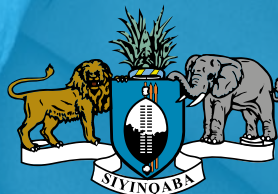




Improving Community-Based Maternal, Child and Adolescent Health and Nutrition in Eswatini: Endline Assessment



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A community health worker provides health education on MNCH and nutrition to a caregiver.

ABBREVIATIONS AND ACRONYMS

ANC	antenatal care
EMTCT	elimination of mother-to-child transmission
FCDO	Foreign Commonwealth and Development Office (United Kingdom)
HIV	human immunodeficiency virus
MCAHN	maternal, child and adolescent health and nutrition
MNCH	maternal, newborn and child health
MoH	Ministry of Health
MPDSR	maternal and perinatal death surveillance and response
NICU	neonatal intensive care unit
PMTCT	prevention of mother-to-child transmission (of HIV)
RHM(s)	rural health motivator(s)
SRH	sexual and reproductive health
UNICEF	United Nations Children’s Fund



A community mentor mother provides counselling to a young mother in a periurban community.

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A sick newborn baby being cared for in the NICU at Mbabane Government Hospital.

EXECUTIVE SUMMARY

The project referred to as ‘Improving community-based maternal, child and adolescent health and nutrition in Eswatini’ was implemented between September 2019 and March 2023. The project aimed at improving the lives of the most vulnerable women and children in Eswatini by ensuring access to quality integrated maternal, newborn, child and adolescent health and nutrition services.

The project was co-funded by UKAID and UNICEF Eswatini Country Office. An endline assessment of the project was conducted between December 2022 and March 2023. A mixed methods approach, combining a desk review, key informant interviews, focus group discussions, a health facility assessment and data abstraction, was used. The overall purpose of the assessment was to evaluate the project’s progress on improving maternal, child and adolescent health and nutrition (MCAHN) and identify key lessons to inform future similar interventions in Eswatini. The project is rated as having been successful, as it met all the output and outcome indicators. Additionally, although it did not meet the population-based neonatal mortality rate, the project was associated with significant reduction in institutional neonatal mortality in the Mbabane Government Hospital neonatal intensive care unit (NICU), which was where it intervened. Summarized below are the key findings organized by assessment thematic area, lessons learned, implementation challenges, conclusions and strategic recommendations.

Key findings by thematic area

Project relevance, theory of change and implementation modalities

- There was no major change in the theory of change during the life of the project.
- The theory of change did not state critical assumptions and was not aligned with the logical framework.

- The project was relevant, given the poor newborn and infant indicators, and was in alignment with national strategic documents.
- Working with the MoH helped strengthen capacity for sustainability, while including the two non-governmental organizations was useful in increasing reach to vulnerable groups.
- Although there was strong collaboration with the MoH, the assessment identified weak coordination and partnership with other relevant stakeholders, including the United Nations Population Fund and World Health Organization, during project implementation.
- The establishment of a maternal and newborn technical working group towards the end of the project was expected to enhance synergies across the continuum of care.

Project achievement against targets

- The project was successful in meeting all nine output indicators. These focused on maternal, newborn and child health (MNCH) trainings for facility- and community-based providers, beneficiary reach and improved capacity for newborn care at the 11 intervention facilities.
- The project had two outcome indicators, these being (i) the percentage of children exclusively breastfed and (ii) the percentage of children who receive a minimum acceptable diet. The project met both of the outcome indicators.
- The project did not meet the neonatal and infant mortality impact indicators as per the *State of the World’s Children* report published by UNICEF in 2021.

Establishment of the Mbabane Government Hospital NICU

- This was identified as the most significant achievement of the project.
- Equipment and consumables were procured and on-the-job training of nurses in intensive newborn care was conducted.
- Data from the NICU indicate that the establishment of the unit was associated with reductions in deaths of newborns admitted at the unit from 12.63 per cent to 7.94 per cent.
- Prematurity is the leading cause of both admissions and neonatal deaths in Eswatini.

KEY GAPS: An inadequate number of nurses are trained in intensive newborn care and there is frequent rotation of trained nurses.

Newborn equipment, essential commodities and supplies

- Essential MNCH equipment and devices were procured for the targeted facilities, including the Mbabane Government Hospital NICU.
- Health workers were oriented on equipment use and safety.
- Biomedical technicians were oriented on equipment maintenance and repair.

KEY GAPS: Suboptimal human resources capacity in equipment maintenance, lack of spare parts in the local market, inadequate budget for equipment repair and maintenance and stock-outs of essential MNCH commodities and supplies.

Quality improvement and maternal and perinatal death surveillance and response (MPDSR)

- Quality improvement and MPDSR structures are established at all levels.
- MPDSR guidelines are available and staff have been trained.
- Seven per cent of health facilities visited reported having quality improvement teams.
- Only 55 per cent of facilities reported having functional MPDSR committees.
- Quarterly supportive supervision and mentorship was provided to over 80 per cent of the health facilities.

KEY GAPS: Quality improvement and MPDSR are not fully operationalized. MPDSR findings are not used to develop and implement quality improvement projects.

Ensuring essential newborn care practices

- Essential newborn care practices have improved. Babies are weighed immediately after birth (95 per cent at baseline compared with 100 per cent at endline), kangaroo mother care is given (22 per cent at baseline compared with 100 per cent at endline) and mothers breastfeed within the first hour of birth (85 per cent at baseline compared with 100 per cent at endline).
- Cord care through use of chlorohexidine was not practised in almost all facilities (82 per cent).

KEY GAPS: There is a need to advocate for the inclusion of chlorohexidine on the essential medicines list, and service providers should be sensitized to its use.

Health information systems for MNCH

- Data collection and reporting tools for rural health motivators (RHMs) were developed and mentorship was undertaken.
- Support for the epidemiology and disease control unit on nutrition surveillance was implemented.
- Some level of data use for decision-making was reported. The SRH unit reported using data to advocate for provision of MNCH commodities.
- More than half (60 per cent) of the targeted facilities reported use of data for decision-making.

KEY GAPS: There is suboptimal use of data for decision-making; multiple registers are used for collecting similar data and there is a lack of consistency in conducting routine data quality audits and support; key indicators for monitoring provision of essential newborn care services are not prioritized, not included in data collection tools and not reported; and there is paper-based reporting for inpatient data, including deliveries.

Capacity-building for MNCH

- Technical assistance was provided to the SRH unit for the development of guidelines and manuals.
- An MNCH technical working group was established and is operational.
- The RHM programme was supported in the development of data collection tools and training, and supportive supervision of RHMs was given.
- The Eswatini National Nutrition Council was supported with trainings, supportive supervision and data quality assessments.
- A total of 186 health workers were trained against a project target of 172.

- Ninety-one per cent of health facilities reported that their health workers had received training in essential newborn care.

KEY GAPS: There is general understaffing for MNCH, frequent rotation of trained staff and lack of training in intensive newborn care, except in Mbabane Government Hospital, and for caesarean sections.

Improving referrals for mothers and newborns

- The number of facilities reporting availability of functional ambulances has increased from two to eight.
- Most health facilities reported having a communication device for facilitating referrals.

KEY GAPS: There is weak adherence to referral protocols and poor communication for referral between facilities, as well as fuel and ambulance maintenance challenges, poor readiness of referral facilities and weak capacity of health centres and regional hospitals, resulting in over-referrals to the national referral hospital.

Increased access to integrated health and nutrition services through community members

- A total of 136,871 children aged 0–2 years were reached with a package of interventions, including nutrition, health, HIV and early childhood development.
- All the targeted 666 RHMs and mentor mothers were trained.
- There was improved knowledge and competencies for MNCH among RHMs, mentor mothers and women with children under 2 years of age.
- There was increased access to health, HIV and nutrition services.
- Nutrition commodities and equipment were procured.

KEY GAPS: There is inadequate staffing for the RHM programme and weak facilitation of supportive supervision. There is an inadequate number of RHMs, they lack transport and they receive a low stipend.

Project value for money

- Cost-effective training and capacity-building approaches were used, including for SRH mentors and trainers of trainers.
- Grassroots community-based organizations and partners were used to enhance equity.
- An integrated approach in delivery of services was used to ensure efficiency and cost-effectiveness.

- Proven, cost-effective MNCH interventions were implemented, especially in essential newborn care.
- The UNICEF supply division was used for procurement of equipment and commodities.
- Broader country health systems were strengthened for sustainability.

KEY GAPS: There is inadequate local capacity to repair some of the procured equipment in a timely manner. Also, car rental, as used for project supportive supervision, was more expensive than purchasing and maintaining a project car would have been.

Gender, disability and social inclusion

- Gender disaggregated data were used.
- Gender was mainstreamed through male involvement initiatives.
- Vulnerable groups, including adolescent mothers, HIV-positive women and children, were targeted.
- There was a focus on children with disabilities through early child development centres, community awareness and ensuring access to services for children living with disabilities.

KEY GAP: There is weak programming for and targeting of adolescents and adolescent mothers.

Lessons learned and best practices

- The use of SRH mentors is a cost-effective and sustainable approach.
- The establishment of the NICU was a relevant and effective intervention.
- Training of RHMs and mentor mothers to deliver integrated services was effective.
- Working with community members ensures continuity of MNCH services during public health emergencies such as the COVID-19 pandemic.
- MNCH may be used to strengthen broader health systems.
- Implementation through existing MoH structures is effective in ensuring sustainability and continuity of MNCH programmes.
- Implementing demand- and supply-side interventions is key to sustained uptake of high impact MNCH interventions.
- Working with grassroots organizations helps reach vulnerable groups.
- The use of male champions to reach male partners of pregnant women is an innovative intervention.



A community health-care worker conducts a home visit to a caregiver with a child who is under 2 years of age.

Project implementation challenges

- The COVID-19 pandemic disrupted service delivery and access.
- Civil unrest led to project disruptions.
- There was weak coordination and partnership with other MNCH players.
- There was inadequate government resource allocation to MNCH.
- There were challenges with regard to human resources for health at MNCH service delivery points, coupled with frequent rotation of health workers.
- The lack of electronic systems for inpatient data delayed the availability of information for decision-making.

Conclusions and recommendations

Conclusions

The project has made a contribution to enhancing the capacity of community members for delivery of integrated health and nutrition services, improving male involvement in MNCH, enhancing the quality of newborn care through the establishment of the NICU, improving capacity

of health workers in provision of MNCH services and strengthening data collection and use in MNCH decision-making. Quality improvement and MPDSR structures have been established, ready for operationalization.

Strategic recommendations

- Strengthen the capacity of the MoH to plan, lead, coordinate and implement MNCH programmes.
- Improve, scale up and sustain gains made in newborn care, including at the NICU.
- Operationalize quality improvement and maternal and perinatal death surveillance and response.
- Optimize data use for MNCH decision-making and programming.
- Strengthen MNCH referral systems and processes.
- Scale up competency-based MNCH skills-building approaches, such as the use of SRH mentors.
- Continue to strengthen the capacity of the RHM programme to recruit, train, deploy and provide supportive supervision.

A male champion provides education in male involvement on MNCH and nutrition.



INTRODUCTION AND BACKGROUND

76%

THE PERCENTAGE OF THE COUNTRY'S POPULATION THAT LIVES IN THE RURAL AREAS



4

THE NUMBER OF ADMINISTRATIVE REGIONS, NAMELY **HHOHHO, MANZINI, SHISELWENI AND LUBOMBO**



US\$2,960

THE GROSS NATIONAL INCOME PER CAPITA



1.1 Country context

The Kingdom of Eswatini, formerly known as Swaziland, is a mountainous, landlocked country in southern Africa bordering South Africa and Mozambique. The country has four administrative regions, namely Hhohho, Manzini, Shiselweni and Lubombo. It has a total area of 17,364 square kilometres and an estimated population of 1.176 million.¹ The majority of the country's population lives in the rural areas (76 per cent). In terms of its economy, Eswatini is classified as a lower middle-income country with a gross national income per capita of US\$2,960.² Although the poverty rate has declined in recent years (from 63 per cent in 2010 to 59 per cent in 2017) it remains high, especially in the rural areas (70 per cent) and in Lubombo (72 per cent) and Shiselweni (67 per cent).³

1 Africa Health Business Limited, 'Eswatini's Health Sector', Nairobi, 2021, <https://www.ahb.co.ke/wp-content/uploads/2021/09/Country-Snapshot_Eswatini.pdf>.
 2 The World Bank, 'Health System Strengthening for Human Capital Development in Eswatini Project (P168564)', Project Information Document, 29 April 2020, <<https://documents1.worldbank.org/curated/fr/261181588177327504/pdf/Project-Information-Documents-Health-System-Strengthening-for-Human-Capital-Development-in-Eswatini-P168564.pdf>>.
 3 Ibid.

1.2 Health service delivery structure

The Eswatini health-care system is based on the primary health-care model and has five distinct levels. These are:

Level 1:	The community
Level 2:	Primary health-care facilities, comprising 'Type A' clinics, 'Type B' clinics and public health units
Level 3:	Health centres
Level 4:	Regional referral hospitals
Level 5:	National referral hospitals

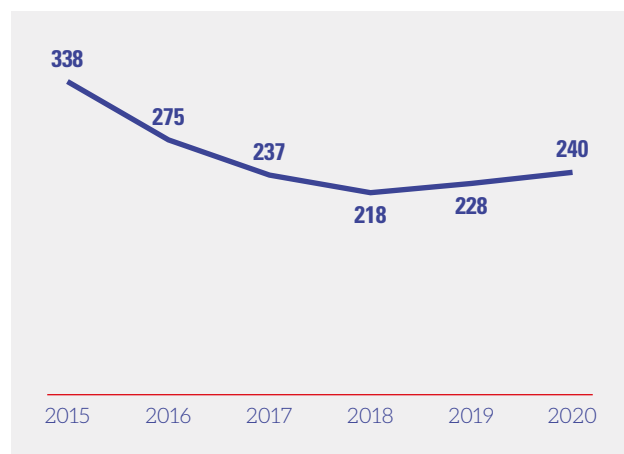
Antenatal care (ANC) services are offered at Level 2, while delivery services are offered at levels 3, 4 and 5. In total, there are six government and two mission hospitals in Eswatini. Mbabane Government Hospital, Psychiatric Government Hospital and TB Hospital are referral hospitals. The other government hospitals are the Hlathikhulu Government Hospital (Shiselweni region), Mankayane Government Hospital (Manzini region) and Piggs Peak Government Hospital (Hhohho region). The two mission hospitals are the Good Shepherd Mission Hospital (Lubombo region) and Raleigh Fitkin Memorial Hospital (Manzini region). The country has five health centres, namely, Dvokolwako, Matsanjeni, Mkhuzweni, Nhlangano and Sithobela.

1.3 The MCAHN situation

Despite having almost universal coverage for ANC with 76 per cent of pregnant women making at least four ANC visits per pregnancy and 88 per cent having facility-based deliveries, Eswatini's maternal mortality remains high at 240 per 100,000 live births.⁴ Leading causes of maternal deaths include obstetric haemorrhage (25 per cent), hypertensive diseases of pregnancy (16 per cent) and pregnancy-related sepsis (10 per cent).⁵ Figure 1 shows the trends in maternal mortality in Eswatini.

