



World Health
Organization

Indicator Sheet

**AVAILABILITY OF
FUNCTIONAL EMERGENCY
OBSTETRIC AND NEWBORN
CARE FACILITIES (EMONC)
(PER POPULATION)**

MoNITOR  **R**

The MoNITOR logo icon consists of a green circle containing a white heartbeat line with a heart symbol at the end.

CONCEPT AND DEFINITION

Concept Maternal and newborn health (MNH) programmes aimed at improving health outcomes and reducing mortality and morbidity should ensure that women and their newborns have access to health facilities that offer care for complications during pregnancy and childbirth. The Emergency Obstetric and Newborn Care (EmONC) framework was established to measure a minimum requirement of provision of emergency obstetric care interventions available at health facilities to respond to emergency needs.

This is a composite indicator that measures the availability of EmONC services, defined by seven basic and two comprehensive interventions, as recommended by WHO (1,2). The seven basic EmONC signal functions include: (i) administration of intravenous/intramuscular antibiotics; (ii) administration of intravenous/intramuscular uterotonic drugs (i.e. oxytocin); (iii) administration of intravenous/intramuscular anticonvulsants; (iv) manual removal of the placenta; (v) removal of retained products of conception; (vi) perform assisted vaginal delivery; and (vii) perform basic neonatal resuscitation (1,2). The two additional signal functions that comprise comprehensive EmONC services include: (viii) perform surgery (i.e. caesarean section); and (ix) perform blood transfusion (1,2). A health facility is defined as having availability of functional EmONC signal function if service was available and provided within the past three months.

Key signal functions were selected because they are the key medical interventions used to treat direct obstetric complications that cause the vast majority of deaths worldwide (1,2). By capturing signal functions “performed” the indicator is expected to indirectly capture the availability of trained staff, equipment and supplies. This indicator is currently under review as part of an effort to revise the EmONC framework and indicators.

Definition

The number of obstetric care facilities that provided EmONC signal functions in the last three months per 500 000 total population.

Unit of measurement: Percentage (%)

Level of indicator use: Population-based at national and subnational (first or second administrative level)

Monitoring and evaluation framework: Output

Domain: Service access and availability

Continuum of care: Intrapartum

MEASUREMENT GUIDANCE

For measurement of this indicator, there must be at least five EmONC facilities per 500 000 total population, including at least one comprehensive and the rest basic EmONC facilities (1,2).

A basic EmONC facility is one in which all signal functions 1 through 7 are performed; and a comprehensive EmONC is one in which all functions 1 through 9 are performed (see Table 1). If a facility has performed each of the first seven signal functions in the past three months, it qualifies as providing basic EmONC. If it has provided all nine of the signal functions, it qualifies as a “comprehensive” EmONC facility.

Table 1. Signal functions used to identify basic and comprehensive EmONC

Basic EmONC signal functions	Comprehensive EmONC signal functions
<i>Perform 1–7 signal functions</i>	<i>Perform 1–7 signal functions and 8–9</i>
(1) Administer parenteral antibiotics	(8) Perform surgery, e.g. caesarean section
(2) Administer uterotonic drugs	(9) Perform blood transfusion
(3) Administer parenteral anticonvulsants for pre-eclampsia and eclampsia	
(4) Manually remove the placenta	
(5) Remove retained products	
(6) Perform assisted vaginal delivery	
(7) Perform basic neonatal resuscitation	

Data sources

The main data source for this indicator is health facility assessments.

Health facility assessments

The main source of data for this indicator has been through health facility surveys collected through nationally or subnationally representative structured surveys, including:

- Service Provision Assessment (SPA) survey (3)
- Service Availability and Readiness Assessment (SARA) (4)
- Other health facility assessment surveys with a similar methodological design.

Health facility assessment survey data are the preferred data source in settings without an established routine facility monitoring system and inability to validate self-reported assessment data.

Key source of data: The main source of data is facility medical registers or health providers' recall of interventions provided. During the facility assessments, facility registers are reviewed, and staff are asked to report on whether or not any of the signal functions for basic and comprehensive EmONC, as applicable for the level of facility, were carried out in the past three months. Each of the seven basic and two comprehensive EmONC signal functions are asked about separately. If a signal function was reported as being provided in the facility, questions are asked about whether the signal function was provided at least once in the past three months.

