Enhancing human capital in Malawi:

The role of maternal and child health and nutrition services

Key messages:

01

Children born in Malawi today will be just 40% as productive as they could have been had they enjoyed full health and complete education. This policy brief draws on the 2018/19 Malawi Harmonised Health Facility Assessment to identify the most important interventions needed to improve the availability of quality health and nutrition services.

02

While most facilities in Malawi offer nutrition services to children, readiness to deliver nutrition services is inadequate in terms of staff clinical knowledge to effectively prevent and respond to malnutrition, staff training, guidelines, commodities and equipment. On average, facilities had only five out of the nine items needed to deliver adequate nutrition services.

03

About half of health facilities in Malawi offered delivery services and among these, 45% were qualified in basic emergency obstetric and newborn care. While facilities had about 70% of the inputs needed to deliver these services, few facilities had all items necessary. Moreover, there were major gaps in clinical knowledge on management of labor complications.

04

Responding to these availability, readiness and knowledge gaps at health facilities in Malawi will be critical to enabling Malawians to receive effective health and nutrition services, as well as to boosting their human capital and allowing them to meet their full potential as individuals and as productive members of society.

Human capital is the combination of knowledge, skills and health that people accumulate throughout their lives, which allows them to realize their potential as productive members of society. The Human Capital Index (HCI), part of the Human Capital Project, was developed by the World Bank in 2018. It calculates how much a generation in a particular context may fall short of realizing their full potential. It is made up of a mix of health and education indicators **(see Box 1)** chosen because global research has linked them directly to future productivity. The aim of the project is to accelerate more and better investments in people to achieve greater equity and economic growth.

Most children born in Malawi today will not grow up to achieve what they could in life, which affects the country's development more broadly. Specifically, the HCI estimates that children in Malawi will be just 40% as productive as they could have been had they enjoyed full health and complete education. However, human capital has been increasing in Malawi as demonstrated by in the increasing HCI value for Malawi between 2010 and 2020 from 0.36 to 0.41[1]. A healthy and nourished population is a key driver of human capital.

Health related indicators – including child and adult survival – have improved significantly in Malawi and are now on par with other countries in sub-Saharan Africa (see Figure 1), though specific issues still require attention such as maternal and neonatal mortality and malnutrition. An estimated 2 out of 5 childrenin Malawi are stunted, which risks leaving them with cognitive and physical impairments that impact lifelong earning opportunities.
This is because impaired growth and development affect a child's ability to learn in school and be successful in work, family and community life. Stunting reflects the cumulative effects of chronic poverty, poor maternal health, inadequate nutrition and repeated infections[2]. For example, poor maternal health tends to lead to low birth weight, infant mortality and growth faltering[3]. Maternal health also has an impact on a child's cognitive and socio-emotional skills because it is often a prerequisite for successful breastfeeding. From a nutritional point of view, iodine deficiency affects fetal brain development and infections reduce overall nutrition, negatively affecting children's cognitive abilities[4]. Stunting is a notoriously difficult issue to tackle without a sustained, multisectoral approach. While child survival has improved significantly in Malawi, improving early-life conditions to harness developmental potential is critical.

The productivity of a country is affected by the quality and availability of maternal and child health services more generally. In Malawi, complications from pregnancy and delivery are major causes of maternal and newborn morbidity and mortality, significantly affecting the potential of Malawi's children. Improving access to emergency obstetric care is therefore an important part of reducing maternal and infant mortality and

