UNITED NATIONS POPULATION FUND

The State of the World's Midwifery 2022

EAST AND SOUTHERN AFRICA

UNFPA

Contents

Contributors and acknowledgements

UNFPA East and Southern Africa Regional Office commissioned this report. Muna Abdullah was the main coordinator from UNFPA. Special recognition to Jyoti Tewari for his continuous support and leadership and to Rondi Anderson for her additional insights. Lead writers and researchers were Andrea Nove, Martin Boyce and Oliva Bazirete of Novametrics Ltd, with support from Kirsty Hughes.

This report relies to a large extent on the methodology developed for the *State of the World's Midwifery 2021* report, co-chaired by UNFPA, the World Health Organization and the International Confederation of Midwives. We acknowledge the contribution of these organizations and all others who supported the development of the original methodology.

We gratefully acknowledge the contribution of the UNFPA country office staff and other stakeholders to the data collection and validation process, and especially: Yousuf Alrawi (Eritrea), Hanta Andremanisa (Madagascar), Amir Batenga (Tanzania), Aster Berhe (Ethiopia), Warren Bright (Tanzania), Ausenda Domingos (Mozambique), Mathias Gakwerere (Rwanda), Grace Hidinua (Namibia), Grace Hiwa (Malawi), Rose Katumba (Zimbabwe), Nachilima Kaunda (Zambia), Achu Lordfred (Democratic Republic of the Congo), Furaha Mafuru (Tanzania), Said Mahamoud (Comoros), Vidal Mahundla (Mozambique), Jenipher Mijere (Zambia), Blandinah Motaung (Lesotho), Josephine Murekezi (Rwanda), Azzah Nofly (Zanzibar), Zwelakhe Nsibande (Eswatini), Dan Okoro (Kenya), Sabrina Pestilli (Madagascar / Mauritius / Seychelles), Ann Phoya (Malawi), Tlangelani Shilubane (South Africa), Thamari Silndza (Eswatini), Precious Zandonda (Zambia).

United Nations Population Fund East and Southern Africa Regional Office (2022). The State of the World's Midwifery 2022: Analysis of the Sexual, Reproductive, Maternal, Newborn and Adolescent Health Workforce in East & Southern Africa.

Abbreviations and acronyms

ANC	Antenatal care
BEmONC	Basic emergency obstetric and newborn care
CAC	Comprehensive abortion care
CHW	Community health worker
CPD	Continuing professional development
DRC	Democratic Republic of the Congo
DSE	Dedicated SRMNAH equivalent
EmONC	Emergency obstetric and newborn care
ESA	East and Southern Africa
ESARO	East and Southern Africa Regional Office
HRH	Human resources for health
ICM	International Confederation of Midwives
ICPD	International Conference on Population and Development
IPV	Intimate partner violence
ISCO	International Standard Classification of Occupations
IUD	Intrauterine device
MEAP	Midwifery education accreditation programme
MMR	Maternal mortality ratio
MoH	Ministry of Health
NHWA	National Health Workforce Accounts
NMR	Neonatal mortality rate
PMN	Potential met need
PNC	Postnatal care
PPE	Personal protective equipment
RMC	Respectful maternity care
SBA	Skilled birth attendance
SDGs	Sustainable Development Goals
SoWMy 2021	State of the World's Midwifery 2021 report
SRHR	Sexual and reproductive health and rights
SRMNAH	Sexual, reproductive, maternal, newborn and adolescent health
UHC	Universal health coverage
UN	United Nations
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Most countries in the region will need to accelerate their progress in order to meet national, regional and global Sustainable Development Goals (SDGs) targets.

Foreword

The East and Southern Africa (ESA) region has made significant progress in recent years in improving the survival and health of girls, women, and newborns. Between 2000 and 2017, the 23 countries in the ESA region achieved a reduction of 49 per cent, exceeding the global average of 38 per cent, to arrive at an average of 391/100,000 live births. Nearly all ESA countries made good progress between 2000 and 2017. In addition, most countries can show good work toward improving the quality of countries' SRHR workforce. Despite this, the average MMR is still well above the global average of 211/100,000 and progress has been uneven. Inequity between and within countries, exacerbated by COVID-19, remains.

Most countries in the region will need to accelerate their progress in order to meet national, regional and global Sustainable Development Goals (SDGs) targets. The vast majority of maternal, and newborn, deaths are preventable with access to a workforce with SRHR expertise, most commonly found in a globally standard midwife. Without the right investments in a well-equipped, enabled, quality workforce, meeting SDG 3 will remain challenging.

This report provides a comprehensive assessment of the current state of the region's sexual, reproductive, maternal, newborn and adolescent health workforce in 23 countries. It gives clear evidence of the region's progress and identifies bottlenecks and challenges that must be addressed. Evidence from the 23 countries shows a specific mixture of challenges, with each country at a different stage of development and with a unique health system. Therefore, this report can be used to reinforce tailored responses to national needs.

This report aims to stimulate policy discussion and evidence-based decision-making at national and subnational levels, to enable countries to ensure that women and young people are able to fully realize their right to health, and that they obtain the care and services that they need. It supports countries in meeting their obligations under regional and global initiatives, such as Campaign for Accelerated Reduction of Maternal Mortality in Africa (CARMMA), the Africa Health Strategy, the Sustainable Development Goals, and the Global Strategy for Women's, Children's, and Adolescents' Health. I recommend this report to all involved in providing sexual, reproductive, maternal, newborn, and adolescent health care in the East and Southern Africa region.

Ms. Lydia Zigomo

Regional Director, UNFPA East and Southern Africa

In some countries in the region, only a small proportion of women access antenatal, childbirth and postnatal care from skilled professionals.

Executive summary

Sexual, reproductive, maternal, newborn and adolescent health (SRMNAH) is an essential component of the Sustainable Development Goals (SDGs) and the Programme of Action of the International Conference on Population and Development (ICPD). Improving SRMNAH requires increased commitment to, and investment in, the health workforce. This report focuses primarily on midwives because a strong midwifery workforce is essential to the success of United Nations Population Fund (UNFPA) strategies for improving SRMNAH and achieving its mandate.

This report provides an up-to-date evidence base to highlight progress since the last regional midwifery workforce report in 2017 and to project forward to 2030. It includes data from all 23 countries in the UNFPA East and Southern Africa (ESA) region: Angola, Botswana, Burundi, Comoros, Democratic Republic of the Congo (DRC), Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa, South Sudan, Uganda, Tanzania, Zambia and Zimbabwe. It is primarily intended to support policy dialogue at national and regional levels, to assist countries in the region to meet the challenges of the health-related SDGs and the universal health coverage (UHC) agenda. Understanding the current state of the midwifery workforce is necessary to allow ESA countries to identify the specific challenges, gaps and bottlenecks which need to be addressed, and to consider suitable strategies for overcoming them.

UNFPA ESARO led the development of this report. The report builds on the approach used for the 2017 regional midwifery workforce report and the global State of the World's Midwifery 2021 report (SoWMy 2021), led by UNFPA, the World Health Organization (WHO) and the International Confederation of Midwives (ICM).

Context

The UNFPA East and Southern Africa (ESA) region contains a diverse range of countries. As a whole, the region has made significant progress over the last two decades in improving Sexual, reproductive, maternal, newborn and adolescent health (SRMNAH) outcomes, but progress has been uneven. As a result, inequity between and within countries remains, and has been exacerbated by the COVID-19 pandemic.

In some countries in the region, only a small proportion of women access antenatal, childbirth and postnatal care from skilled professionals. In other countries, access is higher but poor quality of care, lack of respectful care and/or the lack of an enabling work environment means that Sexual, reproductive, maternal, newborn and adolescent health (SRMNAH) outcomes can still be poor.

The need for improved Sexual, reproductive, maternal, newborn and adolescent health (SRMNAH) has been recognized at a high level within the region: key policy and strategy documents emphasize the importance of investment in the health workforce generally, and midwives specifically.

Availability of midwives and SRMNAH workers

The region has a total of 800,000 SRMNAH workers, of whom 146,000 (18 per cent) are midwives and nurse-midwives. Just over half (53 per cent) are nurses without midwifery training and 11 per cent are SRMNAH doctors (general practitioners, obstetricians and gynaecologists and paediatricians). In comparison to other regions of the world, midwives make up a large proportion of the available SRMNAH workforce: 37 per cent of the available SRMNAH worker time in ESA comes from midwives, compared with the global average of 19 per cent.

About two-thirds of the region's midwives and nurse-midwives are classified as "professional" and about one-third as "associate professional". Associate professional midwives (who typically have a narrower range of skills and competencies) comprise all or most of the midwifery workforce in DRC, Malawi, Mauritius, mainland Tanzania and Zambia. In the remaining countries, all or most are classed as professionals.

The 146,000 midwives in the region translate to a density of 2.5 midwives per 10,000 population, far lower than the global average of 4.4. Nine ESA countries have a midwife density above the global average: Botswana, Comoros, Eswatini, Kenya, Lesotho, Malawi, Mauritius, Seychelles and Zimbabwe. The analysis in this report indicates that the region has a shortage of almost 300,000 midwives, with the largest shortages in DRC, Ethiopia, Mozambique, South Africa, Tanzania and Uganda. The ESA region has a density of 1.4 SRMNAH doctors (general practitioners, obstetricians and gynaecologists and paediatricians) per 10,000 population, which is far below the global average of 6.9. This includes just 0.05 obstetricians and gynaecologists per 10,000 population. Similarly, the region's density of nurses without midwifery training is seven per 10,000, well below the global average of 36.

With its current size and composition, the available workforce could meet a maximum of 49 per cent of the region's need for essential SRMNAH interventions, indicating that workforce shortages contribute to the relatively low rates of skilled birth attendance, antenatal care coverage and postnatal care coverage that are seen in many ESA countries. In this report, this is referred to as "49 per cent potential met need (PMN)". Just four countries in the region have a PMN above the global average of 77 per cent: Botswana, Kenya, Mauritius and Seychelles. Where constraints prevent the workforce from operating effectively (e.g. poor infrastructure, ineffective supply chains, poor-quality education, inequitable geographic distribution), the actual amount of need being met will be far lower than indicated by the PMN estimate. Nearly all the region's midwives are women, except in Burundi and DRC. About two-thirds of the region's nurses without midwifery training and about a third of its SRMNAH doctors are women. A reliance on men to provide SRMNAH care has been identified as a barrier to women accessing the care they need, because there is often a preference to consult a woman health worker for their SRMNAH needs.

Future projections indicate that, by 2030, ESA will have increased the number of midwives in the workforce by 43 per cent. However, in most countries this will not address the shortage, because even this level of workforce growth will not keep pace with the rate of population growth. Indeed, without additional investment in midwife availability, eight countries in the region are projected to have a worse midwife shortage in 2030 than they do today: Burundi, DRC, Eritrea,

Madagascar, Malawi, Mozambique, mainland Tanzania and Zambia.

Availability of midwives is important, but so is the quality of the care that they are able to provide. Using indicators from this report, it is possible to estimate the extent to which midwives in ESA countries adhere to key elements of the ICM definition of a midwife: (1) a midwife has completed a high-quality education programme, (2) a midwife is a "responsible, accountable professional", and (3) a midwife works on her own responsibility across the full continuum of SRMNAH care. This report shows that, although some countries do well on most indicators (most notably Ethiopia, Malawi and Zimbabwe), no country is rated positively on every indicator. Most of the gaps relate to the extent to which midwives are considered to be "responsible, accountable professionals", but there are also major gaps in indicators of education quality. In all ESA countries, more could be done to professionalize midwifery and enable midwives to fulfil their potential to make a major contribution to the health and well-being of women, adolescents and newborns.

Midwife education and training

High-quality education and training for midwives is an essential ingredient for quality of care. This report illustrates that the policy environment for midwife education in the region is generally strong, but implementation of the policy is challenging.

All of the region's Francophone countries and some of the Anglophone countries offer a direct entry midwifery education programme. Nearly all Anglophone countries offer a post-nursing or integrated nursing and midwifery programme, and some also offer direct entry. The existence of multiple education pathways in the same country can lead to confusion and lack of clear career pathways after graduation.

Most countries offer a Bachelor's degree qualification or equivalent (exceptions: Lesotho, Mauritius and Mozambique), but about half of ESA countries also offer a qualification below this level, which indicates that not all midwives are educated to a high level. Only half of ESA countries (and none of the Francophone countries) offer postgraduate qualifications in midwifery such as Master's and PhD degrees. Postgraduate qualifications can equip midwives to take the lead in future midwifery education and research.

Most midwifery education programmes in the region adhere to the ICM recommendation of at least three years for direct entry courses and at least 18 months for post-nursing courses. The exceptions are Burundi, Comoros, Eswatini, Lesotho, Madagascar, Mauritius, mainland Tanzania and Zambia.

Out of 20 reporting countries, 13 reported having a national curriculum used by all midwifery schools, and five reported a national curriculum that was used by only some schools (Burundi, DRC, Madagascar, Mozambique and Uganda). This left two with no national curriculum at all: Comoros and Namibia. Out of 20 responding countries, 16 have a national policy or guideline on education of midwifery care providers that is based on ICM competencies. However, hardly any education curricula in ESA countries align fully with ICM competencies. Other challenges to high-quality midwifery education in the region include a shortage of suitably qualified educators, curricula that are not aligned with global and national guidelines, shortages of teaching and training equipment, and insufficient opportunities for students to gain practical experience.

Out of 20 reporting countries, just 10 require their midwives to provide evidence of continuing

professional development (CPD) as part of a periodic relicensing process: Eswatini, Ethiopia, Kenya, Malawi, Rwanda, Seychelles, mainland Tanzania, Uganda, Zambia and Zimbabwe. Although it is concerning that half of ESA countries do not require CPD, the region does perform better than most other regions on this measure: globally, just one-third of countries require CPD.

The policy and regulation environment

A positive policy and regulatory environment facilitates the provision of high-quality midwifery care. Nearly all reporting countries have national policies/guidelines which support high-quality, midwife-led care and most have a policy/guideline on regulation which is based on ICM midwife competencies. Again, these are signs of a positive policy environment, but the evidence in this report indicates that policy implementation can be a major challenge.

Similarly, nearly all reporting countries have midwives in leadership roles within the national ministry of health (MoH) and most also have midwife leaders at other levels of the health system. On this measure, ESA performs more strongly than other regions of the world.

ESA also performs very strongly in relation to the midwife's scope of practice. In most countries, midwives are authorized to perform all seven basic emergency obstetric and newborn care (BEmONC) signal functions and to provide all types of modern contraception.

However, only 13 of 20 reporting countries have legislation recognizing midwifery as a profession distinct from nursing. This represents an improvement since the last regional report in 2017, but there is still some way to go. Similarly, only half of reporting countries have a regulatory system that is specific to midwives, and three (Burundi, Comoros and DRC) have no regulatory system at all for midwives.

Impact of COVID-19 on SRMNAH and the workforce

The COVID-19 pandemic has led to significant SRMNAH service disruption, which has started to ease but is still evident in many settings. Public health measures designed to contain the spread of COVID-19, such as the suspension of transport, education and childcare services, have also made it more difficult for health workers (especially women) to work their contracted hours, thus reducing their availability for provision of SRMNAH care.

Respectful maternity care (RMC) has been identified as an important contributor to quality midwifery care, and it is high on the agenda in the ESA region. The evidence indicates that disrespectful and undignified care is prevalent in many countries and this is likely to have been exacerbated by measures taken to tackle the COVID-19 pandemic, such as not allowing birth partners to accompany labouring women in health facilities.

Like other health workers, midwives often had insufficient personal protective equipment (PPE), which meant they had to make or buy their own supplies, go without or be absent from work. Similarly, inequitable distribution of vaccines and vaccine hesitancy have combined to contribute to low vaccination rates among health workers in the region. Vaccination is vital, to protect both health workers and their clients. In May 2021, WHO estimated that over 1,000 health workers had died from COVID-19 in Africa, which is a major and tragic loss to a region which was

already experiencing the worst health worker shortages in the world.

Midwives: a vital investment

Investment in the midwifery workforce has been shown to yield significant returns in terms of improved health and social outcomes. For example, a recent study concluded that universal coverage of midwife-delivered interventions would reduce mortality rates by two-thirds. In the ESA region, this translates to 1.2 million lives saved per year by 2035.

There is growing recognition that creating jobs for health workers not only improves population health indicators such as mortality and morbidity rates, but also supports sustainable economic growth and progress towards the SDGs, including gender equality.

SoWMy 2021 calls for investment in four areas: (i) health workforce planning, management, and regulation and, in the work environment, (ii) high-quality education and training of midwives, (iii) midwife-led improvements to SRMNAH service delivery and (iv) midwifery leadership and governance. This report can help stakeholders in the ESA region to identify which areas of investment are most needed in their country context and provides high-quality evidence and data that can be used to support advocacy for these investments.

Recommendations for advancing midwifery in the region

The data from this report and the global SoWMy 2021 report should be used to highlight the strengths, gaps and challenges affecting the midwifery workforce in the ESA region, and to encourage further investment in midwives and midwifery.

This report includes recommendations for advancing midwifery, in five main areas:

- **Strengthening data systems and addressing the shortage of midwives**
- **Strengthening quality of midwifery care, including education and training**
- **Encouraging interdisciplinary collaboration in SRMNAH care**
- **Investing in midwife leaders and improved understanding of the value of midwifery**
- **Contributing to the research agenda**

Introduction

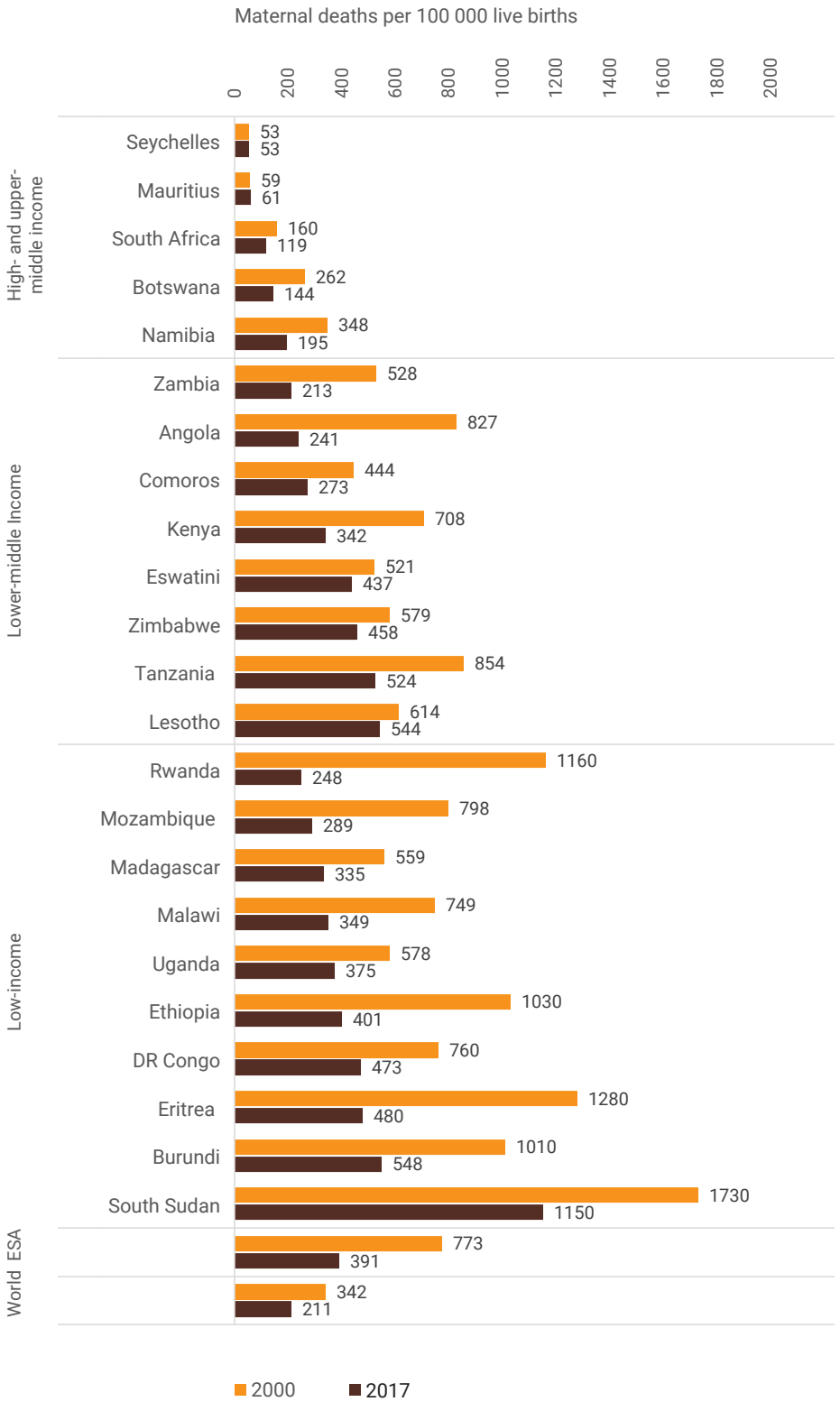
Over the last two decades, the world has made good progress on improving the health and well-being of mothers, newborns and adolescents. Nevertheless, about 295,000 women died during and following pregnancy and childbirth in 2017 [1] and 2.4 million children died globally in the first month of life in 2019. [2] A quarter of these deaths (26 per cent or 77,000 deaths) occurred in ESA, and most could have been prevented. [1]

The 23 countries in the ESA region (Angola, Botswana, Burundi, Comoros, DRC, Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa, South Sudan, Uganda, Tanzania, Zambia and Zimbabwe) have collectively made significant progress in reducing maternal and neonatal mortality and stillbirths, and improved the health and well-being of mothers, newborns and adolescents. However, progress has been unbalanced, and there is still considerable diversity. The COVID-19 pandemic is believed to have exacerbated this variability, according to growing evidence. [3]

SDG3 on "ensuring healthy lives and promoting well-being for all at all ages" calls for reducing the global maternal mortality ratio (MMR) to fewer than 70 maternal deaths per 100,000 live births by 2030, with no nation having an MMR higher than twice the global average. [4] Between 2000 and 2017, there was a reduction of 38 per cent in the global MMR. Over the same period, the UNFPA ESA region achieved a reduction of 49 per cent (the MMR declined from 773 maternal deaths per 100,000 live births in 2000 to 391 in 2017). [1] However, only two countries in the region – Mauritius and Seychelles – recorded an MMR well below 70 in 2017, even though no MMR reduction was noted for these two countries between 2000 and 2017.

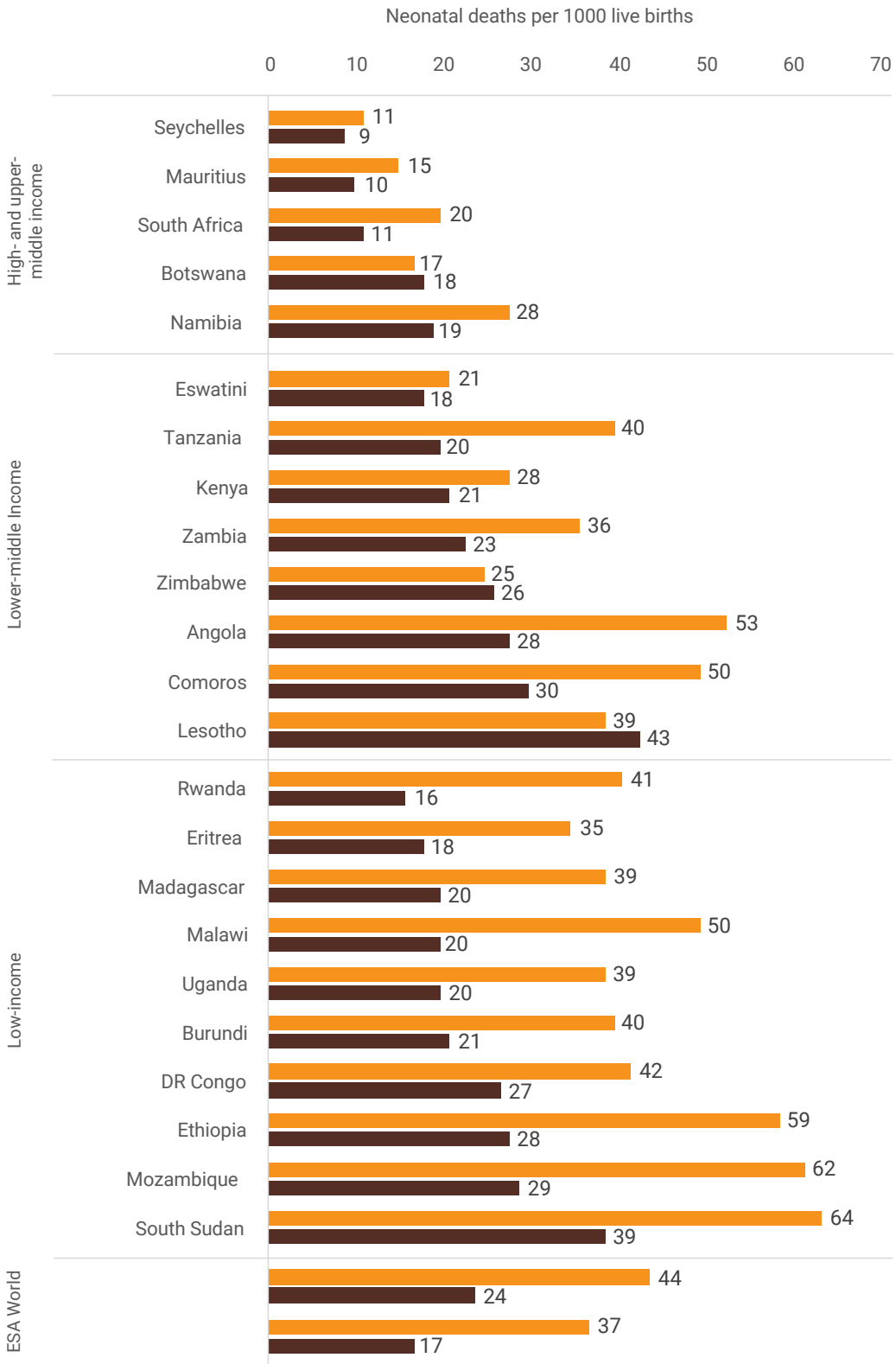
The average MMR in the region was 391, much higher than the global average of 211 (Figure 1.1). Nearly all ESA countries made good progress in reduction of MMR between 2000 and 2017, most notably Rwanda (79 per cent reduction), Angola (71 per cent), Mozambique (64 per cent), Eritrea (63 per cent), Ethiopia (61 per cent), Zambia (60 per cent), Malawi (53 per cent) and Kenya (52 per cent).

Figure 1.1: Maternal mortality ratio by country, 2000 and 2017



Source: WHO, *Maternal Mortality: Levels and trends 2000 to 2017*, 2019.

Figure 1.2: Neonatal mortality rate by country, 1990 and 2019



Source for country and world estimates: UN Inter-agency Group for Child Mortality Estimation 2020. [2] This data source does not include an estimate for the UNFPA ESA region. The regional estimate shown here was calculated from the estimated number of neonatal deaths in the above publication and UN population data.

SDG3 also includes a target to reduce the global neonatal mortality rate (NMR) to no more than 12 neonatal deaths per 1,000 live births. [5] In 2019, the average NMR for the ESA region was 24 (Figure 1.2). Three ESA countries (Mauritius, Seychelles and South Africa) recorded an NMR below 12 in 2019. However, six countries had NMRs over 25: Angola, Comoros, DRC, Lesotho, Mozambique and South Sudan.

Between 1990 and 2019, the global NMR reduced by 54 per cent, but the NMR for the ESA region reduced by less than the global average (45 per cent). Figure 1.2 shows that the majority of ESA countries progressed over this period, most notably: Rwanda (61 per cent reduction), Malawi (60 per cent), Ethiopia (53 per cent), Mozambique (53 per cent) and Tanzania (50 per cent). However, three countries – Botswana, Lesotho and Zimbabwe – recorded a slight increase in their NMR.

In 2019, the average number of stillbirths per 1,000 total births in the ESA region was 21, higher than the global average of 14 (Figure 1.3). Only Eswatini, Mauritius and Seychelles recorded a stillbirth rate below the global average. Seven countries had rates over 20: Burundi, Comoros, DRC, Ethiopia, Lesotho, Mozambique and South Sudan.

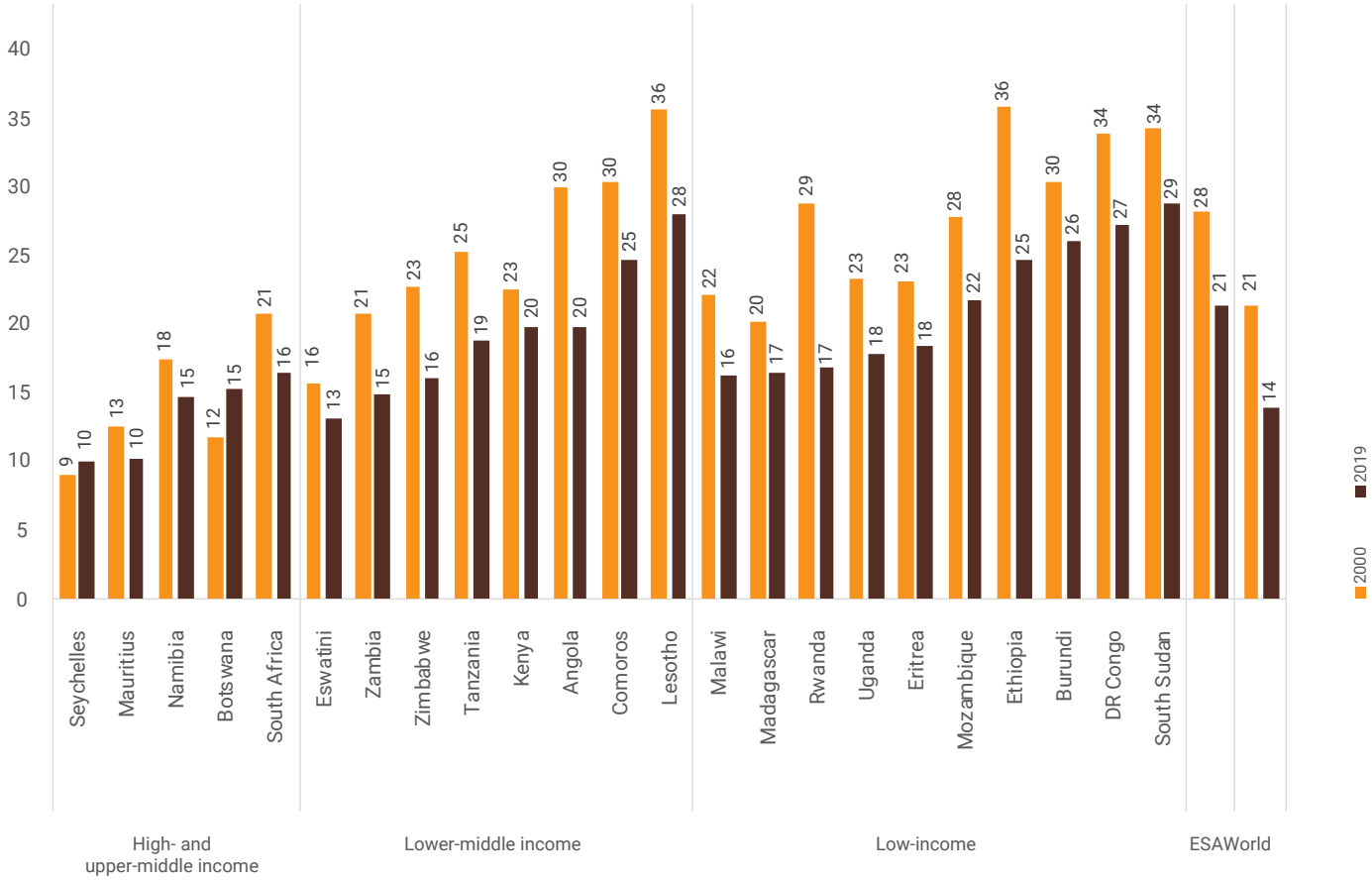
Between 2000 and 2019, the global stillbirth rate reduced by 35 per cent and the average reduction for the ESA region was less than this (24 per cent). Figure 1.3 shows that – with the exception of Botswana and Seychelles who recorded an increase in the stillbirth rate – nearly all ESA countries made progress, most notably Rwanda (41 per cent reduction), Angola (34 per cent) and Ethiopia (31 per cent). However, much smaller percentage reductions were evident in several countries, especially Burundi (14 per cent) and Kenya (12 per cent).

The East and Southern Africa (ESA) region has made significant progress in recent years in improving the survival and health of girls, women, and newborns. Between 2000 and 2017, the 23 countries in the ESA region achieved a reduction of 49per cent in MMR, exceeding the global average of 38per cent, to arrive at an average of 391/100,000. Nearly all ESA countries made good progress between 2000 and 2017. In addition, most countries can show good work toward improving the quality of countries' SRHR workforce.

Despite significant improvement the average MMR is still well below the global average of 211/100,000 and progress has been uneven. Inequity between and within countries, exacerbated by COVID-19, remains. Only two countries in ESA met the MDG goals of less than 70/1000 and most countries do not deploy a distinct globally standard professional midwife.

This report shows that, although some countries do well on most indicators for a strong professional midwife, (most notably Ethiopia, Malawi, and Zimbabwe), no country is rated positively on all indicators. Most of the gaps relate to the extent to which midwives are considered to be "responsible, accountable professionals", but there are also major gaps in indicators of education quality. In all ESA countries, more could be done to professionalize midwifery and enable midwives to fulfil their potential to make a major contribution to the health and wellbeing of women, adolescents and newborns.

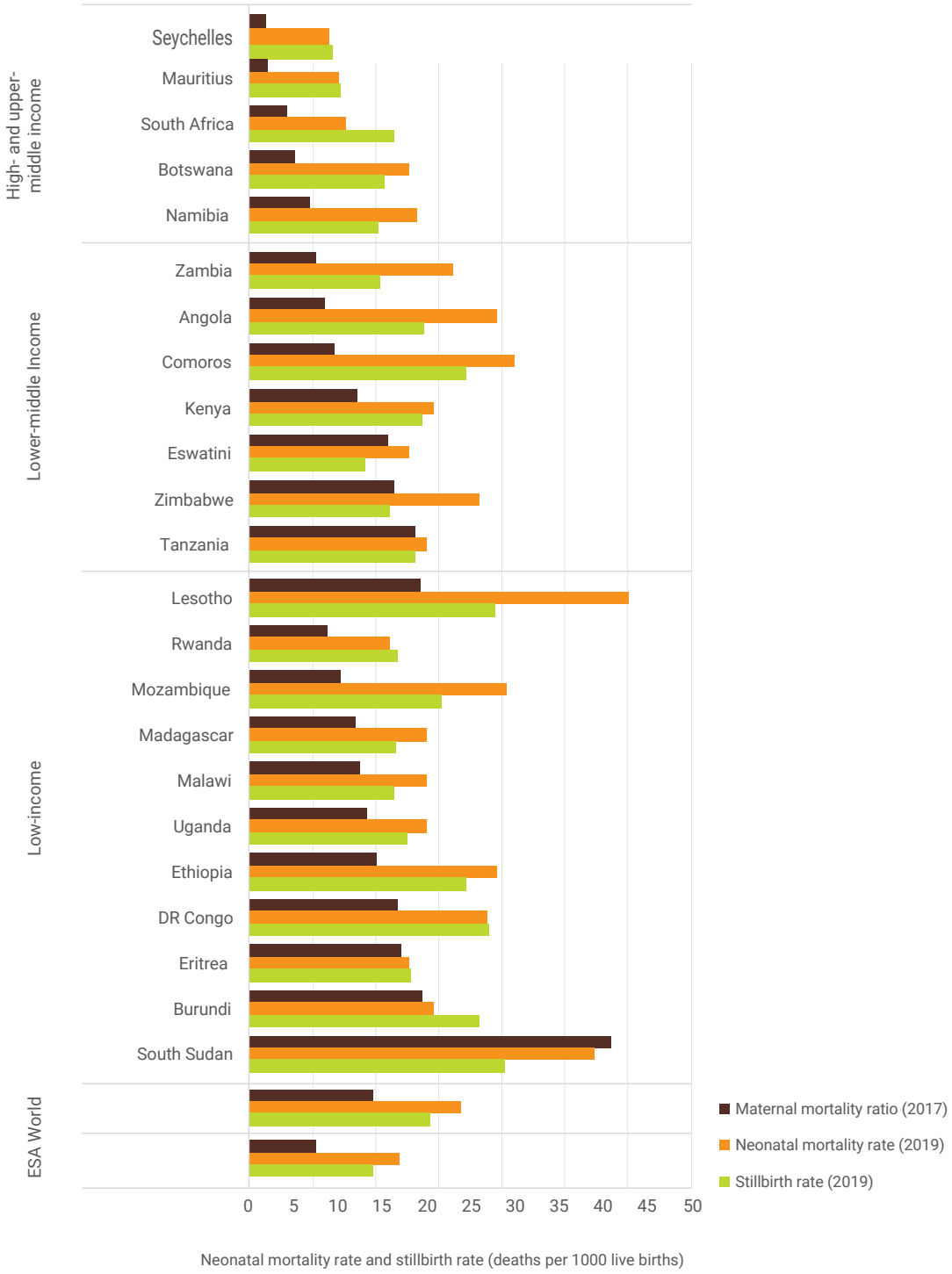
Figure 1.3: Stillbirth rate by country, 2000 and 2019



Source for country and world estimates: UN Inter-agency Group for Child Mortality Estimation 2020. [6] This data source does not include an estimate for the UNFPA ESA region. The regional estimate shown here was calculated from ESA country-specific stillbirth data in the above publication.

Figure 1.4 presents side-by-side the most recent estimates for maternal and neonatal mortality and stillbirths. It illustrates that some countries perform relatively well on all three, whereas some are making better progress in some areas than in others. For example, South Africa's MMR and NMR are relatively low, but its stillbirth rate is high relative to other high- and upper-middle-income countries. Angola, Comoros, Mozambique and Zambia have low MMRs compared to other low- and middle-income countries, but their NMRs and stillbirth rates are among the highest in their income groups. Conversely, South Sudan and Tanzania have made better progress on neonatal mortality and stillbirths than on maternal mortality.

Figure 1.4: Most recent estimates of maternal mortality ratio, neonatal mortality rate and stillbirth rate, by country



Sources: as per Figures 1.1 to 1.3.

The "survive, thrive and transform" objectives of the *Global Strategy for Women's, Children's and Adolescents' Health* aim not only to reduce preventable deaths, but also to transform societies so that women, children and adolescents everywhere can realize their rights to the highest attainable standards of health and well-being. [7] SRMNAH is an essential component of the SDGs, particularly SDG3 and SDG5: to "achieve gender equality and empower women and girls". [5]

Health and well-being are dependent on access to health services across the life course. In the case of SRMNAH, the continuum of care includes adolescent sexual and reproductive health, pre-pregnancy, antenatal, childbirth and postpartum.

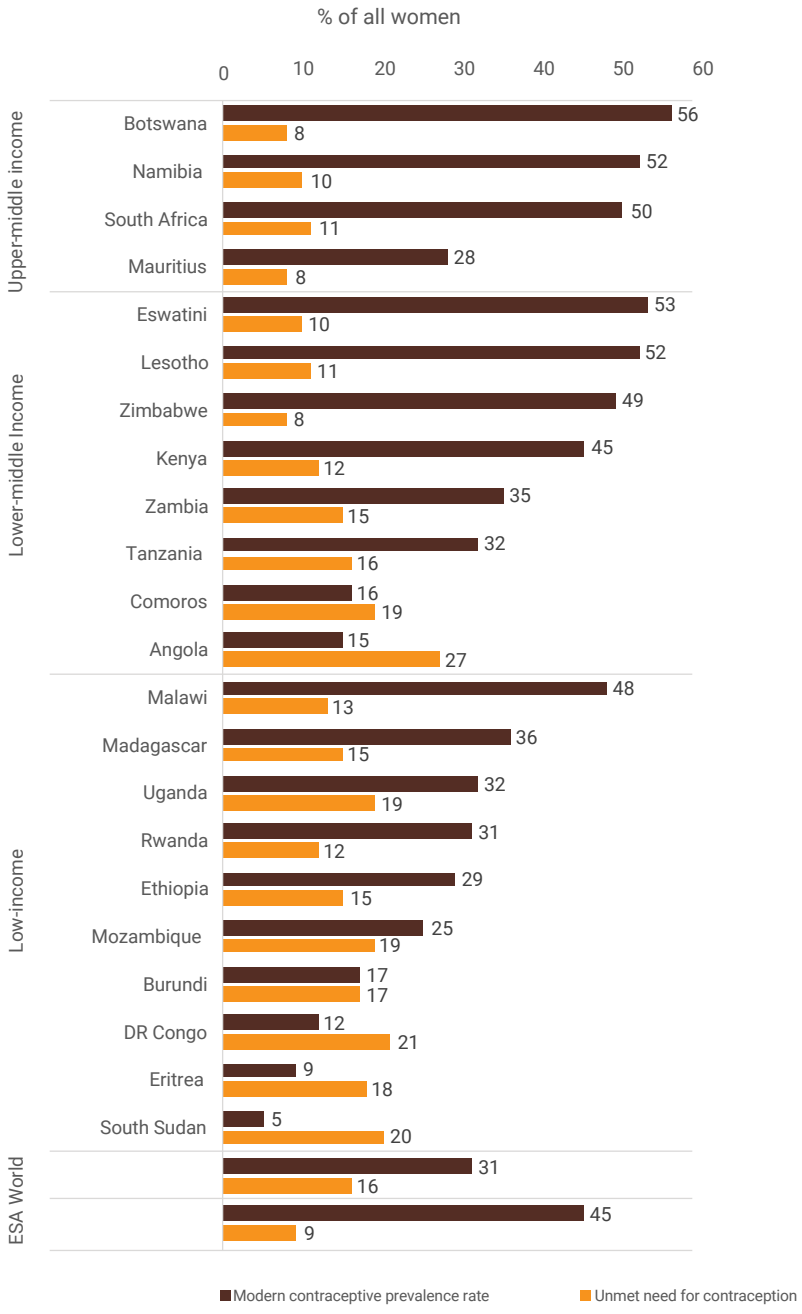
Figure 1.5 shows that the global average modern contraceptive prevalence rate is 45 per cent, and that eight countries of the ESA region equal or exceed this global average: Botswana (56 per cent), Eswatini (53 per cent), Lesotho (52 per cent), Kenya (45 per cent), Malawi (48 per cent), Namibia (52 per cent), South Africa (50 per cent) and Zimbabwe (49 per cent). The rest of the countries of the region fall under the global average. The region's lowest modern contraceptive rates are in Angola (15 per cent), Comoros (16 per cent), DRC (12 per cent), Eritrea (9 per cent) and South Sudan (5 per cent). Similarly, the global average unmet need for contraception is 9 per cent. Only three ESA countries have a lower unmet need than the global average: Botswana, Mauritius and Zimbabwe. Unmet need is particularly high in Angola (27 per cent), DRC (21 per cent) and South Sudan (20 per cent).

About 295 000 women died globally during and following pregnancy and childbirth in 2017, and in 2019 2.4 million children died in the first month of life. A quarter of these deaths (26per cent, or 77 000 deaths) occurred in East and Southern Africa (ESA) Most could have been prevented by universal coverage of midwifery care, most effectively through a globally standard midwife.

Universal coverage of midwife-delivered interventions would reduce mortality rates by two-thirds. In the ESA region, this translates to 1.2 million lives saved per year by 2035.

Health and well-being are dependent on access to health services across the life course.

