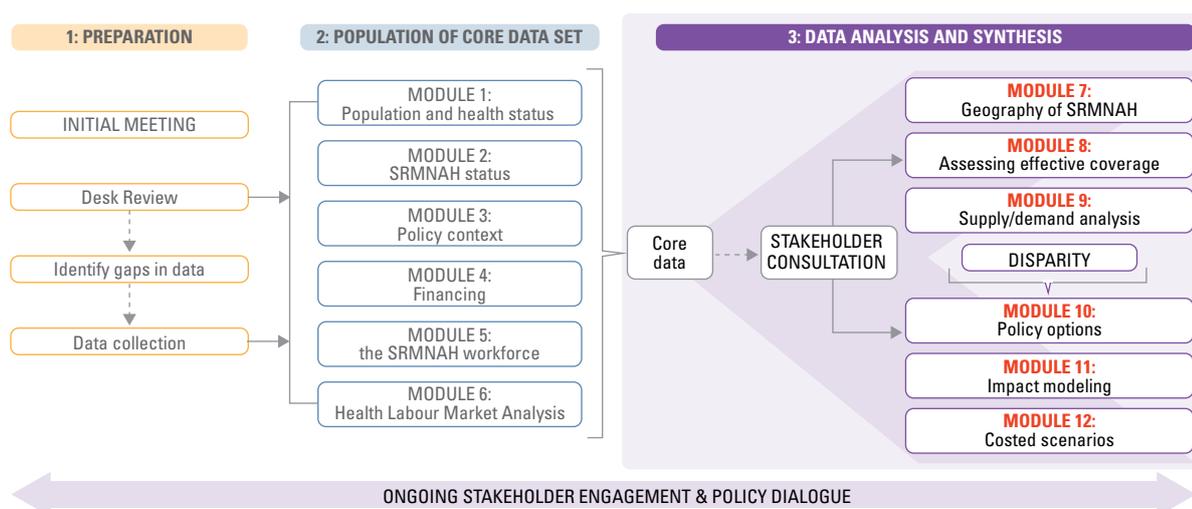
During Phase 3, the national assessment team may wish to engage external consultants to provide technical assistance with the modelling and analysis. The expert organizations who contributed to develop this guidance may be contacted for more information (see Annex D).

Separate modules for each step of the analysis process in Phase 3 are included below.

Output of Phase 3

The anticipated output of Phase 3 is a national SRMNAH assessment report incorporating the findings of Phases 1, 2 and 3. This report will provide an in-depth analysis of the country context, the population need for and effective coverage of SRMNAH services and the SRMNAH workforce, as well as policy options and costed scenarios for scaling up effective coverage.

FIGURE 10: **National Assessment Framework Phase 3: Data analysis & synthesis**



Phase 3 activities

Phase 3 has six modules (Modules 7-12). These focus on in-depth analysis and modelling using the core data set sourced during Phases 1 and 2.

- Module 7 conducts a geographic analysis of the SRMNAH workforce.
- Module 8 models effective coverage of the SRMNAH workforce.
- Module 9 conducts a supply and demand analysis.
- Modules 10-12 examine policy options, impact modelling and costed scenarios for scaling up coverage of SRMNAH services to meet projected need.

As in Phase 2, each module contains a clear outcome objective and explains key concepts needed to conduct that component of the assessment. The key questions, core indicators and suggested assessment tools (both quantitative and qualitative) are then provided, together with illustrative country examples. Finally, post-assessment consideration points are included to encourage reflection on the results.

Stakeholder consultation

In Phase 3, a stakeholder consultation will take place with relevant policymakers, influencers and SRMNAH and HRH experts, such as representatives of the MoH and other key ministries (finance, education, etc.), professional associations, United Nations agencies, civil society organizations, development partners and the private health sector.

It is very important that the consultation takes place after sufficient data have been collected in the previous phases, allowing the stakeholders to discuss and validate the findings, as well as contributing to the completion of Modules 8 and 10 of the assessment. More information is available in the modules below.

Geography of SRMNAH

Overview

This module provides guidance on how to estimate and map where women of child-bearing age are living and the number of pregnancies per year. Using existing population and Demographic and Health Surveys (DHS) it is possible to estimate the number and geographical location of pregnancies and births. This provides a proxy for women's need for SRMNAH services.

Through geo-referenced facility data and a geographic information system (GIS) a country can compare population needs with the supply-side capacity of health facilities and workforce deployment, and so identify potential inequities in access to SRMNAH care and services, as well as priority areas for future workforce deployment.

Key concepts

Geographic information system (GIS)

A computer-based GIS is used to collect, store, manage, analyse, display and distribute geographic data (40). With the rapid expansion of earth-observation satellites and accompanying technical innovations, GIS techniques are increasingly being used to generate state-of-the-art evidence in the social and natural sciences. In the health sector, early adopters of GIS have largely focused on geographical positioning of infrastructure (health facility census/assessments) and communicable disease surveillance and control, such as the Malaria Atlas Project.

GIS techniques have been applied more sporadically in the area of maternal and newborn health, predominantly related to communicable diseases in subsets of the population (i.e. women during pregnancy), or spatial analysis of travel and catchment areas in relation to health facilities.

GIS techniques are important, not only to display health systems and health outcome data, but also to promote greater awareness of equity. The MDGs focused on national achievement. Where countries have made progress it is usually more prominent among some subgroups of the populations than others. Many regional groups are being left behind and inequities are widening. In recent years, tracking results and resources in subnational areas has become more feasible, and more necessary.

MODULE 7 OBJECTIVE:

To understand **where** the **health-care facilities** and the **health-care providers** are in **relation to pregnant women** between now and the end of the projection period, at **regional or district** level, allowing for tailored development of the health system and the health workforce for **all levels of need**.

GIS techniques are important, not only to display health systems and health outcome data, but also to promote greater awareness of equity.

Applying the module

This module comprises the following steps:

1. Mapping where women of child-bearing age are living and the estimated number of pregnancies per year, with projections to the desired time horizon
2. Mapping the supply of health facilities and health workforce at subnational level
3. Using these layered datasets to identify inequities between women's needs for SRMNAH services and their access to them, at subnational level.

Key Question 7.1: Location of needs based on number and distribution of pregnancies

Where are the needs (expected pregnancies per district projected to the desired time horizon)?

Data collection

When estimating women's need for EmONC services it is important to look at the population of pregnant women, rather than the numbers of live births only. Pregnant women include those whose pregnancies terminate in late miscarriages, stillbirths and abortions, as well as live births. In each case, access to health facilities and health-care providers is required.

Geographical datasets that show the subnational distribution of pregnancies can be produced using the following process:

1. Geographical datasets of population distributions at subnational level must be obtained. These are available from the WorldPop project at: <http://www.worldpop.org.uk/>.
2. United Nations estimates of urban- and rural-specific growth rates by 5-year periods must be applied to these datasets, to obtain population distribution datasets to the desired time horizon.
3. Estimates of the distributions of populations by sex and 5-year age group must be produced, by adjusting the datasets according to data on subnational population compositions.
4. Datasets representing females in the 15-49 year age groups must be added up to produce women of childbearing age datasets.
5. Age-specific fertility rates (ASFRs) must be obtained by 5-year age groupings, disaggregated by subnational regions and urban versus rural. ASFRs are calculated by dividing the number of births to women in a specified age group during a specified time period by the number of woman-years of exposure during the same period. The ASFRs correspond to women for the seven 5-year age groups from 15-19 to 45-49. For current fertility rates, the Demographic and Health Surveys use the period 1-36 months before the survey (available at: <http://www.measuredhs.com/>).
6. ASFRs must be used to adjust the 5-year age grouped female population distribution datasets and thus obtain 100 m x 100 m gridded estimates of the distributions of births across the country.
7. Finally, datasets of numbers of births must be converted to numbers of pregnancies, by adjusting the national totals to match national estimates of numbers of pregnancies.⁷

⁷ Geographical datasets showing subnational distribution of pregnancies are already available for the 73 countries of the *Countdown to 2015* initiative. These were produced for the *State of the World's Midwifery Report 2014*. For more information please contact: enquiries@integrare.es.



Viviane Fortaillier

Key Question 7.2: Location of facilities and SRMNAH workforce

Where are the health-care facilities, at all levels?

Where are the SRMNAH workers?

Data collection

First, it is necessary to obtain the geographic coordinates of all health facilities in the country, at all levels of the health system: community, district, central, and first-, second- and third referral levels. Of particular interest are the health facilities that provide delivery care to pregnant women.

Second, data on the number and type of practising health workers per health facility must also be obtained. Again, of particular interest are the health workers who provide services along the SRMNAH continuum of care.

There are several potential sources for this information. Geographic coordinates of health facilities are usually available at the MoH. Information on the location of health workers may be available from a Human Resource Information System or a national payroll system. It is also possible that the country has participated in an EmONC Needs Assessment in the past 3-5 years, or in a Service Availability Readiness Assessment (SARA). This should be available at: http://www.who.int/healthinfo/systems/sara_introduction/en/.

SARA is a comprehensive assessment of the supply of health services at facility level, using a standardized set of indicators and summary measures to determine the extent to which minimum criteria for the provision of services are met. The starting point for each SARA is a master facility list, which comprises all public, private non-profit, private for-profit and faith-based health facilities, including hospitals, health centres, dispensaries and specialized clinics. The master list includes the name, address, geo-location, beds, staffing and services available for each facility (41). If the country has conducted a SARA then this master facility list will be available.

Further in-depth investigation

If this information is not readily available, it may be necessary to conduct original research to obtain the geographic coordinates of health facilities and locate practising health workers. This should be linked to the research on the supply of the SRMNAH workforce in Module 5.

To collect data on this key question, look for tools, questions or segments of tools in Annex B labelled Module 7: Key Question 7.2, and choose those most appropriate for this national assessment.

Key Question 7.3: Measuring effective coverage

How do women's projected SRMNAH needs compare to their geographic access to health facilities and the SRMNAH workforce?

Data analysis

The concept of effective coverage of the SRMNAH workforce includes the dimensions of availability, accessibility, acceptability and quality. More information on the Tanahashi framework of effective coverage is provided in Module 8.

This module focuses on the first two dimensions of the effective coverage framework: availability and accessibility, particularly geographic accessibility.

Once the geographic data have been obtained (see Key Questions 1 and 2), different GIS techniques, of varying levels of complexity, can be applied to its analysis. These include:

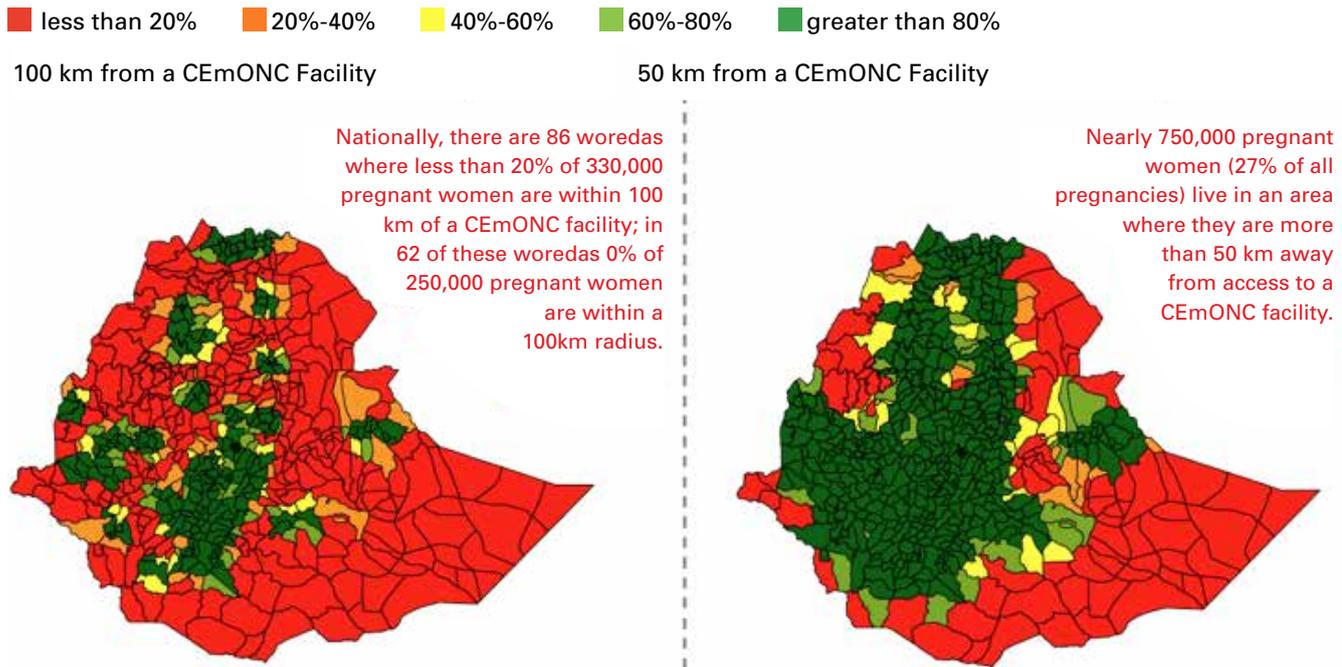
1. **Thematic mapping:** creation of maps to convey information about a topic or theme
2. **Spatial analyses:** extraction or creation of new information from spatial data
3. **Spatial modelling:** spatial analysis that includes the use of a mathematical model to simulate natural or anthropogenic phenomena.