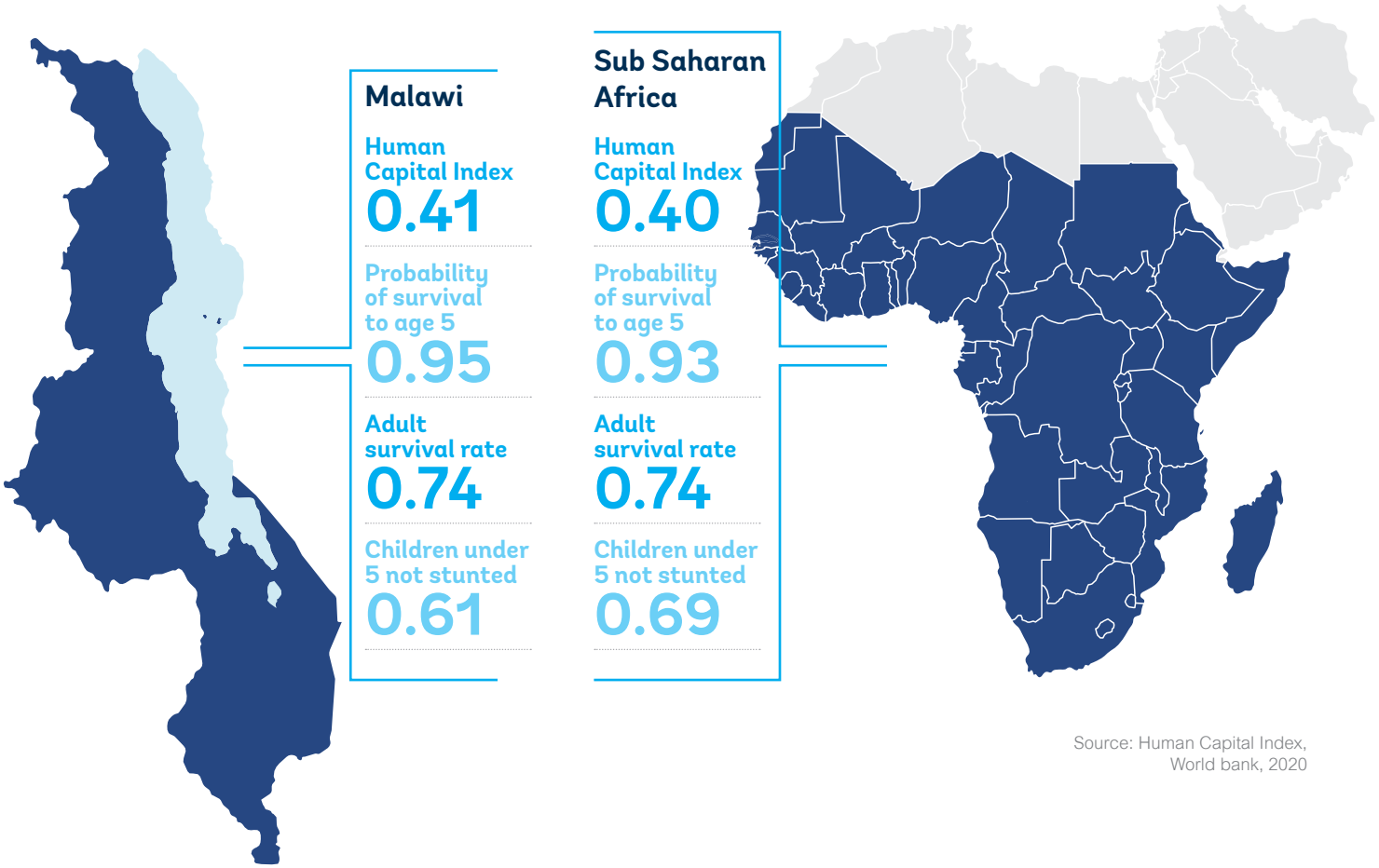
Box 1: What is the HCI?

The HCI measures how much human capital countries lose due to suboptimal investments in health and education. It scores countries between 0 and 1, with 1 meaning maximum potential reached. The index incorporates five indicators (see below), which were selected to allow for meaningful cross-country comparisons

- **Probability of survival to age five**
- **Adult survival rate**
- **Proportion of children who are not stunted**
- **Child's expected years of schooling**
- **Harmonized test scores**

For more information, please visit: https://www.worldbank.org/en/publication/human-capital

Figure 1:
Health-related human capital indicators in Malawi



Source: Human Capital Index, World bank, 2020

contributing to the country's efforts to enhance human capital.

Simply put, countries which invest heavily in maternal and childhood interventions, together with high-quality nutritional support, are more productive. Recognizing this, the Government of Malawi is currently implementing its ambitious Health Sector Strategic Plan II (2017-2022) and an aligned National Multi-Sector Nutrition Policy, which promote a range of evidence-based interventions to improve maternal and child health.

To effectively support this effort, however, Malawi's health care system needs to be strengthened, both in terms of infrastructure and human resource capacity.

This policy brief draws on Malawi's recent 2018/19 Harmonised Health Facility Assessment (HHFA) to identify the key health sector service gaps that stand in the way of children growing up healthy and being productive members of their communities and country. The 2018/19 HHFA survey instrument was comprised of a standard Service Availability and Readiness Assessment* and Service Delivery Indicators†. These were combined into a single tool with five modules: facility inventory; health worker roster; clinical vignettes; facility finances and governance; and client exit interviews. Data was collected from all health facilities in the country (1,106 health facilities) including government, faith-based, CHAM (Christian Health Association of Malawi), and private for-profit facilities between November 2018 and March 2019.