Figure 1.5: Modern contraceptive prevalence rate and unmet need for contraception by country, most recent available year



Source: UNFPA 2021. [8]

In the ESA region the average total fertility rate (average number of children per woman) is 4.2, which is well above the global average of 2.4. Rates are above the global average in Angola (5.3), Burundi (5.2), DRC (5.6), Mozambique (4.6), South Sudan (4.5), Tanzania (4.7), Uganda (4.6) and Zambia (4.4). The lowest is in Mauritius (1.4). [8] Similarly, the average adolescent birth rate in the region is 95 births per 1,000 girls aged 15-19, more than double the global average of 41. Nine countries of the region recorded an adolescent birth rate of over 100: Angola, DRC, Madagascar, Malawi, Mozambique, South Sudan, Tanzania, Uganda and Zambia. The only country in the region with an adolescent birth rate below the global average was Mauritius. [8]

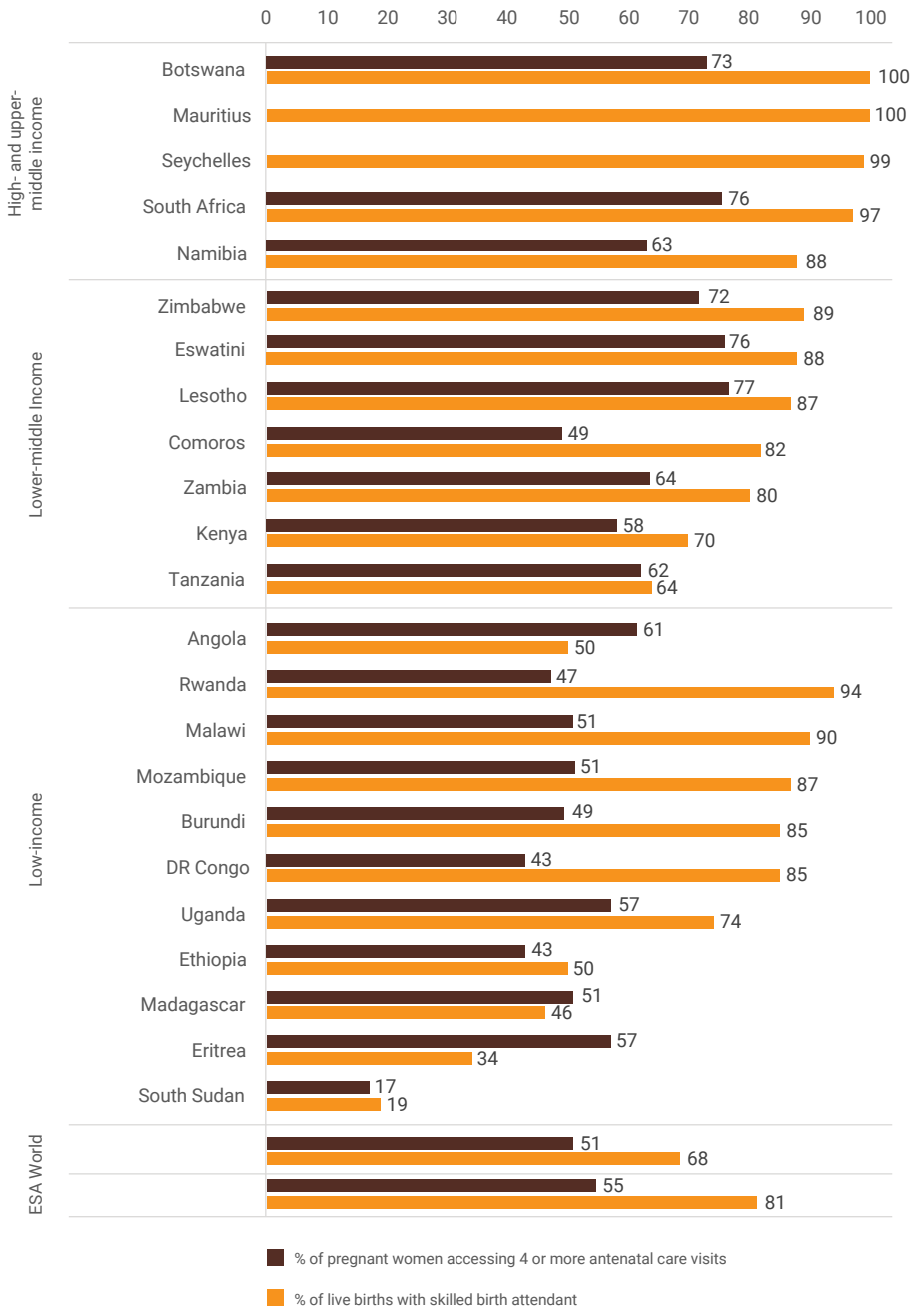
Another critical aspect of preserving adequate SRMNAH is access to antenatal, childbirth and postnatal care for pregnant women and newborns. Figure 1.6 shows that the global average rate of skilled birth attendance (SBA) is 81 per cent, but the average for the region is well below this at 68 per cent. However, 14 countries in the region report a rate above the global average. The main reason for the relatively low regional average is the low SBA rates in Angola, Eritrea, Ethiopia, Madagascar and South Sudan. Facility delivery rates for most ESA countries were very similar to SBA rates, indicating that a facility delivery is usually the only way to ensure SBA. The exceptions are Kenya and Madagascar, where the facility delivery rate is slightly below the SBA rate, [9] perhaps indicating some access to SBA at home in these two countries.

On average, 51 per cent of women in the ESA region access four or more antenatal care (ANC4+) visits, which is slightly below the global average of 55 per cent (Figure 1.6). ANC4+ rates were over 70 per cent in Botswana, Eswatini, Lesotho, South Africa and Zimbabwe.

About 295 000 women died globally during and following pregnancy and childbirth in 2017, and in 2019 2.4 million children died in the first month of life. A quarter of these deaths (26per cent, or 77 000 deaths) occurred in East and Southern Africa (ESA) Most could have been prevented by universal coverage of midwifery care, most effectively through a globally standard midwife.

Universal coverage of midwife-delivered interventions would reduce mortality rates by two-thirds. In the ESA region, this translates to 1.2 million lives saved per year by 2035.

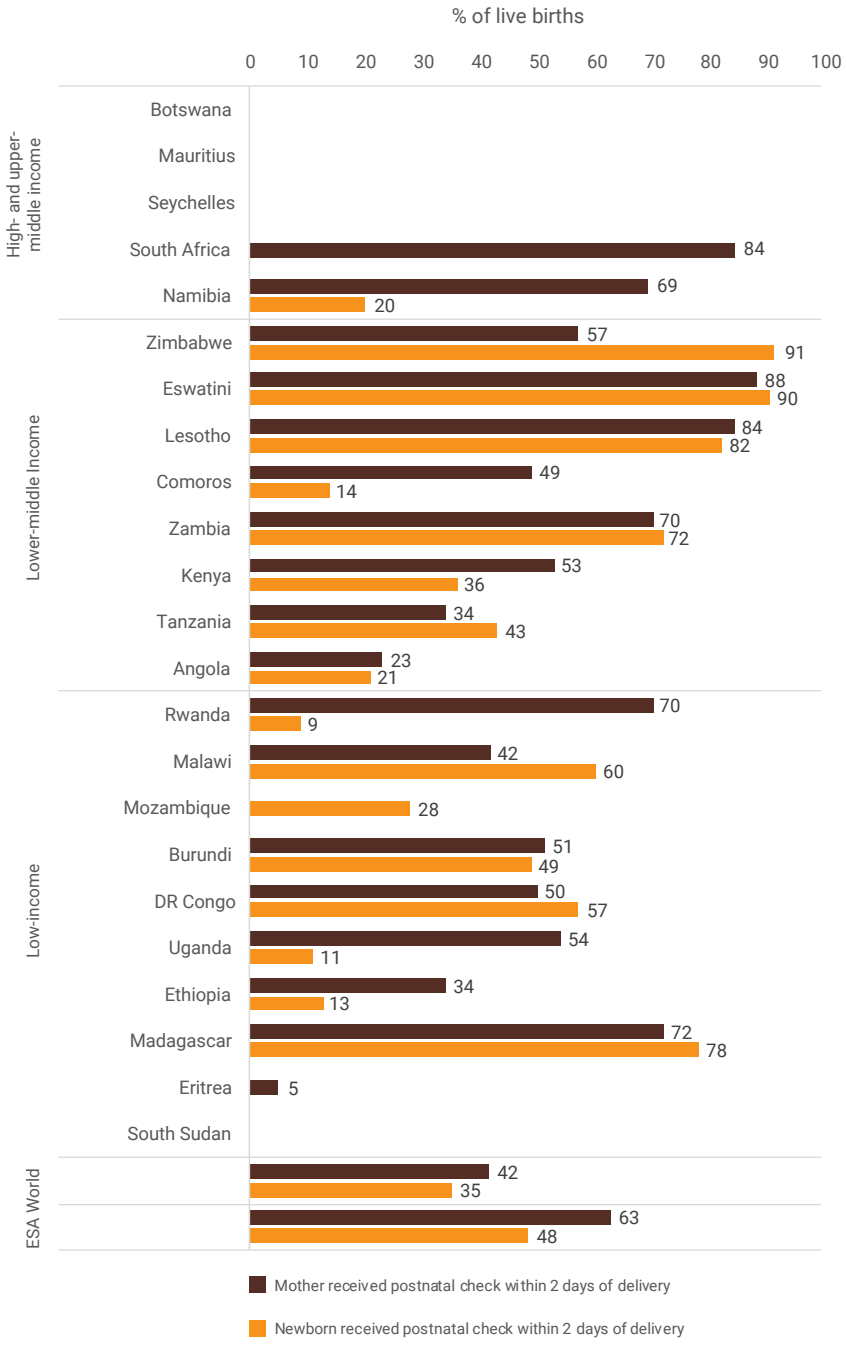
Figure 1.6: Accessing antenatal care and skilled birth attendance by country, most recent available year



Source: UNICEF 2021. [9]

Rates of postnatal care (PNC) for mothers in ESA are generally lower than the global average of 63 per cent (Figure 1.7). The lowest level is in Eritrea where 5 per cent of women with live births received a postnatal check-up within two days of delivery and the highest level is 88 per cent in Eswatini. The average rate of PNC for newborns within two days of birth is 35 per cent which is also lower than the global average of 48 per cent. Seven countries recorded average rates of postnatal care for newborns below the regional average: Angola (21 per cent), Comoros (14 per cent), Ethiopia (13 per cent), Mozambique (28 per cent), Namibia (20 per cent), Rwanda (9 per cent) and Uganda (11 per cent). [8]

Figure 1.7: Accessing postnatal care by country, most recent available year



Source: UNICEF 2021. [9]

The 1994 International Conference on Population and Development (ICPD) shone a light on the importance of sexual and reproductive health as a fundamental human right. It marked a fundamental shift in global thinking on population and development issues by moving away from a focus on reaching specific demographic targets towards a focus on the needs, aspirations and rights of individual women and men. It asserted that the true measure of progress should be the extent to which inequalities are addressed. [10]

In 2019, Kenya hosted a global summit to take stock of progress over the 25 years since the first ICPD conference. Here it was agreed that the principles of the ICPD programme of action are essential to achieving the SDGs. The Nairobi Statement on ICPD25 made 12 global commitments to complete the ICPD agenda, including: (i) zero unmet need for family planning information and services, (ii) zero preventable maternal deaths, (iii) access for all adolescents and youth to comprehensive and age-responsive sexual and reproductive health information and services. [11]

None of these commitments can be achieved without investment in the SRMNAH workforce. Sustainable health systems based on primary health care are essential to the health and well-being of every woman, newborn and adolescent. The *Global Strategy on Human Resources for Health* (HRH) [12] stresses that without an effective health workforce no health system is viable and universal health coverage cannot be achieved. High quality SRMNAH care requires a competent, educated, motivated and supported workforce.

The *Maputo plan of action on sexual and reproductive health and rights* (SRHR) recognized that SRHR can be achieved only with sufficient HRH. So one of its ten key strategies was to invest in HRH by strengthening training, recruitment and retention to produce a health workforce with the required competencies and equitably distributed. [13] The *Africa Health Strategy 2016-2030* calls on all African Union member states to develop an HRH management plan which addresses "policies, strategic plans, information, training, recruitment, deployment and retention, administration, working and living conditions and the health of staff". [14] The *Road Map for Scaling Up HRH in the African Region 2012-2025* identifies six strategic areas that require strengthening: (i) health workforce leadership and governance capacity, (ii) HRH regulatory capacity, (iii) education and training of health workers, (iv) optimizing the utilization, retention and performance of health workers, (v) improving health workforce information and generation of evidence for decision-making, and (vi) health workforce dialogue and partnership. [15]

The *UNFPA strategic plan for 2018-2021* includes three areas of focus to end preventable maternal deaths, of which one is "strengthening capacities of the health workforce, especially those of midwives, to provide high-quality and integrated sexual and reproductive health services, including in humanitarian settings". [16] The 2022-2025 strategic plan of the ESA region identifies midwifery education as a priority area for responding to gaps in access to high-quality SRMNAH care. [17]

UNFPA led the development of the *State of the World's Midwifery* 2021 report (SoWMy 2021), which highlighted the many and varied returns on investment in midwives. It called for "bold investments" in four areas: (i) health workforce planning, management, regulation and the work environment, (ii) high-quality education and training for midwives, (iii) midwife-led improvements to SRMNAH service delivery and (iv) midwifery leadership and governance. [18]

In the context of the above global and regional policies and strategies, UNFPA's ESARO

commissioned this report, with the following objectives:

* Provide an ESA regional and country-specific status report on the midwifery workforce
* Provide additional data beyond those featured in SoWMy 2021, tailored for the ESA region
* Analyse the progress made since 2011 in the ESA region on midwifery education, regulation and networking/association (the three pillars of a strong midwifery profession)
* Provide information on the achievement of the UNFPA ESARO strategic plan 2018-2021, specifically the number of countries that have adopted a standard midwifery curriculum that is used by all midwifery education institutions
* Provide a baseline for the midwifery workforce for the UNFPA ESARO strategic plan 2022-2025.

Where possible, this report highlights the progress since the 2011 and 2014 global SoWMy reports [19, 20] and the 2017 ESA midwifery workforce report, [21] or points out where progress has stalled and may require additional efforts. It thus contributes to the regional strategic objectives identified by UNFPA and other partners.

This report covers all 23 countries in the UNFPA ESA region, and where appropriate it shows separate results for mainland Tanzania and Zanzibar. The report is based on the data provided for SoWMy 2021. UNFPA country offices were invited to review these data and to consult with relevant national stakeholders to provide updates or fill gaps. The data contained within SoWMy 2021 were validated by the competent national authorities, and these data are shown in bold type in the country profiles. New data provided during the preparation of this regional report may not be validated and are therefore not emboldened in the country profiles. A profile is also included for Zanzibar, as in some areas its policies and processes are different from those of mainland Tanzania.

The data collection and analysis methods are described in SoWMy 2021 webappendices 2 and 3. [22] Where the methods employed in this report differ from those used in SoWMy 2021, this is mentioned in the Appendix to this regional report.

Locating and validating health workforce data can be difficult and has become even more so as the world continues to fight the COVID-19 pandemic. We appreciate the tremendous efforts of national stakeholders to provide data despite competing priorities, but health workforce data systems were clearly a serious restriction in certain countries even before the pandemic. Limitations include lack of data on the private sector, inability to disaggregate data into sub-national administrative areas and, in some cases, outdated data that do not adequately reflect the situation in the present day.

2

Midwifery workforce availability, 2020-2030

This chapter describes and analyses workforce data from the ESA region, to provide a situation analysis. Where feasible, comparisons are made against the 2017 regional midwifery workforce report and future projections are made of the supply of midwives and other SRMNAH workers.

Defining midwives and other SRMNAH workers

This report focuses primarily on midwives, because – if available in sufficient numbers and if fully educated, regulated and integrated within an interdisciplinary team – midwives could meet about 90 per cent of the need for essential SRMNAH interventions. [18] To understand their pivotal role it is necessary also to define and consider their place within the SRMNAH workforce. This report uses international definitions of health occupations to enable comparison between countries and the International Standard Classification of Occupations (ISCO) system [23] to classify the SRMNAH workforce into occupation groups based on their roles and responsibilities (see SoWMy 2021 webappendix 1 [22]). Not all these occupations exist in every country but where they do exist, and where data are available, they are included in the analysis.

The occupations considered to be part of the SRMNAH workforce in this report are professional and associate professional midwives and nurses, medical doctors (general medical practitioners, obstetricians/gynaecologists and paediatricians), paramedical practitioners and community health workers (CHWs). Traditional birth attendants are not included because, although they attend a significant proportion of births in some countries and can play a role in community engagement and support, [24] many are not formally educated, trained or regulated. Conversely, CHWs are included. Although they are variously defined and have differing competencies, they play an important role in many countries in delivering a small number of essential SRMNAH interventions.

The ISCO classification system classifies midwives as either "professionals" or "associate professionals". Under the ISCO definition, midwifery professionals "*plan, manage, provide and evaluate midwifery care services before, during and after pregnancy and childbirth. They provide delivery care for reducing health risks to women and newborn children, working autonomously or in teams with other health care providers*." Midwifery associate professionals "*provide basic health care and advice before, during and after pregnancy and childbirth. They implement care, treatment and referral plans usually established by medical, midwifery and other health professionals*." [23]

The ICM defines a midwife as "*a person who has successfully completed a midwifery education programme that is based on the ICM Essential Competencies for Midwifery Practice and the framework of the ICM Global Standards for Midwifery Education and is recognized in the country where it is located; who has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery and use the title 'midwife'; and who demonstrates competency in the practice of midwifery*." [25] Thus, the ISCO definition focuses on the midwife's roles and responsibilities, and the ICM definition on the midwife's qualifications and competency to perform these roles and responsibilities.

The need for midwives and other SRMNAH workers

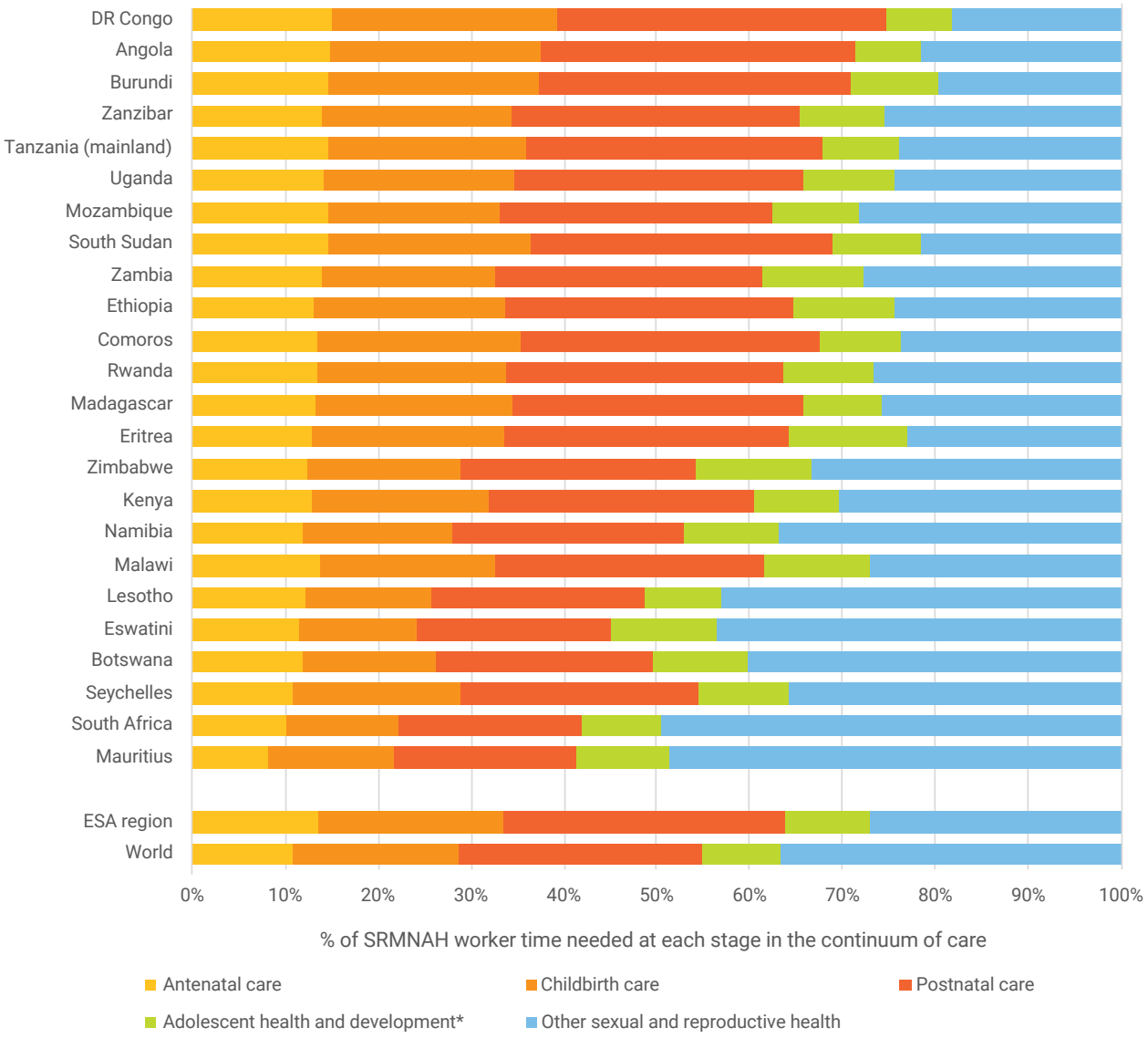
In this report, the need for midwives and other SRMNAH workers is defined as the amount of SRMNAH worker time that would be required to achieve universal, high-quality coverage of the essential SRMNAH interventions listed in the *Global Strategy for Women's, Children's and Adolescents' Health*. [7] The 2017 ESA regional midwifery report [21] used a similar definition, but a different list of essential interventions. This affects comparability between 2017 and 2021: the increased level of need in 2021 is partly due to population growth, but mainly due to the use of a more comprehensive list of essential interventions to define need.

Across the region as a whole, 880 million SRMNAH worker hours would have been required to meet all the need in 2020, of which 64 per cent are needed for maternal and newborn health interventions (antenatal, childbirth and postnatal care), 27 per cent for other sexual and reproductive health interventions (such as counselling, contraceptive services, comprehensive abortion care and detection and management of sexually transmitted infections) and 9 per cent for adolescent sexual and reproductive health interventions.

The two main drivers of need for SRMNAH workers are population size and fertility rate. Variations in fertility rates (along with epidemiological factors such as HIV and malaria prevalence) also influence the skill mix needed within the workforce. In high fertility settings the workforce should contain a higher percentage of SRMNAH workers competent to provide maternal and newborn health care. [26]. Figure 2.1 shows the proportions of SRMNAH worker time needed at different stages of the continuum of care for each ESA country/territory (arranged in order of the total fertility rate, from highest to lowest). In a very high-fertility country such as DRC, over 70 per cent of the need for SRMNAH worker time is for maternal and newborn health interventions, represented by the green segments on the chart. By contrast, in the region's lowest-fertility country (Mauritius), less than half of the need is for maternal and newborn health interventions.

The two main drivers of need for SRMNAH workers are population size and fertility rate.

Figure 2.1: per cent of SRMNAH worker time needed at each stage in the continuum of care, 2020



* The needs of adolescent girls aged 15-19 were included within those of women of reproductive age, so the estimate for adolescent health and development covers the sexual and reproductive health needs of girls aged 10-14 and boys aged 10-19.

Current workforce availability and composition

Number of SRMNAH workers in the region

Across the 23 countries in the ESA region, there are just over 800,000 SRMNAH workers.

Table 2.1 shows that just over half (53 per cent) are nurses without additional training in midwifery and 11 per cent are doctors (general practitioners, obstetricians/gynaecologists, and paediatricians). Just under one in five (18 per cent) are professional or associate professional midwives or nurse-midwives.

Table 2.1: Number of SRMNAH workers, 2020

Occupation	Number of reporting countries	Number of workers reported	per cent of total SRMNAH workforce
Midwifery professionals	16	45,026	6
Midwifery associate professionals	6	4,097	1
Nurse-midwife professionals	8	56,567	7
Nurse-midwife associate professionals	5	39,959	5
Nursing professionals**	21	312,749	39
Nursing associate professionals**	13	115,109	14
Community health workers	6	91,464	11
Paramedical practitioners	8	50,983	6
Medical assistants	1	164	*
General medical practitioners	22	77,894	10
Obstetricians and gynaecologists	22	2,961	*
Paediatricians	19	3,598	*
Total		800,571	100

* = less than 0.5per cent but greater than zero. ** Including only nurses without formal midwifery training: nurses with midwifery training are counted as nurse-midwives.

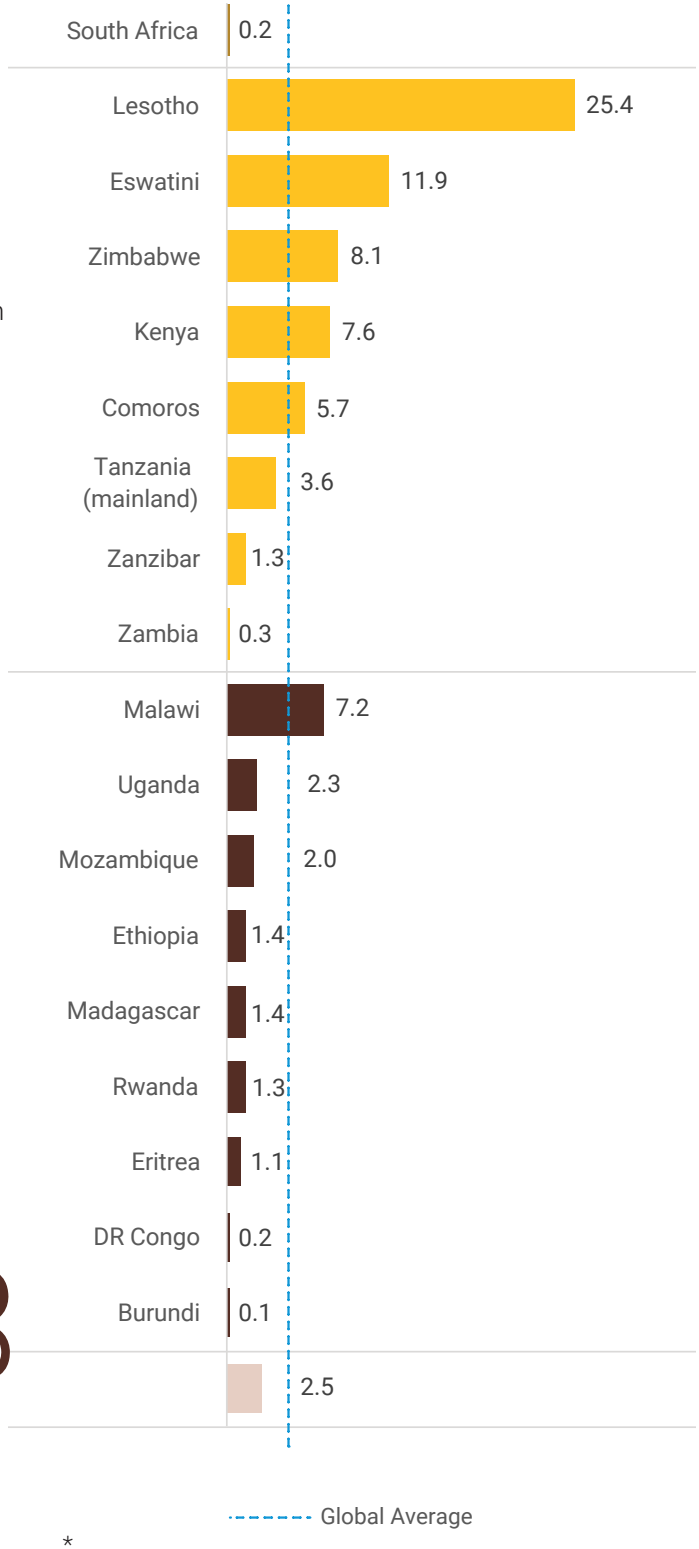
The main focus of the remainder of the analysis in this chapter is on midwives, including nurse-midwives (the blue rows in Table 2.1), nurses without additional midwifery training (the yellow rows in Table 2.1), and SRMNAH doctors (the green rows in Table 2.1). Few countries reported headcounts for paramedical practitioners, medical assistants and CHWs, but when these numbers were provided they are shown in the individual country profiles and used in estimates of the potential of the SRMNAH workforce to meet the need.

Current availability of midwives, nurses and SRMNAH doctors

Of the 23 ESA countries, 20 reported the number of midwives/nurse-midwives in their health workforce. The three countries which did not provide a midwife headcount are Angola, Namibia and South Sudan. Across the 20 reporting countries, there are 146,000 midwives, giving a density of 2.5 midwives per 10,000 population. This is far lower than the global average of 4.4 per 10,000.

Figure 2.2 shows the massive variation in midwife density across the responding ESA countries/territories, ranging from 33.2 per 10,000 population in Seychelles to 0.1 in Burundi. Nine countries have a density above the global average: Botswana, Comoros, Eswatini, Kenya, Lesotho, Malawi, Mauritius, Seychelles and Zimbabwe. Four countries have a density below 1.0: Burundi, DRC, South Africa and Zambia. In general, the higher-income countries/territories in the region tend to have a higher midwife density, but there are some exceptions, notably South Africa (which has a much lower density than the other upper-middle-income countries) Lesotho (which has a much higher density than the other lower-middle-income countries), and Malawi (which has a much higher density than the other low-income countries).

Figure 2.2: Midwife density, 2020



*

* Including professional and associate professional midwives and nurse-midwives

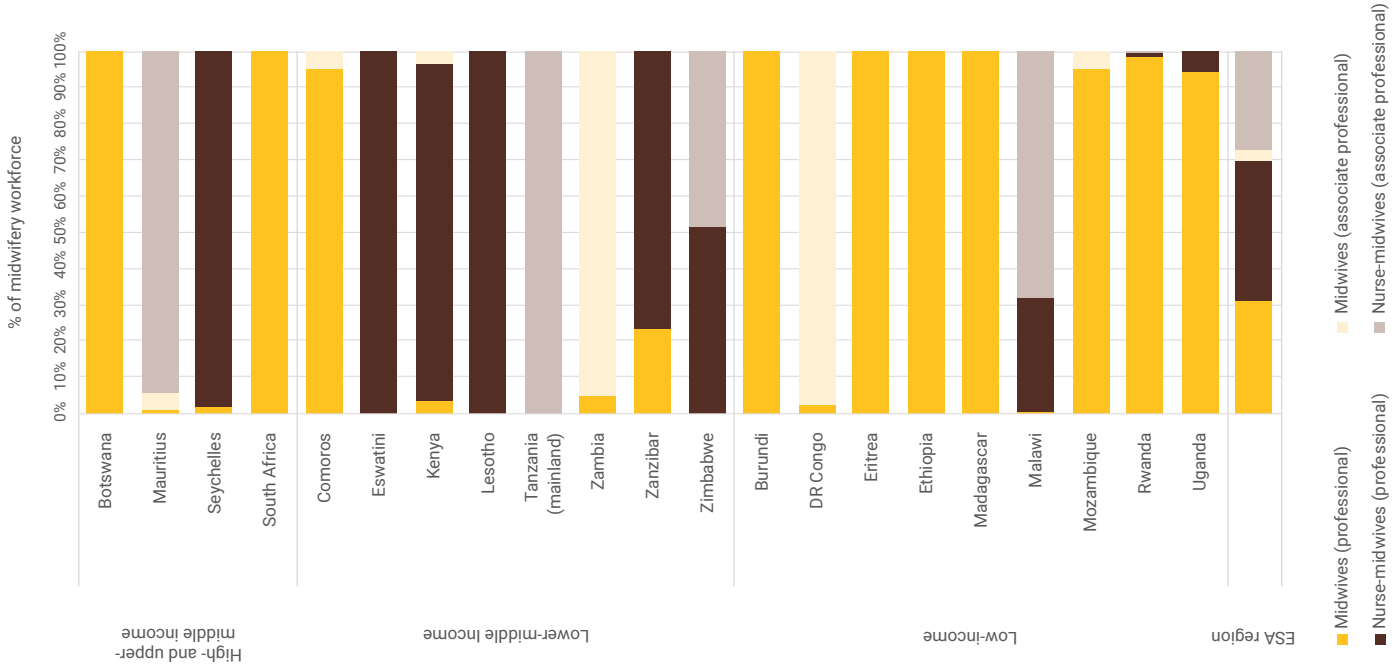
Of the 23 ESA countries, 20 reported the number of midwives/nurse-midwives in their health workforce.

Of the 146,000 midwives in the region, 30 per cent (45,000) are categorized as midwifery professionals. Of the remainder, 4,000 are classed as midwife associate professionals, 57,000 as nurse-midwife professionals and 40,000 as nurse-midwife associate professionals. However, these aggregate figures mask the fact that many countries in the region have just one type of midwife in the workforce. Figure 2.3 shows that all of the region's low-income countries except Malawi have midwives rather than nurse-midwives. High- and middle-income countries are more likely to have nurse-midwives in their workforces.

In 10 countries, the midwifery workforce is composed entirely or almost entirely of professional midwives: Botswana, Burundi, Comoros, Eritrea, Ethiopia, Madagascar, Mozambique, Rwanda, South Africa and Uganda. In four countries (Eswatini, Kenya, Lesotho and Seychelles), the midwifery workforce consists entirely or almost entirely of professional nurse-midwives. Zanzibar has a mix of midwives and nurse-midwives.

Malawi, Mauritius, Tanzania (mainland) and Zimbabwe have a large number of associate professional nurse-midwives in the workforce. Similarly, DRC and Zambia rely very heavily on associate professional midwives. Associate professionals have a relatively narrow range of competencies and can therefore safely provide only some essential SRMNAH interventions.

Figure 2.3: Composition of the midwifery workforce, 2020

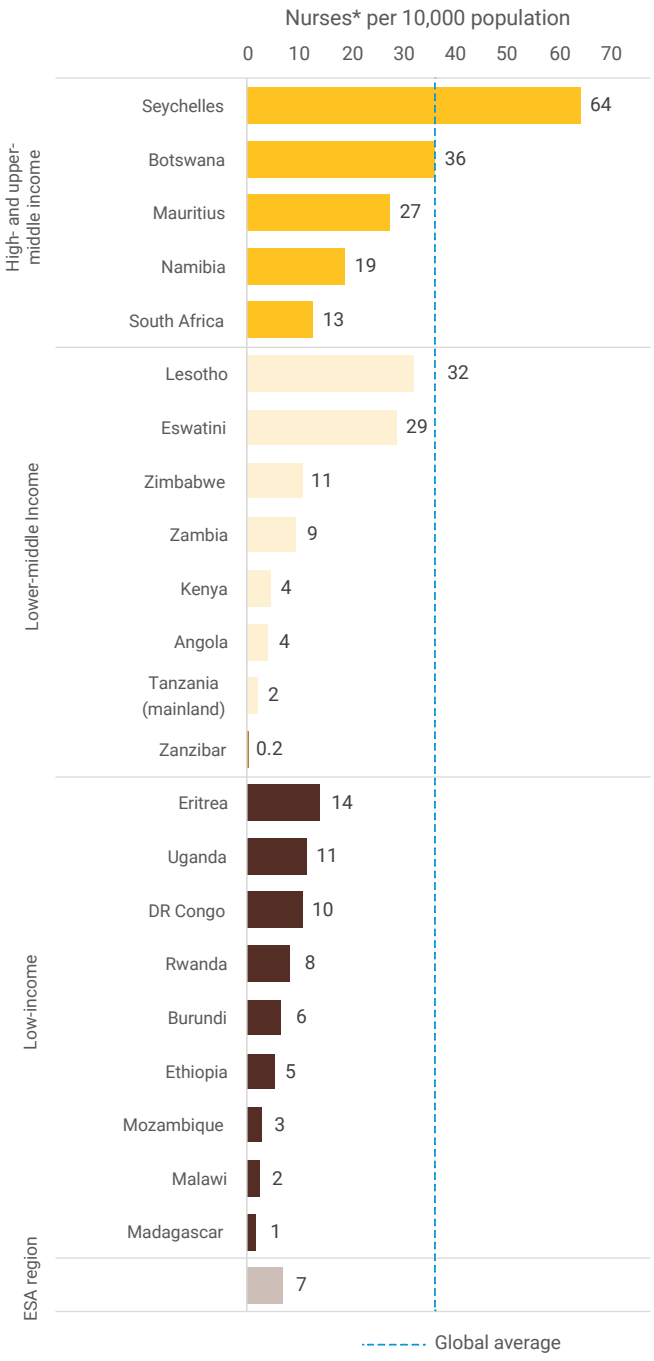


Like all health professionals, the SRMNAH workforce is most effective when it operates within a fully enabled health system/work environment, with each person working to their full scope of practice, so that the team collectively possesses all the competencies required to provide high-quality, respectful SRMNAH care. [27] Availability of midwives must therefore be considered in the context of availability of other key SRMNAH workers, especially nurses and doctors.

The ESA region as a whole has seven nurses[1] per 10,000 population, far lower than the global average of 36 per 10,000. Nurse density is similar in Anglophone and Francophone countries in the region. This is in contrast to midwife density, which is lower in Francophone countries (0.8 midwives per 10,000 population, compared with 3.2 in Anglophone countries).

Figure 2.4 shows that only two countries in the region have a nurse density at or above the global average: Botswana and Seychelles. Eswatini and Lesotho also stand out as having high nurse densities relative to most other middle-income countries. The region's lowest nurse densities (fewer than five per 10,000) are observed in Angola, Kenya, Malawi, Mozambique, Madagascar and Tanzania (both mainland and Zanzibar).

Figure 2.4: Nurse density, 2020



* Including professional and associate professional nurses, excluding nurse-midwives and associate nurse-midwives.

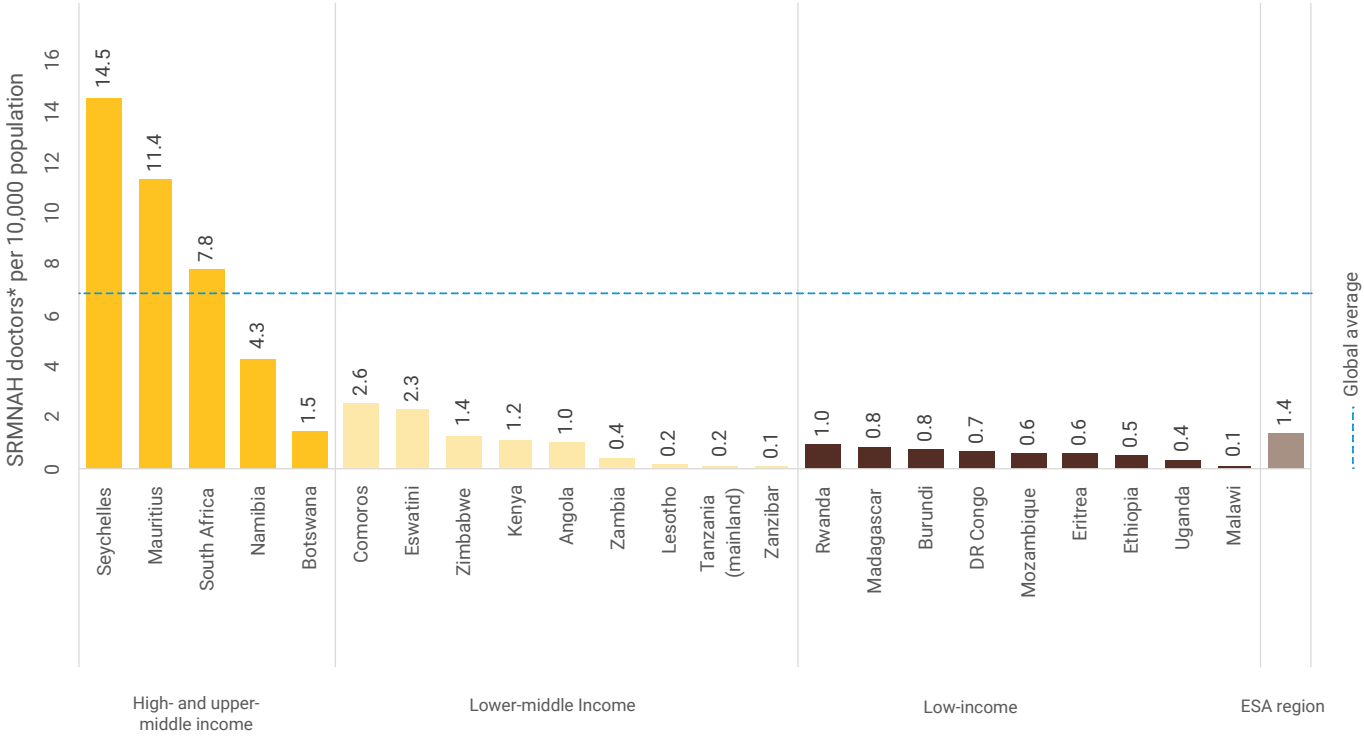
1 Excluding nurse-midwives, who are counted as part of the midwifery workforce in this report.

The ESA region has 1.4 SRMNAH doctors (general practitioners, obstetricians and gynaecologists, and paediatricians) per 10,000 population, again considerably lower than the global average of 6.9 per 10,000. Most of the region's SRMNAH doctors are general practitioners: there are just 0.05 obstetricians and gynaecologists per 10,000 population.

Doctor density is associated with fragility status. The average SRMNAH doctor density is 5.2 in the region's non-fragile countries, compared with an average of 0.7 in fragile and extremely fragile countries. Like midwife density, SRMNAH doctor density is also associated with the country's official language: English-speaking countries have an average density of 1.6, compared with 0.8 in French- and Portuguese-speaking countries.

Figure 2.5 shows that just three ESA countries have a density above the global average: Mauritius, Seychelles and South Africa. High- and upper-middle income countries tend to have the highest densities in the region, the exception being Botswana. Extremely low densities (1.0 or below) are evident in all of the region's low-income countries and half of its lower-middle-income countries.

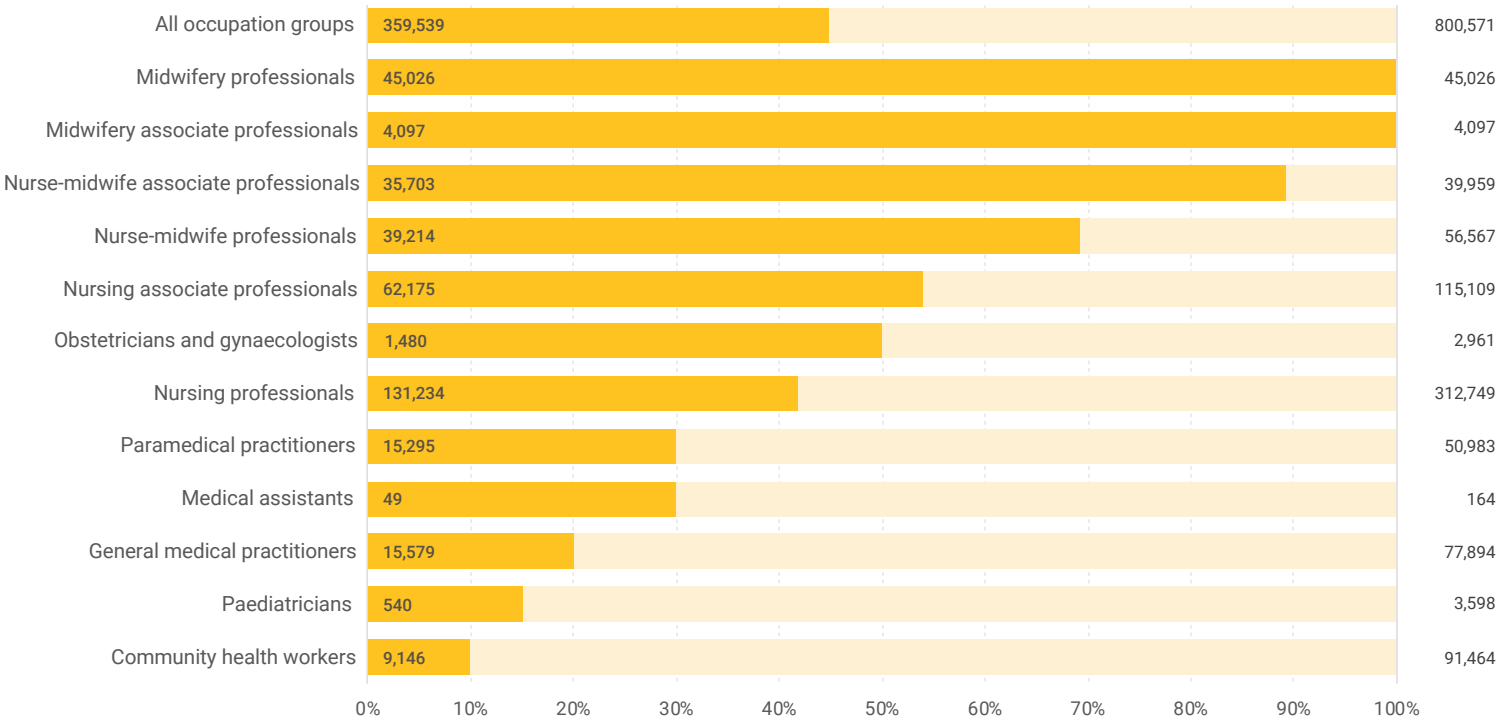
Figure 2.5: SRMNAH doctor density, 2020



* General medical practitioners, obstetricians and gynaecologists, and paediatricians.

In addition to the headcounts, it is important to consider how much of each occupation group's clinical time is available to spend on SRMNAH care: it would be inaccurate to assume that they can all spend all their time on SRMNAH. To address this issue, this report uses the concept of a "dedicated SRMNAH equivalent" (DSE) worker, DSEs have been calculated using estimates about the average percentage of clinical contact time that each occupation spends on SRMNAH (see SoWMy 2021 webappendix 3. [22]). The impact of the DSE adjustment is illustrated in Figure 2.6: the DSE workforce is 360,000, just 45 per cent of the total headcount of 800,000.

Figure 2.6: SRMNAH workforce headcount versus dedicated SRMNAH equivalent (DSE), 2020

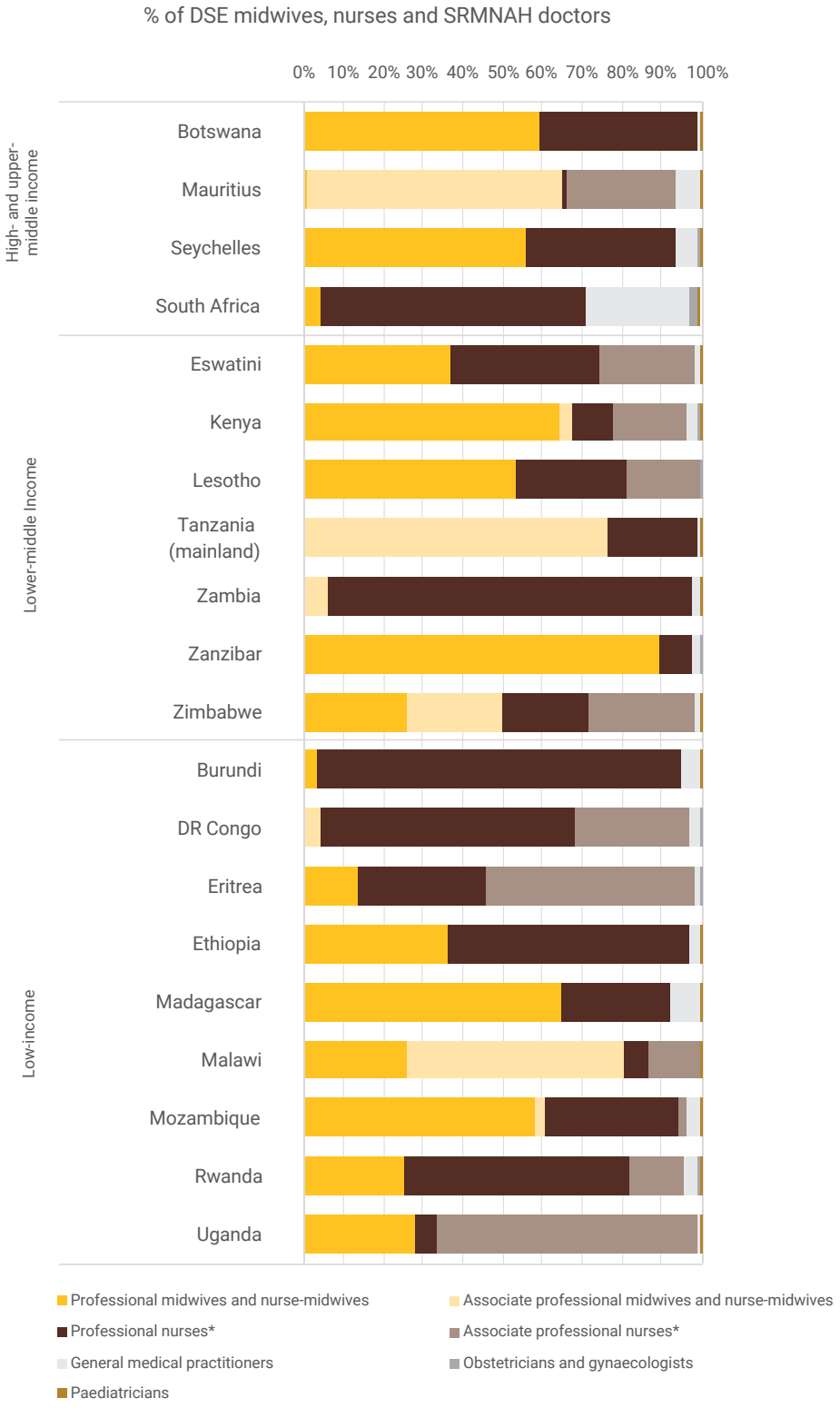


Note: the figures for nursing professionals and nursing associate professionals exclude nurse-midwives and associate nurse-midwives.

