

Mozambique: Midwifery Workforce Assessment

Document review (Synthesis Report)

H4+ High Burden Countries Initiative

Prepared by:

Secretariat and Technical Working Group on behalf of the H4+ Agencies

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LIST OF ABBREVIATIONS

ADB	African Development Bank
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
BEmONC	Basic Emergency Obstetric and Neonatal Care
CEmONC	Comprehensive Emergency Obstetric and Neonatal Care
CHW	Community Health Worker
DALY	Disability Adjusted Life Years
DHS	Demographic and Health Survey
EmONC	Emergency Obstetric and Neonatal Care
ESMI	Enfermeira de Saúde Materno-Infantil
EWEC	Every Woman, Every Child
FRELIMO	Frente de Libertação de Moçambique
GDP	Gross Domestic Product
GoM	Government of Mozambique
HBCI	High Burden Countries Initiative
HC	Health Centre
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
HRH	Human Resources for Health
HU	Health Unit
IHP	International Health Partnership
IMEPS	Instituto Médio Politécnico de Saúde
INE	Instituto Nacional de Estatística
IPD	In-patient Department
ISCISA	Instituto Superior de Ciências da Saúde
JANS	Joint Assessment of National Strategies
LB	Live Births
M&E	Monitoring and Evaluation
MCH	Mother and Child Health
MDG	Millennium Development Goal
MICS	Multiple Indicators Cluster Survey
MISAU	Ministério de Saúde
MM	Maternal Mortality
MNH	Maternal and Neonatal Health
MoH	Ministry of Health
MoPLeD	Ministério de Planeamento e Desenvolvimento
MTEF	Medium Term Expenditure Framework
MZN	Novo Metical Moçambicano
ODA	Overseas Development Aid
OPD	Outpatient Department
PAF	Plano Acelerado de Formação
PARP	Plano de Acção para a Redução da Pobreza
PDRH	Plano para o Desenvolvimento dos Recursos Humanos
PES	Plano Económico e Social
PESS	Plano Estratégico do Sector Saúde
PHC	Primary Health Care
PMTCT	Prevention of Mother To Child Transmission
PNDRH	Plano Nacional de Desenvolvimento dos Recursos Humanos
PQG	Programa Quinquenal do Governo
SWAp	Sector Wide Approach
TA	Tribunal Administrativo
TWG	Technical Working Group
VAT	Value Added Tax
WHO	World Health Organization
YLL	Years of Life Lost

1 Introduction

The **purpose** of the Midwifery Workforce Assessment (MWA) is to support policy dialogue on the provision of Maternal and Newborn Health (MNH) services in Mozambique and the attainment of national policy goals in the period 2013-2025. The MWA aims at providing the Ministry of Health (MISAU) with a comprehensive analysis of the context, population health needs and the internal health labour market in order to identify costed policy options that would accelerate progress on reaching MDGs 4 and 5 and inform the potential for universal access to reproductive, maternal and newborn health services in the post-2015 development agenda.

The MWA is conducted at the invitation of MISAU as part of the High Burden Countries Initiative (HBCI).¹ The process follows the Operational Guidance and Assessment Framework (OGAF) developed by the HBCI's Secretariat and Technical Working Group. The OGAF has been applied in Afghanistan, Bangladesh, DR Congo, Ethiopia and United Republic of Tanzania in 2012-13. The approach has also been adopted in the 'Muskoka' countries (including Benin and Togo). A 2013 revision of the OGAF, reflecting the lessons of its field application, now informs the MWA in Mozambique.

The **aim** of the national assessment is to answer the following question:

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

The **"midwifery workforce"** includes all health providers whose primary functions include assistance to women during pregnancy, labour and birth as well as postpartum and postnatal care for mothers and babies. Subject to each country, this includes community, primary, secondary and specialist health providers that engage with women across the continuum of care.

In order to answer the research question and inform policy discussions, the assessment will address the following:

- (i) describe the national context and the influences on maternal and newborn health;
- (ii) model and describe population needs in the period 2013-2025;
- (iii) describe existing policies, guidelines and regulations and the availability, accessibility, acceptability and quality of the midwifery workforce as well as factors influencing this (education, working environment, management and financing), identifying gaps and opportunities;
- (iv) identify emerging practices and opportunities to improve availability and performance;
- (v) model and describe the disparities in supply and demand of the midwifery workforce in relation to projected needs;
- (vi) formulate scenarios and costed policy options to improve quality, equitable access, efficiency and utilization of midwifery services.

The **output** is a national assessment, presenting the situation and costed policy options for strengthening the health workforce. It is anticipated that this will be of immediate value to national stakeholders in enabling and informing their national commitments to the UN Secretary-General's Every Women, Every Child (EWEC) campaign, as well as to improving MNH services.

The implementation process for the national assessments is scheduled in 3 phases:

- 1) Preparation and country engagement;
- 2) National assessments and reporting;
- 3) Synthesis.

Table 1 provide an overview of the phases, activities, outputs and approximate timing. This overview is subject to adaptation and alignment with the specific country context.

¹ The HBCI National Assessment process and the assessment framework are described in more detail in the *HBCI National Assessments Operational Guidance*, prepared by the Technical Working Group on behalf of the H4+ agencies.

Table 1: Midwifery Workforce Assessment– process overview

Phase	Level	Activities	Outputs
1. Preparation and country engagement	International and national	<ol style="list-style-type: none"> 1. Document review 2. Identification of representatives from MoH and H4+ 3. Scoping mission <ol style="list-style-type: none"> a. Engagement with national stakeholders b. Identification of on-going activities ('landscape analysis') c. Identification of in-country research and other partners d. Review and refinement of assessment framework e. Validation of data collected through the document review f. Identification of knowledge gaps and additional data sources g. Planning of and agreement on in-country data collection, analysis and reporting. 	<p>Background paper containing the contextual, stakeholders and landscape analysis</p> <p>Partial completed assessment framework</p> <p>Scoping mission Back to Office Report against anticipated outputs in the scoping mission terms of reference</p>
2. National assessments and reporting	International	1. Commissioning of in-country partner	In-country partner commissioned
	National and subnational	2. In-country data collection	Assessment framework completed
	National and international	3. Data analysis	National reports with costed policy options
		4. National stakeholder workshop to develop, choose and test scenarios and strategies	
		5. Costing analysis and testing	
		6. Draft report and testing	
		7. Final reporting	
3. Synthesis	International	1. Format and synthesise country reports	Synthesis report

Current status for Mozambique

The assessment process for Mozambique is in the preparation phase (June 2013). This draft paper presents the result of the document review to date.

The documentary review gathers information available in published and unpublished (grey) literature about nine areas including overall contextual information, policy and management, financial, population and health, MNH status and care needs, overall and midwifery workforce and labour market. New documents are still being added and their information included, so this is work in progress. The paper is to prompt further discussion, including:

1. Validation of the findings;
2. Information gaps;
3. Additional sources of information available at global, national or subnational level;
4. In-country data collection and focus;
5. Tools and methodologies for in-country data collection.
6. Questions arising

2 Socio-political and economic context

Mozambique became independent from Portugal in June 25th 1975 and two years later a civil war erupted plaguing the country until 1992 when the Rome General Peace Agreement put an end to the conflict. The exodus of

Portuguese citizens and the return of more than 1.5 million refugees marked the beginning of a reconstruction period. First democratic elections took place in 1994 won by the ever-since ruling party Frente de Libertação de Mozambique (FRELIMO).

The country is divided into 10 provinces and one capital city with provincial status. Provinces are divided into 129 Districts comprising 405 “postos administrativos” (Administrative Posts) which are subdivided into localities which are the lowest level of the administration.

Mozambique is a multi-party democracy under the 1990 Constitution with the Executive comprising a President, a Prime Minister and a Council of Ministers. The legislative branch comprises a unicameral 250-seat Assembly of the Republic (Assembleia da República) with members directly elected by popular vote to serve five-year terms. Right to vote is universal at eighteen. In terms of development Mozambique ranks second bottom in the world with a HDI of 0.327 (UNDP 2013).

Mozambique has witnessed a relatively stable political period. Next elections are due for 2014 but lack of consensus over the reform agenda may undermine political stability and may be exacerbated by the deterioration in socio-economic conditions, particularly increases in food, fuel and utility prices which triggered riots in October 2010 (ADB 2011) .

Social development remains a challenge despite the progress registered since the mid-1990s. Based on the last National Poverty Assessment (2002-2009) there is progress in several non-monetary poverty indicators at national and regional levels such as improved access to primary and secondary education and health services particularly in rural areas, quality improvements in housing and relative improvements in essential assets ownership. However consumption related poverty (poverty index) remained stagnant and with inter-regional disparities (MPIeD 2010a).

At independence, Mozambique was one of the poorest countries in the world, a situation exacerbated by the subsequent civil war. The signature of peace agreements, the support of foreign assistance and the political stability after the first elections in 1994 led the country to considerable and steady growth. In fact from 1993 to 2009 Mozambique was the fastest growing non-oil economy in Sub-Saharan Africa, with growth averaging 7.5% per year coming mainly from large inflows of foreign direct investment, Official Development Assistance and agriculture (ADB 2011).

GDP (current USD) was \$9.67 billion in 2009 and \$12.8 billion in 2011 representing a growth of 30% in only 3 years. The inflation rate was 12.7% in 2010 and 10.4% in 2011. Agriculture contributes 32% to GDP, industry 24.2% and services 43.8%. GDP per capita is \$538 (2011)². Macroeconomic policy has mainly focussed on 1) economic growth, 2) price and exchange rate stability and 3) the implementation of a programme for structural reform.

Fiscal performance improved substantially during the last five years with an increase in total revenue from 12% in 2005 to 19.6% of GDP in 2010. However, Mozambique depends greatly on foreign assistance with half of its annual budget being supported from external sources. More than half of the population live under the poverty line (59.6% at US\$ 1.25)³.

Subsistence agriculture accounts for most of the employment but agricultural development and productivity run at very low levels. Great projects, such as aluminium smelter and hydro electrical production, support exporting earnings. New prospections found gas, coal and titanium bringing a great economic potential for the country.

Foreign debt was partially forgiven and rescheduled through the Highly Indebted Poor Countries initiative and is now at a more manageable level. Mozambique is now growing at an annual average of 7% (2010-2012).

A major challenge for development is the country’s geographical location and the impact of global climate change which makes it prone to natural disasters such as seasonal drought and floods causing massive population displacements, disruption to social and economic activities and damaged homes, factories and critical infrastructure.