Each of these methods adds different specific value to the policy discussion. Thematic maps are powerful instruments that allow the visualization of subnational information from a geographic perspective. Spatial analysis techniques, including spatial modelling, are advanced methods providing more detailed analysis and better understanding of the health system factors and behaviours behind SRMNAH-related health outcomes.

	Required data	Required GIS skills	Required GIS software
Thematic mapping	Statistical data (indicators) and GIS data containing the extension of the geographic objects to which the statistical data is attached	Basic GIS training (knowledge for producing relevant thematic maps)	Any GIS software (proprietary or free)
Spatial analysis	Location of the different geographic objects necessary to create or extract the new information (location of households, health facilities, etc.)	Intermediate GIS training (GIS data management, spatial analysis functions)	More limited range of GIS software providing spatial analysis and/or modelling functionalities
Spatial modelling (geographic access)	Location of health facilities providing SRMNAH care; spatial distribution of the population in demand (pregnant women, births, etc.); road network; hydro-graphic network; Digital Elevation Model; land cover and coverage capacity of each facility if human resources taken into account in the analysis	Advanced GIS training (GIS data management and manipulation, use of advanced GIS functions)	

An example of spatial analysis is given below. The map shows the results of a simple distance-based analysis of facility provision in Ethiopia, using the estimated number of pregnancies per grid cell in Ethiopia in 2010 and the location of comprehensive EmONC facilities. 50 km and 100 km buffers were applied to these facility locations and the estimated number of pregnancies within them were added up. A simple analysis of the proximity of pregnancies to facilities was undertaken to show the percentage of pregnancies within each *woreda* (administrative unit) that were within 50 km and 100 km of a comprehensive EmONC facility.

FIGURE 11: **Percentage of pregnancies (per woreda) within 50 km and 100 km of a CEmONC facility (Ethiopia, 2010).**



Source: Analysis conducted with data from WorldPop (42) and Ethiopia EmONC Assessment 2008 (43)

For planning purposes, this approach presents an advantage over others that establish benchmarks for EmONC facilities and health workers based on numbers of births (26, 43). By providing an insight into the geographical differences in coverage and their impact, and identifying areas with gaps, it allows for the formulation of tailored options for the development and coverage of the health workforce.

To carry out geographic analysis of effective coverage in the country, a technical expert in GIS could assist in conducting the appropriate analysis or modelling (see Annex D for contact details).

Further in-depth investigation

A number of resources are available that provide more information about GIS systems and their application in monitoring and improving access to SRMNAH services. Look for tools, questions or segments of tools in Annex B labelled Module 7: Key Question 7.3, and choose those most appropriate for this national assessment.

Module 7 post-assessment considerations

Having completed this module, consider the following questions:

- Are the services close enough to the people who need them?
- What is the time required to access rural facilities?
- Where are there no health facilities at all
 - Are there people who need access to facilities in those areas?
 - What can be done to provide them with some access to SRMNAH facilities?

Assessing effective coverage of the SRMNAH workforce

Overview

This module provides guidance on assessing the effective coverage of the SRMNAH workforce using the effective coverage framework (the Tanahashi framework).

This framework provides insight into how the availability, accessibility, acceptability and quality of the SRMNAH workforce determine the effective coverage of SRMNAH services. It allows the identification of key action areas for improving effective coverage, in line with agreed national targets.

This module will guide the national assessment team through the steps needed to distinguish the different dimensions of effective coverage, and to measure the gap between the SRMNAH workforce that is theoretically “available” to the population, and the actual effective coverage of acceptable and quality SRMNAH services that are accessible and received by the population (i.e. effective coverage), as well as the policy implications that this has for SRMNAH and workforce planning for resilient health systems. This module should ideally be completed within the stakeholder consultation that takes place in this Phase of the assessment.

Key concepts

The effective coverage framework

The effective coverage framework is structured by four domains that determine whether a health system and its health workforce are providing effective coverage, i.e. whether women are obtaining the care they want and need from SRMNAH services.

The four domains are: availability, accessibility, acceptability and quality. The definitions of these domains in relation to the health workforce are as follows (7):

- **Availability:** The sufficient supply and stock of health workers, with the relevant competencies and skill mix that correspond with the health needs of the population.
- **Accessibility:** The equitable access to health workers for all, including for marginalized populations, and in terms of travel time and transport, opening hours and corresponding workforce attendance, whether the infrastructure is disability-friendly, referral mechanisms and the direct and indirect cost of services, both formal and informal.

MODULE 8 OBJECTIVE:

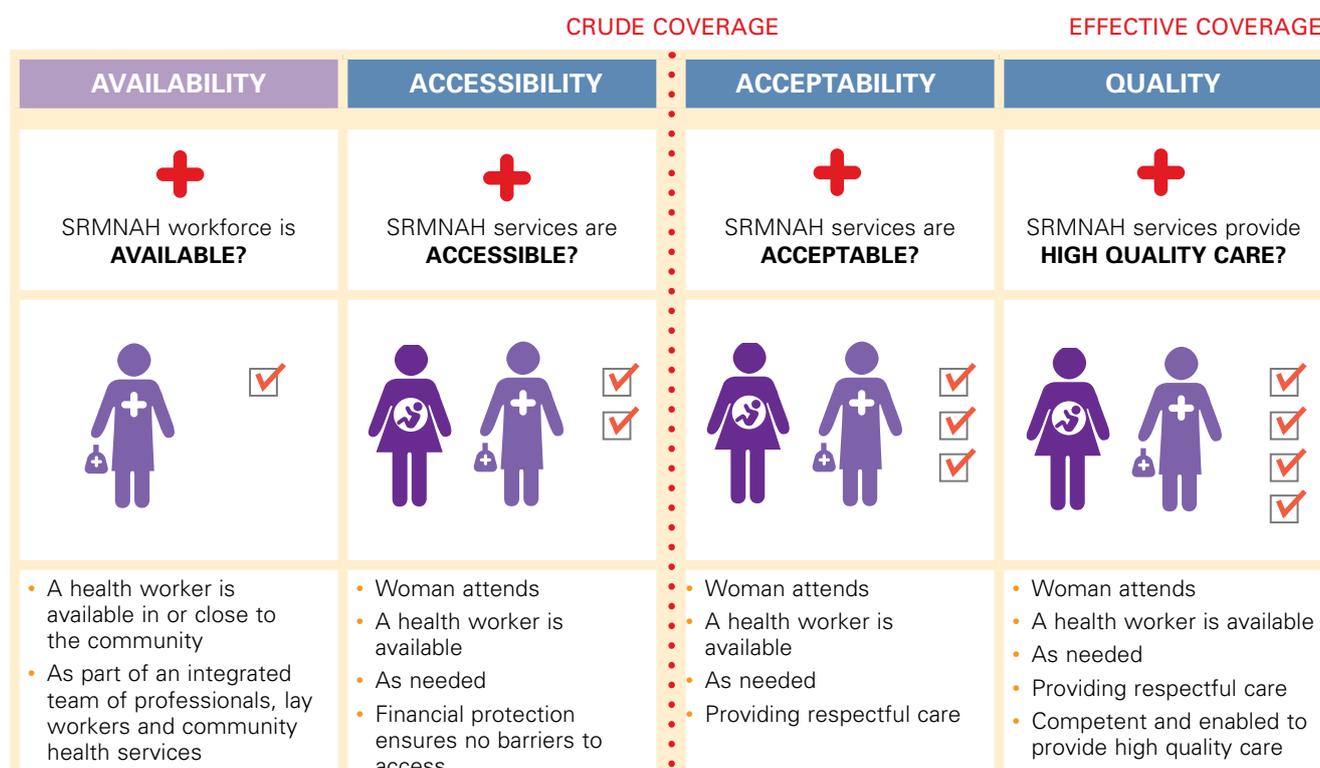
To **understand** how to **differentiate** between the availability, accessibility, acceptability and quality of the SRMNAH workforce and their impact on **SRMNAH services available** and the **effective coverage** provided to a population.

- **Acceptability:** The characteristics and ability of the workforce to treat everyone with dignity and sensitivity, creating trust and enabling or promoting the demand for services.
- **Quality:** The competencies, skills, knowledge and behaviour of the health worker assessed according to professional norms and as perceived by users.

The concept of “effective coverage” was developed by T. Tanahashi and the WHO in the 1970s to explore the delivery of health services (26). Tanahashi proposed several measurements of coverage, stating that “it is unlikely that a single measurement of coverage could satisfactorily reflect the complex interaction between the health service and the target population”. General Comment No. 14 on the right to health, published in 2000, mirrored the Tanahashi domains of availability, accessibility and acceptability, adding quality as the fourth domain (13).

Figure 12 illustrates this framework. With each step towards providing the desired health intervention, fewer people in the target population may receive satisfactory services.

FIGURE 12: **The effective coverage framework**



from availability to effective coverage

This module applies the effective coverage framework to SRMNAH and SRMNAH workers. The framework is used to identify bottlenecks or problem points in the effective coverage of the SRMNAH workforce. After identifying these bottlenecks, it will be possible to investigate their cause(s), and propose ways to enable the SRMNAH workforce to overcome these issues.

Applying the module: Effective coverage framework process

Key Question 8.1: Effective coverage

How should resources be allocated and the SRMNAH workforce organized to serve as many women and newborns as possible?

Is the SRMNAH workforce reaching the population it should serve?

Has the SRMNAH workforce been effective in meeting women's and newborn's needs?

Data analysis

To gather data on these questions, complete the table below. The table can be completed by the national assessment team, or, ideally, in a stakeholder consultation bringing together key national experts from the fields of SRMNAH, HRH and health policy. Such consultation provides an opportunity for experts to review the evidence gathered in previous modules, share knowledge and build expert consensus around effective coverage in the country.

For each of the effective coverage dimensions, list the constraining factors and bottlenecks present in the country, and assign a score from 1 to 10 (1 low, 10 high), evaluating each dimension according to the best expert estimates.

In the following column, offer policy solutions applicable to the country context to overcome these constraints.

The final column lists the key questions from previous modules where data was gathered on each dimension. That data should be used to complete this table.

	Questions	Constraining factors/ bottlenecks	Score	Solutions	Sources (key questions)
Availability	Are health workers educated in sufficient numbers and working in an environment that enables them to provide quality care?				3.3, 4.3, 5.6, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6
Accessibility	Are health workers deployed equitably, 24/7, affordable?				3.3, 4.2, 5.6, 6.3, 6.4, 6.5, 6.6, 7.2
Acceptability	Are practitioners acceptable (respectful, gender, language, competencies)?				3.3, 4.2, 5.6, 6.1, 6.2, 6.3, 6.5, 6.6
Quality	Do practitioners provide high quality, effective care?				3.4, 5.2, 5.3, 5.4, 5.5

This analysis should also be conducted separately for urban and rural areas, as these environments may have very different scores for effective coverage, as well as specific constraining factors requiring specific solutions. Additional templates to assist with this analysis are available at: http://integrare.es/wp-content/uploads/2015/02/Informant_Interview_Health_Workers.docx.

Further in-depth investigation

A number of resources are available to guide discussions on workforce bottlenecks and policy solutions. Look for tools, questions or segments of tools in Annex B labelled Module 8: Key Question 8.1, and choose those most appropriate for this national assessment.