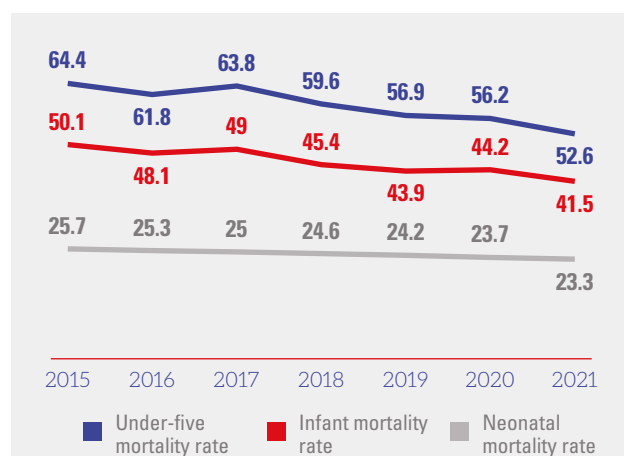
While the country has made progress in improving neonatal mortality, neonatal deaths still account for more than 30 per cent of deaths of children under the age of 5. As at 2021, the country's neonatal mortality was 23.3 per 1,000 live births, a rate that is far from meeting the

FIGURE 1: TRENDS IN MATERNAL MORTALITY



Source: UNICEF Data, 'Countdown to 2030 Country Profile: Eswatini'

FIGURE 2: TRENDS IN CHILD MORTALITY



Source: UNICEF Data, 'Countdown to 2030 Country Profile: Eswatini'

Sustainable Development Goal target of 12 per 1,000 live births. The country's infant mortality rate is 41.5 per 1,000 live births, and the under-five mortality rate is 52.6 per 1,000 live births.⁶ Figure 2 presents child mortality trends for the country since 2015.

Nutrition is a main underlying cause of mortality among children under the age of 5. Maternal nutrition impacts newborn health outcomes. According to UNICEF data, close to a quarter (23 per cent) of children under the age of 5 in Eswatini are stunted, while 2 per cent are wasted.⁷ This is attributed to poor breastfeeding practices and insufficient quality of complementary foods, especially for infants.⁸ The prevalence of stunting in rural areas is 27 per cent, compared with urban areas, where the

4 UNICEF Data, 'Countdown to 2030 Country Profile: Eswatini', <<https://data.unicef.org/countdown-2030/country/Eswatini/1/>>.

5 Ibid.

6 UNICEF Data, 'Eswatini Country Profile: Key demographic indicators', <<https://data.unicef.org/country/swz/>>.

7 Ibid.

8 Standardized Monitoring Assessment for Relief and Transition (SMART), 2017.



This man involves himself in the upbringing of his child using his MNCH and nutrition education.

rate is 17 per cent. Anaemia prevalence among women, pregnant women and children under 5 years is estimated at 27 per cent, 30 per cent and 42 per cent, respectively.⁹ Vitamin A coverage among children aged 6 to 59 months is 31 per cent.¹⁰ Early initiation of breastfeeding and exclusively breastfeeding are estimated at 45 per cent and 64 per cent, respectively.

1.4 The Eswatini community-based MCAHN project

Despite having good coverage indicators across the reproductive, maternal, child and adolescent health continuum, Eswatini continues to have poor neonatal and child mortality indicators. This could be an indication of poor quality of delivery of MNCH services.

Starting in 2019, to address these poor indicators, UNICEF has provided support to the MoH in Eswatini to implement a FCDO-funded integrated MCAHN project

in selected facilities and communities. With the goal of reducing maternal, neonatal and infant mortality, the project's aim was to ensure improved health outcomes for mothers, newborns and children, especially those living with HIV. The MCAHN project targeted 11 health facilities where maternity services are provided and 20 constituencies in the country's four regions. Table 1 provides a list of the 11 intervention facilities, by region.

Table 1: List of project intervention facilities

Regional	Intervention facilities
Hhohho	Piggs Peak Government Hospital
	Mbabane Government Hospital
	Dvokolwako Health Centre
	Mkhuzweni Health Centre
Manzini	Raleigh Fitkin Memorial Hospital
	Mankayane Government Hospital
Shiselweni	Nhlangano Health Centre
	Hlathikhulu Government Hospital
	Matsanjeni Health Centre
Lubombo	Sithobela Health Centre
	Good Shepherd Mission Hospital

Annex 2 provides the project's logical framework matrix, detailing its goal, outcomes, outputs and planned activities.

1.5 Assessment purpose and deliverables

Overall assessment purpose

The overall purpose of the assessment was to assess the MCAHN project's progress and results and identify key lessons to inform future similar interventions in Eswatini.

Assessment focus areas

The endline assessment focused on areas supported by the project at national, health facility and community levels to verify that it was implemented as planned and that the needs of the targeted population were met as envisaged in the project document. Additionally, the assignment focused on eliciting lessons learned and best practices; assessing value for money; assessing gender, social and disability inclusion; and developing recommendations for improving the MCAHN project.

9 Development Initiatives Poverty Research Ltd., 'Eswatini 2018 Nutrition Country Profile', 2018, <<https://globalnutritionreport.org/documents/220/Eswatini.pdf>>.

10 UNICEF Data, 'Eswatini Country Profile: Key demographic indicators', <<https://data.unicef.org/country/swz/>>.



Equipment donated by UKAID in the NICU.

METHODS AND APPROACHES

11

THE NUMBER OF **INTERVENTION FACILITIES** AND THEIR CATCHMENT AREAS



17

respondents

WERE REACHED, FROM

MoH at the national level (6),
the Eswatini National Nutrition Council (1),
UNICEF Eswatini (6),
United Nations Population Fund (1),
World Health Organization (1),
Siphilile Maternal and Child Health (1) and
World Vision Eswatini (1).



The assessment utilized a mixed methods approach, combining qualitative and quantitative data collection methods. The qualitative data collection methods included a review of country strategy documents, focus group discussions and key informant interviews. Data collection was centred around the 11 intervention facilities and their catchment areas across the four regions of Manzini, Hhohho, Lubombo and Shiselweni. The data collection methods used in this endline assessment are described below.

Literature review

Relevant national and project-related documents were collated and reviewed. The desk review exercise sought to:

- Provide contextual understanding of the MNCH situation in Eswatini.
- Provide an understanding of maternal, child and adolescent health priorities for the government of Eswatini.
- Provide an understanding of the project, the challenges it sought to address and its relevance.
- Identify project targets and benchmarks as documented in project documents, including the project logical framework matrix and theory of change.
- Understand project progress against targets.
- Identify documented gender, disability and social inclusion initiatives.
- Identify initiatives implemented to ensure project value for money.

Documents reviewed

The review documents included the Eswatini Sexual, Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition Strategy (2019–2023), Every Newborn Action Plan, the FCDO-funded community-based MCAHN project document, the log frame and theory of change, the project baseline survey report and project progress reports. Findings from the literature review were triangulated through the other data collection methods, as described below.

Key informant interviews with stakeholders

Using a structured guide, key informant interviews were conducted with project implementers and other stakeholders at the national level. In total, 17 respondents were reached, including representatives from the MoH at the national level (6), the Eswatini National Nutrition Council (1), UNICEF Eswatini (6), United Nations Population Fund (1), World Health Organization (1), Siphilile Maternal and Child Health (1) and World Vision Eswatini (1). The national-level key informant interviews focused on the role of the respondent and their institution or department in the implementation of the project, the MNCH needs that the project sought to address, project rationale and relevance, project activities implemented, performance (output and outcomes) against targets, project gender, social and disability inclusion initiatives, value for money, lessons learned and best practices, implementation challenges and recommendations for project improvement.

Key informant interviews with health workers in targeted facilities

Key informant interviews with health facility management and health care workers involved in the delivery of maternal, child and adolescent health services were conducted in each of the 11 intervention health facilities. The interviews sought to provide an understanding of the status of maternal, child and adolescent health service delivery before the initiation of the project, including the main service delivery gaps and indicators; the relevance of the MCAHN project implementation in the facility; activities implemented in the facility to improve maternal, child and adolescent health, including health worker trainings and other health systems support; results from the implementation of the activities, including changes in knowledge of health workers, quality, health systems and uptake of maternal, child and adolescent health services; lessons learned and best practices; and remaining gaps and recommendations for how the project could be strengthened to improve maternal, child and adolescent health outcomes. A total of 33 respondents were reached.

Table 2: Focus group discussion categories and content of discussion

Focus group discussion category	Number of focus group discussions conducted
Focus group discussion with mothers of children under 2 years of age	8
RHMs	8
Male partners and male champions	12
Community leaders	4

Focus group discussions

In each of the 11 target facilities' catchment areas, focus group discussions were held with the following groups: mothers with children under 2 years of age; RHMs; male champions and partners of pregnant and lactating women; and community leaders. A focus group discussion guide for women with children under the age of 2 is provided as Annex 5. A generic focus group discussion guide for RHMs, male partners and community leaders, which was contextualized to each of the three discussion categories, is provided as Annex 6. Table 2 shows the number of focus group discussions conducted for each category.

MNCH health facility assessment and data abstraction

A MNCH facility assessment was conducted in each of the 11 intervention health facilities. The facility assessment focused on availability of essential maternal, child and adolescent health services; trained health workforce; equipment and infrastructure; commodities and supplies; guidelines for provision of quality maternal, child and adolescent health services; quality improvement and MPDSR; referrals; and health information systems for maternal, child and adolescent health. A health facility assessment tool was used (Annex 7). Data abstraction was undertaken at the Mbabane NICU.

Ethical considerations

This being a project assessment, no stringent ethical approvals were required ahead of the study. However, approvals to implement the assessment were sought from the national ethical review committee and the MoH. The MoH provided an introductory letter to all facilities and communities participating in the assessment. The officer in charge of health facilities visited provided permission to conduct interviews and abstract data from their facility records. Additionally, informed written consent to interview was obtained from all respondents. Confidentiality and privacy were ensured. The assessment report does not contain names of respondents or any information that can be traced back to them.

3

A caregiver with a newborn baby in the NICU.

ASSESSMENT FINDINGS



23

per 1,000 live births

NEWBORN MORTALITY RATE

41

per 1,000 live births

INFANT MORTALITY RATE

80%

EXCLUSIVE BREASTFEEDING

65%

of children

RECEIVE THE **MINIMUM**
ACCEPTABLE DIET

This section of the report provides the endline assessment findings organized by assessment thematic area. These thematic areas are aligned to the endline assessment purpose and focus areas, as well as the main project implementation areas across the two outputs.

3.1 Theory of change, project relevance and implementation modalities

The assessment sought to review the project theory of change and whether this had changed over the life of the project. Additionally, the assessment sought to understand the project relevance in addressing country priorities. Understanding project implementation modalities is key in understanding project efficiency and in ensuring sustainability. A review of the theory of change (see Annex 1) identified that it did not articulate critical assumptions and therefore these could not be monitored during the project implementation. A further analysis identified that the theory of change, which combines Eswatini and Lesotho, details broader outcome indicators for health, nutrition and strengthening of health systems. The theory of change does not fully align with the project logical framework matrix. The theory of change identifies outcome indicators relating to maternal, neonatal and infant mortality, nutrition and health systems strengthening, but the logical framework has only two indicators, and both are related to nutrition outcomes.

This, again, is a design flaw in that only nutrition indicators are assessed at outcome level while the project made significant investments in newborn health care.

The project prioritized newborn health and infant nutrition across the reproductive, maternal, newborn, child and adolescent health continuum. With the country's poor newborn and infant mortality indicators of 23 and 41 per 1,000 live births, respectively, the project was relevant in having its focus on newborn health.¹¹ Additionally, national documents identify newborn health as a priority intervention area. The Eswatini Sexual, Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition Strategy (2019–2023), National Food and Nutrition Strategic Plan 2010–2015 and Every Newborn Action Plan¹² identify newborn health and nutrition as priority intervention areas. Good MNCH implementation practices identify that it is difficult to separate maternal from newborn health programming as the quality of care women receive during pregnancy has an impact on newborns. While the UNICEF mandate does not cover pregnancy-related interventions, this assessment identifies that it would have helped to have stronger collaboration with agencies supporting the maternal health part of the continuum, such as the United Nations Population Fund. The assessment did not identify deliberate attempts to coordinate with partners implementing interventions in other parts of the continuum, especially those focused on ANC. The MNCH technical working group, which was established in the last phase of the project, presents a mechanism for coordinating MNCH stakeholders. On levels of care, the project targeted facilities that are mandated to provide MNCH services, national and regional hospitals and health centres, and the community level. While community-level interventions were linked to the facility-based interventions, especially for the five regional hospitals, interventions implemented at community level in the other intervention areas had no clear geographic linkage to facility-level interventions. This is because the project did not target clinics, which are nearer and more linked to the community health interventions by RHMs. Linking community health and facility-based interventions is important in maternal, newborn, child and adolescent health programming because it helps ensure that as demand is created for uptake of services, facility-level interventions address supply-side bottlenecks and hence create trust in health facilities. When that is not done, a lack of trust in health facilities can be created, with further lower demand for and uptake of services.

The project had three implementing partners, namely, the MoH, World Vision International (Eswatini field office) and

Siphilile Maternal and Child Health. While implementing through the MoH was key in strengthening its capacity and hence overall sustainability, working with the two non-governmental organizations helped supplement government efforts to reach the most vulnerable mothers and children. The project has successfully supported the establishment of an MNCH technical working group as part of the effort to strengthen coordination. The technical working group provides a platform for improving coordination across the MNCH continuum of care, in both MoH programmes and partner-funded interventions.

Key gaps

Key programme design gaps identified include inadequate project indicators to measure improvements in outcomes for newborns and children given the project investments; weak coordination with other partners, including the key United Nations MNCH partners, World Health Organization and United Nations Population Fund; and failure by the programme design to effectively articulate and manage assumptions related to the reproductive, maternal, newborn, child and adolescent health continuum, both by life course and by levels of care.

Programmatic recommendations

- Future MNCH programme designs should ensure response across the entire reproductive, maternal, newborn, child and adolescent health continuum, both by life course and by levels of care, either through the project or through coordination with others.
- Ensure stronger partnership with other relevant partners through the already established MNCH technical working group.

3.2 Project achievements against set targets

The project sought to achieve two impact and outcome indicators and nine output indicators. Review of the project reports and log frame identify that the project has (i) achieved all nine output indicators; (ii) achieved one of the two outcome indicators; and (iii) not achieved the two impact indicators of reduction in infant and neonatal mortality rate.

Achieved: All output indicators

Table 3 shows the project progress against the nine output indicators as extracted from the project year 4, quarter 1 report.

¹¹ UNICEF Data, 'Eswatini Country Profile: Key demographic indicators', <<https://data.unicef.org/country/swz/>>.

¹² World Health Organization and United Nations Children's Fund, *Every Newborn: An action plan to end preventable deaths*, World Health Organization, Geneva, 2014.



Table 3: Progress on output indicators

Indicator	Baseline	2022 target	Project achievement
Number of health facilities utilizing neonatal intensive care facilities	–	1	1
Number of health facilities providing essential newborn care services (including care of preterm babies) according to neonatal guidelines	–	11	11
Number of health workers trained in and implementing essential newborn care based on the national protocol	–	172	186
Number of health facilities implementing perinatal and neonatal death audits to inform project improvement	–	11	11
Number of health facilities providing a package of services for early childhood development, including essential newborn care, health, nutrition, HIV, early stimulation and nurturing care	–	11	11
Number of community health workers trained in and implementing provision of an early childhood development package of services (nutrition, HIV, newborn and infant care, water, sanitation and hygiene, early stimulation and nurturing care)	–	666	666
Number of children 0–2 years of age reached with a package of interventions that include nutrition, health, HIV and early childhood development	–	128,422	142,362
Number of tinkhundla (constituencies) with RHMs providing an early childhood development information package (health, nutrition, water, sanitation and hygiene, HIV, early stimulation and nurturing care) at community and household levels	–	20	27
Number of male partners of pregnant and lactating women sensitized to male involvement	–	21,387	17,620

Source: Project year 4, quarter 1, updated log frame

Achieved: One of two outcome indicators

The project sought to achieve two outcome indicators, these being (i) the percentage of children exclusively breastfed and (ii) the percentage of children who receive a minimum acceptable diet. From a baseline of 48 per cent, the project surpassed the set indicator target of 62 per cent and achieved 65 per cent of children receiving the set minimum acceptable diet. Although different sources of data were used for the baseline and endline assessments, the outcome indicator on exclusive breastfeeding improved from a baseline of 64 per cent¹³ to 80 per cent,¹⁴ against a target of 75 per cent. Results from the 2022 Multiple Indicator Cluster Survey report will provide more details on the two outcome indicators.

