



Quality, Equity, Dignity

A Network for Improving Quality of Care  
for Maternal, Newborn and Child Health



## **QUALITY OF CARE FOR MATERNAL AND NEWBORN HEALTH: A MONITORING FRAMEWORK FOR NETWORK COUNTRIES**

*Updated February 2019*

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## Abbreviations

<b>CeM<sup>ONC</sup></b>	comprehensive emergency obstetric and newborn care	<b>LMIS</b>	logistics management information system
<b>C-section</b>	caesarean section	<b>M&amp;E</b>	monitoring and evaluation
<b>DHIS2</b>	District Health Management Information System 2	<b>MNH</b>	maternal and newborn health
<b>ENAP</b>	Early Newborn Action Plan	<b>MPDSR</b>	Maternal and Perinatal Deaths Surveillance and Response
<b>EPPM</b>	Strategies for Ending Preventable Maternal Mortality	<b>PDSA</b>	Plan-Do-Study-Act (cycle)
<b>HMIS</b>	health management information systems	<b>PE/E</b>	pre-eclampsia/eclampsia
<b>ICD</b>	International Statistical Classification of Diseases and Related Health Problems	<b>PHCPI</b>	Primary Health Care Performance Initiative
<b>ICD-10</b>	International Statistical Classification of Diseases and Related Health Problems, 10th Revision	<b>PLA</b>	participatory learning and action
<b>ICD-MM</b>	The WHO application of ICD-10 to deaths during pregnancy, childbirth, and puerperium: ICD–maternal mortality	<b>PPH</b>	postpartum haemorrhage
<b>ICD-PM</b>	The WHO application of ICD-10 to deaths during the perinatal period: ICD–perinatal mortality	<b>QED</b>	Quality, Equity, Dignity
<b>IHP+</b>	International Health Partnership	<b>QI</b>	quality improvement
<b>KMC</b>	kangaroo mother care	<b>QoC</b>	quality of care
		<b>SARA</b>	Service Availability and Readiness Assessment
		<b>SI</b>	staff interviews
		<b>SPA</b>	Service Provision Assessment
		<b>TWG</b>	Thematic Working Group
		<b>WHO</b>	World Health Organization

## 1. Network Goals

- Reduce maternal and newborn mortality – reduce maternal and newborn deaths and stillbirths in participating health facilities by 50% over five years.
- Improve experience of care – enable measurable improvement in user satisfaction with the care received.

## 2. Purpose of the Monitoring Framework

This Monitoring Framework provides basic guidance on the monitoring and evaluation (M&E) needs for the Network for Improving Quality of Care for Maternal, Newborn and Child Health (the Network). The Monitoring Framework aligns with the Network goals, strategic objectives, implementation framework and World Health Organization (WHO) standards for improving maternal and newborn care in health facilities (2016)<sup>1</sup> and the WHO standards for improving quality of care for children and young adolescents in health facilities (2018).<sup>2</sup>

With diverse stakeholders in the Network, the Monitoring Framework attempts to balance the monitoring needs across unique Network countries and data users at multiple levels of the health system: facility, district, national and global. To this end, the Framework articulates conceptual guidance for review by stakeholders rather than prescriptive instructions. Each country has an existing data and monitoring system and its monitoring needs will vary depending on the country context. The Monitoring Framework builds on the WHO maternal and newborn quality standards and measures<sup>1</sup> and also on complementary monitoring frameworks, indicators and measurement methods, including global monitoring frameworks within the Strategies for Ending Preventable Maternal Mortality (EPMM),<sup>3,4</sup> Every Newborn Action Plan (ENAP),<sup>5,6</sup> and the Global Strategy for Women's, Children's and Adolescents' Health.<sup>7</sup> The Network encourages countries to incorporate, as appropriate, quality of care indicators, tools and methodologies into their existing information systems to support improved quality of care for mothers, newborns and children. A common set of indicators is recommended for measurement in all Quality, Equity, Dignity (QED) participating facilities in Network countries to monitor performance on a small number of common indicators and to facilitate learning within and across Network countries.

## 3. Monitoring Components

The Monitoring Framework outlines four key components visualized and summarized in Table 1, which can be adapted and integrated into existing country health information and monitoring systems:

1. **Quality Improvement Measures (for health facilities):** to support rapid improvements in quality of care (QoC) led by facility Quality Improvement (QI) Teams and supported by district/regional (or other subnational administrative and managerial unit) managers.
2. **District/Regional Performance Measures:** to support district and regional managerial and leadership functions in support of improving and sustaining quality care in facilities.
3. **Implementation Milestones:** to track implementation steps and progress against strategic objectives (Leadership, Action, Learning and Accountability) in line with QED implementation guidance.
4. **Common Indicators:** to provide a common set of standardized indicators for monitoring in all participating QED facilities in Network countries and to facilitate shared learning within and across countries.

Table 1 describes the primary stakeholders (users) and measurement purpose of each component. Indicators and key data users in each component are not mutually exclusive and some indicators may be selected for use as part of more than one monitoring component (e.g. postpartum haemorrhage [PPH] incidence and case fatality may be useful as a QI and district/regional performance measure). The results generated in each of the monitoring components will contribute to in-country and cross-country learning as part of the quality network global learning platform.

**Annex 1** lists the maternal and newborn **common indicators** for monitoring in every participating QED facility in Network countries. These common MNH measures represent a small number of standardized indicators for monitoring in every QED facility and are intended to facilitate shared learning within and across countries. Selection of a set of child health common indicators is in progress (as of November 2018) and, once finalized, will be added to this Framework as an annex.

**Table 1. Monitoring Components and Link to Learning Agenda**

Monitoring Component	Purpose of Measurement	Facility Manager and QI Team	District Managers	National Ministry of Health Leadership
<b>1. Quality Improvement (QI) Measures (for facility teams)</b>	<ul style="list-style-type: none"> <li>• For use by QI teams to support rapid improvement of specific care processes and health outcomes.</li> <li>• Flexible menu of prioritized measures (not prescriptive) linked to WHO quality statements in eight standards.</li> <li>• May require purpose-built data collection systems (e.g. checklist, column added to registers). Ad hoc as required.</li> </ul>	<b>HIGH</b> data collection and use	<b>HIGH</b> data collection and use	Moderate data use
<b>2. District/ Regional Performance Monitoring Measures</b>	<ul style="list-style-type: none"> <li>• Key performance measures to track district functions and inform district/ regional management of quality activities.</li> <li>• Selected process/output and outcome measures – see Catalogue in Annex 3.</li> <li>• Measures of facility readiness, especially for essential inputs in standards 2 (information), 3 (referral), 7 (human resources) and 8 (commodities).</li> </ul>	Moderate data collection and use	<b>HIGH</b> data collection and use	Moderate data use
<b>3. Implementation Milestones</b>	<ul style="list-style-type: none"> <li>• Track progress of implementation steps and strategic objectives (Leadership, Action, Learning and Accountability).</li> <li>• Relevant for all stakeholders.</li> </ul>	Moderate data collection and use	Moderate data collection and use	<b>HIGH</b> data collection and use
<b>4. Common Indicators</b>	<ul style="list-style-type: none"> <li>• Fifteen quality indicators related to important maternal and newborn health (MNH) care processes and outcomes for tracking in all QED facilities across countries.</li> <li>• To facilitate shared learning within and across countries.</li> <li>• Aligned with standardized global measures (EPMM, ENAP, etc.).</li> <li>• Feasible to measure in routine information systems (most measures).</li> <li>• For use by all QED Network stakeholders (national, regional, facility, global stakeholders, including civil society).</li> </ul>	<b>HIGH</b> data collection and use	<b>HIGH</b> data use	<b>HIGH</b> data use

It is important to note that common indicators are complementary to other QED monitoring components (Table 1), including implementation milestones, district performance, and facility QI measures, which collectively represent the heart of monitoring to improve QoC in Network learning districts and participating facilities.

Selection criteria for common indicators include:

- Relevant and useful for most QED stakeholders.
- Aligned to extent possible with standardized global MNH indicators (Every Woman Every Child, EPMM, ENAP, WHO 100 core indicators).
- Clearly provide information regarding whether (or not) health outcomes, care processes or inputs are improving.