Module 8 post-assessment considerations

Having completed this module, consider the following questions:

- What are the key areas for improvement to guarantee effective coverage of the SRMNAH workforce and SRMNAH services?
- Which areas can be easily improved, and which ones will require further analysis and investment?
- Are there already strategies in place to improve effective coverage of health services?
 - If so, do they include SRMNAH services?
 - If so, are they being implemented?

Supply and demand analysis

Overview

This module draws together the information collected in the previous modules in order to quantify the available supply of the current SRMNAH workforce and to estimate how it will evolve over time, in the current policy context, to cover the population's future requirements for SRMNAH services. If the future estimated supply of the SRMNAH workforce does not cover SRMNAH workforce requirements, there will be a SRMNAH workforce deficit. Alternatively, there may be a SRMNAH workforce surplus. This analysis uses workforce projection modelling.

MODULE 9 OBJECTIVE:

To **calculate** the present and future **supply** and **demand** of the **SRMNAH workforce** and SRMNAH services under the current policy environment in order to identify the **deficit** or **surplus** in meeting the SRMNAH needs of the population.

Key concepts

Stock-and-flow models

A commonly used methodology for undertaking workforce supply projections involves the use of **stock-and-flow models**. These are based on a description of an existing workforce as a stock of workers which increases or decreases over time as new workers enter the workforce and existing workers exit it. Annual **inflows** into the stock of workers are typically new graduates or workers from other countries who join the workforce. Annual **outflows** from the stock of workers occur through attrition, which can be 1) involuntary attrition (due to retirement, death, illness, or dismissals) and 2) voluntary attrition (due to personal choice).

Cohort simulation

Cohort simulation is a stock-and-flow based procedure that describes the current cohort of workers in terms of its age composition and projects its evolution year-on-year based on expected annual inflows into, and annual outflows out of the different age groups of the cohort.



Jhpiego/Kate Holt

Applying the module: Linking workforce supply with workforce requirements

Key Question 9.1: Current and future SRMNAH workforce requirements

What is the current required supply of SRMNAH workers to provide the SRMNAH services needed by the population?

How will these requirements evolve in the current policy scenario?

Data analysis

The first step in the modelling is to project the future SRMNAH workforce requirements in the current policy scenario. Five common approaches to making workforce requirement projections are as follows (45–47).

- 1. The workforce-to-population ratio method.** With this method, a benchmark of the SRMNAH workforce density to population (for example, the density of midwives per 10,000 population) is established as a future target. The workforce numbers (e.g. the total number of midwives) required to reach this benchmark are then calculated.
- 2. The needs-based method.** This method determines the likely future changes in the population's need for SRMNAH services as a result of changing demographic patterns (e.g. a rising trend over time in the fertility rate) or as a result of changes in the patterns of disease (e.g. a decreasing trend over time in the prevalence of HIV). The estimated volume of SRMNAH services required as a result of these changes is calculated and then converted into the SRMNAH workforce numbers needed to deliver these services.
- 3. The service demands-based method.** In this method, the current rates of utilization of SRMNAH services by the population are calculated and applied to future population projections. The estimated volume of future demand for SRMNAH services is calculated, and then converted into the SRMNAH workforce numbers needed to provide these services.
- 4. The service targets-based method.** This method creates targets for the future provision of SRMNAH services using information about the current level of services provided by the SRMNAH workforce, the technologies in use, and/or the population's demand for SRMNAH services. The future SRMNAH workforce numbers are then calculated and these future service targets are converted into staffing requirements.
- 5. The adjusted service targets-based method.** This method determines which SRMNAH services are to be prioritized in the population, together with the health worker skills and the time required to deliver each of these services. The future volume of each service which will be required to cover the needs of the population is then estimated, based on likely changes in the relevant demographic- and disease-related patterns. This volume of services is then converted into the time required from health workers with the relevant skill/competencies to provide each type of service.

Which method is used will depend on the decision maker's preferences, the SRMNAH and HRH policies and policy targets and the data available. Please note that using different methods will give different results in terms of future SRMNAH workforce projections. Also note that within each method the use of different data sources will also give different results.

For examples of planning tools using these different methods, see Annex B and look for tools, questions or segments of tools labelled Module 9: Key Question 9.1.

Key Question 9.2: Modelling the current and future supply of the SRMNAH workforce

What is the current actual supply of the SRMNAH workforce?

How will this supply evolve in the current policy scenario?

Data analysis

The task is to estimate the current SRMNAH workforce supply and to project its likely evolution over time using an adjusted service targets-based method to estimate future SRMNAH workforce requirements, and a cohort simulation (a stock-and-flow-based procedure) to estimate the future SRMNAH workforce supply.

The adjusted service targets method makes it possible to estimate the yearly hours of working time required from health workers with the relevant skills and competencies to deliver the essential SRMNAH interventions, as defined by PMNCH, from the present to the desired time horizon. Using a cohort simulation, it is possible to calculate, for each year, the supply of available working time of each SRMNAH cadre to deliver these essential SRMNAH interventions. Finally, for each year that the projections are made, by putting the two analyses together, it is possible to calculate the predicted deficit/surplus in the working time available from each SRMNAH cadre to deliver these essential interventions on the assumption that the current SRMNAH and HRH policies do not change.

Cohort simulation can be used to carry out a number of analyses, as follows.

1. Analysis of the impact of ageing on the available working time for SRMNAH care in the future

The passage of time alone will cause a proportion of the cohort of workers to retire each year, causing the available working time to diminish over time. The loss of available working time can be accurately quantified by using cohort simulation. It will depend on the precise age structure of the workforce. Some additional outputs that can be accurately estimated in this analysis are:

- the size of the SRMNAH workforce retiring in the future, and
- the required replacement rate of SRMNAH workers to prevent the SRMNAH workforce stock from shrinking due to retirement.

2. Analysis of the impact of the current and future outflows from the workforce on the available working time for SRMNAH care

Cohort simulation can determine the negative impact on the future working time available to deliver the essential SRMNAH interventions based on the current annual outflows (voluntary and involuntary attrition) of workers from the workforce stock.

3. Analysis of the impact of the current and future inflows into the workforce on the available working time for SRMNAH care

Adding the inflows of SRMNAH workers (graduates of pre-service education and foreign workers recruited) to the analysis will provide additional information about the impact of the existing educational and immigration policies on the number of hours that will be available to deliver the essential SRMNAH interventions in the future.

Combining the three types of analysis produces an adequate estimate of the joint impact of the most important factors affecting the actual stock of SRMNAH workers over time. If evidence-based data is collected for points 1-3, this will provide a realistic picture of the future SRMNAH workforce availability to cover the needs of the population for SRMNAH services, under the current SRMNAH and HRH policy scenario.

When the above analysis is combined with the adjusted service targets method, it is possible to estimate the following:

4. Analysis of the gap between future SRMNAH workforce requirements and future supply in the current SRMNAH and HRH policy scenario

As the combined analysis estimates the future deficit/surplus in the SRMNAH workforce to provide the SRMNAH essential interventions to meet population needs, it facilitates discussion of policy changes to bridge that gap (see Module 10).

Data requirements

The table below shows the information requirements for the adjusted service targets method and the cohort simulation. Unless specified, data requirements refer to the current year (or the latest year for which the information is available). The table also shows the module in this Handbook where the relevant data collection is explained. Priority data requirements are highlighted with an * in the table below.

	Information requirement	Module
1	Description of the current HRH policy scenario	Module 3
2*	Time frame for the workforce projections	Module 1
3	List of SRMNAH essential interventions to be provided to the population in addition to those described by PMNCH (see Figure 2)	Module 5
4	List and geographical distribution of facilities providing the essential SRMNAH interventions, specifying whether they are in an urban or rural environment	Module 7
5*	Total population estimates over the time frame for the workforce projections, including women of reproductive age and young people	Module 1
6*	Contraceptive prevalence rate/ pregnancy rates/ birth rates	Modules 1, 2
7	Prevalence of the most common causes of morbidity and mortality in pregnant women	Module 2
8	List of the cadres providing the essential SRMNAH interventions	Module 5
9*	Years of education required to qualify, for each SRMNAH cadre	Module 6
10*	Number of new graduates, for each SRMNAH cadre, for the past 10 years	Module 6
11*	Number of projected new graduates, for each SRMNAH cadre, for each year over the time frame of the workforce projections	
12	Average cost per new graduate, for each SRMNAH cadre	Module 6
13*	Percentage of graduates who are employed in the provision of health care, for each SRMNAH cadre, within one year of graduating	Module 6
14*	Number of immigrant workers, for each SRMNAH cadre and age group, who are entering employment	Module 6
15	Education curriculum of each SRMNAH cadre	Module 5
16*	Essential competencies of each SRMNAH cadre needed to provide the essential SRMNAH interventions	Module 5
17*	Roles and functions of each SRMNAH cadre with regard to the essential SRMNAH interventions	Module 5
18	Recommended skill mix at each level of service provision to provide the essential SRMNAH interventions	Module 5

continued

	Information requirement	Module
19*	Total stock (headcount) of each SRMNAH cadre	Module 5
20*	Age distribution of the stock of each cadre, e.g. <20, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64	Module 5
21	Distribution of the stock of each SRMNAH cadre, across facilities	Module 5
22*	Statutory retirement age	Module 5
23	Percentage of the stock of each cadre which is in part-time employment, by age group and facility type	Module 5
24*	Average number of working days per week, for each SRMNAH cadre	Module 6
25*	Average number of holidays per year, for each SRMNAH cadre	Module 6
26	Average number of days of sick leave per year, for each SRMNAH cadre	Module 6
27	Average number of days of in-service training per year, for each SRMNAH cadre	Module 6
28	Annual average cost of in-service training, for each SRMNAH cadre	Module 4
29*	Average number of days of absenteeism, for each SRMNAH cadre	Module 6
30*	Number of hours worked per day by a health worker employed full time, for each SRMNAH cadre	Module 6
31*	Percentage of available working time devoted on average by each SRMNAH cadre to health services activities: activities performed by all members of each cadre for which regular statistics are collected, see Workload Indicators of Staffing Need (WISN) manual (39)	Module 6
32	Percentage of available working time devoted on average by each SRMNAH cadre to support activities: activities performed by all members of each cadre for which regular statistics are not collected, see WISN manual (39)	Module 6
33	Percentage of available working time devoted on average by each SRMNAH cadre to additional activities: activities performed by only certain members of each cadre for which regular statistics are not collected, see WISN manual (39)	Module 6
34*	Mortality rate by age group	Module 1
35*	Voluntary attrition rate: percentage of the stock (headcounts) for each SRMNAH cadre, of members who leave the workforce voluntarily, annually	Module 6
36	Average salary levels (including all incentives), for each SRMNAH cadre	Module 6

To assist in this analysis, see Annex B, Key Question 9.2 for suggested tools and software packages

Module 9 post-assessment considerations

Completion of Module 9 will provide a clear picture, for the coming years, of both the requirements for and the availability of the SRMNAH workforce to provide SRMNAH care. It is important to consider these questions and apply the answers in Module 10, “Policy options for workforce planning”:

- In the current SRMNAH and HRH policy scenario, what are the current overall SRMNAH workforce requirements? What are they likely to be in the future?
- Specifically, for which essential SRMNAH interventions are these requirements likely to be highest in the coming years? What are the main reasons for this?
- In the current SRMNAH and HRH policy scenario, what will be the pattern of supply of each SRMNAH cadre in the coming years? What will be the relative impact on the future supply of each SRMNAH cadre of: 1) the current pre-service education inflows, 2) ageing of the workforce and 3) voluntary attrition?
- Is it likely that there will be an overall SRMNAH workforce deficit in the future in the current SRMNAH and HRH policy scenario? If so, how is this deficit likely to affect the provision of essential SRMNAH interventions?
- What policy options could address any existing gaps (surpluses or deficits) between the SRMNAH workforce requirements and the its availability in the future?

Policy options for workforce planning

Overview

This module is designed to help develop policy on SRMNAH workforce planning. It uses the information from the previous modules to evaluate workforce policy options aimed at fulfilling the country's future requirements of SRMNAH care. The module introduces Multi-Criteria Decision Analysis (MCDA), a decision-making tool which will enable the comparison of a set of SRMNAH workforce planning policy options and their ranking from best to worst, according to:

- the performance of these options on a set of relevant policy criteria, and
- the importance attached to each of these policy criteria.

The module describes how MCDA can be used in the stakeholder consultation to guide a dialogue about workforce planning for resilient health systems, in order to meet the population's requirements for universal access to SRMNAH care.