Not achieved: The impact indicators

The infant mortality indicator, which had a target of 30 per 1,000 live births by 2021, showed a small reduction from 50 at baseline to 41 at per 1,000 live births at the end of the project period, but failed to meet the set target.¹⁵ The neonatal mortality rate worsened during the project implementation period from 20 per 1,000 live births to 23, short of the project target of 14 per 1,000 live births by the end of 2021.¹⁶ Failure to achieve the impact indicators can be attributed to other factors beyond the scope of this project, including broader health system challenges. As the impact indicators are determined by many other factors beyond the control of the project, this project cannot be held accountable for failure to achieve the impact indicators. Annex 2 provides details on the project progress against the set output, outcome and impact indicator targets.

3.3 Establishment of the Mbabane Government Hospital NICU

Functional equipment, with health workers who are qualified to use and maintain them, is a prerequisite for delivery of quality MNCH services. Building on the existing neonatal care unit, the project supported the establishment of a neonatal intensive care unit within Mbabane Government Hospital. Key informants identified the establishment of the Mbabane Government Hospital NICU as the most significant achievement of the project. To establish the NICU, the

project procured neonatal care equipment, provided medicines and consumables and conducted on-the-job training for nurses on intensive neonatal care. As part of the endline assessment and to assess utilization and outcomes, NICU data for the period 2019–2022 were abstracted. Since opening, the NICU has realized a significant increase in the number of admissions, from 689 in 2019 to 1,193 in 2022. Despite this increase, the percentage of deaths of admitted newborns has decreased, from 12.63 in 2019 per cent to 7.94 per cent in 2022. The leading cause of admissions in the unit is prematurity (50 per cent). Most newborns admitted weighed 2.5 kilogrammes or more (57 per cent), with 3 per cent weighing less than 1 kilogramme. With the facility being the only NICU in the country, numbers of inter-facility referrals would have been expected to increase alongside increased admissions. However, at 3 per cent of total admissions, newborn referrals from other facilities are low. This could mean that inter-facility referral of babies is conducted when they are in utero. An alternative explanation could be that clients self-refer in the event of identified risks or complications, which is a good practice, especially given the challenges with the ambulance system. Of these few referrals, 60 per cent were from three facilities: Mankayane (25 referrals, 22 per cent), Piggs Peak (23 referrals, 20 per cent) and Dvokolwako (17 referrals, 15 per cent). Figures 3, 4 and 5 show the trends in NICU admissions, leading causes of admissions and admissions by weight, respectively.

An analysis of NICU data since 2019 shows a reduction in the percentage of newborns admitted who die, from 12.6 per cent in 2019 to 7.94 per cent in 2022. As was expected, complications of prematurity (including extremely low birth weight) are responsible for most of neonatal deaths (57 per cent). In agreement with the existing literature, most neonatal deaths occurred within seven days of birth (81 per cent). Figure 6 shows the trend in deaths of newborns admitted to the NICU from 2019 to 2022, while Figure 7 shows neonatal deaths by cause. Age of death of newborns is shown in Figure 8.

A significant percentage of newborns (31 per cent) admitted to the NICU over the four years of the project were HIV-exposed. It is critical to understand the final outcomes of HIV-exposed infants admitted to the NICU to arrive at recommendations for improving the quality of care for these children.

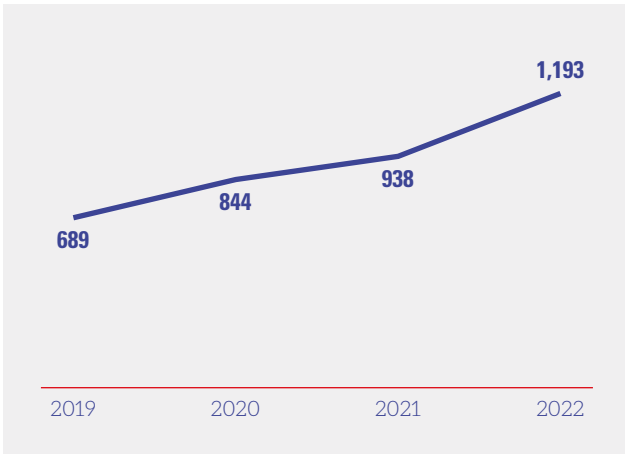
13 United Nations Children's Fund, *The State of the World's Children 2021: On My Mind – Promoting, protecting and caring for children's mental health*, UNICEF, New York, October 2021.

14 Kingdom of Eswatini, 'Annual Vulnerability Assessment & Analysis Report', 2022.

15 United Nations Children's Fund, *The State of the World's Children 2021: On My Mind – Promoting, protecting and caring for children's mental health*, UNICEF, New York, October 2021.

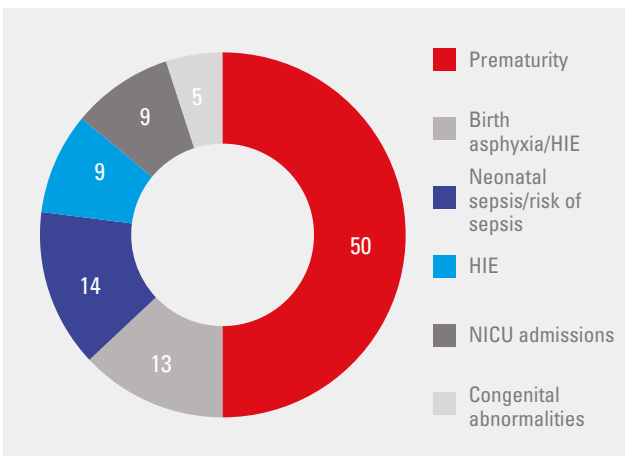
16 Ibid.

FIGURE 3: NICU ADMISSIONS, BY YEAR



Source: NICU registers, 2019–2022

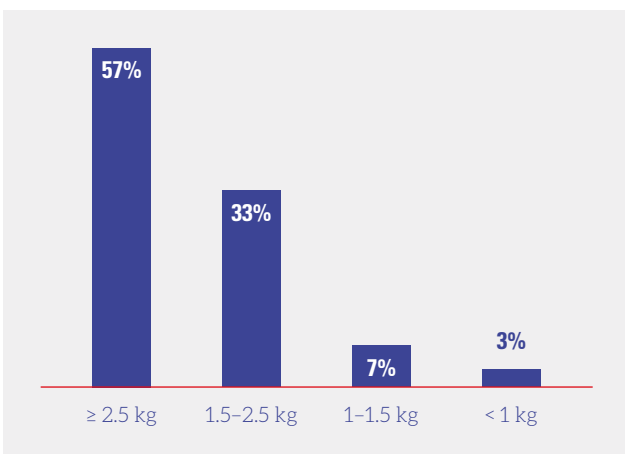
FIGURE 4: NEONATAL ADMISSIONS, BY CAUSE



Source: NICU registers, 2019–2022

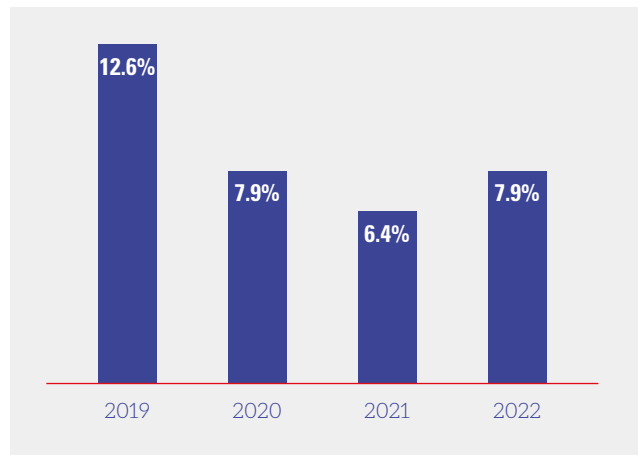
Note: HIE = hypoxic-ischemic encephalopathy

FIGURE 5: PERCENTAGE OF ADMISSIONS, BY WEIGHT



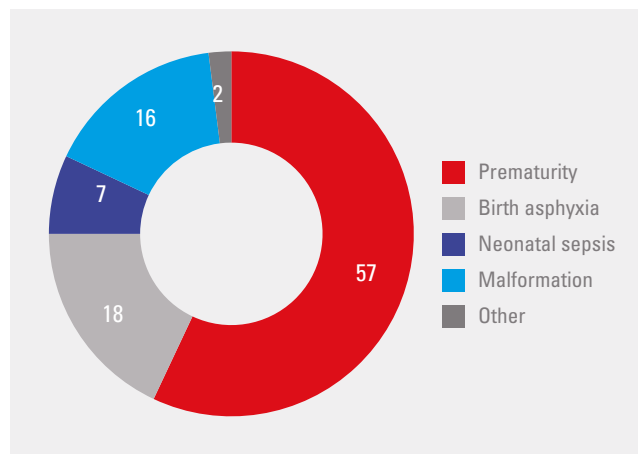
Source: NICU registers, 2019–2022

FIGURE 6: PERCENTAGE OF NEONATES WHO DIE AFTER ADMISSION IN MBABANE GOVERNMENT HOSPITAL NEONATAL WARDS



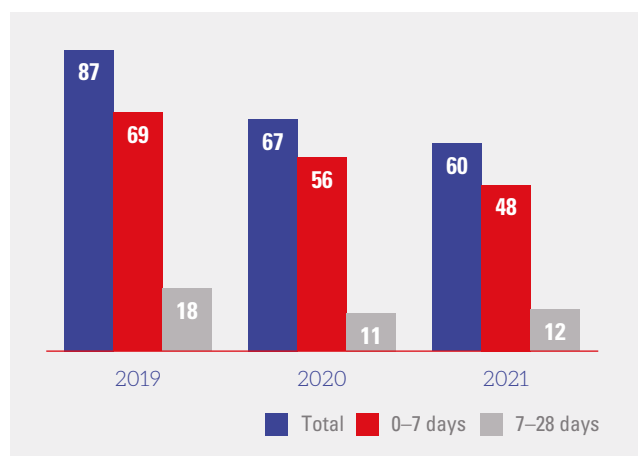
Source: NICU registers, 2019–2022

FIGURE 7: NEONATAL DEATHS BY CAUSE



Source: NICU registers, 2019–2022

FIGURE 8: AGE OF DEATH OF NEWBORNS



Source: NICU registers, 2019–2022



A health-care worker provides support to a mother who is breastfeeding her newborn baby in the NICU.

Key gaps

Understaffing and frequent rotations were reported as the biggest service delivery gap at the NICU unit, as confirmed in a key informant interview:

During a normal shift, one nurse is in attendance and the sister in charge and the two are responsible for 25 to 30 sick newborns at a time. We have received training. Out of the six nurses in this unit, five have been trained in early essential newborn care and the remaining nurse is also scheduled for a training. Our biggest challenge is that we are understaffed and therefore overburdened, something that affects the quality of care we provide to newborns. Ideally, for provision of quality of intensive care to newborns, one nurse should be assigned to a maximum of two newborns.

Programmatic recommendations

- Establish the Mbabane NICU as a centre of excellence and training hub for intensive newborn care. This could be done through ensuring adequate space, all-time availability of supplies and commodities, and functional equipment and space. A neonatologist should be recruited and stationed at the NICU to offer in-service training.
- With prematurity being the leading cause of admissions and newborn deaths, the MoH needs to have a focused programme to train health workers and provide essential supplies to address prematurity.

Implementation of kangaroo mother care corners is also recommended.

- With the observation that newborn referrals to the NICU from other regions is low, this study recommends a 'deep dive' to understand newborn referral practices.
- Despite the low number of referrals, this assessment recommends a further review of reasons for newborn referrals, with a view to establishing regional referral sites.
- Conduct follow-up studies to understand the treatment outcomes of HIV-exposed newborns admitted to the NICU.

3.4 Newborn equipment and essential commodities and supplies

In order to increase coverage and the quality of neonatal health services, the project procured equipment for the 11 targeted facilities, including the Mbabane Government Hospital NICU. The health facility assessment identified that most of the health facilities had the required equipment and devices. In the Mbabane Government Hospital NICU, the health-care providers highlighted that the support that was provided with the equipment was associated with improved quality of care for newborns. Along with this support, biomedical engineers were trained in maintenance and repair, while health-care workers were trained in equipment use and safety.

Table 4: Equipment status in intervention facilities

Equipment	Available and functional	Available but NOT functional	Not available
Infant incubator (or other source of heat)	11 (100%)	0	0
Kangaroo mother care wrap	3 (27%)	1 (9%)	7 (64%)
Kangaroo mother care chair/bed	5 (45%)	0	6 (55%)
Examination light (or flashlight)	9 (82%)	1 (9%)	1 (9%)
Resuscitation table for baby	11 (100%)	0	0
Newborn Ambu bag	11 (100%)	0	0
Newborn mask (size 0/1)	11 (100%)	0	0
Continuous positive airway pressure machine	7 (64%)	0	4 (36%)
Suction apparatus with catheter	9 (82%)	1 (9%)	1 (9%)
Laryngoscope	7 (64%)	0	4 (36%)
Penguin suction device for mucus extraction	5 (45%)	1 (9%)	5 (45%)
Suction bulb for mucus extraction	8 (73%)	1 (9%)	2 (18%)
Manual vacuum extractor/aspirator	7 (64%)	0	4 (36%)
Ventouse cap	7 (64%)	0	4 (36%)
Forceps – tissue	10 (91%)	1 (9%)	0
Forceps – artery	9 (82%)	0	2 (18%)
Needle holder	11 (100%)	0	0
Scissors	11 (100%)	0	0
Urinary catheter	9 (82%)	0	2 (18%)
Tendon hammer	3 (27%)	0	8 (73%)
Fetoscope/Doppler	10 (91%)	1 (9%)	0
Measuring tape	11 (100%)	0	0
Oxygen gauge	11 (100%)	0	0
Adult Ambu bag	9 (82%)	0	2 (18%)
Refrigerator for storing oxytocin*	11 (100%)	0	0

* Refrigerator accessible in the labour ward or a room nearby at the time of audit.

However, this was interrupted by the COVID-19 pandemic. A total of 41 health workers at the NICU were oriented on the various equipment, including ventilators, continuous positive airway pressure machines, incubators, radiant warmers, blood gas machines, infusion pumps and monitors.

According to an interview informant:

After the procurement of the equipment and training, we are now able to provide quality care to neonates admitted in our unit.

This assessment found that despite the trainings, there is still inadequate capacity for repair of the more sophisticated pieces of equipment, for which the hospital

relies on service contract agreements between the hospital and the supplier. Faulty equipment and devices were reported at the Mbabane NICU.

A review of data from the 11 intervention health facilities found that the majority of the supported facilities have the essential equipment and devices required for the care of newborns during labour, delivery and the postnatal period. While equipment and devices to manage small and sick newborns were largely available, a significant portion of the facilities did not have kangaroo mother care wraps (64 per cent) and kangaroo mother care beds (55 per cent). Lack of these wraps and beds negatively impacts the practice of kangaroo mother care, a proven low cost intervention for managing prematurity. This is of concern,

given that prematurity is the leading cause of neonatal deaths in Eswatini. Table 4 shows equipment status in the 11 intervention facilities, as obtained from the health facility assessment.

Commodities and other supplies

The assessment sought to determine the availability of key essential commodities required for prevention and management of common complications for mother and baby during labour, delivery and the postnatal period. Five of the 11 health facilities visited reported having been out of stock of essential maternal and newborn health commodities in the recent past, although they were well stocked at the time of the assessment data collection. All facilities visited reported having been out of stock of oxytocin for more than a month in the last three months as a result of a national stock shortage, although it was available at the time of the visit. None of the 11 health facilities had supplies for syphilis testing, challenging the country's triple elimination agenda.¹⁷ In Mbabane Government Hospital, commodities and supplies are ordered jointly for the NICU and general intensive care unit. It was reported that sometimes the NICU is not correctly prioritized, leading to stock-outs of essential commodities and supplies. Although a list of essential commodities and supplies for the NICU had been developed, this had not been adopted at the time of this assessment. A total of eight (73 per cent) and six (55 per cent) health facilities reported having never received chlorohexidine and ergometrine, respectively. A review of the national essential medicines list found that 7.1 per

cent chlorohexidine gluconate, an essential medicine for newborn care, is not included on the list. Ergometrine (injection) is included on the list, but it is possible that health workers are not aware of this commodity, indicating a need for creating awareness among health workers on the products included on the list. Table 5 shows the status of essential commodities for emergency obstetric and neonatal care in the 11 intervention facilities.