A set of draft maternal and newborn common indicators was presented at the launch of the QED MNH Network in February 2017 in Malawi and subsequently reviewed and further prioritized based on a series of consultations with country-based and regional and global technical experts between July and December 2017.

Consultations held to review and prioritize QED MNH common indicators include the following (notes are available for each consultation):

- QED M&E Thematic Working Group (TWG) feedback on updated measures
- Country consultations:
  - 9 countries participating in QED MNH meeting, Tanzania, December 2017
  - 12 countries participating in routine health management information systems (HMIS) MNH content meeting, Nepal, November 2017
- EPMM virtual consultation, 29 December 2017
- ENAP/EPMM virtual consultation, 5 December 2017
- In-person meeting of QED M&E TWG, Geneva, July 2017
- In-person MONITOR meeting, Geneva, July 2017
- Working group meeting to review the common measures proposed at the February 2017 launch of the QED Network.

## 4. Measurement Methods and Data Sources

With the exception of the common indicators, the Network indicators, measurement methods and data sources will vary according to each

country's context, monitoring framework and data systems. Indicators will usually be calculated and used by facility QI teams and regional/district managers as part of regular monitoring to improve care. Most indicators will be calculated using **routine** measurement methods and data sources. Supplemental collection methods (e.g. periodic facility assessment/baseline assessment) can complement routine monitoring to inform understanding of critical quality gaps and to inform the design and evaluation of QI interventions.

Each country's monitoring framework will leverage a diverse set of **data sources**, including, but not limited to:

### Continuous (routine) data collection sources:

- **Patient records/facility registers:** These can provide more detailed information on interventions provided and adherence to standards of care for more complex processes of care that are not typically aggregated in HMIS at subnational or national levels.
  - **Data aggregated within HMIS or District Health Management Information System 2 [DHIS2]:** Selected data from facility registers are typically aggregated in HMIS (e.g. DHIS2). To varying degrees, HMIS can provide routine (e.g. monthly) information on service utilization, provision of high-impact interventions, incidence of institutional complications, number and causes of death, and case fatality.
- **Maternal death surveillance and response and perinatal death audits:** These can provide detailed case-by-case information about cause of death and underlying contributors, including QoC provided.
- **Civil registration and vital statistics:** These provide information on mortality and population-based denominators (e.g. estimated births).
- **Logistics management information systems (LMIS) and supply chain management:** The availability, distribution and quantity of medicines, commodities and medical supplies are often routinely tracked in LMIS or other supply chain management systems from central warehousing to service delivery points, such as health facilities.
- **Human resources and staff training:** The placement, availability and training of health staff are often routinely tracked at facility, district and/or national levels in human resource information systems.

### Periodic data collection sources:

- **Client surveys:** Structured quantitative questionnaires (e.g. brief client exit survey) can provide information on a client's priorities for care and experience of care. Since three of the eight WHO QoC standards address experience of care, it is likely that QED facilities may support episodic brief surveys of women and families (e.g. brief structured exit questionnaire).
- **Staff/provider interview (and vignettes):** These are useful for assessing provider knowledge, self-reported practice and training.
- **Simulations of care:** These assess provider competence and skills for discrete tasks (e.g. resuscitation of newborn using mannequin; postpartum counselling).
- **Observation:** Provider performance and adherence to standards of care during real-time clinical care can be assessed through observations (e.g. as part of baseline assessment or periodic peer-to-peer observation). Service readiness (e.g. stock availability or condition of water and sanitation facilities) or other operations can also be assessed.

### Other data collection sources:

- **Periodic health facility assessments using standardized tools (e.g. Service Availability and Readiness Assessment [SARA], Service Delivery Indicator, Service Delivery Platform, Service Provision Assessment [SPA]):** These tools generate important supplemental information (e.g. baseline or periodic facility assessment) using a combination of routine and non-routine data sources (such as those highlighted above). Facility assessments can be an important source for data that are not routinely available in most health systems to provide a deeper and more nuanced understanding of the QoC. More in-depth information on **users' and providers' care experience and priorities** can be collected through baseline and/or periodic **client interviews** and focus group **discussions** and other qualitative methods to supplement routine quantitative data sources (e.g. client survey).
- **Population-based health surveys (e.g. Demographic and Health Surveys, Multiple Indicator Cluster Surveys, Lot Quality Assurance Sampling):** These can provide information on intervention coverage, treatment-seeking behaviour, patient self-reported practices and experience of care and other variables.

- **Desk review and stakeholder interviews:** Information on activities undertaken or completed and achievement of specific implementation milestones can be obtained through these two methods.

Each measurement method and data source has inherent strengths and weaknesses that will need to be considered as countries define an optimal and feasible monitoring framework for their country context. For example, health facility assessments provide tremendous depth of information, but are resource intensive and thus are usually not feasible for routine (e.g. monthly) monitoring of performance to inform QI efforts led by facility teams and regional/district managers.

As part of each country's monitoring framework, stakeholders will need to define priority quality measures for routine tracking at national, regional/district and facility levels. While some quality measures will be tracked and analysed on a routine basis, other measures will be monitored by a QI team for a finite period of time (sometimes using purpose-built data sources such as checklists or columns added to patient registers) while the team works to improve a specific process of care (e.g. improve management of newborn asphyxia). Not all such measures will need to be, or should be, incorporated into routine national or local health information systems.

Many countries have information systems that lack the primary data elements needed for routine measurement of QoC processes and health outcomes. Registers often do not include the data elements to assess the QoC processes (e.g. percentage of newborns with asphyxia resuscitated), especially for more complex clinical processes. In some instances, a standardized facility patient record may not be available. Many national health information systems contain relatively few quality indicators, making it difficult to extract and aggregate performance across multiple facilities at subnational level (e.g. district, region). Health-care workers and staff often lack exposure to and capabilities for monitoring QoC, including knowledge of how to calculate quality measures and the ability to visualize and analyse trends over time (e.g. using time series trend or run chart).

Countries will need to consider many factors as they define the specific measures that will be included in their country's quality network monitoring system. For example, they will need to consider existing data availability, data sources,

and which new measurement methods will be feasible in their context. Data quality issues are common in many settings and regular data quality assurance will be an important activity as part of continuous monitoring. Countries can use the Network resources to leverage standardized indicators, data collection methods and tools; leveraging validated tools and analysis methods can save time and resources.

The Network will help support countries to build information systems and health worker capabilities for monitoring QoC through several mechanisms, including a user-friendly web-based platform of resources. For example, the Network will act as a repository for lists of standardized quality indicators, measurement methods and tools for countries to review. Currently, certain areas of quality measurement remain relatively undeveloped with respect to methods and validated tools, particularly in terms of experience of care and patient satisfaction. The Network web-based platform will be an important communication vehicle and repository of resources as new methods and tools are developed across countries. Importantly, countries are encouraged to identify and communicate information gaps, which can help push researchers to develop methods of common interest.

## 5. QI Measures and District Performance Measures: QED Indicator Catalogue

The WHO QoC standards include a menu of input, output/process and outcome measures categorized by each quality statement for use by district managers and facility teams to support QI efforts.<sup>1</sup> **Quality statements** are concise prioritized statements designed to help drive measurable improvements in care. Three types of measures are defined for each quality statement:

- **Inputs:** what must be in place for the desired care to be provided
- **Outputs (process):** whether the desired process of care was provided as expected
- **Outcomes:** the effect of the provision and experience of care on health and people-centred outcomes.