² www.databank.worldbank.org

³ www.databank.worldbank.org

3 Population and health

Population projection by the National Bureau of Statistics for 2013 is 24,366,112⁴ (25,028,000 as for UN Pop. figures) with an age distribution pyramid typical of a developing country with a wide base (17.7% 0-14 years and 20.7% from 15-24 years) and a narrower body and top (27% 25-54 years, 3.5% 55-64 years and 3% +65)⁵. Birth rate ranks among the highest in the world with 39.34 new-borns every year per 1,000 population. However the relatively high mortality rate of 12.79% and low life expectancy of 51 years (50 for men and 51.8 for women)⁶ leads to a relatively low population growth rate of 2.44%. The number of women of child-bearing age is projected to increase with about 13% every five years (based on 2010 figures) which will result in this cohort representing half of the total population by 2030.

POPULATION PROJECTION PER PROVINCE ⁷	
PROVINCE	2013
Niassa	1,531,958
Cabo Delgado	1,830,124
Nampula	4,767,442
Zambezia	4,563,018
Tete	2,322,294
Manica	1,800,247
Sofala	1,951,011
Inhambane	1,451,081
Gaza	1,367,849
Maputo Province	1,571,095
Maputo City	1,209,993
TOTAL	24,366,112

4 Health system: a midwifery workforce perspective

4.1 Governance: health policy and management

National Health Policy in Mozambique is based on principles of Primary Health Care, equity and universal access to high quality services. Based on the Government's directives for the health sector, the Ministry of Health defines its priorities on a five-year basis reflected in the Plano Estratégico do Sector Saúde (Health Sector Strategic Plan) (MISAU 2008a) which is part of the overall Five-Year Government Programme (Programa Quinquenal do Governo) (Governo_de_Moçambique 2010) and the Plan for Eradication of Absolute Poverty (Plano Para a Redução da Pobreza -PARP) (Governo_de_Moçambique 2011). The PESS is a strategic guide for all stakeholders working in the health sector and the framework for the development of sub-national (province and district levels) health plans. PESS is operationalized through the annual Economic and Social Plan (PES).

The national health policy is well aligned with the overall national policy framework, but there are limitations in implementation. While national health policy revolves around principles of primary health care and equity there are serious gaps in allocation and equitable distribution of resources as reflected in the low coverage of health services in general and MNH in particular in primary services mainly in rural areas. Workforce establishment in general is defined using standards such as WHO minimum ratios or densities of workforce to population which are often not adapted to specific local needs (e.g. high fertility in some rural areas). Limited financial allocation for new positions for the health sector is a main barrier for scaling up the health workforce. MoH have to recruit health workers on temporary basis for positions that are not officially approved by the Government (non-established) which are funded mostly through ODA and which is likely to have consequences in terms of job security, motivation and retention of these health workers due to employment insecurity.

MNH is given high priority in national health policies which has contributed to improved coverage in the last years, MNH workforce expansion being an example (MISAU_DRH 2012c). However when looking through a labour market lens there are still limitations in terms of quality of education (e.g. high student attrition, excessive student to teacher ratios, professional performance below expected as per curricula in the different programmes, etc.). Some

⁴ Instituto Nacional de Estatística (<http://www.ine.gov.mz/Dashboards.aspx?key=152415>)

⁵ <https://www.cia.gov>

⁶ UN Population Division www.un.org

⁷ Instituto Nacional de Estatística (INE)

of the MNH targets established in the different strategies such as reducing maternal mortality to 250 deaths per 100,000 live births (LB) in 2015 are proving to be extremely ambitious.

Following national strategies the Mozambican health sector is undergoing a decentralization process since 1994. However implementation has been slow and enforcement of policies and regulations inconsistent with central level still retaining power and responsibility on many areas (DANIDA 2010). Decentralization policies for HR management were developed in a complex environment characterised by lack of resources and a massive destruction of the socio-economic infrastructure after the civil war. Saide and Stewart (2001) in their case study about Nampula province found that financial constraints were the main hindrance for implementation of the HR management decentralization policy. Other barriers identified were delays in recruitment and deployment and lack of continuous education opportunities, inappropriate supervision (non-systematic and lack of feedback to workers) and a weak HR information systems due to weak capacity at sub-national level which made the follow up of the decentralization process difficult and its overall impact on HR management weak (Saide and Stewart 2001).

Nevertheless some essential HR management functions have been decentralized during the last decade. By the end of 2010 District Health Directorates could include their vacancies for general (support) staff in the District Operational Social and Economic Plan, advertise their vacancies, recruit and request budget allocation from the provincial finance authority and send all the processes for approval to the Regional Administrative Court. However all these processes are plagued with problems due to the limited capacity of managers at district level particularly in areas such as financial management.

There have been four national plans for health workforce development since 1992. Two main achievements of the first plan (PDRH 1992-2002) were the functional and technical rehabilitation of the educational infrastructure and the requalification of existing workforce (post-conflict rehabilitation). The implementation of the second plan (PDRH 2000-2010) resulted in a general scale-up of the workforce with emphasis on the production of mid- and higher academic level health workers. The third plan (PDRH 2005-2010) despite initially not aiming at a great quantitative growth was complemented soon after elections with an accelerated training programme (Plano Acelerado de Formação or PAF) as an emergency strategy from the new government to scale up the workforce. The third plan was replaced in 2008 by the current plan (PNDRHS 2008-2015) which is more comprehensive and ambitious not only in quantitative but also in qualitative terms aiming at strengthening workforce education and management capacity as a base for a more substantial quantitative growth from 2015. The plan defines four strategic areas aiming at: 1) improving organizational environment, 2) developing managerial capacity, 3) improving health workforce distribution, motivation and retention and 4) strengthening pre-service, post-graduate and continuous education at all levels.

4.2 Health service delivery network

Health care is mostly delivered through the public sector which is also the main employer of health workers and one of the major overall employers in the country.

Public health service delivery is organized through 1,277 health units across 4 levels (MISAU 2007):

- 1) **The primary level** includes 365 health posts, 755 rural health centres (type I and II) and 104 urban health centres (type A, B or C with or without maternity). Health care at this level is provided by clinical officers, nurses, and medical technicians (*técnicos de medicina*); however most health facilities are currently understaffed;
- 2) **The secondary level** includes 28 rural, 5 general and 8 district hospitals (the last only in Zambezia, Nampula, Cabo Delgado and Manica). Most district hospitals are able to offer basic diagnostic services, including microscopy, blood counts, biochemistry and X-rays, as well as surgical and obstetric services. Many districts in more rural areas have no district hospital, but only health centres with limited capacity for admitting patients with medical and non-surgical obstetric conditions. Since several years, all District hospitals are staffed with at least one general medical doctor;
- 3) **The tertiary level** includes 7 provincial hospitals, which provide a greater range of diagnostic and curative services and include training centres for provincial health care staff;
- 4) **The fourth level** includes 3 hospitals in Maputo, Beira and Nampula which are the major referral centres for southern, central, and northern Mozambique respectively. There are also two psychiatric hospitals in Maputo and Beira respectively.

Other sub-systems in the public sector include 3 hospitals, 11 health centres and several health posts under the responsibility of the Ministry of Defence offering services to army staff and their families totalling around 21,000 beneficiaries; the Ministry of Home Affairs offers curative care through health posts in police stations; the Ministry of Justice provides health care in prisons through health units with out-patient and some limited in-patient facilities (Ferrinho, Martins et al. 2010).

4.3 Human resources information system

Health information systems are essential to understand the MNH workforce. In Mozambique, the Ministry of Public Administration introduced a Personnel Information System (Sistema de Informação de Pessoal or SIP) in 1993 which was computerised and transferred to the National Directorate of Strategic Human Resources Management at the Ministry of Public Function in 2007 under the name e-SIP. Within MISAU SIP was introduced in all Provincial Health Directorates in 2006 but its roll out was plagued with problems which resulted in serious payment delays. The system is now decentralised at district level (personal communication).

Information about salaries is processed through the SISTAFE (Sistema de Administração Financeira do Estado) which is managed by the Ministry of Finances. The original SISTAFE was developed into the e-SISTAFE (web based), which integrates five sub-systems: National Budget, Public Accounts, Public Treasury, State Wealth and Internal Control (audit). The e-SISTAFE was rolled out down at the district level.

SIFO is a computer-based sub-system dealing with information about continuous education. It was developed in 2005 and rolled out in two pilot provinces. By the end of 2007 it was shifted into a web-based system. During 2008 and 2009, the web based system was expanded to the national level. The main challenges with this sub-system are problems in capturing all training activities and the limited use of this information by managers.

In 2009 the MoH started to develop a sub-system to deal with information about pre-service education (SIFIN).

An analysis of the Human Resources Information System (HRIS) undertaken in October 2010 found that the existing systems and sub-systems contributed to familiarise managers with the use of computerised information. However, despite progress in this regard the systems do not offer enough updated information to support and improve decision-making. The main reasons behind this problem are:

- Fragmentation of information by levels with limited capacity for automatic updating;
- Lack of disaggregation by health facility or professional category (systems were created to respond to the needs of other Government departments);
- Potential duplication or omission of information due to lack of individual civil servant coding leading to difficulties in obtaining historical information.

Managers have created alternative procedures to update the existing information manually or by using spread sheets. However, this increases the risk of mistakes and inconsistencies and often results in inefficiencies and “emergency” situations. The Government of Mozambique and the MoH are currently undergoing an integration of all systems but written information about the process was not accessible at the time of writing this report.

4.4 Health workforce

Mozambique’s health workforce increased from 25,683 workers in 2006 to 35,503 in 2011 (+38%). However, the density of doctors, nurses and midwives per 1,000 population is currently 0.645/1,000 which is far from the minimum standard of 2.3/1,000 established by WHO (MISAU_DRH 2012b). The ratio of population per qualified health worker has seen a steady decrease in the last decade with 1,947 persons per health worker in 2000, 1,881 in 2003 (MISAU 2008c) and 1,217 in 2011 (MISAU_DRH 2012b). Total number of health workers has increased substantially in some key categories such as MCH Nurses which almost tripled from 1,414 in 2000 to 3,926 in 2011. Unfortunately this important growth has not been matched by the GoM with equivalent financial investment which has caused an increase from 7% to 18% in the proportion of workers that are not absorbed by the Civil Service and that are under temporary contracts (non-established) financed mainly from ODA (see Table 12). This number has increased by 59% in the last year from 3,162 in 2010 to 5,033 in 2011.

Looking at the distribution of non-established positions per province, provinces like Maputo City and Nampula show almost one-third of staff in non-established positions. The fact that these positions are dependent on external funding has a bearing on workforce stability but also on the motivation and therefore potential retention of these workers.