Key concepts

Making health policy decisions

Policymaking in health is complex. A large number of actors with different interests exercise their power to affect policy decisions; and situational, structural and cultural factors are often influential (48). The process of decision making has variously been described as ad hoc, based on the way decisions were made in the past (49), based on making small incremental decisions to induce the agreement of interested parties (50), or based on mixed scanning, i.e. a wide sweep of the general decision problem with a more detailed analysis of only some policy decisions (51). Policy decisions themselves are complex and multifaceted (49). Many factors may influence these policy decisions, not least political considerations and considerations relating to international organizations which may not be aligned with country-specific priorities.

The complexity of the policymaking environment and the particularities of the policymaking process may lead to policy decisions which are suboptimal. This indicates the need for an approach to making policy decisions that is structured, transparent and rational.

MODULE 10 OBJECTIVE:

To **identify the optimal policy options to improve access to SRMNAH services and the SRMNAH workforce.**

Situational, structural, or cultural factors often influence policy decisions.

Such approaches include:

- **Evidence-based medicine:** based on prioritizing those health interventions with the highest proven effectiveness;
- **Cost-effectiveness analysis:** prioritizes health interventions based on minimizing the incremental cost per unit of incremental effectiveness (i.e. maximizing the “value for money”) of these interventions;
- **Equity analysis:** measures the distributional impact of interventions and allows for prioritizing interventions in terms of how much they benefit the most disadvantaged groups of the national population (49).

However, each of these approaches to health policy decision-making is limited in scope. Each is concerned with one criterion (e.g. effectiveness in evidence-based medicine, equity in equity analysis) or at best two criteria (cost and effectiveness in cost-effectiveness analysis).

There is a need for a decision-making approach which encompasses a wider array of criteria relevant for policymaking. This is the case of MCDA explained in the section below.



Lynsey Addario

Applying the module

Key Question 10.1: Policy options

What are the optimal policies for improving access to SRMNAH services and the SRMNAH workforce in the country?

Data analysis

MCDA in SRMNAH policy decision-making

MCDA is a quantitative approach to making complex decisions that depend on several criteria. It is a structured, transparent, evidence- and preference-based approach to decision-making.

How does MCDA work in the context of SRMNAH policy decision-making? The basic workings of MCDA for this task are illustrated with a simple example involving two SRMNAH policy options and five decision criteria.

1. Defining policy interventions

The first step involves defining the relevant SRMNAH workforce policy interventions for addressing SRMNAH workforce requirements. For example, suppose a policymaker defines the following two SRMNAH workforce policies, which he/she is considering for implementation in the near future:

- POLICY 1: Scaling up over 5 years the SRMNAH workforce supply (by increasing pre-service education for midwives) to provide basic antenatal care for all pregnant women in all primary-level health centres.
- POLICY 2: Setting up a salary and incentives policy to increase retention of midwives in rural areas.

2. Selecting priority-setting criteria

The second step involves selecting the criteria which are relevant to the decision maker for choosing between the SRMNAH workforce policy interventions above. An example of criteria for priority setting of health interventions is available in Tromp and Baltussen, 2012 (52).

Suppose the decision maker in this example chooses the following six criteria from this list as relevant for choosing between POLICY 1 and POLICY 2:

- C_1 : Effectiveness of the intervention at the population level
- C_2 : Budget impact of the intervention
- C_3 : Size of the target population affected by the intervention
- C_4 : Equity in the geographical distribution of health benefits associated with the intervention
- C_5 : Congruence of the intervention with previous priority setting
- C_6 : Social acceptability of the intervention.

3. Measuring performance of each policy against the criteria

The third step involves measuring the performance levels of each policy option with respect to each of the criteria. Table 1 shows some estimates of these performance levels. Note that these estimates are for illustrative purposes and are not based on any particular assessment of the evidence.

TABLE 1: Measuring the performance of the policy options on the decision criteria

Measure of performance of each policy option on each criterion	Performance of POLICY 1 on each criterion	Performance of POLICY 2 on each criterion
C ₁ (effectiveness): estimated number of pregnancy complications avoided by the policy	1 million pregnancy complications avoided	600,000 pregnancy complications avoided
C ₂ (budget impact): estimated cost of the policy to the MoH	US\$ 6 million	US\$ 1 million
C ₃ (target population): estimated percentage of all pregnant women who will benefit from the essential SRMNAH interventions with the policy	50% of all pregnant women	20% of all pregnant women
C ₄ (equity): % of estimated number of pregnant women who have access to essential SRMNAH interventions in rural versus urban settings with the policy	Pregnant women in rural areas have half the % of access that urban women have	Pregnant women in rural areas have the same access that urban women have
C ₅ (congruence with previous policy): Is there a recent health policy which justifies the implementation of the policy option?	There is no previous policy addressing scaling up of midwives to cover antenatal care	There is a recent policy indicating a commitment to ensure high retention of midwives in rural areas
C ₆ (social acceptability): Is the policy socially and culturally acceptable to the population?	There is popular support for improving maternal health	Midwives are well regarded and there is support for increasing incentives

4. Rating each policy against the decision criteria

The fourth step requires transforming the performance levels of the health policy interventions under consideration (POLICY 1 and POLICY 2) into ratings between 0 and 1, where 0 is “the worst possible performance” and 1 is “the best possible performance”. The technical aspects of calculating these ratings, which vary in complexity depending on the specific MCDA method used, are not explained here. Table 2 displays these ratings.

TABLE 2: The ratings of the policy options on the decision criteria

Measure of performance of each policy option on each criterion	Rating of POLICY 1 on each criterion	Rating of POLICY 2 on each criterion
C ₁ (effectiveness): estimated number of pregnancy complications avoided by the policy	1	0.6
C ₂ (budget impact): estimated cost of the policy to the MoH	0.17	1
C ₃ (target population): estimated percentage of all pregnant women who will benefit from the essential SRMNAH interventions with the policy	1	0.4
C ₄ (equity): % of estimated number of pregnant women who have access to essential SRMNAH interventions in rural versus in urban settings with the policy	0.5	1
C ₅ (congruence with previous policy): Is there a recent health policy which justifies the implementation of the policy option?	0	1
C ₆ (social acceptability): Is the policy socially and culturally acceptable to the population?	1	0.8

From Table 2, note that POLICY 1 rates higher (i.e. is “better”) than POLICY 2 in terms of 1) effectiveness at the population level and of 2) the target population covered. Similarly, POLICY 2 rates higher than POLICY 1 in terms of 1) the budget impact, 2) the resulting equity in geographic distribution and 3) its congruence with previous policy.

5. Weighting the priority criteria

The fifth step involves exploring the decision maker’s preferences for the criteria. This requires assigning relative importance weights (between 0 and 1) to the different criteria from step 2, where 0 means that the criterion has “no importance at all” with respect to the other criteria and 1 means

that the criterion is “extremely important” with respect to the other criteria. There are a number of approaches to calculating these criteria weights, depending on the specific MCDA method used. Table 3 shows an example of relative importance weights.

TABLE 3: Categorisation of relative importance weights

Relative importance weight category	Weight
Not important at all	0
Somewhat important	0.25
Moderately important	0.5
Very important	0.75
Extremely important	1

Table 4 supposes (for illustration purposes) that the decision maker assigns the following relative importance weights to the five criteria from step 2.

TABLE 4: Weights of relative importance of the decision criteria

Criteria	Relative importance of the criteria (numerical weight)
C ₁ : Effectiveness of the intervention at the population level	Extremely important (1)
C ₂ : Budget impact of the intervention	Moderately important (0.5)
C ₃ : Size of the target population affected by the intervention	Very important (0.75)
C ₄ : Equity in the geographical distribution of health benefits associated with the intervention	Very important (0.75)
C ₅ : Congruence of the intervention with previous priority setting	Somewhat important (0.25)
C ₆ : Social acceptability of the intervention	Somewhat important (0.25)

6. Calculating scores and ranking policy options

Once the policy-relevant criteria have been assigned relative importance weights, the MCDA procedure automatically combines 1) the ratings of the options on the criteria (from step 4), and 2) the relative importance weights of the criteria (from step 5) into an aggregate score for each health policy option. This score is used to rank the options from most to least preferred from the point of view of the decision maker.

Table 5 shows the aggregate scores and the ranking, in the example used above, of POLICY 1 and POLICY 2 based on the preferences of the decision maker from Table 4. Table 5 shows that POLICY 2 scores higher than POLICY 1 and therefore ranks first.

TABLE 5: Aggregate scores and rank of the policy options

	Aggregate score	Rank
POLICY 1	0.70	Second
POLICY 2	0.74	First

Using MCDA for setting priorities across SRMNAH workforce policy options: the stakeholder consultation

The principles of MCDA outlined in the previous section can be used to define, compare and rank a number of relevant policy options for workforce planning. This can be done via an iterative consultation process involving a MCDA consultant and the national assessment team. For more information on technical consultants who can assist in this process, see Annex D.

The iterative process has four main stages:

1. Defining the criteria that are considered relevant for choosing the best SRMNAH workforce policy option in the future. Many different criteria may affect this decision (52). The role of the consultant is to help the decision maker refine the definitions of the criteria to ensure that they satisfy the properties of a well-structured criteria hierarchy (53).
2. Defining in detail the potential set of SRMNAH workforce policy options that are considered relevant to the country context. This exercise will enable, for example, the inclusion of the following types of workforce policy options in the potential set:
 - Scaling up (via future increases in pre-service education) of specific SRMNAH workforce cadres to deliver the essential SRMNAH interventions required to cover the needs of the population;
 - Skilling up (via future increases in in-service training) of specific SRMNAH workforce cadres to improve the quality of care in the delivery of the essential SRMNAH interventions;
 - Changing the skill mix of SRMNAH cadres to increase the efficiency in the delivery of essential SRMNAH interventions to the population;
 - Changing the skill mix in order to increase the provision of those essential SRMNAH interventions which focus on preventing SRMNAH complications;
 - Developing a package of measures to increase the recruitment and retention of specific SRMNAH workforce cadres in rural areas;
 - Developing a package of measures to increase the productivity of the SRMNAH health workforce.

The policy options can be refined with the help of the MCDA consultant.

3. Measuring the impact of the SRMNAH workforce policy options on the criteria, and calculating the ratings of the options on the criteria. During the stakeholder consultation, an iterative discussion with the technical assessment team assisted by the MCDA consultant will allow the stakeholders to determine the appropriate measures of performance of the relevant policy options on the desired criteria. To assess the performance levels of the policy interventions on each of these criteria, three sources of information should be used:
 1. Available evidence-based information (from the desk review conducted in Phase 1 of this assessment).
 2. The results of modelling the future gap between supply and requirement of the SRMNAH workforce under the alternative policy interventions, using the methodology described in Module 9.
 3. The decision maker's expert opinion.

Once the impacts of the options on the criteria have been measured, the ratings of the options are calculated and entered for analysis into an MCDA software package by the MCDA consultant (see Annex B, Key Question 10.1 for suggested software packages).

4. Weighting the criteria, ranking the policy options from best to worst, and exploring the sensitivity of the ranking of the options to changes in the relative importance weights. This is to be achieved in the course of the stakeholder consultation, in an exchange between the stakeholders and the consultant using an interactive MCDA software package.
5. Defining scenarios that arise from these policy options, i.e. elements that need to be put into place for the policy options to be implemented, and which will impact on the costs of these options. These scenarios should be discussed and agreed in the stakeholder consultation.
6. The results of the MCDA analysis will be compiled by the MCDA consultant in a report designed for accessible presentation.

At the end of the consultation process a technical consensus statement should be produced, describing the policy options agreed during the stakeholder consultation, sources of data, and scenario elements to be considered in the costing (more information on this in Module 12). An example of a technical consensus statement can be found at: http://integrare.es/wp-content/uploads/2015/02/Annex_Technical-Consensus-Statement.docx.

Further in-depth investigation.

For additional insights into evidence-based policymaking, look for tools, questions or segments of tools in Annex B labelled Module 8: Key Question 10.1, and choose those most appropriate for this national assessment.

Module 10 post-assessment considerations

Following the procedures set out Module 10 will have resulted in a set of relevant SRMNAH workforce planning policy options to meet the requirements of the SRMNAH workforce to cover the population's future needs for SRMNAH interventions. It will also have produced a preliminary assessment of the impact of these policy options on those criteria which are important for prioritizing policy interventions. In addition, it will have established the decision maker's preferences for these criteria. These preferences will have partially determined the ranking of the set of SRMNAH workforce policy options from best to worst.