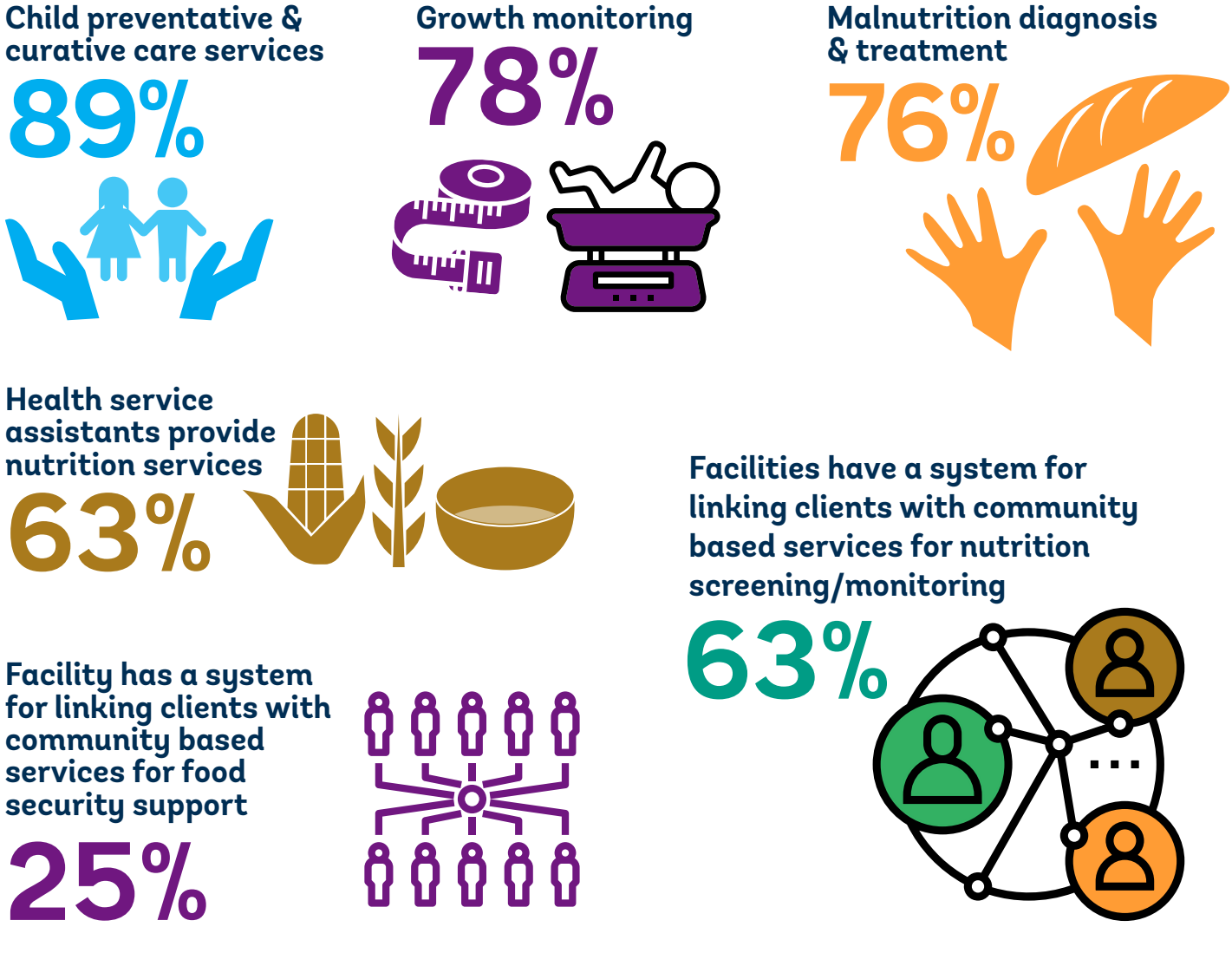
Issues affecting delivery of critical maternal and child health services in Malawi

1. Variability in the availability of key services

Nutrition services

Most health facilities in Malawi offer nutrition services to children because they are integrated with child health preventative and curative care. The 2018/19 HHFA revealed that about 9 out of 10 health facilities offered health care services for children under five and three quarters offered malnutrition diagnosis and treatment services for children. Growth monitoring was also widely available at health facilities – some 78% offered the service. However, only 63% of facilities had Health Surveillance Assistants who provide community-based nutrition services, and just half had a system for linking clients with community-based services for nutrition screening and monitoring. Far fewer – about 25% – had a way to connect clients with food security support **(see Figure 2)**. Service availability also varied by facility type and urbanicity. While most health centers (98%),

Figure 2: (Below)
Percentage of facilities offering key child nutrition services (N=1106)



Source: 2018/19 Harmonised Health Facility Assessment, 2019

hospitals (94%), dispensaries (82%) and health posts (72%) offered malnutrition diagnosis and treatment services, clinics were far less likely to provide this service (41%). The divide between rural and urban facilities offering malnutrition diagnosis and treatment was also quite stark at 87% and 52% respectively.