Shortage of local medical doctors is addressed through recruitment of expatriate professionals either by means of active recruitment through open international tenders or as part of bilateral agreements with source countries (e.g. Cuba, Vietnam, China or Korea). Expatriates represented 24% (287) of the overall medical workforce (1,198) in 2011 with 119 new expatriate medical doctors recruited through bilateral agreements (e.g. 62 from Cuba, 42 from Korea, 3 from Vietnam and 12 from China) and 6 through international recruitment. Professionals from other

cadres are also being recruited internationally but in very limited numbers (e.g. 7 health technicians in 2011) (MISAU_DRH 2012b).

Table 2: MNH Care Workers by occupations, category and academic levels and ISCO 08

Occupation	Level		Availability	ISCO 08
	Category/career*	Academic	2011	
Medical Doctor	Medical (generalist)	Superior level	1,198	2211
Specialist Doctor (Paed. Obs/Gyn)	Medical (hospital)	Superior level	54 Obs/Gyn, 48 pediat. (includes expatriates)	2212
Surgery Technician	TES, TSS/ N1&N2	Middle and superior level	8 (M); 52 (S)	2240
Medicine technician	TS	Basic, mid and superior level	1,383 (B); 1,197(M); 970 (S)	2240/3256
Theatre Nurse/technician (Instrumentalist)	TS, TES, TSS	Superior N1, middle specialised and middle level	196 (M)	2221/2240
Anaesthetics Nurse/technician	TS, TES, TSS N1 and TSS N2	Middle specialised and superior level	144 (ME)/ 3 (S)	2221/2240
Maternal Health Nurse A (ESMI A)	TSS	Superior level	52 (S)	2222
Maternal Health Nurse B (ESMI B)	TSS	Superior level		2222
MCH Specialist Nurse (ESMI especializado)	TES	Middle level	959 (M)	2222
MCH Nurse C (ESMI C)	TS	Middle level		2222
MCH Nurse D (ESMI D)	TS	Middle level		2222
MCH Nurse (ESMI)	Ass TS	Basic level	2,167 (B)	2222
Elementary midwife (Parteira Elementar)	Aux TS	Elementary level	748 (E)	3222
Nurse (E, B, M, ME, S)	AuxTS, AssTS, TS, TES, TSS N1&N2	E, B, M, ME and S	715 (E), 3,136 (B), 1,587 (M), 137 (S)	2221 (TS, TES and TSS) 3221 (AuxTS and AssTS)
CHW (APEs)			1,213 end of 2012	3253

Source: (MISAU_DRH 2011f, MISAU_DRH 2012c) and www.who.int/hrh/statistics/workforce_statistics (ISCO 08)

* **AuxTS** Auxiliar Técnico de Saúde (**E** elemental); **AssTS** Assistente Técnico de Saúde (**B** básico); **TS** Técnico de Saúde (**M** médio); **TES** Técnico Especializado de Saúde (**ME** Médio Especializado); **TSS** Técnico Superior de Saúde N1 or N2 (**S** Superior)

4.5 Health financing

Total health expenditure in 2011 was around 23 billion MZN (USD 850 millions). Total health spending per capita rose from \$17 in 2004 to \$35 in 2011 (WB Data Bank⁸) but it is still below the \$54 recommended by WHO to achieve the MDGs (WHO 2010a). Despite having increased during the last decade, Mozambique's health expenditure as a proportion of the GDP was 6.6% in 2012 which is far below the level recommended in the Abuja Declaration (15%). Investment in health has doubled in the same period but growth of public investment as a proportion of total health expenditure has seen a progressive slowdown parallel to the increase in external assistance (USAID 2010). The National Budget comprises Government allocation for health and overseas development aid (ODA) through direct budget contributions with a sector-wide approach (SWAp) which is managed through the same mechanisms as the Government Budget. Despite having increased in absolute terms, the proportion of the Government's allocation for health has declined in relative terms from 15% in 2006 to 7% in 2011

⁸ <http://databank.worldbank.org/data/views/reports/tableview.aspx#>

(MISAU 2013). Vertical funds from USA and The Global Fund for HIV, TB and Malaria supporting specific disease programmes represent around half of the total budget for health. The third source is out-of-pocket payments for private services and medicines, co-payment in NHS services and the 1.5% retention from civil servants' salaries for health services and medicines.

Most investment expenditure is managed at central level while provinces and districts manage local operational funds. Ministry of Finance allocates direct funding for the different expenditure units such as central MoH, Provincial Directorates and big hospitals (e.g. central, provincial and general levels). The District Health Authority is responsible for the financial management of smaller hospitals (e.g. district and rural levels) and primary level facilities.

ODA in Mozambique is relatively well aligned with government priorities - PARP and PESS are at the core of most interventions in the health sector. The Programme Aid Partners unite aid donors most of whom have signed memoranda of understanding (MoU) with the government which contributes to mutual accountability and harmonization of priorities. The off-budget nature of vertical funding (ODA invested directly in specific projects and not managed through the common government financial management mechanisms) represents a challenge for the MoH and a barrier for integration into government plans. However there are efforts to reduce the proportion of off-budget contributions from the overall ODA. Predictability of ODA is relatively high with most donors providing information about intended investment with more than 3 years horizon. Global Fund to Fight AIDS, Malaria and Tuberculosis represent a high proportion of total foreign aid to the health sector. Despite the fact that there are voices claiming that GFATM is one of the few aid mechanisms that can address the problem of HRH shortages mainly due to its long term funding commitment and sustainability (Ooms, Van_Damme et al. 2007) its performance-based disbursement policy often limit its predictability. There is a relative lack of sustainability in external funding but SWAp and other efforts to strengthen adherence to the Paris Declaration principles contribute to improving the situation in this regard (WHO 2009b). While there is information about aid provided to the health sector, it is more difficult to find how much is allocated to HRH. Funding from ODA is used to pay incentives to key health workers such as topping up salaries for specialist doctors deployed to provinces. This is funded through PROSAUDE, the SWAp mechanism, although the wage bill is fully funded by government (KTyrrell, Russo et al. 2010). PROSAUDE contributed 38% of its total investment to HRH in 2004. However is not possible to quantify the effect of adding donor funding streams to the total resource base. Funding for initial training is equally shared between vertical funds mainly coming from PEPFAR, government budget and PROSAUDE. Donor funding is often directed toward in-service training as part of their programmes and often goes unaccounted (WHO 2009b).

4.5.1 Financing human resources for health

The estimated cost of implementing the National Plan for Health Human Resources Development (NPHRD) 2008-2015 was estimated in around USD 1,963 million with an increase of USD 157 million in the first year to around USD 350 million in 2015 (MISAU 2008b).

4.5.1.1 Education cost

The proportion of the total cost for pre-service education and in-service training are 5% and 1% respectively. The NPHRD 2008-2015 estimates 1) more than USD 90 million for the cost of pre-service training which represents 5% of the total cost, 2) more than USD 10 million for in-service training (1%) and 3) more than USD 21 million (1%) for scholarships and post-graduate education (specialisation) (MISAU 2008b, KTyrrell, Russo et al. 2010).

Calculations by WHO on the costs of basic and mid-level education in Mozambique (reporting data from 2006) are consistent with MOH figures in 2012. WHO estimated the average cost of training at basic level being USD 3,678 - USD 4,312; for mid-level initial courses USD 8,623; mid-level promotion USD 3,043, and; mid-level specialised USD 2,963 (Sidat, Fronteira et al. 2010). The average annual cost of training a MCH nurse at basic and mid-level is \$2,807 and \$3,332 respectively (MISAU 2012a). The cost of training Surgical Technicians (BSc level) was reported as USD 8,000 per student per year (personal communication) but this information was not substantiated.

4.5.1.2 Salaries

The NPHRD 2008-2015 estimates that 90% of the total implementation expenditure in that period is on staff including 76% on salaries and remunerations and 14% for incentives. The cost of international recruitment of doctors to address the existing shortage represents a 2% of the total expenditure in the same period (KTyrrell, Russo et al. 2010).

Table 3: Salaries (basic and current) for health workers in 2013 by level (basic and middle) and step

Level	Step	Basic Salary (MZN)	Basic Salary (USD)*	Index (x%)	Current salary (MZN)	Current salary (USD)*
CHW (APEs)		1,200	40.00	100	1,200	40.00
Basic	C1	4,898	163.27	100	4,898	163.27
Basic	B1	4,898	163.27	120	5,877	195.90
Basic	A1	4,898	163.27	140	6,857	228.57
Middle	C1	6,975	232.50	100	6,975	232.50
Middle	B1	6,975	232.50	125	8,719	290.63
Middle	A1	6,975	232.50	150	10,463	348.77
Middle Specialised	C1	8,649	288.30	122	10,552	351.73
Middle specialised	B1	8,649	288.30	140	12,109	403.63
Middle specialised	A1	8,649	288.30	165	14,271	475.70

* Exchange 1 USD=30 MZN (Information about superior levels not available at time of writing this report)

Source: (Vio, Buffolano et al. 2013)

4.5.1.3 Incentives

Most of the subsidies and incentives paid in the Mozambican public health sector are financial but some are of material value (e.g. food, clothing, accommodation, transport, free of charge health care and free of charge or subsidised school), others are professional (e.g. access to continuous training or specialization, attendance to workshops or conferences or rapid promotion) and others are symbols of recognition (e.g. non-monetary prizes, type of office, titles, flexible work hours or exemption, more days of annual leave, etc.). Others involve support for spouses to find employment.

Some incentives are paid by the government and others using external funds, either through “common funding” (SWAp) or through vertical funding. Some incentives which initially were planned to increase willingness to work in difficult situations (e.g. high risk, remote, etc.) are applied equally to all workers diminishing their intrinsic effect. Other incentives, such as the topping up for medical doctors assigned out of Maputo City, are relatively effective. This is in part due to the specific allocation for peripheral services but also due to the fact that it is a considerable amount (up to USD 3,000) and to the fact that this amount is revised and increased every 5 years. However, recently there have been problems with funding this incentive for new specialists.

The system is highly fragmented. There is a need to simplify it with less packages of higher quantitative value differentiated by the degree of geographical isolation and for each professional group. However it is important to remember that undesired outcomes such as illegal fee charging, drug pilfering, attrition and lack of motivation are caused by problems that are not necessarily related to the implementation of the incentive policy but to other factors including perceived low salaries, inconsistent salary revisions delinked from the increase in the cost of living and inflation, occupational risks, difficult working conditions (e.g. lack of electricity and/or running water, non-functioning or unavailable equipment, etc.). Solving these problems should be the first priority for senior management at MoH. In line with this, the MoH started in 2012 to revise the specific health career system. The revision is based on the terms of responsibilities of each career. This revision is expected to subsequently allow for a revision of salaries.