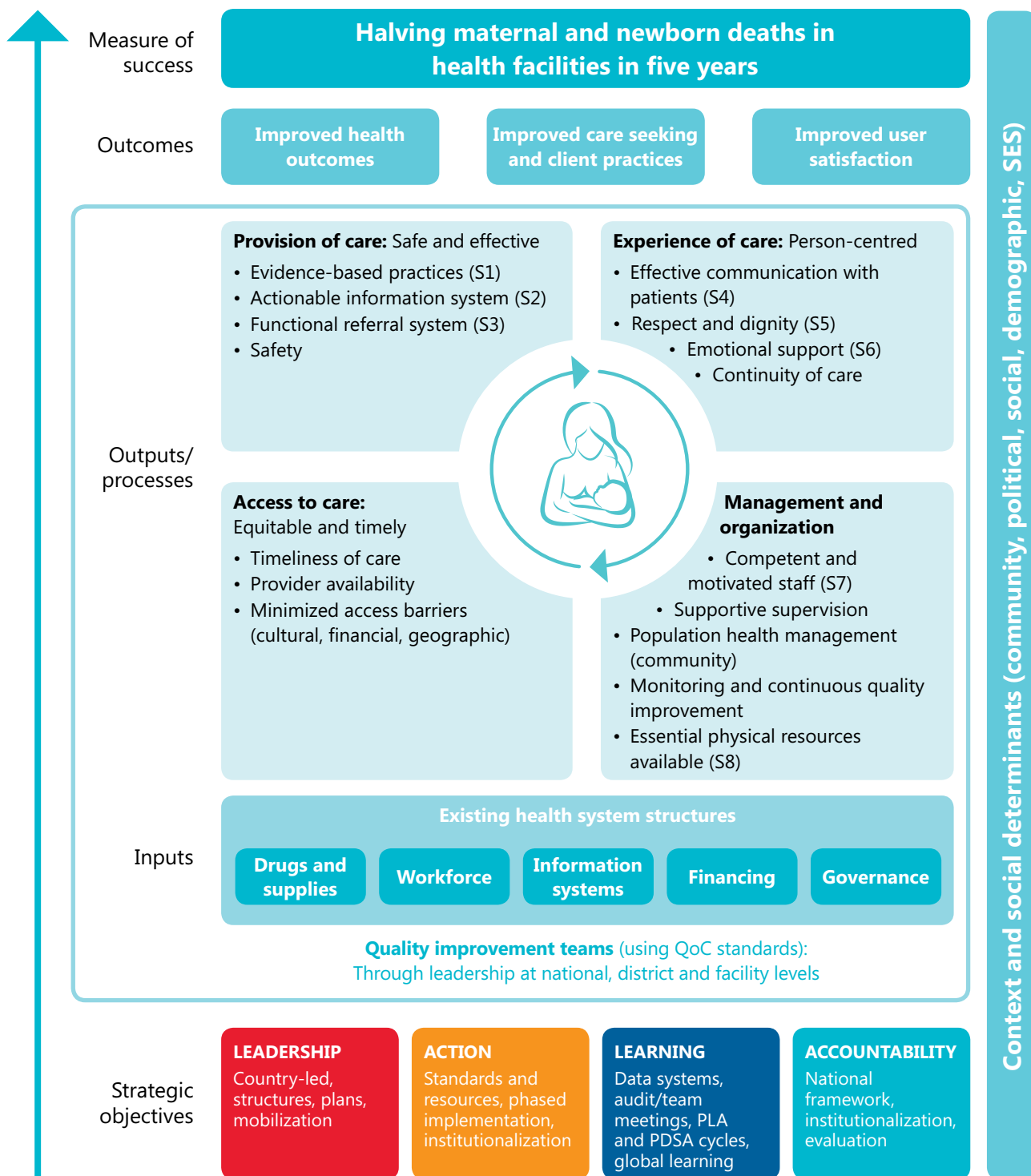
**Annex 2** gives an example of how a QED learning district might select maternal and newborn quality indicators (input, process and outcome) for use by district managers and/or facility teams to achieve specific quality statements (e.g. women with PPH receive appropriate interventions according to WHO guidelines).

To help district managers and facility managers prioritize indicators for monitoring as part of local QI efforts, the QED monitoring framework includes a streamlined set of indicators (categorized by quality statements) called the **QED indicator catalogue**. The indicators included in the maternal and newborn indicator catalogue are summarized in **Annex 3**. Prioritization of child health measures by quality statement for inclusion in a QED child health indicator catalogue is in progress (as of November 2018) and will be added to this monitoring framework as an annex once finalized.

The QED indicator catalogue categorizes indicators by quality statement and indicator type (input, output/process and outcome) and specifies potential data sources for each indicator to help QED country stakeholders design their monitoring plans. For the most part, QED catalogue indicators will be collected by district managers and/or facility QI teams using routine data collection sources as described above.

The monitoring logic model used to establish links between the strategic objectives and the outcomes of the Network is illustrated in Fig. 1.

**Fig. 1. Monitoring Logic Model: Unpacking the Links Between the Strategic Objectives and the Outcomes of the Network**



NOTE: S1–S8 reflect the numbering from the WHO Standards for Improving Quality of Maternal and Newborn Care in Health Facilities.<sup>1</sup>



## 6. The Monitoring Logic Model

The monitoring logic model (Fig. 1) visually unpacks the links between the Network’s strategic objectives (i.e. Leadership, Action, Learning and Accountability) and the goal of reducing maternal and newborn mortality.<sup>8</sup> The monitoring logic model builds on several important conceptual models, including the WHO vision paper<sup>9</sup> and framework of standards, quality statements and measures, the Primary Health Care Performance Initiative (PHCPI),<sup>10</sup> International Health Partnerships (IHP+),<sup>11</sup> and the WHO health system building blocks.<sup>12</sup> The model is a helpful organizing principle that users can reorganize as needed for their unique context or priority. Building on existing monitoring systems, each country’s monitoring needs are unique, but all should attempt to capture at least some indicators from each of the logic model’s four central elements: (a) management and organization; (b) access to care; (c) provision of care; and (d) experience of care.

## 7. Using Data to Improve Quality: Model for Improvement and Plan-Do-Study-Act (PDSA) Cycles

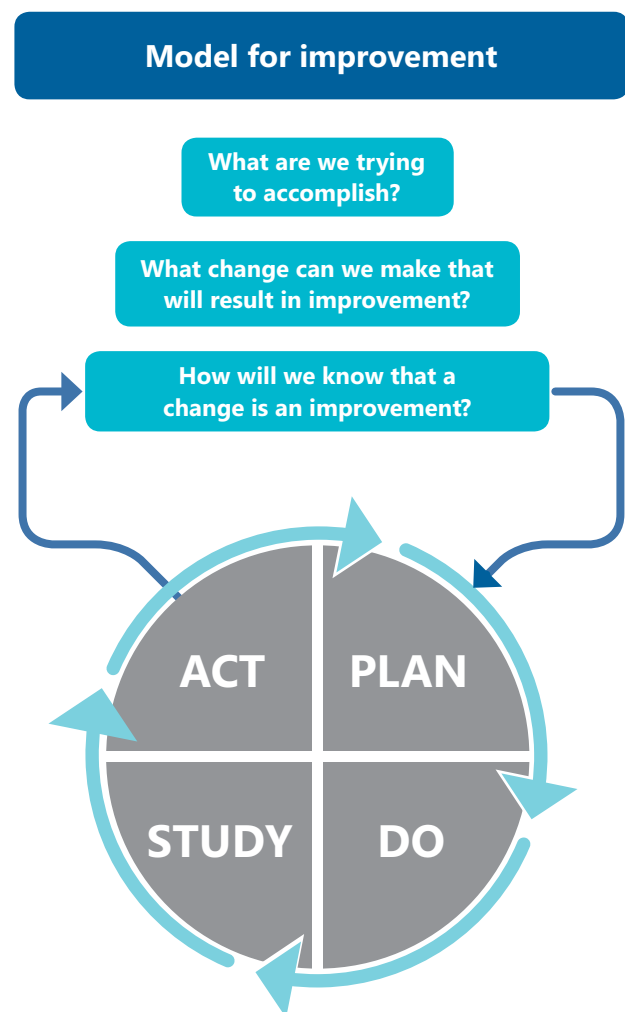
The Model for Improvement (Fig. 2) is one implementation model that provides a structured way to improve the delivery of care. This model uses three questions to structure an improvement plan for better care:

1. What are we trying to accomplish? (a specific numeric and time-bound aim)
2. What change can we make that will result in improvement? (the ideas for change that we can test)
3. How will we know that a change is an improvement? (the measures we will use to track progress for improving care)

Quality statements are a good starting point for developing the first question as part of local improvement efforts. The concept of “trying out” ideas and learning what works and what does not is an essential part of implementation designs that can be adapted to local context. One method for testing new ideas for improvement is the Plan-Do-Study-Act (PDSA) cycle. The PDSA cycle is designed to help QI teams methodically test and iteratively refine ideas on a small scale before committing to larger scale and implementation. QI teams need to collect real-time data to undertake these tests and track performance of the maternal newborn care system.