Indicator definition and calculation: The availability of EmONC services is measured by the number of facilities that performed the complete set of signal functions in the past three months. If the staff has carried out the seven signal functions of basic EmONC in the three-month period before the assessment, the facility is considered to be a fully functioning basic facility. The facility is classified as functioning at the comprehensive level when it offers the seven signal functions plus surgery (i.e. caesarean section) and blood transfusion.

Finally, the availability of functional EmONC facilities is given if, in a geographical area of 500 000 people, there are at least five facilities that qualify, according to the aforementioned definition of performing EmONC, including at least one facility that qualifies as performing comprehensive EmONC. The indicator consists of the following numerator and denominator:

Numerator: The number of obstetric care facilities that provided EmONC signal functions in the last three months in a specified time period.

Denominator: Total population (per 500 000) in a specified period of time.

To compute the minimum acceptable number of basic and comprehensive EmONC facilities in the defined geographical area, begin by dividing the total population by 500 000. This is the minimum acceptable number of comprehensive facilities. Then, multiply that number by 5 to calculate the overall minimum number of facilities, both basic and comprehensive. These numbers should be compared with the actual number of facilities found; then classify the services as fully functioning basic or comprehensive.

Frequency of measurement: The indicator can be calculated on an annual basis, or may be tracked on a more frequent and ongoing basis (e.g. monthly, quarterly), depending on facility, subnational and national processes for data entry, compilation and analysis. As a guide, the recommended frequency of measurement based on reporting level is outlined below:

- *Subnational (first and second administrative) level:* Quarterly
- *National level:* Annually (data can be aggregated to provide national-level data).

Disaggregation at population level: By location of health facility (first or second administrative level)

Missing values: Missing values are not allowed for any of the variables that make up the indicator, as it is a composite score and each of the signal functions is required.

INTERPRETATION AND USE

Interpretation

If a country or region does not have at least five EmONC facilities (including at least one comprehensive facility) per 500 000 total population, the overall minimum acceptable level of EmONC services is not met. If the overall minimum acceptable level of EmONC service is met, it is reasonable to conclude that, in the aggregate, an acceptable minimum number of facilities currently exists (1,2).

This indicator assesses and monitors the availability of services in health facilities to generate evidence for planning and managing a health system to improve service delivery. The objectives are to obtain reliable, regular information on service delivery for basic and comprehensive EmONC. However, it is unknown how many facilities within a geographical area are needed in order to provide timely and adequate access to EmONC services and ultimately to reduce maternal and newborn morbidity and mortality (5,6). Moreover, only facilities with a case load of at least 250 births in three months have a reasonable chance to encounter the complications to provide EmONC signal functions (4,5). Thus, health facilities that see a smaller birth volume will not be able to qualify to meet this indicator because of the low prevalence of complications and the inability to perform the aforementioned signal functions – regardless of whether the services are available and ready to be performed at that facility.

Moreover, this indicator does not take into account the geographical location of the facilities, the transport and referral system, and the quality of EmONC that is provided. Using geographical information systems to quantify access measured in actual distance and travel time from maternal residence to the nearest obstetric and newborn facility would provide complementary information to understand the need for and access to these services (5,6).

In addition, this indicator assumes that the EmONC signal functions are available at the facility within the last three months to women at any hour of the day, every day of the week. This indicator is only one of the indicators that monitors prompt, adequate treatment of complications of pregnancy and childbirth, and therefore should be tracked together with indicators that monitor the provision of EmONC (1).

Common challenges

Even if the availability and utilization of health facilities in a country or administrative area is high, it is worthwhile investigating which women are not using them. Certain factors strongly affect use of services in a particular area, such as distance to the facility, prevalence of ethnic or religious minority groups, socioeconomic status (e.g. education, literacy, income levels), and the reputation of the facility. Information on some of these factors, such as maternal place of residence, may already be available in health facility records, and records can be reviewed to determine whether women attended the health facility

from all parts of the catchment area or only from the town in which the facility is located.

The denominator used is “total population” rather than “total births” because most planning is based on population size. However, it may be more appropriate to assess EmONC services in relation to births as this would be a better estimate of the total population in need of services (2). Currently, there is an ongoing discussion among global experts and analyses of available data are being conducted on whether the denominator should be per population or per expected birth (6).