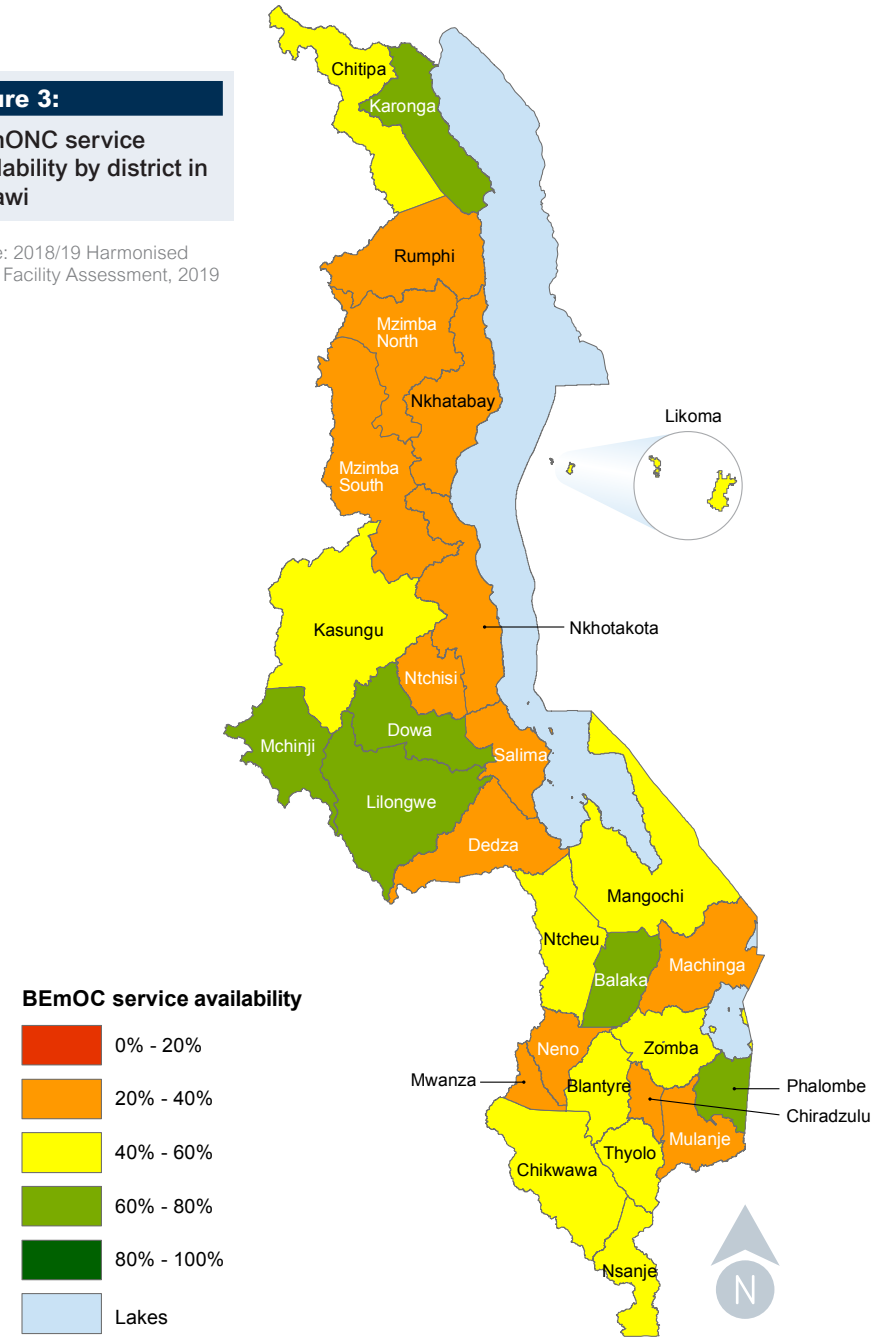
Basic obstetric and newborn care

The 2018/19 HHFA found that about half of health facilities in the country offered delivery services and among facilities that offered delivery services, 45% were qualified in basic emergency obstetric and newborn care (BEmONC)‡. However, there was variability across districts with availability being lower in the northern part of the country (20%-40% in northern districts compared to 40-60% in southern ones). About one-quarter of districts had at least 60% of facilities with delivery services qualified to deliver BEmONC services. **Figure 3** provides details of the availability of BEmONC services by district. Among facilities offering delivery services,

Figure 3:

BEmONC service availability by district in Malawi

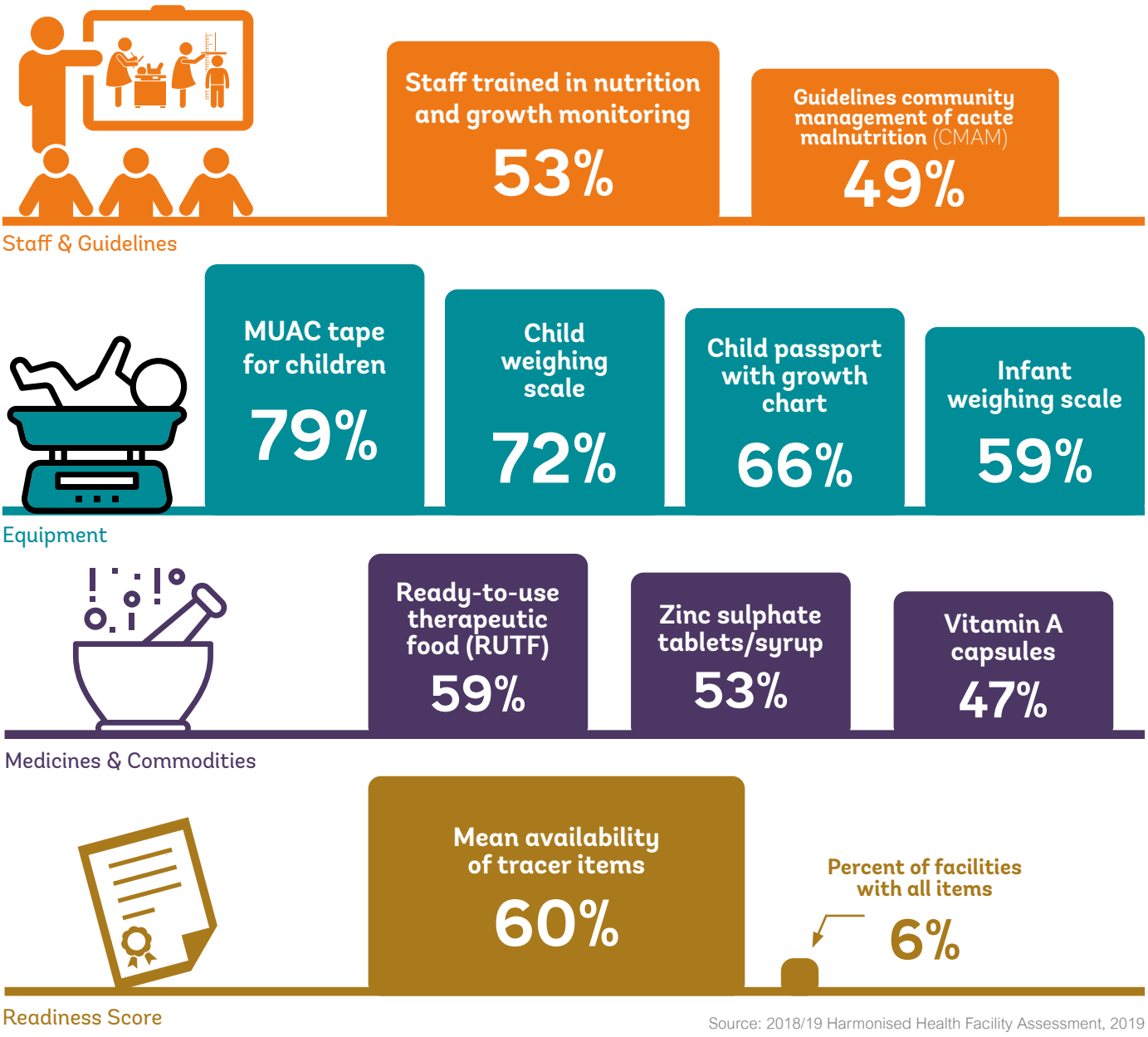
Source: 2018/19 Harmonised Health Facility Assessment, 2019



Box 2: Tracer items related to child nutrition services

Nine tracer items related to child nutrition services consist of:

- **Guidelines for community management of acute malnutrition** (CMAM)
- **Staff trained in nutrition and growth monitoring in the past two years**
- **Infant weighing scale**
- **Child weighing scale**
- **Mid-upper arm circumference** (MUAC) **tape for children**
- **Child health passport with growth chart**
- **Vitamin A capsules**
- **Zinc sulphate tablets/syrup**
- **Ready-to-use therapeutic foods (RUTFs)**



Source: 2018/19 Harmonised Health Facility Assessment, 2019

Figure 4: (Above)
Percentage of facilities that have tracer items for child nutrition services among facilities that provide child preventative and curative care services (N=982)

a higher proportion of hospitals met BEmONC criteria (88%), as compared to health centres, dispensaries, clinics and health posts (35%, 25%, 48% and 0% respectively). Across managing authorities, private non-profit facilities (9%) were the least likely to meet the criteria compared to all other managing authorities, which include government and CHAM facilities (range 40%–54%).

2. Inadequate 'readiness' to provide key services in terms of trained staff, medicines and commodities and essential equipment

Nutrition services

The 2018/19 HHFA assessed *readiness* to deliver child nutrition services based on nine essential inputs including trained staff and guidelines, equipment and medicines and commodities (see Box 2, previous page) and found that on average, facilities had only five out of the nine items needed to deliver adequate services and just 6% of facilities had all items necessary.

About half of all facilities had at least one staff member who had been trained in nutrition and growth monitoring within the last two years, while just under half of all facilities had guidelines on community management of acute malnutrition. In terms of equipment, most facilities had mid-upper arm circumference (MUAC) tape for children (79%) and a child weighing scale (72%), but it was less common for facilities to have child health passports with growth charts (66%) and infant weighing scales (59%). Key medicines and commodities such as ready-to-use therapeutic foods (RUTFs) (59%), zinc sulphate (53%) and vitamin A (47%) were available in approximately one in two health facilities **(see Figure 4)**.