Figure 2.7 shows the composition of the main occupation groups within the DSE workforce: midwives/nurse-midwives (blue segments), nurses (red segments), and SRMNAH doctors (green segments). Across the region as a whole, 37 per cent of the DSE workforce in these three groups are midwives/nurse-midwives, 58 per cent are nurses and 5 per cent are doctors.

This means that midwives comprise a relatively large portion of the DSE workforce in ESA: across the world, midwives account for just 19 per cent of the DSE workforce. Again, however, there is a great deal of variation between countries. In some countries/territories, there is heavy reliance on midwives/nurse-midwives - they account for more than half of the DSE workforce in Botswana, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Seychelles, mainland Tanzania, Zanzibar and Zimbabwe (although in Malawi, Mauritius and mainland Tanzania they are mostly associate professionals rather than professionals). However, in Burundi, DRC, South Africa and Zambia, midwives account for less than 10 per cent of the DSE workforce. Globally, 9 per cent of DSE workers are doctors, but in most ESA countries this figure is much lower, and most countries have hardly any obstetricians/gynaecologists and paediatricians. The main exception is South Africa, which relies relatively heavily on doctors.

Figure 2.7: Composition of DSE midwifery, nursing and SRMNAH doctor workforce, 2020



* The figures for nurses exclude nurse-midwives. Angola, Comoros, Namibia and South Sudan are not shown due to lack of data for at least one occupation group.

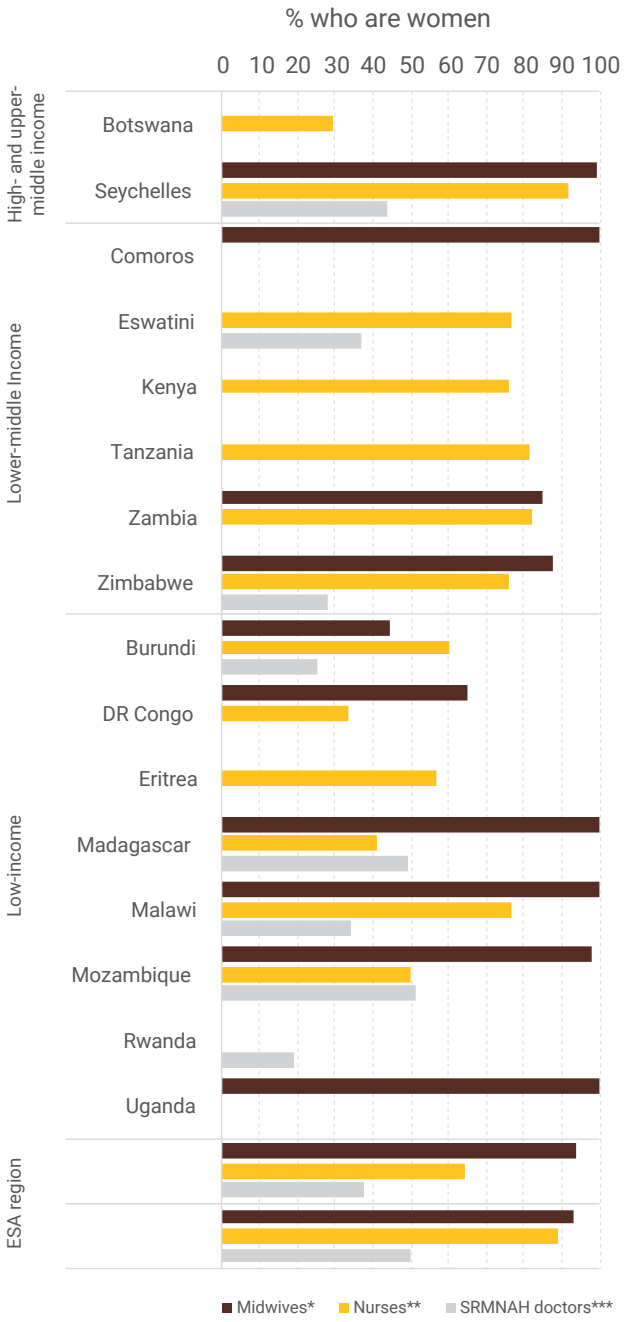
SRMNAH needs often involve sensitive personal issues, so service users may prefer to consult a health worker of a specific gender. It is therefore important that the SRMNAH workforce includes both women and men, recognizing that an appropriate balance is likely to involve more women than men. Survey data confirm that many women have a preference to consult a woman SRMNAH worker. The Demographic and Health Survey series sometimes includes questions about barriers to accessing health care. The most recent surveys in ESA countries found that, typically, between 10-20 per cent of women were concerned that they may not be able to see a health worker who is a woman. Concern was relatively high in Ethiopia (53 per cent) and Malawi (24 per cent). [28] Some countries in the region were able to provide data on the gender profile of their SRMNAH workforce. Based on these countries, Figure 2.8 shows that – in line with the global average – nearly all of the region's midwives are women. The main exceptions are Burundi and DRC, where 44 per cent and 65 per cent respectively of midwives are women.

Two-thirds of the region's nurses (65 per cent) are women, but this is much lower than the global average of 89 per cent. Overall, therefore, the nursing workforce in ESA includes a relatively large number of men. This is particularly true in Botswana, DRC and Madagascar, where more than half of nurses are men.

About one in three (37 per cent) of the region's SRMNAH doctors are women, also much less than the global average of 50 per cent. Only two countries report equal numbers of men and women in the SRMNAH doctor workforce: Madagascar and Mozambique.

If there were sufficient midwives, a large number of men in the SRMNAH doctor and nursing workforce would not be of great concern. However, the extensive shortage of midwives and consequent reliance on nurses and doctors for the provision of SRMNAH interventions in many countries may lead to service users being unable to consult a woman SRMNAH worker.

Figure 2.8: Percentage of SRMNAH workers who are women in ESA countries, 2020



* Including professional and associate professional midwives and nurse-midwives. ** Including professional and associate professional nurses, excluding nurse-midwives and associate nurse-midwives. *** General medical practitioners, obstetricians and gynaecologists, and paediatricians.

Potential of the workforce to meet the need for essential interventions

The country profiles show estimates of "potential met need" (PMN): the extent to which the SRMNAH workforce is large enough and has the appropriate composition to meet population need. Taking into account each country's demography and epidemiology, PMN estimates the maximum percentage of the need for essential SRMNAH interventions that could potentially be met by the current workforce, if it was well educated, equitably distributed, and working within an enabling environment (and thus able to deliver high-quality care). An enabling environment means that SRMNAH workers:

* can practise to their full scope
* are accountable for independent decisions within the required standard operating procedure
* work within a functional health infrastructure with adequate human resources, equipment and supplies
* have access to timely and respectful consultation, collaboration and referral
* are safe from physical and emotional harm, and
* have equitable compensation, including salary and working conditions.

Box 2.1: The need for an enabling work environment – Agnes' story

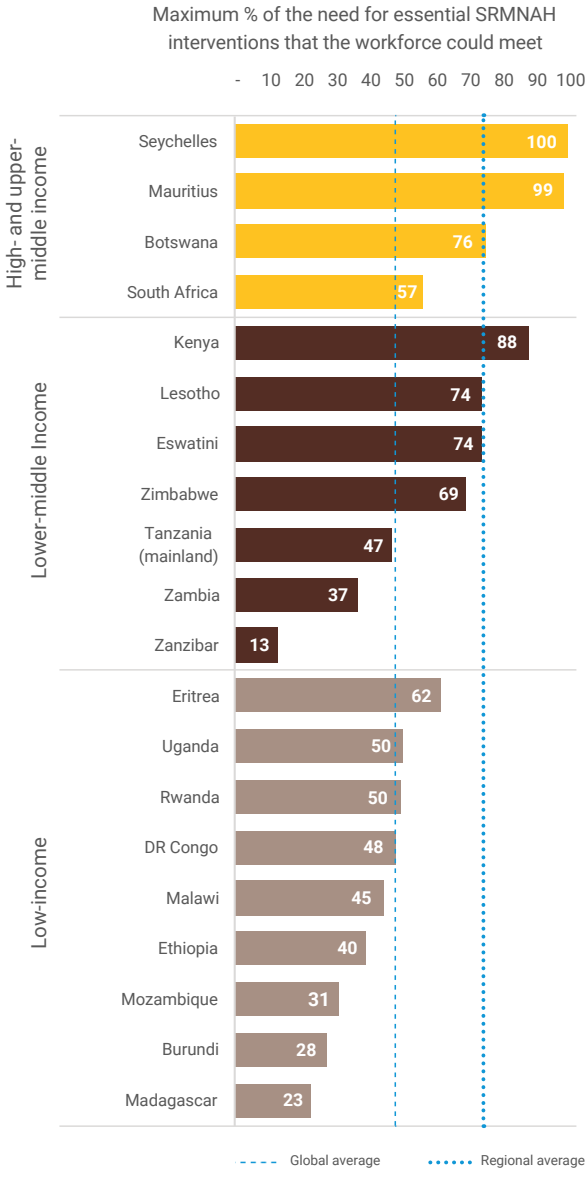
Agnes Ndunguru is a midwife in Tanzania. She is also a holder of a Super Woman Award, presented to her by the then Vice President H.E. Samia Suluhu Hassan on International Women's Day in 2019. She has witnessed many healthy and happy deliveries, but she also remembers the mothers and children who didn't make it. She becomes visibly upset as she remembers a mother of three who died during childbirth due to postpartum haemorrhage. "As she took her last breath, she looked into my eyes and cried, 'Midwife: my children, my children…'. That incident lives with me to this day."

Working conditions may also compromise the dedicated work of midwives. Agnes says that there are many challenges that make her job difficult – stock-outs of life-saving kits and maternal health medicines, power outages and a lack of the equipment needed to assist mothers and newborns during and after delivery. But Agnes says she was born a midwife and is dedicated to her job.

The PMN estimates are based on assumptions about the clinical time needed to achieve universal coverage of the essential SRMNAH interventions (see SoWMy 2021 webappendix 5 [22]) and about which SRMNAH occupations should be competent to perform which essential interventions (see SoWMy 2021 webappendix 6 [22]). Where constraints prevent the workforce from operating to its full potential (e.g. poor infrastructure, ineffective supply chains, high absenteeism, poor quality education, inequitable geographical distribution) the actual level of need being met will be lower than is indicated by the PMN estimate. Box 2.1 illustrates how an enabling work environment is essential for midwives to achieve their potential to save lives.

The overall PMN for the ESA region is 49 per cent, well below the global average of 75 per cent. Just four countries have a PMN estimate above the global average: Botswana, Kenya, Mauritius and Seychelles. While Eswatini and Lesotho's PMN estimates are about the same as the global average. Figure 2.9 shows that there is a relationship between income group and PMN, with the higher-income economies having on average higher PMN estimates. However, there are exceptions, most notably South Africa[2], Tanzania (mainland and Zanzibar) and Zambia, which have PMN estimates lower than the region's other middle-income countries. Conversely, Eritrea's PMN estimate is high relative to the region's other low-income countries.

Figure 2.9: Potential met need estimates in ESA countries, 2020



Note: Estimates are not shown for Angola, Comoros, Namibia and South Sudan due to missing headcounts for midwives, nurses and/or SRMNAH doctors.

A low PMN estimate indicates that the SRMNAH workforce is too small and/or does not have the correct composition to meet the need. A high PMN indicates a workforce large enough to meet

2 In the 2017 regional report, South Africa's PMN was 100 per cent. This was primarily due to a large number of nurses. More recent data suggest that this was an over-estimate.

the need, but not necessarily with the optimal composition. For example, a country with many midwives would achieve the same PMN as a country with many doctors, because the time required to deliver interventions is allocated to the available competent workers. Thus, if there are too few midwives in a workforce, the time required for interventions that could be delivered by a midwife is allocated to the available doctors or nurses. However, it could be argued that it is expensive and inefficient to routinely allocate to doctors tasks that could be performed by midwives. Furthermore, without the option to consult a midwife, women, newborns and adolescents are deprived of the unique philosophy of care that midwives provide.

It is therefore important to critically evaluate the composition of the SRMNAH workforce as well as its overall size. To that end, the country profiles also estimate the number of DSEs required for 100 per cent PMN. These estimates are based on the allocation of tasks to a preferred SRMNAH worker. The preferred type was selected on the basis of the competencies they should have if properly educated and regulated (see SoWMy 2021 webappendix 6 [22]). Tasks are allocated to doctors last, on the premise that doctors (who are relatively expensive to educate and employ and are needed only if medical intervention is indicated) should only be the preferred provider if no other occupation is competent to perform the task. If a country's PMN estimate is high but the "needed" numbers on the country profile are very different from the "actual" numbers within an occupation group, this may indicate suboptimal composition of the SRMNAH workforce.

Allocating interventions to preferred occupations enables the needs-based shortage of different SRMNAH workers to be estimated. This analysis indicates a total shortage of 378,000 DSE workers in the region, 298,000 of which are midwives. SoWMy 2021 estimated a global shortage of 900,000 midwives, which means that about one-third of the global midwife shortage is in this region.

Table 2.2 shows that just six countries in the region have no needs-based shortage of midwives: Botswana, Eswatini, Lesotho, Mauritius, Seychelles and Zimbabwe. Botswana, Eswatini, Lesotho and Zimbabwe do, however, have an SRMNAH doctor shortage (see country profiles), which explains why their PMN estimates are well below 100 per cent. The largest midwife shortages are in DRC and Ethiopia, but many other countries have shortages of 10,000 or more.

This report highlights the progress since the 2011 and 2014 global SoWMy reports and the 2017 ESA midwifery workforce report and is a guide for the way forward to 2030.

The region has made significant progress over the last two decades in improving SRMNAH outcomes, but progress has been uneven. As a result, inequity between and within countries remains

The average MMR in the region was 391, higher than the global average of 211. Nearly all ESA countries made good progress between 2000 and 2017, most notably Rwanda (79per cent reduction), Angola (71per cent), Mozambique (64per cent), Eritrea (63per cent), Ethiopia (61per cent), Zambia (60per cent),

Table 2.2: Estimated midwife shortage, 2020

Country	Shortage	Country	Shortage
DR Congo	71,300	Malawi	6,400
Ethiopia	62,300	Eritrea	1,800
South Africa	28,900	Zanzibar	900
Uganda	26,100	Comoros	100
Tanzania (mainland)	25,200	Botswana	0
Mozambique	20,700	Eswatini	0
Madagascar	15,500	Lesotho	0
Zambia	14,500	Mauritius	0
Burundi	9,300	Seychelles	0
Kenya	8,200	Zimbabwe	0
Rwanda	6,900	**ESA region**	

Note: Estimates are rounded to the nearest 100. Estimates are not shown for Angola, Namibia and South Sudan due to missing headcounts for midwives. It is therefore likely that the regional shortage is larger than is shown here.

Future supply

Effective workforce planning and management requires understanding why people join and leave the workforce, and how this will affect future workforce availability. Future availability is influenced by a number of factors, including domestic production of new graduates and the age profile of the workforce. Very few countries provided data on domestic production of midwives, nurses and doctors. This makes it difficult to produce accurate projections of future availability. At country level, where graduate numbers were provided, they are shown in the country profile and were used to project workforce numbers to 2030. Otherwise, standard assumptions were applied to make projections (see SoWMy 2021 webappendix 3 [22]).

The age structure of the SRMNAH workforce in an important indicator of future availability: if more are approaching retirement age than are young, then it will be difficult to ensure sufficient availability in the near future. Most countries were unable to provide the age distribution of their SRMNAH workforce, but eight did so for midwives, 12 for nurses and 10 for doctors. Three of the reporting countries have an ageing midwifery workforce (i.e. there are more aged over 55 than aged under 35): DRC, Kenya and Seychelles. Madagascar and South Africa are the only countries in the region which reported an ageing nursing workforce, and Madagascar also has an ageing SRMNAH doctor workforce.

SDG3 has a target to reduce the global neonatal mortality rate (NMR) to no more than 12 neonatal deaths per 1000 live births. In 2019, the average NMR for the ESA region was 24.

Three ESA countries (Mauritius, Seychelles and South Africa) **recorded neonatal mortality rates** (NMR) below 12 in 2019. However, six countries had NMRs over 25: Angola, Comoros, DRC, Lesotho, Mozambique and South Sudan.

On average, 51per cent of women in the ESA region **access four or more antenatal care** (ANC4+) visits, which is slightly below the global average of 55per cent (Figure 1.6). ANC4+ rates were over 70per cent in: Botswana, Eswatini, Lesotho, South Africa and Zimbabwe.

Eight countries of the ESA region equal or exceed the global average for **contraceptive prevalence** rate: Botswana (56per cent), Eswatini (53per cent), Lesotho (52per cent), Kenya (45per cent), Malawi (48per cent), Namibia (52per cent), South Africa (50per cent) and Zimbabwe (49per cent).

The region's lowest modern contraceptive rates are in: Angola (15per cent), Comoros (16per cent), DRC (12per cent), Eritrea (9per cent) and South Sudan (5per cent).

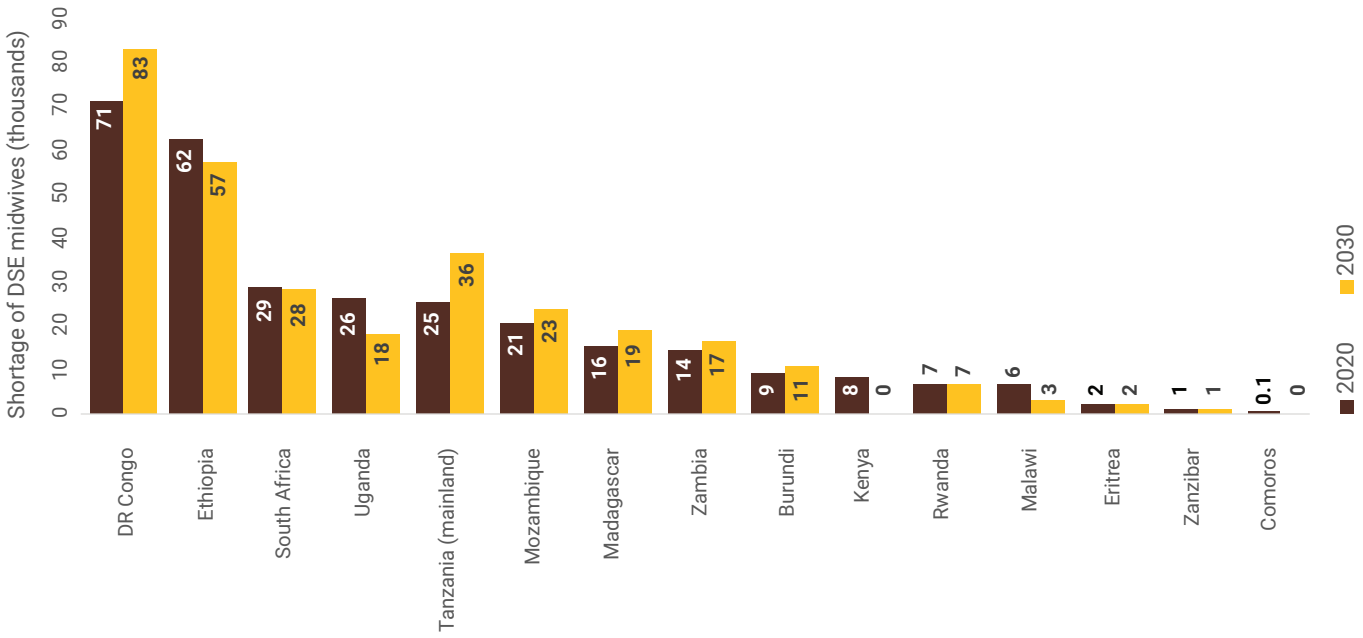
In most countries in the ESA region, **fewer than 10per cent of births are by caesarean section**, indicating that the major issue in the region is lack of access to this intervention when it is needed, rather than too many unnecessary sections. However, a few countries in the region have rates over 10per cent: Mauritius (45per cent), Seychelles (28per cent), South Africa (26per cent), Namibia (14per cent), Rwanda (13per cent), and Eswatini (12per cent)

In every country there is evidence that women in **urban locations and in the richest wealth quintile are more likely than rural and poor women to give birth by caesarean** section, e.g. in Namibia 34per cent of the richest 20per cent of women and 21per cent of urban women do so; and in Rwanda 24per cent of the richest women and 22per cent of urban women do so. [9] Similarly, rates can be very high in private healthcare settings, especially in Comoros, Ethiopia, Namibia, and Rwanda.

Using the data provided about graduate numbers and age profile, or evidence-based assumptions when data are missing, the country profiles project the SRMNAH workforce supply estimates to 2030. This analysis indicates that the supply of DSE workers in the ESA region will grow from 360,000 in 2020 to 560,000 in 2030 (a 57 per cent increase). The nursing workforce is projected to grow proportionally more than the midwife and SRMNAH doctor workforces: the projected number of DSE nurses will be 70 per cent higher in 2030 than in 2020. For midwives, the projected number will be 43 per cent higher, and for SRMNAH doctors it will be 40 per cent higher. This growth will not, however, address the SRMNAH worker shortage, because the rate of population growth means that need is projected to grow at an even faster rate than the workforce. In fact, the DSE workforce shortage in the ESA region is projected to be slightly larger in 2030 than in the present day. These figures emphasize the scale of the task facing countries with large SRMNAH worker shortages and growing populations. A 57 per cent increase in the number of SRMNAH workers in the next 10 years will not have any impact at all on the size of the shortage: the region is "running to stand still".

Figure 2.10 shows that three countries (Ethiopia, South Africa and Uganda) are projected to have a slightly smaller midwife shortage in 2030 than in the present day, and two countries (Comoros and Kenya) are projected to have wiped out their midwife shortages by 2030. However, if current trends continue, eight countries (Burundi, DRC, Eritrea, Madagascar, Malawi, Mozambique, mainland Tanzania and Zambia) are projected to have a bigger shortage in 2030 than they do today. While Rwanda's shortage will be unchanged.

Figure 2.10: Estimated midwife shortage, 2020 and 2030



Estimates are not shown for Angola, Namibia and South Sudan due to missing headcounts for midwives. Estimates are not shown for Botswana, Eswatini, Lesotho, Mauritius, Seychelles and Zimbabwe because they are estimated to have no midwife shortage in 2020 or 2030.

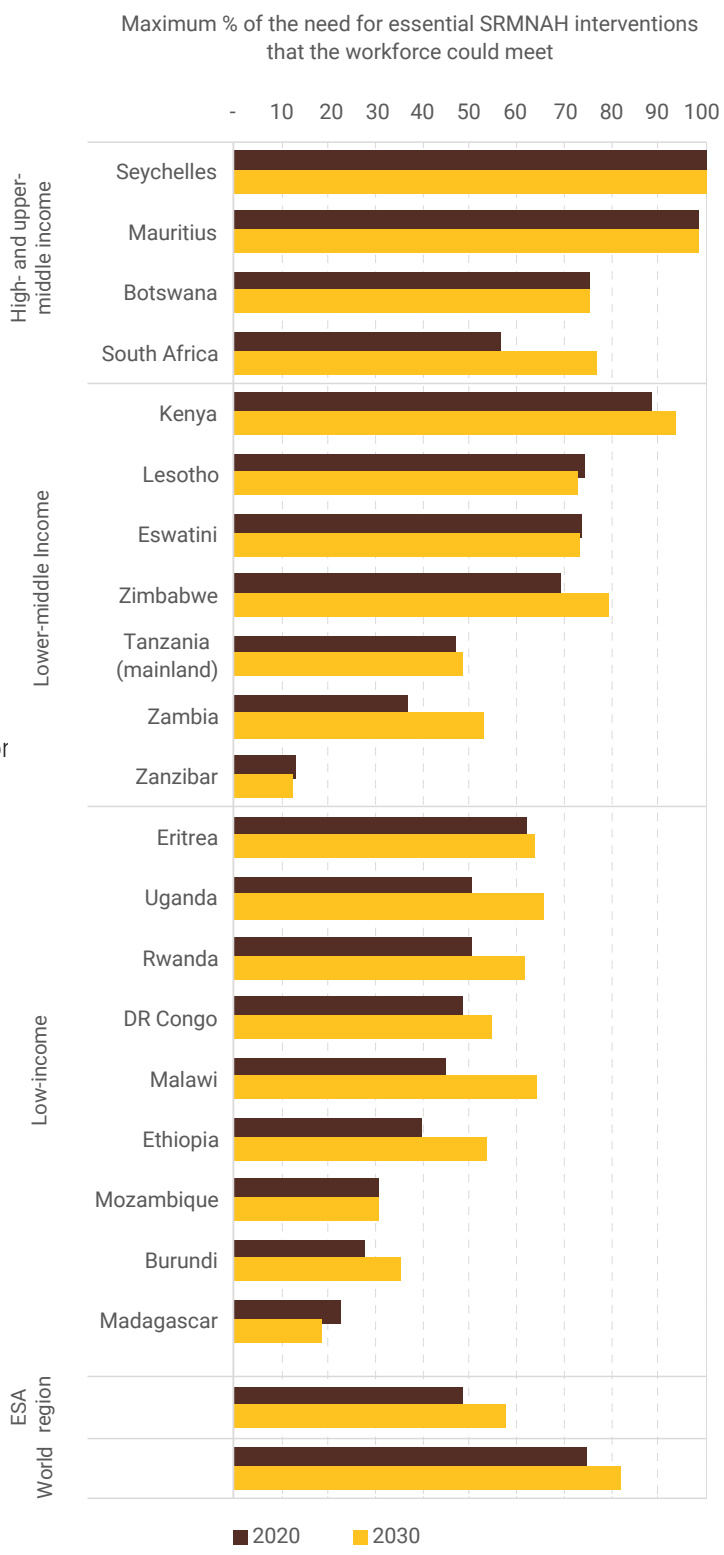
Similar analysis for SRMNAH doctors shows that nearly all ESA countries are projected to have a worse shortage in 2030 than in 2020. There are four exceptions: South Africa's doctor shortage is projected to decrease slightly (from 8,300 to 7,000), and Comoros, Mauritius and Seychelles are projected to have no shortage in 2030.

Future need and the workforce's potential to meet that need

Having projected the supply to 2030, it is then compared with the projected need, yielding a 2030 PMN estimate. These projections indicate that the region's PMN will increase from 49 per cent in 2020 to 58 per cent in 2030. Figure 2.11 shows that most of the region's low-income countries are expected to have increased PMN, as are South Africa and Zambia. No country is expected to have a large decrease in PMN, but several are projected to have a small decrease or no change.

Similar analysis for SRMNAH doctors shows that nearly all ESA countries are projected to have a worse shortage in 2030 than in 2020.

Figure 2.11: Potential met need estimates in ESA countries, 2020 and 2030



Note: Estimates are not shown for Angola, Comoros, Namibia and South Sudan due to missing headcounts for midwives, nurses and/or SRMNAH doctors.

Covid 19 has exacerbated existing health inequities

The region has a total of **800 000 SRMNAH workers, of whom 18per cent are midwives and nurse-midwives** by country definition. Half are nurses, and 11per cent are "SRMNAH doctors" (general practitioners, obstetricians and gynaecologists, and paediatricians).

Midwives by county definition make up a large proportion of the available SRMNAH workforce in ESA: 37per cent compared with the global average of 19per cent.

In many ESA countries there is **no clear professional distinction between midwifery and nursing**. This affects government policy and professional and public attitudes to midwives and midwifery.

13 of 20 countries recognize midwifery as a profession distinct from nursing. This represents an improvement since the last regional report in 2017

Even in countries where a distinction is made, **posts for maternity care may be given to nurses**.

Defining midwives by **International Confederation of Midwives (ICM) Standards is not consistent**.

The ICM is recognized by globally by WHO and others as the expert body on standards for the profession of midwifery. The ICM standards for midwifery education were revised in 2021. In the standards it is stated that in order to obtain the basic qualification to be a midwife a candidate must complete secondary education followed by either a minimum of 3 year/36 month direct entry midwifery educational program, or a combined nursing and midwifery program, including post basic midwifery, with at least 18 months of dedicated midwifery education.

The ICM also stipulates that to meet an ICM standard a midwifery program must prepare the student in all aspects of ICM defined midwife scope of practice, and evaluation of students must be competency based. ICM defined midwife scope of practice include: 1) prevention of, screening for, and treatment of common female sexual and reproductive health problems 2) Preventive counseling and care for women who experience sexual violence 3)Screening for cervical, breast, and other reproductive tract cancers 5) Screening for medical problems that affect pregnancy such as diabetes 6) screening for sexually transmitted infections 7) Pregnancy care including detecting, stabilizing, managing, and referring complications 7) Abortion counselling, emergency contraception, and post abortion care 8) Labor, birth, newborn, and initial stabilization of related emergencies 9) Postnatal and newborn care including detection and initial stabilization of emergencies 10) All relevant counseling and teaching for mothers and newborns.


3

Key issues facing midwives in East and Southern Africa

It is important for health systems to have sufficient availability of midwives, but it is equally important that the available midwives are enabled to provide high-quality care, according to global standards. [29] This matters both for quality of midwifery care and for midwife motivation. [30] This chapter highlights several key issues which are known to affect quality of care and the enabling work environment for midwives.

Midwife education

High-quality midwifery education is an essential ingredient for quality of care. [31] Inadequate education and training jeopardize the professional identity, competence and confidence of midwives. [32]

Of the 20 ESA countries providing data about their midwife education programmes, 12 offer a direct entry pathway, 12 offer a post-nursing pathway and five offer an integrated nursing and midwifery pathway (Table 3.1). Most countries offer only one of these pathways, but several low- and lower-middle-income countries offer both direct entry and another type of pathway: Burundi, DRC, Ethiopia, Malawi, Tanzania and Zambia.

All the reporting Francophone countries offer a direct entry pathway, and two of them (Burundi and DRC) also offer a post-nursing pathway. Nearly all of the reporting Anglophone countries offer a post-nursing or integrated nursing and midwifery pathway, and five of them also offer direct entry (Ethiopia, Malawi, Tanzania (mainland), Uganda and Zambia). The exceptions are Rwanda (a former Francophone country) and South Sudan, which only offer direct entry. Multiple education pathways can result from a recognition that the country needs more midwives but can lead to confusion and a lack of clear career pathways after graduation. [33] Countries in this situation will require careful regulation of education providers to ensure that curricula and standards are harmonized.

The available workforce could meet a maximum of 49per cent of the region's need for essential SRMNAH care. Future projections indicate that, by 2030, ESA will have increased in the number of midwives in the workforce by 43per cent. For many countries this will not keep up with population growth.

Four countries have adequate numbers and right skill mix of health professionals to meet the SRMNAH needs of their countries, at or above the global average of 75per cent: Botswana, Kenya, Mauritius, and Seychelles. But limitations in the enabling environments may interfere with realizing their potential.

Table 3.1: Types of midwife education programme available, 2020

Official language	Country	Direct entry	Post-nursing	Integrated
English	Eritrea			✔
	Eswatini		✔	
	Ethiopia	✔	✔	
	Kenya		✔	
	Lesotho		✔	
	Malawi	✔	✔	
	Namibia			✔
	Rwanda	✔		
	Seychelles		✔	
	South Sudan	✔		
	Tanzania	✔ (Mainland only)	✔ (Mainland only)	✔ (Mainland & Zanzibar)
	Uganda	✔	✔	
	Zambia	✔	✔	
	Zimbabwe		✔	
French	Burundi	✔	✔	
	Comoros	✔		
	DR Congo	✔	✔	✔
	Madagascar	✔		
	Mauritius	✔		
Portuguese	Mozambique			
Number of countries		**12/20**	**12/20**	**5/20**

Note: Angola, Botswana, and South Africa are not shown because they did not provide data on their education programmes.

Most countries have a policy/guideline setting forth a competency framework for maternal and/or newborn care, and a policy/guideline on regulation of midwifery care providers based on ICM competencies, but several are missing one or both of these: Eritrea, Lesotho, Mauritius, Mozambique, Namibia, South Africa, South Sudan, and Uganda. Of those reporting, the only country without a national policy/guideline on midwife-led care is Rwanda.

Having a policy is only the first step: implementation of the policy can be challenging, especially if there are too few midwives or they are not adequately educated, regulated, and working in an enabling environment

Types of midwife education programme available, 2020

	NATIONAL POLICY/GUIDELINE…				
	…recommends midwife-led care for pregnancy	…recommends midwife-led care for childbirth	…recommends midwife-led care for postnatal period	…sets forth competency framework for maternal and/or newborn care	…on regulation of midwifery care providers based on ICM competencies
Angola	✔	✔	✔	✔	✔
Botswana	✔	✔	✔	✔	✔
Burundi	✔	✔	✔	✔	✔
DR Congo	✔	✔	✔	✔	✔
Eritrea	✔	✔	✔	x	x
Eswatini	✔	✔	✔	✔	✔
Ethiopia	✔	✔	✔	✔	✔
Kenya	✔	✔	✔	✔	✔
Lesotho	✔	✔	✔	x	✔
Madagascar	✔	✔	✔	✔	nr
Mauritius	✔	✔	✔	x	x
Mozambique	✔	✔	✔	✔	x
Namibia	✔	✔	✔	x	✔
Rwanda	x	x	x	nr	✔
South Africa	✔	✔	✔	nr	x
South Sudan	✔	✔	✔	x	x
Uganda	✔	✔	✔	x	✔
Tanzania	✔	✔	✔	✔	✔
Zambia	✔	✔	✔	✔	✔
Zimbabwe	✔	✔	✔	✔	✔
Number of countries	19/20	19/20	19/20	12/18	14/19

The opportunity to obtain high-level academic qualifications in midwifery helps to assure professional respect for midwives and midwifery. Table 3.2 shows that the vast majority of countries in the region offer a Bachelor's degree (or equivalent) in midwifery, but only in eight countries are all midwives educated to at least this level. In three countries (Lesotho, Mauritius and Mozambique) the only available qualification is below degree level.

Strong midwifery departments in universities encourage further study and research on midwifery and encourage midwives to take the lead in the education and research which is greatly needed. Half of the reporting ESA countries offer a Master's degree in midwifery, and seven countries offer a PhD programme. All of the countries offering higher-level degrees are Anglophone low- and lower-middle-income countries. Box 3.1 tells the story of a Rwandan midwife who gained a PhD in midwifery.

Globally, about three-quarters of countries have a regulation system that is specific to midwives. The ESA region performs relatively poorly on this measure: **eight countries plus mainland Tanzania do not have specific regulatory processes for midwives**, of which three (Burundi, Comoros, and DRC) have no midwife regulation system at all.

Licensing is not compulsory in eight countries: Burundi, Comoros, DR Congo, Eritrea, Lesotho, Mozambique, Namibia, and South Sudan. Only 10 countries have distinct midwife licensing separate from nursing: Ethiopia, Eswatini, Madagascar, Malawi, Rwanda, Seychelles, Uganda, Zambia, Zanzibar, Zimbabwe.

Having a policy is only the first step: implementation of the policy can be challenging.

Globally, about a third of countries have **a compulsory licensing system under which midwives are required to provide periodic evidence of continuing professional development**. In the ESA region, about half of responding countries have this requirement. However, this still leaves several countries/territories which do not (including all of the Francophone countries), which indicates that midwives in these countries/territories may not have the most up-to-date skills and competencies.

Nearly all countries in the region have **at least one professional association** specifically for midwives, the exceptions being: Eritrea, Seychelles, and South Sudan.

Table 3.2: Available qualifications in midwifery, 2020

Income group	Country	PhD	Master's	Bachelor's	Below Bachelor's
High	Seychelles			✔	
Upper-middle	Mauritius				✔
	Namibia			✔	✔
Lower-middle	Comoros			✔	
	Eswatini		✔	✔	
	Kenya	✔	✔	✔	✔
	Lesotho				✔
	Tanzania	✔	✔	✔	✔
	Zambia	✔	✔	✔	✔
	Zimbabwe	✔	✔	✔	✔
Low	Burundi			✔	
	DR Congo			✔	
	Eritrea		✔	✔	
	Ethiopia	✔	✔	✔	
	Madagascar			✔	
	Malawi	✔	✔	✔	✔
	Mozambique				✔
	Rwanda	✔	✔	✔	✔
	South Sudan			✔	✔
	Uganda		✔	✔	✔
Number of countries		**7/20**	**10/20**	**17/20**	**12/20**

Note: Angola, Botswana, and South Africa are not shown because they did not provide data on their education programmes.

Box 3.1: Earning a PhD in midwifery – Oliva's story

Midwife Oliva Bazirete has been a lecturer at the University of Rwanda since 2003. Her motivation to join academia was to make her contribution to improving maternal and newborn health in a more sustainable way through education, research and community outreach activities: "I consider midwifery education as a sustainable way to ensure invest....ment in midwifery. I have upgraded my education level from advanced diploma in midwifery, and I graduated with my PhD in September 2021".

Her university assigned to her three supervisors: two from the University of Rwanda and one from Western University in Canada. Her PhD studies were funded by the TSAM (Training, Support and Access Model for Maternal, Newborn and Child Health in Rwanda) Project and the Government of Canada through Global Affairs Canada. The University of Rwanda already had strong links with Western University, and they offered a scholarship for which Oliva applied. She was granted a study leave from her employer, which allowed her time to work on her PhD research: "I was working 20 per cent of my workload for the university and the rest of my time was dedicated to my studies and research work."

She credits the quality of her research work to her supervisors, who provided guidance and support: "I had an amazing team of supervisors and I loved every single minute spent working with them on my research project entitled 'Exploring the proactive prevention of postpartum haemorrhage in public health institutions of Rwanda: development of a risk assessment tool'".

She completed her PhD by publication within 3.5 years. Papers emanating from her research work have been accepted in international peer reviewed journals.

Oliva would encourage her fellow midwives to have a vision and to always aim higher to invest in themselves and in midwifery more generally. As she has completed her PhD journey, she is starting a new journey to work hard to contribute to a world where "no woman should die while giving life" ensuring that mothers, newborns, children and adolescents are healthy and able to fulfil their potential. She explains: "My aspiration for the future is to continue to invest in midwifery through research work to inform policies and more especially through implementation research to improve effectiveness and efficiency in maternal and newborn health interventions" Oliva's academic skills and credentials will help her to achieve this goal.

Dr Oliva at her PhD graduation ceremony

Three of the countries offering both Bachelor's degree-level qualifications and qualifications below this level nevertheless report that all or nearly all of their midwives are counted as professionals (see Technical Annex for a definition of professional): Kenya, Rwanda and Uganda (Figure 2.3). Similarly, Lesotho and Mozambique report that all or nearly all of their midwives are professionals, even though the only qualifications on offer are below degree level. Although a degree-level qualification is not the only way to prepare professional midwives, this raises questions about whether midwives in these countries are deployed to positions which make appropriate use of their skills and competencies.

The ICM recommends that midwife education programmes should be competency-based. [34] Out of 20 responding ESA countries, 16 have a national policy/guideline on education of midwifery care providers that is based on ICM competencies. The exceptions are Eritrea, Mauritius, Mozambique and South Africa. UNFPA ESARO recently commissioned an analysis of the alignment of midwifery education in the region to ICM's essential competencies for midwifery. [35] It concluded that midwife education in the region was not well aligned with this global standard: only one programme (in Malawi) was found to be aligned, and for many countries it was challenging to make an assessment at all. [36]

ICM also recommends that direct entry programmes should be at least three years in duration, and that post-nursing programmes should be at least 18 months in duration. [34] ICM does not have a policy on the duration of integrated nursing and midwifery education programmes. All of the region's Anglophone countries with direct entry programmes meet the ICM recommendation of at least 36 months, but only one of the Francophone countries (DRC) does (Figure 3.1). All but four of the countries offering post-nursing programmes meet the ICM recommendation of at least 18 months, the exceptions being Eswatini, Lesotho, mainland Tanzania and Zambia (Figure 3.2). Of the five countries/territories offering integrated programmes, three lasted 48 months, and two lasted 36 months (Figure 3.3).

The short durations of post-nursing programmes in Mauritius, mainland Tanzania and Zambia align with their report that all of their nurse-midwives are associate professionals (see Figure 2.3), but Burundi, Comoros, Eswatini, Lesotho and Madagascar all report that all or nearly all of their midwives/nurse-midwives are professionals. It is questionable whether these shorter programmes are able to cover the full range of midwifery competencies to a high standard. Conversely, in DRC and Malawi most midwives/nurse-midwives are classed as associate professionals even though their education programmes are of the recommended duration. This may indicate a mismatch between what midwives are educated to do and what they actually do in the workplace, or it may indicate potential to broaden the curriculum and scope of practice in these countries.

Across the region 880 million SRMNAH worker hours would have been required to meet all the need in 2020, of which 49 per cent are currently being met. Maternal and newborn interventions account for 64per cent of the needed hours, 27per cent for other sexual and reproductive health interventions (such as counselling, contraceptive services, comprehensive abortion care, and detection and management of sexually transmitted infections), and 9per cent for

Figure 3.1: Duration of direct entry midwifery education programmes, 2020

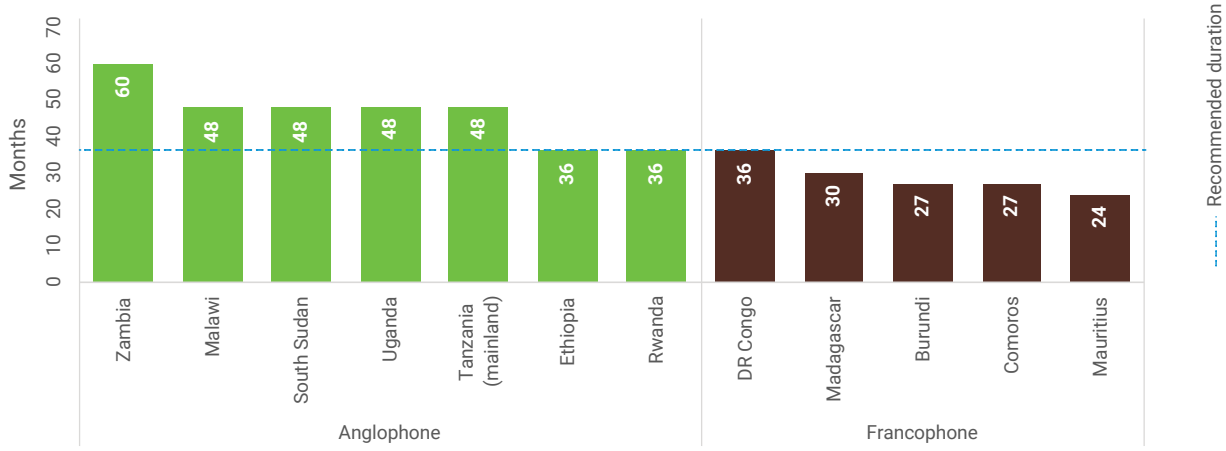
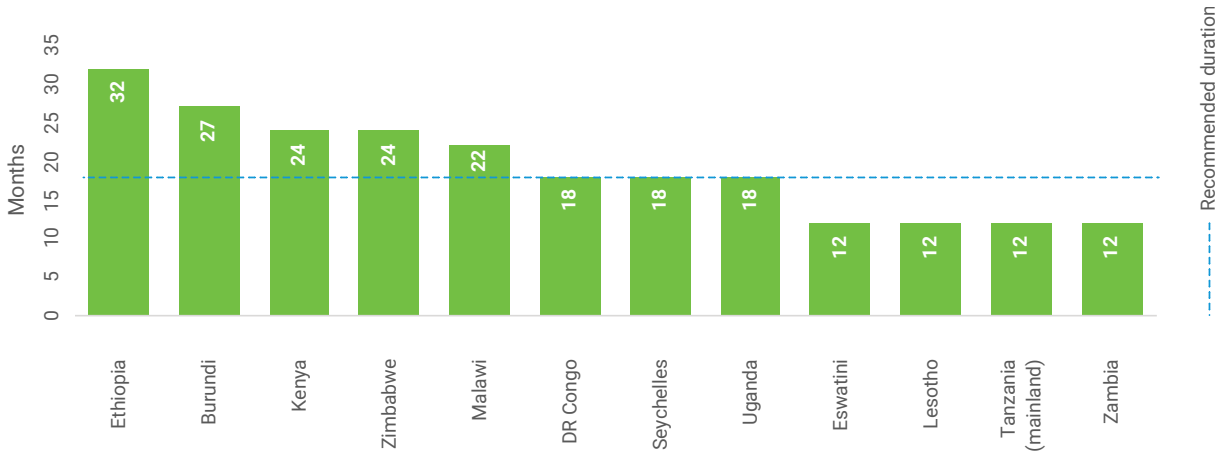


Figure 3.2: Duration of post-nursing midwifery education programmes, 2020

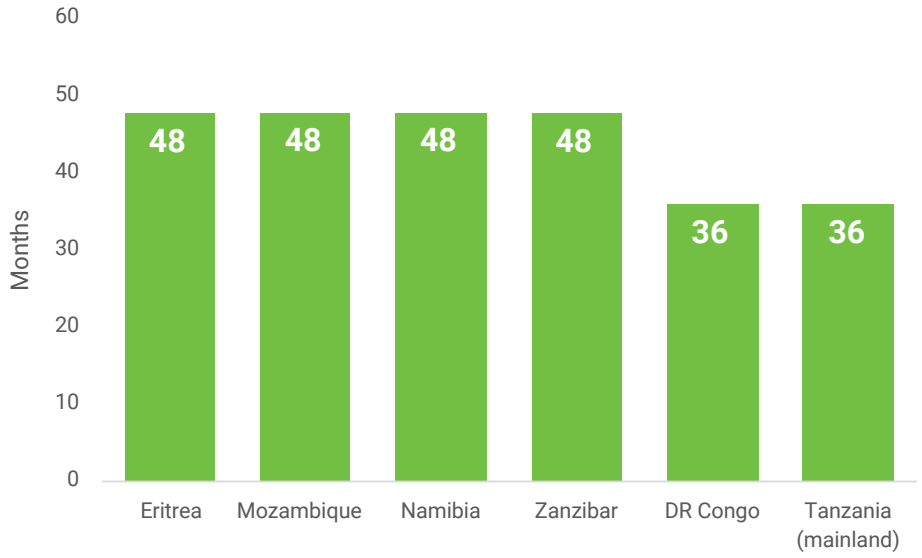


This report highlights the progress since the 2011 and 2014 global SoWMy reports and the 2017 ESA midwifery workforce report and is a guide for the way forward to 2030.