In some cases, facilities are assumed to be functional, but facility visits reveal a different reality (2). At basic EmONC facilities, providers may not have the opportunity to perform all signal functions within the last three months, even if they are capable and have the appropriate equipment and supplies. Even when signal functions are available, they may not be performed – for example, if staff are not trained and are not confident in their skills or authorized to perform certain signal functions. In some countries, a signal function may not be performed because they are not included in the pre-service training of health personnel or national treatment protocols; an example is assisted vaginal deliveries (vacuum or forceps).

The definition of the numerator has also been flagged for revisions around the inclusion and content of the signal functions for this indicator. It is also essential to develop and incorporate signal functions that meet the needs of the newborn. The basic and comprehensive EmONC signal functions and their related indicators are currently being updated by the United Nations Population Fund (UNPFA), Averting Maternal Death and Disability (AMDD) and WHO in response to improving issues related to inexact and inadequate measurement. There has been a preference to report data related to population sizes rather than the number of births and met need for EmONC, as well as defining not only required EmONC facility numbers, but also facility size, capacity and staffing (7). In addition to core competencies related to obstetric and neonatal emergency signal functions, future evaluations should consider a broader spectrum of competencies such as interpersonal skills and ability to counsel and educate women and their families on relevant topics such as family planning (8).

Many countries have a mix of public and private facilities; however, information is commonly collected from the public facilities and not the private facilities. Since the indicator is based on population estimates, it is recommended that both public and private facilities are included in the measurement of the indicator. The validity of this indicator rests on direct inspection of the facilities.

GLOBAL MONITORING

Global monitoring data for the availability of functional EmONC facilities is from UNFPA and AMDD. More information about AMDD can be found at: <https://www.mailman.columbia.edu/research/averting-maternal-death-and-disability-amdd/emonc>.

Key initiatives

Averting Maternal Death and Disability (AMDD): <https://www.mailman.columbia.edu/research/averting-maternal-death-and-disability-amdd>

Countdown to 2030 – Women’s, Children’s and Adolescents’ Health: <http://countdown2030.org/>

Ending Preventable Maternal Mortality (EPMM): http://who.int/reproductivehealth/topics/maternal_perinatal/epmm/en/

Every Newborn Action Plan (ENAP): http://apps.who.int/iris/bitstream/10665/127938/1/9789241507448_eng.pdf

Global Reference List of 100 Core Health Indicators (plus health-related SDGs), 2018: <https://www.who.int/healthinfo/indicators/2018/en/>

Global Strategy for Women’s, Children’s and Adolescents’ Health (2016–2030): <http://www.who.int/life-course/partners/global-strategy/en/>

ADDITIONAL RESOURCES

Moran AC, Jolivet RR, Chou D, Dalglish SL, Hill K, Ramsey K, et al. A common monitoring framework for ending preventable maternal mortality, 2015–2030: phase I of a multi-step process. BMC Pregnancy Childbirth. 2016;16(1):250: <https://doi.org/10.1186/s12884-016-1035-4>

MEASURE Evaluation: Family Planning and Reproductive Health Indicators Database: Number of facilities per 500,000 providing basic and comprehensive emergency obstetric care: https://www.measureevaluation.org/prh/rh_indicators/womens-health/sm/number-of-facilities-per-500-00-providing-basic

Monitoring emergency obstetric care: a handbook: <http://www.who.int/reproductivehealth/publications/monitoring/9789241547734/en/>

The DHS Program – Service Provision Assessment (SPA) Survey: <https://dhsprogram.com/What-We-Do/Survey-Types/SPA.cfm>

WHO Service Availability and Readiness Assessment (SARA): http://www.who.int/healthinfo/systems/sara_introduction/en/

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7. Collender G, Gabrysch S, Campbell OM. Reducing maternal mortality: better monitoring, indicators and benchmarks needed to improve emergency obstetric care. Research summary for policymakers. *Trop Med Int Health*. 2012;17(6):694–6. doi:10.1111/j.1365-3156.2012.02983.x.
8. Hobbs AJ, Moller AB, Kachikis A, Carvajal-Aguirre L, Say L, Chou D. Scoping review to identify and map the health personnel considered skilled birth attendants in low-and-middle income countries from 2000-2015. *PLoS One*. 2019;14(2):e0211576 (<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0211576>, accessed 22 October 2020).