There are some pilot projects to introduce performance-based incentives but there is not yet evidence about their overall effectiveness and sustainability and their impact on the workforce.

5 MNH status

5.1 Pregnancy and morbidity

Malaria specific mortality has witnessed an important decrease in the general population but remains as one of the main causes of morbidity and mortality and is still a high risk factor for pregnant women, representing one of the main causes of premature births and/or low birth weight. It is also related to seasonal increases in maternal mortality (Romagosa, Ordi et al. 2007). 37% of pregnant women slept under a mosquito net the night before the

interview for the DHS 2011 with an urban/rural variability of 51% to 31% respectively. Regarding chemoprophylaxis 42% of women who were pregnant during the two years preceding the DHS 2011 reported having received antimalarial drugs. However only 19% followed the established intermittent malaria prophylaxis included in the ANC protocol of two doses of Sulfadoxine Pyrimethamine/Fansidar[®] (SP/F) one of them during an ANC visit with a urban/rural variability of 26% to 16% respectively (INE-MISAU 2012).

Adult HIV prevalence in 2009 was 11.5% with an estimated 1.4 million people living with HIV from a population of 23.5 million in 2012 (UNAIDS 2010). Prevalence is disproportionally higher in urban areas (15.9%) compared with rural areas (9.2%). Data from ANC surveillance shows a similar result with 13.7% of pregnant women testing positive to HIV in 2009 (National_AIDS_Council(CNCS) 2012). UNICEF estimated around 76,000 HIV+ pregnant women in 2010 of which 52% were receiving ARV treatment.⁹

5.2 Maternal Mortality

Despite maternal mortality¹⁰ (MM) having decreased from 1,000 deaths per 100,000 live births (LB) at the beginning of the 1990s (MoPLeD 2010) to 408 deaths per 100,000 LB in 2003 (INE-MISAU 2005) data from DHS 2011 shows a clear stagnation in this regard reporting the same MM rate of 408 deaths per 100,00 LB (INE-MISAU 2012). Evidence suggests that around 43% of overall maternal deaths occur during delivery or within the first 24 hours post-delivery with most of those which are reported to happen in primary level health facilities occurring within the first two hours after admission. This suggests poor access and women arriving in precarious conditions. Only 37% of maternal deaths analysed by Lewis et al. (2007) in their study based on verbal autopsies from households in the 2007 Census occurred at health facilities. This suggests that the proportion of deaths occurring at home (60.5%) is high and highlights the need to 1) expand MNH care before and after pregnancy (Lewis, West et al. 2011) and 2) bringing it into the community.

Among the reported specific causes of maternal death 76% are direct causes (obstetric) such as uterine rupture (17% of total maternal mortality), post-partum haemorrhage (14%) and hypertensive disorders of pregnancy such as pre-eclampsia and eclampsia (13%). All are included in the signal functions covered by EmONC protocols, suggesting that mortality could be reduced if appropriate care was more readily available (MoPLeD 2010). Deaths due to direct (obstetric) causes were considerably higher in rural (59%) than in urban (41%) areas (Lewis, West et al. 2011). While direct obstetric causes of maternal mortality are important the impact of infectious diseases such as malaria and HIV/AIDS cannot be neglected (Romagosa, Ordi et al. 2007, Menéndez, Romagosa et al. 2008).

There is an increase in the proportion of maternal deaths among younger women. While 39.6% of all maternal mortality was reported among women between 15 to 24 years of age in the DHS 2003 (INE-MISAU 2005) this proportion increased to 45.6% in the DHS 2011 (INE-MISAU 2012).

The most prevalent factor contributing to maternal mortality identified in the ANSMN 2007-2008 was the delayed arrival of pregnant women at the health unit which was reported occurring in 54.4% of maternal deaths analysed in the study. Other factors were delays in receiving care, lack of necessary resources (e.g. equipment, drugs, etc.) and shortage of appropriate health professionals (MISAU 2009a). However more recent studies and reports show an improvement in human resources (MISAU_DRH 2012c) drug and equipment availability (MCHIP_MISAU 2013).

5.3 Neonatal mortality

Neonatal mortality¹¹ (NM) has improved in the last decade. While the DHS 2003 reported 53 and 34 per 1,000 LB in rural and urban areas respectively (INE-MISAU 2005) the DHS 2011 reported 34 and 31 per 1,000 LB 2011 (INE-MISAU 2012). The main causes of institutional neonatal deaths are premature birth (50%), asphyxia (32%) and neonatal sepsis (29%) (MISAU 2009a) with 32% of the deaths occurring within the first 24 hours of delivery and 49% between the first and seventh day of life (MoPLeD 2010).

5.4 Infant and Child Mortality

Infant mortality¹² (IM) has improved in the last decade in absolute terms but also in its rural-urban distribution mainly due to important improvements in rural areas (INE/UNICEF 2008). IM was 135 and 95 per 1,000 LB in rural and urban areas respectively in 2003 (INE-MISAU 2005) and is 72 and 69 per 1,000 LB in 2011 (INE-MISAU 2012).

⁹ UNICEF at http://www.unicef.org/esaro/5482_pmtct.html

¹⁰ The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (from "Trends in Maternal Mortality 1990-2010" by WHO/UNICEF/UNFPA/WB 2012)

¹¹ Probability of dying before the 28th day of life

¹² Probability of dying before the first birthday

Inter-provincial disparities in IM range between the highest in Zambezia (147.1 ‰) and the lowest in Maputo (66.6 ‰). The main causes of IM are Malaria (23%), prematurity (13.6%), ARI (13.1%) and birth asphyxia (8.8%) (MISAU/UNICEF 2009). WHO¹³ estimates a reduction in the absolute number of infant deaths from 93,000 in 1995 to 59,000 in 2011.

Child mortality¹⁴ (CM) has also been reduced from 140 per 1,000 LB at the beginning of the 1980s to 64/1,000 LB at the end of the 2000s (INE-MISAU 2012). This reduction has been more remarkable in rural areas (INE/UNICEF 2008). There are inter-provincial disparities with the highest CM in Zambezia (205 ‰) and the lowest in Maputo (103 ‰). WHO¹⁵ estimates show a reduction in the absolute number of child deaths from 138,000 in 1995 to 90,000 in 2011.

6 MNH care needs

6.1 Population growth and projected pregnancies

The number of expected deliveries is 4.5% of the total population with an annual population growth of 2.2% according to data from the Census 2007 (Hobbins 2013) which with projections of total population of around 24,366,112 for 2013 suggest around 1,096,475 expected deliveries.

6.2 Contraception / Family planning

The National Fertility Rate (FR), despite being high, has remained almost invariable for the last two decades with DHS results in 1997, 2003 and 2011 showing 5.6, 5.3 and 5.9 children respectively (MISAU 2010a, INE-MISAU 2012).

Table 4: Fertility Rate (births per 1,000 women) by age group disaggregated by area of residence (urban/rural)

Age Group ¹⁶	Area of residence		Total	UN Pop ¹⁷ estimates 2005-2010
	Urban	Rural		
15-19	141	183	167	149.2
20-24	220	290	264	245.1
25-29	198	280	251	234.7
30-34	163	238	214	175.4
35-39	124	189	168	120.6
40-44	40	103	84	61.1
45-49	19	43	36	36.6
FR (15-49) ¹⁸	4.5	6.6	5.9	5.11
GFR ¹⁹	163	227	205	
CFR ²⁰	37.4	43.4	41.6	

Source: DHS 2011 (INE-MISAU 2012)

National contraceptive prevalence rate²¹ increased in the last decade from 5.1% in 1997 to 11.3% in 2011. However Mozambique lags far behind when compared with increasing trends in neighbouring countries such as Malawi (45%), Tanzania (34.3%) or Zambia (43.2%) in the same period (Alkema, Kantorova et al. 2013). There are great disparities between rural (7.2%) and urban areas (21.1%) and inter-provincial distribution is unequal with an interprovincial gap of 32% between the highest in Maputo City (35.1%) and the lowest in Cabo Delgado (2.9%). Highly populated provinces like Zambezia (18.9% of total population as per 2007 Census) or Nampula (19.6% of

¹³ WHO Global Health Observatory Data Repository

¹⁴ Probability of dying between the first and the fifth birthday

¹⁵ WHO Global Health Observatory Data Repository

¹⁶ Age group specific fertility rate per 1,000 women (referred to the period 1 to 36 months before interview)

¹⁷ UN Population Division www

¹⁸ FR Fertility Rate: number of children per woman

¹⁹ GFR General Fertility Rate: number of children for each 1,000 women between 15 and 49 years of age

²⁰ CFR Crude Fertility Rate: number of births per 1,000 population

²¹ CPR is measured as the percentage of women who report themselves or their partners as using at least one contraceptive method of any type (modern or traditional).

total pop. as per 2007 Census) report only 5% of contraceptive prevalence rate (INE-MISAU 2012). The proportion of mothers that received two doses of tetanus toxoid during pregnancy was 66.9% at national level with 76.1% of women living in urban areas and 63% of these living in rural settings.

6.3 Antenatal Care

The antenatal care (ANC) protocol in Mozambique establishes four visits during pregnancy as the standard with the first visit occurring preferably during the third month of pregnancy. Data shows a decrease in the women receiving four visits from 53.1% in 2003 DHS to 50.6% in 2011 DHS with disparities between attendance (four visits) in rural (46.9%) and urban areas (59.5%) reported in the last DHS (INE-MISAU 2005, INE-MISAU 2012).

The proportion of mothers that received two doses of tetanus toxoid during pregnancy was 55.9% at national level with 65.5% of women living in urban areas and 53.6% of these living in rural settings. Inter-provincial disparities were relatively important as shown by an inter-provincial gap of 30.6% (INE-MISAU 2012).

In terms of quality of ANC, WHO recommends that ANC programmes should include at least blood pressure measurement, urine testing for bacteriuria and proteinuria, blood testing for syphilis and severe anaemia and weight/height measurement. In Mozambique 84.5% of women interviewed for the DHS 2011 who received ANC had a blood sample taken, 58.8% had their blood pressure measured. 49.6% had a urine sample taken. This shows that at least one third of ANC consultations do not follow minimum standards (INE-MISAU 2012).

6.4 Birth

The MoH has established a target of 66% of births to be institutional deliveries by 2015. During the five years preceding the DHS in 2011, 55% of all deliveries occurred in a health facility which represents an increase from the 48% reported in the DHS 2003; however only 17% of them occur in a health facility offering all the signal functions of the EmONC package (MISAU 2009a). DHS 2011 shows a great difference in the proportion of institutional delivery between urban and rural settings (80.3% and 44.3% respectively). The level of wealth of the mother is correlated with the probability of delivering in a health facility with only 31.2% of institutional deliveries occurring among women belonging to the poorest quintile and 91.5% among the richest (INE-MISAU 2012).