The region has made **significant progress** over the last two decades in improving SRMNAH outcomes, **but progress has been uneven**. As a result, inequity between and within countries remains

The **average MMR** in the region was 391, higher than the global average of 211. Nearly all ESA countries made good progress between 2000 and 2017, most notably Rwanda (79per cent reduction), Angola (71per cent), Mozambique (64per cent), Eritrea (63per cent), Ethiopia (61per cent), Zambia (60per cent), Malawi (53per cent) and Kenya (52per cent).

Figure 3.3: Duration of integrated nursing and midwifery education programmes, 2020



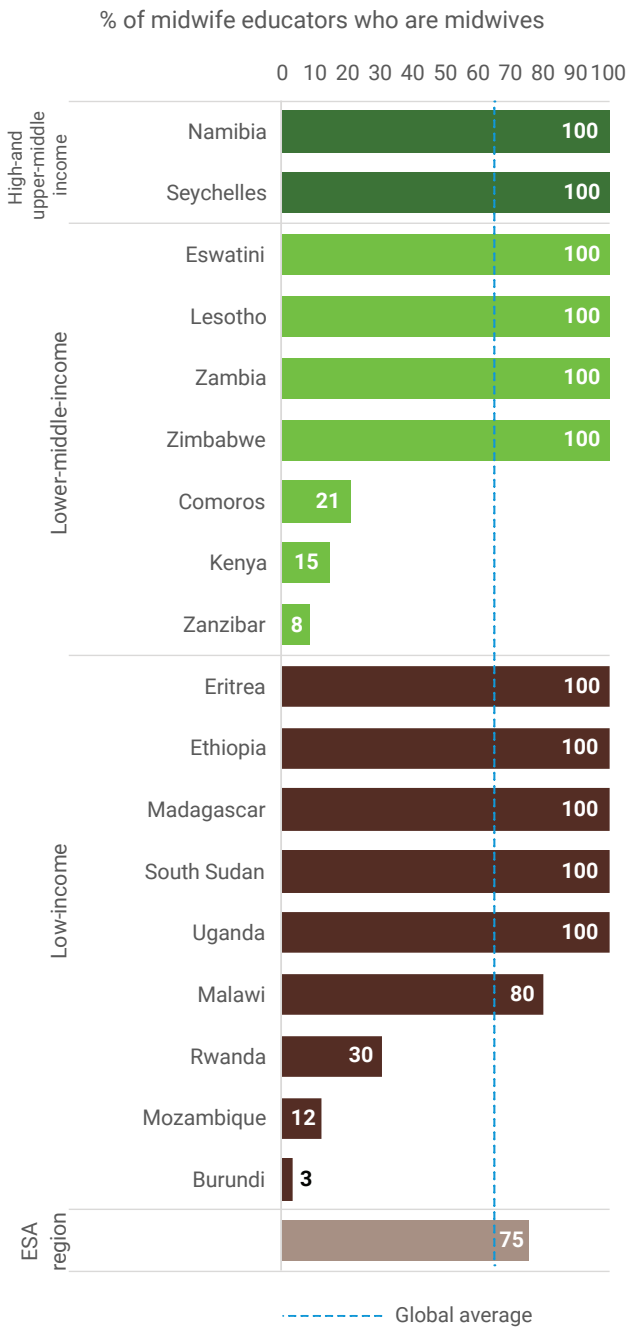
One of the activities under UNFPA ESARO's regional action plan for 2018-2021 was to strengthen national capacity to deliver quality integrated sexual and reproductive health services and information. Within this activity, there was a target to increase the number of countries with a standard midwifery curriculum that is used by all midwifery education institutions from nine in 2017 to 11 in 2020 and 15 in 2021. [37] Out of 20 reporting countries, 13 reported having a national curriculum used by all midwifery schools, and five reported a national curriculum that was used by only some schools (Burundi, DRC, Madagascar, Mozambique and Uganda). This left two with no national curriculum at all: Comoros and Namibia. The data collection for this report took place in 2020 and 2021, so the 2020 target was achieved.

ICM global standards for education recommend that midwifery education programmes should be led by midwives and that the faculty should consist primarily of midwives with a professional midwifery qualification and formal preparation for teaching. [34] In most of the reporting countries, the entire faculty is comprised of midwives, and the region as a whole performs well as compared to the global average (Figure 3.4). However, in some countries/territories only a small minority of faculty are midwives: Burundi, Comoros, Kenya, Mozambique, Rwanda and Zanzibar.

The available workforce could meet a maximum of 49per cent of the region's need for essential SRMNAH care. Future projections indicate that, by 2030, ESA will have increased in the number of midwives in the workforce by 43per cent. For many countries this will not keep up with population growth.

Four countries have adequate numbers and right skill mix of health professionals to meet the SRMNAH needs of their countries, at or above the global average of 75per cent: Botswana, Kenya, Mauritius, and Seychelles. But limitations in the enabling environments may interfere with realizing their potential.

Figure 3.4: per cent of midwife educators who are themselves midwives, 2020



A programme of the recommended duration, a standard curriculum and a large proportion of midwives on the teaching staff are important indicators of education quality, but they are not in themselves sufficient to ensure quality. Studies involving countries in the ESA region have identified a number of additional challenges to the provision of high-quality education, including:

* A shortage of midwifery educators [32, 38, 39]
* Educators and preceptors not fully qualified to teach to a high standard [32, 33, 40, 41]
* Curricula and teaching methods not aligned with global and national guidelines, leading to graduates not being competent to practise autonomously and to a high standard [32, 33, 38, 42, 43]
* Shortage of teaching and training equipment [38, 40-42]
* Large classes and heavy teaching loads [38]
* Poor links between education institutions and clinical sites [38, 40], therefore insufficient opportunities for students to gain practical experience before graduating [38, 42, 43]
* Conflict and humanitarian crises interrupting education programmes [44]
* Poor quality secondary education and low school attendance reducing the pool of suitably-qualified candidates to study midwifery [44]

The result of these challenges is that graduates are not always equipped to provide high-quality care, which means that clinical care can be sub-optimal even when midwives and other health workers are available. [45] WHO guidelines for improving the quality of health professional

education and training make a number of recommendations, including increasing the number and competencies of faculty and regular curriculum reviews. [46] Central to these guidelines was establishing and strengthening education accreditation systems. Many countries in the region have education accreditation systems, but a recent study found that many of these systems required strengthening. [47] Tools exist to support this process, including ICM's midwifery education accreditation programme (MEAP). [48] The first ever MEAP accreditation was awarded to a midwifery school in Rwanda in 2020. [49]

In partnership with ICM, United Nations International Children's Emergency Fund (UNICEF) and WHO, UNFPA published a framework for strengthening quality midwifery education. [50] This identified three strategic priorities: (i) all midwives to be educated and trained to international standards, (ii) the appointment of midwife leaders who can influence key decisions about investment in midwifery education and (iii) better coordination and alignment between stakeholders.

The policy and regulation environment

Each country's regulation governs the education, practice and licensure of its midwives. National laws and regulations establish who is qualified to use the title "midwife", as well as the midwife's scope of practice.

Midwives' associations are established at country level to support members of the profession and to provide leadership to strengthen and advance the role and impact of midwives. Nearly all countries in the region have at least one professional association specifically for midwives, the exceptions being Eritrea, Seychelles and South Sudan.

Globally, three-quarters of countries have legislation recognizing midwifery as distinct from nursing. In the ESA region, only 13 out of 20 reporting countries (62 per cent) have such legislation. The countries which do not make an official distinction between the two professions are Burundi, Comoros, DRC, Eswatini, Kenya, Lesotho, Namibia[3] and South Sudan. This does, however, represent an improvement since 2017, when 11 out of 21 countries (52 per cent) reported having this legislation. [21] Box 3.2 tells the story of a nurse-midwife in DRC who came to realize the importance of midwifery being viewed as a profession distinct from nursing.

Similar analysis for SRMNAH doctors shows that nearly all ESA countries are projected to have a worse shortage in 2030 than in 2020.

3 In the 2017 regional report, Lesotho and Namibia stated that there was legislation making an official distinction between midwives and nurses. The UNFPA offices in these two countries were asked to explain this apparent change, and they indicated that the information supplied in 2017 was incorrect.

Midwife regulation and licensing systems, 2020

Midwife regulation system	Countries with this system
Regulatory body specifically for midwives	Madagascar
No separate regulatory body for midwives, but the regulator has distinct policies and processes for midwives	Eswatini, Ethiopia, Malawi, Mozambique, Namibia, Rwanda, Seychelles, Uganda, Zambia, Zanzibar, Zimbabwe
No separate regulatory body for midwives, and no distinct policies and processes	Eritrea, Kenya, Lesotho, Mauritius, South Sudan, Tanzania (mainland)
No regulation system for midwives	Burundi, Comoros, DR Congo
Midwife licensing system	**Countries with this system**
Compulsory licensing with periodic relicensing and CPD requirement	Eswatini, Ethiopia, Kenya, Malawi, Rwanda, Seychelles, Tanzania (mainland), Uganda, Zambia, Zimbabwe
Compulsory licensing but no CPD requirement	Madagascar, Mauritius, Zanzibar
Licensing not compulsory	Burundi, Comoros, DR Congo, Eritrea, Lesotho, Mozambique, Namibia, South Sudan

South Africa[2], Tanzania (mainland and Zanzibar), and Zambia, have **fewer health care providers or less needed skill mix than the region's other middle-income** countries. Eritrea is performing the best of low-income countries.

Across the 20 reporting countries, **there are 146 000 midwives, giving a density of 2.5 midwives per 10 000 population**. This is far lower than the global average of 4.4 per 10 000 or the global recommendation of 4.45 nurses doctors and midwives per 1000.

About one-third of the global midwife shortage is in this region.

Midwife density ranges from 33.2 per 10 000 in Seychelles to 0.1 in Burundi. Nine countries have a density above the global average: Botswana, Comoros, Eswatini, Kenya, Lesotho, Malawi, Mauritius, Seychelles, and Zimbabwe.

Four countries have a density below 1.0: Burundi, DRC, South Africa, and Zambia.

Of the 146 000 midwives in the region, **30per cent (45 000) are categorized as midwifery professionals**. Of the remainder, 4000 are classed as midwife associate professionals, 57 000 as nurse-midwife professionals, 40 000 as nurse-midwife associate professionals

In 10 countries, the midwifery workforce is composed entirely or almost entirely of professional midwives: Botswana, Burundi, Comoros, Eritrea, Ethiopia, Madagascar, Mozambique, Rwanda, South Africa, and Uganda. In four countries (Eswatini, Kenya, Lesotho, and Seychelles), the midwifery workforce consists entirely or almost entirely of professional nurse-midwives. Zanzibar has a mix of midwives and nurse-midwives.

(2) In the 2017 regional report, South Africa's PMN was 100per cent. This was largely due to a large number of nurses. More recent data suggest that this was an over-estimate.

Box 3.2: Midwifery is different from nursing – Pauline's story

Pauline Tshiyoyo is a registered nurse in DRC who has changed her career by undertaking a post-nursing midwifery qualification. She is now in her final year of the midwifery programme, thanks to the UNFPA scholarship scheme. Before commencing her midwifery education, she thought that being a registered nurse was sufficient to be able to safely assist births, but she has since realized that "midwifery is a stand-alone profession, allowing caring for others with humanized care".

Pauline believes passionately that there should be more investment in midwife education and training because her personal experience has demonstrated how midwives contribute to the reduction of maternal, neonatal, child and adolescent mortality. Pauline shared her experience in saving a mother's life even before she qualified as a midwife: "During one of my clinical placements, I found myself managing a case of postpartum haemorrhage. I was able to recognize on my own that a woman was bleeding heavily and was able to diagnose that the bleeding was due to uterine atony. So, I gave the oxytocin infusion and performed uterine massage, because the midwife I was working with was taking care of another woman. I was alone managing the case at the beginning then, after the other midwife was able to join me, we continued to manage this case of postpartum haemorrhage together until it came to a complete stop. The management was successful, and I am very proud that I saved this woman".

This experience helped Pauline to develop her autonomy, the spirit of creativity and effective communication with her team during her midwifery practice. She is happy that during her midwifery education she has been equipped with the knowledge and skills to train many more midwives in the province of Central Kasai, which has a severe shortage of midwives.

Globally, half of countries have midwives in leadership roles[4] at national level, and similar proportions have midwife leaders at sub-national level and in the regulatory authority. In comparison to this global average, the ESA region performs strongly: most countries in the region have at least one midwife leader at all three levels (Table 3.3). Burundi is the only country to report no midwife leaders at all, and DRC has none in the national or sub-national Ministry of Health (MoH). Box 3.3 describes the positive impacts of a midwife leader in the regulatory authority in Zanzibar, Tanzania.

4 "Leadership role" was defined as referring to a number of management, supervisory and executive titles, including chief midwife, midwife adviser, midwife director, maternity adviser, midwife-in-charge, president, chief executive, executive director, chair.

Table 3.3: ESA countries with midwives in leadership positions, 2020

		Midwife leader(s) in…		
Income group	Country	National MoH	Sub-national MoH	Regulatory authority
High and upper-middle	Mauritius	✔	nr	✔
	Namibia	nr	nr	✔
	Seychelles	✔	na	✔
Lower-middle	Comoros	✔	✔	✔
	Eswatini	✔	✔	✔
	Kenya	✔	✔	✔
	Lesotho	✔	✔	✔
	Tanzania	✔	✔	✔
	Zambia	✔	✔	✔
	Zimbabwe	✔	✔	✔
Low	Burundi	x	x	x
	DR Congo	x	nr	✔
	Eritrea	✔	✔	x
	Ethiopia	✔	✔	✔
	Madagascar	✔	x	x
	Malawi	✔	✔	✔
	Rwanda	✔	x	x
	South Sudan	✔	✔	✔
	Uganda	✔	✔	✔
Number of countries		16/19	13/16	16/20

MoH = Ministry of Health; na = not applicable; nr = not reported. If a country did not report the number of midwife leaders at any level, it is not shown in the table.

Box 3.3: A midwife leader in Zanzibar – Zuwena's story

Zuwena Ali Salim builds the competencies of student midwives.

For some Zanzibaris, midwifery is not just an ordinary career. It is a call to serve and save other people's lives. Zuwena Ali Salim was one such midwife who felt this from the beginning of her career at Chake Hospital, Pemba Island, over 20 years ago. She wanted to be someone who works to save the lives of women and children in Zanzibar.

Zuwena knows that she has saved many women and children's lives in her 20 years of practice in the maternity wards at Chake and then Mwembeladu and Mnazi Mmoja Hospitals. What she remembers most is the lives of the women that have been lost while they are bringing new life into the world. "It has left scars on my heart which will remain with me for a very long time."

Zuwena wanted to do more – and to do it better – to make motherhood safer for Zanzibari women and so she made the bold decision to take up a leadership position at the Zanzibar Nurses and Midwives Council. One of the challenges she identified was the quality of maternal and child health service provision, particularly in rural areas. So, as Registrar of the Council, she put an emphasis on supportive supervision for health care practitioners so they could continuously improve their skills, particularly to manage pregnancy-related complications, while on-the-job and under the watchful eye of more experienced health professionals.

After building the capacity at the Council, Zuwena decided to pursue further education. She was supported by UNFPA to pursue a Master's degree in Midwifery and Women's Health at Muhimbili University of Health and Allied Sciences in Dar es Salaam. When she completed her studies in 2017, Zuwena returned to Zanzibar, this time not as a midwife, but as an Assistant Lecturer at the Department of Midwifery and Nursing at the School of Health and Medical Sciences at the State University of Zanzibar.

Just **six countries in the region have no needs-based shortage of midwives**: Botswana, Eswatini, Lesotho, Mauritius, Seychelles, and Zimbabwe.

The largest midwife shortages are in DRC and Ethiopia, but many other countries have shortages of 10 000 or more.

Burundi is the only country to report no midwife leaders at all.

Table 3.4 summarizes elements of the policy environment for midwifery in the region. The only country without a national policy/guideline on midwife-led care for pregnancy, childbirth and the postnatal period is Rwanda (although several other countries did not provide a response, so there may be other countries without such a policy). Most countries also have a policy/guideline setting forth a competency framework for maternal and/or newborn care, and a policy/guideline on regulation of midwifery care providers based on ICM competencies, but several are missing one or both of these: Eritrea, Lesotho, Mauritius, Mozambique, Namibia, South Africa, South Sudan and Uganda.

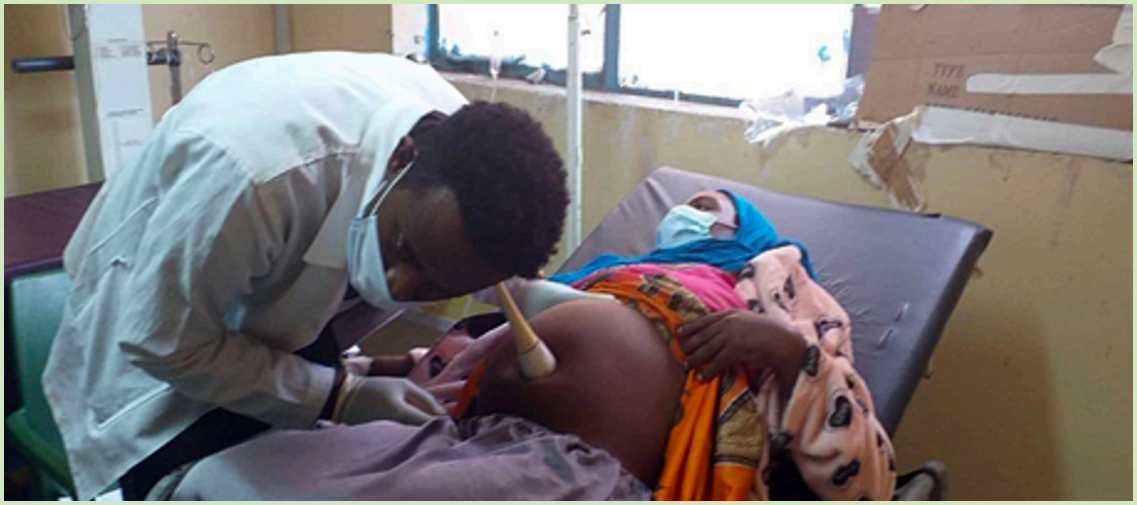
These results indicate strong political support in the region for midwife-led care and the benefits it brings. However, having a policy is only the first step: implementation of the policy can be challenging, especially if there are too few midwives or they are not adequately educated, regulated and working in an enabling environment (see Box 3.4).

Table 3.4: Policy environment for midwifery, 2020

	National policy/guideline…				
	…recommends midwife-led care for pregnancy	…recommends midwife-led care for childbirth	…recommends midwife-led care for postnatal period	…sets forth competency framework for maternal and/or newborn care	…on regulation of midwifery care providers based on ICM competencies
Angola	✔	✔	✔	✔	✔
Botswana	✔	✔	✔	✔	✔
Burundi	✔	✔	✔	✔	✔
DR Congo	✔	✔	✔	✔	✔
Eritrea	✔	✔	✔	x	x
Eswatini	✔	✔	✔	✔	✔
Ethiopia	✔	✔	✔	✔	✔
Kenya	✔	✔	✔	✔	✔
Lesotho	✔	✔	✔	x	✔
Madagascar	✔	✔	✔	✔	nr
Mauritius	✔	✔	✔	x	x
Mozambique	✔	✔	✔	✔	x
Namibia	✔	✔	✔	x	✔
Rwanda	x	x	x	nr	✔
South Africa	x	x	x	nr	x
South Sudan	✔	✔	✔	x	x
Uganda	✔	✔	✔	x	✔
Tanzania	✔	✔	✔	✔	✔
Zambia	✔	✔	✔	✔	✔
Zimbabwe	✔	✔	✔	✔	✔
Number of countries	19/20	19/20	19/20	12/18	14/19

; nr = not reported. Countries that did not provide data for any of the five indicators are not shown in the table.

Box 3.4: Restricting midwives' practice limits their impact – Yordanos' story



"The midwifery profession is not well understood and known by the community," says Yordanos, a young midwife and delivery ward case team coordinator at the Gandhi Memorial Hospital in Ethiopia.

Yordanos strives to improve the quality of midwifery care and the performance of midwives at the hospital. Together with his colleagues he evaluates, on a weekly basis, the successes and challenges in the provision of quality maternal and newborn health care services to clients. Yordanos says that despite their competency in various areas such as family planning and postnatal and obstetric care, midwives' practice is limited to the emergency out-patient department and delivery room with limited educational opportunities.

Another ingredient for high-quality health care is the existence of effective health worker regulation and licensing systems. Globally, about three-quarters of countries have a regulation system that is specific to midwives (either a separate regulatory body or distinct policies and processes for midwives). The ESA region performs relatively poorly on this measure: eight countries plus mainland Tanzania do not have specific regulatory processes for midwives, of which three (Burundi, Comoros and DRC) have no midwife regulation system at all (Table 3.5).

On midwife licensing, however, the ESA region does better than the global average. Globally, about a third of countries have a compulsory licensing system under which midwives are required to provide periodic evidence of continuing professional development (CPD) in order to keep their licence to practise. In the ESA region, about half of responding countries have this requirement. However, this still leaves several countries/territories which do not achieve this standard (including all of the Francophone countries), which indicates that midwives in these countries/territories may not have the most up-to-date skills and competencies.

Table 3.5: Midwife regulation and licensing systems, 2020

Midwife regulation system	Countries with this system
Regulatory body specifically for midwives	Madagascar
No separate regulatory body for midwives, but the regulator has distinct policies and processes for midwives	Eswatini, Ethiopia, Malawi, Mozambique, Namibia, Rwanda, Seychelles, Uganda, Zambia, Zanzibar, Zimbabwe
No separate regulatory body for midwives, and no distinct policies and processes	Eritrea, Kenya, Lesotho, Mauritius, South Sudan, Tanzania (mainland)
No regulation system for midwives	Burundi, Comoros, DR Congo
Midwife licensing system	**Countries with this system**
Compulsory licensing with periodic relicensing and CPD requirement	Eswatini, Ethiopia, Kenya, Malawi, Rwanda, Seychelles, Tanzania (mainland), Uganda, Zambia, Zimbabwe
Compulsory licensing but no CPD requirement	Madagascar, Mauritius, Zanzibar
Licensing not compulsory	Burundi, Comoros, DR Congo, Eritrea, Lesotho, Mozambique, Namibia, South Sudan

ICM guidance on the midwife's scope of practice states that a midwife "works in partnership with women to give the necessary support, care and advice during pregnancy, labour and the postpartum period, to conduct births on the midwife's own responsibility and to provide care for the newborn and the infant. This care includes preventative measures, the promotion of normal birth, the detection of complications in mother and child, the accessing of medical care or other appropriate assistance and the carrying out of emergency measures. The midwife has an important task in health counselling and education, not only for the woman, but also within the family and the community. This work should involve antenatal education and preparation for parenthood and may extend to women's health, sexual or reproductive health and childcare. A midwife may practise in any setting including the home, community, hospitals, clinics or health units". [25]

The global SoWMy 2021 report found that the scope of practice of midwives in many countries is limited e.g. midwives are often not authorized to provide the full range of modern contraceptives and to perform all seven BEmONC signal functions. In the ESA region, however, the scope of practice of midwives is generally not restricted in these ways.

Nearly all of the 15 reporting countries stated that midwives were authorized to provide contraceptive pills, implants, injections, intrauterine devices (IUDs) and emergency contraception. The one exception is that midwives in Namibia are not authorized to insert IUDs. Similarly, most countries reported that midwives are authorized to perform all seven BEmONC signal functions[5]. The exceptions were that:

* Four countries (Kenya, Namibia, South Sudan, Uganda) do not authorize midwives to provide delivery by vacuum extractor
* Two countries (Namibia and South Sudan) do not authorize midwives to provide manual vacuum aspiration
* One country (Namibia) does not authorize midwives to perform manual removal of the placenta.

Extent to which midwives in ESA countries adhere to the ICM definition of a midwife

Taking all of the above issues into account, we can assess the extent to which midwifery policy, education and regulation enables midwives in ESA countries to adhere to the ICM definition of a midwife. [25] Table 3.6 shows a number of indicators relating to three key aspects of the ICM definition: (1) a midwife has completed a high-quality education programme, (2) a midwife is a "responsible, accountable professional", and (3) a midwife works on her own responsibility across the full continuum of SRMNAH care. This analysis shows that, although some ESA countries do well on most indicators (most notably Ethiopia, Malawi and Zimbabwe), no country is rated positively on every indicator. Most of the gaps relate to the extent to which midwives are considered to be "responsible, accountable professionals", but there are also major gaps in indicators of education quality, in particular the extent to which education curricula are aligned with ICM essential competencies.

5 The seven signal functions are newborn resuscitation with bag and mask, parenteral administration of antibiotics, administration of oxytocics, administration of anticonvulsants, manual removal of placenta, assisted instrumental delivery by vacuum extraction and manual vacuum aspiration for retained products of conception.

Table 3.6: Indicators of the extent to which midwives in ESA countries adhere to the ICM definition of a midwife

	Completed a high-quality education programme				A responsible, accountable professional			Works on own responsibility across full continuum of care		
	Midwife education policy is based on ICM competencies	Curriculum aligned with ICM competencies	Standard curriculum used by all schools	Programme duration aligns with ICM recommendation	Legislation recognizes midwifery as distinct from nursing	Distinct regulatory processes for midwifery	CPD required for relicensing	MLC recommended across full continuum of care	Authorized to provide five modern contraceptive methods	Authorized to provide all 7 BEmONC signal functions
Angola	yes	nr	yes	nr	nr	nr	nr	yes	nr	nr
Botswana	yes	no	yes	nr	nr	nr	nr	yes	nr	nr
Burundi	yes	no	partial	partial	no	no	no	yes	yes	yes
Comoros	yes	nr	no	no	no	no	no	nr	yes	yes
DR Congo	yes	nr	partial	yes	no	no	no	yes	nr	nr
Eritrea	no	nr	yes	yes	yes	no	no	yes	yes	yes
Eswatini	yes	nr	yes	no	no	yes	yes	yes	yes	yes
Ethiopia	yes	no	yes	yes	yes	yes	yes	yes	yes	yes
Kenya	yes	no	yes	yes	no	no	yes	yes	yes	no
Lesotho	yes	nr	yes	no	no	no	no	yes	nr	nr
Madagascar	yes	nr	partial	no	yes	yes	no	yes	yes	yes
Malawi	yes	partial	yes	yes	yes	yes	yes	nr	yes	yes
Mauritius	no	nr	yes	no	yes	no	no	yes	nr	nr
Mozambique	no	nr	partial	yes	yes	yes	no	yes	yes	yes
Namibia	yes	no	no	nr	no	yes	no	yes	no	no
Rwanda	yes	nr	yes	yes	yes	yes	yes	no	yes	yes
Seychelles	yes	nr	yes	yes	yes	yes	yes	nr	nr	nr
South Africa	no	nr	yes	nr	nr	nr	nr	yes	nr	nr
South Sudan	yes	nr	yes	yes	no	no	no	yes	yes	no
Tanzania (mainland)	yes	nr	yes	partial	yes	no	yes	yes	nr	nr
Uganda	yes	nr	partial	yes	yes	yes	yes	yes	yes	no
Zambia	yes	no	yes	partial	yes	yes	yes	yes	yes	yes
Zanzibar	yes	nr	yes	yes	yes	yes	no	nr	yes	yes
Zimbabwe	yes	nr	yes	yes	yes	yes	yes	yes	yes	yes

BEmONC = basic emergency obstetric and newborn care. CPD = continuing professional development. MLC = midwife-led care. nr = not reported.

Respectful maternity care

The findings reported above emphasize that the quality of midwifery care is a major challenge in the ESA region. Respectful maternity care (RMC) is an important contributor to quality of care. For this reason, WHO guidelines on intrapartum care and maternal and newborn care

standards highlight respectful care as a key recommendation, and RMC is emerging as an essential concept for ensuring the rights and safety of women during labour and childbirth. [29, 51] WHO defines RMC during labour and childbirth as "*care organized for and provided to all women in a manner that maintains their dignity, privacy and confidentiality, ensures freedom from harm and mistreatment, and enables informed choice and continuous support during labour and childbirth*". The 65th East, Central and Southern African health ministers' conference in 2018 urged member states to strengthen health systems in order to advance RMC [52], taking into consideration the principles of multisector collaboration and the WHO framework for the quality of maternal and newborn health care. [53]

In many ESA countries, disrespectful and undignified care is prevalent, [54-59] and emerging evidence suggests that this has been exacerbated by the COVID-19 pandemic (see next section). As well as violating women's rights, this can cause women to avoid seeking essential SRMNAH care. In addition, the prevailing models of childbirth care provision in the region, under which the care provider holds all or most of the power to control the process, expose healthy pregnant women to the risk of unnecessary clinical interventions which interfere with the physiological process of childbirth. [60] Many ESA countries are working to implement quality of SRMNAH care guidelines, and it is important that RMC is central to the implementation of these guidelines.

In 2019, UNFPA ESARO conducted a review of published evidence on initiatives to advance RMC in the region. Examples were found of RMC interventions reducing incidence of disrespect and abuse, improving clients' awareness of their rights and strengthening provider-patient relationships. Positive impacts were also found for health service providers related to efficiency, sense of empowerment at work, effectiveness of teamwork and communication between facility staff. Three factors particularly stood out as contributing to securing these outcomes: (i) building consensus on the importance of RMC through dissemination of evidence and advocacy, in advance of intervention design and implementation, (ii) a participatory approach to RMC intervention design and implementation involving all levels of the health system and (iii) addressing structural and resource constraints in health facilities, which otherwise lessen the impact of RMC interventions. [61]

Rmc Interventions Implemented In settings not affected by Humanitarian Crises	Considerations for implementation in humanitarian settings	Examples and resource links
Communities and Women		
Generating demand through community outreach		Tanzania, Ethiopia
Revitalizing the client services charter, birth companions, community score cards and improvements to facility infrastructure (privacy and space on maternity wards).		Tanzania, Ethiopia Birth companionship at government hospitals and "Open Birth Days" in Tanzania In Ethiopia, evidence proved that improving facility infrastructure and availing supplies led to enhanced RMC. The Staha Intervention in Tanzania

Establish complaint systems in health facilities		Ethiopia, Kenya Development of a tool to measure women's perception of RMC in public health facilities in Ethiopia In Kenya, suggestion boxes, exit interviews, client reports were instituted by teams and had some positive effect
Healthcare Providers		
Pre- and in-service training, such as Emergency Obstetric and Newborn Care (EmONC) training		South Sudan, Kenya BEmONC in Crisis Settings Impact of Health Care Provider's Training on Patients' Communication During Labour in Sudan
Midwifery associations to promote RMC such as during the celebration of the International Day of Midwives		Zambia, Malawi
Support in-service training on RMC for midwives		Ethiopia, Kenya, South Africa · Lessons learned through RMC training and its implementation in Ethiopia · RMC Resource Package (USAID/Kenya) · An innovative intervention to improve RMC in three districts in Ethiopia · CLEVER maternity care: A before-and-after study of women's experience of childbirth in Tshwane, South Africa · Training providers in Kenya
Mainstream RMC in midwifery pre-service curriculum		Lesotho, Zambia
Health Systems		
Mainstream RMC in national guidelines		Kenya, Ethiopia, Eswatini, Namibia, Tanzania · National Guidelines for Gender and Respectful Care Mainstreaming and Integration Across RMNCH Services in Tanzania, 2019
Service standards such as ANC guidelines		Namibia
Mainstreaming RMC indicators in the national health sector monitoring framework		Ethiopia · A Rapid Review of Available Evidence to Inform Indicators for Routine Monitoring and Evaluation of RMC
National respectful care strategies with a focus on implementation		Ethiopia
Assessments of disrespect and abuse in the maternity wards		Tanzania, South Africa, Ethiopia, Kenya, Rwanda, Malawi · The prevalence of disrespect and abuse during facility-based maternity care in Malawi: evidence from direct observations of labour and delivery · Midwives' perspectives on (dis)respectful intrapartum care during facility-based delivery in sub-Saharan Africa · Direct observation of RMC in five countries: a cross-sectional study of health facilities in East and Southern Africa
RMC task force brings together stakeholders		Tanzania, Kenya · Applying a participatory approach to the promotion of a culture of respect during childbirth in Tanzania · The Staha Intervention in Tanzania · The Heshima Project in Kenya

Impact of COVID-19 on SRMNAH and the workforce

The region's first COVID-19 case was registered in March 2020, triggering national lockdowns and other stringent infection control measures in many countries. Most governments in the region responded quickly to control the spread of the virus, concerned that already fragile health systems would not be able to cope with increased demand. [62] However, these restrictions presented a major challenge to the work of midwives. In particular, lockdowns and 'stay-at-home' orders, combined with fear of infection, discouraged or prevented women from seeking care. Efforts to contain disease outbreaks diverted resources (including human resources) away from the provision of other essential health services including SRMNAH care. [63] The arrival of COVID-19 in countries experiencing other health shocks (such as the Ebola and measles outbreaks in DRC) placed the health workforce under even more pressure, especially in locations experiencing violence and conflict. [64, 65] Emerging data indicate that COVID-19 will affect progress towards the SDGs unless there are significant efforts to mitigate its impact. [62, 66, 67]

WHO has tracked levels of service disruption due to COVID-19 in several areas of health care, collecting data in two rounds: June-August 2020 and January-March 2021. Overall, it was observed that there was much less disruption in the second round than in the first. All reporting countries in the ESA region experienced at least some disruption to key SRMNAH services as a result of COVID-19. Overall, family planning and contraceptive services and ANC are observed to be the most disrupted, but several countries also reported relatively high levels of disruption to other SRMNAH services. [68] Several countries had missing data, especially for the prevention of and response to intimate partner violence (IPV). The lack of data on IPV is of concern, given that the need for such services is known to increase at times like this. [69, 70]

In addition to service disruptions, emerging evidence indicates a negative impact on RMC. A global study conducted in 2020 found that the pandemic has compromised RMC by preventing birth partners from accompanying women through labour and childbirth, causing an increase in caesarean section without medical indication, decreasing quality of care (perhaps due to SRMNAH workers being over-stretched) and decreasing physical and emotional support from SRMNAH workers due to infection control measures. [71]

WHO estimates that health workers experienced more than triple the risk of COVID-19 infection compared with the general population. [72] To minimize these risks they require priority access to vaccines and PPE. A global survey of midwives' associations at the end of 2020 found that, in most countries, midwives had insufficient PPE with the result that they had to make or purchase their own supplies and/or take risks such as reusing single-use PPE or working without PPE. [18] PPE shortages were recorded in many ESA countries. [73] Similarly, inequitable distribution of vaccines, [74] sometimes combined with vaccine hesitancy, [75, 76] meant that in some parts of the world (including the African region), by September 2021 fewer than 10 per cent of health workers had been vaccinated. [77] ICM has called on all midwives to be vaccinated both to protect themselves and to fulfil their professional obligation to those in their care. [78]

Data on the number of health workers who have died of COVID-19 are scarce, especially in Africa. WHO member states in the African region reported zero deaths of health workers via the WHO surveillance system, but in May 2021 WHO estimated that globally more than 115,000 health

workers had died of the disease, of whom over 1,000 were from the WHO African region. [72] Although a small proportion of the total, this represents a major and tragic loss to a region which was already experiencing the worst health worker shortages in the world.

In addition to the infection risk, health workers are likely to experience increased pressure at work during a pandemic, which puts them at higher risk of mental health problems. Additional psychosocial support for health workers may be needed as part of post-pandemic recovery plans, but there is a lack of high-quality evidence about the effectiveness of different types of intervention. [79]

The SRMNAH workforce consists mostly of women, and the suspension of many education, childcare and transport services made it more difficult for working parents, especially women, to work their contracted hours. [80] The International Labour Organization estimated a 9 per cent decline in global working hours in 2020. The decline was 7 per cent in sub-Saharan Africa, but 13 per cent in southern Africa. [81]

Published in June 2020, UNFPA's COVID-19 global response plan [82] identified three strategic priorities, of which one was "continuity of sexual and reproductive health services and interventions, including protection of the health workforce". UNFPA also recommended the investment of time and resources to advocacy, in particular for SRMNAH services to be integrated with other relevant health services to ensure that SRMNAH is not overlooked in the pandemic response. Resilience to COVID-19 and future pandemics will depend on such measures being in place.

Since the onset of the pandemic, UNFPA has supported midwives in various ways, including providing PPE and training in its use, supporting government to provide continuity of service delivery including telephone-based care, disseminating evidence-based guidance and supporting education institutions to provide virtual learning. Such support has been provided to several countries in the ESA region, including Madagascar and South Africa. [83]

Box 3.5 describes how the pandemic has affected the work of midwives and midwife educators in ESA countries, and how they have continued to work despite the personal and professional challenges they faced as a result of COVID-19. Their bravery and commitment should be celebrated, but health systems should not be totally reliant on it: midwives and their colleagues need and deserve to be protected and supported as well.

Box 3.5: Midwives continue to provide care throughout the COVID-19 pandemic – examples from Ethiopia, Eswatini and Namibia

Ethiopia: Delil's story

Midwives are each day facing the risk of COVID-19 infection in serving their clients in overcrowded labour wards with limited PPE. Delil Abdu, who delivered her baby at the Ghandi Memorial Hospital in Ethiopia, expressed her gratitude to midwives for ensuring a healthy pregnancy and delivery despite the formidable challenges they are facing at work: "The health education I got from the midwives in the labour ward and antenatal care clinic was so friendly. The services following COVID-19 preventive measures enhanced my well-being."

Eswatini: The Good Shepherd Hospital strives to keep maternal mortality low despite COVID-19

Midwife Zodwa in Eswatini preparing for a birth.

In an effort to reduce preventable maternal deaths UNFPA, WHO and UNICEF undertook a structured field visit to the Good Shepherd Hospital. A team of clinicians led by Dr Koshy reported that quality perinatal care at this hospital is enabling the hospital to keep mortality low despite the threats posed by the COVID-19 pandemic. "In practice, the facility provides health education to pregnant women and nursing mothers. Also, the hospital provides a COVID-19 test for all pregnant women seeking maternity services. Over and above that, the facility enhances COVID-19 appropriate behaviour." said Dr Koshy.

The hospital's approach to quality of care has continued to attract a high number of clients even during the pandemic. For example, there were 958 births in the maternity ward in the first quarter of 2021, a 50 per cent increase compared to the same period in 2020. "Our facility is the only regional hospital which still receives referrals from other facilities, being the 'hospital of choice' for most patients in the country." stated Dr. Koshy.

There was one maternal death in the first quarter of 2021, and none at all in the first quarter of 2020. Efforts such as those displayed by midwives at this hospital need to be replicated by many facilities in Eswatini as this would "create a resilient health system" as observed by UNFPA Executive Director Dr Natalia Kanem.

Namibia: the stories of Tekla and her students

Tekla Shiindi-Mbidi is a lecturer at the International University of Management, Windhoek, Namibia. She describes how midwife educators have had to find safe alternatives for students and educators to ensure that teaching and learning continues during the COVID-19 pandemic. "There were opportunities brought about by the pandemic that midwife educators had to embrace. One of the many opportunities was the ability to adapt and promptly switch to online teaching to deliver the theoretical component and comply with the COVID-19

Namibian student nurse-midwives in class after the easing of COVID-19 restrictions

mitigating strategies". She says also that as soon as the restrictions for the pandemic were eased, the students were allowed to return to campus and continue their theoretical and practical learning.

Tekla also mentioned some challenges that affected midwifery education during the pandemic:

- Some midwife educators did not cope well with online teaching, especially when they experienced poor connectivity.
- In some institutions, midwife educators did not receive their salaries, which has made it difficult for them to cope financially during the pandemic.
- To allow social distancing, clinical practice and simulations had to be done with small groups of students. Some institutions did not have sufficient resources to ensure that every student could access the practice session.
- Not all students had access to smartphones and good internet connectivity, or could not afford to pay for additional data, which made it hard for them to access online learning activities.

Two of Tekla's students recounted their experiences during COVID-19:

Student nurse-midwife Ruusa Nambahu working as a volunteer

Ruusa Nambahu was a final-year student in 2020. She considers that COVID-19 brought not only bad news but also some opportunities, as the Ministry of Health and Social Services employed volunteers to assist the frontline health workers for three months: "I made some extra income for myself and learned a lot about an emergency response towards a pandemic of such nature."

This was echoed by student Boniface: "This brought an opportunity for me because as a volunteer I was given an income and that supported me with buying data for online learning." However, Boniface noted some challenges associated with working as a volunteer to assist frontline workers: "My family members and friends turned out to have disassociated with me as a result of fear that I might end up bringing the virus home, so I had to live in an outside and isolated room, and I was psychologically traumatized. But due to the fact that I wanted to keep up with my clinical skills I was left with no choice but to do it".

4

Midwives: a vital investment

Midwives provide many essential clinical SRMNAH interventions and can play a broader role in activities such as advancing SRMNAH care at the primary level and UHC, responding to violence against women, and addressing sexual and reproductive rights. [84] Their valued and respected role in the communities they serve positions them well to be agents of change in promoting women's empowerment and behaviour change on family planning and also in addressing harmful social and gender norms and practices, such as female genital mutilation and child and early forced marriage. They can be a point of contact in the community for sexual and reproductive health services (see Box 4.1) and can support and promote self-care interventions such as self-monitoring of blood pressure during pregnancy. This chapter discusses the potential return on investment in midwives and provides examples of such investments from the ESA region.

Box 4.1: A midwife as the village's point of contact for family planning service – Nana's story

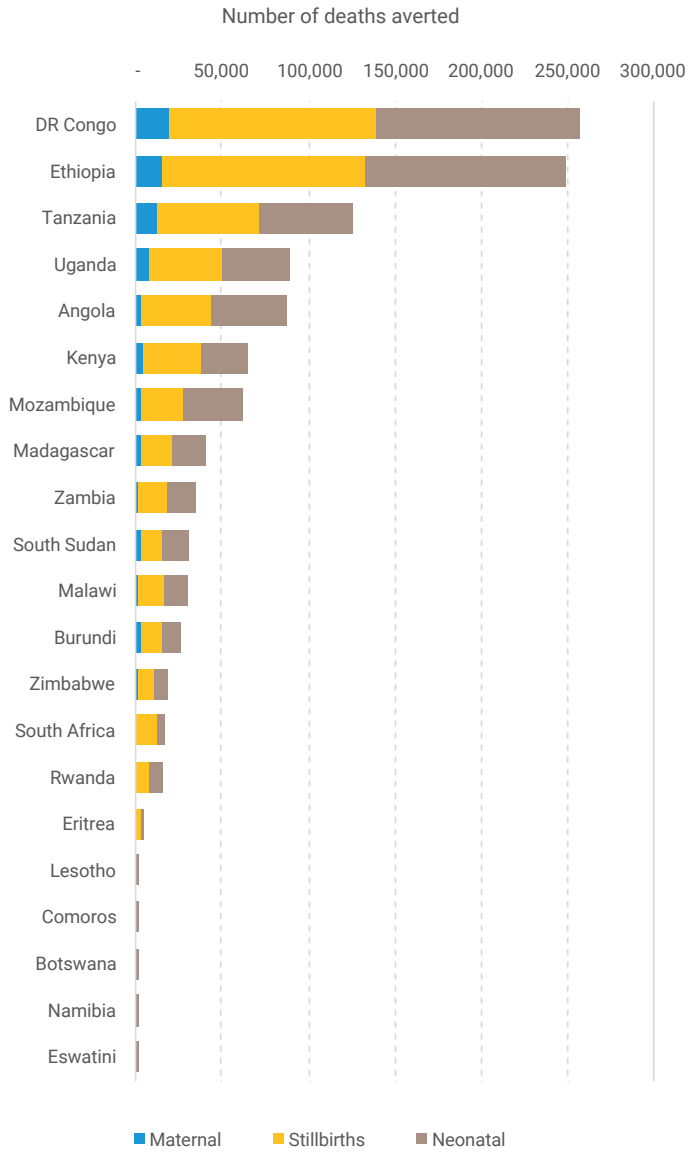
Midwife Nana is from Burkina Faso but is currently based in Mozambique. Her mother worked very hard as the only skilled birth attendant serving a large village. That feeling of accomplishment in assisting safe birth inspired Nana to follow in her mother's footsteps and become a midwife. That was just the beginning – she soon discovered that being a midwife is much more than catching babies at birth: "After every single delivery, I am so happy to make the announcement to the family and enjoy how they celebrate. Helping a mother to give birth and stay alive is a great mission for me." She also became interested in family planning, to which many in her village did not have access: "I wanted to work as a midwife to help improve family planning use... [it was] a way to help young girls escape unwanted pregnancy and continue their studies." she said.