Key gaps

Suboptimal human resource capacity in equipment maintenance, lack of spare parts in the local market and inadequate budget for equipment repair and maintenance were identified as the weak links in equipment support. The country is currently developing an electronic logistics management information system, which includes an equipment inventory and maintenance plan, with support from the World Bank. For commodities and supplies, essential commodities were reported as having been out of stock, with some essential newborn commodities having never been supplied.

Programmatic recommendations

- Review, update and advocate for adherence to the essential medicines list when supplying commodities and supplies to health facilities.
- Formalize an essential list of medicines and consumables for the NICU and ensure they are part of the country's essential medicines list and procurement plans.

Table 5: Status of newborn health commodities in intervention facilities

Essential medical supply	Out of stock	Never received	Has stock	Average number of days out of stock
Magnesium sulphate	0	0	11 (100%)	0
Diazepam (injection)	0	0	11 (100%)	0
Calcium gluconate	7 (64%)	2 (18%)	2 (18%)	423
Oxytocin (injection)	0	0	11 (100%)	0
Ergometrine (injection)	3 (27%)	6 (55%)	2 (18%)	185
Misoprostol (capsule or tablet)	2 (18%)	3 (27%)	6 (55%)	120
Injectable antibiotic (e.g., ceftriaxone, ampicillin, gentamicin)	1 (9%)	0	10 (91%)	30
7.1% chlorohexidine digluconate aqueous solution or gel	3 (27%)	8 (73%)	0	70
Nevirapine/AZT	0	0	11 (100%)	0
Option B+ (TLE)	0	2 (18%)	9 (82%)	0
TLD (tenofovir disoproxil, lamivudine, dolutegravir)	0	0	11 (100%)	0

17 The triple elimination agenda focuses on simultaneously committing to elimination of mother-to-child transmission of HIV, syphilis and hepatitis B.



A mother gives her preterm newborn kangaroo care in the NICU.

- Provide technical assistance on equipment maintenance and repair, establish a roving equipment maintenance team and train technicians at regional and facility level.
- Strengthen and advocate for implementation of and adherence to an essential devices list and national equipment repair and maintenance plan to be supported under the aegis of the World Bank project.
- Advocate for provision of adequate budgets for equipment repair and maintenance.
- Sensitize health workers to essential newborn health commodities to ensure they are ordered and used.

3.5 Quality improvement and MPDSR

The project has made progress in establishing quality improvement and MPDSR structures. MPDSR is a key quality improvement intervention in understanding the numbers and causes of maternal and perinatal deaths.¹⁸

Quality improvement and MPDSR committees were reported at national level and in all facilities visited. Health workers have been trained and guidelines on MPDSR disseminated to health facilities. All facilities visited had MDSR guidelines clearly displayed at their service delivery points. However, despite the training and availability of

guidelines, MPDSR structures have not been adequately developed at point of care, with maternity and newborn teams often working separately. Reviews are also not always conducted routinely and documentation is poor. In all health facilities visited, a facility committee was reported to be in existence, but there were no work improvement teams at service delivery points such as maternity and newborn units. There was also no defined clear linkage between MNCH service delivery points and the facility quality improvement committee. The assessment found that most of the facility quality improvement and MPDSR committees at facility level were not functional.¹⁹ There was no evidence of quality improvement and MPDSR documentation in most of the facilities visited. None of the health facilities reported implementing quality improvement projects and change ideas to address gaps identified from MPDSR, indicating a weak linkage and suboptimal use of MPDSR as an entry point for quality improvement. Integrating near misses as part of maternal and perinatal death audits is also useful in identifying bottlenecks that need to be addressed to prevent maternal and newborn deaths. An audit of maternal and perinatal near misses was not done in almost all the facilities. The project has already identified this critical gap and a training was planned for the end of February 2023 with the aim of providing national-, regional- and facility-level support to establish functional

¹⁸ World Health Organization, *Maternal and Perinatal Death Surveillance and Response: Materials to support implementation*, Geneva, 2021.

¹⁹ Functionality in this assessment is defined as regular meetings (at least every three months) evidenced by availability of minutes and action plans from the quality improvement and MPDSR meetings.

Table 6: Quality improvement and MPDSR status in intervention facilities

Quality improvement component	Facilities	Percentage
Does this facility have maternal, newborn, child and adolescent health quality improvement teams?	8	73
Is the quality improvement team functional (has it met in the last three months)?	7	64
Are quality improvement team minutes for the last meeting (within three months) available to the interviewer?	5	45
Is there documentation of the quality improvement activities carried out by the team in the last six months?	5	45
Is the official report for the quality improvement activities in the last six months available to the interviewer?	5	45
Does this facility receive regular supportive supervision for maternal, newborn, child and adolescent health services?	9	82
Is the supportive supervision visit report within the last six months available to the interviewer?	7	64
Do MNCH service providers in this facility receive any mentorship support or visits?	8	73
Have the MNCH service providers received any mentorship support or visits in the last three months?	8	73
Facility conducts review of maternal deaths	9	73
Facility conducts review of maternal near misses	5	45
Facility conducts review of perinatal (still births and newborn) deaths	8	73
Facility conducts review of neonatal near misses	5	45
Is there a functional MPDSR committee in this facility?	6	55
Are the minutes of the last MPDSR committee meeting available to the interviewer?	3	27
Are MPDSR action plans developed after review meetings?	5	45
Is a sample of the MPDSR action plan available to the interviewer?	3	27
The MPDSR action plans are implemented ALWAYS	2	18

committees with clear terms of reference. This would enhance collaboration and response between maternity and newborn units, strengthen root cause analysis for action and improve data use for quality improvement projects and for monitoring implementation.

In summary, there is a need to ensure a structured process of undertaking MPDSR and ensuring its findings are used to improve the system. On this point, a key informant observed:

As a clinician, I think the entire MPDSR process is not done well. One, it happens very late, many days or months after the death, and two, it does not happen at the health facility where the death happened. The files are brought, and it happens somewhere at national or regional level. There is usually fault-finding and the real bottlenecks are not identified.

To supplement and validate the qualitative method findings, a health facility assessment was conducted to understand MPDSR and quality improvement status at the 11 intervention facilities. The results confirm the qualitative data collection method findings. Table 6 shows that while quality improvement and MPDSR structures have been established, there is weak operationalization.

Seventy-three per cent of the health facilities reported having quality improvement teams at the time of data collection. While most of the facilities had quality improvement teams, only slightly more than half (55 per cent) had functional MPDSR committees and reported developing action plans after review meetings (45 per cent). Only 18 per cent reported implementing action plans after MPDSR reviews. Only two facilities were implementing maternal and neonatal near miss reviews. The assessment also found that quarterly supervision and mentorship have been conducted by national and regional teams in 82 per cent and 73 per cent of facilities.

Key gaps

Quality improvement and MPDSR are not fully operationalized. MPDSR findings are not used to develop and implement quality improvement projects.

Programmatic recommendations

- Strengthen operationalization of MPDSR through provision of mentorship to the facility member in charge and staff.

- Provide mentorship to health workers, especially those in MNCH units, on the use of MPDSR findings to implement quality improvement projects.
- Support implementation of mini quality improvement projects to address gaps identified from MPDSR findings.
- Support structured MDPDSR meetings and production of reports at all levels.

3.6 Ensuring essential newborn care practices

An assessment of the health facilities was undertaken to identify whether the support had resulted in any improvements in essential newborn care practices. The health facility assessment found that training of health workers was associated with improvements in the practice of essential newborn care practices in the facilities visited. Some of the practices showing improvements included weighing babies immediately after birth (95 per cent at baseline compared with 100 per cent at endline) and kangaroo mother care (22 per cent at baseline compared with 100 per cent at endline). Some improvement in breastfeeding within the first hour of birth was reported (85 per cent at baseline compared with 100 per cent at endline). Cord care through the use of chlorohexidine was not practised in almost all facilities (82 per cent), further validating the finding that 7.1 per cent chlorohexidine was not provided at health facilities. As indicated earlier, chlorohexidine for cord care is not provided for in the national essential medicines list.

Table 7 shows the status of selected essential newborn care practices.

Table 7: Status of essential newborn care practices

Practices observation	No	Yes (but NOT observed)	Yes (observed)
Place the newborn on the abdomen (skin to skin)	0	7 (64%)	4 (36%)
Dry and wrap newborns to keep them warm	0	7 (64%)	4 (36%)
Initiation of breastfeeding within the first hour	0	6 (55%)	5 (45%)
Weigh the newborn immediately	0	7 (64%)	4 (36%)
Routine, complete (head to toe) examination of the newborn	1 (9%)	6 (55%)	4 (36%)
Administer vitamin K to the newborn	0	7 (64%)	4 (36%)
Apply tetracycline eye ointment to both eyes	0	6 (55%)	5 (45%)
Care for the cord by applying chlorohexidine	9 (82%)	2 (18%)	0
Give full bath (immerse the newborn in water) shortly after birth	10 (91%)	1 (9%)	0
Give the newborn prelacteal liquids	10 (91%)	1 (9%)	0
Give the newborn oral poliovirus vaccine prior to discharge	2 (18%)	5 (45%)	4 (36%)
Give the newborn bacille Calmette-Guerin prior to discharge	2 (18%)	5 (45%)	4 (36%)

Key gaps

There is a need to advocate for the inclusion of chlorohexidine on the essential medicines list, and service providers should be sensitized to its use.

Programmatic recommendations

- Advocate for inclusion of chlorohexidine on the essential medicines list and its procurement.
- Develop protocols and standard operating procedures on the use of chlorohexidine for cord care.
- Sensitize service providers to the use of chlorohexidine for cord care.
- Continue to monitor provision of essential newborn care at health facilities through supportive supervision.

3.7 Use of MNCH data for decision-making

Availability of quality and timely data and its use are important components for improving MNCH outcomes. The assessment sought to understand what health management information system activities had been implemented and what the status of data use for MNCH decision-making was. As part of the project's support, and in partnership with different programmes and stakeholders, the community data collection tool was revised. Through UNICEF support, the tool was piloted in 20 constituencies that were part of the FCDO project. RHMs were trained and provided with the revised tool after it had been approved by the health information system coordination committee. Continuous mentorship of the RHMs helped address challenges on summarizing disaggregated data. To address data quality challenges, the project was in the

Table 8: Data use for MNCH decision-making

Use of data for decision-making	Facilities	Percentage
Does this facility regularly compile any reports containing maternal, newborn, child and adolescent health services data?	11	100
Do the reports provide disaggregated data?	6	55
Are maternal, newborn, child and adolescent health reports (except for PMTCT)* analysed for completeness?	10	91
Are maternal, newborn, child and adolescent health reports (except for PMTCT) checked against data in registers?	9	82
Has this facility received any MNCH data quality audit visits in the last six months?	7	64
Does the facility display any data related to maternal health?	1	9
Does the facility display any data related to newborn health?	1	9
Does the facility use MNCH data (except PMTCT) for decision-making	9	82
Have any decisions and actions resulted from review of maternal, newborn, child and adolescent health (except for PMTCT) indicators at this facility?	7	64

Note: PMTCT = Prevention of mother-to-child transmission (of HIV)

process of digitalizing community health data. Although more could be done, this assessment identified some efforts on use of data for MNCH decision-making. Key informants interviewed at the Mbabane NICU reported using data from the NICU to advocate for improved staffing and provision of consumables and supplies. Additionally, the assessment identified use of nutrition data for improved targeting. During implementation of the project, support was provided to the epidemiology disease control unit to improve malnutrition surveillance from four sentinel sites to all 11 delivery sites supported by the FCDO project. Table 8 presents the status of data use for MNCH in the 11 visited facilities.

To further confirm use of data for decision-making, the seven facilities that reported using data for decision-making were asked whether this had resulted in any of the changes listed in Table 9. All seven facilities reported that data had been used to inform changes in resource mobilization and allocation, staff training and organization

of services. Only four facilities reported use of data in planning for commodity procurement.

Key gaps

Key gaps observed included suboptimal use of data for decision-making, multiple registers collecting similar data and lack of consistency in conducting routine data quality audits and support. With inadequate staffing and no data clerks in health facilities, it was reported that there is a high probability of under-reporting. Key indicators for monitoring provision of essential newborn care services, such as neonatal resuscitation and kangaroo mother care, among others, are not prioritized, not included in data collection tools and therefore not reported. Reporting for inpatient services, including deliveries, is paper-based, and this compromises quality and makes tracking challenging. Though progress has been slow, the MoH is in the process of establishing an electronic system for inpatient care through financial support from the World

Table 9: Changes resulting from data use for decision-making

Data-guided changes at the facilities	Facilities	Percentage
Facility personnel responsibilities reviewed and/or changed	5	71
Resources mobilized and/or shifted	7	100
Changes in commodity procurement occurred	4	57
Staff training or supervision conducted	7	100
Data-informed selection of health education topics	6	86
Appreciation for and acknowledgement of staff based on performance	6	86
Change in organization of services (e.g., client flow, organization of physical space)	7	100

Bank project. The SRH unit identifies digitalization of inpatient reporting as a high-priority activity.

Programmatic recommendations

- Review national reproductive, maternal, newborn, child and adolescent health indicators and ensure inclusion of and reporting on provision of essential newborn indicators.
- Train health workers at all levels on MNCH data analysis and use this for decision-making.
- Partner with the World Bank project to support digitalization of inpatient data and ensure interoperability with other client management information system data.
- Support digitalization of community health data collection tools and provide mentorship to RHMs on their use.
- Support routine data quality audits and review meetings at national and regional level.

3.8 Capacity-building for MNCH

This project implemented MNCH capacity-strengthening interventions targeting critical MNCH units at national level and health-care workers providing MNCH services at both facility and community level. Capacity-building interventions are crosscutting actions and are also discussed under the other sections of the report. As strengthening of capacity is a key component of the FCDO grant, this section of the report seeks to further detail the status of the capacity-building interventions supported.

National-level structures that received capacity strengthening included the SRH unit, the RHM programme and the Eswatini National Nutrition Council. The assessment found that the project successfully provided technical assistance to the SRH unit for development of MNCH manuals, job aids, quality improvement and MPDSR mentorship. In addition, guidelines were developed and supportive supervision and mentorship were facilitated through SRH mentors.

As part of building the capacity of the SRH unit to effectively implement one of its key mandates, that of coordinating MNCH stakeholders, the project supported the establishment and operationalization of a MNCH technical working group. As discussed in other sections of this report, the RHM programme also received technical assistance towards the development of data collection tools. Additionally, the project provided technical assistance in nutrition by supporting the Eswatini National Nutrition Council to coordinate the nutrition response, provide supportive supervision and conduct nutrition data quality audits.

Competent health workers are key in delivering quality high-impact MNCH services. By February 2023, the project had trained 186 health workers, against the set target of 172. To further understand the MNCH trainings provided to health workers in the 11 intervention facilities, a health facility assessment was undertaken. The findings show that the majority of the facilities (91 per cent) had received training on essential newborn care, including kangaroo mother care, as shown in Table 10. Most facilities reported that their health workers had not received training in critical areas such as provision of surgical services, including caesarean sections (64 per cent) and blood transfusions (64 per cent). It should be noted that the project did not have a strong focus on maternal health; it was assumed that the maternal health partners would offer the necessary training for this. Rather, training given was associated with improved competency-based skills in caring for newborns. A key informant observed:

The training has helped improve our skills. After the training I am now able to resuscitate a newborn. For example, I was able to successfully resuscitate a newborn with a poor Apgar score.