In preparation for Module 11, it is important to answer the following questions:

- From the set of policy options developed, compared and ranked in the stakeholder consultation, which policy options will now be selected for in-depth modelling and analysis?
- What are the strengths of these policy options, particularly in terms of their implementation?
- What constraints (e.g. likely resources involved, political and stakeholder acceptability etc.) are anticipated that may affect the implementation of these policy options?
- What are the potential impacts of these policy options in the broader context of the health system? Could additional positive/negative impacts arise from applying these options (e.g. distorting incentives that could impact on the broader health workforce/health system)?
- What are the time frames for applying these policy options? Which ones can be implemented in the short, the medium and the long term?

Modelling the impact on lives saved

Overview

Assessing the impact of SRMNAH policy scenarios on reducing maternal and newborn mortality is a useful way to determine where resources need to be planned for and expended to achieve the maximum positive impact. This module sets out the process of, and the tools available to assist in, modelling the impact of the policy options to improve access to SRMNAH services and the SRMNAH workforce that were selected in module 10.

MODULE 11 OBJECTIVE:

To **model** the **impact** of the policy options selected in Module 10 in **reducing** maternal and newborn **mortality**.

Key concepts

The Lives Saved Tool (LiST)

One way to determine the impact of coverage of the essential interventions that can be delivered by SRMNAH services is to model the potential lives saved using a computer programme. The most commonly used programme in SRMNAH to date is the Lives Saved Tool (LiST). The LiST modelling software is a module in the Spectrum policy modelling software, and has been in use for the past decade. LiST and Spectrum are freely available for download and the source code is available on request (54).

LiST estimates cause-specific changes in mortality, calculated by combining the best available evidence of health intervention effectiveness with population specific health intervention coverage change, mortality rates and causes of death (55–57). Other Spectrum modules, including those relating to HIV, demography and family planning, are automatically linked to LiST.

LiST can estimate impacts on maternal, neonatal and under-five mortality as well as stillbirths and selected nutritional outcomes, and has been used in global research and advocacy. Validation exercises have shown that LiST will typically estimate impacts within the confidence intervals of observed data (57–59).

LiST is also a powerful policy and strategic planning tool that can be applied at country or regional level (60). It can be used by policymakers to develop different combinations of intervention or coverage scenarios and to compare these within different regions or countries to determine their effectiveness or impact (61).

The most commonly used program in SRMNAH to date is the Lives Saved Tool or LiST.

Examples of the application of LiST to model the impact of SRMNAH policies include:

- *The Lancet Series on Midwifery* used LiST to estimate deaths averted if the SRMNAH essential interventions (covering pre-pregnancy, antenatal, labour, birth and post-partum care, and family planning) were scaled up in 78 countries (62).
- Another analysis, in 58 countries included in the report on the *State of the World's Midwifery 2011* (63), calculates the cost savings associated with deaths averted when midwifery services, including family planning, are scaled up as compared with an obstetrics model (64).

Limitations of LiST

LiST also has some limitations which need to be considered. As a tool, it looks only at the impact on mortality in low- and middle-income countries; the wide range of other non-mortality outcomes cannot be included, such as morbidity, satisfaction with care or other potential benefits.

Only the interventions with known effect size differences can be included in the model, which means that some effective interventions for which data are lacking may be excluded. LiST also does not take into account the impact of broader social determinants of health, many of which will be mediated by interventions included in LiST (56).

Like any modelling software, LiST is only as good as the data inputted into it. Many countries for which modelling would be useful have limited accurate data systems, and potentially have the poorest quality and quantity of data, especially on causes of maternal mortality. These invariably include a high proportion of unknown causes, which will always result in an underestimate of the potential mortality impact of any SRMNAH workforce scale up (58).

Finally, the impact calculated by LiST assumes that there are no barriers and bottlenecks affecting the accessibility, acceptability or quality (effectiveness) of the health services provided. Actual impact will therefore be significantly less in the absence of measures to improve the accessibility, acceptability, utilization and quality of services.



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Applying the module

Key Question 11.1: Reductions in maternal and newborn mortality

What is the impact on maternal and newborn mortality of applying different types of SRMNAH policies?

Data analysis

LiST can be used to estimate the potential impact of an increase in coverage of the SRMNAH workforce. It can be applied to carry out different types of data analysis:

1. Modelling the impact on the numbers of maternal deaths, neonatal deaths and stillbirths if the current situation stays the same.
2. Modelling the impact on maternal deaths, neonatal deaths and stillbirths if the proposed set of policy options is implemented.

This will enable the completion of the following tables:

Baseline scenario			
Year	Maternal deaths	Neonatal deaths	Stillbirths

Year	Impact of the policy options: deaths averted per year (lowest future scenario)			Impact of the policy options: deaths averted per year (medium future scenario)			Impact of the policy options: deaths averted per year (highest future scenario)		
	Maternal deaths averted	Neonatal deaths averted	Stillbirths averted	Maternal deaths averted	Neonatal deaths averted	Stillbirths averted	Maternal deaths averted	Neonatal deaths averted	Stillbirths averted
TOTAL DEATHS AVERTED (from current year to end of projection period)									

The LiST tool contains default information about population demographics, intervention coverage and patterns/causes of mortality, but also allows these to be altered to reflect the national data gathered in previous modules of this assessment.

All the assumptions used to model the impact on lives saved should be listed as an annex to the national assessment report. This is essential to the transparency of the report, and to allow for the impact to be recalculated in the future as updated information becomes available.

For this module, external consultants can be engaged to provide technical assistance with the use of the LiST tool.

Further in-depth investigation.

A number of other resources are available to assess the impact of different policy interventions on reducing mortality. Look for tools, questions or segments of tools in Annex B labelled Module 11: Key Question 11.1, and choose those most appropriate for this national assessment.

Module 11 post-assessment considerations

Having completed this module and calculated the potential impact of the chosen policy options on reducing maternal and newborn deaths and stillbirths, the following questions may be considered:

- Is this impact sufficient? If not, what other policy options should be considered as an alternative?
- Is this impact realistic? Are there barriers and bottlenecks to the accessibility, acceptability and quality of services that are likely to lessen the real impact for users?
- Does the impact on reducing morbidity also need to be considered?
- How does the impact relate to the country's goals for expanding universal health coverage?

Costed scenarios

Overview

This module sets out the process and tools needed to cost the policy options selected in Module 10. These cost estimates are essential in order to present a case to policy-makers and donors on the practicalities of implementing these policies in the country concerned.

MODULE 12 OBJECTIVE:

To **cost** and **assess** the **value** of the different policy options chosen in Module 10.

Applying the module

Key Question 12.1: Policy option costs

What is the overall cost of the policy options identified in Module 11?

Data analysis

Each of the policy options selected in Module 10 should be broken down into its elements, which should be individually costed, for each year from the present to the end of the projection period. External consultants can be engaged to provide technical assistance with the costing process.

To assist in the costing process, some assumptions about costs must be made. These will be based on evidence gathered in Module 4 on salaries, financial incentives, costs of education and training, etc. The elements to be costed and the exact cost assumptions made should also be agreed during the stakeholder consultation, and reflected in a technical consensus statement. An example of a technical consensus statement is available at: http://integrare.es/wp-content/uploads/2015/02/Annex_Technical-Consensus-Statement.docx. All cost assumptions should also be listed as an annex in the national assessment report.

The following policy tools will be useful:

- The **OneHealth** tool is designed to strengthen health system analysis and costing and to develop financing scenarios at the country level. The primary purpose of the tool is to assess health investment needs in low- and middle-income countries 3-10 years into the future, covering a broad set of SRMNAH interventions (10). Available at: <http://www.avenirhealth.org/software-onehealth> (see also Annex B).
- The **Marginal Budgeting for Bottlenecks** tool is an analytical costing and budgeting tool that helps countries develop their health plans by taking into account the most effective interventions, cost and budget marginal allocations of their implementation to health services, and assessing their potential impact on health coverage. Available at: http://www.aidstar-one.com//focus_areas/treatment/ART_costing_cross_walk/marginal_budgeting_bottlenecks_mbb_toolkit.

- **CapacityPlus iHRIS Retain** is an open source tool to cost various health worker interventions and to develop retention strategies to be implemented at district, regional or national level. The tool is structured according to the 2010 WHO Global Policy Recommendations for Increasing Access to Health Workers in Remote and Rural Areas through Improved Retention. Available at: <http://retain.ihris.org/retain/>.
- The **Effective Coverage Modelling (ECoMod)** tool allows for the calculation over time of the costs of the staff required to provide effective coverage of maternal and newborn health services (see also Annex B).

Please complete the following table with the detailed costs for each policy option.

Policy option 1										
Element	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	etc
1										
2										
3										
4										
5										
6										
7										
8										
etc										
TOTAL (US\$)										

Policy option 2										
Element	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	etc
1										
etc										
TOTAL ALL POLICY OPTIONS (US\$)										

Key Question 12.2: Cost breakdown

What is the cost per pregnancy per year?

The total costs can then be broken down into the costs per pregnancy. Complete the following table:

	Current year (Year 0)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	etc
Number of pregnancies											
TOTAL COSTS (US\$), including inflation											
Costs per pregnancy, including inflation											
TOTAL COSTS (US\$), excluding inflation											
Costs per pregnancy, excluding inflation											

Module 12 post-assessment considerations

Having completed this module and calculated the costs of implementing the chosen policy options and the costs per pregnancy, consider the following questions:

- Have all the necessary elements been taken into account in calculating the costs?
- How do these costs compare to the overall health workforce budget? Is this level of spending on these specific policy options achievable in the context of the overall health workforce budget?
- How can the mobilization of the funds necessary to implement these policies be supported?
- Which groups need to be engaged for this process (e.g. Ministry/Department of Finance, Planning, etc.)?

Quality assurance and dissemination of results

The SRMNAH assessment team should bring together national and international experts, drawn from the MoH, the Ministry of Finance, the H4+ and partner organizations. According to the knowledge gaps identified, the team should have the appropriate research skills to cover the topic: i.e. clinical skills and experience, social science, epidemiology and statistics, health systems research, HRH, health economics and financing and policy research.

During the assessment there should be regular interaction between the members of the national assessment team, ideally at weekly meetings of a working group or steering committee. This will allow for the exchange of experiences, lessons learned and review of outputs to maintain quality, but also to provide input to and support for implementation.

The assessment team is responsible for following national guidelines and regulations related to carrying out and publishing research. All team members must have a thorough understanding of the background of the assessment in order to ensure appropriate in-depth assessment and questioning.

Preferably, the interviews and group discussions should be taped (after obtaining permission) and transcribed, so as to allow completeness in reporting. During data collection and before data processing the data should be checked for completeness (in comparison to the assessment framework) and internal consistency (in comparison to earlier data). When data are inconsistent or missing, either additional data can be gathered, or data should be excluded. During data entry a check should be performed to ensure its accuracy. Regarding the extraction of data from published and unpublished documents, health information systems, registers and databases, the research team should verify that the source contains accurate, complete and updated information. If several databases are available on the same topic (e.g. numbers of HRH) a decision should be made jointly with the national representatives on the most appropriate source or sources to use.

Regarding the interviews and group discussions, it is important that the national partner translates the topic guides (if required, possibly for subnational level) with back translation, adapts the topic guides to the local situation and pre-tests these before data are collected.

The assessment team should have the appropriate mix of research and policy analysis skills to cover the topic.

Advocacy and communication strategies must be developed to share the results of the assessment at the national, regional and global levels, and to ensure the results are used in subsequent planning for HRH and SRMNAH to achieve real improvements in policy and practice at the national level. At the same time, a regional and global communication strategy will ensure that the results of the assessment align with and support the global evidence base and advocacy movements for best practices in SRMNAH.