Basic obstetric and newborn care

The 2018/19 HHFA assessed *readiness* to deliver basic obstetric care services based on 21 essential inputs including trained staff and guidelines, equipment and medicines and commodities (see Box 3), and found that on average, facilities had about 70% of the inputs needed to deliver obstetric care services. However, just a handful of facilities had all items necessary. Within the staff and guidelines domain, protocols for essential childbirth care were available in nearly two-thirds of facilities (64%), but fewer facilities had at least one staff trained in essential childbirth care (40%) **(see Figure 5)**. Availability of equipment was variable. While most facilities had gloves (96%) and blood pressure apparatus (92%), there was lower availability of vacuum aspirators or dilation and curettage kits (37%), sterilization equipment (46%) and manual vacuum extractors (47%). In terms of essential medicines, more than 85% of facilities were well stocked with relevant items including injectable uterotonics, injectable antibiotics, magnesium sulphate, skin disinfectant and antibiotic eye ointment. The nearly universal availability of injectable uterotonics, antibiotics and magnesium sulphate reflects the Government of Malawi's strong commitment to ensuring safe delivery care for all women in Malawi. However, only 62% had intravenous solution with infusion sets as part of their inventory. In many situations, not having these important medicines and commodities could lead to serious complications during labor and birth, potentially endangering mother, baby, or both.

Box 3: Tracer items related to basic obstetric care services

21 tracer items related to basic obstetric care services consist of :

- **Checklists and/or job aids for essential childbirth care**
- **Staff trained in newborn resuscitation in the past two years**
- **Guidelines for essential childbirth care**
- **Staff trained in essential childbirth care in the past two years**
- **Gloves**
- **Blood pressure apparatus**
- **Infant weighing scale**
- **Emergency transport**
- **Suction apparatus**
- **Soap and running water or alcohol-based hand rub**
- **Examination light**
- **Delivery bed**
- **Manual vacuum extractor**
- **Sterilization equipment**
- **Vacuum aspirator or D&C kit**
- **Injectable uterotonic**
- **Injectable antibiotic**
- **Magnesium sulphate (injectable)**
- **Skin disinfectant**
- **Antibiotic eye ointment**
- **Intravenous solution with infusion set**

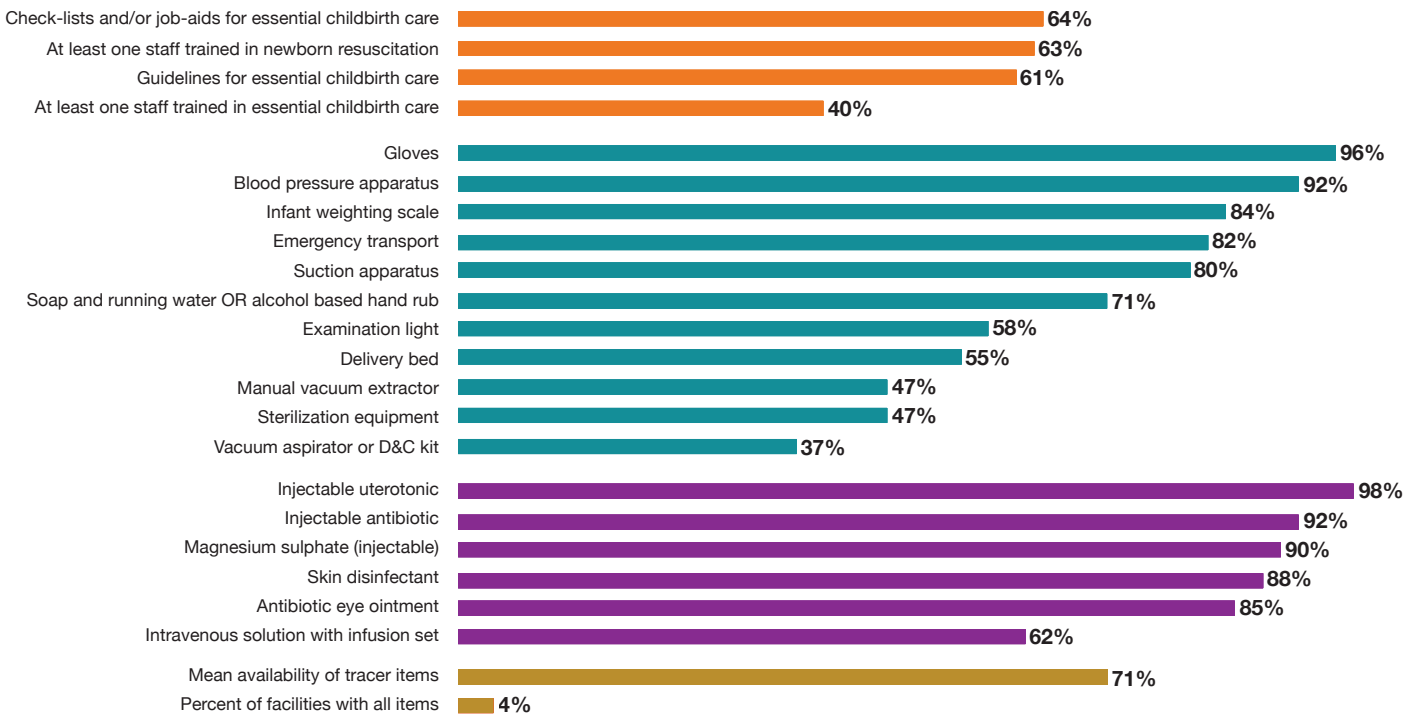


Figure 5:

Percentage of facilities that have tracer items for basic obstetric care among facilities that provide delivery services (N=568)

Source: 2018/19 Harmonised Health Facility Assessment, 2019

3. Low knowledge of health service providers in some areas

Nutrition services

Using patient vignettes, the Malawi 2018/19 HHFA provides the first country-wide assessment of clinical knowledge of providers. Three vignettes covering common childhood illnesses (e.g. diarrhea with severe dehydration, pneumonia, and malaria with anemia) helped gauge the ability of health care workers to appropriately assess and counsel on nutrition for sick children.