In most cases, the data tracked in the monitoring framework will be used to assess whether PDSA tests and other QI interventions are (or are not) improving care. Some PDSA cycles will require ad hoc measures.

Fig. 2: PDSA Cycle



Note that the PDSA cycle is just one example of a test system for new ideas – countries can use other problem-solving or implementation research strategies as needed.

## 8. Network Resources

To support countries with the development and implementation of their Quality Monitoring Framework, the Network will provide resources that include, but are not limited to:

(a) **Web-based repository of monitoring tools and guidance:** These include indicator sets, data collection tools, analysis methods, manuals and capacity-building materials.

(b) **Technical assistance:** When requested by countries, the Network can facilitate technical assistance to help design and implement a QI monitoring framework.

(c) **Web-based dashboard and tools to track performance:** The Network will develop a web-based dashboard to showcase implementation status and progress towards the collective goals across countries.

(d) **Links to related initiatives:** Countries with related M&E and HMIS initiatives can be connected through the Health Data Collaborative, PHCPI and other maternal and newborn child health monitoring frameworks and platforms such as Every Woman Every Child, ENAP and EPMM.



Midwife Susan Acom, in Apeitolin Health centre II in Uganda checks a mother during her antenatal care visit to the facility, in July 2018. ©UNICEF/Adriko

## Annex 1. Common Indicators for Monitoring Across Network Countries – Based on Consultations with Country and Global Stakeholders in 2017

Indicator	Operational Definition	Numerator	Denominator	Data Source	Frequency of Data Collection
1 Pre-discharge Maternal deaths	Number of women who delivered in the facility and died prior to discharge	Number of women who delivered in the facility and died prior to discharge	N/A (count indicator)	HMIS/facility register	Monthly
2 Maternal deaths by cause (pre-discharge)	Number of institutional pre-discharge maternal deaths by cause (ICD-MM)	Number of maternal deaths by cause (ICD-MM) among women who delivered in the facility and died prior to discharge	N/A	HMIS/facility register	Monthly
3 Neonatal deaths by cause (pre-discharge)	Number of institutional pre-discharge neonatal deaths (28 days or less) by cause (ICD-PM)	Number of neonatal deaths by cause (ICD-PM) among babies born live in the facility who die prior to discharge from the facility (up to 28 days of completed life). This excludes readmission for illness.	N/A	HMIS/facility register	Monthly
4 Institutional stillbirth rate (disaggregated by fresh and macerated)	Percentage of babies born in a health facility with no signs of life at birth	Number of babies delivered in a facility with no signs of life and born weighing at least 1000 grams or after 28 weeks of gestation, per 1000 births (alive or dead at birth)	Number of babies born in the facility (live and stillbirth)	HMIS/facility register	Monthly
5 Pre-discharge neonatal mortality rate	Percentage of babies born live in a facility who die prior to discharge	Number of babies born live in a facility who die during the first 28 of completed days of life and die prior to discharge from the facility, per 1000 live births in a given year or period	Number of babies born in the facility (live and stillbirth)	HMIS/facility register	Monthly
6 Obstetric case fatality rate (disaggregated by direct and indirect causes when possible)	Percentage of women who delivered at the facility and experienced complications (regardless of time of onset) and died from these complications before discharge	Number of women who delivered at the facility and experienced complications (regardless of time of onset) and died from these complications before discharge (obstetric and non-obstetric complications)	Number of women who delivered at the facility and experienced complications (obstetric and non-obstetric)	HMIS/facility register	Monthly
7 Pre-discharge counselling for mother and baby	Proportion of women who received pre-discharge counselling for the mother and the baby in a given period	Number of women who received pre-discharge counselling for the mother and the baby in a given period (for minimum elements)	Number of women who delivered at the facility	Client questionnaire (sample of women) (e.g. exit interview)	Quarterly
8 Companion of choice	Proportion of women who wanted and had a companion supporting them during [labour] [childbirth] in the health facility	Number of women who wanted and had a companion supporting them during [labour] [childbirth] in the health facility	Number of women who wanted a companion during [labour] [delivery]	Client questionnaire (sample of women)	Quarterly

Indicator	Operational Definition	Numerator	Denominator	Data Source	Frequency of Data Collection
<b>9</b>	Women who experienced physical or verbal abuse in labour, childbirth or postpartum period  (Physical abuse includes: slapped, pinched or punched by a health worker or other facility staff. Verbal abuse includes: shouted at, screamed at, insulted, scolded or mocked by a health worker or other staff.*)	Proportion of women who report physical or verbal abuse at any time during labour, childbirth or postpartum period	Number of women who report physical or verbal abuse during labour or childbirth	Client questionnaire (sample of women) (e.g. exit interview)	Quarterly
<b>10</b>	Newborns breastfed within one hour	Percentage of newborns born alive in a facility who are breastfed within one hour of birth	Number of babies born alive in a facility who are breastfed within one hour of birth	HMIS/facility register	Monthly
<b>11</b>	Immediate postpartum uterotonic for PPH prevention	Percentage of women who gave birth in a facility who received a prophylactic uterotonic immediately after birth (ideally within one minute) for prevention of PPH	Number of women who gave birth in the facility who received a prophylactic uterotonic immediately after birth (ideally within one minute) for prevention of PPH	HMIS/facility register	Monthly
<b>12</b>	Newborns with birthweight documented	Percentage of babies born in a facility with birthweight documented	Total number of babies born in the facility (live births and stillbirths)	HMIS/facility register	Monthly
<b>13</b>	Premature babies initiating KMC	Proportion of newborns weighing $\leq 2000$ grams who are initiated on KMC	Total number of newborns weighing $\leq 2000$ grams who are initiated on KMC (or admitted to KMC unit if separate unit exists)	HMIS/facility register	Monthly
<b>14</b>	Basic hygiene provision	Proportion of QED facilities in which delivery rooms have at least one functional handwashing station with water and soap available	Number of QED facilities in which [at least one] delivery room(s) have at least one functional handwashing station with water and soap available	Facility survey (e.g. district supervision)	Quarterly
<b>15</b>	Basic sanitation available to women and families	Proportion of QED facilities with basic sanitation available for women during and after labour and childbirth	Number of QED facilities with basic sanitation available for women during and after labour and childbirth (clean running water, waste disposal facilities, toilets and sanitation material for women)	Facility survey (e.g. district supervision)	Quarterly

\*Physical and verbal abuse questions based on WHO multicountry study and validation of survey questions.

HMIS: health management information system; ICD-MM: WHO application of ICD-10 to deaths during pregnancy, childbirth, and puerperium; ICD-PM: WHO application of ICD-10 to deaths during the perinatal period; KMC, kangaroo mother care; N/A: not applicable; PPH: postpartum haemorrhage; QED: Quality, Equity, Dignity.

## Annex 2. Quality Improvement Measures – An Example

Each of the eight WHO standards for improving quality of maternal and newborn care in facilities includes several **quality statements** and associated **measures**. **Quality statements** are concise prioritized statements designed to help drive measurable improvements in care. Three types of measures are defined for each quality statement:

- **Inputs:** what must be in place for the desired care to be provided)
- **Outputs (process):** whether the desired process of care was provided as expected

- **Outcome:** the effect of the provision and experience of care on health and people-centred outcomes.

The WHO quality statements and measures can be used to inform the improvement areas prioritized by the teams at the district and facility levels to monitor performance of essential functions (e.g. 24/7 availability of essential commodities) and quality of maternal and newborn care processes in facilities. The table below outlines illustrative input, output/process and outcome measures for two WHO quality statements highlighting links to components of the monitoring framework.