Key gaps

A key bottleneck in human resources, in addition to general understaffing, was identified as the frequent rotation of trained staff working in critical MNCH service delivery

Table 10: Training of health workers

Training/programme updates	Never trained	Trained over two years ago	Trained within last two years
Basic emergency and obstetrics care	2 (18%)	3 (27%)	6 (55%)
Routine care for labour and normal vaginal delivery	–	–	11 (100%)
Active management of third stage of labour	–	–	11 (100%)
Blood transfusion	7 (64%)	3 (27%)	1 (9%)
Surgical skills, including caesarean section (in-service/placement)	7 (64%)	2 (18%)	2 (18%)
Essential newborn care, including kangaroo mother care	1 (9%)	–	10 (91%)

Table 11: Status of referral systems in supported facilities

Variable	Yes	No	Don't know
Respondent has the phone number to at least one referral site	10 (91%)	1 (9%)	0
Facility has one or more functional emergency transport vehicles stationed at the facility that operates from the facility	9 (82%)	2 (18%)	0
Facility has access to an emergency transport vehicle that is stationed at another facility	4 (36%)	6 (55%)	1 (9%)
Uses ambulance for emergency transport	9 (82%)	0	2 (18%)
At least one emergency transport vehicle functioning today	9 (82%)	0	2 (18%)
Is fuel available for at least one emergency transport vehicle today?	6 (55%)	1 (9%)	4 (36%)
Facility has one or more phones or other devices that can be used to call/send work-related messages outside the facility	9 (82%)	2 (18%)	0
Communication device being used is functioning	9 (82%)	0	0
Respondent has the phone number to at least one referral site	4 (36%)	7 (64%)	0
Referral system has a way of ensuring a complete referral. In other words, is there a feedback mechanism?	4 (36%)	7 (64%)	0

points such as newborn care units and maternity units. In the Mbabane NICU, it was reported that no nurses were trained in intensive newborn care. The unbalanced ratio of midwives to general nurses was also reported as causing a bottleneck in human resources and training. The implication is that MNCH-trained midwives have to be rotated to non-MNCH service delivery points, creating the need to continue training health-care workers who are then newly rotated to MNCH service delivery points.

Programmatic recommendations

- Advocate for increased human resources deployment, especially in critical units such as the NICU.
- Advocate for change of policy to regulate transfer and rotation of health-care workers trained to deliver services in specific units such as the NICU.
- Continue to address gaps resulting from rotation of trained health-care workers.
- Partner with health training institutions to offer a course in neonatal intensive care.

3.9 Improving referral systems for mothers and newborns

Effective and responsive referral systems are critical in preventing delays in accessing quality MNCH services. The health facility assessment reported some improvements from the baseline. At baseline, only two of the 11 facilities reported availability of a functional ambulance, compared with eight during the endline assessment. Table 11 presents the status of referral systems in the 11 health facilities at the endline assessment.

Key gaps

The key challenges affecting referral systems include lack of referral protocols, poor communication for referral between facilities and lack of functional ambulances, mainly due to poor maintenance and lack of fuel. It was also noted that receiving sites have challenges in addressing the needs of patients that are referred to them, mainly as a result of health staff shortages, insufficient equipment and lack of essential medicines and supplies. Health centres and regional referral hospitals were reported as lacking adequate competent staff, equipment and necessary infrastructure, such as theatres, to provide adequate care to patients who do not require referral to Mbabane Government Hospital. This was reported as contributing to 'over-referrals' and burdening Mbabane Hospital with cases that could be managed at lower levels or in regional facilities. Self-referrals to Mbabane Hospital were reported mainly due to preference of clients and lack of trust in quality of services at the lower levels.

Programmatic recommendations

- Strengthen readiness of referral facilities. This assessment recommends an assessment of readiness for referral of the existing referral facilities in the country. Based on the findings of the assessment, the country should provide targeted strengthening of these facilities, including provision of adequate staffing, equipment, commodities and supplies.
- Strengthen regional and health centres to provide services appropriate for their levels of care. To reduce overburdening of the higher-level facilities, especially Mbabane Hospital, this assessment recommends that lower-level facilities are provided with adequate



UNICEF staff give supportive supervision to a household where the community health worker is providing health education on MNCH and nutrition.

staffing and are equipped to offer services relevant for their level of care, as per the essential package of health services.

- Ensure provision of adequate funding for fuel, ambulance repair and maintenance.

3.10 Increased access to integrated health and nutrition services through community members

The Eswatini RHM programme, staffed by community health members, is mainly female by design and provides a package of services at community level. In some communities, mentor mothers, engaged mainly by non-governmental organizations, help supplement the work of the RHMs. Through the community component of this project, a total of 136,871 children under the age of 2 were reached with an integrated package of health, HIV and nutrition services. A total of 666 RHMs, including mentor mothers, were trained in the provision of this integrated package of services.

On health, training of RHMs, including of mentor mothers, was reported to have significantly improved their competencies. RHMs discussants were able to list maternal and newborn danger signs correctly. Validation with health workers in health facilities that were close to the communities reported that the RHMs were able to correctly identify mothers and women with danger

signs and effectively refer them. As a result, women reached through home visits also showed improved knowledge of danger signs, which is a prerequisite for taking early decisions to seek care and avoid delay. The quote below, from a health worker respondent, confirms this observation.

[It was] encouraging [to hear] in Lumbobo about a mother identified by an RHM with danger signs [who was] successfully referred to a health facility.

Further, focus group discussions during this assessment identified that, through RHM support, there has been an improvement in MNCH knowledge and health-seeking behaviour among the project beneficiaries. Focus group discussion participants observed the following:

We have gained knowledge on essential newborn care, like the proper way of cleaning of [the] umbilical cord using surgical spirit.

Delivering children is risky, so it has to be done at a health facility.

Another said:

[There are] myths and misconceptions around health-seeking behaviour. Even if a baby needs to be taken to the health facility, elders in the family will require the baby to be taken to the traditional doctor first.



A newborn baby being cared for in the NICU.

However, there has been some change in the way some people seek and access health care services:

There is a change in the way some people utilize health services which are promoted by RHMs. For me, I am 100 per cent sure that if my child is sick, she will be taken to the health facility.

The project provided support in nutrition training of RHMs and mentor mothers on infant and young child feeding and procurement of nutrition commodities and supplies, including vitamin A, weighing scales, batteries, theory of change tapes and height boards. The trained RHMs and mentor mothers provided nutrition services through home visits and during community meetings. Key informant interviews with health workers and project staff revealed

that the project made significant contributions to the provision of nutrition services.

Through the project, RHMs reported that they had the equipment and supplies they needed to provide community-based nutrition services. This is a great improvement compared with the situation at the time of a baseline focus group discussion with RHMs:

We don't get anything for children, such as MUAC [mid-upper arm circumference]. We used to have the weighing scales for children but not anymore. The hanging scales are difficult to use because we didn't have the appropriate place to hang without risking injuries.

A review of project documents found that the skills acquired by RHMs in the provision of nutrition services had resulted in improved health and nutrition outcomes. The extract below from a project human interest story validates this observation.

The RHMs also conduct regular house visits, especially with families where children have been identified as being at risk of malnutrition or disease. "Every month the RHM comes to my house," says Nomvula, "and she assesses Thandiswa's development. She teaches me what I must do to help stimulate her and help her grow and looks at what we are eating. She is very helpful with suggestions of what I can feed my child and where I can get or even grow certain foods." Over the past few months, Thandiswa has made notable progress. She is not yet at the same developmental level as the average 19-month-old, but she is stronger, more responsive and happier, according to Nomvula.

Key gaps

Key informants interviewed identified priority gaps as being an inadequate number of RHMs and their lack of transport and low stipends. Additionally, the RHM unit has inadequate staff and is not well facilitated in terms of transport to undertake supportive supervision for the RHMs. The lack of RHM staff at the regional and district level further weakens supportive supervision for RHMs.

Programmatic recommendations

- Advocate for additional recruitment, training and deployment of RHMs.
- Ensure that adequate resources are allocated to strengthen coordination of the RHM programme.
- Ensure the RHM programme provides effective supportive supervision for RHMs. To ensure supportive supervision, the MoH needs to provide adequate staffing for the RHM unit and facilitate transport.
- Establish and facilitate regional RHM focal point persons.

3.11 Improving male involvement for MNCH

Male involvement is critical in ensuring uptake of MNCH services by women and children. As in many other countries, men in Eswatini have a significant influence on when, where and how women and children access MNCH services. To improve male involvement, and with the complexity that RHMs in Eswatini are mainly female (of the 666 trained RHMs, only five were male), this project trained male champions and mobilized community leaders to sensitize the community to the importance of male involvement in MNCH. Through trained male champions and community leaders, 15,329 male partners were reached with information on MNCH and the need to provide support to their spouses and children.

The assessment identified improved male involvement in MNCH. Qualitative data from the assessment identified changes in men providing money for transport to health facilities and for supplies required as part of delivery preparedness.

I used to be an embarrassment before. After delivering I would walk around requesting for pads from other women but the project ... has helped me, I was able to prepare efficiently for delivery.

Accompanying women for ANC, delivery and child health activities such as immunization was also reported. Additionally, increased male involvement has led to improved MNCH care-seeking behaviour, uptake of ANC and delivery services and birth preparedness. The following quotes from focus group discussions with RHMs confirm this finding.

Men also are now part of the home care [and] are supporting pregnant women during pregnancy through accompanying their partner and doing some of the household chores.

Caregivers practise the recommended infant and young child feeding practices.

Home delivery is now not a common practice, pregnant women prepare themselves for delivery.

Other changes reported as having resulted from improved male involvement include fewer cases of gender-based violence in communities and increased communication between pregnant and lactating women and their partners.

3.12 Project value for money

Although the project did not provide considerations and indicators for assessing value for money, the assessment identified various actions indicating that the project provided value for money. These actions include:

- *The use of cost-effective training and capacity-building approaches, including SRH mentors and trainers of trainers:* Mentorship training approaches are more cost-effective than classroom-based training. Providing on-site mentorship also ensured that health workers do not have to leave their duty stations to participate in classroom training. The use of trainers of trainers ensured the availability of a pool of trainers that could be used to conduct refresher training or train new health workers.
- *The use of grassroots community-based organizations and partners:* Equity is an important component of value for money. The use of community-based organizations such as Siphilile Maternal and Child Health and World Vision International helped the project reach vulnerable and hard-to-reach groups, such as adolescent mothers in peri-urban settings.
- *An integrated project delivery approach:* Several studies have shown that integration is cost effective and helps increase efficiency. The use of RHMs and mentor mothers to deliver an integrated package of interventions to mothers and children under 2 years contributed to increased project value for money.
- *Implementation of cost-effective interventions:* The interventions used for addressing newborn and infant mortality, including essential newborn care interventions and nutrition, have been tested and proven to be cost-effective.
- *Use of the UNICEF supply division in procurement of equipment and commodities:* An earlier assessment in Eswatini identified that procurement through UNICEF systems provided higher value for money than other procurement options.
- *Strengthening broader country health systems for sustainability:* Some of the interventions implemented had an impact on broader health systems and therefore had the potential for increasing sustainability beyond the period of the project.

Key gaps

Despite the value for money considerations discussed, this assessment identified the following two issues as having lowered or having the potential to lower the project's value for money:

- Inadequate local capacity for repair of some of the equipment procured in a timely manner.
- The amount of money spent on car rentals for supportive supervision could have been used to purchase a vehicle for the SRH unit.

Programmatic recommendations

- Future programme designs should ensure setting value for money considerations and indicators that

the programme can track as part of monitoring and evaluation.

3.13 Gender, disability and social inclusion

Ensuring gender, disability and social inclusion is an important consideration in ensuring equity, a key component of universal health coverage. The assessment identified that the project was effective in ensuring gender, disability and social inclusion. Details of the findings are as follows:

- *Use of gender disaggregated data:* A review of project documents found that the project used gender disaggregated data in all its reporting.
- *Gender mainstreaming:* Despite being a mother and child health programme, the project made deliberate efforts to integrate male involvement initiatives, including through the use of male champions and mentor fathers, through one of the partners, Siphilile Maternal and Child Health.
- *Targeting of vulnerable groups as part of social inclusion:* Siphilile Maternal and Child Health worked in a peri-urban area targeting communities that included adolescent mothers, HIV-positive women and children.
- *Focus on people with disabilities:* As part of its reporting, the project maintained a list of and reported on the number of people with disabilities that were reached. Through early childhood centres established with project support, Siphilile Maternal and Child Health identified and reached out to children living with disabilities and linked them to health facilities. In addition, World Vision International reported integrating disability awareness in their community activities.

Key gaps

A key gap identified in the programme is the suboptimal focus on adolescents, especially adolescent mothers. In the facilities visited, health workers had not been trained in adolescent health and had therefore not integrated adolescent-responsive programming in their service delivery. A data/information gap identified is that although neonatal abnormalities were reported in the facilities visited, the actual magnitude was not established. This indicates a need for continued integration of disability inclusion in maternal, child and newborn health.

Programmatic recommendations

- To strengthen programming for adolescent mothers, a detailed assessment of the status of adolescent-friendly and responsive services in the health-care delivery system is recommended. Based on the assessment findings, appropriate steps should be

taken, including training of service providers, to provide adolescent-friendly services.

- Lessons learned from this project should be used to continue to strengthen disability inclusion in MNCH programming through the training of service providers in disability programming in the context of MNCH.

3.14 Lessons learned and best practices

This endline assessment identifies the following as the project's key lessons and best practices:

- The use of SRH mentors is a cost-effective and sustainable approach to building the capacity of health-care workers.
- The establishment of the NICU is identified as being a relevant and effective intervention with huge potential for scale-up to other regions.
- Training and working with RHMs and mentor mothers to deliver integrated services ensures that women and children receive a comprehensive package of high-impact MNCH interventions.
- Working with community members such as RHMs and mentor mothers ensures continuity of MNCH services during public health emergencies such as COVID-19.
- Using MNCH to strengthen broader health systems, including training of health workers, ensuring equipment and commodity support, improving service delivery through quality improvement initiatives and strengthening health information systems, among others, is a cost-effective approach.
- Partnership with and implementation through existing MoH structures such as the SRH unit and RHM programme is an effective strategy for ensuring sustainability and continuity of MNCH programmes.
- Implementing demand- and supply-side interventions is key to ensuring sustained uptake of high-impact MNCH interventions; however, there is a need to ensure linkages between the different levels of care.
- Working with grassroots organizations helps reach vulnerable groups, as demonstrated by the involvement of Siphilile Maternal and Child Health and World Vision International.
- Using male champions to reach male partners of pregnant women is an innovative intervention that helps improve maternal and newborn health outcomes.
- There is a great deal of potential for using data for decision-making in MNCH, as demonstrated by its use in nutrition programming and by the SRH unit's use of data to advocate for commodity supplies.
- Digitalizing data collection systems, both at community and inpatient levels, is key to ensuring

data quality, tracking and even the quality of care offered to clients.

3.15 Project implementation challenges

To supplement the programmatic gaps identified in other sections of the report, this section discusses the main programmatic and logistical challenges in the implementation of the project.

The COVID-19 pandemic

As in other countries, COVID-19 presented serious challenges in delivery of quality MNCH services. The COVID-19 pandemic in Eswatini was associated with delays in programme implementation, reduced uptake of facility-based services, relapse in MNCH indicators and increases in prices of MNCH commodities and supplies. To reduce the impact of COVID-19, the project supported the country in the establishment of a COVID-19 technical working group; training of health workers in COVID-19, including vaccination; procurement of infection prevention and control supplies; and provision of personal protective equipment to service providers. To ensure project continuity, adaptations were implemented in the form of (i) using virtual and mobile phone platforms to train, mentor and supervise and (ii) reducing the duration of RHM training from three days to one day.