The following tools can help develop a strong advocacy and communications strategy:

Tool	Availability	Description
The Advocacy Progress Planner: an online tool for advocacy planning and evaluation	http://planning.continuousprogress.org/	This online tool is designed to help clarify the goals, audience and tactics of the advocacy campaign, and review progress towards the goals.
Addressing the health workforce crisis: a toolkit for health professional advocates	http://www.healthworkforce.info/advocacy/HWAI_advocacy_toolkit.pdf	This toolkit is designed to assist health professionals, health professional associations, and civil society organizations to develop advocacy strategies to address human resource and health financing issues in their country.
Make a case for supplies. Leading voices in securing reproductive health supplies: an advocacy guide and toolkit	http://www.rhsupplies.org/fileadmin/user_upload/toolkit/Advocacy_Guide_and_Toolkit.pdf	This guide contains general information and guidance on advocacy communication for groups interested in advocating for improved reproductive health policy environments. Includes examples and templates of advocacy tools targeted specifically at securing long-term availability of high-quality reproductive health supplies.
The Spitfire Strategies Smart Chart 3.0: an even more effective tool to help nonprofits make smart communications choices	http://www.smartchart.org/content/smart_chart_3_0.pdf	This tool is designed to help assess strategic decisions and ensure that the communications strategy delivers high impact.
Making the Case for Midwifery: a toolkit for using evidence from the <i>State of the World's Midwifery 2014</i> report to create policy change at the country level	http://www.familycareintl.org/en/resources/publications/110	This toolkit, designed to support advocacy efforts using the evidence from the <i>State of the World's Midwifery 2014</i> report, contains useful general information on conducting advocacy campaigns for SRMNAH workforce issues.

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Glossary and operational definitions

Acceptability (of health services): Dimension of the right to health, which requires that all health facilities, goods and services must be respectful of medical ethics and culturally appropriate, as well as sensitive to gender and life cycle requirements.¹

Acceptability (of the health workforce): The characteristics and ability of the workforce to treat everyone with dignity, create trust and enable or promote demand for services.²

Accessibility (of health services): Dimension of the right to health, which requires that health facilities, goods and services are accessible to everyone within the jurisdiction of the State Party. Accessibility has four overlapping dimensions: non-discrimination, physical accessibility, economic accessibility (affordability) and information accessibility.³

Accessibility (of the health workforce): The equitable access to health workers, including in terms of travel time and transport, opening hours and corresponding workforce attendance, disability-friendly infrastructure, referral mechanisms and the direct and indirect cost of services, both formal and informal.⁴

Accreditation: A process of confirming the educational quality of new, developing and established education and training programmes. It is usually carried out by peer/third-party review against established standards/outcomes.⁵

Association (or College): An organized body of persons engaged in a common professional practice, sharing information, career-advancement objectives, in-service training, advocacy and other activities. It usually defends the interests of the profession and the professionals, but is not a union.

Auxiliary midwife: A health worker assisting in the provision of maternal and newborn health care, particularly during childbirth, who possesses some midwifery competencies but is not a fully qualified/licensed midwife. In the latest International Standard Classification of Occupations (ISCO-08) auxiliary midwives are also referred to as midwifery associate professionals.⁶

1 United Nations Committee on Economic Social and Cultural Rights. CESCR General Comment No. 14: The right to the highest attainable standard of health (Art. 12). New York: United Nations, 2000.

2 Campbell J, Dussault G, Buchan J et al. *A universal truth: no health without a workforce*. Forum report, Third Global Forum on Human Resources for Health. Recife, Brazil. Geneva: Global Health Workforce Alliance and WHO, 2013.

3 United Nations Committee on Economic Social and Cultural Rights. CESCR General Comment No. 14: The right to the highest attainable standard of health (Art. 12). New York: United Nations, 2000.

4 Campbell J, Dussault G, Buchan J et al. *A universal truth: no health without a workforce*. Forum report, Third Global Forum on Human Resources for Health. Recife, Brazil. Geneva: Global Health Workforce Alliance and WHO, 2013.

5 Mckimm J, Newton PM, Silva A Da et al. Accreditation of health-care professional education programmes: a review of international trends and current approaches in Pacific Island countries. Sydney: Human Resources for Health Knowledge Hub, University of New South Wales, 2013.

6 WHO. Classifying health workers: Mapping occupations to the international standard classification. http://www.who.int/hrh/statistics/Health_workers_classification.pdf (accessed 30 January 2015).

Auxiliary nurse-midwife: A health worker assisting in the provision of maternal and newborn health care, particularly during childbirth but also in the prenatal and post-partum periods, who possesses some midwifery competencies but is not a fully qualified/licensed nurse-midwife.

Availability (of health services): Dimension of the right to health that requires functioning public health and health-care facilities, goods and services, as well as programmes in sufficient quantity.⁷

Availability (of the health workforce): The sufficient supply and stock of health workers, with the relevant competencies and skill mix that correspond with the health needs of the population.⁸

Cadre: A type or category of professional health worker.

Community health worker: Community health workers should be members of the community where they work, should be selected by the community, should be answerable to the community for their activities, should be supported by the health system but not necessarily a part of its organization, and have shorter training than professional workers.⁹

Effective coverage: The proportion of people who have received satisfactory health services relative to the number needing such services. The dimensions of effective coverage are: availability, accessibility, acceptability, utilization and quality.

Emergency obstetric and neonatal care facilities – basic (BEmONC): Peripheral health facilities with maternity and newborn services that have practised in the past three months all seven basic signal functions: parenteral administration of antibiotics, anticonvulsants, oxytocics, manual removal of placenta, manual vacuum aspiration for retained products, assisted instrumental delivery by vacuum extractor, and newborn resuscitation with mask. The functions include stabilization of mothers and newborns with complications before and during transfer to a higher-level hospital.¹⁰

Emergency obstetric and neonatal care facilities – comprehensive (CEmONC): Health facilities with maternity services that have practised in the past three months all seven BEmONC signal functions listed above plus two additional signal functions: emergency surgery (caesarean section) and safe blood transfusion (can also include advanced newborn resuscitation).¹¹

Licensing: Generally involves conferring upon an individual a licence to practise their particular health-care profession. Many countries do not distinguish between licensing and registration (see definition below) and both may be partial/temporary/conditional in certain circumstances (for instance, newly qualified professionals in some countries).¹²

7 United Nations Committee on Economic Social and Cultural Rights. CESCR General Comment No. 14: The right to the highest attainable standard of health (Art. 12). New York: United Nations, 2000.

8 Campbell J, Dussault G, Buchan J et al. *A universal truth: no health without a workforce*. Forum report, Third Global Forum on Human Resources for Health. Recife, Brazil. Geneva: Global Health Workforce Alliance and WHO, 2013.

9 WHO. Strengthening the performance of community health workers in primary health care: a report from a WHO study group. Geneva, 1989.

10 WHO, UNFPA, UNICEF, AMDD. *Monitoring emergency obstetric care: a handbook*. Geneva: WHO; 2009 May p. 1-152.

11 WHO, UNFPA, UNICEF, AMDD. *Monitoring emergency obstetric care: a handbook*. Geneva: WHO; 2009 May p. 1-152.

12 Mckimm J, Newton PM, Silva A Da et al. Accreditation of health-care professional education programmes: a review of international trends and current approaches in Pacific Island countries. Sydney: Human Resources for Health Knowledge Hub, University of New South Wales, 2013.

Midwife: A person who, having been regularly admitted to a midwifery educational programme, duly recognized in the country in which it is located: has successfully completed the prescribed course of studies in midwifery that is based on the ICM Essential Competencies for Basic Midwifery Practice and the framework of the ICM Global Standards for Midwifery Education; has acquired the requisite qualifications to be registered and/or legally licensed to practise midwifery and use the title “midwife”; and demonstrates competency in the practice of 'midwifery'.¹³

Midwifery: Midwifery is defined as skilled, knowledgeable and compassionate care for childbearing women, newborn infants and families across the continuum from pre-pregnancy, pregnancy, birth and the post-partum period to the early weeks of life. Core characteristics of midwifery include optimizing normal biological, psychological, social and cultural processes of reproduction and early life, timely prevention and management of complications, consultation with and referral to other services, respecting women’s individual circumstances and views, and working in partnership with women to strengthen women’s own capabilities to care for themselves and their families.¹⁴

National Health Account: A system for tracking the flow of funds into the health-care sector over a defined period of time.

Nurse-midwife: A person who is legally licensed/registered to practise the full scope of nursing and midwifery in his/her country.¹⁵

People-centred care: The management and delivery of health services such that people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease-management, rehabilitation and palliative care services, through the different levels and sites of care within the health system, and according to their needs throughout the life course.¹⁶

Public-private partnership: An arrangement, typically medium- to long-term, between the public and private sectors whereby some of the services that fall under the responsibilities of the public sector are provided by the private sector, with clear agreement on shared objectives for delivery of public infrastructure and/or public services.

Quality (health services): Dimension of the right to health, which requires that health facilities, goods and services must be scientifically and medically appropriate and of good quality.¹⁷

Quality (health workforce): The competencies, skills, knowledge and behaviour of the health workforce assessed according to professional norms and as perceived by users.¹⁸

Registration: Generally refers to the actual process of enrolling with a professional regulatory body following graduation from an accredited programme. Many countries do not distinguish between registration and licensing, but some do and a licence to practise may be issued by a separate authority, particularly in countries where the processes are managed at a subnational level. Both licensing and registration may be partial/temporary/conditional under certain circumstances (for instance, newly qualified professionals in some countries).¹⁹

13 ICM. ICM international definition of the midwife (revised June 2011). The Hague, 2011.

14 Renfrew MJ, McFadden A, Bastos MH et al. Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care. *Lancet* 2014; 384: 1129–45.

15 ICN. Nature and scope of practice of nurse-midwives. Position Statement. Geneva: International Council of Nurses; 2007.

16 WHO. WHO global strategy on people-centred and integrated health services. Geneva, 2014. <http://www.who.int/servicedeliverysafety/areas/people-centred-care/en/> (accessed 30 January 2015).

17 United Nations Committee on Economic Social and Cultural Rights. CESCR General Comment No. 14: The right to the highest attainable standard of health (Art. 12). New York: United Nations, 2000.

18 Campbell J, Dussault G, Buchan J et al. A universal truth: no health without a workforce. Forum report, Third Global Forum on Human Resources for Health. Recife, Brazil. Geneva: Global Health Workforce Alliance and WHO, 2013.

19 Mckimm J, Newton PM, Silva A Da et al. Accreditation of health-care professional education programmes: a review of international trends and current approaches in Pacific Island countries. Sydney: Human Resources for Health Knowledge Hub, University of New South Wales, 2013.

Regulation: The controlling of professional practice in accordance with laws, policies, standards and ethics. It can apply to education, practice, management of the profession, career advancement, etc.

Reproductive, maternal and newborn health: The health of women during pre-pregnancy, pregnancy, labour, childbirth and the post-partum period, as well as the health and survival of the foetus during labour and the newborn within the first few hours and days, a period during which the newborn is mostly cared for by a professional birth attendant (and in privileged circumstances by a neonatologist).

Skilled birth attendant: Defined by the WHO 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.²⁰

Woman-centred care: The perspectives, needs and concerns of women should be at the centre of the considerations when discussing and agreeing the package of care.

Universal health coverage: The goal of universal health coverage is to ensure that all people obtain the health services they need without suffering financial hardship when paying for them. This requires: a strong, efficient, well run health system; a system for financing health services; access to essential medicines and technologies; and a sufficient number of well trained, motivated health workers to meet demand.²¹

20 WHO, ICM, FIGO. Making pregnancy safer: the critical role of the skilled attendant. Joint statement by WHO, ICM and FIGO. Geneva, 2004.