WHO Quality Statement	Illustrative Input, Output and Outcome Measures	Monitoring Framework Component
<p><b>WHO Quality Statement 1.3 (evidence-based care)</b></p> <p>Women with postpartum haemorrhage (PPH) receive appropriate interventions according to WHO guidelines</p>	<ul style="list-style-type: none"> <li>• <b>Input measures:</b> proportion of facilities with functional uterotonic available 24/7 in delivery room.</li> <li>• <b>Process/output measures:</b> <ul style="list-style-type: none"> <li>– Percentage of women who delivered who received immediate postpartum uterotonic (PPH prevention)</li> <li>– Percentage of women with PPH treated with <i>therapeutic</i> uterotonic.</li> </ul> </li> <li>• <b>Outcome measures:</b> <ul style="list-style-type: none"> <li>– Proportion of women who developed PPH (incidence)</li> <li>– Proportion of maternal deaths due to PPH.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• QI measure</li> <li>• District performance measure</li> <li>• QI measure</li> <li>• Common indicator (PPH prevention)</li> <li>• QI measure</li> <li>• District performance measure</li> </ul>
<p><b>WHO Quality Statement 7.3 (motivated, competent staff)</b></p> <p>Managerial and clinical leadership (district/facility) fosters an environment that supports facility staff in continuous quality improvement (QI)</p>	<ul style="list-style-type: none"> <li>• <b>Input measures:</b> <ul style="list-style-type: none"> <li>– Facility has designated QI team and responsible personnel</li> <li>– Proportion of all facility (district) managers trained in QI and leading change.</li> </ul> </li> <li>• <b>Output/process:</b> <ul style="list-style-type: none"> <li>– Facility team meets at least monthly to review data, monitor QI performance, address problems, recognize improvement</li> <li>– Facility leadership communicates performance through established monitoring mechanisms to all relevant staff (e.g. dashboard of key metrics).</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• District performance measure</li> <li>• Implementation milestone</li> <li>• Implementation milestone</li> <li>• QI measure</li> <li>• District performance measure</li> </ul>

A number of initiatives – such as the WHO Western Pacific Region’s First Embrace action plan for healthy newborn infants<sup>13</sup> and others – are gaining important experience at regional and country levels with tracking and using measures to strengthen

performance of essential system functions (e.g. 24/7 availability of functional commodities) and to improve processes of care and experience of care for mothers and newborns.

## Annex 3: QED Indicator Catalogue

The table below is a catalogue (or menu) of possible indicators for use by QI teams and district/subnational managers to monitor improvements in QoC based on the standards and quality statements prioritized for improvement. The catalogue indicators, categorized by WHO maternal newborn standards and quality statements, include a subset of indicators from the 2016 WHO Standards for Improving Quality of Maternal and Newborn Care in Health Facilities<sup>1</sup> and additional indicators recommended during QED metrics consultations. Potential data sources or methods of data collection are noted for each indicator. See notes below the table for more

details on data sources. Common indicators are noted with a double asterisk (\*\*).

Please note that the catalogue indicator list is a menu and *not* an exhaustive list. As appropriate to their selected area of improvement work, district managers and QI teams should consider other indicators, including the more exhaustive list of indicators in the 2016 WHO standards.

***The QED indicator catalogue is considered a “living” document that will be regularly updated based on learning in Network countries measuring and using specific indicators to help improve care.***

Indicator	Category (under revision)	Potential Data Sources or Methods			
		Routine Information Systems	Client Interview	Observation (clinical or operational)	Other
<b>STANDARD 1. EVIDENCE-BASED CARE</b>					
<b>WOMEN</b>					
<b>Women: Outcome Measures</b>					
Number of maternal deaths (per 100 000 live births in health facility)**	Outcome	1			
Number of maternal deaths classified by cause (ICD-MM)**	Outcome				
% women with specific obstetric complication (PPH, PE/E, prolonged labour, infection/sepsis)	Outcome	1			
Obstetric case fatality rate (disaggregated by direct and indirect causes when possible)**	Outcome	1			
Maternal cause-specific case fatality rate (PPH, PE/E, infection/sepsis, prolonged labour)	Outcome	1			
<b>1.1.a. Women receive routine assessment and appropriate care</b>					
% facilities with basic essential equipment and supplies available	Input (Commodities / Equipment)	1			
% facilities with written, up-to-date clinical protocols	Input (Policy / Protocol)			1	
% staff with recent in-service training	Output (Training)	1		[2]	SI
% facilities with recent supportive supervision	Output (Supervision)	1		[2]	
% women assessed appropriately at admission in labour [prenatal history/risk factors, vital signs, danger signs, physical examination]	Output (Service Delivery)				
% women monitored appropriately during labour [see forthcoming 2018 WHO intrapartum care recommendations]	Output (Service Delivery)				

Indicator	Category (under revision)	Potential Data Sources or Methods			
		Routine Information Systems	Client Interview	Observation (clinical or operational)	Other
% women with blood pressure, pulse and temperature monitored appropriately [admission, labour, postpartum period]	Output (Service Delivery)	1			
% women with appropriate monitoring during postpartum period for danger signs, including bleeding [per local protocol and national/global guidelines]	Output (Service Delivery)				
<b>1.2. Women with PE/E</b>					
% facilities with magnesium sulfate and antihypertensives available	Input (Commodities / Equipment)	[2]		1	
% women with severe PE/E treated with magnesium sulfate	Process/ Output (Service Delivery)	1			
% women with PE/E managed appropriately based on maternal/fetal status and gestational age (composite indicator) (see WHO MCPC 2nd edition, 2017)	Process/ Output (Service Delivery)	1			
% women with pre-eclampsia who progressed to eclampsia	Outcome (Service Delivery)	1			
PE/E case fatality rate (valid only in high-volume facilities or when aggregated across multiple facilities)	Outcome				
<b>1.3. Women with PPH</b>					
% facilities with uterotonic drugs available	Input (Commodities / Equipment)	[2]		1	
% CEmONC facilities with functional blood transfusion service	Input Commodities / Equipment)				
% women administered immediate postpartum uterotonic (PPH prevention)*	Process/ Output (Service Delivery)	1			
% women who developed PPH receiving appropriate treatment (composite indicator, e.g. uteronic, tranexamic acid, uterine balloon tamponade, etc.) (see WHO MCPC 2nd edition 2017)	Output (Service Delivery)	1			
PE/E case fatality rate (valid only in high-volume facilities or when aggregated across multiple facilities)	Outcome				
<b>1.4. Women with delayed or obstructed labour</b>					
% facilities with supplies/equipment for vacuum or forceps-assisted delivery	Input (Commodities / Equipment)	[2]		1	
% women with prolonged labour (active labour > 12 hours) managed appropriately (composite indicator) (see WHO 2018 intrapartum care recommendations)	Process/ Output (Service Delivery)				
% women with prolonged/obstructed labour who gave birth by C-section	Output (Service Delivery)	1			

Indicator	Category (under revision)	Potential Data Sources or Methods			
		Routine Information Systems	Client Interview	Observation (clinical or operational)	Other
% all women who gave birth in the facility whose active first stage of labour > 12 hours	Outcome	1			
% women with obstructed labour with unmet need for C-section	Outcome	1			
Case fatality rate for women with prolonged labour (valid only in high-volume facilities or when aggregated across multiple facilities)	Outcome	1			[2]
Newborn asphyxia rate (adverse intrapartum outcome)	Outcome	1			[2]
<b>1.6.a. Women in preterm labour</b>					
% facilities with antenatal corticosteroids available	Input (Commodities / Equipment)	[2]		1	
% women with preterm pre-labour rupture of membranes who received prophylactic antibiotics	Process/ Output (Service Delivery)				
% preterm newborns whose mothers received corticosteroids when indicated	Process/ Output (Service Delivery)	1			
<b>1.7.a. Women with or at risk for infections</b>					
% facilities with first- and second-line antibiotics available	Input (Commodities / Equipment)	[2]		1	
% women with C-section who received prophylactic antibiotics before C-section	Process/ Output (Service Delivery)	1			
% women with pre-labour rupture of membranes who received antibiotics	Process/ Output (Service Delivery)	1			
% women who gave birth in the facility with signs of infection treated with appropriate antibiotics	Process/Output	1			
Maternal infection/sepsis case fatality rate (valid only in large facilities or when aggregated across multiple facilities)	Outcome				
<b>1.8 Women and newborns: prevent hospital-acquired infections</b>					
(See Standard 8.1 for more indicators.)					
<b>1.9. Women (and newborns): harmful practices</b>					
% uncomplicated, vaginal births where episiotomy performed	Process/ Output (Service Delivery)	1			
<b>NEWBORN</b>					
<b>Newborn Outcome Measures</b>					
Pre-discharge neonatal mortality rate**	Outcome	1			
Facility stillbirth rate (disaggregated by fresh and macerated)**	Outcome	1			
Neonatal deaths classified by cause (ICD-PM)**	Outcome	1			SI (if needed)