Overall, health care workers performed better on nutrition counseling than on nutrition assessment, but less than half of providers could appropriately assess *and* counsel on nutrition associated with three common conditions (37% for diarrhea with severe dehydration, 28% for pneumonia, and 33% for malaria with anemia). There was little variation in the assessment and counselling scores based on provider cadre (e.g. doctor, nurse), managing authority (e.g. government, church, private), and urban/rural location, which was an unexpected finding **(See Figure 6)**. In short, while providers in Malawi could identify childhood illness, they were less able to adequately treat conditions or link people with appropriate services even though this is considered to be a critical part of the country's standard package of care. This points to a massive gap in delivering quality counseling on nutrition, which seems to be a secondary consideration for most health care providers. It also represents a missed opportunity to leverage the health sector to make progress on improving poor nutrition indicators.

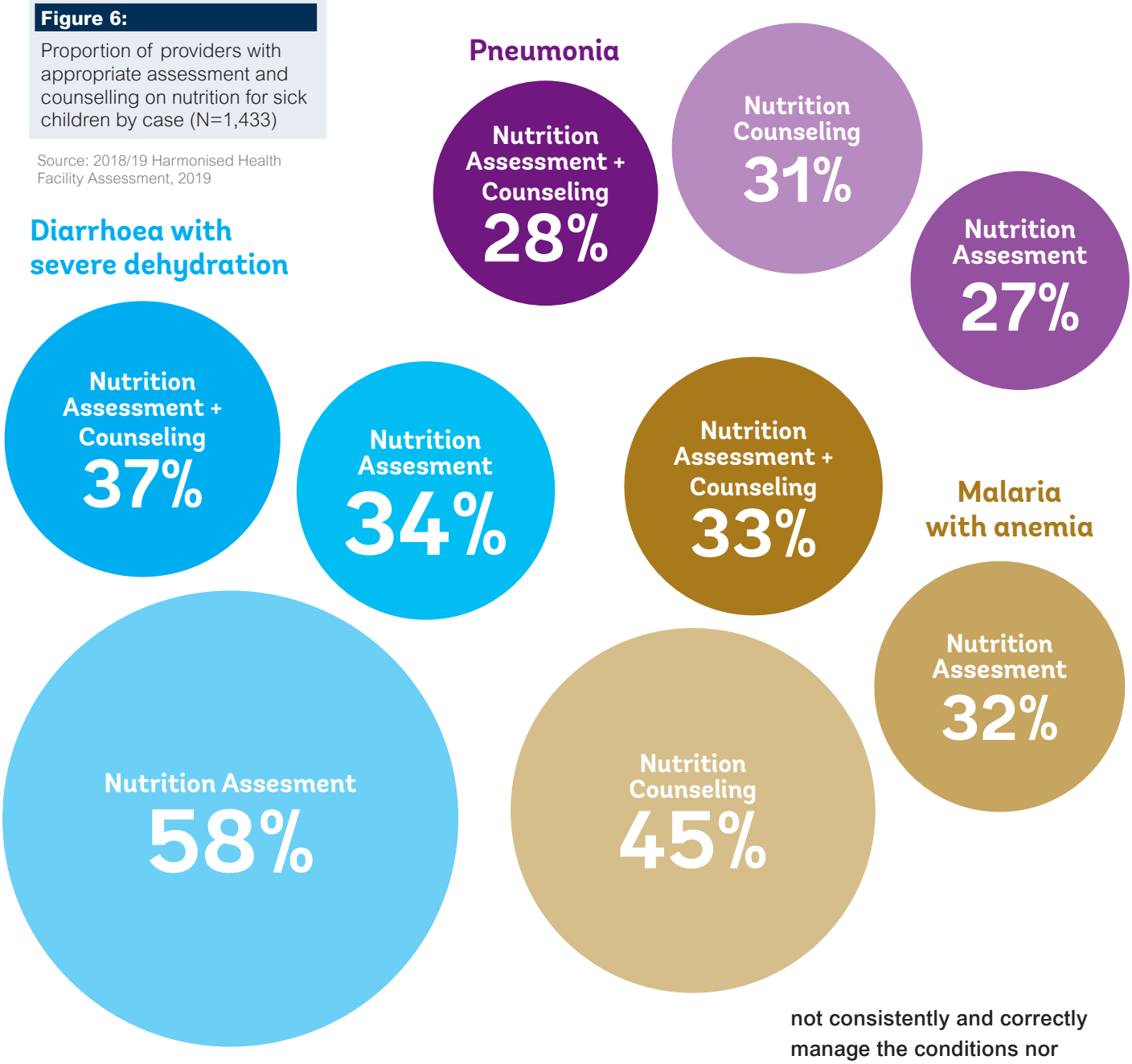
Basic obstetric and newborn care

Two vignettes focused on postpartum hemorrhage and neonatal asphyxia helped paint a more complete picture of the barriers related to effective treatment of common causes of avoidable maternal and neonatal deaths in Malawi. Appropriate assessment, diagnosis and management of these conditions has a significant impact on patient outcomes. What is more, no sophisticated equipment or technologies are