Civil unrest

The civil unrest in the country that started in June 2021 was reported to have caused project disruptions. This included inability of the project teams to travel to implementation sites, as well as restrictions on the movement of health workers, leading to lack of services in some sites. Though at a reduced rate, RHMs and mentor mothers continued to provide essential services to communities in their catchment areas.

Weak coordination in project implementation

As discussed earlier, there was weak coordination between the different partners and programmes implementing MNCH programmes in the country. The recent establishment of a functional MNCH technical working group through the project is expected to strengthen partnership between and coordination of MNCH stakeholders in the country.

Inadequate government resource allocation to MNCH

As indicated earlier, the assessment identified challenges around lack of stock of commodities and consumables, especially in critical service delivery points such as



newborn care units. These challenges were mainly attributed to low government financing. Additionally, in most of the facilities visited, the facility staff in charge attributed the fact that ambulances were not functional to a lack of adequate financing for fuel, repair and maintenance.

Human resources for health challenges

Inadequate numbers of health workers at MNCH service delivery points, coupled with frequent rotations of health workers, were noted as negatively impacting delivery of high-impact MNCH interventions.



A community health-care worker provides health education for a household.

CONCLUSION AND RECOMMENDATIONS

THE ESWATINI MNCH
PROJECT HAS
ACHIEVED ALL
THE SET OUTPUT
AND OUTCOME INDICATORS



4.1 Conclusion

In conclusion, this assessment finds that the Eswatini MNCH project has achieved all the set output and outcome indicators. The project has made significant contributions in the following areas:

- Enhancing capacity of RHMs in delivery of integrated health, HIV and nutrition services
- Improved male involvement in maternal and newborn health services
- Improved quality in provision of newborn health-care services through establishment of the Mbabane NICU
- Improved capacity of health workers in provision of essential newborn care practices
- Improved collection, disaggregation and reporting of community data
- Establishing structures for operationalizing MPDSR and quality improvement.

4.2 Strategic recommendations

In alignment with and complementing the specific programmatic recommendations provided in specific sections of this report, the assessment makes the following strategic recommendations.

- *Strengthen the capacity of the MoH to plan, lead, coordinate and implement MNCH programmes:* The assessment recommends that UNICEF and other agencies should embed technical assistance within the SRH unit to strengthen its capacity in planning, coordinating and leading MNCH programmes. The embedded technical assistance will support the SRH unit in coordinating MNCH programmes through the already established MNCH technical working group.
- *Improve, scale up and sustain the gains made in newborn care, including in the NICU:* To ensure sustainability, the assessment recommends that the government commits to procurement of essential supplies and consumables, and provision of adequate staff to the NICU, as well as supporting establishment of and capacity-building for an equipment maintenance team. It is recommended that, using lessons from the NICU, UNICEF considers supporting the SRH unit in establishing satellite NICUs at regional hospitals. UNICEF could place technical assistants at the Mbabane Government Hospital NICU and use them to build the capacity of service providers at the satellite and regional NICUs. This could involve placement at the Mbabane NICU or roving mentorship by the technical assistants to the satellite sites.
- *Strengthen and operationalize quality improvement and MPDSR:* This is to be achieved through capacity-building and facilitating health workers at all levels to conduct MPDSR and use the findings to develop and implement action plans to address identified gaps. The country should ensure a structured process in conducting MPDSR and using the findings as an entry point for implementing MNCH quality improvement projects and to change ideas. To operationalize this, it is recommended that UNICEF uses the current technical working group to rally other agencies to provide technical assistance to the SRH unit to establish functional pilot MPDSR and quality improvement projects, which other sites can learn from.
- *Optimize data use for MNCH decision-making and programming, including through digitalization of inpatient data:* To achieve this, the assessment recommends a review of the existing tools to ensure all relevant MNCH data is captured and reported. Additionally, health workers should be trained in data analysis and data use for MNCH decision-making. To ensure quality, the assessment recommends that UNICEF works with other partners to support the SRH unit in digitalization of inpatient data, including delivery data. This is identified as a high-priority recommendation.
- *Strengthen MNCH referral systems and processes:* This should be done through operationalization of referral protocols, provision of adequate funding for fuel supply and maintenance and strengthening of national and regional referral facilities. Additionally, it is recommended that the country strengthens community-to-facility and facility-to-community referral systems. This can be achieved through strengthening partnerships between the two levels.
- *Scale up implementation of innovative competency-based and sustainable MNCH skills-building approaches, such as the use of SRH mentors:* The assessment identified the use of SRH mentors as being an innovative and cost-effective intervention and recommends that UNICEF supports the strengthening of SRH mentors to assist health facilities in other interventions, such as newborn care practices, operationalizing MPDSR and quality improvement and using data for MNCH decision-making.
- *Continue to strengthen the capacity of the RHM programme to recruit, train, deploy and provide supportive supervision for increased coverage in the provision of quality MNCH at community level:* The RHM programme identified its main challenges to be inadequate RHMs and insufficient support supervision. The assessment recommends that UNICEF supports the programme to quantify the required number of RHMs, develop an investment case on how to fund the RHM programme and advocate with other agencies on support to the programme.

ANNEXES

Annex 1 Theory of change

LONG-TERM IMPACT

Improved maternal and child health and survival

OUTCOMES

- Reduced maternal mortality
- Reduced neonatal and infant mortality
- Improved neonatal and infant health and nutrition outcomes
- Strengthened facility and community health systems (improved knowledge of health workers)

WHAT

OUTPUTS – ESWATINI



Health:

- Proportion of births attended by skilled birth attendants
- Number of health workers trained in essential newborn care
- Proportion of newborns received bacille Calmette-Guerin vaccine
- Proportion of children tested for HIV
- Proportion of children initiated on antiretroviral therapy



Nutrition:

- Number of children screened for malnutrition
- Proportion of children admitted with severe acute malnutrition and cured
- Proportion of children initiated on antiretroviral therapy
- Proportion of children exclusively breastfed



Health systems strengthening:

- Number of **community** health workers trained in early childhood development package of services
- Number of health workers trained in essential newborn care in facilities
- Number of health facilities performing neonatal death audits
- Number of male partners of pregnant and lactating women reached with maternal and newborn health information

HOW

INDIRECT BENEFITS (NOT TO BE MEASURED)

- Improved water, sanitation and hygiene practices
- Improved childhood development practices
- Increased social accountability
- Increased knowledge of and demand for health services
- Improved health information management systems

Annex 2 Project performance framework

Impact/outcome/output	Indicator	Status	Baseline	Milestone 1 (2020)	Milestone 2 (2021)	Target (2022)	Source
Impact Reduction in neonatal, infant and maternal and infant mortality	Impact indicator 1 Infant mortality rate (per 1,000 live births)	Planned	50	40	35	30	UNICEF State of the World's Children ²⁰
		Achieved		54 (2019)	39 (2020)	41 (2021)	
	Impact indicator 2 Neonatal mortality rate (per 1,000 live births)	Planned	20	18	16	14	
		Achieved		17 (2019)	18 (2020)	23 (2021)	
Outcome By 2022, an estimated 142,080 children and 43,983 pregnant women and mothers, especially those living with HIV, have improved health	Outcome indicator 1 Percentage of children exclusively breastfed	Planned	64%	70%	73%	75%	Eswatini Multiple Indicator Cluster Survey (MICS)
		Achieved		57%	68%	80% ²¹	
	Outcome indicator 2 Percentage of children who receive a minimum acceptable diet ²²	Planned	48%	55%	60%	65%	Eswatini Multiple Indicator Cluster Survey (MICS) ²³
		Achieved		53% ²²	58% ²²	65% ²²	
Output 1 Improved coverage and quality of newborn care services in 11 health facilities in all four regions of Eswatini	Output indicator 1.1 Number of health facilities with neonatal intensive care facilities	Planned	–	1	1	1	MoH data, programme data
		Achieved		–	1	1	
	Output indicator 1.2 Number of health facilities providing essential newborn care services (including care of preterm babies) according to neonatal guidelines	Planned	–	4	8	11	MoH SRH unit, project monitoring and evaluation and reviews
		Achieved		6	11	11	
	Output indicator 1.3 Number of health workers trained in and implementing essential newborn care based on the national protocol	Planned	0	40	160	172	MoH SRH unit, training register
		Achieved		69	92	186	
	Output indicator 1.4 Number of HF implementing perinatal and neonatal death audits to inform programme improvement	Planned	0	4	8	11	MoH SRH unit, project monitoring and evaluation and reviews
		Achieved			8	11	

20 United Nations Children's Fund, *The State of the World's Children 2021: On My Mind – Promoting, protecting and caring for children's mental health*, UNICEF, New York, October 2021.

21 Kingdom of Eswatini, 'Annual Vulnerability Assessment & Analysis Report', 2022.

22 Proxy: food consumption score (percentage of households with acceptable food consumption).

23 Proxy: household acceptable diets (food consumption score) from Eswatini vulnerability assessment committees.

Impact/outcome/output	Indicator	Status	Baseline	Milestone 1 (2020)	Milestone 2 (2021)	Target (2022)	Source
Output 2 Strengthened provision of integrated health, nutrition, HIV, early stimulation and nurturing care for children 0–2 years at 11 health facilities and 30 (50%) tinkhundla (constituency) in all four regions of Eswatini	Output indicator 2.1 Number of HF providing a package of services for early childhood development (essential newborn care, health, nutrition, HIV, early stimulation and nurturing care)	Planned	0	4	8	11	MoH SRH unit, project monitoring and evaluation and reviews
		Achieved			11	11	
	Output indicator 2.2 Number of community health workers trained in and implementing provision of an early childhood development package of services (nutrition; HIV; newborn and infant care; water, sanitation and hygiene; early stimulation; and nurturing care)	Planned	0	100	400	666	Implementing partner, project monitoring and evaluation and reviews, training register
		Achieved		249	666	666	
	Output indicator 2.3 Number of children aged 0–2 reached with package of interventions (nutrition, health, HIV and early childhood development)	Planned		20,000	50,000	77,600	MoH and other implementing partners' data, project monitoring and evaluation and reviews
		Achieved		22,924	73,135	136,871	
	Output indicator 2.4 Number of tinkhundla with RHMs providing an early childhood development information package (health; nutrition; water, sanitation and hygiene; HIV; early stimulation; and nurturing care) at community and household levels	Planned	0	15	20	20	
		Achieved		15	27	27	
	Output indicator 2.5 Number of male partners of pregnant and lactating women sensitized to male involvement	Planned	0	198	1,722	2,500	
		Achieved		198	1,722	15,329	

Annex 3 Generic key informant interview guide

Target respondents: Representatives from project implementers and other stakeholders

About the respondent and organization/partner

- a. Please tell me about your role in the MNCH project? (*Probe:* Identify the organization type, donor, MoH, UNICEF, implementing partner, technical partner, role in project implementation.)

Introduction to the project

- a. Tell me about this MNCH project, including the donor, implementing partners, its governance structure and how it partners with the MoH.
- b. What are the main components addressed by this project? (*Probe:* In each MNCH intervention area, probe for main areas of focus.)
- c. Why did the project choose to focus on these components and what guided the choice of intervention areas? (*Probe:* Project relevance, why the focus areas were the best areas of intervention, mortality rates across the continuum, coverage across the continuum.)
- d. How does the project align with global best practices, national strategic documents and other MNCH programmes in Eswatini? (*Probe:* Was it aligned with national health sector strategic documents, reproductive, maternal, newborn, child and adolescent health and nutrition strategy, ENA, global commitments such as global strategy for women, children and adolescents, the Sustainable Development Goals, universal health coverage agenda?)

About the project effectiveness (inputs, activities, outputs and outcomes)

- a. What was the envisioned goal of the project and what higher results did the project seek to achieve? (*Probe:* Maternal and newborn mortality reduction, nutrition indicators.)
- b. Did the project achieve that goal? (*Probe:* Level of achievement of the various impact targets, evidence and source of data.)
- c. What outcomes were implemented to achieve the desired impact indicators and goal? (*Probe:* List the main outcomes. What informed the choice of those outcomes?)
- d. Were the outcomes achieved? (*Probe:* Level of achievement, what was not achieved and why, evidence of achievement, source of data.)
- e. In your opinion, were the outcomes adequate to meet the required impact? (*Probe:* Were the project

outcome statements were adequate to meet the required impact?)

- f. What outputs were planned under each outcome and what determined the choice of those specific outputs? (*Probe:* List of outputs for each outcome, why the outputs were specifically chosen for those outcomes.)
- g. Were the various outputs achieved and at what level? (*Probe:* Level of achievement of the various outputs by outcome area, evidence for the achievement of the outputs, explanations for variance. Were outputs achieved within timelines?)
- h. In your opinion, were the various outputs adequate to achieve each of the outcomes? (*Probe:* Number of outputs to achieve outcomes. What else should have been done to achieve each of the outcomes?)
- i. What activities were planned under each outcome, what determined the choice of those specific activities? (*Probe:* List of activities for each output, why the activities were specifically chosen for those outputs.)
- j. Were the various activities implemented as planned? (*Probe:* Level of achievement of the various activities by output area, evidence for the implementation of the activities, explanations for variance. Were activities implemented within timelines?)
- k. In your opinion, were the various activities adequate to achieve each of the outputs? (*Probe:* Number of activities to achieve outputs. What other activities should have been implemented to achieve each of the outputs?)

Project theory of change

- a. What was the process for the development of the project theory of change? (*Probe:* What guided the development of the theory of change, how consultative was the process?)
- b. How effective has the theory of change been in guiding project design, implementation, review, monitoring and evaluation?)
- c. Has the theory of change/logframe changed or been adapted during the project's lifetime?
- d. If yes, what changes were introduced and what necessitated the changes?
- e. Going forward, what changes would you recommend on the project theory of change?

Gender equality

- a. What approaches did the project use to ensure gender equality during its design, planning, implementation, monitoring and evaluation?
- b. How effective were the various approaches used in ensuring gender equality?
- c. What examples are there of practical actions taken by the project to ensure gender equality at all phases?

- d. What lessons were learned that ensured gender equality throughout the project?
- e. What could have been done better to ensure gender equality?

Disability inclusion

- a. What did the project do in terms of design, implementation, monitoring and evaluation to ensure that people with disabilities participated in and benefited from project interventions?
- b. How were people with disabilities in the project areas identified and reached?
- c. What examples are there of practical actions taken by the project to ensure that people with disabilities were reached, and that they participated in and benefited from the project interventions?
- d. What lessons were learned in ensuring that people with disabilities were reached, and that they participated in and benefited from project interventions?
- e. What could have been done better to ensure people with disabilities were reached, and that they demanded and utilized quality MNCH services?

Social inclusion

- a. What did the project do in terms of design, implementation, monitoring and evaluation to ensure that the most marginalized and vulnerable groups were reached by the project interventions?
- b. How were the marginalized and most vulnerable people in the project areas identified?
- c. Who are the most marginalized and vulnerable people in the project areas?
- d. What examples are there of practical actions taken to ensure that marginalized and vulnerable people were reached?
- e. What lessons were learned in ensuring that the most marginalized and vulnerable people were reached?
- f. What challenges did the project experience in ensuring that the most marginalized and vulnerable people were reached?
- g. What could have been done better to ensure that the most vulnerable and marginalized people were reached, and that they demanded and used quality MNCH interventions?

Project value for money

- a. What strategies, actions and considerations did the project put in place during design, planning and implementation to ensure value for money?

- b. How did the project plan for and assess value for money? Did the project have indicators for measuring value for money?
- c. What practical and evidence-based examples are there where the project demonstrated value for money? (*Probe:* For economy, efficiency, effectiveness, cost-effectiveness and equity.)
- d. What lessons were learned by the project in ensuring value for money?
- e. What challenges did the project experience in ensuring value for money and how were they addressed?
- f. What are your recommendations for how the project can ensure value for money going forward?