The impact and potential impact of midwives

A recent study from 88 countries that account for the vast majority of the world's maternal and neonatal deaths and stillbirths concluded that universal coverage of midwife-delivered interventions could avert two-thirds of these deaths and save 4.3 million lives per year by 2035. [85] A special analysis of these estimates was conducted for this report, estimating the number of lives that could be saved in the 21 ESA countries included in the study: Angola, Botswana, Burundi, Comoros, DRC, Eritrea,

Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Rwanda, South Africa, South Sudan, Tanzania, Uganda, Zambia and Zimbabwe. This analysis shows that universal coverage of midwife-delivered interventions[6] in the region could save 1.2 million lives per year by 2035. Figure 4.1 shows that half of the total lives saved would be from three countries: DRC (almost 260,000 per year), Ethiopia (250,000) and Tanzania (125,000).

Figure 4.1: Projected numbers of maternal and neonatal deaths and stillbirths averted in 2035 by universal coverage of midwife-delivered interventions in ESA countries



Source: special analysis of projections used for Nove et al 2021. [85]

6 A "midwife-delivered intervention" was defined as one which (i) can be delivered in its entirety by a professional midwife according to standards published by ICM, (ii) is known to directly affect mortality or nutritional status and (iii) is listed as an essential intervention either by ICM or the UN *Global Strategy for Women's, Children's and Adolescents' Health*.

The unique philosophy of midwifery promotes physiological birth where this is the safest option. When medically necessary, caesarean sections save lives, but they are often performed when not medically necessary. WHO states that when caesarean section rates rise towards 10 per cent, the number of maternal and newborn deaths decreases, but that rates above 10 per cent are not associated with further reductions of maternal and newborn mortality. [86] In most countries in the ESA region, fewer than 10 per cent of births are by caesarean section, indicating that the major issue in the region is lack of access to this intervention when it is needed, rather than too many unnecessary sections. However, a few countries in the region have rates over 10 per cent: Mauritius (45 per cent), Seychelles (28 per cent), South Africa (26 per cent), Namibia (14 per cent), Rwanda (13 per cent), and Eswatini (12 per cent). [87]

Furthermore, in every country there is evidence that women in urban locations and in the richest wealth quintile are more likely than rural and poor women to give birth by caesarean section e.g. in Namibia 34 per cent of the richest 20 per cent of women and 21 per cent of urban women do so and in Rwanda 24 per cent of the richest women and 22 per cent of urban women do so. [9] Similarly, rates can be very high in private health care settings, especially in Comoros, Ethiopia, Namibia and Rwanda. [88] In these settings, action to reduce unnecessary caesareans is warranted. In 2018, WHO published five recommendations for reducing unnecessary caesareans, of which one is a "*collaborative midwifery-obstetrician model of care (i.e. a model of staffing based on care provided primarily by midwives, with 24-hour back-up from an obstetrician)*". [89] This recommendation is difficult to achieve in countries with a major shortage of midwives and/or obstetricians and lacking an enabling work environment, [90] but it is a worthwhile longer-term aspiration, given the evidence from high-income countries that this model of care improves outcomes and reduces unnecessary caesarean sections. [91-93]

Box 4.2: Supporting midwives to achieve their potential in Madagascar, Zambia, Comoros and Rwanda

Madagascar: The stories of Tantely and Hasimbolatiana

Working at the university teaching hospital of Misting Tuléar in Madagascar, Tantely concluded that midwifery work is hard because of heavy workload and the stress of obstetric complications but is also rewarding. She feels supported when they work as a team to reach the objective of "zero preventable maternal deaths".

Hasimbolatiana is from a family of many health professionals. She loves being a midwife. "The love of my work is my hobby because I am a midwife by profession. Today I have one more reason to feel that I am winning, because I assisted two births, including twins".

Hasimbolatiana after assisting with the birth of twins

Zambia – Michelle's story

Michelle Simukayi is a 3rd year student pursuing a Diploma in Nursing and Midwifery at Lewanika College of Nursing and Midwifery in Zambia's Western Province. She shares her experience of commencing midwifery education after witnessing traditional birth attendants assisting home births in an ineffective way: "Growing up in a remote village in Shibuyunji District of Central Province, I witnessed my grandmother, who was a traditional birth attendant, attend births. She and many other traditional birth attendants would perform these deliveries at home, using local herbs to try and address complications during delivery. Many mothers

and newborns lost their lives, and this made me sad. Determined to make a difference once I completed high-school, I began researching about maternal mortality and was fortunate to come across the book "Sellers' Midwifery" by Pauline McCall Sellers. After reading the book with keen interest, I was determined to become a midwife, in order to save the lives of women and girls in remote rural areas".

Supported by UNFPA, Lewanika College of Nursing and Midwifery has upgraded its education programmes and now offers a direct entry midwifery programme, to increase the number of trained registered midwives across the country. UNFPA procured and delivered equipment for use in the skills lab, as well as textbooks and computing equipment for use by students. UNFPA also provides scholarships for student midwives.

Comoros – Réhema's story

In-service training on EmONC in Comoros

Réhema Loufti is a midwife from Comoros who benefited from in-service training on EmONC, supported by UNFPA. Applying the life-saving skills she learned on the course, she was able to contribute to reducing the mortality and morbidity of women and newborns: "The knowledge and skills acquired during this training helped me to better manage pregnancies and their complications. Right after the training, when I went back to my workplace at the Hombo Hospital, I had to take care of a woman with postpartum haemorrhage, and I am thankful because due to the acquired knowledge and skills from the training, I was able to save her life by stabilizing the woman before calling on the doctor for help."

Rwanda – Helen's story

Midwife Helen works at the university teaching hospital in Kigali. She describes how in-service training, including under the Helping Mothers Survive and Helping Babies Survive initiative, helped her to acquire clinical EmONC skills. She says: "These courses helped me in the skill of helping a baby breathe within the first golden minute." She remembers a woman giving birth for the fifth time: none of her previous pregnancies had resulted in a living child. During labour the foetal heart rate had dropped suddenly, and the whole team was worried because of the woman's obstetric history – they feared this baby too would not live. After the birth, the baby was very listless and had an Apgar score of 4/10. Helen provided newborn life support according to the guidance provided in her training. After one hour the newborn was breastfeeding and all vital signs were in the normal range.

Investments in midwifery in the region

SoWMy 2021 recommended that, for midwives to achieve their potential, there should be investment in four areas: (i) health workforce planning, management and regulation, and the work environment, (ii) high-quality education and training of midwives, (iii) midwife-led improvements to SRMNAH service delivery and (iv) midwifery leadership and governance (Figure 4.2).

Figure 4.2: Types of investment needed for midwifery

Source: SoWMy 2021. [18]

Bold Investments are needed

For midwives to achieve their potential SoWMy 2021 calls for greater investment in four **KEY AREAS**:

* Health workforce planning, management and regulation and in the work environment
* Education and training
* Service delivery; and
* Leadership and governance.

These investments should be considered at country, regional and global levels by governments, policy-makers, regulatory authorities, education institutions, professional associations, international organizations, global partnerships, donor agencies, civil society organizations and researchers.

The need invest in the production and deployment of SRMNAH workers is not confined to countries with a needs-based shortage. Many countries, including some high-income countries, are forecast to have insufficient SRMNAH workers to meet demand by 2030.

Box 4.3 shows examples from the ESA region of investments in the working environment for midwives, and how these have supported midwives to bring about improved outcomes for women and newborns.

Investments in the working environment for midwives in Madagascar and Tanzania

Madagascar – Judith's story

A well-functioning operating theatre is important to address emergency obstetrical complications. Judith is a midwife in Madagascar, and she describes the improved working conditions of the theatre at Ambovombe hospital, thanks to the support of UNFPA and the Japanese government: "Our job is not always easy as we meet many obstetric complications. We are fortunate that our hospital has received a donation of solar energy, and now our theatre operates without electricity outages as we used to have before".

Tanzania – Lusekelo's story

Nine health facilities in Mwanga have been renovated and equipped to provide comprehensive SRMNAH services, including emergency newborn care. Mwanga Dispensary was one of these health facilities identified for renovations by UNFPA and regional and local government in 2018 under the Ujana Wangu Nguvu Yangu (My Youth, My Power) project funded by the Government of Ireland.

Midwife Lusekelo works at Mwanga Dispensary. Prior to the renovations Lusekelo reveals how his job was challenging: "The working area used to be very busy and congested, we didn't have the right equipment and there wasn't enough space or any privacy – it didn't bring me any joy at work."

The number of pregnant women delivering at Mwanga Dispensary has increased since the renovations, and there are now around 40 births per month; the number previously hovered around 20. Lusekelo is proud to report that "Women have confidence and trust in our services since we have the equipment and supplies, and their privacy is guaranteed".

The analysis in Chapter 3 highlights several areas of concern in relation to midwifery education in the region. Box 4.4 shows examples from the ESA region of investments in midwife education and training, and how this has contributed to improving the skills and confidence of newly qualified midwives.

Box 4.4: Investments in midwife education in Mozambique and Zambia

Equipping student midwives with knowledge, skills and attitudes builds their autonomy and confidence to provide high-quality SRMNAH services to the community. UNFPA contributes by providing scholarships to student midwives.

Mozambique – Rosa's story

Group of students at the Training Institute Tete province, Mozambique. ©UNFPA Mozambique

Rosa was educated at Tete Institute in Mozambique. She started her career as a cook, but she decided to pursue her dream to become a maternal and child health nurse in 2008, at the age of 49. She describes how her dream was always to work directly with pregnant women and newborns: "I was not worried or anxious when I began my training because this was always my dream, I knew it was what I was meant to do".

Effective midwifery education includes plenty of opportunities to practise hands-on skills. Rosa credits a lot of her confidence and competencies to the visiting Cuban nurses who taught her valuable lessons e.g. about incubation of premature newborns, newborn resuscitation and kangaroo mother care. The Tete Institute also received lifelike mannequins to practise their skills: *"Because of our work with the mannequins, I knew what to do in real life*. We were able to get a lot of practise with the mannequins, so we know what to expect at the health facilities," explains Rosa.

Zambia – the stories of Gift and Michelle

Whilst noting the valuable skills and enriching learning experience, student midwives Gift and Michelle from Lewanika College in Zambia share some of the challenges faced by many students pursuing a nursing and midwifery qualification.

Gift says: "Our learning at Lewanika College of Nursing and Midwifery has been fascinating from the start. We have good tutors who guide us through the theoretical aspects of nursing and midwifery, while our clinical instructors equip us with practical clinical experience in a well-equipped and conducive skills lab. I am able to diagnose a complication and make a decision on time to save a life".

"Availability of student accommodation, as well as financial support for student midwives is limited. This becomes very challenging for many students who come from under-privileged families, as well as those from out of town." says Michelle.

Recommendations for advancing midwifery in the region

The data from this report and the global SoWMy 2021 report should be used to highlight the strengths, gaps and challenges affecting the midwifery workforce in the ESA region, and to encourage further investment in midwives and midwifery to address the gaps and challenges, in five main areas:

1. Strengthening data systems and addressing the shortage of midwives

The main issue facing the region is a pervasive shortage of SRMNAH workers, including a shortage of almost 300,000 midwives. Current rates of SRMNAH worker production, combined with population growth rates, mean that the shortage will improve only slightly by 2030 unless significant additional investments are made. These should focus on increased production, coupled with demand creation, to ensure that the additional midwives can be absorbed into the workforce and enabled to take the lead on SRMNAH care for the vast majority of women and girls who have uncomplicated pregnancies. This may require advocacy about the return on investment in midwives specifically, using the extensive body of evidence available on this topic.

In many countries, the provision of data for this type of report is a major challenge, due to weak health workforce data systems. High-quality data is essential for workforce planning to address the identified shortages, so investment is needed in creating health workforce data systems where these do not exist, and strengthening them where they do exist e.g. to ensure full coverage, or make a distinction between midwives and nurses, or include indicators of accessibility and quality as well as availability of SRMNAH workers.

2. Strengthening quality of midwifery care, including education and training

At the same time as addressing the shortage, it is essential to ensure that midwives are educated, equipped and enabled to provide high-quality and respectful care according to global standards. This applies to all countries, whether or not they have a major midwife shortage, even more so if they rely heavily on associate professional midwives to provide SRMNAH care or if the workforce includes nurse-midwives who spend only a small proportion of their time on SRMNAH and therefore may find it difficult to maintain their midwifery skills.

In many ESA countries, the data indicate shortcomings in the quality of midwifery education and training, such as low-level qualifications, outdated curricula, insufficient faculty, lack of opportunity for clinical practice before graduation and inadequate CPD programmes. Stronger midwifery departments in universities are needed, to ensure that midwives receive the best possible education and can take the lead on research. The introduction or strengthening of education accreditation systems is recommended. An institutionalized system of regular curriculum reviews would help to ensure that curricula are up-to-date and aligned with global recommendations, including on quality of care and respectful maternity care.

In addition, many countries operate multiple midwifery education pathways, which can create confusion and lack of clarity about roles and career pathways. It also makes regulation and quality assurance of education programmes more complicated. Education regulators (with support if needed) should work towards harmonized education curricula across institutions, aligned with global competency-based standards. This will ensure that midwives are educated to meet population need and, where appropriate, rationalize the number of programmes available in the country.

3. Encouraging interdisciplinary collaboration in SRMNAH care

Although the evidence on the benefits of midwife-led care is strong and compelling, it must be acknowledged that midwives can only reach their full potential to improve SRMNAH outcomes if they are working within a multidisciplinary team and a functioning referral system. At the same time as addressing the midwife shortage, action to address the shortage of obstetricians and gynaecologists in the region will help to support midwives to meet the need for SRMNAH care. Action to encourage more women to become SRMNAH doctors would contribute to women's empowerment and to the RMC agenda, ensuring that women are able to choose an SRMNAH care provider of a specific gender if they so wish.

Collaborative staffing models and platforms for interdisciplinary collaboration and cooperation will support better teamwork and health outcomes: professional associations could be tasked (and if necessary supported) to take the lead on making this happen. This process could begin at universities, which could provide opportunities for medical, midwifery and nursing students to learn collaboratively so that they are used to working in this way by the time they join the workforce.

4. Investing in midwife leaders and improved understanding of the value of midwifery

In many ESA countries there is no clear professional distinction between midwifery and nursing, and midwives are not always seen as responsible, accountable and autonomous practitioners. This affects government policy and professional and public attitudes to midwives and midwifery. It can also have a detrimental effect on quality of care, because in comparison to nurses, midwives have greater expertise in SRMNAH.

Possible solutions include greater investment in midwife leaders in roles where they can influence policy, and information campaigns which reach secondary school students who are considering higher education options. Raised awareness of the unique philosophy and benefits of midwifery will also help to protect against over-medicalization of childbirth. Although this appears not to be a major issue in the region, there are signs that it could become so in future e.g. high caesarean section rates among richer women and those giving birth in private facilities in some ESA countries. Action at this point in time will help the region to avoid an over-medicalized system and its inherent risks.

5. Contributing to the research agenda

Although this report represents a major step forward in the evidence base on midwifery in the ESA region, it highlights several evidence gaps. The following regional research agenda is recommended:

* Research on factors contributing to good interdisciplinary collaboration, and implementation research on methods to improve collaboration and cooperation between midwives and other SRMNAH professionals.
* Documentation of the impact of education accreditation systems and CPD systems on midwives' skills, competencies, confidence and professional respect.
* Assessment of the extent to which the design and implementation of midwife education curricula align with global recommendations for comprehensive sexual and reproductive health and rights (SRHR), and take WHO-guided quality standards and RMC into account.
* Improved understanding of the implications of having multiple midwife education pathways and what this means for competencies, deployment and career development of midwives.
* Generation of evidence about the impact of embedding WHO-guided quality standards and RMC in education and training curricula.
* Documentation of the impact of COVID-19 on various aspects of midwifery, including education, personal safety, midwives' family and community relationships and mental health.
* Documentation of the impact of having midwives in leadership positions at different levels of the health system.

5

Country profiles

Note to designer – insert mini-table of contents here:

How to use the country profiles

The country profiles prepared for this report are designed to prompt and inform policy discussions on how the education, composition, deployment and working environment of the SRMNAH workforce impacts on the delivery of SRMNAH services for all women, newborns and adolescents.

The country profiles are an innovative mix of the data submitted to the various data sources, and projections for the period leading to 2030. The projections aim to inform policy dialogue and decision-making within countries. They are, of course, sensitive to the data and assumptions that inform them and are limited in their context-specificity by the use of standard, evidence-based parameters (details in the SoWMy 2021 Webappendix 3 and the Technical Annex to this report). They should therefore be treated, not as fact sheets, but as a tool to review and improve data quality and to inform discussions of the potential impact of different workforce planning strategies. They may also enable the identification of future analysis and research needed at national and sub-national levels.

The estimates shown in the country profile were those available in mid-2021. More recent updates to these data sources are not captured in the country profiles. The code "nr" stands for "not reported" i.e. the cited data source includes no estimate for that country.

1. Key SRMNAH indicators (page 1, top section)

This section illustrates the country context using key SRMNAH indicators. Table 5.1 shows the data sources used for these indicators. Some countries prefer to use national data sources for these indicators, but global sources have been used to ensure that comparable methods were applied for all countries.

Table 5.1: Data sources used for key SRMNAH indicators in the country profiles

Indicator(s)	Data source
Estimated population; women of reproductive age; adolescents, total fertility rate; live births	UN Department of Economic and Social Affairs (DESA) World Population Prospects 2019 revision
Pregnancies	Live births as above, with a multiplier to account for stillbirths, spontaneous abortions and inducted abortions based on estimates made by the Guttmacher Institute[7] and used in Tatem et al. 2014
Adolescent birth rate	WHO Global Health Observatory data repository
Maternal mortality ratio	WHO, UNICEF, UNFPA, World Bank Group and UN Population Division, 2019
Neonatal mortality rate; stillbirth rate	UN Inter-Agency Group for Child Mortality estimation, 2020
Births attended by skilled health personnel	SDG indicator database
Modern contraceptive prevalence rate; unmet need for family planning	UN DESA estimates and projections of family planning indicators, 2020
Coverage for 4+ antenatal care visits; Caesarean section rate	UNICEF Maternal and newborn health coverage

Note: The estimates shown in the country profiles were current when they were prepared in late 2021.

2. Full SRMNAH workforce availability (page 1, middle section)

The first two columns in this table in the country profile show the best estimate for the number of health workers, for each occupation considered to be part of the SRMNAH workforce. Numbers **in bold** indicate validated data submitted by the national focal point to the WHO National Health Workforce Accounts (NHWA) (as at December 2020; if more recent data have since been entered in NHWA, these are not shown).

Numbers which are not in bold are updates or clarifications provided by the UNFPA country office as part of the preparation for this report. The occupations are defined in the Technical Annex to this report.

Individual countries may have other occupations working in SRMNAH care. The country profile does not take these other occupations into account, and the analysis should be interpreted with this in mind.

For each occupation, the headcount and the year to which the headcount applies are shown. If a country provided headcount data for more than one year, only the most recent year is shown. The code "nr" means that the country has reported no data to NHWA for that occupation since the SoWMy 2014 report and has not been able to provide an update for this report. It is important to establish whether this is because the occupation does not exist in the country, or because no headcount data were available. If the latter, plans should be made to improve data availability for NHWA.

The "total SRMNAH workforce" number at the bottom of the table is the sum of the headcounts for individual occupations. If headcount data are missing for one or more occupations, this may be because that occupation does not exist

7 Guttmacher Institute, 16 February 2014, tabulations of data for: Singh S, Darroch JE and Ashford LS. Adding it up: the costs and benefits of investing in sexual and reproductive health. New York: Guttmacher Institute; 2014

in the country. Alternatively, it may be because headcount numbers were not provided to NHWA or through the update process for this report, in which case the total will underrepresent the size of the SRMNAH workforce.

The "percentage of time on SRMNAH" column shows estimates of the proportion of clinical time each occupation group spends on SRMNAH interventions (details in the Technical Annex to this report). Within an occupation group there will be considerable variation: some individual nurses or doctors may have a specialist SRMNAH role, others may spend no time on SRMNAH. The percentage represents an average across all individuals within an occupation group. These estimates were based on expert opinion and previous surveys and are the same as used for the global SoWMy 2021 report except for one occupation (general medical practitioners – see Technical Annex). The estimates may not accurately reflect the reality in every country. If the percentage is judged to be much too high or much too low in a specific country context, the projections (Sections 3 and 6 below) should be interpreted with this in mind. The code "na" (not applicable) signifies that there are no headcounts for that occupation.

The "Dedicated SRMNAH Equivalent (DSE)" column is the result of multiplying the headcount by the percentage time spent on SRMNAH. It is similar to a "full-time equivalent" worker and takes into account that some occupation groups do not spend all their available clinical time on SRMNAH work. This is a better indication than the headcount of the workforce's availability for providing SRMNAH interventions.

The "graduates" columns show the number of graduates produced domestically for each occupation, as entered in NHWA. Again, if data were provided for more than one year, only the most recent year is shown. Relatively few countries were able to provide graduate numbers for all occupations, despite this indicator being among the most important drivers of future workforce availability. If these data are not shown in the country profile, national stakeholders are encouraged to work with the NHWA focal points to ensure better data availability in future. Some countries provided a graduate number but no headcount for an occupation. In such cases, the graduate numbers are still shown.

The "density per 10,000 population" column shows a ratio of the headcount to the country's 2020 population according to the United Nations' World Population Prospects 2019 revision. No adjustment was made if the headcount predated 2020. If the headcount in NHWA predates 2020 (as indicated in the first column) this density figure is probably inaccurate, especially if the population is growing quickly.

3. Projections to 2030, dedicated SRMNAH equivalent (DSE) workforce (page 1, bottom section)

This section compares estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030. The main chart shows all SRMNAH workers, while the chart above and to the right highlights SRMNAH doctors, as these numbers can be difficult to see on the main chart.

The "needed" numbers represent the number of DSEs necessary to achieve universal coverage of essential SRMNAH interventions in that year (details in the SoWMy 2021 Webappendix 3). This need is allocated to occupations according to the competencies they should have if educated and regulated according to global standards (details in the SoWMy 2021 Webappendix 6).

Thus, a "need" estimate may be shown for certain occupations, even if the country currently reports no headcount for this occupation. If a country does not recognize that occupation, it should consider how that need can be met by other occupation groups in the short term, and whether new occupation groups should be created to meet the need in the longer term.

The "actual" numbers for 2020 represent the number of DSEs currently available (see section 2 above).

If the "actual" bar is smaller than the "needed" bar for the baseline year, the country may have a needs-based shortage of SRMNAH workers. Alternatively, it might be due to missing data or to the need being met by other health occupations.

If the "actual" bar is the same size as or bigger than the "needed" bar, the country theoretically has sufficient SRMNAH workers to meet the need for the essential SRMNAH interventions which they are competent to deliver. However, in practice the need may not actually be met e.g. if the workforce is inequitably distributed or poorly educated, or if the occupation group's scope of practice is restricted. Furthermore, countries without a needs-based shortage may still have shortages according to other measures, such as demand for SRMNAH care.

The "forecast" numbers for 2025 and 2030 are estimates based on the current age structure of the workforce (if provided in NHWA or UNFPA country office updates for this report, otherwise regional averages were applied) and the rate of domestic production (details in SoWMy 2021 Webappendix 3: again estimates were used if no graduate numbers were provided). If the "forecast" bar is smaller than the "needed" bar, the country is projected to have a needs-based shortage in that year.

The differently coloured sections of the bars show how many DSEs of each type are within the overall total. It is important to look at these individual sections, as well as the overall height of each bar. If any individual segment of the "actual" or "forecast" bar is smaller than the corresponding segment of the "needed" bar, this may indicate an inappropriate or inefficient skill mix within the SRMNAH workforce.

4. Midwives demography (page 2, top section)

These two charts illustrate the age and gender distribution of the country's midwifery workforce. If the bar for those aged 55+ is larger than the bar for those aged 35 and under, the midwifery workforce is ageing and there is a risk of shortages within the next 10 years if production does not keep pace with retirements.

A midwifery workforce which is mostly female is not necessarily a problem, because many women prefer to receive care from a female midwife. However, a workforce which is 100 per cent female may indicate unnecessarily restrictive recruitment policies and/or practices. If a large proportion of midwifery workers are male, consideration should be given to whether the gender balance is appropriate.

The code "nr" means that the country did not provide age- and gender-disaggregated headcounts for midwives.

5. Enabling environment (page 2, left-hand section)

The data in this section come from the 2020 ICM member association survey and the 2018–2019 WHO SRMNCAH policy survey or UNFPA country office updates as submitted for this report.

The code "nr" denotes one of two things; either the country did not complete the survey or the survey was completed but this question was not answered. If the answer is in bold, then this indicates that the response was validated by the competent authority in the country as part of the SoWMy 2021 data collection process.

The code "na" means that this indicator is not applicable. For example, for a country without a direct-entry midwifery education programme, the question about the duration of the direct-entry programme is not applicable. The code "dk" means "don't know" i.e. those responsible for completing the survey did not know the answer to that question.

Policy environment

The first indicator in this section has three parts, one in each of the three columns on the right. The left-hand box shows whether there is a policy/guideline recommending midwife-led care in pregnancy, the middle box shows whether there is a policy/guideline recommending midwife-led care in childbirth and the right-hand box whether there is a policy/guideline recommending midwife-led care in the postnatal period. For each, there are three possible answers: "mother only" (if there is a guideline but it only applies to the mother), "mother and newborn" (if the guideline applies to both) or "no" (if there is no guideline at all). Ideally a country should not have "no" or "don't know" in any of the three boxes.

The second indicator has three numerical answers. The left-hand box shows the number of midwives in leadership roles in the national MoH, the middle box shows the number in sub-national MoH offices, and the right-hand box the number in health worker regulatory authorities. Small numbers, especially zeroes, may be cause for concern.

Education

The first indicator has a single "yes/no" answer. Ideally the answer should be "yes".

The second indicator has three "yes/no" answers. A "yes" in the left-hand box indicates that the country has at least one direct-entry midwifery education programme, a "yes" in the middle box that there is at least one post-nursing midwifery programme, under which a person graduates as a nurse (and in some cases must work for a period as a nurse) before continuing their midwifery studies. A "yes" in the right-hand box indicates that there is at least one integrated nursing and midwifery education programme i.e. graduates qualify in both nursing and midwifery simultaneously.

The third indicator shows the duration (in months) of the available education programme(s). If the country has more than one direct entry programme, the one with the longest duration is shown here, and details about the other programmes are given in the "explanatory notes" box on the bottom right of this page. The same applies if there is more than one post-nursing programme or more than one combined programme. The duration of the post-nursing programme does not include time spent qualifying as a nurse (usually three to four years) only the additional time spent on the midwifery programme. A direct-entry programme of less than 36 months' duration or a post-nursing programme of less than 18 months' duration may indicate the need for a curriculum review.

The fourth indicator shows the percentage of midwifery educators who are themselves qualified midwives. If this number is low, it may indicate a shortage of midwives who are competent to educate future midwives, and/or a restrictive policy about which types of health professional are competent to teach.

Regulation

The first three indicators have single "yes/no" answers. Ideally the answer should be "yes" for all three.

The fourth indicator has three "yes/no" answers. A "yes" in the left-hand box indicates that midwives must be licensed before they are permitted to practice; a "yes" in the middle box that midwives are required to renew their license periodically and a "yes" in the right-hand box that CPD is a requirement for license renewal. Ideally the answer should be "yes" for all three unless the country has an alternative system or mechanism to ensure continuing competence.

Association

This indicator has two "yes/no" answers. A "yes" in the left-band box indicates that the country has at least one professional association specifically for midwives. An association was classed as "specifically for midwives" if the association's name includes the word "midwife" and does not mention other health occupations. A "yes" in the right-hand box indicates that there is at least one other professional association which midwives are eligible to join. A "no" in both boxes indicates that the midwifery profession may not be well represented in the country.

6. Potential to meet need, 2015, 2021 and 2030 (page 2, right-hand section)

This section includes a needs-based summary estimate of SRMNAH workforce availability referred to as "potential met need" (PMN). The methods used to produce this estimate can be found in the SoWMy 2021 Webappendix 3 and the Technical Annex to this report. PMN is primarily a measure of the overall size and composition of the workforce: it does not account for workforce accessibility, acceptability or quality.

The three pictures of a baby each represent a year: the one on the left-hand side shows the PMN estimate from the previous regional report in 2017. This picture is labelled "nr" if the country has not participated in a SoWMy report before, or if they did participate but there was insufficient data to make a PMN estimate. The picture labelled "2021" shows the current PMN estimate; the one labelled "2030" shows a forecast for that year.

If the estimate is above 50 per cent, the baby is mostly coloured green, below 50 per cent the baby is mostly grey. Ideally the 2021 and 2030 pictures should both be completely green. A small amount of grey is usually an indication of insufficient specialist doctors or insufficient midwives, because a few essential interventions (most notably caesarean sections and breastfeeding counselling) can only be delivered by them. A large amount of grey usually indicates a needs-based shortage across many or all SRMNAH occupation groups.

The 2017 and 2021 estimates are not directly comparable, because the definition of need has been expanded since the 2017 report, which makes it more challenging to achieve a high PMN in 2021. However, the method used to produce the 2021 estimates is almost certainly a more accurate reflection of the workforce's potential to meet the need. The changed method means that: (1) a lower percentage in 2021 than in 2017 does not necessarily indicate that the workforce's potential to meet the need has decreased in the last four years, and (2) a large increase since 2017 is strong evidence that the country has significantly expanded the size or improved the composition of its SRMNAH workforce.

As noted in Section 3 above, a PMN estimate of 100 per cent means that all of the need could potentially be met – it does not necessarily mean that all of the need is actually met. For example, the available SRMNAH workers may not be easily accessible, or may provide poor quality care.

It could also be due to the way in which need is defined: in this report it is based on the clinical time required to deliver the minimum set of essential SRMNAH interventions (see SoWMy 2021 Webappendix 5). However, individual countries may use other definitions of need which are more challenging to achieve.

7. Need for SRMNAH services (page 2, lower right-hand section)

This section shows the need for SRMNAH services in the population for essential SRMNAH interventions, expressed as the working hours required per annum from the SRMNAH workforce. The total need is also presented in a pie chart, where it is split between five stages along the continuum of care from antenatal care, childbirth care, postnatal care, though other sexual and reproductive health (e.g. contraceptive services, detection and management of sexually transmitted infections), to adolescent sexual and reproductive health and development.

8. Explanatory notes (page 2, bottom right)

When submitting data, many countries provided additional explanatory information. Where applicable, that information is summarized here, to support understanding and interpretation of the country profiles.

Angola

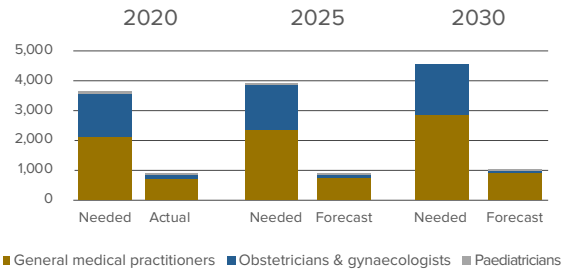
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	**2018**	**9,317**	60per cent	5,590	**2018**	**727**	2.8
Nursing associate professionals	**2018**	**3,237**	88per cent	2,849	**nr**	**nr**	1.0
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	2017	2,889	20per cent	578	**nr**	**nr**	0.9
Obstetricians / gynaecologists	2017	287	50per cent	143	**nr**	**nr**	0.1
Paediatricians	2017	257	15per cent	39	**nr**	**nr**	0.1
Total SRMNAH workforce		15,987		9,198			4.9

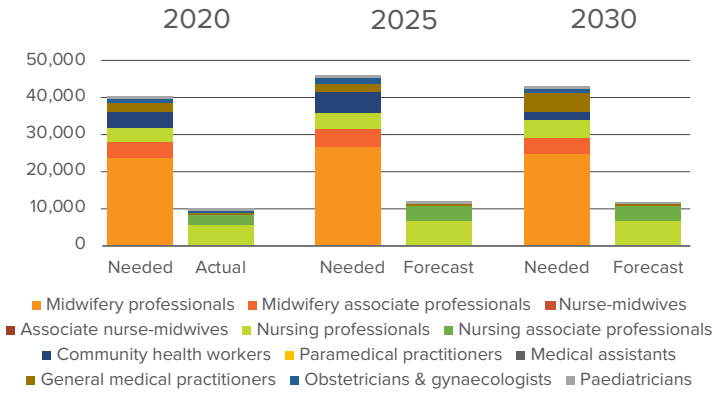
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).





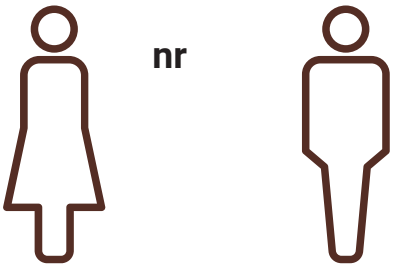
The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Angola

FULL SRMNAH WORKFORCE AVAILABILITY

Age Distribution

Gender Distribution



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment

National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **nr**	Sub-national MoH **nr**	Regulatory authorities **nr**
Education National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **nr**	Post nursing **nr**	Combined **nr**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **nr**	Post nursing **nr**	Combined **nr**
per cent of midwifery educators who are midwives		**nr**	
Regulation National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		**nr**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **nr**	Periodic relicensing **nr**	Continuing development requirement **nr**
Association Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **nr**	Other association open to midwives **nr**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

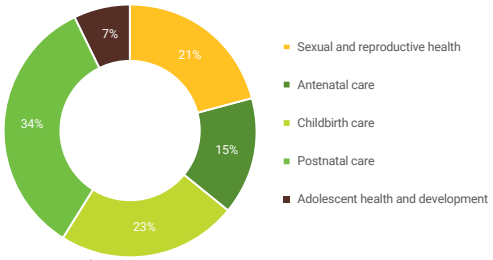
Potential to meet NEED =

Workforce time available

Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
16per cent	nr	nr

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for SMRNAH worker time to deliver essential interventions is **50** million hours per year

EXPLANATORY NOTES

Botswana

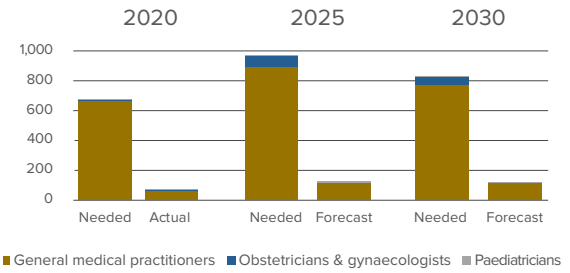
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**2018**	**3,800**	100per cent	3,800	**2015**	**47**	16.2
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	**2018**	**8,500**	30per cent	2,550	**2018**	**342**	36.1
Nursing associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Community health workers	**2018**	**716**	10per cent	72	**nr**	**nr**	3.0
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2016**	**308**	20per cent	62	**2015**	**47**	1.3
Obstetricians / gynaecologists	**2016**	**11**	50per cent	6	**nr**	**nr**	0.0
Paediatricians	2018	28	15per cent	4	**nr**	**nr**	0.1
Total SRMNAH workforce		13,363		6,493			56.8

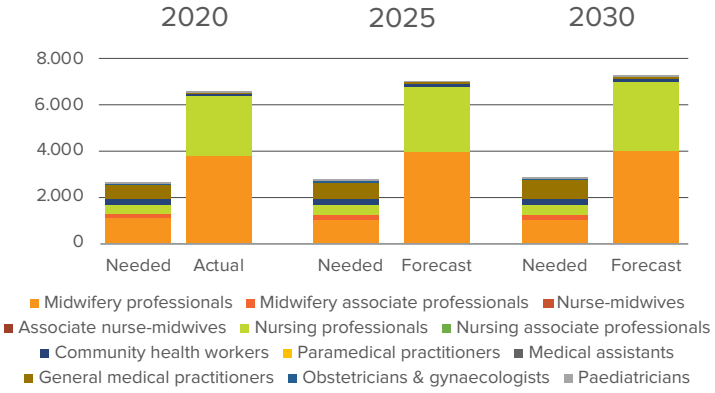
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).





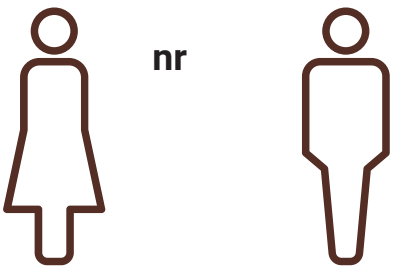
The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Botswana

FULL SRMNAH WORKFORCE AVAILABILITY

Age Distribution

Gender Distribution



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment

National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **nr**	Sub-national MoH **nr**	Regulatory authorities **nr**
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **nr**	Post nursing **nr**	Combined **nr**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **nr**	Post nursing **nr**	Combined **nr**
per cent of midwifery educators who are midwives		**nr**	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		**nr**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **nr**	Periodic relicensing **nr**	Continuing development requirement **nr**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **nr**	Other association open to midwives **nr**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

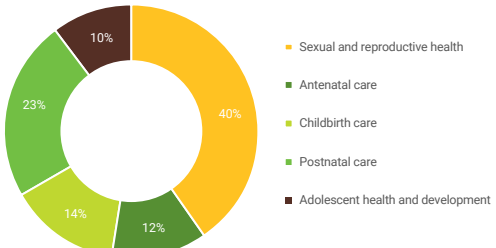
Potential to meet NEED =

Workforce time available

Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
78per cent	76per cent	76per cent

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for essential worker time to deliver essential interventions is **3** million hours per year

EXPLANATORY NOTES

Burundi

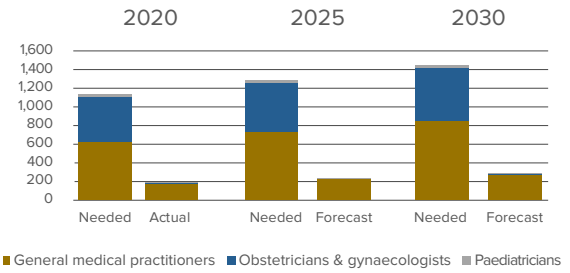
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**2019**	**124**	100per cent	124	**2015**	**45**	0.1
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	**2019**	**7,518**	44per cent	3,308	**nr**	**nr**	6.3
Nursing associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2017**	**889**	20per cent	178	**nr**	**nr**	0.7
Obstetricians / gynaecologists	**2018**	**20**	50per cent	10	**nr**	**nr**	0.0
Paediatricians	2017	27	15per cent	4	**nr**	**nr**	0.0
Total SRMNAH workforce		8,578		3,624			7.2

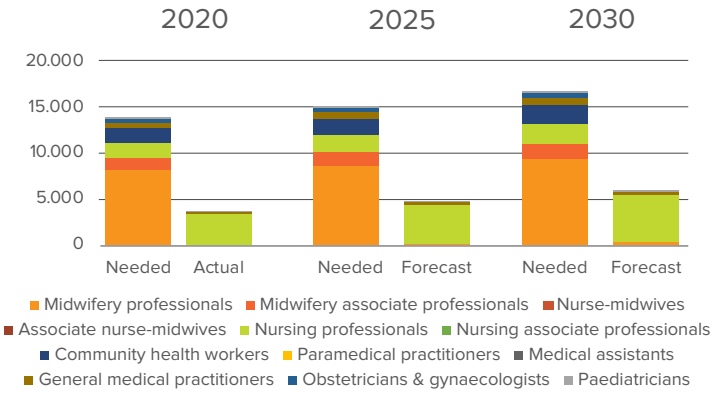
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

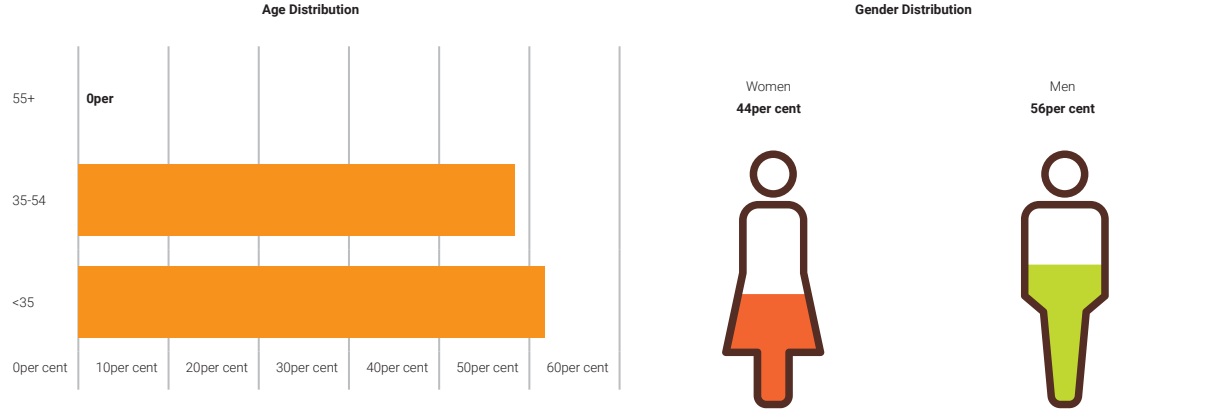




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Burundi

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

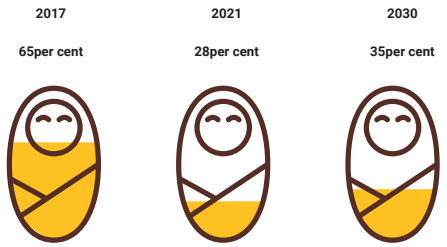
Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother only**	Childbirth **Mother only**	Postnatal **Mother only**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH 0	Sub-national MoH 0	Regulatory authorities 0
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **Yes**	Post nursing **Yes**	Combined **No**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **27**	Post nursing **27**	Combined **na**
per cent of midwifery educators who are midwives		**3**	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		No	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **No**	Periodic relicensing **na**	Continuing development requirement **na**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives No	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

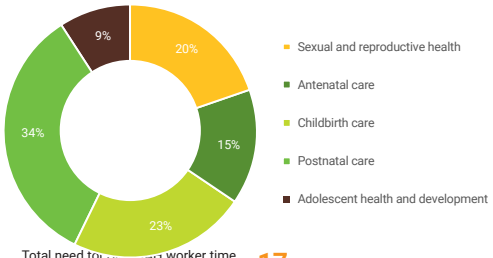
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions



PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for [illegible] worker time to deliver essential interventions is **17** million hours per year

EXPLANATORY NOTES

The country submitted an ICM survey, but the leadership and regulation sections were not validated so these data are not shown here.