Intrapartum and very early neonatal mortality rate is an indicator of the quality of intrapartum and neonatal care offered in health facilities. This is the proportion of births that result in a very early neonatal death²² or an intrapartum death (fresh stillbirth²³) in a health facility offering EmONC. WHO does not provide standards for this indicator but recommends definition of standards in each country after testing in different circumstances (WHO, UNFPA et al. 2009). In Mozambique a Maternal and Neonatal Needs Assessment (ASMN 2007-2008) identified a mean of 2.4% of intrapartum deaths with inter-provincial disparities (MISAU 2009a).

It is estimated that up to 15% of pregnancies may develop direct obstetric complications (WHO, UNFPA et al. 2009). The ANSMN 2007-2008 identified that only 20% of women suffering from obstetric complications were treated at a health facility offering the whole package of EmONC signal functions. There are great inter-provincial disparities in this regard with for instance, Tete reporting 94% of unmet needs (only 6% of women are attended at a facility with full EmONC package), Sofala reporting 67% and Maputo City reporting 47% of women with obstetric complications who did not receive the appropriate attention (MISAU 2009a). There is evidence of low levels of surgical care provision at district level in Mozambique. Despite not having specific information about levels of unmet need, the low number of C-sections performed in the districts suggests a relatively substantial level of unmet need in this regard (Galukande, von_Schreeb et al. 2010).

6.5 Emergency obstetric care

According to the 2007-2008 population figures and following WHO standards (WHO, UNFPA et al. 2009), there should have been at least 205 HUs offering EmONC including at least 41 offering CEmONC. However findings from the ANSMN 2007-2008 show that there were only 78 HUs offering EmONC with 33 of them offering CEmONC and 45 offering Basic EmONC (BEmONC), meeting only 38% of the required standards for BEmONC but 80% of CEmONC. No province had the minimum number of HUs offering EmONC but three had more than 70% of the minimum WHO standard for EmONC and four had the minimum WHO standard for CEmONC. Findings from the same study show

²² Neonates born at term who could not be resuscitated (or for whom resuscitation was not available) or who had a specific birth trauma. The death must have occurred within 24 hours of delivery

²³ Infants born dead after more than 28 weeks gestation without signs of skin maceration; the death is assumed to have occurred less than 12 hours before delivery

that there are serious deficits in EmONC offered at primary care level (health posts and health centres) with only 7% of the health facilities analysed having BEmONC available (MISAU 2009a).

The quality of the EmONC offered is measured by the Direct Obstetric Case Fatality Rate (DOCFR) which should not be higher than 1% as per WHO standards (WHO, UNFPA et al. 2009). In Mozambique the average national DOCFR is 5.2% which indicates serious quality deficiencies in EmONC offered.

Different studies found that MNH care, particularly with respect to the EmONC signal functions assumed by each cadre (see section 7 for cadres involved in EmONC), strongly depends on the specific setting in which care is delivered with low resourced rural settings being more prone to shift functions and responsibilities to lower level cadres than areas where higher level human resources are more readily available. Often basic level MNH Nurses are the only qualified staff in lower levels and they assume all functions depending on their experience. Even ancillary staff sometimes assumes clinical MNH care functions when other skilled staff is not available (personal communication).

6.6 Postpartum care

The national protocol for post-partum care includes interventions such as removing secretions, cleaning, drying-up and warming up the newborn, umbilical cord care, Vitamin K injection and ophthalmic antibiotic ointment application.

While 76.5% of all newborns included in the ANSMN 2007-2008 study were protected against hypothermia and 76.9% got their secretions removed, only 26% received appropriate umbilical cord care, 20.7% were cleaned and dried-up, 23.3% received Vit. K and 26.6% received ophthalmic ointment. In this regard peripheral rural facilities (rural hospitals and health centres) performed worse than bigger facilities (district, provincial, general and central hospitals) which are usually located in more urban settings. The situation seems to have improved as suggested by the study by Chavane et al (2013) in which almost 100% of newborns received appropriate umbilical cord care and more than 80% were dried and cleaned immediately after birth (MCHIP_MISAU 2013)

Regarding new-born resuscitation the situation seems to be better with 77% of newborns needing resuscitation having been ventilated with bag and mask, 74.8% having received hypertonic glucose, 72.2% having received oxygen and 63.9% having received cardiac massage. However adrenaline was only administered in 17% of cases and sodium bicarbonate solution was administered only to 41.2% of cases (MISAU 2009a).

7 Supply: what is the midwifery workforce?

In Mozambique the “key” cadres comprising the midwifery workforce include:

- Obstetrician/gynaecologist
- Paediatrician
- Medical Doctor
- Surgery Technician
- Medicine Technician (mid-level)
- Medicine agent (basic level)
- Maternal health nurse superior level
- MCH Nurse mid-level
- MCH Nurse basic-level
- Paediatric nurse superior level
- General nurse superior level
- Nurse mid-level
- Nurse basic level
- Elementary midwife (production discontinued)

Other important cadres that contribute to the provision of MNH care are:

- Surgeon (MD)
- Anesthesiologist (MD or technician)
- Instrumentalist (nurse or technician)
- Laboratory technician
- Community health worker (APE)

A task analysis undertaken among MCH nurses (basic and mid-level), medicine technicians (basic and mid-level) and nurses (basic and mid-level) as part of the revision of the nursing curriculum compared what these professional categories are meant to do as per existing policies, curricula and job descriptions and what they actually perform (See Table 4). The study found that tasks performed by each category are consistent with their scope of practice but some cadres are performing functions that should be performed by other cadres (between 20% and 46% of basic and mid-level MCH nurses reported that some key functions of EmONC were performed by other cadres because they were not appropriately trained). Evidence from the same study shows an overlapping of tasks among basic and mid-level MCH nurses in all levels of the health system which suggests that both levels could be merged in one keeping the educational standards of the mid-level and discontinuing the production of basic-level MCH nurses but this recommendation deserves further analysis. Surprisingly basic-level MCH nurses perform tasks such as manual removal of placenta more frequently than mid-level MCH nurses which are more trained in this specific task. Delivery is assumed by general nurses and medical technicians when MCH nurses are not present and medical technicians assume sick newborn care (MISAU_DRH 2010b).

Table 4: Tasks corresponding to the scope of practice of each category and frequency with which they perform each task

FUNCTIONAL AREA (TASK)	Nurse basic level		Nurse mid-level		Midwife basic level		Midwife mid-level		Medicine tech. basic		Medicine tech. mid	
	Th.	Act	Th.	Act	Th.	Act	Th.	Act	Th.	Act	Th.	Act
Antenatal Care		6.0%		4.0%	X	63.8%	X	66.9%		18.9%		24.4%
Admission and labour		4.0%		1.5%	X	80.4%	X	76.6%		17.3%		19.2%
Delivery	X*	4.9%	X*	2.5%	X	72.4%	X	66.9%	X*	15.5%	X*	12.5%
Newborn care		4.6%		3.0%	X	75.1%	X	69.9%	X**	15.6%	X**	12.7%
EmONC		0.0%		1.1%	X	27.5%	X	32.4%		5.1%		8.6%
Postnatal care		3.7%		2.0%	X	57.9%	X	62.5%		13.7%		12.7%
Family planning and gynaecology		6.1%		4.4%	X	48.0%	X	47.1%		18.2%		18.8%

NOTE: X specific professional task; X tasks assumed in absence of midwife; X* only sick newborn; Th: theoretical; Act: actual
Source: (MISAU_DRH 2010b)

The cadres that deliver essential EmONC in Mozambique are physicians (e.g. GPs, paediatricians, Obs/Gyn and surgeons) and non-physician providers (e.g. elementary, basic, mid-level and high level maternal health nurses and surgery technicians). Other professional cadres such as general and specialist nurses, laboratory staff, OT professionals and Community Health Workers (CHWs) indirectly contribute to EmONC either as support staff or by replacing more qualified professionals in their absence.

As mentioned above, there is great disparity in the distribution of MNH workers. In central hospitals, caesarean sections are performed mainly by obstetricians/gynaecologists and surgeons. In provincial and district hospitals they are performed by maternal health nurses superior level and surgery technicians. To ensure comprehensive EmONC (CEmONC) apart from the staff qualified to perform C-sections, other staff including medical doctors, anaesthesiology technicians, instrumentalists (nurses or technicians) and laboratory staff are needed. Looking at the distribution of these cadres by province, Maputo City, Nampula and Zambezia are the provinces with the highest density of these cadres.

In Mozambique mid-level MCH nurses should have all EmONC competencies and be able to work as a member of a multidisciplinary team at any level of the health system where MNH services are provided (see table 12). However, they are only the main provider in 18% of all facilities, with basic MCH nurses providing MNH care in 67% of all facilities and with high-level MCH nurses and doctors providing care in only 1% of facilities (MCHIP_MISAU 2013).

Since 2010, the GoM is re-establishing the community health workers programme (Agentes Polivalentes Elementares or APEs). Their training programme has a special emphasis on the MNH aspects of community work such as health promotion and appropriate health seeking behaviours of pregnant women and mothers (MISAU 2010d). Up to 1,213 CHWs were trained and deployed by the end of 2012 with plans to double that number (3,444) by the end of 2013 (personal communication).

Task-shifting is a common practice in Mozambique where, due to shortages of key cadres, often nurses and even ancillary staff assume functions otherwise performed by specific MNH professionals (personal communication).

Nurses working beyond their functions often leads to heavier workloads and not being released for continuing education, the lack of recognition through a change in job titles, the lack of career progression or reward is suggested to result in both low job satisfaction and increased risk for patients (Ferrinho, Sidat et al. 2010, Ferrinho, Sidat et al. 2012).

Having health workers who are trained in specific MNH functions is not enough to ensure appropriate service provision. Absenteeism is relatively frequent in Mozambique. The ANSMN 2007-2008 identified that there were no important differences in staff presence during week-days' nights, weekends or holidays but that service provision with staff actually present at the facility (not "on call" or absent) in these periods was reduced by half when compared to standard week days. Delivery was the service with highest levels of service provision with staff present in the health facilities (93.5%). However, only 9.6% of staff able to perform C-sections were present at the facility (note that this includes facilities with no surgical capacity).