Indicator	Category (under revision)	Potential Data Sources or Methods			
		Routine Information Systems	Client Interview	Observation (clinical or operational)	Other
Facility intrapartum stillbirth rate (plus fetal heart rate documented at admission)	Outcome	1			
% newborns with specific complications (prematurity, possible serious bacterial infection, asphyxia)	Outcome	1			
Neonatal cause-specific case fatality rate	Outcome	1			
<b>1.1.b. Newborns receive routine care immediately after birth</b>					
% facilities with essential supplies available	Input (Commodities / Equipment)	[2]		1	
% facilities with written, up-to-date clinical protocols	Input (Policy / Protocol)			1	
% staff with recent in-service training	Input (Training)	1			SI
% facilities with supportive supervision	Output (Supervision)	1			
% newborns breastfed within one hour of birth**	Output (Behaviour)	1	[2]		
% newborns with documented birthweight**	Output (Service Delivery)	1			
% newborns who received essential early newborn care (drying, skin to skin, delayed cord clamping, breastfeeding)	Process/Output				
<b>1.1.c. (Women and) newborns receive routine postnatal care</b>					
% postnatal mothers/babies monitored appropriately for danger signs (vital signs/clinical signs)	Process/Output	1			
% newborns receiving vitamin K and full vaccination	Process/Output (Service Delivery)	1			
% newborns breastfed exclusively at time of discharge	Process/Output	1			
% postpartum women counselled on birth spacing and postpartum contraception options	Process/Output				
% women discharged postpartum with contraceptive method of choice	Output/Process				
% live births delivered in the facility that were notified by the facility to the civil registrar (in the context where health workers/health facilities have responsibility to notify live birth to the civil registrar)	Output/Process	1			SI
% women/families who received postpartum counselling on importance of birth registration and obtaining a birth certificate and the process for registration of their infants with the civil registrar to obtain a birth certificate (applicable for all facilities, regardless of civil registration laws and policies in the country)	Process/Output	1			SI

Indicator	Category (under revision)	Potential Data Sources or Methods			
		Routine Information Systems	Client Interview	Observation (clinical or operational)	Other
% live births delivered in the facility that were registered in the civil registry by the facility (applicable where health workers/health facilities have responsibility to register live births into the civil registry)	Process/Output	1			SI
<b>1.5. Newborns who are not breathing spontaneously</b>					
% facilities with suction device, mask and bag (size 0 and 1)	Input (Commodities / Equipment)	[2]		1	
% live-born newborns not breathing after additional stimulation who were resuscitated with bag and mask	Outcome (Service Delivery)	1			
<b>1.6.b. Preterm and small babies receive appropriate care</b>					
% facilities with supplies/equipment for thermal care and feeding of small babies	Input (Commodities / Equipment)	[2]		1	
Proportion of newborns < 2000 grams initiated on KMC (or admitted to KMC unit if separate unit exists)**	Process/ Output (Service Delivery)	1			
% eligible neonatal babies (≤ 2000 grams) who receive near continuous KMC	Process/ Output (Service Delivery)	1			
<b>1.7.b. Newborns with suspected/risk factors for infection</b>					
% facilities with first- and second-line antibiotics available	Input (Commodities / Equipment)	[2]		1	
% newborns of mothers with signs of infection who are evaluated for infection and treated as appropriate	Process/ Output (Service Delivery)	1			
% newborns with signs of infection who received appropriate antibiotics	Process/ Output (Service Delivery)	1			
<b>1.9. (Women and) newborns: harmful practices</b>					
% facilities with no displays of infant formula, bottles, teats	Input (Other)			1	
% women who received augmentation of labour (uterotonics) with no indication of delay in labour progress	Process/ Output (Service Delivery)	1			
% women with uncomplicated, spontaneous vaginal birth in whom episiotomy performed	Process/ Output (Service Delivery)	1			
<b>STANDARD 2. HEALTH INFORMATION SYSTEMS</b>					
<b>2.1. Complete, accurate, standardized medical record</b>					
% facilities with birth and death registration linked to vital national registration system	Output (Information Systems)			1	
% facilities with standardized registers, patient charts and data collection forms	Input (Information Systems)			1	

Indicator	Category (under revision)	Potential Data Sources or Methods			
		Routine Information Systems	Client Interview	Observation (clinical or operational)	Other
% facilities with system for classifying maternal and newborn diseases and health outcomes, including death, aligned with ICD (e.g. ICD-MM/ICD-PM)	Input (Information Systems)			1	
% newborns discharged with accurately completed record	Output (Information Systems)	1			
% newborns with patient identifier and individual clinical medical record	Output (Information Systems)	1			
% postpartum women discharged with accurately completed record	Process/Output (Information Systems)	1			
<b>2.2. Mechanism for data collection, analysis and feedback</b>					
% facilities in which QI team regularly extracts data, calculates and visualizes prioritized quality indicators	Output/Process			1	SI
% facilities where data regularly reviewed and used to make decisions on QI	Outcome			1	
% facilities conducted at least one recent review of maternal and perinatal death	Output (Information Systems)			1	MPDSR
% facilities with standard operating procedures for checking, validating and reporting data	Input (Policy / Protocol)			1	
% maternal deaths reviewed with standard audit tools	Process/Output (Information Systems)	[2]			MPDSR
% perinatal deaths reviewed with standard audit tools	Process/Output (Information Systems)	[2]			MPDSR
% QED facilities implementing "full" cycle of MPDSR according to WHO technical guidance (maternal and perinatal) (Global MPDSR TWG to consider facility MPDSR assessment tools)	Output (Information Systems)	[2]			MPDSR
<b>STANDARD 3. REFERRAL</b>					
<b>3.1. Decision to refer made without delay</b>					
% facilities with standardized referral protocol for identification, management and referral of women/newborns with complications	Input (Policy / Protocol)			1	
% facilities with supplies for stabilization and pre-referral treatment	Input (Commodities / Equipment)	[2]		1	
% women/newborns who fulfilled criteria for referral and were referred	Process/Output (Service Delivery)	1			
% women/newborns with complications transferred to appropriate care level with referral note	Process/Output (Service Delivery)	1			Admin
% women presenting to labour ward who report receiving immediate attention upon arrival	Process/Output		1		

Indicator	Category (under revision)	Potential Data Sources or Methods			
		Routine Information Systems	Client Interview	Observation (clinical or operational)	Other
<b>3.2. Referral follows predetermined plan without delay</b>					
% facilities with ready access to functioning ambulance or emergency transport	Input (Commodities / Equipment)			1	Admin
% facilities with up-to-date list of network facilities providing referral services	Input (Information Systems)			1	
% newborns who died before or during transfer to higher-level facility	Outcome	1			
% newborns referred from facility who completed referral	Outcome	1			
% pregnant or postpartum women who died before or during transfer to higher-level facility	Outcome	1			
% women referred from facility who completed referral	Outcome	1			
<b>3.3. Appropriate information exchange between facilities</b>					
% facilities with reliable communication methods for referrals and consultation	Input (Information Systems)			1	
% facilities with standardized referral form	Input (Information Systems)			1	
% referred newborns with counter-referral feedback information	Output (Information Systems)	[2]			Admin
% referred women with counter-referral feedback information	Output (Information Systems)	[2]			Admin
<b>STANDARD 4. COMMUNICATION</b>					
<b>4.1. Women and families receive information about care and have effective interactions with staff</b>					
% facilities with accessible health education materials	Input (Other)			1	
% facilities with written policy to promote interpersonal communication and counselling	Input (Policy / Protocol)			1	
% staff with recent training on interpersonal communication	Output (Training)	1		1	SI
% facilities receiving supportive supervision that addresses counselling	Output (Supervision)	1			Admin
% women receiving postnatal information and counselling before discharge**	Output (Service Delivery)	[2]	1		
% women who felt they were adequately informed by the health workers about their care, including examinations	Outcome		1		
% women who reported they were given an opportunity to discuss their concerns and preferences	Outcome		1		