Comoros

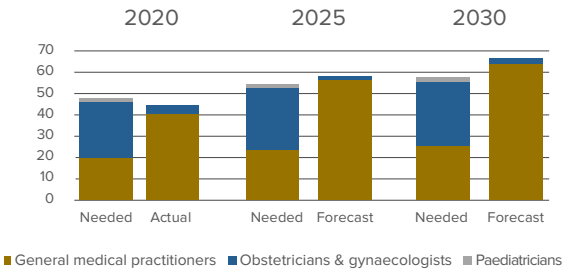
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**2016**	**475**	100per cent	475	**2015**	**21**	5.5
Midwifery associate professionals	**2016**	**25**	100per cent	25	**nr**	**nr**	0.3
Nurse-midwives	2020	0	na	0	**nr**	**nr**	nr
Associate nurse-midwives	2020	0	na	0	**nr**	**nr**	nr
Nursing professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2016**	**216**	20per cent	43	**nr**	**nr**	2.5
Obstetricians / gynaecologists	**2016**	**8**	50per cent	4	**nr**	**nr**	0.1
Paediatricians	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Total SRMNAH workforce		724		547			8.3

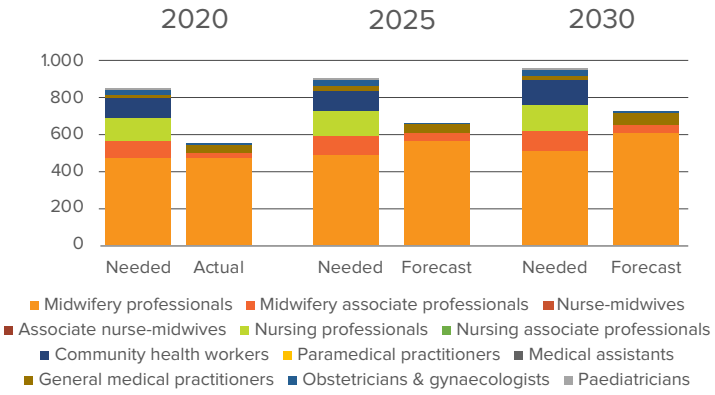
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

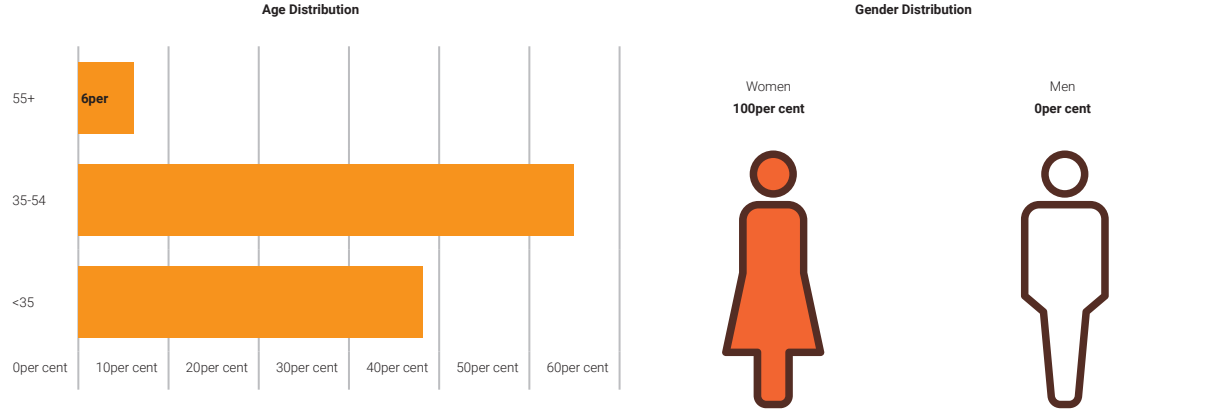




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Comoros

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment

National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy	Childbirth	Postnatal
	nr	**nr**	**nr**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH	Sub-national MoH	Regulatory authorities
	9	**12**	**2**

Education

National policy guideline on education of midwifery care providers based on ICM competencies?*		**nr**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry	Post nursing	Combined
	Yes	**No**	**No**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry	Post nursing	Combined
	27	**na**	**na**
per cent of midwifery educators who are midwives		**21**	

Regulation

National policy sets a competency framework for maternal and/or newborn care?*		**nr**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**nr**	
Regulatory system for midwifery practice?		**No**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory	Periodic relicensing	Continuing development requirement
	No	**na**	**na**

Association

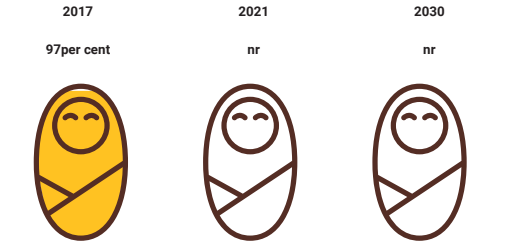
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives	Other association open to midwives
	Yes	**No**

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

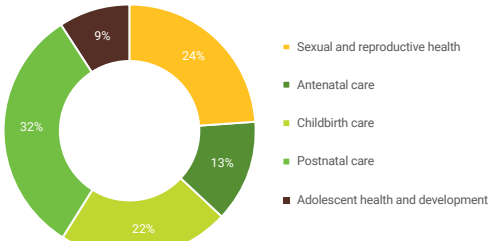
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions



PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for SRMNAH worker time to deliver essential interventions is **1** million hours per year

EXPLANATORY NOTES

There has been a recruitment freeze for the last five years, so no new midwives have joined the public sector workforce.

Democratic Republic of the Congo

FULL SRMNAH WORKFORCE AVAILABILITY

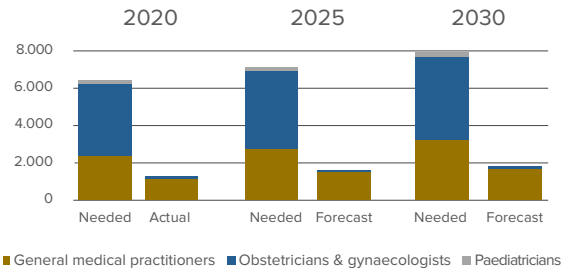
Occupation	Year	Headcount (A)	Percentage of time on SRMNAH (B)	Dedicated SRMNAH Equivalent (DSE) (A*B)	Graduates		Density per 10,000 population
					Year	Number	
Midwifery professionals	**2016**	**40**	100per cent	40	**2015**	**336**	0.0
Midwifery associate professionals	**2016**	**1,753**	100per cent	1,753	**nr**	**nr**	0.2
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	2018	67,173	44per cent	29,556	**nr**	**nr**	7.5
Nursing associate professionals	2018	26,153	50per cent	13,077	**nr**	**nr**	2.9
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2016**	**5,832**	20per cent	1,166	**nr**	**nr**	0.7
Obstetricians / gynaecologists	**2016**	**200**	50per cent	100	**nr**	**nr**	0.0
Paediatricians	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Total SRMNAH workforce		101,151		45,692			11.3

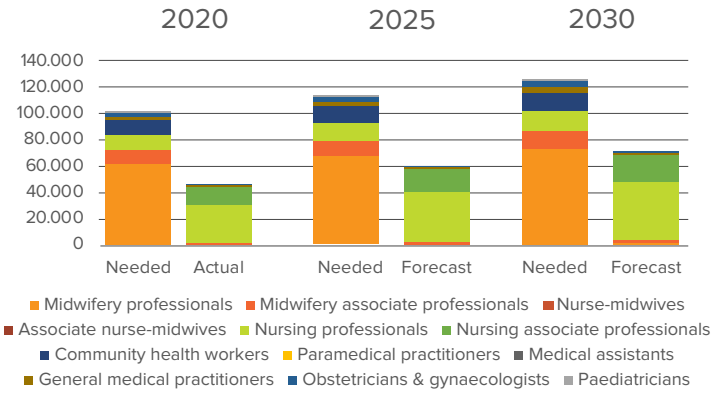
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

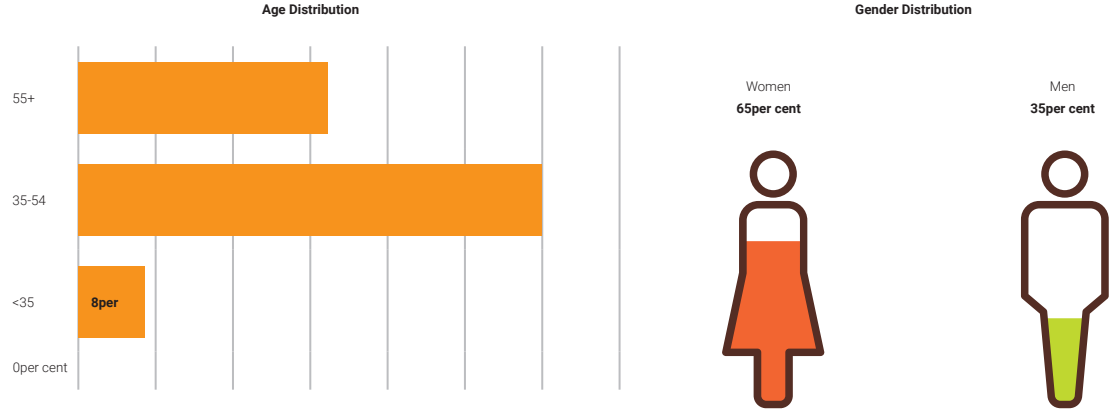




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Democratic Republic of the Congo

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH 0	Sub-national MoH dk	Regulatory authorities 1
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry Yes	Post nursing Yes	Combined Yes
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry 36	Post nursing 18	Combined 36
per cent of midwifery educators who are midwives		dk	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		No	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory No	Periodic relicensing na	Continuing development requirement na
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives Yes	Other association open to midwives **nr**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

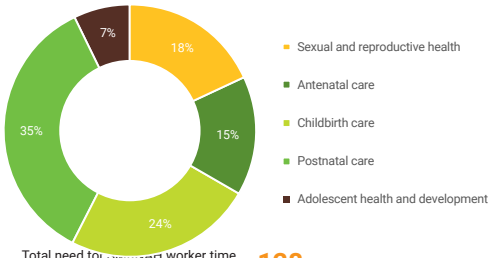
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
58per cent	48per cent	55per cent

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for SRMNAH worker time to deliver essential interventions is **128** million hours per year

EXPLANATORY NOTES

Eritrea

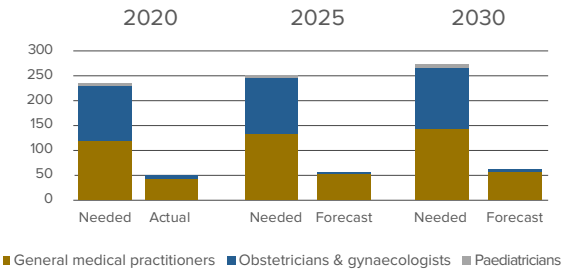
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**2016**	**376**	100per cent	376	**2015**	**15**	1.1
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	**2018**	**2,058**	44per cent	906	**2018**	**560**	5.8
Nursing associate professionals	**2018**	**2,913**	50per cent	1,457	**nr**	**nr**	8.2
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2016**	**212**	20per cent	42	**nr**	**nr**	0.6
Obstetricians / gynaecologists	**2016**	**11**	50per cent	6	**nr**	**nr**	0.0
Paediatricians	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Total SRMNAH workforce		**5,570**		2,786			15.7

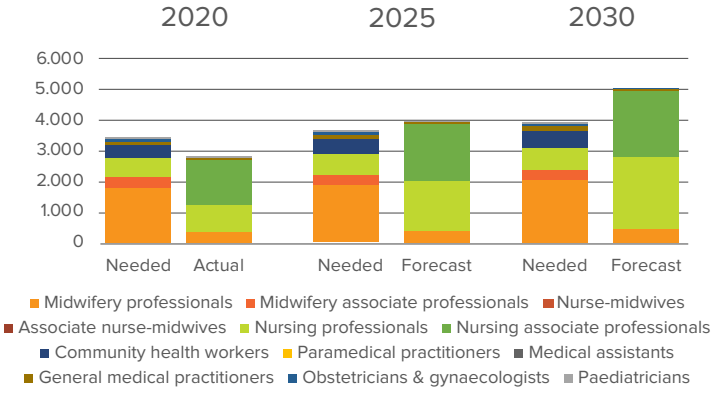
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).





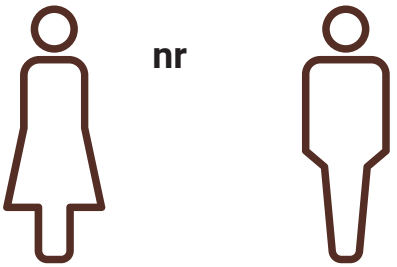
The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Eritrea

FULL SRMNAH WORKFORCE AVAILABILITY

Age Distribution

Gender Distribution



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment

National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH 7	Sub-national MoH 4	Regulatory authorities 0
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**No**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry No	Post nursing **nr**	Combined Yes
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry na	Post nursing **nr**	Combined **48**
per cent of midwifery educators who are midwives		100	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**No**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**No**	
Regulatory system for midwifery practice?		Yes	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory No	Periodic relicensing na	Continuing development requirement na
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **No**	Other association open to midwives **nr**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

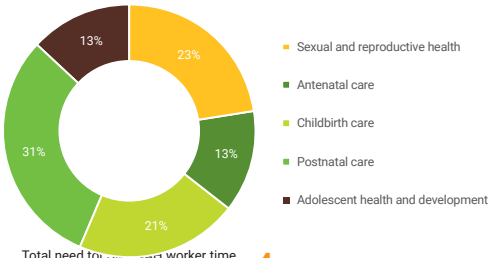
POTENTIAL MET NEED

Potential to meet NEED =

Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
49per cent	**62per cent**	**64per cent**

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for SRMNAH worker time to deliver essential interventions is **4** million hours per year

EXPLANATORY NOTES

The country submitted an ICM survey, but only the association section was validated, so only the association data are shown here.

Eswatini

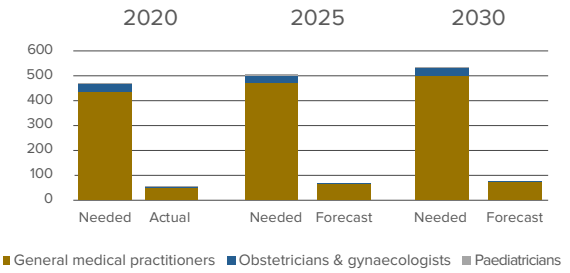
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	2018	1,376	100per cent	1,376	**nr**	**nr**	11.9
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	2018	2,301	60per cent	1,381	**2018**	**298**	19.8
Nursing associate professionals	**2018**	**1,029**	88per cent	906	**nr**	**nr**	8.9
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2016**	**259**	20per cent	52	**nr**	**nr**	2.2
Obstetricians / gynaecologists	**2016**	**6**	50per cent	3	**nr**	**nr**	0.1
Paediatricians	2016	4	15per cent	1	**nr**	**nr**	0.0
Total SRMNAH workforce		4,975		3,718			42.9

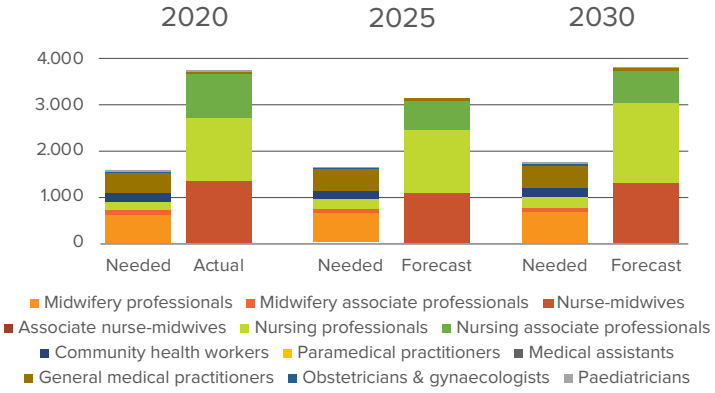
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

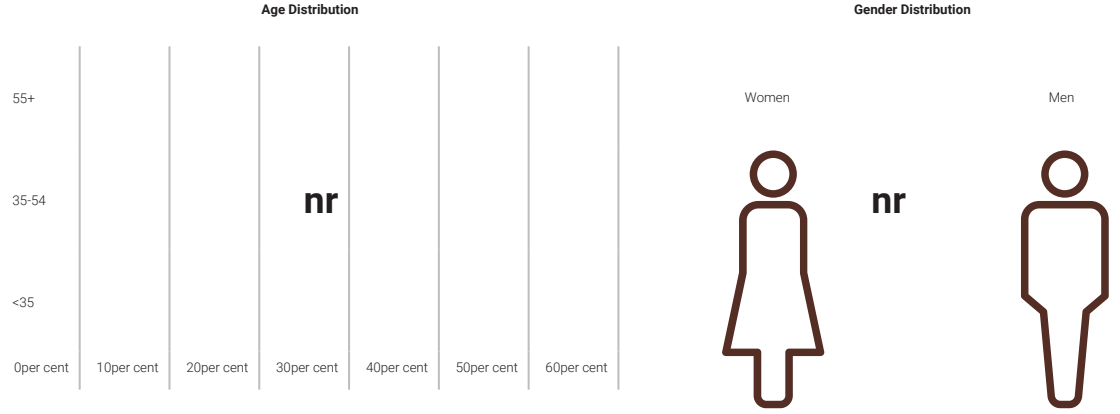




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Eswatini

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **3**	Sub-national MoH **13**	Regulatory authorities **3**
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **No**	Post nursing **Yes**	Combined **No**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **na**	Post nursing **12**	Combined **na**
per cent of midwifery educators who are midwives		**100**	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **Yes**	Periodic relicensing **Yes**	Continuing development requirement **Yes**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives **Yes**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

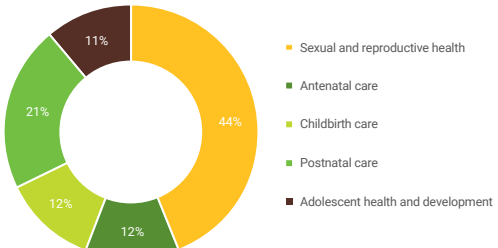
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
78per cent	**74per cent**	**73per cent**

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need f… worker time to deliver essential interventions is **2** million hours per year

EXPLANATORY NOTES

Although Eswatini reported no nurses with midwifery training in NHWA, in the East and Southern Africa regional SoWMy report in 2017 the country reported 1,376 nurse-midwives. The SoWMy 2021 analysis assumes that 1,376 of the 3,677 nursing professionals without midwifery training are in fact nurse-midwives.

There are two post-nursing midwife education programmes: (1) a 12-month Bachelor's in nursing with midwifery snd (2) a 12-month Post Diploma in midwifery.

Ethiopia

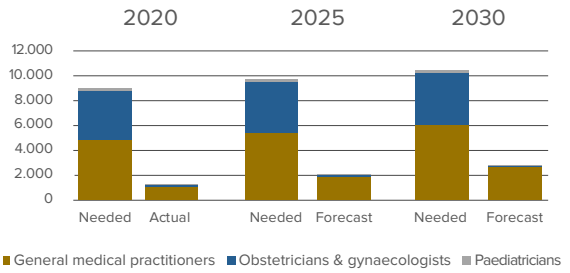
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**2018**	**16,159**	100per cent	16,159	**2015**	**2,106**	1.4
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	**2018**	**61,772**	44per cent	27,180	**nr**	**nr**	5.4
Nursing associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2018**	**5,867**	20per cent	1,173	**2015**	**1,376**	0.5
Obstetricians / gynaecologists	**2018**	**200**	50per cent	100	**nr**	**nr**	0.0
Paediatricians	2018	212	15per cent	32	**nr**	**nr**	0.0
Total SRMNAH workforce		84,210		44,644			7.3

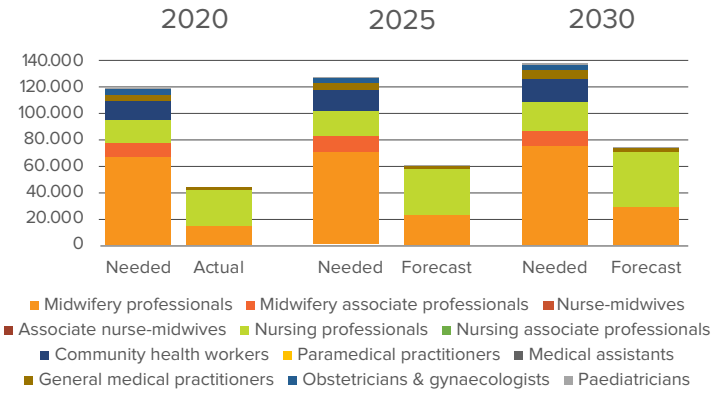
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

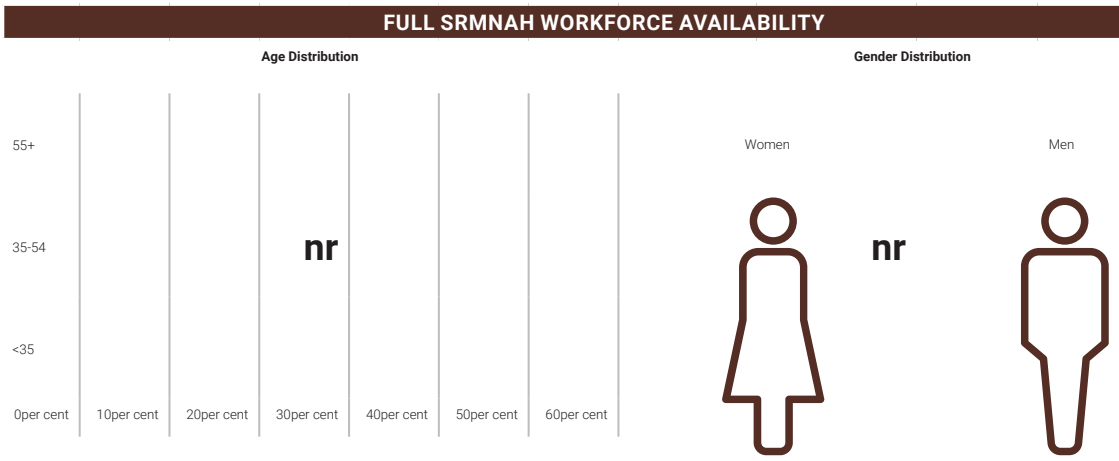




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Ethiopia

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH 6	Sub-national MoH 57	Regulatory authorities 1
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry Yes	Post nursing Yes	Combined No
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry 36	Post nursing 32	Combined na
per cent of midwifery educators who are midwives		100	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		Yes	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory Yes	Periodic relicensing Yes	Continuing development requirement Yes
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives **No**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

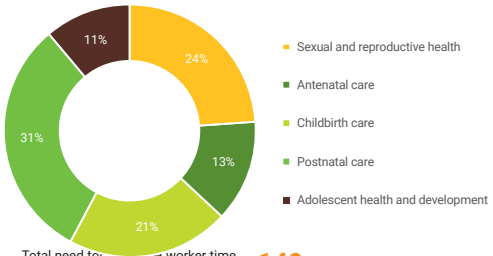
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
62per cent	**40per cent**	**54per cent**

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for SRMNAH worker time to deliver essential interventions is **149** million hours per year

EXPLANATORY NOTES

The Federal Ministry of Health has ceased to recruit midwives centrally: they must apply locally when vacancies are advertised.

The country submitted an ICM survey, but only the association section was validated, so only the association data are shown here.

Kenya

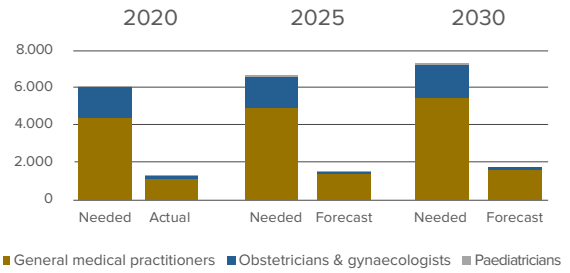
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	2020	1,293	100per cent	1,293	**2015**	**136**	0.2
Midwifery associate professionals	2020	1,380	100per cent	1,380	**nr**	**nr**	0.3
Nurse-midwives	2020	38,113	60per cent	22,868	**nr**	**nr**	7.1
Associate nurse-midwives	2020	0	na	0	**nr**	**nr**	nr
Nursing professionals	2020	8,877	44per cent	3,906	**2017**	**7,120**	1.7
Nursing associate professionals	2020	14,010	50per cent	7,005	**nr**	**nr**	2.6
Community health workers	**2018**	**58,079**	10per cent	5,808	**nr**	**nr**	10.8
Paramedical practitioners	**2018**	**21,942**	30per cent	6,583	**nr**	**nr**	4.1
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2018**	**5,602**	20per cent	1,120	**2015**	**520**	1.0
Obstetricians / gynaecologists	**2018**	**400**	50per cent	200	**nr**	**nr**	0.1
Paediatricians	**2018**	**339**	15per cent	51	**nr**	**nr**	0.1
Total SRMNAH workforce		150,035		50,213			27.9

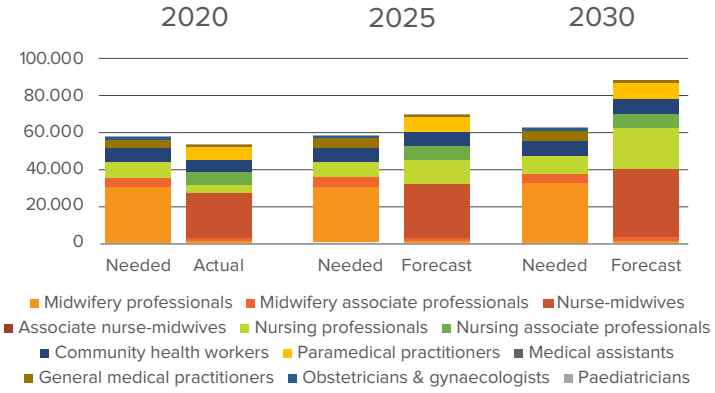
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

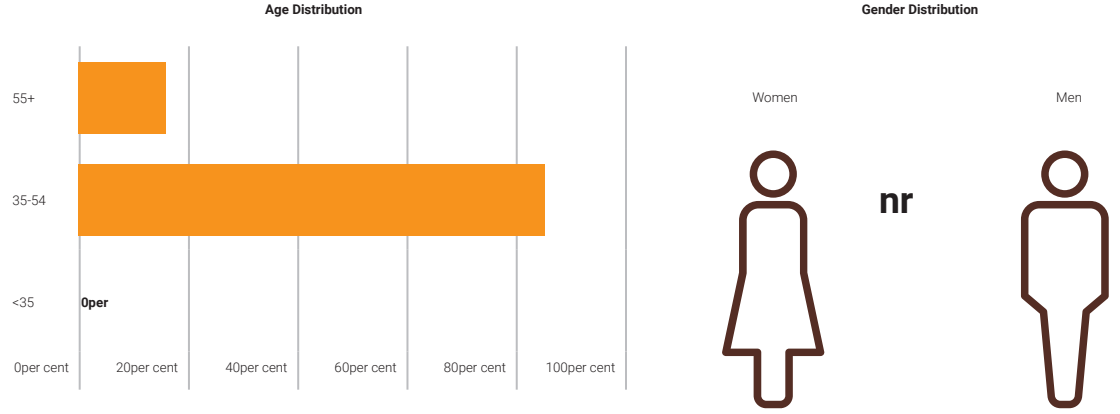




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Kenya

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment

National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **1**	Sub-national MoH **337**	Regulatory authorities **3**
Education National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **No**	Post nursing **Yes**	Combined **No**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **na**	Post nursing 24	Combined **na**
per cent of midwifery educators who are midwives		**15**	
Regulation National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **Yes**	Periodic relicensing **Yes**	Continuing development requirement **Yes**
Association Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives **Yes**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

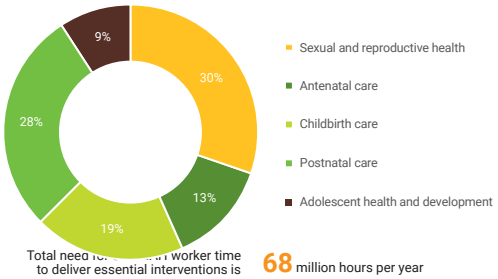
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
97per cent	**88per cent**	**93per cent**

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need f… worker time to deliver essential interventions is **68** million hours per year

EXPLANATORY NOTES

There are two post-nursing midwife education programmes: (1) a 36-month Bachelor's programme in midwifery and (2) an 18-month programme to qualify as a Registered Nurse/Midwife.

Lesotho

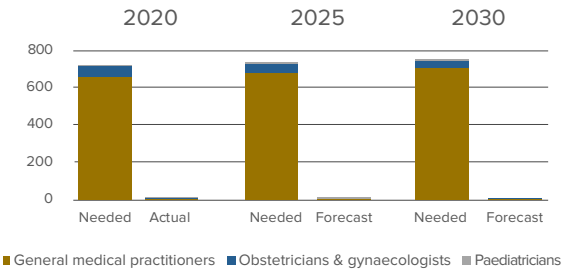
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	2020	0	na	0	**nr**	**nr**	nr
Midwifery associate professionals	2020	0	na	0	**nr**	**nr**	nr
Nurse-midwives	2020	5,434	100per cent	5,434	**nr**	**nr**	25.4
Associate nurse-midwives	2020	0	na	0	**nr**	**nr**	nr
Nursing professionals	**2018**	**4,686**	60per cent	2,812	**2018**	**304**	21.9
Nursing associate professionals	**2018**	**2,180**	88per cent	1,918	**nr**	**nr**	10.2
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	2020	38	20per cent	8	**nr**	**nr**	0.2
Obstetricians / gynaecologists	2020	4	50per cent	2	**nr**	**nr**	0.0
Paediatricians	2020	3	15per cent	0	**nr**	**nr**	0.0
Total SRMNAH workforce		12,345		10,174			57.6

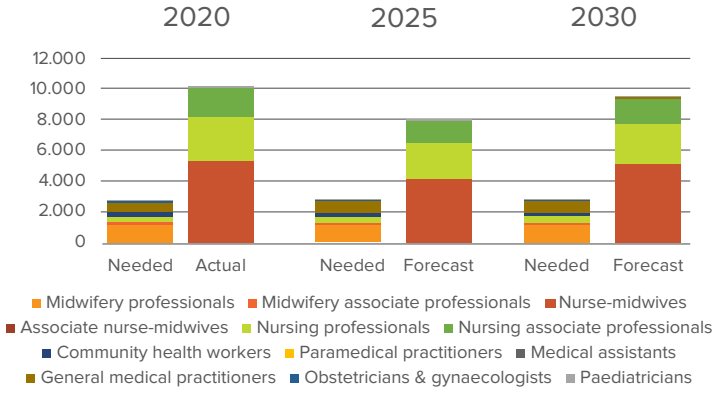
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

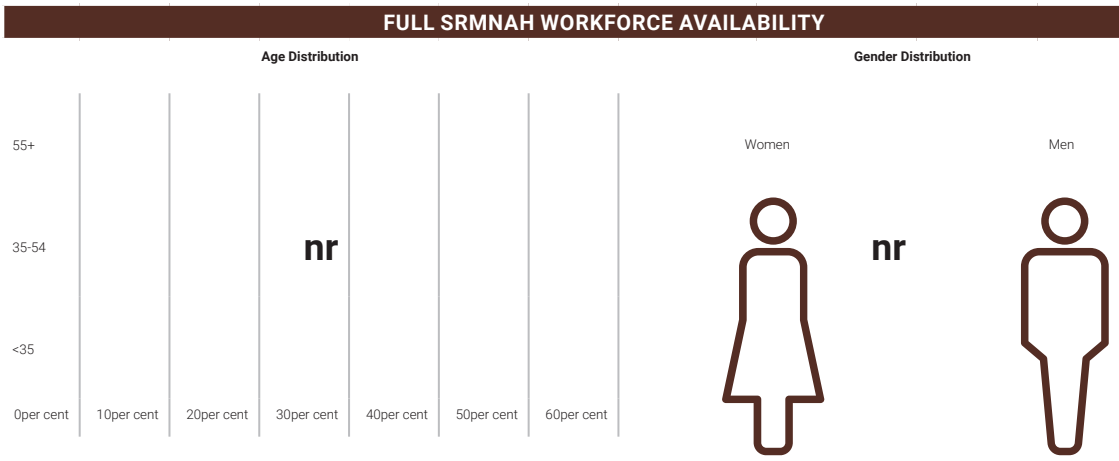




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Lesotho

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH 19	Sub-national MoH 36	Regulatory authorities 13
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry No	Post nursing Yes	Combined No
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry na	Post nursing 12	Combined na
per cent of midwifery educators who are midwives		100	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**No**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		Yes	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory No	Periodic relicensing na	Continuing development requirement na
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives Yes	Other association open to midwives **nr**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

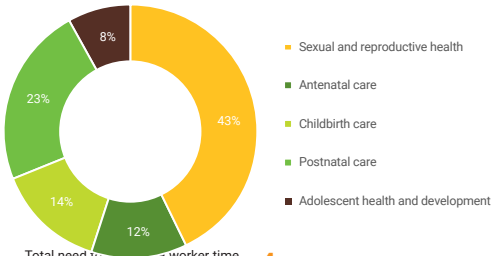
POTENTIAL MET NEED

Potential to meet NEED =

Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
nr	74per cent	73per cent

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for SRMNAH worker time to deliver essential interventions is **4** million hours per year

EXPLANATORY NOTES

Madagascar

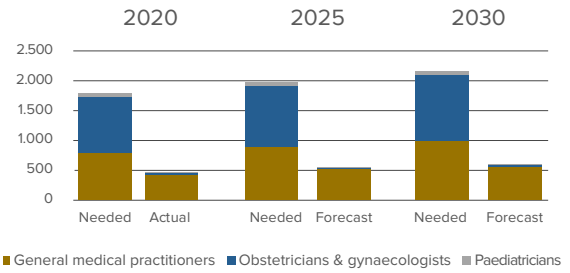
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**2018**	**3,994**	100per cent	3,,994	**2015**	**4**	1.4
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	**nr**	**3,833**	44per cent	1,687	**2018**	**159**	1.4
Nursing associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2016**	**2,200**	20per cent	440	**2015**	**155**	0.8
Obstetricians / gynaecologists	**2016**	**35**	50per cent	18	**nr**	**nr**	0.0
Paediatricians	2014	108	15per cent	16	**nr**	**nr**	0.0
Total SRMNAH workforce		10,170		6,154			3.7

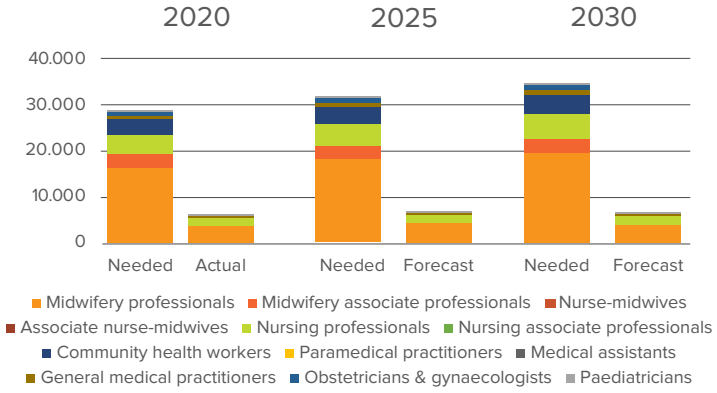
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

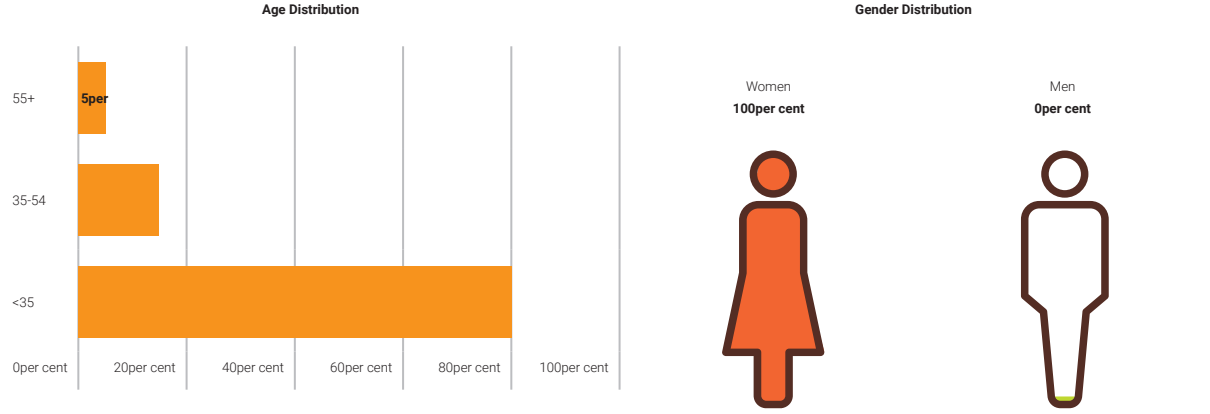




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Madagascar

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **1**	Sub-national MoH **0**	Regulatory authorities **0**
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **Yes**	Post nursing **No**	Combined **No**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **30**	Post nursing **na**	Combined **na**
per cent of midwifery educators who are midwives		**100**	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		dk	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **Yes**	Periodic relicensing **No**	Continuing development requirement **na**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives **Yes**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

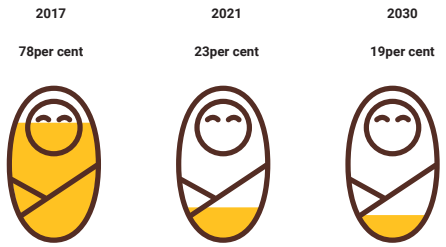
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

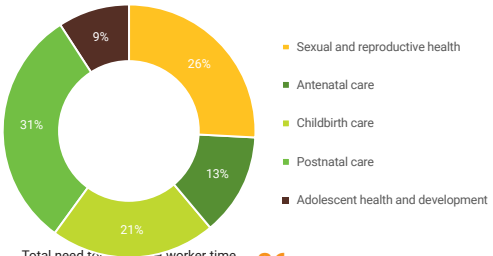
Potential to meet NEED =

Workforce time available

Workforce time needed for universal coverage of essential SRMNAH interventions



PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for SRMNAH worker time to deliver essential interventions is **36** million hours per year

EXPLANATORY NOTES

Malawi

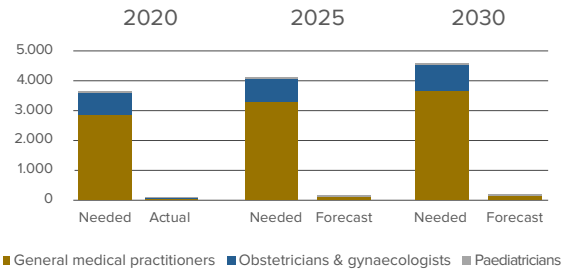
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	2020	20	100per cent	20	**2015**	**265**	0.0
Midwifery associate professionals	2020	0	na	0	**nr**	**nr**	nr
Nurse-midwives	2020	4,396	60per cent	2,638	**nr**	**nr**	2.3
Associate nurse-midwives	2020	9,344	60per cent	5,606	**nr**	**nr**	4.9
Nursing professionals	2020	1,578	44per cent	694	**2018**	**1,886**	0.8
Nursing associate professionals	2020	2,556	50per cent	1,278	**nr**	**nr**	1.3
Community health workers	**2018**	**9,928**	10per cent	993	**nr**	**nr**	5.2
Paramedical practitioners	**2016**	**1,159**	30per cent	348	**nr**	**nr**	0.6
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2016**	**255**	20per cent	51	**2015**	**63**	0.1
Obstetricians / gynaecologists	**2016**	**15**	50per cent	8	**nr**	**nr**	0.0
Paediatricians	2018	16	15per cent	2	**nr**	**nr**	0.0
Total SRMNAH workforce		29,267		11,638			15.3

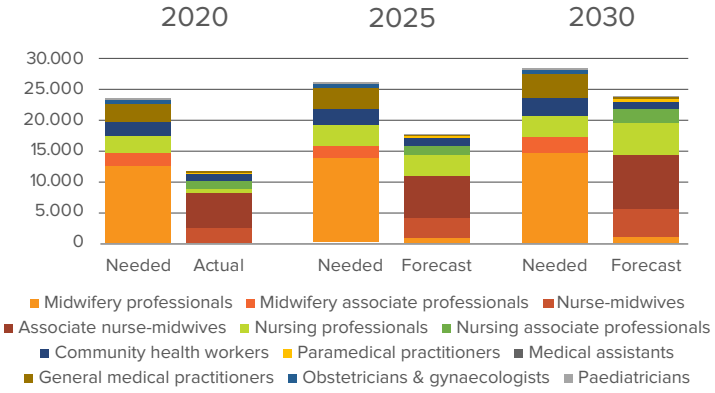
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

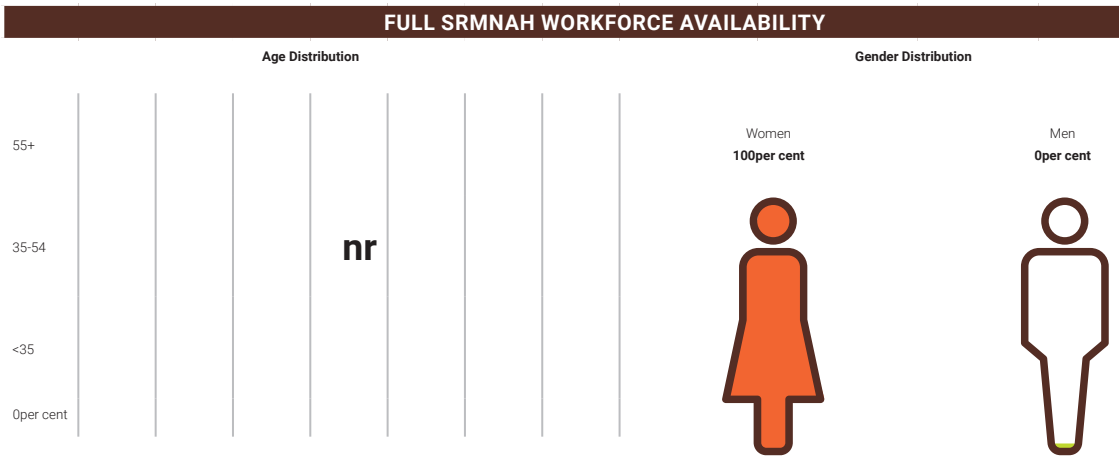




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Malawi

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **nr**	Childbirth **nr**	Postnatal **nr**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **21**	Sub-national MoH **101**	Regulatory authorities **7**
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**nr**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **Yes**	Post nursing **Yes**	Combined **No**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **48**	Post nursing **22**	Combined **na**
per cent of midwifery educators who are midwives		**80**	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**nr**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**nr**	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **Yes**	Periodic relicensing **Yes**	Continuing development requirement **Yes**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives **Yes**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

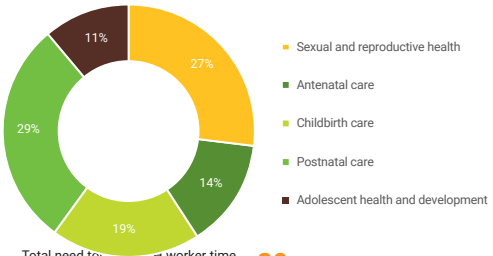
Potential to meet NEED =

Workforce time available

Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
39per cent	**45per cent**	**64per cent**

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for SRMNAH worker time to deliver essential interventions is **30** million hours per year

EXPLANATORY NOTES

There are 3 types of direct entry midwife education programmes: (1) a 18-month BSc midwifery programme, (2) a 36-month Diploma in Nursing/Midwifery Technician programme and (3) an 18-month Community Midwife Certificate programme. There are also 2 post-nursing midwife education programmes: (1) a 22-month BSc in nursing and (2) a 12-month University Certificate in midwifery.