8 Labour market analysis and effective coverage assessment (AAAQ²⁴)

An adaptation of Tanahashi's framework for coverage assessment is used in this study to comprehensively assess MNH service coverage with a focus on the MNH workforce (Tanahashi 1978). In studying availability coverage the principles of labour market and more specifically the model proposed by Vujicic and Zurn (2006) to assess the supply of labour (Vujicic and Zurn 2006) have been adapted to assess the MNH workforce needs.

8.1 Availability

There are problems in the quality and quantity of health MNC providers and their distribution is inequitable with rural areas being relatively neglected. Almost 75% of the MNC Nursing workforce is elementary or basic levels.

8.1.1 Secondary education pipeline

The minimum academic requirement to apply to mid-level health professional education in Mozambique is class 10 while for superior level the requirement is class 12. Access to post-graduate levels (specialisation) requires an academic degree in the specific root discipline and practical professional experience in that specific area (Eguiluz and Cardoso 2011).

In Mozambique more than 100,000 students completed 10th class level in 2011 with female students representing 42% (46,404) of the total cohort. However less than half of the students (overall and female) managed to complete their courses which deserves further investigation. Regarding class 12 (full secondary education) more than 38,000 students graduated, 17,000 of them being female students (44%). Of all the female students (36,117) who started class 12, 47% (16,953) completed their courses and graduated.

There has been an increasing trend in the number of applications during the last years. This shows that health professions are attractive career options for Mozambicans coming out of secondary school. If this perception is sustained, this could assure an adequate input to the health education system, thus strengthening the potential supply of health workers.

8.1.2 Health professional education and training capacity and infrastructure (potential supply)

Lower cadres (e.g. elementary, basic and mid-level) are trained in 4 Institutos de Ciências da Saúde and 11 Centros de Formação which are spread across the country (see Map 1 below) operating under the responsibility of the MISAU.

There are currently five higher institutions training medical graduates. In Maputo City: the Universidad Eduardo Mondlane (UEM) graduating medical doctors since 1963 and the Instituto Superior de Ciências e Tecnologia de Moçambique (ISCTEM) operational since 2010; In Beira: the Universidade Católica (UCB) operating since 2000; In Nampula: the Universidade de Lurio (UniLurio) started training medical graduates in 2007; and in Tete the Universidade de Zambeze (UniZambeze) in 2008. The annual output of doctors from all Mozambican institutions is currently 120 but is expected to increase to 200 when students from Unilurio and Unizambeze start to graduate in 2013 and 2014 respectively.

Other higher degree professionals (e.g. high-degree maternal nurses, paediatric nurses and surgery technicians) are trained at the Instituto Superior de Ciências da Saúde (ISCISA) in Maputo which opened in 2004 under the responsibility of the MoEd. Around 379 professionals in the areas of Nursing (general, maternal and paediatrics), Surgery, Anaesthesia, Theatre Nursing (Instrumentista), Laboratory, Hospital Management and Occupational

²⁴ AAAQ refers to **A**vailability (commodities and HRH), **A**ccessibility, **A**dequate Coverage and utilization (initial and continuous) and **Q**uality

Medicine graduated from this institution in 2010. This is the only institution in Mozambique training health professionals other than medical doctors at high degree level except for UNILurio which provides Bachelor training for Nutritionists and Nurses. Private institutions graduated 110 pharmacists, 108 dentists and 745 psychologists between 2000 and 2010.

There have been some concerns about the quality of health professional education in Mozambique in the last years. One of the problems identified in the literature is the existence of quantitative and qualitative deficiencies in academic staff (faculty). However, efforts from MISAU to address this problem have resulted in an increased number of full-time teaching staff from 177 in 2004 to 305 in 2011. Despite the proportion of teachers with degree and masters level qualification having increased from 15.8% in 2004 to 21.7% in 2009, there are difficulties in getting highly qualified staff into full-time academic work, probably due to unattractive financial incentives and a lack of a well-defined professional career. The average ratio of students per full-time teacher is currently 19 which is relatively acceptable. However, some provinces reach excessive levels that could compromise the quality of education, such as the ICS in Maputo City with 44 students per teacher or the ICS Beira with 36 (Sidat, Fronteira et al. 2010).

Attrition at basic and mid-level education has been increasing during the last years of the last decade (13.3% in 2005 and 22.6% in 2009). The main attrition-related causes reported are poor student performance (68.9%), dismissal (11.5%), dropout (7.6%), interruption (6.9%), health problems (2.8%) and death (2.4%). Attrition from MCH Nursing courses at basic and mid-level is among the highest of all, which probably deserves a deeper analysis (MISAU_DRH 2011a).

The increase of the human resources to deliver MCH services is one of the main objectives defined both in the National Plan to Achieve MDG 4&5 2009-2012 (2015) and the National Human Resources for Health Development Plan 2008-2015 (MISAU 2008b).

8.1.3 MNH workforce education

MCH Nursing is considered a priority in the National Training Plan 2011-2015 (MISAU_DRH 2011c). MCH Nursing training at mid-level is offered in all 11 Training Centres (Centros de Formação) and 4 Health Sciences Institutes (Institutos de Ciências da Saúde) in the country. MCH Nursing Degrees (high-level) are only provided at the ISCISA in Maputo in 2 different courses, one for Paediatric Nurses and another for Maternal Health Nurses. Since training of MCH nurses at elementary level was discontinued in 2003, professionals working at this level were offered a “bridge” course to get a mid-level diploma called mid-level promotion course. There are no private institutions involved in the training of MCH nurses.

The annual output of MCH nurses in the different levels is variable. The overall production capacity has increased by 45% in the last decade. The number of mid-level MCH nurses has increased by 585% and the number of basic-level nurses has increased by 41%.

Table 5: Number of MCH Nursing graduates per level (mid and basic levels)

LEVEL	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	TOTAL
Elementary	124	91	25	0	0	0	0	0	0	0	0	0	240
Basic	79	140	120	119	65	148	98	144	342	139	257	112	1763
Mid initial	34	54	68	24	134	0	129	75	35	118	83	233	987
Mid prom.	0	19	30	33	61	0	31	31	30	0	0	0	235
Subt. mid	34	73	98	57	195	0	160	106	65	118	83	233	1222
Total MCH Nurses	237	304	243	176	260	148	258	250	407	257	340	345	3225

Source: (MISAU_DRH 2011a)

The curriculum for mid-level MCH nurses has been recently revised and its structure shifted into a modular programme with a competence-based orientation in line with international guidelines for midwifery training (MISAU 2010b). The duration of the new programme for MCH Nurses training at mid-level is four semesters of 22 weeks each (MISAU 2010b). Applicants should have passed 10th level of basic education (Sidat 2012). Applicants should be ≤ 30 years old, female and pass an admission exam for Portuguese and Biology. Successful candidates are submitted to a psycho-technical test (vocational assessment) and then selected according to the vacancies established for MNH Nursing courses in the different training institutions.

As in other disciplines, an important problem faced by MCH Nursing training institutions is the insufficient number of competent and appropriately qualified faculty staff, particularly in some specific areas. Financial constraints are often found for the recruitment of part-time trainers, with aid cooperation partners often having to cover expenses in the absence of public resources. Funding for rural placement is often also a problem due to the high cost of transport, lodging and other added costs which could have serious implication for equity (Sidat 2012).

The failure rate among students who enrolled in maternal nursing during the period 2000-2004 was 14.4% among students of mid-level promotion and 18.7% among those in mid-level initial (total mid-level 17.4%) which is relatively high. In the basic level the failure rate was extremely high with 32.4% of students who enrolled in the period 2000-2004 failing to complete their courses.

Admission to maternal nursing, paediatric nursing and surgery at superior level is open to health professionals with mid-level qualifications limited by an entry exam for those with no previous experience and covers 4 years with an entry requirement of 12th level of primary education. Higher degree maternal and paediatric nurses have 6 months of rural training and surgery technicians have 12 months of rural training. Most new graduates are posted in rural settings at district level where they are required to work for two years.

Training of medical interns comprises the two first years of basic biomedical science, followed by three years of clinical science research and one last year for an internship (total six years). The curriculum prioritizes skills and competencies as well as theoretical knowledge. The programme incorporates a 10-week rural placement including clinical and community health activities. The high number of students per academic year reduces the quality of training, particularly with regard to opportunities for practice to gain adequate clinical proficiency. Thus, many students finish their studies without sufficient practical skills, leading to underperformance during their internship. MCH higher degree Nurses and Surgery Technicians feel far more confident in performing life-saving signal functions (Sidat 2012).

8.1.4 Recruitment and contracting mechanisms to convert potential supply into participation and retention

Staffing standards in Mozambique are regulated by a Ministerial Decree 127/2002 which provides standard figures for each cadre at primary and secondary levels of care (Boletim_da_República 2002). Staffing standards for third and fourth levels of care are not included in this Decree. Health facilities at these two levels are staffed following retrospective figures which, after being assessed by the DRH, need to be approved by the Minister of Health. However standards are often not achieved as suggested in the National Plan HRH Development 2008-2015 (MISAU 2008b).

Most of graduating students are automatically absorbed by the public system. However despite increases in production (1,692 in 2011) many newly graduates end being recruited on non-established positions due to the low allocation of new positions by the GoM (around 1,000 new established positions per year). The Directorate of Medical Assistance at MoH distributes new graduates to provinces prioritizing those with poor workforce ratios. Once assigned to the province, the Provincial Health Directorate (DPS) use staffing standards included in the Decree 127/2002 to appoint workers to districts. The distribution of maternal health nurses is decided by the provincial responsible for the MNH programme. The distribution of medical technicians and general nursing staff is decided by the provincial chief medical officer. HR needs are calculated at the health facilities based on the estimated turnover. Needs are sent to the district and province levels on an annual basis. Depending on the capacity available, some provinces apply workload criteria (delivery units) for the calculation of HR needs. The recruitment process requires approval from the Administrative Tribunal (TA).

8.1.5 Attrition (participation)

The attrition rate in the overall health workforce (including support staff) was 1.5% in 2000 and is currently around 3% with the most frequently reported causes being retirement (20%) and death (20%). Attrition due to own initiative gives an idea of the severity of retention problems. Causes in this group include unlimited leave of absence, contract rescission, career change, transfer to a different sector and detachment. While the general attrition rate due to these causes among the overall technical workforce (only health professionals) was 0.8% in 2011, for MCH nurses (all categories) it was 0.5%. However, when disaggregating into different academic levels we observe that while the rate is relatively low among nurses with basic degrees (0.4%), it is 1.7% among these with mid-level degrees and it goes up to 4.3% among professionals with high degrees (MISAU_DRH 2012b).