Indicator	Category (under revision)	Potential Data Sources or Methods			
		Routine Information Systems	Client Interview	Observation (clinical or operational)	Other
<b>4.2. Coordinated care, with clear, accurate information exchange</b>					
% facilities with standard form for documenting clinical progress and care	Input (Information Systems)			1	
% facilities with written protocols for verbal and written handovers (shift change, intra-facility transfer, referral, discharge)	Input (Policy / Protocol)			1	
% women for whom a partograph has been completed	Process/Output (Information Systems)	1			
<b>STANDARD 5. RESPECT AND DIGNITY</b>					
<b>5.1. Privacy around the time of labour and childbirth, and their confidentiality is respected</b>					
% facilities where physical environment allows privacy	Input (Other)			1	
% facilities with written, up-to-date protocols to ensure privacy and confidentiality	Input (Policy / Protocol)			1	
% women reported receiving dignified and respectful care during maternity visit	Outcome		1		
<b>5.2. Not subjected to mistreatment</b>					
% facilities with written accountability mechanism in the event of mistreatment	Input (Policy / Protocol)			1	
% facilities with written, up-to-date zero-tolerance nondiscriminatory policies on mistreatment	Input (Policy / Protocol)			1	
% staff with recent training on respectful care	Output (Training)				Admin, SI
% women who gave birth in facility who reported physical or verbal abuse to themselves [or their newborns]**	Outcome		1		
<b>5.3. Informed choices about the services</b>					
% facilities with written, up-to-date policies on obtaining informed consent	Input (Policy / Protocol)			1	
% facilities with standard informed consent form	Input (Other)			1	
% women who felt adequately informed by health workers about their health and care	Outcome		1		
<b>STANDARD 6. EMOTIONAL SUPPORT</b>					
<b>6.1. Offered option of companion of choice</b>					
% facilities with written, up-to-date policies for one person of woman's choice	Input (Policy / Protocol)			1	
% facilities with labour and childbirth areas organized to allow for private space	Input (Infrastructure)			1	Admin
% women who wanted and had a companion of their choice in labour [childbirth]**	Output (Service Delivery)		1		
% women reported receiving supportive care during maternity stay	Output		1		

Indicator	Category (under revision)	Potential Data Sources or Methods			
		Routine Information Systems	Client Interview	Observation (clinical or operational)	Other
<b>6.2. Support to strengthen her capabilities</b>					
% facilities with written, up-to-date protocol on minimizing unnecessary interventions	Input (Policy / Protocol)			1	
% staff with recent training on providing emotional support	Output (Training)	1			SI
% women undergoing bereavement or adverse outcome who report additional emotional support from facility staff	Outcome		1		
<b>STANDARD 7. MOTIVATED STAFF</b>					
<b>7.1. Access at all times to skilled birth attendant</b>					
% facilities displaying roster of staff on duty, shift times	Input (Other)			1	
% facilities with skilled birth attendant available all the time in sufficient numbers to meet workload	Input (Other)			1	Admin
% available posts that are filled by staff with necessary competence	Input (Other)				Admin
% births attended by a skilled birth attendant	Process/Output	1	[2]	[2]	
% women reporting sufficient staff at health facility	Outcome		1		
<b>7.2. Skilled birth attendants have competence and skills</b>					
% facilities with standard procedures for recruitment, motivation and retention	Input (Other)			1	
% facilities with programme for continuing professional and skills development	Input (Policy / Protocol)			1	
% skilled birth attendant staff with recent in-service training	Input (Training)	1			SI
% staff who supervised/mentored to support clinical competence and QI in last quarter	Output (QI)			1	Admin, SI
% staff who can identify and report on at least one clinical activity in which they are personally involved	Output (QI)			1	Admin, SI
Measure of health worker experience of providing care in the facility and/or support – <i>to be determined</i>	Output/Process				Health worker interview
<b>7.3. Leadership in continuous QI</b>					
% facilities with written, up-to-date plan for improving quality of care and patient safety	Input (QI)			1	Admin, SI
% facilities with designated QI team	Input (QI)			1	SI
% facilities with QI review meeting within at least past one month	Output (QI)			1	Admin, SI
% leaders at facility trained in QI and leading change	Output (QI)			1	Admin, SI
% facilities with mechanism for regular collection of information on patient and provider experiences	Input (QI)			1	
% facilities with an established liaison mechanism to district (and/or national level) on quality issues	Input (QI)			1	SI
% QI meetings held in last 12 months	Output (QI)				Admin, SI

Indicator	Category (under revision)	Potential Data Sources or Methods			
		Routine Information Systems	Client Interview	Observation (clinical or operational)	Other
% facilities that participated in data sharing with district and community to inform user decision-making, prioritization and planning	Output (QI)			1	Admin, SI
% leaders communicated performance through established mechanisms (e.g. dashboards)	Output (QI)				Admin, SI
<b>STANDARD 8. PHYSICAL ENVIRONMENT</b>					
<b>8.1. WASH functioning, reliable, safe and sufficient</b>					
% facilities with basic water supply in maternity care areas (labour, birth, postnatal)	Input (WASH)			1	[2]
% facilities with basic environmental cleaning practices in maternity areas (labour, birth, postnatal); written cleaning protocols, trained cleaning staff and providers	Input (WASH)			1	[2]
% facilities with basic health-care waste management in maternity care areas	Input (WASH)			1	
% facilities with basic hygiene provisions in maternity care areas (functional handwashing station, access to <b>bathing/shower area, basic sterile equipment</b> )	Input (WASH)			1	[2]
% facilities with basic sanitation available for women during and after labour and childbirth (toilet, latrine)	Input (WASH)			1	
% facilities with written protocol and awareness materials (posters) on WASH and waste management	Input (WASH)			1	
% women reporting satisfactory access to water	Outcome		1		
<b>8.2. Labour, childbirth and postnatal care appropriately organized</b>					
% facilities with adequate labour and childbirth areas/rooms for estimated number of births	Input (Infrastructure)			1	
% facilities with dedicated area in labour/childbirth area for resuscitation of newborns, which is adequately equipped	Input (Infrastructure)			1	
% facilities with policy and space for rooming-in of mothers and babies 24 hours a day	Input (Infrastructure)			1	
% women reporting clean physical environment	Outcome		1		
<b>8.3. Adequate stock of medicines, supplies and equipment</b>					
% facilities with regular source of electricity	Input (Infrastructure)			1	
% facilities with essential laboratory supplies and tests					
<i>(See Standards 1 &amp; 3 for more indicators on medicines, supplies and equipment.)</i>					

\*\*Common QED indicator.

Admin: administrative data source; CEmONC: comprehensive emergency obstetric and newborn care; C-section: caesarean section; ICD: International Statistical Classification of Diseases and Related Health Problems; ICD-MM: WHO application of ICD-10 to deaths during pregnancy, childbirth, and puerperium; ICD-PM: WHO application of ICD-10 to deaths during the perinatal period; KMC: kangaroo mother care; MPDSR: Maternal and Perinatal Deaths Surveillance and Response; PE/E: pre-eclampsia/eclampsia; PPH, postpartum haemorrhage; QED: Quality, Equity, Dignity; QI: quality improvement; SI: staff interview; TWG: Thematic Working Group; WASH: water, sanitation and hygiene.

**Routine Information Systems** (see more details in section 4, page 4):

- **Patient records/registers:** This original data source is typically aggregated into a HMIS (e.g. DHIS2), or a records review process can be used to analyse this data source.
- **Health management information systems (HMIS/DHIS2):** Aggregation of health service delivery, which is typically drawn from patient records or other facility registers.
- **Logistics management information systems (LMIS):** Commodities, medicines, medical supplies and other supply chain management information.
- **Human resources information systems:** Information on human resources, staff placement and training received.

**Client Interview:** Asking clients about the provision or experience of care is a critical data source for understanding QoC.

**Observation:** Observing patient care or service readiness (e.g. commodity stock availability or presence of water and sanitation in facilities) is a critical data source. Observations can be conducted by an internal team (e.g. QI team) or by external reviewers (e.g. health facility assessment, such as SARA, SPA).

**Other Data Sources:**

- Administrative data source: Refers to administrative data sources, such as budget, equipment purchasing, or other relevant data sources.
- Maternal and Perinatal Death Surveillance and Response (MPDSR): MPDSR may have a separate data collection system.
- Staff interview: A qualitative interview with facility or district staff members (e.g. managers, providers, pharmacists, etc.) can be conducted by an internal team or external reviewer. In-person interviews are preferred, but under certain circumstances interviews could be conducted remotely (i.e. via telephone).