Mauritius

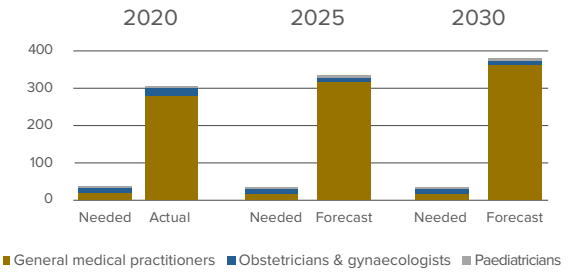
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	2020	20	100per cent	20	**nr**	**nr**	0.2
Midwifery associate professionals	2020	187	100per cent	187	**nr**	**nr**	1.5
Nurse-midwives	2020	0	na	0	**nr**	**nr**	nr
Associate nurse-midwives	2020	3,422	85per cent	2,909	**nr**	**nr**	26.9
Nursing professionals	2020	204	30per cent	61	**nr**	**nr**	1.6
Nursing associate professionals	2020	3,285	40per cent	1,314	**nr**	**nr**	25.8
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	2020	1,363	20per cent	273	**nr**	**nr**	10.7
Obstetricians / gynaecologists	2020	40	50per cent	20	**nr**	**nr**	0.3
Paediatricians	2020	42	15per cent	6	**nr**	**nr**	0.3
Total SRMNAH workforce		8,563		4,790			67.3

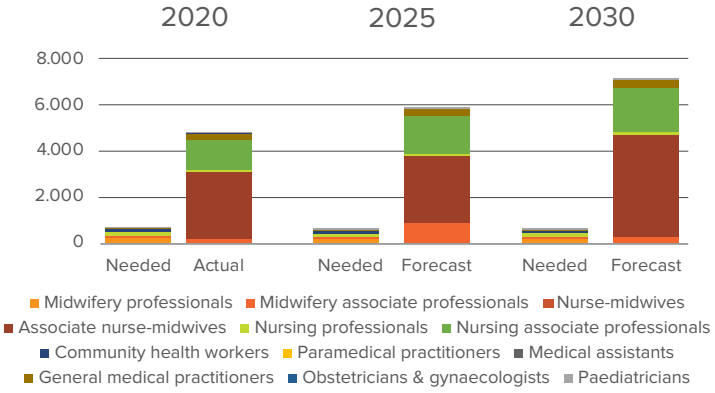
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

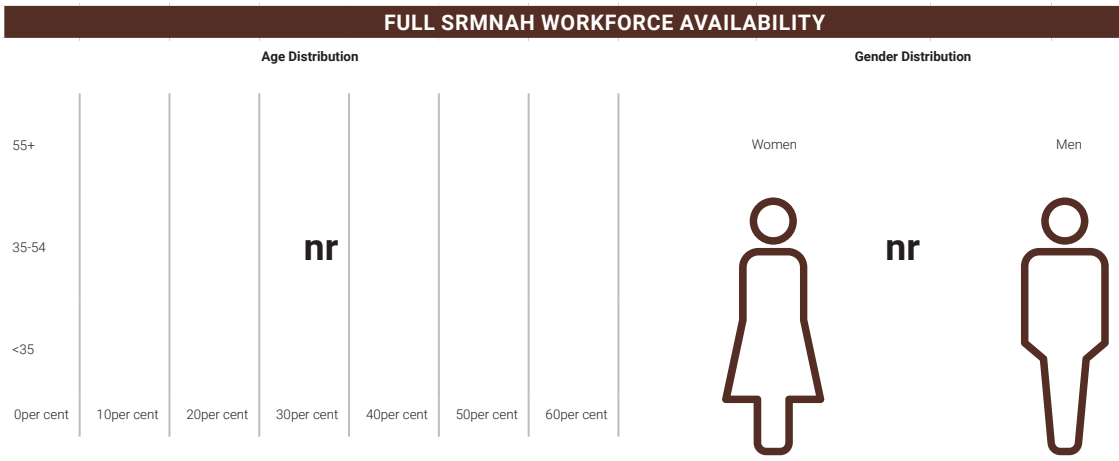




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Mauritius

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH 1	Sub-national MoH dk	Regulatory authorities 1
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**No**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry Yes	Post nursing No	Combined No
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry 24	Post nursing na	Combined na
per cent of midwifery educators who are midwives		dk	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**No**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**No**	
Regulatory system for midwifery practice?		Yes	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory Yes	Periodic relicensing Yes	Continuing development requirement No
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives Yes	Other association open to midwives **nr**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

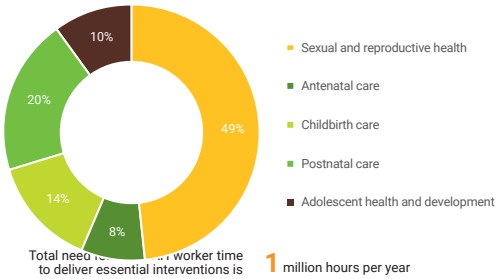
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
nr	99per cent	99per cent

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need f… worker time to deliver essential interventions is **1** million hours per year

EXPLANATORY NOTES

Mozambique

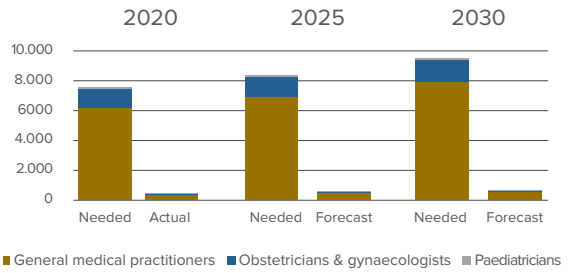
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**2019**	**5,889**	100per cent	5,889	**2019**	**382**	1.9
Midwifery associate professionals	**2019**	**286**	100per cent	286	**nr**	**nr**	0.1
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	**2019**	**7,802**	44per cent	3,433	**2019**	**87**	2.5
Nursing associate professionals	**2019**	**377**	50per cent	189	**nr**	**nr**	0.1
Community health workers	**2019**	**6,632**	10per cent	663	**nr**	**nr**	2.1
Paramedical practitioners	**2019**	**6,665**	30per cent	2,000	**nr**	**nr**	2.1
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2019**	**1,715**	20per cent	343	**2015**	**200**	0.5
Obstetricians / gynaecologists	**2019**	**76**	50per cent	38	**2019**	**1**	0.0
Paediatricians	**2019**	**66**	15per cent	10	**2019**	**3**	0.0
Total SRMNAH workforce		**29,508**		12,850			9.4

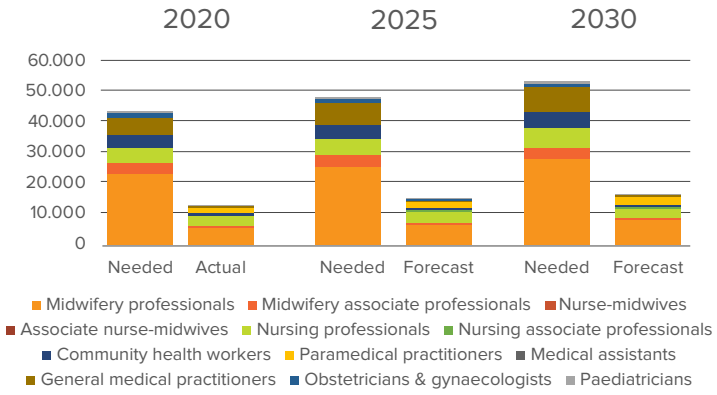
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

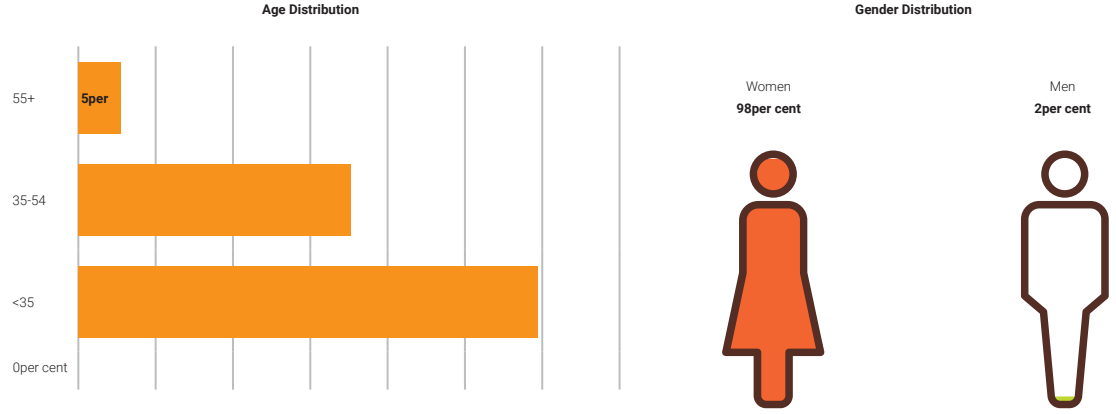




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Mozambique

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **dk**	Sub-national MoH **dk**	Regulatory authorities **dk**
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**No**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry No	Post nursing **nr**	Combined Yes
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry na	Post nursing **nr**	Combined 48
per cent of midwifery educators who are midwives		12	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**No**	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **No**	Periodic relicensing **No**	Continuing development requirement **na**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives **Yes**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

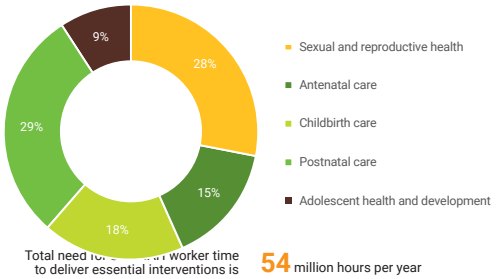
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
25per cent	**31per cent**	**31per cent**

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need f… worker time to deliver essential interventions is **54** million hours per year

EXPLANATORY NOTES

Mozambique has Maternal ans Child Nurses (MCHNs) who provide midwifery services. Currently there are three levels of MCHN: the basic MCHN is being upgraded to medium level. The basic level will then cease to exist.

The country submitted an ICM survey, but the education section was not validated so education data are not shown here.

Namibia

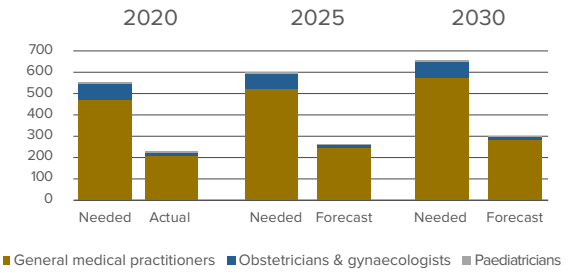
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	**2018**	**2,334**	30per cent	700	**2017**	**269**	9.2
Nursing associate professionals	**2018**	**2,450**	40per cent	980	**nr**	**nr**	9.6
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**2018**	**1,049**	30per cent	315	**nr**	**nr**	4.1
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2018**	**1,024**	20per cent	205	**nr**	**nr**	4.0
Obstetricians / gynaecologists	**2018**	**43**	50per cent	22	**nr**	**nr**	0.2
Paediatricians	**2018**	**38**	15per cent	6	**nr**	**nr**	0.1
Total SRMNAH workforce		**6,938**		2,227			27.3

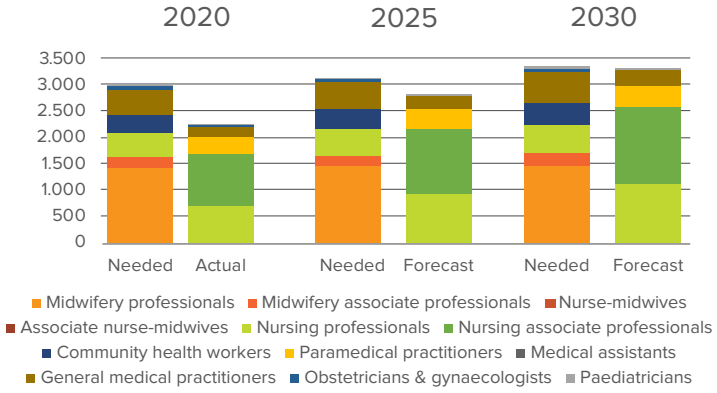
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

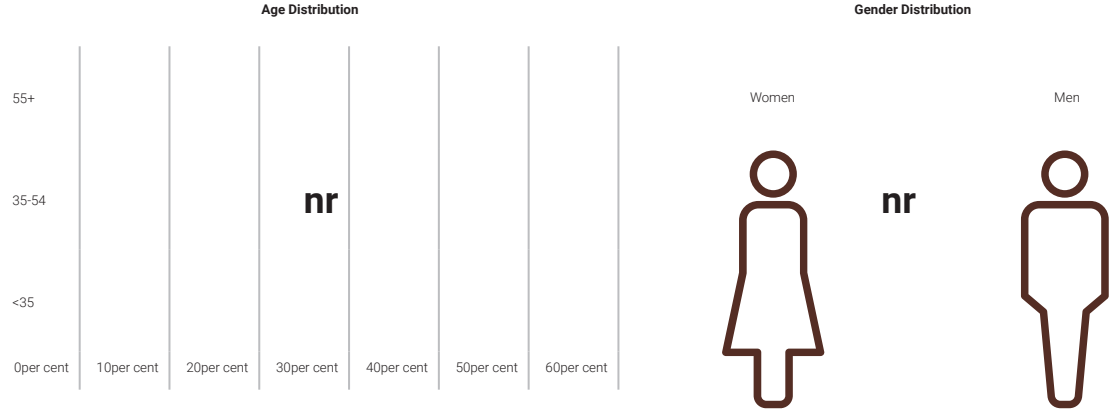




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Namibia

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother only**	Childbirth **Mother only**	Postnatal **Mother only**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **dk**	Sub-national MoH **dk**	Regulatory authorities **5**
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **No**	Post nursing nr	Combined **Yes**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **na**	Post nursing nr	Combined **48**
per cent of midwifery educators who are midwives		**100**	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**No**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **No**	Periodic relicensing **na**	Continuing development requirement **na**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives **Yes**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

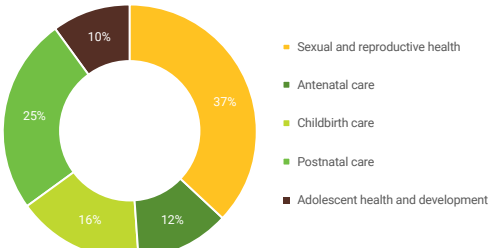
Potential to meet NEED =

Workforce time available

Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
nr	nr	nr

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for [illegible] worker time to deliver essential interventions is **4** million hours per year

EXPLANATORY NOTES

There are two midwife education programmes: (1) a 48-month Bachelor's programme and (2) a 24-month Certificate programme.

Rwanda

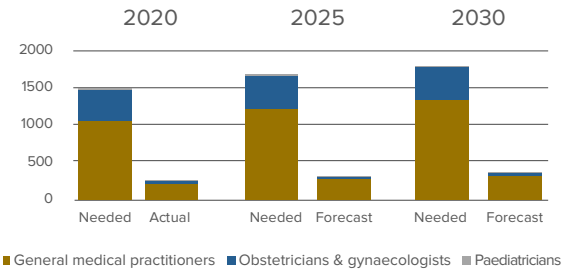
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	2020	1,671	100per cent	1,671	**2015**	**150**	1.3
Midwifery associate professionals	2020	0	na	0	**nr**	**nr**	nr
Nurse-midwives	2020	10	60per cent	6	**nr**	**nr**	0.0
Associate nurse-midwives	2020	12	60per cent	7	**nr**	**nr**	0.0
Nursing professionals	2020	8,571	44per cent	3,771	**2018**	**947**	6.6
Nursing associate professionals	2020	1,816	50per cent	908	**nr**	**nr**	1.4
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2018**	**1,114**	20per cent	223	**2015**	**91**	0.9
Obstetricians / gynaecologists	**2017**	**83**	50per cent	42	**nr**	**nr**	0.1
Paediatricians	**2017**	**76**	15per cent	11	**nr**	**nr**	0.1
Total SRMNAH workforce		13,353		6,639			10.3

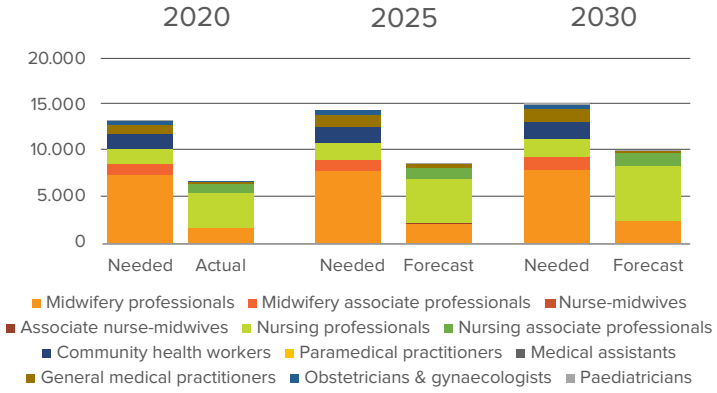
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

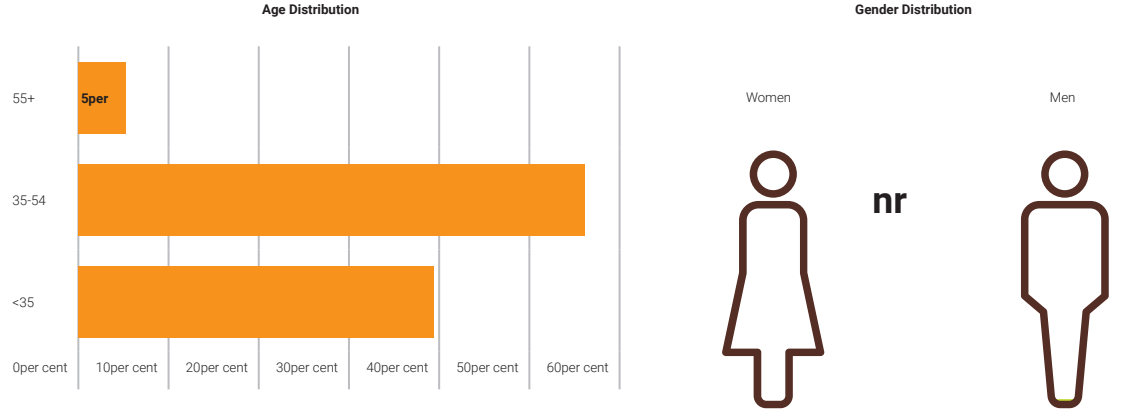




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Rwanda

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **No**	Childbirth **No**	Postnatal **No**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **1**	Sub-national MoH **0**	Regulatory authorities **0**
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **Yes**	Post nursing **No**	Combined **No**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **36**	Post nursing **na**	Combined **na**
per cent of midwifery educators who are midwives		**30**	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**dk**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **Yes**	Periodic relicensing **Yes**	Continuing development requirement **Yes**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives **Yes**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

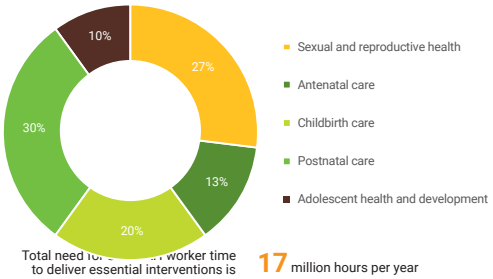
Potential to meet NEED =

Workforce time available

Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
59per cent	50per cent	62per cent

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need f… worker time to deliver essential interventions is **17** million hours per year

EXPLANATORY NOTES

Seychelles

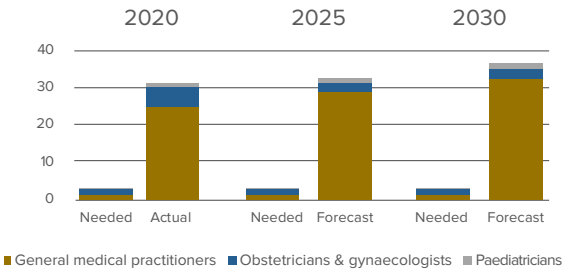
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**2018**	**5**	100per cent	5	**nr**	**nr**	0.5
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**2018**	**321**	85per cent	273	**nr**	**nr**	32.6
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	**2018**	**630**	30per cent	189	**2018**	**8**	64.1
Nursing associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2018**	**125**	20per cent	25	**nr**	**nr**	12.7
Obstetricians / gynaecologists	**2018**	**11**	50per cent	6	**nr**	**nr**	1.1
Paediatricians	**2018**	**7**	15per cent	1	**nr**	**nr**	0.7
Total SRMNAH workforce		**1,099**		498			111.8

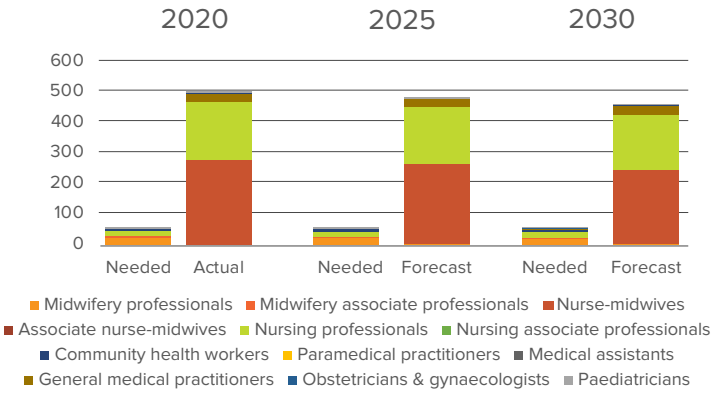
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

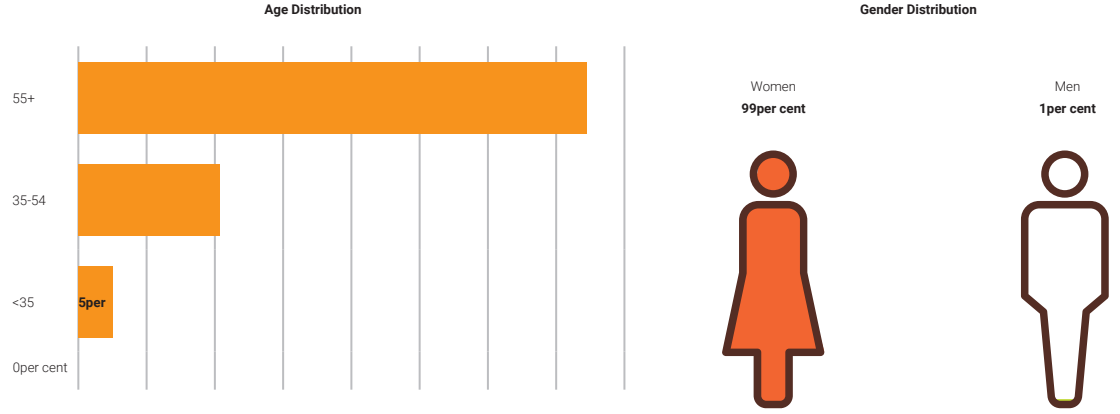




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Seychelles

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **nr**	Childbirth **nr**	Postnatal **nr**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH 48	Sub-national MoH na	Regulatory authorities 1
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**nr**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry No	Post nursing Yes	Combined No
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry na	Post nursing 18	Combined na
per cent of midwifery educators who are midwives		100	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**nr**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**nr**	
Regulatory system for midwifery practice?		Yes	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory Yes	Periodic relicensing Yes	Continuing development requirement Yes
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives No	Other association open to midwives **nr**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

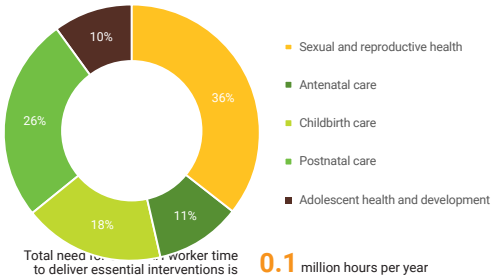
Potential to meet NEED =

Workforce time available

Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
nr	100per cent	100per cent

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need f… …worker time to deliver essential interventions is **0.1** million hours per year

EXPLANATORY NOTES

South Africa

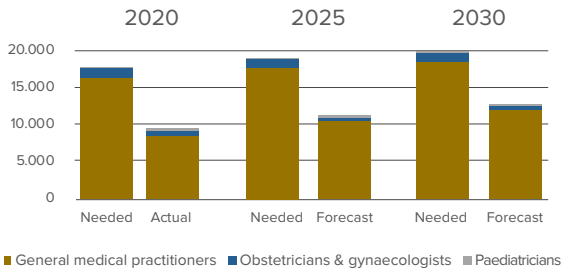
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**2016**	**1,284**	100per cent	1,284	**nr**	**nr**	0.2
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	2017	74,556	30per cent	22,367	**2018**	**10,192**	12.6
Nursing associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**2017**	**8,919**	30per cent	2,676	**nr**	**nr**	1.5
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2016**	**43,277**	20per cent	8,655	**nr**	**nr**	7.3
Obstetricians / gynaecologists	**2016**	**1,247**	50per cent	624	**nr**	**nr**	0.2
Paediatricians	2019	1,966	15per cent	295	**nr**	**nr**	0.3
Total SRMNAH workforce		131,249		35,900			22.1

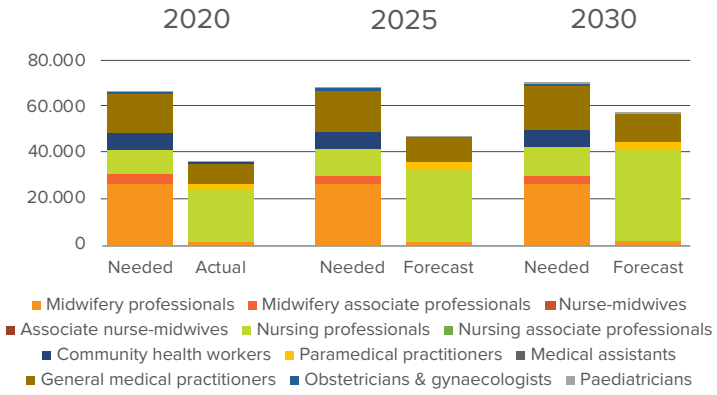
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).





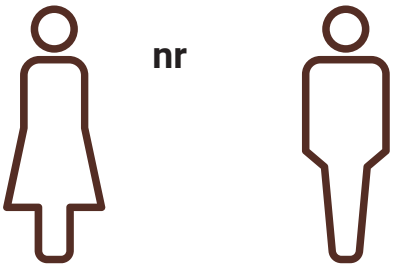
The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

South Africa

FULL SRMNAH WORKFORCE AVAILABILITY

Age Distribution

Gender Distribution



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment

National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **nr**	Sub-national MoH **nr**	Regulatory authorities **nr**
Education National policy guideline on education of midwifery care providers based on ICM competencies?*		**No**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **nr**	Post nursing **nr**	Combined **nr**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **nr**	Post nursing **nr**	Combined **nr**
per cent of midwifery educators who are midwives		**nr**	
Regulation National policy sets a competency framework for maternal and/or newborn care?*		**dk**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**No**	
Regulatory system for midwifery practice?		**nr**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **nr**	Periodic relicensing **nr**	Continuing development requirement **nr**
Association Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **nr**	Other association open to midwives **nr**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

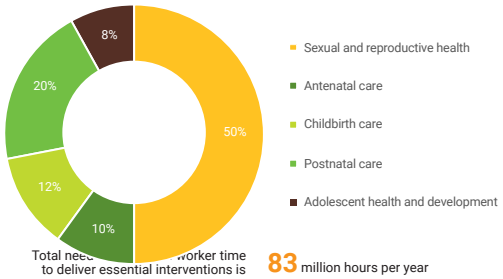
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
100per cent	**57per cent**	**77per cent**

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need … worker time to deliver essential interventions is **83** million hours per year

EXPLANATORY NOTES

South Sudan

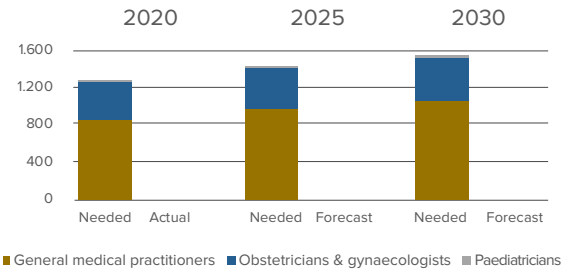
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Obstetricians / gynaecologists	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paediatricians	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Total SRMNAH workforce		**0**		0			0.0

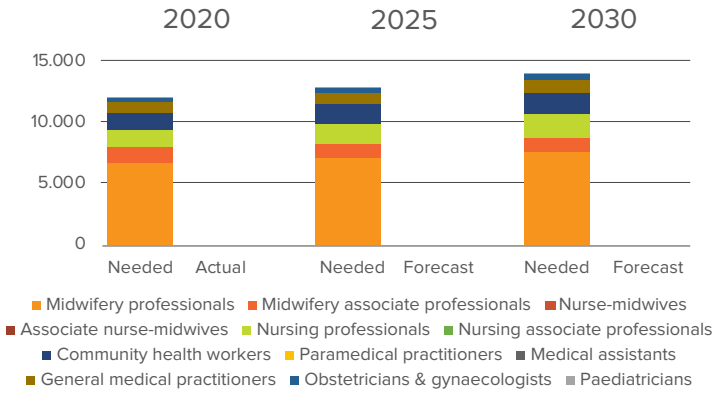
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

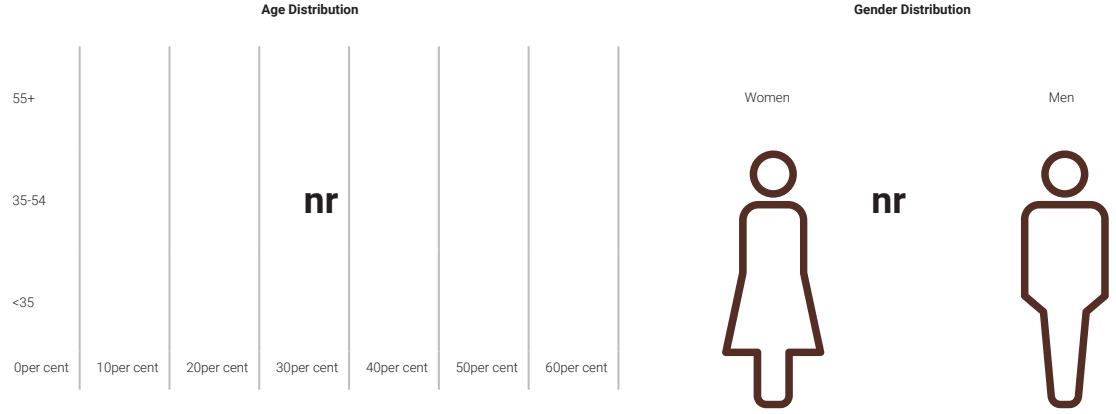




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

South Sudan

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother only**	Childbirth **Mother only**	Postnatal **Mother only**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **1**	Sub-national MoH 3	Regulatory authorities 3
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **Yes**	Post nursing **No**	Combined **No**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **48**	Post nursing **na**	Combined **na**
per cent of midwifery educators who are midwives		**100**	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**No**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**No**	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **No**	Periodic relicensing **Yes**	Continuing development requirement **Yes**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **No**	Other association open to midwives **Yes**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

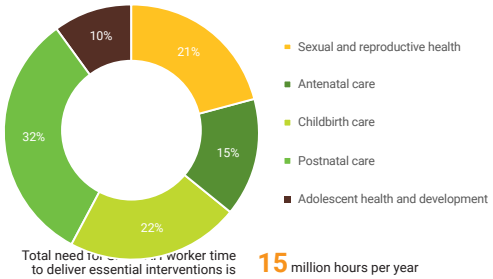
Potential to meet NEED =

Workforce time available

Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
nr	nr	nr

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for [illegible] worker time to deliver essential interventions is **15** million hours per year

EXPLANATORY NOTES

There are three direct-entry midwife education programmes: (1) a 48-month Bachelor's programme, (2) a 36-month Diploma programme and (3) a 30-month Certificate programme.

The registration and licensing system began in November 2019: when the ICM survey was submitted no one had yet needed to renew their licence.

Uganda

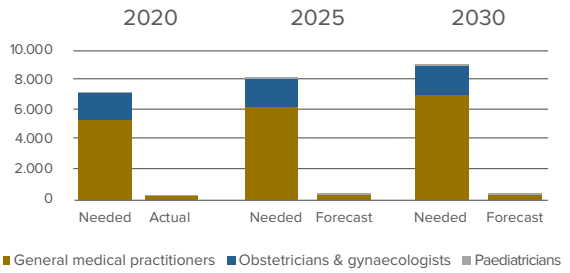
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**2016**	**9,802**	100per cent	9,802	**2015**	**1,827**	2.1
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	2018	574	60per cent	344	**nr**	**nr**	0.1
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	2018	4,452	44per cent	1,959	**2018**	**10,353**	1.0
Nursing associate professionals	**2018**	**47,881**	50per cent	23,941	**nr**	**nr**	10.5
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2016**	**1,408**	20per cent	282	**nr**	**nr**	0.3
Obstetricians / gynaecologists	**2016**	**42**	50per cent	21	**nr**	**nr**	0.0
Paediatricians	2017	175	15per cent	26	**nr**	**nr**	0.0
Total SRMNAH workforce		64,334		36,375			14.1

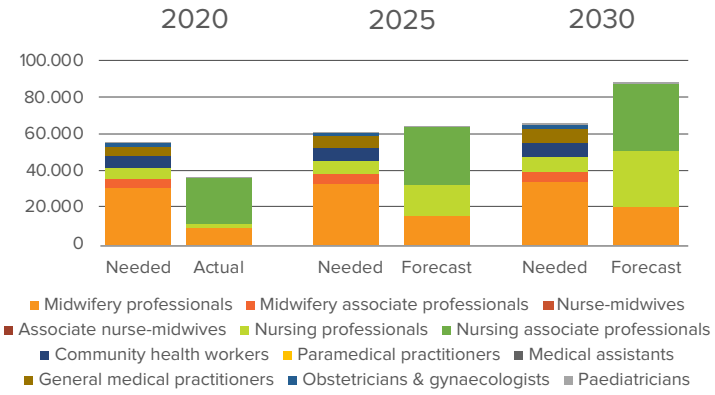
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).





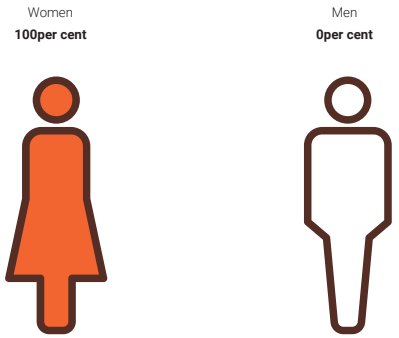
The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Uganda

FULL SRMNAH WORKFORCE AVAILABILITY

Age Distribution

Gender Distribution



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

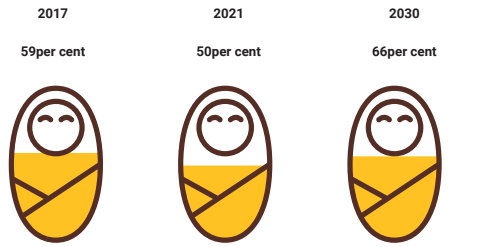
Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother only**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH 5	Sub-national MoH 181	Regulatory authorities 4
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		Yes	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **Yes**	Post nursing **Yes**	Combined **No**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **48**	Post nursing **18**	Combined **na**
per cent of midwifery educators who are midwives		**100**	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**No**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **Yes**	Periodic relicensing **Yes**	Continuing development requirement **Yes**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives **Yes**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

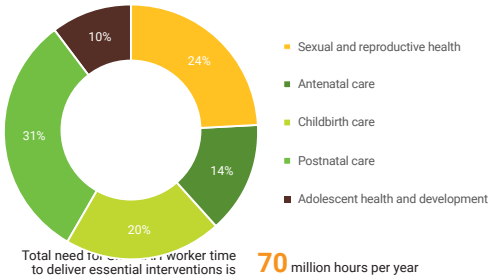
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions



PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for [illegible] worker time to deliver essential interventions is **70** million hours per year

EXPLANATORY NOTES

Although Uganda reported no nurses with midwifery training in NHWA, in the East and Southern Africa regional SoWMy report in 2017 the country reported 574 nurse-midwives. The SoWMy 2021 analysis assumes that 574 of the 5,026 nursing professionals without midwifery training are in fact nurse-midwives.

There are three direct-entry midwife education programmes: (1) a 48-month Bachelor's in midwifery, (2) a 36-month Diploma in midwifery and (3) a 30-month Certificate in midwifery.

United Republic of Tanzania

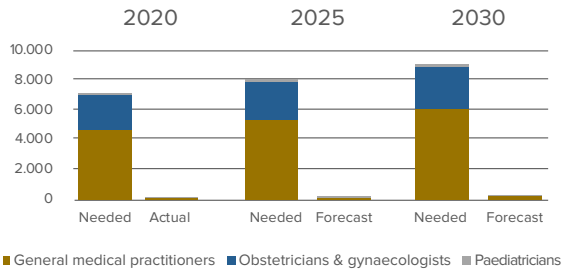
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	2017	21,351	100per cent	21,351	**nr**	**nr**	3.6
Nursing professionals	**2017**	**10,589**	60per cent	6,353	**nr**	**nr**	1.8
Nursing associate professionals	nr	nr	na	nr	**nr**	**nr**	nr
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	**2014**	**10,536**	30per cent	3,161	**nr**	**nr**	1.8
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	**2016**	**742**	20per cent	148	**nr**	**nr**	0.1
Obstetricians / gynaecologists	**2016**	**67**	50per cent	34	**nr**	**nr**	0.0
Paediatricians	2014	121	15per cent	18	**nr**	**nr**	0.0
Total SRMNAH workforce		43,406		31,065			7.3

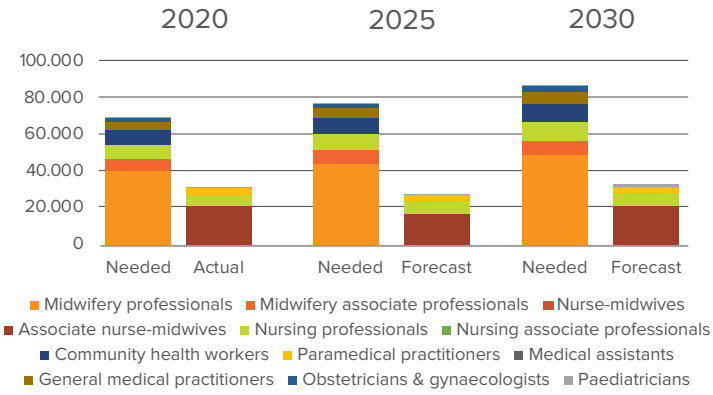
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).





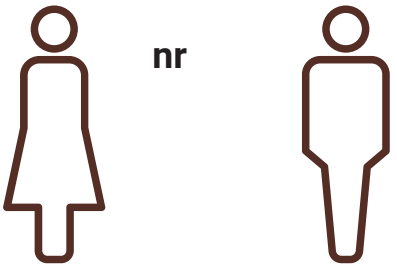
The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

United Republic of Tanzania

FULL SRMNAH WORKFORCE AVAILABILITY

Age Distribution

Gender Distribution



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH 4	Sub-national MoH 215	Regulatory authorities 213
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry Yes	Post nursing Yes	Combined Yes
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry 48	Post nursing 12	Combined 36
per cent of midwifery educators who are midwives		dk	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		Yes	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory Yes	Periodic relicensing Yes	Continuing development requirement Yes
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives Yes	Other association open to midwives **nr**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

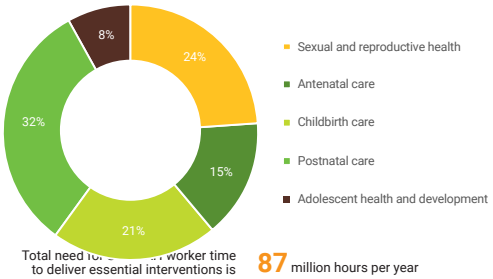
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
64per cent	47per cent	48per cent

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need f… worker time to deliver essential interventions is **87** million hours per year

EXPLANATORY NOTES

Although Tanzania reported no nurses with midwifery training in NHWA, in the East and Southern Africa regional SoWMy report in 2017 the country reported 21,275 nurse-midwives. The SoWMy 2021 analysis assumes that the 21,351 nursing associate professionals without midwifery training are in fact associate professional nurse-midwives.

Zambia

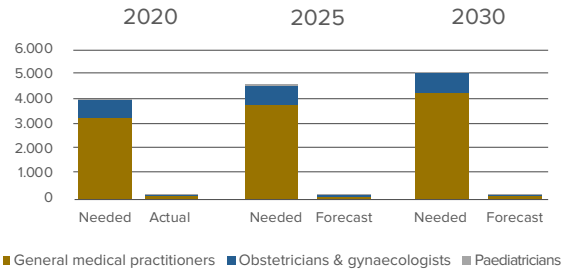
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	2018	22	100per cent	22	**2015**	**141**	0.0
Midwifery associate professionals	2018	466	100per cent	466	**nr**	**nr**	0.3
Nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Associate nurse-midwives	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nursing professionals	**2018**	**17,257**	44per cent	7,593	**2018**	**2,558**	9.4
Nursing associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Community health workers	**2018**	**221**	10per cent	22	**nr**	**nr**	0.1
Paramedical practitioners	**2018**	**503**	30per cent	151	**nr**	**nr**	0.3
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	2016	683	20per cent	137	**2015**	**32**	0.4
Obstetricians / gynaecologists	**2016**	**46**	50per cent	23	**nr**	**nr**	0.0
Paediatricians	2016	61	15per cent	9	**nr**	**nr**	0.0
Total SRMNAH workforce		19,259		8,423			10.5

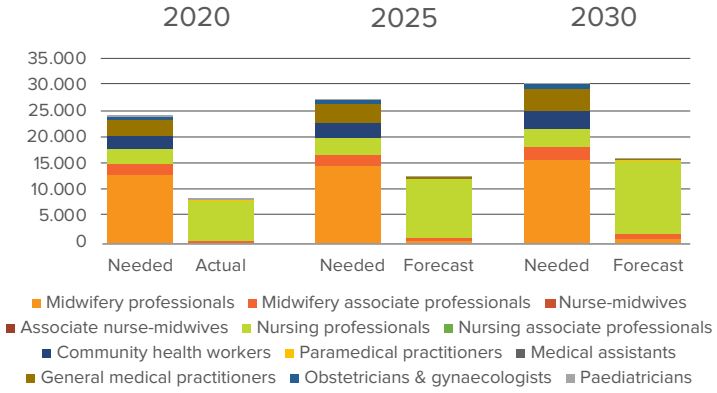
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

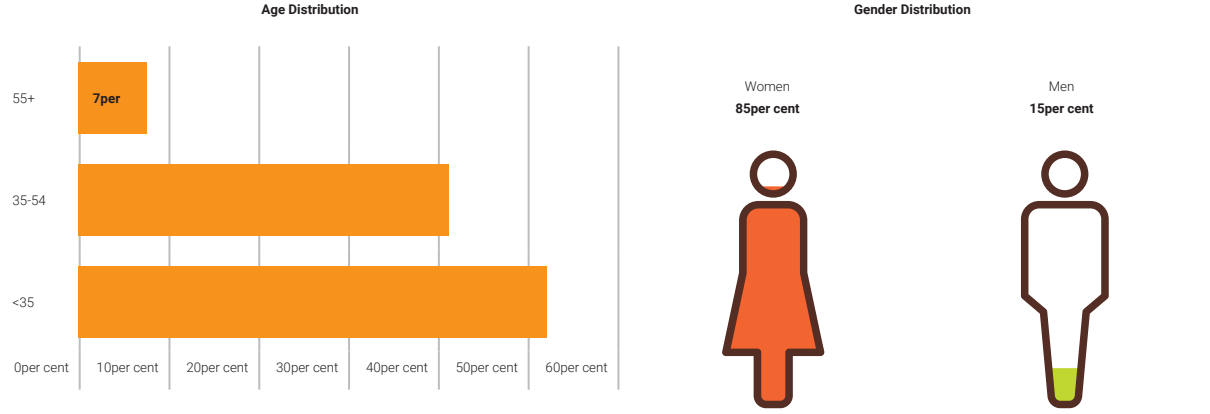




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Zambia

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **8**	Sub-national MoH **48**	Regulatory authorities **4**
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **Yes**	Post nursing **Yes**	Combined **No**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **60**	Post nursing 12	Combined **na**
per cent of midwifery educators who are midwives		**100**	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **Yes**	Periodic relicensing **Yes**	Continuing development requirement **Yes**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives **Yes**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

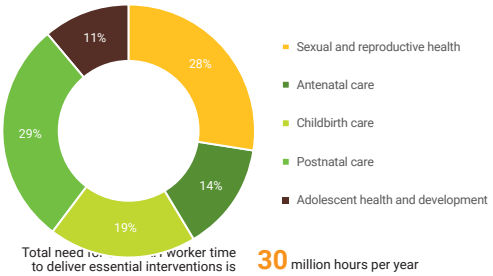
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
56per cent	**37per cent**	**53per cent**

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need f… …worker time to deliver essential interventions is **30** million hours per year

EXPLANATORY NOTES

There are two direct entry midwife education programmes": (1) a 60 monthBSc programme (one tear of natural sciences plus four years of midwifery) and (2) a 36-month Diploma programme. There are also two post-nursing midwife education programmes: (1) a 36-month BSc programme and (2) a 12-month Advanced Diploma programme.

Zanzibar

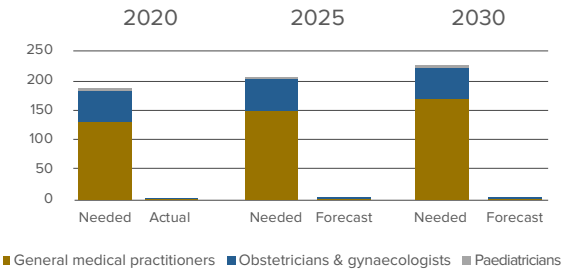
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	2015	52	100per cent	52	**nr**	**nr**	0.3
Midwifery associate professionals	2015	0	na	0	**nr**	**nr**	nr
Nurse-midwives	2015	169	60per cent	101	**nr**	**nr**	1.0
Associate nurse-midwives	2015	0	na	0	**nr**	**nr**	nr
Nursing professionals	2015	33	44per cent	15	**nr**	**nr**	0.2
Nursing associate professionals	2015	0	na	0	**nr**	**nr**	nr
Community health workers	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Paramedical practitioners	2015	36	30per cent	11	**nr**	**nr**	0.2
Medical assistants	**nr**	**nr**	na	nr	**nr**	**nr**	nr
General medical practitioners	2015	13	20per cent	3	**nr**	**nr**	0.1
Obstetricians / gynaecologists	2015	2	50per cent	1	**nr**	**nr**	0.0
Paediatricians	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Total SRMNAH workforce		305		182			1.8

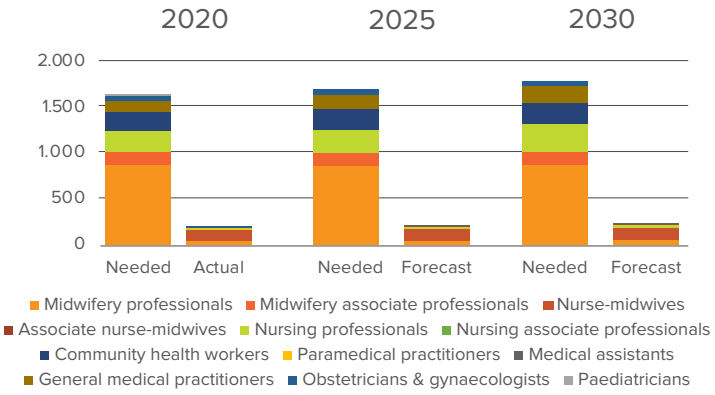
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).