21 WHO. What is universal health coverage? http://www.who.int/universal_health_coverage/en/ (accessed 30 January 2015).

Qualitative data collection tools

Tool	Availability	Description	For key question(s)
<i>State of the world's midwifery 2014</i> Questionnaire	http://integrare.es/wp-content/uploads/2015/02/Training_Capacity_Questionnaire.doc	This questionnaire, developed to collect data for the <i>State of the world's midwifery 2014</i> , provides a tool to explore and discuss the availability, accessibility, acceptability and quality of midwifery services (and the health workers who provide these services). The questionnaire is separated into modules to prompt policy dialogue on the workforce, infrastructure, education, regulation, professional associations, and policy architecture.	General
Monitoring the building blocks of health systems: a handbook of indicators and their measurements	http://www.who.int/healthinfo/systems/WHO_MBHSS_2010_full_web.pdf	This handbook is structured around the WHO framework that describes health systems in terms of six core components or "building blocks": 1) service delivery, 2) health workforce, 3) health information systems, 4) access to essential medicines, 5) financing, and 6) leadership/governance. For each building block, the handbook identifies a parsimonious set of indicators and related measurement strategies.	General
WHO Western Pacific Regional Office, Regional Training Centre. Health workforce planning workbook	http://www.who.int/hrh/tools/planning_workbook.pdf	Workbook designed to assist Ministries/ Departments of Health in producing a health workforce plan.	General
Averting Maternal Death and Disability program: Needs assessment of emergency obstetric and newborn care (EmONC)	http://amddprogram.org/d/content/needs-assessments	This EmONC Toolkit contains documents needed to plan for and conduct an EmONC Needs Assessment. These needs assessments provide details for planning to address gaps or problems in EmONC services. This is a first and critical step to improving equitable access to EmONC and to strengthening the overall health system.	2.2
International Health Facility Assessment Network	http://ihfan.org/home/	The International Health Facility Assessment Network has developed a number of tools, white papers and resources to improve the availability and utility of health facility targeted data for evidence-informed decision-making.	2.2
Patient Pathway tool: mapping what happened to the last 10 patients with pregnancy, obstetric, postnatal or neonatal complications	http://integrare.es/wp-content/uploads/2015/02/Last_10_Patients.pdf	Tool to collect information in health facilities on the last 10 patients treated for pregnancy complications.	2.2, 5.4
Clinical walk-through tool	http://integrare.es/wp-content/uploads/2015/02/Clinical_Walkthrough_Tool.pdf	Assessment tool designed to collect information at health facilities on services provided, availability and functionality of equipment, and types of health worker.	2.2, 5.5
WHO. Handbook on monitoring and evaluation of human resources for health: with special applications for low- and middle-income countries	http://www.who.int/hrh/resources/handbook/en/	This handbook provides guidance for the adequate development of a health workforce along the whole working life cycle, including training, deployment, retention, indicators and monitoring strategies. It can be adapted and applied to the SRMNAH workforce.	3.3, 3.4, 4.1, 4.2, 4.3, 5.3, 5.4, 5.5, 5.6, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 8.1

Tool	Availability	Description	For key question(s)
WHO, 2007. Assessing financing, education, management and policy context for strategic planning of human resources for health	http://www.who.int/hrh/tools/assessing_financing.pdf	The tool provides guidance for evaluating the health workforce situation and may be used as a guide for the development of health workforce strategies.	3.3, 3.4, 4.1, 4.2, 4.3, 5.5, 5.6, 6.3, 6.4, 6.5, 6.6
Training capacity questionnaire	http://integrare.es/wp-content/uploads/2015/02/Training_Capacity_Questionnaire.doc	Questionnaire to collect data on health workforce policy and education and training.	3.3, 3.4, 6.2, 6.3
Standards for maternal and neonatal care	http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/a91272/en/	The standards for maternal and neonatal care are part of the WHO Integrated Management of Pregnancy and Childbirth Care Package, which provides guidance for countries to improve the health and survival of women and their newborn babies during pregnancy, childbirth and the postnatal period.	3.4
ICM. Global standards for midwifery regulation	http://www.internationalmidwives.org/assets/uploads/documents/Global%20Standards%20Comptencies%20Tools/English/GLOBAL%20STANDARDS%20FOR%20MIDWIFERY%20REGULATION%20ENG.pdf	This document provides a professional framework that supports midwives to work autonomously within their full scope of practice. It should be used together with ICM essential competencies and the global standards for regulation and education.	3.4
ICM. International code of ethics for midwives	http://www.internationalmidwives.org/assets/uploads/documents/CoreDocuments/CD2008_001%20ENG%20Code%20of%20Ethics%20for%20Midwives.pdf	This tool guides the ethical development, education and appropriate utilization of the professional midwife.	3.4
ICM. Competency based equipment list for basic skills training	http://www.internationalmidwives.org/assets/uploads/documents/CoreDocuments/Standard%20Competency-Based%20Equipment%20List%20for%20Basic%20Skills%20TrainingFINAL_2013.pdf	This document provides guidance on the basic set of models, equipment, consumables, reference books and learning materials for midwifery education and training.	3.4
Nursing & Midwifery Council. Standards for pre-registration midwifery education	http://www.nmc-uk.org/Documents/Standards/nmcStandardsforPre_RegistrationMidwiferyEducation.pdf	This tool covers the scope of the standards and guidance for pre-registration midwifery education. It assesses the fitness for practice at point of registration, and pre-registration midwifery education.	3.4
The charter for respectful maternity care	http://whiteribbonalliance.org/wp-content/uploads/2013/10/Final_RMC_Charter.pdf	This document focuses specifically on the interpersonal aspects of care received by women seeking maternity services.	3.4
ICM. Member association capacity assessment tool	http://www.internationalmidwives.org/assets/uploads/documents/Global%20Standards%20Comptencies%20Tools/English/Association_with_MACAT-Final_Sept_2012_Final.pdf	A tool to assist member associations to assess themselves.	3.4
WHO, 2002. Assessment of human resources for health. Regulation of health occupations. Question-by-question specifications	http://www.who.int/hrh/tools/hrh_assessment_guide.pdf	This tool helps countries to identify appropriate human resource interventions, by making it possible to see how the current health workforce is distributed within and between public and private sectors, areas of specialization, and level of care.	3.4, 4.2, 4.3, 5.6, 6.2, 6.3, 6.4, 6.5, 6.6

Tool	Availability	Description	For key question(s)
ICM. Global standards for midwifery education	http://www.internationalmidwives.org/assets/uploads/documents/CoreDocuments/ICM%20Standards%20Guidelines_ammended2013.pdf	This document defines the standards and the expectations for performance (competencies) and scope of midwifery practice for a given country or region needed to promote the health of women and childbearing families. This is based on midwives' provision of high quality, evidence-based health services for women, newborns, and childbearing families. This document was developed in harmony with ICM's essential competencies and standards of practice and regulation.	3.4, 5.2
ICM. Model curriculum outlines for professional midwifery education	http://www.internationalmidwives.org/what-we-do/education-coredocuments/model-curriculum-outlines-for-professional-midwifery-education/packet-1-2-3-4.html	This document provides a model for midwifery pre-service or basic education development. The curriculum outlines and suggested organization of content are based on the principles of adult learning and are competency-based in their design and teaching and learning strategies.	3.4, 5.2
ICM. Curriculum mapping tool	http://www.internationalmidwives.org/assets/uploads/documents/CoreDocuments/ICM%20Curriculum%20concordance%20map%20-revised%202013.pdf	This mapping tool is focused on the curriculum of studies based on the knowledge, professional behaviours and clinical skills that the individual midwife should know/demonstrate/perform.	3.4, 5.2
WHO. Strengthening midwifery toolkit	http://www.who.int/maternal_child_adolescent/documents/strengthening_midwifery_toolkit/en/	This tool aims to strengthen the central role and function of the professional midwife in the provision of quality care during pregnancy and childbirth and in other reproductive and sexual health services. It is organized in nine modules: 1) A background paper, 2) Legislation and regulation of midwifery, making safe motherhood possible, 3) Developing standards to improve midwifery practice, 4) Competencies for midwifery practice, 5) Developing a midwifery curriculum for safe motherhood: guidelines for midwifery education programmes, 6) Developing effective programmes for preparing midwife teachers, 7) Developing standards to improve midwifery practice, 8) Monitoring and assessment of continued competency for midwifery practice, 9) Developing midwifery capacity for the promotion of maternal and newborn health.	3.4, 5.2, 5.3, 6.2, 8.1
Evaluating the quality of care for severe pregnancy complications: the WHO near-miss approach for maternal health	http://www.who.int/reproductivehealth/publications/monitoring/9789241502221/en/index.html	This guide proposes a systematic process for assessing the quality of care through a maternal near-miss approach and monitoring the implementation of critical interventions in maternal health care. It is intended to inform policy decisions for improving the quality of maternal health care. It can be implemented both at facility level and within the health system as a whole.	3.4, 8.1
WHO. Management of quality of care	http://www.who.int/management/quality/en/	This section of WHO's guidance on managing health services delivery includes topics and issues relevant to managing the quality and safety of services at district, facility, programme and community levels. Many of these issues also involve staff professionalism and staff safety.	3.4, 8.1

Tool	Availability	Description	For key question(s)
PMNCH. A multisectoral policy compendium for RMNCH	http://www.who.int/pmnch/media/news/2014/compendium/en/	This Compendium brings together key consensus-based policy recommendations and guidance to improve the delivery of essential RMNCH interventions. It also includes multisectoral policies on the economic, social, technological and environmental factors that influence health outcomes and service delivery. It is designed for policymakers and managers who are responsible for developing, implementing and evaluating RMNCH strategies, plans and programmes.	5.1
ICM. Essential competencies for basic midwifery practice	http://www.internationalmidwives.org/assets/uploads/documents/CoreDocuments/ICM%20Essential%20Competencies%20for%20Basic%20Midwifery%20Practice%202010,%20revised%202013.pdf	The essential competencies are guidelines for the mandatory content of midwifery pre-service education curricula, and information for governments and other policy bodies that need to understand the contribution that midwives can make to the health-care system. This document describes the knowledge, skills and behaviours required of the midwife for safe practice in any setting and details several different educational pathways.	5.3
RCM. Evidence-based guidelines for midwifery-led care in labour	https://www.rcm.org.uk/content/evidence-based-guidelines	These evidence-based guidelines provide midwives with a comprehensive discussion of currently available evidence for midwives to follow in practice.	5.3
WHO. Recommendations for optimizing health worker roles to improve access to key maternal and newborn health interventions through task shifting – OPTIMIZE 4 MNH	http://www.optimize4mnh.org/	The objective of this guidance is to issue evidence-based recommendations to facilitate universal access to key, effective maternal and newborn interventions through optimizing health workers' roles. These recommendations are intended for health policymakers, managers and other stakeholders at regional, national and international levels.	5.4, 5.5
WHO. Global health workforce statistics	http://www.who.int/hrh/statistics/en/	Statistics on the number and density of health workers for 194 WHO Member States. The main (aggregated) data set provides standardized information on nine occupational categories of human resources for health (HRH). Depending on data availability and the organization of the national health system, disaggregated information may be provided for up to 18 occupational categories, as well as on the distribution of HRH by age, sex and place of work (urban/rural).	5.6
WHO. Human resources for health minimum data set	http://www.who.int/hrh/documents/hrh_minimum_data_set.pdf	The WHO Human Resources for Health Minimum Data Set aims to support Member States and areas in designing effective and efficient HRH management information systems focused on nurses and midwives, to generate, process, report on and apply essential core data in a timely manner. The data are for planning and management, as well as to promote coordination and collaboration between various health professionals, ministries, educational institutions and professional associations.	5.6, 6.3, 6.6
WHO. Data mapping template on human resources for health	http://www.hrresourcecenter.org/node/3135	This tool is for use as a starting point in the collation, analysis and synthesis of data and evidence on HRH, as well as for monitoring the strengths and limitations of the underlying information systems.	5.6, 6.2, 6.3
USAID, Capacity Plus. The human resources for health indicator compendium: health workforce performance support	http://www.capacityplus.org/hrhic/content/result-4-health-workforce-performance-support	Compendium of published indicators on HRH, a tool for HRH systems strengthening practitioners interested in monitoring HRH projects and programmes.	6.3, 6.6