*A frontline health worker gives a vaccine to a student during a Measles Rubella vaccination session at Kendriya Vidyalaya School in Pasighat, in India's north-eastern state of Arunachal Pradesh in February 2018. ©UNICEF/Boro*



## Annex 4. Implementation Milestones

The table below outlines the recommended implementation milestones that track progress against the Network's strategic objectives (Leadership, Action, Learning and Accountability). Additional details can be found in the working document on the QoC Strategy<sup>7</sup> and Country Implementation Guidance. Note that this list is preliminary and more detailed definitions and data sources are forthcoming.

Implementation Milestones (by Strategic Objective)	Source
<b>1. LEADERSHIP</b>	
<b>1. National and district governance structures for QoC are strengthened (or established) and functioning.</b>	
1. National leadership structure for QoC in health services is strengthened (or established).	Desk Review
2. Ministerial, multi-stakeholder steering group for quality improvement in MNH services is strengthened (or established).	Desk Review
3. QoC committees in district health management teams are established (including representatives from the community and women's associations) and functioning.	Desk Review
4. QoC committees in hospitals and QI teams in health facilities are established (including representatives from the community and women's associations) and functioning.	Desk Review* (a,b)
5. Liaison mechanism between groups at the three levels (national, district and health facility) on quality issues is established and functioning.	Desk Review* (a,b)
<b>2. National vision, strategy and operational plan for improving QoC in MNH services is developed, funded, monitored and regularly reviewed.</b>	
1. National vision, strategy and operational plan (with targets) for improving QoC in MNH services is developed.	Desk Review
2. Partners are aligned and resources mobilized for implementation of the national operational plan.	Desk Review
3. Implementation of the national operational plan is costed and funding allocated in the budget.	Desk Review
4. Human resources for implementation of the national plan are committed and roles and responsibilities of different stakeholders are agreed.	Desk Review
5. Regular reviews of progress against targets are conducted and the national plan is adjusted as required.	Desk Review
<b>3. National advocacy and mobilization strategy for QoC is developed and implemented.</b>	
1. Professional associations, academia, civil society and the private sector are brought together and mobilized to champion the Network and support implementation.	Desk Review
2. National advocacy and mobilization strategy developed, implemented and monitored.	Desk Review* (b)
<b>2. ACTION</b>	
<b>1. WHO evidence-based standards of care for mothers and newborns are adapted and disseminated.</b>	
1. National standards and protocols for maternal and newborn QoC are compiled and reviewed.	Desk Review
2. National standards and protocols are adapted and updated using WHO standards of MNH care.	Desk Review
3. National standards and protocols are incorporated into national practice tools.	Desk Review
4. Updated national standards, protocols and practice tools are disseminated to all relevant stakeholders and used.	Desk Review* (a,b)

<b>2. National package of improvement interventions is adapted (or developed) and disseminated.</b>	
1. QI interventions in the country are compiled and reviewed and best practices are identified.	Desk Review
2. QoC situation is assessed and quality gaps identified based on the national standards of care.	Desk Review
3. National package of QI interventions to address identified quality gaps is developed and disseminated, drawing on the WHO QI intervention.	Desk Review
<b>3. Clinical and managerial capabilities to support QI are developed, strengthened and sustained.</b>	
1. A national resource centre, with tools to improve capabilities of health-care providers and managers, is established and functioning.	Desk Review* (b)
2. National and district pools of consultants and facilitators with expertise in quality improvement (including PLA) are identified and trained.	Desk Review
3. National QI and PLA manuals for national-, district-, facility- and community-level groups and committees are developed and used.	Desk Review* (a,b)
4. Monthly meetings for participatory learning on QI at district, facility and community levels are scheduled and implemented.	Desk Review* (a,b)
<b>4. QI interventions for MNH are implemented.</b>	
1. Demonstration sites for QoC in MNH services are identified and established to implement national package of QI interventions.	Desk Review
2. Change package is adapted to district context.	Desk Review
3. Resources and technical support to implement the change package in the districts are provided.	Desk Review
4. Success of demonstration sites is regularly reviewed and assessed.	Desk Review* (a,b)
5. Refined package of effective and scalable QoC interventions is identified from demonstration sites.	Desk Review
6. Implementation of refined package of interventions is expanded into new districts and health facilities.	Desk Review* (a,b)
<b>3. LEARNING</b>	
<b>1. Data systems are developed/strengthened to integrate and use QoC data for improved care.</b>	
1. A national minimum set of MNH QoC indicators at the district and national levels, aligned with the common cross-country indicators, is agreed and validated.	Desk Review
2. Process to add a minimum set of MNH QoC indicators in the national health information system established and supported as appropriate. In addition, other local information sources (e.g. maternity registers) updated to monitor prioritized indicators for district and facility level, as needed.	Desk Review* (a,b)
3. Data collection, synthesis and reporting is standardized and data quality is monitored and assessed.	Desk Review* (a,b)
4. Capabilities in data collection, synthesis and use for improving care at health facility, district and national levels are strengthened.	Desk Review
5. System for collection and reporting of case histories, stories from the field, and testimonials developed and used.	Desk Review* (a,b)
6. Key data are shared with health facility staff, district health teams and community groups to inform user decision-making, prioritization and planning.	Desk Review* (a,b)

## 2. Mechanisms to facilitate learning and share knowledge through a learning network are developed and strengthened.

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|--|--------------------|
| 1. National and international resources on QoC are accessed through a dedicated QoC website.   | Desk Review        |
| 2. Virtual and face-to-face learning networks and communities of practice are established and supported at the global, national and district levels. | Desk Review* (a,b) |
| 3. Learning collaboratives between health facilities and districts are established and supported.  | Desk Review* (a,b) |
| 4. Government focal point and national institution to coordinate and sustain a national learning network are identified.                             | Desk Review        |

## 3. Data and practice are analysed and synthesized to generate an evidence base on QoC improvement.

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| 1. Data are regularly analysed and synthesized to identify successful interventions.           | Desk Review* (a,b) |
| 2. Best practices and variations are identified and disseminated within and between countries. | Desk Review        |

## 4. ACCOUNTABILITY

### 1. National framework and mechanisms for accountability for QoC are established and functioning.

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|---|------------------------|
| 1. Quality indicator dashboards to track progress at facility, district and national levels are developed and regularly updated and published.                                | Desk Review* (a,b)     |
| 2. Inputs and outputs in the national operational plan for QoC are tracked and regularly reported, and reports disseminated to stakeholders and discussed in national forums. | Desk Review* (b)       |
| 3. Regular multi-stakeholder dialogue is conducted to monitor progress and resolve issues.  | Desk Review* (a,b)     |
| 4. Periodic independent assessments of progress to validate routinely reported results are conducted.   | Independent Assessment |

### 2. Progress of the Network on MNH QoC is regularly monitored.

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|---|-------------|
| 1. Annual progress report on the Network is published.  | Desk Review |
| 2. Network plan is reviewed, revised and shared.  | Desk Review |
| 3. Annual review and planning meeting of the Network (members and affiliates) is held.  | Desk Review |
| 4. Learnings of implementation are summarized and made available in the public domain (including peer-reviewed publications). | Desk Review |

### 3. Impact of the global initiative on MNH QoC is evaluated.

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|---|--------------------|
| 1. Country-specific evaluation designs are developed and agreed.                                  | Desk Review        |
| 2. Pre-intervention qualitative and quantitative data collection are established and implemented. | Desk Review* (a,b) |
| 3. Interim impact analysis is performed and used to inform programme implementation.              | Desk Review* (a,b) |
| 4. Final impact analysis is performed and disseminated.   | Desk Review        |

\* = Indicator has more detailed data source requirements.

a = Indicator may require subnational (e.g. district, facility, community) data collection.

b = Indicator may require regular or ongoing (e.g. quarterly, six-monthly, annual) update of information.

MNH: maternal and newborn health; PLA: participatory learning and action; QI: quality improvement; QoC: quality of care; WHO: World Health Organization.

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Front cover photo: Nurses at the children's ward at Tamale Central Hospital in Tamale in the Northern Region of Ghana, in November 2015.

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