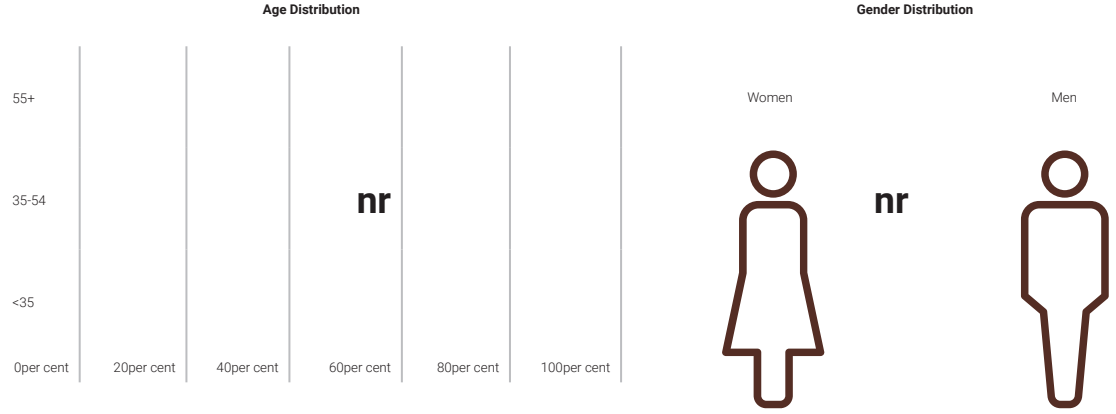




The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Zanzibar

FULL SRMNAH WORKFORCE AVAILABILITY



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **nr**	Childbirth **nr**	Postnatal **nr**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **0**	Sub-national MoH 9	Regulatory authorities **1**
Education National policy guideline on education of midwifery care providers based on ICM competencies?*		**nr**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **No**	Post nursing No	Combined Yes
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **na**	Post nursing na	Combined 48
per cent of midwifery educators who are midwives		**8**	
Regulation National policy sets a competency framework for maternal and/or newborn care?*		**nr**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**nr**	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **Yes**	Periodic relicensing **Yes**	Continuing development requirement **No**
Association Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **No**	Other association open to midwives **Yes**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

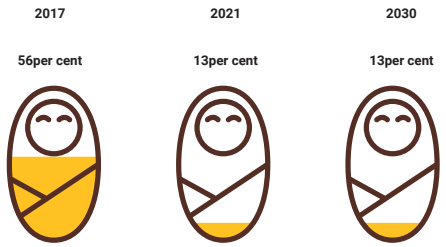
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

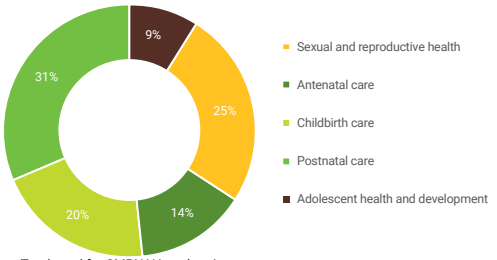
Potential to meet NEED =

Workforce time available

Workforce time needed for universal coverage of essential SRMNAH interventions



PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for SMRNAH worker time to deliver essential interventions is **2** million hours per year

EXPLANATORY NOTES

In addition to the 48-month integrates nursing and midwifery education programme, which leads to a Bachelor's degree, there is also a 36-month Diploma programme

After the Diploma programme, the graduated General Nurses (in service) may undergo two years, Master course in Midwifery either in Mainland Tanzania or abroad

Zimbabwe

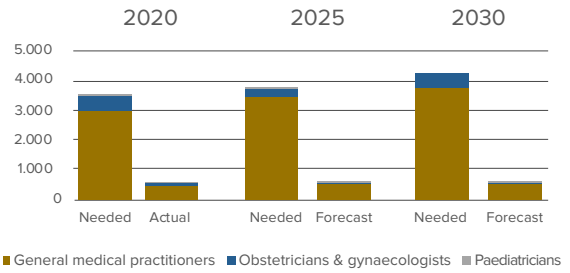
FULL SRMNAH WORKFORCE AVAILABILITY							
Occupation	**Year**	**Headcount (A)**	**Percentage of time on SRMNAH (B)**	**Dedicated SRMNAH Equivalent (DSE) (A*B)**	**Graduates**		**Density per 10,000 population**
					Year	Number	
Midwifery professionals	**nr**	**nr**	na	nr	**2018**	**550**	nr
Midwifery associate professionals	**nr**	**nr**	na	nr	**nr**	**nr**	nr
Nurse-midwives	**2018**	**6,176**	100per cent	6,174	**nr**	**nr**	4.2
Associate nurse-midwives	**2018**	**5,830**	100per cent	5,830	**nr**	**nr**	3.9
Nursing professionals	**2018**	**8,708**	60per cent	5,225	**2018**	**796**	5.9
Nursing associate professionals	**2018**	**7,222**	88per cent	6,355	**nr**	**nr**	4.9
Community health workers	**2018**	**15,888**	10per cent	1,589	**nr**	**nr**	10.7
Paramedical practitioners	**2017**	**174**	30per cent	52	**nr**	**nr**	0.1
Medical assistants	**2018**	**164**	30per cent	49	**nr**	**nr**	0.1
General medical practitioners	**2018**	**1,863**	20per cent	373	**2015**	**91**	1.3
Obstetricians / gynaecologists	**2018**	**107**	50per cent	54	**nr**	**nr**	0.1
Paediatricians	**2018**	**51**	15per cent	8	**nr**	**nr**	0.0
Total SRMNAH workforce		**46,181**		25,708			31.1

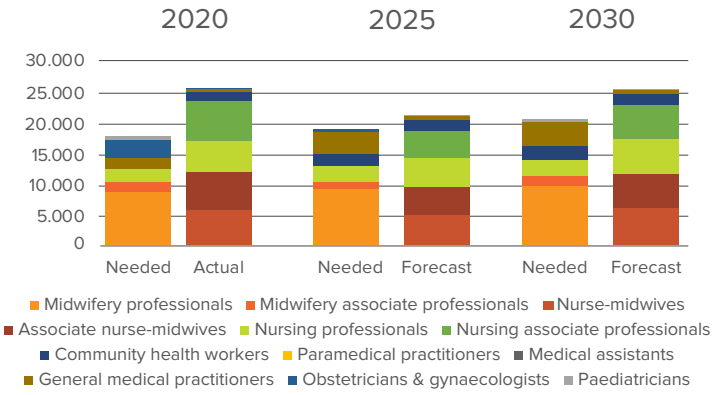
Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept. 2021

PROJECTIONS TO 2030, DEDICATED SRMNAH EQUIVALENT (DSE) WORKFORCE

These charts compare estimates of the number of DSE workers needed with the number available. On each chart, the first pair of bars show the baseline year, the second pair shows projections to 2025, and the third pair shows projections to 2030.

The chart below shows shows all SRMNAH occupations. The chart to the right highlights SRMNAH doctors (as these numbers are difficult to see on the main chart).





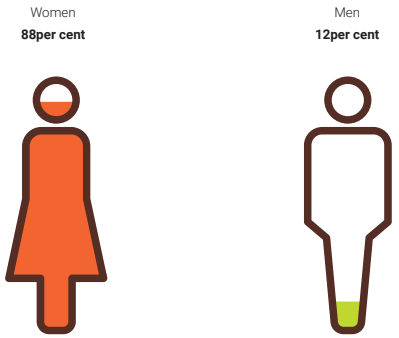
The 'needed' numbers represent the numbers of DSEs necessary to achieve universal coverage of essential SRMNAH interventions.
Need is allocated to occupations according to competencies they should have if educated and regulated according to global standards.

Zimbabwe

FULL SRMNAH WORKFORCE AVAILABILITY

Age Distribution

Gender Distribution



Source: **If in bold type: WHO National Health Workforce Accounts (NHWA) data platform, accessed Dec 2020, most recent year**
If not in bold type: communication with UNFPA Country Office Sept 2021

ENABLING ENVIROMENT

Policy enviroment			
National policy guideline that recommends midwife-led care for pregnancy and/or childbirth and/or postnatal period for mother only, or both mother and newborn?	Pregnancy **Mother & newborn**	Childbirth **Mother & newborn**	Postnatal **Mother & newborn**
Number of midwives in leadership roles in national MoH / sub-national MoH / regulatory authorities	National MoH **18**	Sub-national MoH **326**	Regulatory authorities **13**
Education			
National policy guideline on education of midwifery care providers based on ICM competencies?*		**Yes**	
Midwifery education pathway (direct entry / post-nursing / combined)	Direct entry **No**	Post nursing **Yes**	Combined **No**
Duration of direct entry / post-nursing / combined education programme (months)	Direct entry **na**	Post nursing **24**	Combined **na**
per cent of midwifery educators who are midwives		**100**	
Regulation			
National policy sets a competency framework for maternal and/or newborn care?*		**Yes**	
National policy on regulation of midwifery care providers based on ICM competencies?*		**Yes**	
Regulatory system for midwifery practice?		**Yes**	
Is licensing compulsory prior to practise? / Is there periodic relicensing? / Is continuing professional development a requirement for relicensing?	License compulsory **Yes**	Periodic relicensing **Yes**	Continuing development requirement **Yes**
Association			
Is there a professional association specifically for midwives? Is there another professional association open to midwives?	Association specifically for midwives **Yes**	Other association open to midwives **No**	

Source: **If in bold validated data from 2020 ICM survey, except those marked * which are from 2018 2019 WHO SRMNCAH policy survey**
If not in bold type: either communication with UNFPA Country Office Sept 2021 or unvalidated data from 2020 IC M survey

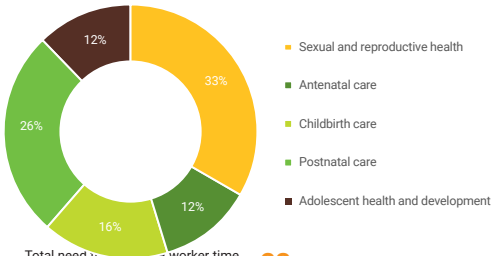
Key:
na = not applicable
nr - not reported
dK = don't know
MoH = Ministry of Health

POTENTIAL MET NEED

Potential to meet NEED = Workforce time available / Workforce time needed for universal coverage of essential SRMNAH interventions

2017	2021	2030
83per cent	**69per cent**	**79per cent**

PER CENT OF NEED AT EACH STAGE ON CONTINUUM OF CARE



Total need for [illegible] worker time to deliver essential interventions is **23** million hours per year

EXPLANATORY NOTES

There are two post-nursing midwife education programmes: (1) an 18-month Bachelor's in clinical midwifery and (2) a 24-month Diploma in advanced midwifery.

Glossary

Adolescent	A person aged between 10 and 19 years (inclusive)
Adolescent birth rate	The number of births to women aged 15-19 years per 1,000 women in that age group[8]
Caesarean section rate	The percentage of pregnant women who give birth via caesarean section
Coverage for 4+ antenatal care visits	The percentage of women aged 15-49 years with a live birth in a given time who received antenatal care four or more times[9]
Dedicated SRMNAH equivalent (DSE)*	Headcount adjusted for percentage of clinical time spent on SRMNAH care, to estimate the amount of health worker clinical time available to deliver SRMNAH interventions
Gender	The characteristics of women, men, girls and boys that are socially constructed. As a social construct, gender varies from society to society, and can also change over time. Gender is hierarchical and produces inequalities that intersect with other social and economic inequalities. Gender interacts with but is different from sex, which refers to the different biological and physiological characteristics of females, males and intersex persons, such as chromosomes, hormones and reproductive organs[10]
Leadership role (in relation to midwives)*	"Leadership role" as defined in the ICM survey may refer to a number of management, supervisory and executive titles, including midwives: · in Ministry of Health positions (e.g. Chief Midwife, midwife adviser, national midwife director, maternity advisory positions) · leading regional or local maternity facilities (e.g. midwife director, midwife adviser to chief executive or senior team, midwives in charge of maternity units/wards) · leading professional midwives' associations (e.g. President, Chief Executive/Director) · leading midwifery regulatory authorities (e.g. Chair of Midwifery Council, Chief Executive/Director) · leading midwifery education programmes (e.g. Head of Midwifery School, Director of Midwifery, Head of Midwifery Programme)
Live birth	The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation breathes or shows any evidence of life, such as a heartbeat, pulsation of the umbilical cord or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached[11]
Maternal mortality ratio	The number of maternal deaths during a given time period per 100,000 live births during the same period[12]

8 Adolescent birth rate. New York: United Nations Department of Economic and Social Affairs; 2021 (https://www.un.org/en/development/desa/population/publications/dataset/fertility/adolescent-rate.asp#:~:text=Theper cent20adolescentper cent20birthper cent20rateper cent20measures,womenper cent20inper cent20thatper cent20ageper cent20group, accessed 26 November 2021)

9 Antenatal care coverage – at least four visits (per cent). Geneva: World Health Organization; 2021 (https://www.who.int/data/gho/indicator-metadata-registry/imr-details/80, accessed 26 November 2021)

10 Gender and health. Geneva: World Health Organization; 2021 (https://www.who.int/health-topics/gender#tab=tab_1, accessed 26 November 2021)

11 Natality. New York: United Nations Department of Economic and Social Affairs; 2017 (https://unstats.un.org/unsd/demographic/sconcerns/natality/natmethods.htm, accessed 26 November 2021).

12 Maternal mortality ratio (per 100,000 live births). Geneva: World Health Organization; 2021 (https://www.who.int/data/gho/indicator-metadata-registry/imr-details/26, accessed 26 November 2021)

Midwife	A midwife is a person who has successfully completed a midwifery education programme that is based on the ICM Essential Competencies for Midwifery Practice and the framework of the ICM Global Standards for Midwifery Education and is recognized in the country where it is located; who has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery and use the title 'midwife'; and who demonstrates competency in the practice of midwifery A midwife is a responsible and accountable professional who works in partnership with women to give the necessary support, care and advice during pregnancy, labour and the postpartum period, to conduct births on the midwife's own responsibility and to provide care for the newborn and the infant. This care includes preventative measures, the promotion of normal birth, the detection of complications in mother and child, the accessing of medical care or other appropriate assistance and the carrying out of emergency measures. The midwife has an important task in health counselling and education, not only for the woman, but also within the family and the community. This work should involve antenatal education and preparation for parenthood and may extend to women's health, sexual or reproductive health and childcare. A midwife may practise in any setting including the home, community, hospitals, clinics or health units[13]
Midwife-led care	The midwife is the lead health care professional, responsible for planning, organizing and delivering care[14]
Modern contraceptive prevalence rate	The percentage of women currently using, or whose sexual partner is currently using, at least one modern method of contraception. Modern methods include oral contraceptive pills, implants, injectables, contraceptive patch and vaginal ring, intrauterine device, female and male condoms, female and male sterilization, vaginal barrier methods (including the diaphragm, cervical cap and spermicidal agents), lactational amenorrhoea method, emergency contraception pills, standard days method, basal body temperature method, TwoDay method and sympto-thermal method[15]
Need for SRMNAH workers*	The amount of SRMNAH worker time needed to achieve universal coverage of the essential SRMNAH interventions listed in the ***Global Strategy for Women's, Children's and Adolescents' Health***
Neonatal mortality rate	Number of deaths during the first 28 completed days of life per 1,000 live births in a given year or period[16]
Nurse	A person who has successfully completed a programme of basic, generalized nursing education and is authorized by the appropriate regulatory authority to practise nursing. Basic nursing education is a formally recognized programme of study providing a broad and sound foundation in the behavioural, life and nursing sciences for the general practice of nursing, for a leadership role, and for post-basic education for specialty or advanced nursing practice. The nurse is prepared and authorized (i) to engage in the general scope of nursing practice, including the promotion of health, prevention of illness and care of physically ill, mentally ill and disabled people of all ages and in all health care and other community settings; (ii) to carry out health care teaching; (iii) to participate fully as a member of the health care team; (iv) to supervise and train nursing and health care auxiliaries; and (v) to be involved in research.[17]
Nurse-midwife*	In National Health Workforce Accounts, countries reported how many of their professional and associate professional nurses had "midwifery training", defined as having "successfully completed a midwifery education programme and acquired the requisite qualifications to be registered and/or legally licensed to practise as a midwife". In this report, these "nurses with midwifery training" are referred to as "nurse-midwives", but it is recognized that not all countries use this terminology and that those in the "nurse-midwives" category are not necessarily all engaged in providing midwifery care

13 International definition of the midwife. The Hague: International Confederation of Midwives; 2017 (https://www.internationalmidwives.org/assets/files/definitions-files/2018/06/eng-definition_of_the_midwife-2017.pdf, accessed 26 November 2021)

14 Position statement: midwifery-led care, the first choice for all women. The Hague: International Confederation of Midwives; 2017 (https://www.internationalmidwives.org/assets/files/statement-files/2018/04/eng-midwifery-led-care-the-first-choice-for-all-women.pdf, accessed 26 November 2021)

15 Contraceptive prevalence – use of modern methods (per cent). Geneva: World Health Organization; 2021 (https://www.who.int/data/gho/indicator-metadata-registry/imr-details/3334, accessed 26 November 2021)

16 Neonatal mortality rate (per 1,000 live births). Geneva: World Health Organization; 2006 (https://www.who.int/whosis/whostat2006NeonatalMortalityRate.pdf?ua=1, accessed 26 November 2021)

17 Definition of a nurse. Geneva: International Council of Nurses; 1987 (https://www.icn.ch/nursing-policy/nursing-definitions, accessed 26 November 2021)

Nursing workforce excluding those with midwifery training*	All persons with a nursing qualification (professional or associate professional) with the exception of nurse professionals or nurse associate professionals with formal midwifery training who are counted as part of the midwifery workforce and subtracted from the overall nursing workforce
Potential met need (PMN)*	The percentage of health worker time needed for universal coverage of essential SRMNAH interventions that could be delivered by the current workforce if it was educated to global standards, equitably distributed and working within an enabling environment
Sexual, reproductive, maternal, newborn and adolescent health (SRMNAH) care	The continuum of sexual and reproductive health care and maternal and newborn health care, including for adolescents. Sexual health care involves the enhancement of life and personal relationships, not merely counselling and care related to procreation and sexually transmitted infections. Reproductive health enables people to have a responsible, satisfying and safe sex life, to have children, and to decide if, when and how often to do so[18]
SRMNAH doctors*	Generalist medical practitioners, obstetricians and gynaecologists, and paediatricians
Stillbirth rate	Number of babies born with no sign of life at 28 weeks or more of gestation, per 1,000 total births[19]
Supply of health workers	The number of health workers available to provide clinical services
Total fertility rate	The average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. It is expressed as children per woman[20]
Unmet need for family planning	The percentage of women of reproductive age who have an unmet need for family planning, i.e. those wishing to stop or delay childbearing but not using any method of contraception[21]

* This term is specific to the ***State of the World's Midwifery*** (SoWMy) series of reports: it is not standard terminology.

18 Sexual and reproductive health. Geneva: World Health Organization; 2021 (https://www.euro.who.int/en/health-topics/Life-stages/sexual-and-reproductive-health/sexual-and-reproductive-health, accessed 26 November 2021)

19 Stillbirths. New York: UNICEF; 2021 (https://data.unicef.org/topic/child-survival/stillbirths/, accessed 26 November 2021)

20 Total fertility rate (births per woman). Geneva: World Health Organization; 2021 (https://www.who.int/data/gho/data/indicators/indicator-details/GHO/total-fertility-rate-(per-woman), accessed 26 November 2021)

21 Unmet need for family planning. New York: United Nations Department of Economic and Social Affairs; 2014 (https://www.un.org/en/development/desa/population/publications/dataset/contraception/wcu2014/Metadata/WCU2014_UNMET_NEED_metadata.pdf, accessed 26 November 2021)

Technical annex

Table A.1 defines the health occupations considered to be part of the SRMNAH workforce for the purposes of this report.

Table A.1: SRMNAH workforce occupation definitions

Occupation	Definition
Midwifery professionals	Midwifery professionals plan, manage and provide midwifery care services before, during and after pregnancy and childbirth. They provide delivery care to reduce health risks to women and newborn children according to the practice and standards of modern midwifery, working autonomously or in teams with other health care providers. They may conduct research on midwifery practices and procedures and implement midwifery education activities in clinical and community settings.
Midwifery associate professionals	Midwifery associate professionals provide basic health care and advice before, during and after pregnancy and childbirth. They provide advice to women, families and communities on birth and emergency plans, breastfeeding, infant care, family planning and related topics; monitor health status during pregnancy and childbirth; and implement care, treatment and referral plans usually established by medical, midwifery and other health professionals.
Nurse-midwives	Nursing professionals who have successfully completed a midwifery education programme and have the requisite qualifications to be registered and/or licensed to practise midwifery. Usually this is achieved by qualifying as a nursing professional and then acquiring a further qualification in midwifery.
Associate nurse-midwives	Nursing associate professionals who have also successfully completed formal education to provide basic health care and advice before, during and after pregnancy and childbirth. They provide advice to women, families and communities on birth and emergency plans, breastfeeding, infant care, family planning and related topics; monitor health status during pregnancy and childbirth; and implement care, treatment and referral plans usually established by medical, midwifery and other health professionals.
Nursing professionals	Nursing professionals provide treatment, support and care services for people in need of nursing care due to the effects of ageing, injury, illness or other physical or mental impairment, or potential risks to health, according to the practice and standards of modern nursing. They assume responsibility for the planning and management of patient care, including the supervision of other health care workers, working autonomously or in teams with medical doctors and others in the practical application of preventive and curative measures in clinical and community settings.
Nursing associate professionals	Nursing associate professionals provide basic nursing and personal care for people needing such care due to effects of ageing, illness, injury or other physical or mental impairment. They provide health advice to patients and families, monitor patients' conditions and implement care, treatment and referral plans usually established by medical, nursing and other health professionals.
Community health workers	Community health workers provide health education, referral and follow-up, case management and basic preventive health care and home visiting services to specific communities. They support and assist individuals and families in navigating the health and social services systems.
Paramedical practitioners	Paramedical practitioners provide advisory, diagnostic, curative and preventive medical services more limited in scope and complexity than those carried out by medical doctors. They work autonomously or with limited supervision by medical doctors, and perform clinical, therapeutic and surgical procedures to treat and prevent diseases, injuries and other physical or mental impairments common to specific communities.

Occupation	Definition
Medical assistants	Medical assistants perform basic clinical and administrative tasks to support patient care under the direct supervision of a medical practitioner or other health professional. They perform routine tasks and procedures such as measuring patients' vital signs, administering medications and injections, recording information in medical record-keeping systems, preparing and handling medical instruments and supplies and collecting and preparing specimens of bodily fluids and tissues for laboratory testing.
General medical practitioners	General medical practitioners (including family and primary care doctors) diagnose, treat and prevent illness, disease, injury and other physical and mental impairments, and maintain general health in humans by applying the principles and procedures of modern medicine. They plan, supervise and evaluate the implementation of care and treatment plans by other health care providers. They do not limit their practice to particular disease categories or methods of treatment and may assume responsibility for providing continuing and comprehensive medical care to individuals, families and communities.
Obstetricians & gynaecologists	Doctors in obstetric and gynaecological specialties and related branches focusing on the care of women's reproductive systems including before, during and after pregnancy and childbirth.
Paediatricians	Doctors in paediatrics and related specialties focusing on the prevention, diagnosis and treatment of health problems in infants, children and adolescents.

The methods used to produce the analyses in this report closely follow those described in the SoWMy 2021 webappendices, with one exception. Some of the data sources used to estimate the level of need for SRMNAH worker time were updated after the publication of SoWMy 2021. Table A.2 shows the interventions affected by the change and cites the updated data sources. If an intervention is not shown in Table A.2, there has been no update since SoWMy 2021 and the same data source was used as shown in SoWMy 2021 webappendix 5.

Table A.2: Data sources updated since SoWMy 2021 which affected estimates of health worker time needed to deliver essential SRMNAH interventions

Intervention	Number and average duration of contacts needed with an SRMNAH worker	Data requirements and sources
Women (including pre-pregnancy interventions)		

Intervention	Number and average duration of contacts needed with an SRMNAH worker	Data requirements and sources
Delivery of condoms, vaginal barriers, vaginal tablets	Three contacts per year totalling 35 minutes per WRA using condoms, estimated as follows: WRA x (contraceptive prevalence rate (CPR) + unmet need) x percentage of female contraceptive users who use male or female condoms	**Indicator**: CPR (any method), 2019-2030. **Source**: UN Department of Economic and Social Affairs family planning indicators (https://www.un.org/en/development/desa/population/theme/family-planning/cp_model.asp), accessed 29 September 2021. A regional mean was applied for countries not included within this source. **Indicator**: Unmet need for contraception (per cent). **Source**: UN Department of Economic and Social Affairs family planning indicators as above. **Indicator**: Percentage of female contraceptive users (aged 15-49) who use each type. **Source**: UN Department of Economic and Social Affairs World Contraceptive Use dataset 2019 (https://www.un.org/en/development/desa/population/publications/dataset/contraception/wcu2019.asp), accessed 29 September 2021. A regional mean was applied for countries not included within this source.
Delivery of contraceptive pills and injectables	Three contacts per year totalling 40 minutes per WRA using pills or injectables, estimated as follows: WRA x (CPR + unmet need) x percentage of female contraceptive users who use pills or injectables	
Insertion and extraction of contraceptive implants	One 60-minute contact every five years per WRA using implants (assuming Jadelle), estimated as follows: WRA x (CPR + unmet need) x percentage of female contraceptive users who use implants	
Intrauterine device (IUD) insertion	One 55-minute contact every 10 years per WRA using IUD (assuming Copper T 380-A-IUD), estimated as follows: WRA x (CPR + unmet need) x percentage of female contraceptive users who use IUDs	
Female sterilization	One 100-minute contact per unsterilized WRA requesting sterilization, estimated as follows: (New members of the WRA cohort, i.e. 20 per cent of women aged 15-19) x (CPR + unmet need) x (percentage of female contraceptive users who use female sterilization)	
Pregnancy (antenatal care)		
Prevention of malaria, including insecticide-treated nets and intermittent preventive treatment	Contacts totalling six-minutes per pregnant woman living in areas of high malaria transmission, estimated as follows: pregnancies x percentage of population living in areas of high malaria transmission	**Indicator**: Percentage of population living in areas of high malaria transmission. **Source**: WHO (2020) World Malaria Report (https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2020), accessed 23 November 2021. Assumed 0 per cent for countries not included in the report.
Treatment of malaria in pregnancy	One four-minute contact per pregnant woman with malaria, estimated as follows: pregnancies x incidence of presumed and confirmed malaria cases	**Indicator**: Incidence of presumed and confirmed malaria cases (per cent). **Source**: WHO (2020) World Malaria Report as above, 2019 values.
Postnatal (mother)		
Response to intimate partner violence (IPV)	Contacts totalling 35 minutes per new mother experiencing IPV, estimated as follows: (Live births + stillbirths) x lifetime prevalence of IPV among women aged 15-49.	**Indicator**: Lifetime prevalence of IPV among women aged 15-49. **Source**: WHO (2021) Global database on the prevalence of violence against women (https://srhr.org/vaw-data/data). A regional mean was applied for countries not included within this source.
Adolescent sexual and reproductive health		
Prevention of harmful practices such as female genital mutilation (FGM) and early and forced marriage	Contacts totalling five minutes for all 10-19 year-old girls living in countries with prevalence of FGM >0 (on the assumption that this intervention will be delivered in groups of 30, each lasting 2.5 hours)	**Indicator:** FGM prevalence (per cent). **Source:** World Bank World Development Indicators (https://databank.worldbank.org/source/world-development-indicators), accessed 29 September 2021.

References

1. World Health Organization, United Nations Children's Fund, United Nations Population Fund, World Bank Group, United Nations Population Division: **Maternal mortality: levels and trends 2000 to 2017.** Geneva: World Health Organization; 2019.
2. United Nations Inter-agency Group for Child Mortality Estimation: **Levels and trends in child mortality: 2020 report.** New York: United Nations Children's Fund; 2020.
3. Chmielewska B, Barratt I, Townsend R, Kalafat E, van der Meulen J, Gurol-Urganci I, O'Brien P, Morris E, Draycott T, Thangaratinam S, et al: **Effects of the COVID-19 pandemic on maternal and perinatal outcomes: a systematic review and meta-analysis.** *Lancet Glob Health* 2021, **9:**e759-e772.
4. World Health Organization: **Strategies toward ending preventable maternal mortality (EPMM).** Geneva: World Health Organization; 2015.
5. United Nations: **Transforming our world: the 2030 agenda for sustainable development. Resolution 70/1.** 2015 [https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf, accessed 26 October 2021]
6. United Nations Inter-agency Group for Child Mortality Estimation: **A neglected tragedy: the global burden of stillbirths.** New York: United Nations Children's Fund; 2020.
7. Every Woman Every Child: **The global strategy for women's, children's and adolescents' health 2016–2030.** Geneva: World Health Organization; 2015.
8. United Nations Population Fund: **World population dashboard.** 2021 [https://www.unfpa.org/data/world-population-dashboard, accessed 29 September 2021]
9. United Nations Children's Fund: **Data: antenatal care coverage.** 2021 [https://data.unicef.org/topic/maternal-health/antenatal-care/, accessed 4 October 2021]
10. United Nations: **International Conference on Population and Development programme of action: twentieth anniversary edition.** New York: United Nations Population Fund; 2014.
11. High-Level Commission on ICPD25: **Nairobi Statement on ICPD25: accelerating the promise.** 2019 [https://www.nairobisummiticpd.org/content/icpd25-commitments, accessed 8 November 2021]
12. World Health Organization: **Global strategy on human resources for health:**

workforce 2030. Geneva: World Health Organization; 2016.

13. African Union: **Maputo plan of action 2016-2030 for the operationalization of the continental policy framework for sexual and reproductive health and rights.** 2016 [https://au.int/sites/default/files/documents/30358-doc-mpoa_7-_revised_au_stc_inputs_may_se-rob-director_002.pdf, accessed 27 October 2021]

14. African Union Commission Department of Social Affairs: **Africa health strategy 2016-2030.** Addis Ababa: African Union Commission; 2016.

15. World Health Organization Regional Office for Africa: **Road map for scaling up the human resources for health for improved health service delivery in the African Region 2012-2025: adopted by the Sixty-second session of the Regional Committee.** Brazzaville: World Health Organization Regional Office for Africa; 2013.

16. United Nations Population Fund: **UNFPA strategic plan, 2018-2021.** 2017 [https://www.unfpa.org/sites/default/files/resource-pdf/DP.FPA_.2017.9_-_UNFPA_strategic_plan_2018-2021_-_FINAL_-_25July2017_-_corrected_24Aug17.pdf, accessed 17 July 2021]

17. United Nations Population Fund: **Eastern Europe and Central Asia regional programme (2022-2025).** 2021 [https://www.unfpa.org/sites/default/files/board-documents/DP.FPA_.2021.8_-_strategic_plan_2022-2025_-_Annex.5_-_Eastern_Europe_and_Central_Asia_-_Final_-_21Jul21.pdf, accessed 24 January 2022]

18. United Nations Population Fund, World Health Organization, International Confederation of Midwives: **The state of the world's midwifery 2021: building a health workforce to meet the needs of women, newborns and adolescents everywhere.** New York: United Nations Population Fund; 2021.

19. United Nations Population Fund, World Health Organization, International Confederation of Midwives: **State of the world's midwifery: delivering health, saving lives.** New York: United Nations Population Fund; 2011.

20. United Nations Population Fund, World Health Organization, International Confederation of Midwives: **State of the world's midwifery: a universal pathway. A woman's right to health.** New York: United Nations Population Fund; 2014.

21. United Nations Population Fund: **Analysis of the sexual, reproductive, maternal, newborn and adolescent health workforce in East and Southern Africa.** In *The State of the World's Midwifery*. Johannesburg: United Nations Population Fund East and Southern Africa Regional Office; 2017.

22. United Nations Population Fund: **The state of the world's midwifery 2021: webappendices.** 2021 [https://www.unfpa.org/sowmy-webappendices, accessed 26 January 2022]

23. International Labour Organization: **International standard classification of occupations (ISCO).** 2008 [https://www.ilo.org/public/english/bureau/stat/isco/isco08/index.htm, accessed 26 January 2022]

24. International Confederation of Midwives: **Partnerships between professional midwives and traditional caregivers with midwifery skills.** 2008 [https://www.internationalmidwives.org/assets/files/statement-files/2018/04/eng-partnerships-between-midwives-and-traditional-caregivers.pdf, accessed 27 July 2021]

25. International Confederation of Midwives: **International definition of the midwife.** 2017 [https://www.internationalmidwives.org/assets/files/definitions-files/2018/06/eng-definition_of_the_midwife-2017.pdf, accessed 17 March 2022]

26. ten Hoope-Bender P, Nove A, Sochas L, Matthews Z, Homer CSE, Pozo-Martin F: **The 'dream team' for sexual, reproductive, maternal, newborn and adolescent health: an adjusted service target model to estimate the ideal mix of health care professionals to cover population need.** *Hum Resour Health* 2017, **15:**46.

27. World Health Organization, United Nations Population Fund, United Nations Children's Fund, International Confederation of Midwives, International Council of Nurses, International Federation of Gynecology and Obstetrics, International Pediatric Association: **Definition of skilled health personnel providing care during childbirth.** 2018 [https://www.who.int/publications/i/item/definition-of-skilled-health-personnel-providing-care-during-childbirth, accessed 7 February 2022]

28. UN Women: **Impact of COVID-19 on gender equality and women's empowerment in East and Southern Africa.** Nairobi: UN Women East and Southern Africa Regional Office; 2021.

29. World Health Organization: **Standards for improving quality of maternal and newborn care in health facilities.** 2016 [https://www.who.int/publications/i/item/9789241511216, accessed 8 March 2022]

30. Muthuri RNDK, Senkubuge F, Hongoro C: **Determinants of motivation among health care workers in the East African Community between 2009-2019: a systematic review.** *Healthcare (Basel)* 2020, **8:**164.

31. Gavine A, MacGillivray S, McConville F, Gandhi M, Renfrew MJ: **Pre-service and in-service education and training for maternal and newborn care providers in low- and middle-income countries: an evidence review and gap analysis.** *Midwifery* 2019, **78:**104–113.

32. Filby A, McConville F, Anayda P: **What prevents quality midwifery care? A systematic mapping of barriers in low- and middle-income countries from the provider perspective.** *PLoS ONE* 2016, **11:**e0153391.

33. Telfer M, Zaslow R, Chalo Nabirye R, Nalugo Mbalinda S: **Review of midwifery education in Uganda: Toward a framework for integrated learning and midwifery model of care.** *Midwifery* 2021, **103:**103145.

34. International Confederation of Midwives: **ICM global standards for midwifery education (2010 revised 2021).** 2021 [https://www.internationalmidwives.org/our-work/policy-and-practice/global-standards.html, accessed 7 October 2021]

35. International Confederation of Midwives: **Essential competencies for midwifery practice: 2019 update.** 2019 [https://www.internationalmidwives.org/our-work/policy-and-practice/essential-competencies-for-midwifery-practice.html, accessed 17 March 2022]

36. United Nations Population Fund Eastern Europe and Central Asia Regional Office: **Analysis of alignment of midwifery education to the international essential midwifery competencies in East and Southern Africa.** 2020.

37. United Nations Population Fund East and Southern Africa Regional Office: **Regional interventions action plan for East and Southern Africa 2018-2021.** 2018 [https://www.unfpa.org/sites/default/files/admin-resource/Final_RIAP_ESARO.pdf, accessed 26 October 2021]

38. International Confederation of Midwives: **Strengthening midwifery education in the French-speaking Africa region.** The Hague: International Confederation of Midwives; 2020.

39. Mukamana D, Uwiyeze G, Sliney A: **Nursing and midwifery education in Rwanda; telling our story.** *Rwanda Journal Series F: Medicine and Health Sciences* 2015, **2:**9-12.

40. Bogren M, Kaboru BB, Berg M: **Barriers to delivering quality midwifery education programmes in the Democratic Republic of Congo - An interview study with educators and clinical preceptors.** *Women Birth* 2021, **34:**e67-e75.

41. Bogren M, Ndela B, Toko C, Berg M: **Midwifery education, regulation and association in the Democratic Republic of Congo (DRC) - current state and challenges.** *Glob Health Action* 2020, **13:**1717409.

42. Yigzaw T, Ayalew F, Kim YM, Gelagay M, Dejene D, Gibson H, Teshome A, Broerse J, Stekelenburg J: **How well does pre-service education prepare midwives for practice: competence assessment of midwifery students at the point of graduation in Ethiopia.** *BMC Med Educ* 2015, **15:**130.

43. Shikuku D: **Standardized midwifery training is essential to achieving maternal and newborn health targets.** 2020 [https://www.lstmed.ac.uk/news-events/blogs/standardized-midwifery-training-is-essential-to-achieving-maternal-and-newborn, accessed 4 November 2021]

44. Bucyabahiga J: **Nursing and midwifery in Southern Sudan - undersubscribed in a high demand environment.** *Southern Sudan Medical Journal* 2010, **3**.

45. Lewis TP, Roder-DeWan S, Malata A, Ndiaye Y, Kruk ME: **Clinical performance among recent graduates in nine low- and middle-income countries.** *Trop Med Int Health* 2019, **24:**620-635.

46. World Health Organization: **Transforming and scaling up health professionals' education and training: World Health Organization guidelines.** Geneva: World Health Organization; 2013.

47. McCarthy CF, Gross JM, Verani AR, Nkowane AM, Wheeler EL, Lipato TJ, Kelley MA: **Cross-sectional description of nursing and midwifery pre-service education accreditation in east, central, and southern Africa in 2013.** *Hum Resour Health* 2017, **15:**48.

48. Nove A, Pairman S, Bohle LF, Garg S, Moyo NT, Michel-Schuldt M, Hoffmann A, Castro G: **The development of a global midwifery education accreditation programme.** *Glob Health Action* 2018, **11:**1489604.

49. International Confederation of Midwives: **ICM's MEAP provides its first-ever international accreditation to Rwandan school.** 2021 [https://www.internationalmidwives.org/assets/files/general-files/2021/01/meap-article_feb-2021-2.pdf, accessed 4 November 2021]

50. World Health Organization, United Nations Population Fund, United Nations Children's Fund, International Confederation of Midwives: **Strengthening quality midwifery education for universal health coverage 2030: framework for action.** Geneva: World Health Organization; 2019.

51. World Health Organization: **WHO recommendations: intrapartum care for a positive childbirth experience.** Geneva: World Health Organization; 2018.

52. East Central and Southern Africa Health Community: **Resolutions of the health ministers' conferences 1974-2020.** 2020 [https://ecsahc.org/wp-content/uploads/2021/07/Resolutions-of-The-Health-Ministers-Conferences-1974-2020.pdf, accessed 26 October 2021]

53. World Health Organization: **Standards for improving quality of maternal and newborn care in health facilities.** Geneva: World Health Organization; 2016.

54. Abuya T, Warren CE, Miller N, Njuki R, Ndwiga C, Maranga A, Mbehero F, Njeru A, Bellows B: **Exploring the prevalence of disrespect and abuse during childbirth in Kenya.** *PLoS One* 2015, **10:**e0123606.

55. Kassa ZY, Husen S: **Disrespectful and abusive behavior during childbirth and maternity care in Ethiopia: a systematic review and meta-analysis.** *BMC Res Notes* 2019, **12:**83.

56. Kruk ME, Kujawski S, Mbaruku G, Ramsey K, Moyo W, Freedman LP: **Disrespectful and abusive treatment during facility delivery in Tanzania: a facility and community survey.** *Health Policy Plan* 2018, **33:**e26-e33.

57. Rosen HE, Lynam PF, Carr C, Reis V, Ricca J, Bazant ES, Bartlett LA, Quality of M, Newborn Care Study Group of the M, Child Health Integrated P: **Direct observation of respectful maternity care in five countries: a cross-sectional study of health facilities in East and Southern Africa.** *BMC Pregnancy Childbirth* 2015, **15:**306.

58. Sando D, Ratcliffe H, McDonald K, Spiegelman D, Lyatuu G, Mwanyika-Sando M, Emil F, Wegner MN, Chalamilla G, Langer A: **The prevalence of disrespect and abuse during facility-based childbirth in urban Tanzania.** *BMC Pregnancy Childbirth* 2016, **16:**236.

59. Sethi R, Gupta S, Oseni L, Mtimuni A, Rashidi T, Kachale F: **The prevalence of disrespect and abuse during facility-based maternity care in Malawi: evidence from direct observations of labor and delivery.** *Reprod Health* 2017, **14:**111.

60. Sen G, Reddy B, Iyer A: **Beyond measurement: the drivers of disrespect and abuse in obstetric care.** *Reprod Health Matters* 2018, **26:**6-18.

61. Dingle A, Nove A: **Respectful maternity care: East and Southern Africa regional**

study. Johannesburg: United Nations Population Fund East and Southern Africa Regional Office; 2021.

62. UN Women East and Southern Africa Regional Office, United Nations Population Fund East and Southern Africa Regional Office: **Impact of COVID-19 on gender equality and women's empowerment in East and Southern Africa.** Nairobi: UN Women; 2021.

63. Nyasulu J, Pandya H: **The effects of coronavirus disease 2019 pandemic on the South African health system: A call to maintain essential health services.** *Afr J Prim Health Care Fam Med* 2020, **12:**e1-e5.

64. Dyer O: **DRC faces new Ebola outbreak, covid-19, and measles all at once.** *BMJ* 2020, **369:**m2219.

65. Adepoju P: **Lessons from Ebola as DRC grapples with conflict, measles, and covid-19.** *BMJ* 2020, **370:**m2879.

66. Abidoye B, Felix J, Kapto S, Patterson L: **Leaving no one behind: impact of COVID-19 on the sustainable development goals (SDGs).** New York and Denver: United Nations Development Programme and Frederick S. Pardee Center for International Futures; 2021.

67. Global Financing Facility: **Preserve essential health services during the COVID-19 pandemic: Eritrea.** 2021 [https://www.globalfinancingfacility.org/sites/gff_new/files/documents/Eritrea-Covid-Brief_GFF.pdf, accessed 8 November 2021]

68. World Health Organization: **Pulse survey on continuity of essential health services during the COVID-19 pandemic.** 2021 [https://www.who.int/teams/integrated-health-services/monitoring-health-services/national-pulse-survey-on-continuity-of-essential-health-services-during-the-covid-19-pandemic/dashboard, accessed 9 February 2022]

69. Uzobo E, Ayinmoro AD: **Trapped Between Two Pandemics: Domestic Violence Cases Under COVID-19 Pandemic Lockdown: A Scoping Review.** *Int Q Community Health Educ* 2021**:**272684X211022121.

70. Dekel B, Abrahams N: **'I will rather be killed by corona than by him...': Experiences of abused women seeking shelter during South Africa's COVID-19 lockdown.** *PLoS One* 2021, **16:**e0259275.

71. Asefa A, Semaan A, Delvaux T, Huysmans E, Galle A, Sacks E, Bohren MA, Morgan A, Sadler M, Vedam S, Benova L: **The impact of COVID-19 on the provision of respectful maternity care: Findings from a global survey of health workers.** *Women Birth* 2021.

72. World Health Organization Health Workforce Department: **The impact of COVID-19 on health and care workers: a closer look at deaths. Working paper 1.** 2021 [https://apps.who.int/iris/handle/10665/345300, accessed 9 February 2022]

73. United Nations Population Fund East and Southern Africa Regional Office: **Amidst the COVID-19 pandemic, midwives save lives.** 2021 [https://esaro.unfpa.org/en/publications/amidst-covid-19-pandemic-midwives-save-lives, accessed 8 November 2021]

74. United Nations Development Programme: **Global dashboard for vaccine equity.**

2021 [https://data.undp.org/vaccine-equity/, accessed 8 November 2021]

75. World Health Organization Regional Office for Europe: **Communicating with health workers about COVID-19 vaccination.** 2021 [https://apps.who.int/iris/bitstream/handle/10665/343962/WHO-EURO-2021-2927-42685-59497-eng.pdf?sequence=1&isAllowed=y, accessed 8 November 2021]

76. Angelo AT, Alemayehu DS, Dachew AM: **Health care workers' intention to accept COVID-19 vaccine and associated factors in southwestern Ethiopia, 2021.** *PLoS One* 2021, **16:**e0257109.

77. World Health Organization: **Health and care worker deaths during COVID-19.** 2021 [https://www.who.int/news/item/20-10-2021-health-and-care-worker-deaths-during-covid-19, accessed 8 November 2021]

78. International Confederation of Midwives: **ICM calls on all midwives to be vaccinated against covid-19.** 2021 [https://www.internationalmidwives.org/icm-news/icm-calls-on-all-midwives-to-be-vaccinated-against-covid-19.html, accessed 9 February 2022]

79. Pollock A, Campbell P, Cheyne J, Cowie J, Davis B, McCallum J, McGill K, Elders A, Hagen S, McClurg D, et al: **Interventions to support the resilience and mental health of frontline health and social care professionals during and after a disease outbreak, epidemic or pandemic: a mixed methods systematic review.** *Cochrane Database Syst Rev* 2020, **11:**CD013779.

80. United Nations Population Fund: **Pandemic pivot: achieving transformative results in the COVID-19 pandemic.** New York; 2021.

81. International Labour Organization: **ILO monitor: COVID-19 and the world of work. Eighth edition. Updated estimates and analysis.** 2021 [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_824092.pdf, accessed 11 February 2022]

82. United Nations Population Fund: **Coronavirus disease (COVID-19) pandemic UNFPA global response plan.** 2020 [https://www.unfpa.org/resources/coronavirus-disease-covid-19-pandemic-unfpa-global-response-plan, accessed 11 February 2022]

83. Bar-Zeev S, Breen-Kamkong C, Ten Hoope-Bender P, Sahbani S, Abdullah M: **UNFPA supporting midwives at the heart of the COVID-19 response.** *Women Birth* 2021, **34:**4-6.

84. Kanem N: **Midwives – defenders of women's rights.** 2019 [https://asiapacific.unfpa.org/en/news/midwivesper centE2per cent80per cent94-defenders-womens-rights#:~:text=Midwivesper cent20areper cent20publicper cent20healthper cent20heroes,theper cent20mostper cent20basicper cent20humanper cent20rights, accessed 11 February 2022]

85. Nove A, Friberg IK, de Bernis L, McConville F, Moran AC, Najjemba M, Ten Hoope-Bender P, Tracy S, Homer CSE: **Potential impact of midwives in preventing and reducing maternal and neonatal mortality and stillbirths: a Lives Saved Tool modelling study.** *Lancet Glob Health* 2021, **9:**e24–e32.

86. World Health Organization: **WHO statement on caesarean section rates.** 2015 [https://www.who.int/reproductivehealth/publications/maternal_perinatal_health/cs-statement/en/, accessed 22 July 2021]

87. World Health Organization: **Births by casearean section: data by country.** 2021 [https://apps.who.int/gho/data/node.main.BIRTHSBYCAESAREAN?lang=en, accessed 9 November 2021]

88. Yaya S, Uthman OA, Amouzou A, Bishwajit G: **Disparities in caesarean section prevalence and determinants across sub-Saharan Africa countries.** *Glob Health Res Policy* 2018, **3:**19.

89. World Health Organization: **WHO recommendations: non-clinical interventions to reduce unnecessary caesarean sections.** Geneva; 2018.

90. Michel-Schuldt M, McFadden A, Renfrew M, Homer C: **The provision of midwife-led care in low- and middle-income countries: an integrative review.** *Midwifery* 2020, **84**.

91. Chapman A, Nagle C, Bick D, Lindberg R, Kent B, Calache J, Hutchinson AM: **Maternity service organisational interventions that aim to reduce caesarean section: a systematic review and meta-analyses.** *BMC Pregnancy Childbirth* 2019, **19:**206.

92. Hanahoe M: **Midwifery-led care can lower caesarean section rates according to the Robson ten group classification system.** *Eur J Midwifery* 2020, **4:**7.

93. King TL: **The effectiveness of midwifery care in the World Health Organization year of the nurse and the midwife: reducing the cesarean birth rate.** *J Midwifery Womens Health* 2020, **65:**7-9.