Sustainability

- a. In your opinion, will the project gains and achievements be sustained beyond the project period? (*Probe:* What will be sustained, what will not be sustained and reasons for these answers.)
- b. What strategies were used to ensure that achievements of the project are sustained beyond the life of the project? (*Probe:* Capacity-building, working with the MoH, health systems strengthening, community health systems strengthening, working with local partners.)
- c. What could have been done better to strengthen sustainability of the project achievements beyond the project funding period?

Your involvement in the project

- a. Are you satisfied with the level of your involvement? How do you think it could have been strengthened? Are there other agencies, organizations or groups that you think needed to be involved in this project but have not been adequately involved?

Remaining bottlenecks and gaps

- a. What remaining bottlenecks are there to availability, demand and utilization of quality MNCH services? (*Probe:* Demand- and supply-side barriers, health systems challenges.)

Recommendations for strengthening the project

- a. What are your recommendations for how the project could be improved and strengthened to ensure improved MNCH outcomes in this community? (*Probe:* How can the project be strengthened to address the remaining demand- and supply-side barriers and health systems challenges?)
- b. Is there any other issue about MNCH and the project that you want to share with me?

Annex 4 Panel group discussion guide

Target respondents: Facility staff in charge and MNCH service providers

MNCH status before the project, and relevance

Please tell me about the situation of MNCH in this facility before the start of the project (*Probe:* MNCH indicators then, availability of MNCH high-impact interventions, availability of commodities and supplies, infrastructure and equipment, availability and adherence to guidelines and protocols, MNCH data collection, reporting and use, human resources, including numbers and competency for MNCH, quality of services.)

- a. Please tell me about the relevance of the project to this facility. (*Probe:* Was the project relevant, were there other issues the project should have prioritized?)

Activities implemented in the facility to improve maternal, newborn, child and adolescent health indicators

- a. Are you aware of any MNCH support to this facility? (*Probe:* Awareness of the UNICEF MNCH project, or through other implementing partners, and identify any other partners that are working in the facility for purposes of attribution.)
- b. What activities are being implemented in this facility? (*Probe:* Activities related to health worker training, health systems strengthening, e.g., equipment, commodities, supplies, quality improvement.)
- c. Have the activities been carried out as planned? (*Probe:* Timelines, within budget, targets, number of health workers trained, examples of equipment support, etc.)

Performance (translation of activities to results)

- a. What MNCH changes have you observed from the implementation of the various activities? (*Probe:* Health worker capacity, improvement in uptake of services, change in MNCH indicators, improved quality of services, improved health systems. Where possible, get data to provide evidence of the change.)

- b. What lessons and best practices were learned from the implementation of the various activities and interventions? (*Probe:* Lessons from health worker MNCH capacity-building, equipment support, other MNCH health systems support.)

Implementation challenges

- a. What would you say have been the challenges in the implementation of the various activities? (*Probe:* health worker movement, inadequate health workers, resources, etc.)

Sustainability

- a. In your opinion, will the project gains and achievements in this facility be sustained beyond the project period? (*Probe:* What will be sustained, what will not be sustained and reasons for the answers.)
- b. What strategies were used to ensure that achievements of the project are sustained beyond the life of the project? (*Probe:* Capacity-building, working with the MoH, health systems strengthening, community health systems strengthening, working with local partners.)
- c. What could have been done better to strengthen sustainability of project achievements beyond the project funding period?

Remaining bottlenecks and gaps

- a. What are the remaining bottlenecks to availability, demand and utilization of quality MNCH services? (*Probe:* Demand- and supply-side barriers, health systems challenges.)

Recommendations for strengthening the project

- a. What are your recommendations for how the project could be improved or strengthened to ensure improved MNCH outcomes in this community? (*Probe:* How the project could be strengthened to address the remaining demand- and supply-side barriers and health systems challenges.)
- b. Is there any other issue about MNCH and the project that you want to share with me?

Changes arising from the implementation of the programme (availability and use of high-impact MNCH interventions)

- a. I would like to discuss changes resulting from MNCH that you have observed in this community in the last three years.

Changes in knowledge of women, especially of pregnancy and newborn danger signs

- a. What change has there been in the knowledge of women and men in this community regarding the health of women, newborns and children, and do you think your knowledge of MNCH and that of other women in this community has improved? (*Probe:* Get an explanation of the changes in knowledge, ask specific questions to test levels of knowledge.)
- b. In your opinion, what is the importance of ANC? Why should a pregnant women receive ANC? (*Probe:* To understand knowledge of ANC among the participants, probe the number of times a women should visit an ANC facility, and probe further into services that they get when they visit such a facility, etc.)
- c. In your opinion, why should a pregnant women deliver at a health facility? (*Probe:* Ask about the importance of delivering at a health facility, and probe any mention of danger signs during pregnancy.)
- d. What are the danger signs during pregnancy and what should a women do when she experiences such signs? (*Probe:* Get a list of danger signs during pregnancy from participants, and a list of actions they should take when danger signs are experienced.)
- e. In your opinion, why should women and their newborns receive postnatal care (care after delivery)? (*Probe:* Ask about the importance of receiving postnatal care.)
- f. What are newborn danger signs, what are the signs that can indicate that a newborn is in danger and what should one do in such a case? (*Probe:* Get a list of neonatal danger signs and a list of actions a mother should take when the newborn shows these danger signs.)
- g. Where did you receive this knowledge about MNCH? (*Probe:* Probe for attribution, whether the information was received from project-supported interventions, e.g., from RHMs or from facilities supported by the project.)

Changes in birth and emergency preparedness

- a. Have you and other women in this community received any information on how to prepare for birth and emergency during your pregnancy or at the time of delivery? (*Probe:* Ask about information received, and who provided the information and support.)

- b. In your opinion, what is the importance of birth and emergency preparedness? (*Probe:* What is the participants' understanding of the importance of birth and emergency preparedness?)
- c. Do you and other women in this community prepare for birth and emergency during pregnancy? How do you prepare? (*Probe:* Do women prepare, how do they prepare, do they involve their partners? Ask if birth plans have been developed.)
- d. Do you and other women in this community prepare birth plans during pregnancy? (*Probe:* Do women prepare birth plans, what are the contents of a birth plan and what issues should be included?)
- e. I would like to hear about your personal experience of using a birth plan as part of birth and emergency preparedness. Was it useful? (*Probe:* Are women willing to share their experience in development and implementation of the birth plan?)

Changes in male involvement and participation

- a. I would like to discuss the involvement of men in MNCH. How are men in this community involved in and how do they support women in improving the use of MNCH services at community and facility levels? (*Probe:* Ask about the level of men's involvement, what support they provide to the women, newborns and children and what the reasons are for low male involvement – if this is mentioned.)
- b. What is your personal experience of how your partner/ husband supported you in improving your access (and that of your children) to MNCH? (*Probe:* Did they accompany them to ANC, delivery, postnatal care, immunization, etc., make payments for services, other things?)
- c. How has male involvement and participation changed over time? (*Probe:* Discuss whether there have been any changes observed over the last three years.)
- d. What was the cause of the changes, and what activities were implemented? (*Probe:* Discuss with the women whether there have been any activities implemented to increase male involvement, probe to understand who implemented or supported the activities.)
- e. What are your suggestions on how male involvement and participation in MNCH can be further strengthened?

Changes in the availability and quality of high-impact MNCH interventions at community and facility level

I would like to discuss your experience of visits to health facility for MNCH services.

- a. Where do you seek services for your pregnancy, delivery, postnatal and child health services? (*Probe:* Probe to understand where women seek services

- from, when health facilities are mentioned. Are they public or private? Do participants seek services from any of the project-supported facilities?)
- What was your experience of your last visit? (*Probe:* What services did they go for, what was their experience of care and how were they handled by service providers? Did they receive the services they went for, and if no, why not?)
 - The last time you went for MNCH services, did you receive the service you went for? (*Probe:* Probe for services they went for – ANC, delivery, postnatal care, immunization, etc. Did they receive the services they went for, and if no, why not?)
 - From your experience, do you think health facilities have the capacity to provide all MNCH services for mothers, newborns and children? (*Probe:* What MNCH services are available in health facilities? Probe for specific MNCH services, e.g., newborn care services. Probe for all services, including kangaroo mother care. Find out what services are not available and whether referrals are done. Probe for health systems challenges and ask why services are not available.)
 - How has availability of MNCH services in your facility and community changed over time? (*Probe:* Enquire about changes before and during project implementation. What is the cause of improvement? Has there been any health systems support, and who are the main players in supporting availability of MNCH services at community and facility level?)
 - What are your suggestions on how availability of MNCH services could be improved at both facility and community level?

Improvements in referral systems

- How do you transfer women, mothers and newborns to health facilities in the event of an emergency? (*Probe:* Probe for means of transport.)
- What challenges do you experience in providing referrals for mothers, newborns and children? (*Probe:* What are the bottlenecks for each of the specific MNCH services? You can use the 3 delay model to understand the bottlenecks.)
- How have referral systems changed in the last three years? (*Probe:* What was the situation before and after the start of the project? What has changed?)

- What caused the observed improvements in referral systems? What activities have been implemented? (*Probe:* What actions have been implemented and by whom? Provision of ambulances, implementation of birth plans, etc.?)
- What are your recommendations for what should be done to further improve referral services for mothers, newborns and children?

Changes in use of high-impact MNCH interventions

- What changes were there in the use of MNCH services by women in this community? (*Probe:* Has there been an increase in access to utilization of ANC, delivery services, essential newborn care services, postnatal care, immunization, early childhood development and nurturing for care, nutrition and other services. Compare the situation before and after the start of the programme.)
- What factors do you think have led to increased use of MNCH services? [That is, if an increase was reported.] (*Probe:* Was there education by RHMs, better quality of services at health facilities, increased availability of services, better treatment by health workers, other factors?)

Suggestions for improving availability and use of MNCH services at facility and community level

- As we conclude, what are the remaining priority challenges to availability and use of maternal, newborn, child and adolescent health services at community and facility level? (*Probe:* Ask about remaining and priority bottlenecks and probe for mention of specific MNCH services. Ask about demand- and supply-side barriers.)
- As we conclude, what are your suggestions for ensuring availability of quality MNCH services at facility and community level? (*Probe:* Probe for recommendations for each of the specific MNCH services and strengthening of health systems, e.g., increasing availability of trained health workers and commodities, etc.)
- What are your recommendations for increasing use of MNCH services at community level by women, newborns and children? (*Probe:* Probe for each specific MNCH service.)
- Is there anything else you want to tell me?

Annex 6 Generic focus group discussion guide

Target respondents: RHMs, male champions, male partners of pregnant and lactating women and community leaders

Introduction

- a. Please tell me about MNCH needs in this community. (*Probe:* Is there access to quality ANC, facility-based delivery, postnatal care, essential newborn care, HIV testing, HIV treatment, paediatric care, infant and young child feeding, early stimulation and nurturing care, child health services and immunization?)
- b. Are you aware of the UNICEF project on community-based MNCH being implemented in your community? (*Probe:* Is there any other MNCH programme and which partner is implementing it?)
- c. Do you think the project is important and relevant in your community? (*Probe:* Why? Provide details.)
- d. What is your role in the programme? (*Probe:* What is the nature of involvement in the programme and perception of whether they are adequately involved?)
- e. What are your suggestions on how your involvement in the project could be strengthened?

Project activities and results

- a. Please tell me what MNCH activities are being implemented in this community through this project? (*Probe:* Has there been any training, community outreach, work through the RMH programme, male champions, referrals, strengthening facilities, etc.?)
- b. What changes have you observed as a result of the implementation of this project? (*Probe:* Have there been any changes in uptake and use of MNCH services, HIV services, infant and young child feeding services, early stimulation and nurturing care, improved knowledge of maternal and newborn danger signs, improved birth and emergency preparedness, etc.)

Gender, disability and social inclusion

- a. In your opinion, is the project reaching the most vulnerable and marginalized groups, such as adolescents, women living with HIV and people with disabilities? (*Probe:* Get details on how the project is targeting these groups and which are other marginalized and vulnerable groups.)
- b. Are there some marginalized and vulnerable groups that the project is not reaching out to? (*Probe:* Are

there groups in hard-to-reach geographical areas? What other reasons are there for why they are not reached?)

- c. What are your suggestions on how the project can ensure all marginalized and vulnerable groups are reached with MNCH services?

Male participation and involvement in MNCH

- a. Tell me about male participation and involvement in MNCH in this community.
- b. What initiatives have been implemented by the project to strengthen male participation and involvement?
- c. What changes have resulted from the implementation of male participation and involvement initiatives?

Beneficiary feedback and accountability

- a. Tell me about community and beneficiary engagement and involvement in this project?
- b. What systems, initiatives and strategies have been put in place by the project to strengthen beneficiary feedback and accountability?
- c. How well have the beneficiary feedback and accountability systems worked? What changes have you observed as a result of implementing community engagement, beneficiary feedback and accountability systems?
- d. What are your suggestions for improving beneficiary feedback and accountability in the implementation of this project?

Remaining bottlenecks to availability, demand and use of quality MNCH services

- a. What are the remaining bottlenecks to availability, demand and utilization of quality MNCH services? (*Probe:* Demand- and supply-side barriers, health systems challenges?)

Recommendations for improving availability and use of MNCH interventions

- a. What are your recommendations for how the project could be improved and strengthened to ensure improved MNCH outcomes in this community? (*Probe:* How could the project be strengthened to address the remaining demand- and supply-side barriers and health systems challenges?)
- b. Is there any other issue about MNCH and the project that you want to share with me?

B. Antenatal care services

B1	Do ANC providers provide any of the following services to pregnant women as part of routine ANC services?	Yes	No
B1a	Iron supplementation	1	2
B1b	Folic acid supplementation	1	2
B1c	Intermittent preventive treatment in pregnancy for malaria	1	2
B1d	Tetanus toxoid immunization	1	2
B1e	Monitoring for hypertensive disorder in pregnancy	1	2
B2	Do ANC providers in this facility provide any of the following tests from this site to pregnant women as part of ANC?		
B2a	HIV rapid diagnostic tests	1	Yes
		2	No
B2b	Urine protein diagnostic test	1	Yes
		2	No
B2c	Urine glucose diagnostic test	1	Yes
		2	No
B2d	Haemoglobin diagnostic test	1	Yes
		2	No
B2e	Blood grouping test	1	Yes
		2	No
B2f	RH typing test	1	Yes
		2	No
B2g	Syphilis testing	1	Yes
		2	No
B2f	Hepatitis B screening	1	Yes
		2	No
B3	As part of ANC services, please tell me if providers in this facility provide the following services to ANC clients.		
B3a	Counselling on recommended minimum of eight ANC visits for each pregnancy	1	Yes
		2	No
B3b	Counselling about healthy eating and physical activity during pregnancy	1	Yes
		2	No
B3c	Counselling on birth preparedness or preparation for delivery	1	Yes
		2	No
B3d	Counselling about postpartum family planning	1	Yes
		2	No
B3e	Counselling about use of ITNs to prevent mosquito bites and malaria	1	Yes
		2	No
B3f	Counselling about breastfeeding	1	Yes
		2	No
B3g	Counselling about newborn care	1	Yes
		2	No

B3h	Counselling about postnatal care visits	1	Yes	
		2	No	
B4	Please tell me if the following documents are available in the facility today. (NB: If available, ask to see the document).	Yes, observed	Yes, NOT seen	No
B4a	National ANC guidelines	1	2	3
B4b	ANC checklists and/or job aids	1	2	3
B4c	Intermittent preventive treatment in pregnancy guidelines, checklists and/or job aids (including wall charts)	1	2	3
B4d	Guidelines for micronutrient supplementation during pregnancy	1	2	3
B5	Have you or any provider(s) of ANC services:	Yes	No	
B5a	Received any ANC training in the last two years	1	2	
B6	I would like to know if the following items are available at ANC and whether they are functional.		Available	Functional
B6a	Stethoscope		1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
B6b	Thermometer		1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
B6c	Adult scale		1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
B6d	Blood pressure device		1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
B7	Please tell me if any of the following medicines are available at this service site today. I would like to see them. Does the facility have at least one, unexpired, unit of the following?		At least one dose available, unexpired	If out of stock, how many days has it been out of stock?
B7a	Iron tablets		1 Yes 2 No, stock out 3 Not applicable	____ days
B7b	Folic acid tablets		1 Yes 2 No, stock out 3 Not applicable	____ days
B7c	Calcium tablets		1 Yes 2 No, stock out 3 Not applicable	____ days
B7d	Sulfadoxine pyrimethamine for intermittent preventive treatment in pregnancy		1 Yes 2 No, stock out 3 Not applicable	____ days
B7e	Tetanus toxoid vaccine		1 Yes 2 No, stock out 3 Not applicable	____ days
B7f	ITN		1 Yes 2 No, stock out 3 Not applicable	____ days