According to data from the Department of Human Resources (DRH) in 2007 the largest age group in the overall workforce (including general staff and health professionals) was 41 to 45 years of age which indicates a relatively

old workforce which, together with the relatively early retirement age will generate great demand of new workers in the near future.

Despite out-migration of health professionals being relatively low in Mozambique (Noormohamed 2000) internal migration from the public to the private sector is increasingly representing a threat to the already suboptimal workforce. It most acutely affects the higher categories like doctors or highly qualified nursing professionals including midwives. Non-for-profit organizations (mainly international NGOs) attract the most skilled professionals, offering disproportionately high salaries and better working conditions than the public sector. Increasing retention capacity in the civil service is just one part of the solution. International NGOs should think how hiring practices could be changed to avoid draining the public system of its best human resources (Sherr-Gimbel, Mussa et al. 2012).

8.1.6 Public health sector

There is no clarity about the exact number of positions established within the public health sector in Mozambique. As mentioned above, there are some staffing standards for different levels of the system (e.g. Decreto 127/2002) but they are implemented inconsistently across the country. It is thus also difficult to calculate vacancy rates unless based on historic staffing levels at facility level.

8.1.7 Private health sector

There is not much information available about the size and scope of the private health sector and its workforce in Mozambique. The private sector has expanded in the last decade particularly through not-for-profit providers from national and international NGOs working at community level on prevention, disease control and information, education and communication in many HIV/AIDS-related programmes that include antiretroviral treatment. Faith based organizations (FBOs) in partnership (PPP) with the government currently run health services previously operated by religious organizations in the colonial era (Ferrinho, Martins et al. 2010).

The private for profit sector is still comparatively small and confined to major cities (e.g. Maputo, Beira and Nampula) but it is expected to grow considerably as a result of an increasing demand linked to positive macroeconomic indicators and a growing middle class. However, strong competition from health services in neighbouring South Africa and the still limited penetration of private health insurance in the country protect the public sector from a major HR drain. Some industries offer health care services to their workers through agreement with established private health services or through individual providers offering services on the industry's premises (Ferrinho, Martins et al. 2010).

In rural areas, the informal sector is often the population's first point of contact with the health system and it is mainly formed of traditional healers and herbalists. Traditional medicine is well established with more than 70,000 practitioners who are members of the Association of Traditional Medicine of Mozambique (AMETRAMO).

8.2 Accessibility

As mentioned in section 5.2 of this document delays in arriving at the health facility are a contributing factor to maternal mortality in 54.4% of the cases included in the ANSMN 2007-2008. Also delays in the identification of risk factors contributed to 23% of maternal deaths. The rural population in Mozambique represented 68.6% of the total population in 2012 (16,131,930 people). The population living in remote areas usually relies on the lower levels of the system to receive health care but as mentioned above these facilities are often understaffed.

8.2.1 Attraction and retention mechanisms

The MoH has trouble attracting health professionals to peripheral areas. While Mozambican doctors working in Maputo City (excluding those working at Maputo Central Hospital and MoH HQs) represent 16.6% of the total national medical workforce, expatriates represent only 2.7% (MISAU_DRH 2012b). This shows the preference of Mozambicans to work in Maputo where they can find work in the private sector and enjoy the services and amenities of the capital. However some measures, such as the salary top-ups offered to specialist physicians appointed outside of Maputo City, seems to be working well. Other retention policies adopted by the MoH during the last years include: a) increasing the opportunities for training by establishing afternoon and evening classes, b) appointing new graduates in remote/rural areas, c) creating incentives for workers appointed in rural areas, d) expanding the training network to provinces, e) revising the job profiles to promote task shifting (MISAU 2012b).

8.2.2 Facilities and their status (BEmONC + CEmONC)

Despite national health policy revolving around principles of primary health care and equity, when looking into the proportion of facilities offering maternity services at this level we find a relatively large unmet need (more than 25% of facilities do not offer delivery services) which, in the context of Mozambique where more than half of the population lives below the poverty line and where the road infrastructure and transport is often poor, does not seem to work towards achieving the national target of increasing institutional delivery from the current 54.8% to 66% by 2015.

Table 6: Distribution of health facilities per province by level and type²⁵

Provinces	2nd, 3rd and 4th level						1st level					TOTAL	
	Hospitals						Urban HC			Rural HC			Health Post
	HoC	HE	HP	HD	HR	HG	Type A	Type B	Type C	Type I	Type II		
Niassa			1		1		1	2		9	25	98	137
C Delgado			1	1	3		2	4	5	15	57	12	100
Nampula	1	1		2	4	2	2	1	5	25	76	74	193
Zambézia			1	2	4		1	9	4	16	89	53	179
Tete			1		3		2	3	1	16	58	18	102
Manica			1	3	1		1	3	1	11	58	4	83
Sofala	1				4		4	1	2	16	78	33	139
Inhambane			1		2				6	14	69	12	104
Gaza			1		4		1	14	2	10	51	45	128
Maputo P.					1	1	4	2	4	11	49	8	80
Maputo C.	1	1				3	7	9	1		3	7	32
Total	3	2	7	8	27	6	25	48	31	143	612	365	1.277

Source: (MISAU 2007)

Using WHO standards of availability of EmONC services, Mozambique has a coverage of just 38% for all EmONC. However when looking at CEmONC, the coverage is 80% with relatively important interprovincial disparities (MISAU 2009a)

Table 7: Availability of health units offering EmONC services by province compared with WHO standards (ANSMN 2007-2008)

Province	Population	Recommended WHO		Found			Indicator	
		Minimum number of HUs offering EmONC (BEmONC + CEmONC)	Minimum number of HUs offering CEmONC	Number of HUs offering EmONC (BEmONC + CEmONC)	Number of HUs offering CEmONC	Number of HUs offering BEmONC	% of standard for EmONC	% of standard for CEmONC
C. Delgado	1,632,809	16 to 17	3 to 4	4	3	1	24%	92%
Gaza	1,219,013	12 to 13	2 to 3	7	5	2	57%	205%
Inhambane	1,267,035	12 to 13	2 to 3	10	3	7	79%	118%
Manica	1,418,927	14 to 15	2 to 3	6	1	5	42%	35%
Maputo C	1,099,103	11	2 to 3	3	3	0	27%	136%
Maputo P	1,259,713	12 to 13	2 to 3	0	0	0	0%	0%
Nampula	4,076,642	40 to 41	8 to 9	14	4	10	34%	49%
Niassa	1,178,117	11 to 12	2 to 3	9	2	7	76%	85%
Sofala	1,654,163	16 to 17	3 to 4	12	7	5	73%	212%
Tete	1,832,339	18 to 19	3 to 4	4	3	1	22%	82%
Zambezia	3,892,854	38 to 39	7 to 8	9	2	7	23%	26%
National	20,530,715	205 to 206	41 to 42	78	33	45	38%	80%

Source: (MISAU 2009a)

²⁵ HoC: central hospital, HE: specialised hospital, HP: provincial hospital, HR: rural hospital, HG: general hospital, HC: health centre

8.2.2.1 Models of care within facilities

It was not clear during data collection for this document what is the most prevalent model of MNH care in Mozambique

8.2.2.2 Financial barriers (user fees, informal payment, etc.)

Despite public health care being free at the point of delivery in Mozambique there is anecdotal evidence about informal payments taking place in health facilities including MNH services (personal communication). However this could not be substantiated during this documentary review.

8.3 Acceptability

Gender acceptability of the MNH workforce is an important issue that can have a great impact on effective coverage and utilization of MNH services. In Mozambique all the MNH nurses are women. This policy is believed to contribute to increased acceptability of MNH services particularly in rural areas. All primary level MCH services are provided by this cadre which is suggested to be a “good practice”.

8.3.1 Adolescent services

The main obstetric causes of death among adolescents (<20 years) in Mozambique include pregnancy-related hypertension, puerperal sepsis and septic abortion. Granja et al. (2001) found that adolescents had a 30% higher risk of institutional maternal mortality than adults. They also have a significantly higher rate of delivery by vacuum extraction than adults and higher risk of stillbirth and low birth weight. The study shows that health workers in peripheral and central hospitals tend to underestimate the gravity of diseases in first and young pregnancies which leads to delays in adequate treatment and correct management. Adolescents were also less likely to be referred to higher levels than older women (Granja, Machungo et al. 2001). This suggests that there was a need to improve the capacity of health workers to identify and respond adequately to adolescent health problems, particularly obstetric emergencies.

8.3.2 Respectful care

The MoH manages a National Programme for Quality and Humanization of Health Services aimed at ensuring a humanized management of health services, promoting human treatment to patients in all health facilities and promoting humanization in working conditions. The programme trains health workers with the objective of changing attitudes towards patients, relatives, companions and the communities where health facilities are based. MNH is considered a priority within this programme resulting in the development of a specific strategy for humanization of MNH services called “Model Maternities”. Lack of respect for women and their birthing preferences and abusive care have been identified as deterrent factors for women to use facility-based care (Bowser and Hill 2010). The Model Maternity Initiative (MMI) introduced in 2009 by the MoH aims at improving the quality of care from the client’s perspective (“humanization of care”) and the technical aspects of maternity care. The focus of the programme is on routine preventive and emergency management practices for key maternal and neonatal complications. In a study undertaken in 2011 using direct observation techniques, Mozambique scored similar to five other countries on humanized care indicators such as the respectful greeting women, encouraging a support person during labour and birth, actively asking if there are questions, proactively informing about findings and about present and subsequent events, support for de-ambulation, friendly support during labour, draping women, etc. The mean percentage score found in all facilities assessed was 46% with minimal differences between MMI and non-MMI facilities, suggesting poor impact of the MMI with substantial room for improvement in how providers treat women in MNH care services (MCHIP_MISAU 2013).

8.4 Quality

Chavane et al. (2013) found in their assessment of quality and humanization of MNH Care in facilities included in the Model Maternity Initiative (MMI) in terms of prevention, early detection and treatment of maternal and neonatal complications, that the overall quality fell below WHO’s recommended standards with similar findings for MMI and non-MMI facilities. The main reason identified was inadequate staffing leading to overloaded staff often working alone in an often stressful environment with limitations in terms of knowledge of high-impact evidence-based interventions (MCHIP_MISAU 2013). Lack of essential equipment and key lifesaving medicines often affects quality of care. In an evaluation of MNH needs in 2007-2008 it was found that only 37.7 of health facilities had one or more complete delivery kits, 15.9% lacks a functional delivery bed, 64.4% lacks a vacuum extractor and 31.4% lacks Diazepam(MISAU 2009a).

8.4.1 Professional associations

Professional associations often assume quality assurance functions defining professional standards and contributing to develop regulations.