Tool	Availability	Description	For key question(s)
USAID, 2011. Community Health Worker Assessment and Improvement Matrix (CHW AIM): a toolkit for improving CHW programmes and services	http://www.who.int/workforcealliance/knowledge/toolkit/50.pdf	This toolkit aims to help organizations assess CHW programme functionality and improve programme performance. Built around a core of 15 components deemed essential for effective programmes, CHW AIM includes a guided self-assessment and performance improvement process to help organizations identify programme strengths and address gaps.	6.4
WHO, 2010. Increasing access to health workers in remote and rural areas through improved retention: global policy recommendations	http://whqlibdoc.who.int/publications/2010/9789241564014_eng.pdf	The evidence-based recommendations relate to the movements of health workers within the boundaries of a country and focus solely on strategies to increase the availability of health workers in remote and rural areas through improved attraction, recruitment and retention. The recommendations apply to all types of health workers in the formal, regulated health sector, including health managers and support staff, as well as to students aspiring to or currently attending education programmes in health-related disciplines.	6.4
Belita A, Mbindyo P et al. Absenteeism amongst health workers—developing a typology to support empiric work in low-income countries and characterizing reported associations. <i>Human Resources for Health</i> 2013; 11(1): 34	http://www.human-resources-health.com/content/11/1/34	This paper reviews the literature on absenteeism from a health system manager's perspective, and offers a typology of definitions that might be useful to classify different forms of absenteeism and identify factors associated with absenteeism.	6.6
MEASURE evaluation, geographic approaches to global health: a self-directed mini-course	http://www.cpc.unc.edu/measure/publications/ms-12-56	This course is appropriate for public health programme planners, managers and professional staff who are interested in learning how geography and spatial data and tools can benefit their programmes. The course is designed for individuals without a background in geographic information systems or who are not specialists in medical geography.	7.2, 7.3
PMNCH. Decision-making pathways to address workforce bottlenecks for MDG5	http://www.who.int/pmnch/knowledge/tools/decision/en/	Tool to support decision makers in identifying actions and relevant resources to help address the issue of low skilled birth attendant coverage as part of an overall effort to reduce high maternal mortality ratios.	8.1
Key informant interviews: facility managers or in-charges. Staffing, service delivery and perceptions	http://integrare.es/wp-content/uploads/2015/02/Informant_Interview_Managers.docx	Questionnaire for managers of health facilities containing sections on the working environment, incentives, motivation and service provision.	4.2, 5.4, 5.5, 6.3, 6.5
Key informant interviews: health workers providing maternal and newborn health services. Staffing, service delivery and perceptions	http://integrare.es/wp-content/uploads/2015/02/Informant_Interview_Health_Workers.docx	Questionnaire for MNH health workers containing sections on skills, education, service provision, working environment, incentives and perceptions.	4.2, 5.2, 5.3, 5.4, 5.5, 6.5, 6.6
WHO, 2010. Workload Indicators of Staffing Need (WISN).	http://www.who.int/hrh/resources/wisn_user_manual/en/	HR management tool that determines how many health workers of a particular type are needed to cope with the workload of a given facility, and assesses workload pressure of workers in that facility. Can be used to plan for future staffing needs.	9.1

Tool	Availability	Description	For key question(s)
iHRIS Plan	http://www.ihris.org/ihris-suite/planning-tools/ihris-plan-2/	This planning tool provides a picture of the current health workforce and projects how that workforce will change based on known influences such as retirement age, the number of trained workers annually entering the workforce, and other factors. This is then compared to projected health workforce needs, illustrating the gap between the two. The decision maker can interactively test various interventions to try to close that gap and immediately assess the effects.	9.1, 9.2
OneHealth Tool	http://www.avenirhealth.org/software-onehealth	Software tool designed to inform national strategic health planning in low- and middle-income countries. The tool provides planners with a single framework for scenario analysis, costing, health impact analysis, budgeting and financing of strategies for all major diseases and health system components. It is thus primarily intended to inform sector wide national strategic health plans and policies.	9.1, 12.1
Effective Coverage Modelling (ECoMod) Tool	http://integrare.es/	This modelling software uses cohort simulation and adjusted service targets-based needs assessment to conduct projections, under a variety of policy scenarios, of workforce requirements and availability to deliver a package of SRMNAH essential interventions to the population.	9.1, 9.2, 10.1, 12.1
SUPPORT tools for evidence-informed health policymaking	http://www.health-policy-systems.com/supplements/7/S1	Each article in this series presents a tool for use by those involved in finding and using research evidence to support evidence-informed health policymaking. The series addresses four broad areas: 1) supporting evidence-informed policymaking; 2) identifying needs for research evidence in relation to three steps in policymaking processes, namely problem clarification, options framing and implementation planning; 3) finding and assessing both systematic reviews and other types of evidence to inform these steps; and 4) proceeding from research evidence to decisions.	10.1
WHO. Evidence-Informed Policy Network	http://global.evipnet.org/en	A network and collection of resources to promote the systematic use of health research evidence in policymaking, focusing on low- and middle-income countries.	10.1
ANNALISA	http://www.annalisa.org.uk/software.php	A decision-making tool which can be used for Multi-Criteria Decision Analysis, with functions for setting and weighting criteria, rating options and scoring the best outcomes.	10.1
Hiview3	http://www.catalyze.co.uk/index.php/software/hiview3/	A decision modelling tool that supports the appraisal and evaluation of options. It is equally effective for group decision-making, such as decision conferences, and for individual decisions. With a host of user-defined features, Hiview3 can be configured to address a variety of problem areas.	10.1
V.I.S.A decisions	http://visadecisions.com/	V-I-S-A software is for decisions with multiple, tough to balance, factors; for decisions where no option matches all of the criteria perfectly; or for decisions where more than one person has a say in how the decision is made. It is visual and interactive so that the decision can be explored easily and quickly, while showing how sensitive the decision is to small changes in how people score or weight the alternatives and criteria.	10.1

Tool	Availability	Description	For key question(s)
Expert Choice Comparison	http://expertchoice.com/	A decision-making application that enables teams to collaborate and reach optimal decisions.	10.1
MANDATE, the maternal and neonatal directed assessment of technology project	http://mnhtech.org/	This tool provides a framework to prioritize technology development and to estimate the impact of those technologies on maternal, foetal and neonatal mortality.	11.1

Document review: H4+ potential sources of data

National government commitments for the Every Woman, Every Child Campaign	http://www.everywomaneverychild.org/commitments
WHO country profiles	http://www.who.int/countries/en/
<i>State of the world's midwifery</i>	http://www.unfpa.org/sowmy/report/home.html
WHO service availability mapping	http://www.who.int/healthinfo/systems/samintro/en/index.html
WHO service availability and readiness assessment	http://www.who.int/healthinfo/systems/sara_introduction/en/index.html
<i>Countdown to 2015, 2010</i>	http://www.countdown2015mnch.org/
UNICEF Multiple Indicator Cluster Survey	http://www.childinfo.org/mics.html
UNAIDS. Countdown to zero: global plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive	http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2011/20110609_jc2137_global-plan-elimination-hiv-children_en.pdf
United Nations Commission on Life-Saving Commodities for Women's and Children's Health	http://www.everywomaneverychild.org/resources/un-commission-on-life-saving-commodities
United Nations development assistance plans and United Nations development assistance framework reports	Available for selected countries
World Bank health expenditure reports	Available for selected countries

Additional reading: Module 7

1. Tatem AJ et al. Millennium Development Goals health metrics: where do Africa's children and women of child bearing age live? *Population Health Metrics* 2013; 11 (11).
2. Tatem AJ et al. Mapping for maternal and newborn health: the distributions of women of childbearing age, pregnancies and births. *International Journal of Health Geographics* 2014; 13(2).
3. Linard C, Gilbert M, Tatem AJ. Assessing the use of global land cover data for guiding large area population distribution modelling. *Geojournal* 2011; 76(5): 525-38.
4. Black M et al. Using GIS to measure physical accessibility to health care. Geneva: WHO, PAHO, RMIT University, 2004.
5. McLafferty S. GIS and health care. *Annual Review of Public Health* 2003; 24: 25-42.
6. Tanser F. Geographical information systems (GIS): innovations for primary health care in developing countries. *Innovations: Technology, Governance, Globalization* 2006; 1(2): 106-122.

ANNEX C:

Typical information for ethics review board

Title

National Assessment of the Sexual, Reproductive, Maternal, Newborn and Adolescent Health (SRMNAH) Workforce

Background

The information in Chapter 1 (“Background”) can be copied for this section.

Applying organization

State the name of the applying organization here.

Principal Investigator (PI)

A representative of either the applying organization or in-country assessment partners

Goals and objectives

The **goal** of the SRMNAH Workforce Assessment is to enhance the quality of and access to the SRMNAH workforce. It is anticipated that this will be of immediate value to national stakeholders in enabling and informing their national strategies, targets and commitments to improve health. The **objective** of the national assessment is to analyse the SRMNAH workforce, specifically: SRMNAH service provision; the performance of the SRMNAH workforce; the work environment; management and policies; and financing. Data will be collected on formal policies, guidelines and regulations, as well as on the current situation at the service provision level and on promising or innovative practices. The **output** per country is a national report, presenting the situation, promising practices, future projections of supply/demand, and costed policy options.

More specifically, the **goal of the data collection** at the subnational level is to complement the document review in identifying the existing situation, policies and practices (including promising practices) related to the availability, accessibility, acceptability and quality of the SRMNAH workforce, and the three domains of investigation: country context, population need for SRMNAH services, and supply of the SRMNAH workforce.

The objective of the data collection at the subnational level (districts and facilities/organizations) is to generate perspectives on existing policies and plans and allow the identification of promising practices. Spot checks, focus groups and semi-structured interviews may be used e.g. regarding implementation of the model of continuum of care, activities contributing to a competent and motivated SRMNAH workforce, and responsiveness to needs of the community.

Research protocol

Study type

This is an exploratory assessment.

Research question

The central question of the national assessment is: What is the appropriate SRMNAH workforce, and how is it best deployed, to equitably deliver essential SRMNAH interventions at scale and quality, and what (including costs) needs to be put into place to achieve universal access?

Data collection techniques

The techniques that will be implemented depend on the knowledge gaps and corresponding data collection tools identified. These may include semi-structured interviews, group discussions, or direct observation in different cases. For each county, the tools selected and corresponding data collection techniques should be explained here.

Sampling and recruitment of the study population

The following text on sampling can be used as a basis for this text:

“Data collection sites (organizations, facilities, institutions) and respondents should be purposefully selected in such way that they provide rich, in-depth information from different perspectives on the questions at hand. The in-country data collection does not intend to collect data that represent the situation in the whole country. This means that the sampling would need to be purposeful, focusing on recruitment of respondents with relevant experience. It is more important to have in-depth information from a limited number of people at national and subnational level, than to have limited information from a large group of people.”

However, this needs to be specified on the basis of the selection criteria that have been agreed upon at country level. For example, selection criteria could include selecting districts with different or contrasting characteristics such as an urban and rural district; or a well-performing and a not-so-well performing district.

Data collection

Refer to the methods used in Phase 1 and Phase 2 of this Handbook, specifying in accordance with the context of the country concerned.

Data analysis

Refer to the methods used in Phase 3 of the Handbook, specifying in accordance with the context of the country concerned.

Letters of collaborating organizations

Provide these if requested.

CVs of the PI and relevant senior researchers

Provide these if requested.

Informed consent form

For each interview, consent shall be requested. An example consent form in English can be found below. The consent form should be translated into the local language when needed, based on the respondents for the data collection.

Informed Consent Form for Semi Structured Interview

Good morning/afternoon.

My name is _____. I am a researcher working with _____ [research institute]_____ and we are doing a study on the health workers providing health care to women during pregnancy, labour and birth and to mothers and babies in the postnatal period. This study is implemented by _____ in collaboration with _____.

Purpose of the study: The aim of this study is to _____. We want to gather evidence regarding _____ and want to find out _____. Through this study we want to contribute to future policies on health workers providing health care to mothers and children before, during and after birth. Therefore, we would be grateful if you would agree to share your thoughts and experience regarding this topic. *(For a group discussion: Therefore, we would be grateful if you would participate in a group discussion to share your thoughts and experience regarding this topic).*

Discomfort and risk: The questions we will be asking are about your ideas regarding the sexual, reproductive, maternal, newborn and adolescent health (SRMNAH) workforce as you have been observing them. The study should not cause any harm to you or the community.

Duration of participation: The interview (*group discussion*) will take about _____. Your participation is voluntary and your decision on whether you will participate or not in this study and the answers you will give will not have any influence on how you will be treated in the health services in the future or how you will be appraised in case you are employed in the health system. Nevertheless if you feel uncomfortable with certain questions you can decide to not answer these and you can stop the interview at any moment in time.

Confidentiality: The interview will be confidential and your name will not appear in the report but will only be recorded on the consent form. *(For a group discussion: You should be aware though that we cannot guarantee full confidentiality on your contribution in the group discussion, but we will treat discussion as confidential and want to ask you to do the same regarding things the other group members will be saying. Your name will be recorded on the consent form but will not appear in the report.)* We might wish to use some of your answers as anonymous quotes, but if you do not wish these to be traceable to you personally you can indicate this here. We will make notes and with your permission we wish to tape record the interview to make sure we accurately record your answers. After transcribing the interview, these tapes will be destroyed.

Benefits and compensation: You will not gain personal benefit from participation in this study. The intention for this study is to contribute towards strengthening the SRMNAH workforce in your country.

Do you have any questions? (If yes, note the questions and answer.)

Yes No

If you agree to participate we ask you to sign below:

“I have been given an opportunity to ask any questions I may have, and all such questions or inquiries have been answered to my satisfaction. I hereby consent to participate in this study”. I agree that my answers can be used as anonymous quotes:

Yes No

Name: _____

Signature _____

Date: _____

ANNEX D:

Contact information

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