C. Triple elimination of mother-to-child transmission (EMTCT) services

C1	Does this facility offer services for triple EMTCT?	Yes: Triple EMTCT..... 1 Yes: Dual EMTCT..... 2 Yes: Only EMTCT of HIV..... 3 No: 4		
C1a	As part of triple EMTCT, please tell me if this facility provides the following services.	Yes	No	
C1b	HIV counselling and testing services to pregnant women for PMTCT	1	2	
C1c	HIV counselling and testing services to infants born to HIV-positive pregnant women for PMTCT	1	2	
C1d	Antiretroviral prophylaxis to HIV-positive pregnant women for PMTCT	1	2	
C1e	Antiretroviral prophylaxis to newborns of HIV-positive pregnant women for PMTCT	1	2	
C1f	Hepatitis B counselling and testing to pregnant women	1	2	
C1g	Treatment for women testing positive for hepatitis B	1	2	
C1h	Syphilis testing and counselling for pregnant women	1	2	
C1i	Treatment for women testing positive for syphilis	1	2	
C1j	Infant and young child feeding counselling for PMTCT	1	2	
C1k	Family planning counselling to HIV-positive pregnant women for PMTCT	1	2	
C2	Please tell me if the following guidelines are available in the facility today. (NB: If available, ask to see the document.)	Yes, observed	Yes, NOT seen	No
C2a	National guidelines for PMTCT	1	2	3
C2b	Guidelines for infant and young child counselling	1	2	3
C3	Have you or any provider(s) of EMTCT services in this facility received any training on:	Yes	No	
C3a	EMTCT/PMTCT in the last two years?	1	2	
C3b	Infant and young child feeding in the last two years?	1	2	

D. Delivery and newborn care

D1	Please tell me if any of the following interventions have ever been carried out by providers as part of their work in this facility and, if so, whether the intervention has been carried out at least once during the past three months.		
D1a	Parenteral oxytocic drugs for treatment of pregnancy-related haemorrhage	1	Yes
		2	No
		8	Don't know
D1b	Has this facility provided it in the past three months?	1	Yes
		2	No
		8	Don't know
D1c	Parenteral anticonvulsants for pregnancy-related hypertension (magnesium sulphate or diazepam)	1	Yes
		2	No
		8	Don't know
D1d	Has this facility provided it in the past three months?	1	Yes
		2	No
		8	Don't know

D1e	Parenteral antibiotics for pregnancy-related infections	1	Yes
		2	No
		8	Don't know
D1f	Has this facility provided it in the past three months?	1	Yes
		2	No
		8	Don't know
D1g	Assisted vaginal deliveries (i.e., use of forceps or vacuum)	1	Yes
		2	No
		8	Don't know
D1h	Manual removal of placenta	1	Yes
		2	No
		8	Don't know
D1i	Has this facility provided it in the past three months?	1	Yes
		2	No
		8	Don't know
D1j	Removal of retained products (e.g., through manual vacuum aspiration and dilation and curettage)	1	Yes
		2	No
		8	Don't know
D1k	Has this facility provided it in the past three months?	1	Yes
		2	No
		8	Don't know
D1l	Caesarean section	1	Yes
		2	No
		8	Don't know
D1m	Has this facility performed it in the past three months?	1	Yes
		2	No
		8	Don't know
D1n	Blood transfusion	1	Yes
		2	No
		8	Don't know
D1o	Has this facility provided it in the past three months?	1	Yes
		2	No
		8	Don't know
D1p	Newborn resuscitation	1	Yes
		2	No
		8	Don't know
D1q	Has this facility provided it in the past three months?	1	Yes
		2	No
		8	Don't know

D1r	Corticosteroids for preterm labour	1	Yes
		2	No
		8	Don't know
D1s	Has this facility provided it in the past three months?	1	Yes
		2	No
		8	Don't know
D2	Does this facility routinely observe any of the following postpartum or newborn-related practices?		
D2a	Placing the newborn to the abdomen (skin to skin)	1	Yes
		2	No
		8	Don't know
D2b	Drying and wrapping newborns to keep them warm	1	Yes
		2	No
		8	Don't know
D2c	Initiation of breastfeeding within the first hour	1	Yes
		2	No
		8	Don't know
D2d	Weighing the newborn immediately	1	Yes
		2	No
		8	Don't know
D2e	Routine, complete (head to toe) examination of the newborn	1	Yes
		2	No
		8	Don't know
D2f	Suction of the newborn by means of a catheter	1	Yes
		2	No
		8	Don't know
D2g	Suction of the newborn by means of a suction bulb or penguin sucker	1	Yes
		2	No
		8	Don't know
D2h	Administering vitamin K to the newborn	1	Yes
		2	No
		8	Don't know
D2i	Applying tetracycline eye ointment to both eyes	1	Yes
		2	No
		8	Don't know
D2j	Giving a full bath (immersing the newborn in water) shortly (i.e., within a few minutes/hours) after birth	1	Yes
		2	No
		8	Don't know
D2k	Giving the newborn prelacteal liquids	1	Yes
		2	No
		8	Don't know
D2l	Giving the newborn oral polio vaccine/polio zero vaccine prior to discharge	1	Yes
		2	No
		8	Don't know

D2m	Giving the newborn bacille Calmette-Guerin prior to discharge	1	Yes
		2	No
		8	Don't know
D3	PMTCT at labour and delivery		
D3a	Do you provide or offer any PMTCT service at this site for women who come in to deliver?	1	Yes
		2	No
		8	Don't know
D3b	Do providers of delivery services conduct HIV testing from this site?	1	Yes
		2	No
		8	Don't know
D3c	May I see a sample HIV rapid diagnostic test kit?	1	Seen
		2	Not seen
D4	I would like to know if the following equipment/device is available and if available if it is functional.	A. Is it present?	B. Is it functional?
D4a	Infant incubator (other source of heat okay)	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4b	Examination light (flashlight okay)	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4c	Resuscitation table for baby	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4d	Newborn bag	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4e	Newborn mask	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4f	CAP machine	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4g	Kangaroo mother care wrap	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4h	Kangaroo mother care chair/bed	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4i	Suction apparatus with catheter	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4j	DeLee trap	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4k	Penguin suction device for mucus extraction	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4l	Suction bulb for mucus extraction	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4m	Manual vacuum extractor/aspirator	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4n	Wall suction	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4o	Ventouse	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4p	Forceps – mid cavity	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No

D4q	Forceps – outlet	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4r	Enema	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4s	Tendon hammer	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4t	Fetoscope	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4u	Measuring tape	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4v	Oxygen, gauge	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4w	Adult bag, mask	1 Yes 2 No <input type="checkbox"/> Next line	1 Yes 2 No
D4x	Refrigerator that is accessible now (in the labour ward or a room nearby)	1 Yes 2 No	1 Yes 2 No
D5	Does the facility have at least one, unexpired unit of the following? If no, for how many days has there been a stock-out?	At least one dose available, unexpired	If stock out, for how many days now
D5a	Magnesium sulphate	1 Yes 2 No, stock out 3 Not applicable	____ days
D5b	Diazepam (injection)	1 Yes 2 No, stock out 3 Not applicable	____ days
D5c	Calcium gluconate	1 Yes 2 No, stock out 3 Not applicable	____ days
D5d	Oxytocin (injection)	1 Yes 2 No, stock out 3 Not applicable	____ days
D5e	Ergometrine (injection)	1 Yes 2 No, stock out 3 Not applicable	____ days
D5f	Misoprostol (capsule or tablet)	1 Yes 2 No, stock out 3 Not applicable	____ days
D5g	Injectable antibiotic (e.g., ceftriaxone, ampicillin, gentamicin)	1 Yes 2 No, stock out 3 Not applicable	____ days
D5h	7.1% chlorhexidine digluconate aqueous solution or gel	1 Yes 2 No, stock out 3 Not applicable	____ days
D5i	Nevirapine	1 Yes 2 No, stock out 3 Not applicable	____ days

D5j	Option B+ (TLE)	1 Yes 2 No, stock out 3 Not applicable	____ days
D5k	TLD	1 Yes 2 No, stock out 3 Not applicable	____ days
D6	I would like to know if the following guidelines are available.		
D6a	Guidelines for care/managing normal labour and birth	1	Yes
		2	No
D6b	Guidelines for basic emergency obstetric and newborn care	1	Yes
		2	No
D6c	Guidelines or protocols on management of preterm labour	1	Yes
		2	No
D6d	Guidelines on care of newborns immediately after birth, including breastfeeding	1	Yes
		2	No
D6e	Guidelines on care of preterm and small babies	1	Yes
		2	No
D6f	Guidelines for standard precautions for infection prevention	1	Yes
		2	No
D6g	Guidelines on health-care waste management	1	Yes
		2	No
D7	Have you or any other service provider in this facility received any in-service training, training updates or refresher training on any of the following. If yes, was the training, training update or refresher training within the last two years?		
D7a	Integrated management of pregnancy and childbirth	1	Yes
		2	No
D7b	Was the training, training update or refresher training within the last two years?	1	Yes
		2	No
D7c	Routine care for labour and normal vaginal delivery	1	Yes
		2	No
D7d	Was the training, training update or refresher training within the last two years?	1	Yes
		2	No
D7e	Active management of third stage of labour	1	Yes
		2	No
D7f	Was the training, training update or refresher training within the last two years?	1	Yes
		2	No
D7g	Comprehensive emergency obstetric and newborn care	1	Yes
		2	No
D7h	Was the training, training update or refresher training within the last two years?	1	Yes
		2	No
D7i	Basic emergency obstetric and newborn care	1	Yes
		2	No
D7j	Was the training, training update or refresher training within the last two years?	1	Yes
		2	No

D7k	Special delivery care practices for preventing mother-to-child transmission of HIV	1	Yes
		2	No
D7l	Was the training, training update or refresher training within the last two years?	1	Yes
		2	No
D7m	Essential newborn care	1	Yes
		2	No
D7n	Was the training, training update or refresher training within the last two years?	1	Yes
		2	No

E. Referrals

E1	Do you have the phone number to at least one referral site? What is the number?	1	Respondent can provide phone number
		2	In-charge cannot provide phone number
		3	No referral site
		8	Don't know
E2	How many women did this facility refer in the last three months due to reasons related to pregnancy, delivery or postpartum?		— women referred in the last three months
E3	Does this facility have one or more functional emergency transport vehicles that is stationed at this facility and that operates from this facility?	1	Yes
		2	No
E4	Does this facility have access to an emergency transport vehicle that is stationed at another facility?	1	Yes
		2	No
		8	Don't know
E5	If yes, what type of vehicle(s) is the emergency transport vehicle?		
E5a	Ambulance	1	Yes
		2	No
E5b	Car	1	Yes
		2	No
		2	No
E5c	Other: _____	1	Yes
		2	No
E6	If ambulance or car, is fuel available for at least one emergency transport vehicle today?	1	Yes
		2	No
E7	Is at least one emergency transport vehicle functioning today?	1	Yes
		2	No
		8	Don't know
E8	Does this facility have one or more phones or other devices that can be used to call/send work-related messages outside the facility?	1	Yes
		2	No
		8	Don't know

E9	Is the communication device being used today functioning?	1	Yes
		2	No
		8	Don't know
E10	Does this facility have referral protocols?	1	Yes
		2	No
E11	If yes, can I see them?	1	Seen
		2	Not seen
E12	Does the referral system have a way of ensuring a complete referral? In other words, is there a feedback mechanism?	1	Yes
		2	No

F. Quality improvement and MPDSR

F1	Does this facility have maternal, newborn, child and adolescent health quality improvement teams. (It is okay to have maternal, newborn, child and adolescent health covered as part of another broader facility quality improvement team.)	1	Yes
		2	No
F2	Is the quality improvement team functional? (Has met in the last three months.)	1	Yes
		2	No
F3	If yes, can I see the quality improvement team minutes for their last meeting? (Within three months.)	1	Seen
		2	Not seen
F4	Is there an official report of the quality improvement activities carried out by the team in the last six months?	1	Yes
		2	No
F5	If yes, can I see the report?	1	Seen
		2	Not seen
F6	Does this facility receive regular supportive supervision for maternal, newborn, child and adolescent health services? (It is okay if it is integrated supportive supervision.)	1	Yes
		2	No
F7	If yes, can I see a supportive a supervision visit report from within the last six months?	1	Seen
		2	Not seen
F8	Does this facility conduct reviews of maternal deaths?	1	Yes
		2	No
F9	Does this facility conduct reviews of maternal near misses?	1	Yes
		2	No
F10	Does this facility conduct review of neonatal deaths?	1	Yes
		2	No
F11	Does this facility conduct reviews of neonatal near misses?	1	Yes
		2	No
F12	Is there a functional MPDSR committee in this facility?	1	Yes
		2	No
F13	If yes, can I see the minutes of the last meeting?	1	Seen
		2	Not seen
F14	Are MPDSR action plans developed after review meetings?	1	Yes
		2	No
F15	If yes, can I see a sample MPDSR action plan?	1	Seen
		2	Not seen

F16	Are the MPDSR action plans implemented?	1	Always
		2	Sometimes
		3	Never implemented

G. Health information

G1	Does this facility have relevant and up-to-date maternal, newborn, child and adolescent health data collection and reporting tools?	1	Yes
		2	No
G1	I would like to know whether today the facility has and is using each of the following registers:		
G1a	Labour and delivery register	1	Yes
		2	No
G1b	Perinatal register	1	Yes
		2	No
G1c	Postnatal register	1	Yes
		2	No
G1d	Birth defect register	1	Yes
		2	No
G1e	Family planning register	1	Yes
		2	No
G2	Does this facility regularly compile reports containing maternal, newborn, child and adolescent health services data?	1	Yes
		2	No
G3	If yes, do the reports provide disaggregated data?	1	Yes
		2	No
G4	How frequently are these reports compiled?	1	Monthly
		2	Quarterly
		3	Semi-annually
		4	Annually
G5	Are maternal, newborn, child and adolescent health reports analysed for completeness?	1	Yes
		2	No
G6	Are maternal, newborn, child and adolescent health reports checked against data in registers?	1	Yes
		2	No
G7	Has this facility received a MNCH data quality audit visit in the last six months? (It is okay if MNCH is part of a broader data quality audit.)	1	Yes
		2	No
G8	Does the facility display any data related to maternal health?	1	Yes
		2	No
G9	Does the facility display any data related to newborn health?	1	Yes
		2	No
G10	Does the facility use MNCH data for decision-making?	1	Yes
		2	No

G11	Have any decisions and actions resulted from review of maternal, newborn, child and adolescent health indicators on the posters data dashboard at this facility?	1	Yes
		2	No
G12	If yes, has there been change in the following areas?		
G12a	Facility personnel responsibilities reviewed and/or changed	1	Yes
		2	No
G12b	Mobilization of and shifting of resources	1	Yes
		2	No
G12c	Changes in commodity procurement	1	Yes
		2	No
G12d	Staff training or supervision conducted	1	Yes
		2	No
G12e	Changes in community education or outreach	1	Yes
		2	No
G12f	Appreciation and acknowledgement of staff based on performance	1	Yes
		2	No
G12g	Organization of services changed (e.g., client flow, organization of physical space)	1	Yes
		2	No