Figure 6:

Proportion of providers with appropriate assessment and counselling on nutrition for sick children by case (N=1,433)

Source: 2018/19 Harmonised Health Facility Assessment, 2019



required. Individually, post-partum hemorrhage and neonatal asphyxia were correctly diagnosed by 91% and 81% of health care workers. They were also able to mention around half of the appropriate treatment actions required for the management of post-partum hemorrhage and neonatal asphyxia. Adherence to clinical standards was marginally higher for the assessment of neonatal asphyxia compared to postpartum hemorrhage at 56% and 47% respectively. For both emergency cases combined, 78% of providers mentioned the correct diagnosis, 53% the correct treatment, and 51% the correct adherence to guidelines **(see Figure 7)**.

These results suggest that while providers can correctly diagnose common maternal and newborn emergency conditions, they do not consistently and correctly manage the conditions nor adhere to clinical guidelines. The emergency cases, if diagnosed early, can be managed with a set of rapid appropriate actions to avoid death. However, this requires clinicians to have solid knowledge for assessment, diagnosis, and management at all levels of care to prevent the development of complications, reduce disease progression and severity, and ultimately improve neonatal and pregnancy outcomes.

Figure 7:

Percentage of providers stating correct diagnosis, correct management and adherence to clinical guidelines for maternal and neonatal cases (N=1,433)

Source: 2018/19 Harmonised Health Facility Assessment, 2019

Post-partum haemorrhage

Correct Diagnosis 91%

Correct Management 52%

Adherence to Clinical Guidelines 47%

Neonatal asphyxia

Correct Diagnosis 81%

Correct Management 53%

Adherence to Clinical Guidelines 56%

Both (post-partum hemorrhage and neonatal asphixia)

Correct Management 53%

Adherence to Clinical Guidelines 51%

Correct Diagnosis 78%

Policy implications

Enabling children to meet their full potential requires maternal and child health services in Malawi to be further strengthened, paying careful consideration to geographic variations in health care availability and provision. Working to reduce maternal and neonatal mortality would benefit from a health center-based care strategy, combined with increased investments to ensure that facilities are equipped and providers have the skills they need to deliver quality services. Most maternal deaths occur during labor, birth or the first 24 hours postpartum due to complications that cannot always be predicted or prevented. This means focusing on how individual health centers are responding is important. The availability of life-saving emergency obstetric care in Malawi is limited so access to properly equipped health facilities with trained staff who can appropriately manage obstetric complications is urgently needed. The care strategy should explore options for strengthening the provision of care in facilities through interventions such as birth attendance training for providers, increasing the availability of equipment and supplies and recruiting additional health providers.

Providing quality nutrition services as part of child and maternal health services provides an opportunity to reduce malnutrition and boost human capital in Malawi. There is a clear clinical gap when it comes to ensuring that children receive proper nutrition assessments and counselling during the visits they make to health facilities in their early years. The integration of nutrition into the health sector is often overlooked. It is therefore important to assess existing health systems and programs – including training, supervision and monitoring, budgeting and service delivery plans – to determine whether nutrition services are sufficiently and effectively integrated. Providing regular training (including hands-on experience) to health workers is critical to improving their knowledge and competencies, and by extension their ability to provide effective care. Evidence suggests that competency-based training is an excellent tool and helps improve the skills of healthcare providers[5].

Establishing a supportive system to monitor and supervise health providers should also be considered. Supportive supervision is critical to ensuring that the knowledge of frontline care providers is enhanced to move beyond diagnosis to adequate treatment and/or monitoring. It is important to manage and check-in with health providers regularly to ensure quality of care. Adherence to correct practices is particularly important and should be regularly monitored by supervisors or authorized entities with the necessary clinical expertise. Regular case management and facility reviews may also create a better enabling environment. As part of this effort, there may also be a need to boost skills around effective management.

Endnotes

* The Service Availability and Readiness Assessment is a health facility assessment tool designed to assess and monitor the service availability and readiness of the health sector and to generate evidence to support the planning and managing of a health system. It is designed as a systematic survey to generate a set of tracer indicators of service availability and readiness.

† The Service Delivery Indicators are sets of health and education indicators that examine health workers' and teachers' effort and ability, as well as the availability of key inputs and resources that contribute to the functioning of a health facility or school.

‡ BEmONC qualified facilities are those that offer the following seven signal functions: (1) parental administration of antibiotics; (2) parental administration of oxytocic; (3) parental administration of anticonvulsants; (4) assisted vaginal delivery; (5) manual removal of placenta; (6) manual removal of retained products; and (7) neonatal resuscitation.

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