The Midwifery Association of Mozambique (APARMO) is a young organization created in 2004. It had 450 members in 2012 who were recruited actively through mobilizations and invitations. APARMO has a small role in in-service training but most of its current activity is representation through affiliation with several international midwifery bodies such as the International Confederation of Midwives (ICM) and the African Midwives Research Network (AMRN). The association is invited to take part in discussions about regulations, career progression and salary revisions and was fully involved in the last revision of the curriculum for mid-level MCH Nurses. However the MoH still plays an important regulatory role for midwifery practice by licensing midwifery professionals including for private practice (Sidat 2012).

The Association of Obstetricians and Gynaecologists of Mozambique (AMOG) has 61 members. Despite being a relatively young organization (founded in 2006) they have evolved and have developed a five-year strategic plan for the period 2011-2016 and become a member of the International Federation of Obstetricians/Gynaecologists (FIGO).

The National Association of Mozambican Nurses (ANEMO) is the oldest health professional association in Mozambique (founded in 1989). They have an important role in promoting leadership and professionalism among Nurses in Mozambique. They have partnerships with several regional associations and are supported by the Nursing Council of Portugal. In their agenda is the development of an ethical council, development of professional regulations and several training initiatives. They are member of the ICN.

8.4.2 CPD (continuous professional development)

An assessment undertaken as a base to develop the national strategy of continuous education (CE) for health found that despite a normative and organizational basis for the implementation of CE up to the provincial level there are some limitations in terms of leadership and management. CE is fragmented and often excessively influenced by vertical programmes. Sometimes contents are not consistent with local or national priorities and some participants do not have the appropriate profile for the training content. Female nursing and midwifery professionals are less likely to access in-service training than their male colleagues which could have a negative impact on the motivation and retention of this specific group (Gupta and Alfano 2011). The National Strategy for Continuous Education in Health addresses most of the issues identified above. It highlights the importance of the MoH assuming the lead role in coordinating CE activities across the country. The objectives of the strategy include improving the consistency of CE courses, more equitable access to CE with clear criteria for the selection of participants, adapted teaching models and methodologies for the objectives of the training, improved quantity and quality of the faculty for CE, improved infrastructure, equipment and didactic materials, a system of credits linked to career progression and effective M&E (MISAU_DRH 2011b)

8.4.3 Maternal death surveillance and review

Important improvements had taken place since 2009 to date: approval of the terms of reference for the national, provincial and district maternal and newborn audits committees and their establishment; the development of a harmonized maternal death review data collection tool; and since 2012, maternal deaths notification is mandatory. The method chosen by Mozambique is facility-based maternal death review, however, there is still not a database that supports regular monitoring of maternal deaths (although foreseen to be developed by end of 2013). However, there is still limited human resources in quality and quantity to ensure quality in the collection, analysis of the maternal deaths and response; maternal death notification is not integrated in the surveillance system; limited capacity of the national committee to oversight the 11 provinces; and lack of confidentiality to ensure accurate reporting might influence the still low notification of maternal deaths (UNFPA personal information).

8.4.4 Supervision

Supervision of health workers in Mozambique has improved in the last years as suggested by Chavane et al. (2013) who found that 73% of the workers observed (n=186) reported having been supervised in the six months before they were interviewed defining the supervision having at least done one of the following: checked records, observed health provider's work, given verbal feedback, provided written comments, provided updates on administrative or technical issues or discussed problems (MCHIP_MISAU 2013).

8.4.5 Performance management

The performance of health workers is meant to be evaluated on an annual basis through a tool developed by the civil service and focussed on issues such as punctuality or behaviour with the customer rather than on health service quality or efficiency. A revision of the performance management assessment system was undertaken in

2008 and a new mechanism was developed looking at aspects of efficiency and effectiveness. The new process had a goals and objectives evaluation approach. The new system was introduced in 2010 but managers implementing it are facing some difficulties due to the multiple tools and the fact that evaluations need to be done in different times during the year (MISAU 2012b).

8.4.6 Incentive schemes and responsiveness

The Government of Mozambique has shown interest in performance based incentives (PBI) as a means to improve the access and uptake of priority health services. There are several projects using this financial mechanism to promote institutional deliveries and to increase retention of key staff

USAID has been funding pilot projects over the past two years through Health Systems 20/20, building on previous experience in other countries such as Rwanda and Côte D'Ivoire. EGPAF, an American NGO started developing a PBI scheme in four provinces in 2011. Among the 16 indicators of performance, 4 are related to maternal health (e.g. number of women attending 4 ANC visits, number of institutional deliveries and number of FP consultations with an intervention) and two with child health (i.e. number of children fully vaccinated by the age of 9 months and number of children discharged from the nutritional rehabilitation programme). However, the indicators are related to coverage and utilization rather than to quality of care. ICAP, another American NGO, is also implementing pilots for PBI in Gaza, Maputo, Nampula and Sofala (USAID_(HS20/20) 2011). Evaluation of these projects still needs to be undertaken (personal communication).

Pilot initiatives for the provision of demand-side incentives for MNH are also underway (e.g. UNFPA). One of these initiatives is the one Medicus Mundi Switzerland is running in Cabo Delgado which provides a baby package (e.g. one plastic basin, 3 cloth nappies and a traditional cloth) worth USD 12 to mothers delivering their babies at the nearest health facility. Results of an evaluation undertaken in 2012 show an increase in institutional delivery of 96% (Hobbins 2013). While this is a positive output there is a great risk if, given the shortages in MNH qualified HRH and the sometimes poor quality of care provided, the demand increases beyond the capacity of existing resources. Sustainability of these schemes needs to be assessed when funding of these projects are to be assumed by the Government.

9 Specific current information gaps and remaining questions after documentary review

After having reviewed all documents found in the published and unpublished literature the main information gaps identified and questions unanswered are (see annex 1):

- What is the midwifery workforce in Mozambique (confirm)?
- What is the overall midwifery regulatory framework?
- Is the low confidence in performing signal functions due to limited opportunities to practice during pre-service education? If so, how this could be improved?
- Why is student attrition among MCH nursing students so high?
- What EmONC functionality is required at each level of the health system? What level of the health system is supposed to deliver EmONC? Does that correlate with population needs? Is the midwifery workforce available able to assume all these functions?
- What is the explanation for the difference between access to ANC as showed by high coverage of women seeking this service for first time and relatively low level of institutional delivery? Is there any workforce reason behind?
- Which are the main barriers for women to seek MNH services (e.g. cultural, religious, financial, etc.? Is there any workforce intervention that could improve this situation (e.g. CHWs promoting appropriate MNH care seeking behavior)?

These questions above are just some areas identified but its main objective is to trigger further discussions about what more is required to better define the scope and contents of the in-country data collection to complete the information necessary to inform this midwifery workforce assessment (see annex 1 for more specific pieces of information). During the next step of the process (national stakeholder consultation during the scoping mission) discussions will be held to better define and complete the information required that is not included in this report.

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10 Annexes

Annex 1: Specific current information gaps and remaining questions after document review

Main current information gaps:

- What is the midwifery workforce in Mozambique (confirm)?
- What is the overall midwifery regulatory framework?
- Is the low confidence in performing signal functions due to limited opportunities to practice during pre-service education? If so, how this could be improved?
- Why is student attrition among MCH nursing students so high?
- What EmONC functionality is required at each level of the health system? What level of the health system is supposed to deliver EmONC? Does that correlate with population needs? Is the midwifery workforce available able to assume all these functions?
- What is the explanation for the difference between access to ANC as showed by high coverage of women seeking this service for first time and relatively low level of institutional delivery? Is there any workforce reason behind?
- Which are the main barriers for women to seek MNH services (e.g. cultural, religious, financial, etc.)? Is there any workforce intervention that could improve this situation (e.g. CHWs promoting appropriate MNH care seeking behavior)?

Other areas where information could be gathered are:

- ANC quality is low with some of the interventions included in the national protocol not being offered to women. What are the reasons for that? Is this problem due to lack of skills or any other workforce problem?
- What is the reason for some provinces to lag behind in institutional delivery (e.g. Zambezia, Tete, Cabo Delgado)? Is there any workforce deficiency (e.g. skills or scale) involved in this problem?
- How long do MNH staff spend delivering essential MNH functions at each level of the system?
- What is the model of care at birth and what are the composition, roles and engagement of the team of support workers (e.g. CHWs)?
- What is the effectiveness of the PBI on improving performance/productivity of the midwifery workforce? Is there any evaluation available?
- What are the causes of maternal mortality disaggregated at district level?
- How different are the associated factors to maternal morbidity and mortality between provinces/districts?
- What is the role of the private sector in terms of MNH care (e.g. size, resources available, services offered, location, etc.)? What is the workforce practicing in the private sector? Is there dual practice? If so, is it regulated?

Other pieces of information missing in the documentary review are:

#	MODULE	SPECIFIC INFORMATION
2	CONTEXT	<ul style="list-style-type: none"> • Breakdown of health facilities by district/administrative post/locality (lowest possible) and populations covered • Up to date health financing context (complete) • Confirm public health services outside of the health sector (e.g. military, police, etc.)
3	POLICY AND MANAGEMENT CONTEXT	<ul style="list-style-type: none"> • PESS 2013-2018 • PES 2013 • Management at national and subnational levels (complete)
4	FINANCING	<ul style="list-style-type: none"> • Public health expenditure 2009-2012 • Cost of higher level education (complete) • Salaries (complete)
5	POPULATION AND HEALTH	
6	MNH STATUS	<ul style="list-style-type: none"> • Infant and child mortality disaggregation (provincial and district)
7	MNH CARE NEEDS	<ul style="list-style-type: none"> • ANC protocol including number of visits and content of each visit • Population growth and expected pregnancies (information being

		<p>processed at the moment of writing this report)</p> <ul style="list-style-type: none"> • Is there a programme for EMTCT? If so what is the situation?
8	SUPPLY/WHAT'S THE MIDWIFERY WORKFORCE	<ul style="list-style-type: none"> • Situation of the plan for improving HRIS • Job description for MNH/EmONC cadres/positions
9	LABOUR MARKET ANALYSIS AND AAAQ	<ul style="list-style-type: none"> • Disaggregation at provincial level of number of applications for the different pre-service education programmes (female and male); • Output from all training institutions; • Plans for expansion of the education network; • Criteria for admission in higher degrees; • What is the establishment (disaggregation at provincial and district levels? • Vacancy rates per cadre and distribution of vacancies to the lowest level possible; • Trends in approved new civil service positions for health (15 years); • What is covered by traditional medicine; • Facilities open 24/7; • Cadre classification in the last 20 years; • Maternal death surveillance (mortality audit); • Supervision (is it supportive?)

