World Health Organization

Indicator Sheet

UTEROTONIC FOR PREVENTION OF POSTPARTUM HAEMORRHAGE

MoNITOR

CONCEPT AND DEFINITION

Concept

Most obstetric complications could be prevented or managed with timely and appropriate access, management and quality care during pregnancy and childbirth. Postpartum haemorrhage (PPH) is defined as a blood loss of 500 millilitres or more within 24 hours after birth, and is the leading cause of maternal morbidity and mortality in low-income countries and the primary cause of nearly one quarter of all maternal deaths globally *(1)*. Administering an uterotonic drug (e.g. oxytocin, syntometrine, ergometrine, carbetocine, misoprostol) immediately after delivery of the baby stimulates uterine contractions that facilitate separation of the placenta from the uterine wall, resulting in rapid delivery of the placenta. Uterotonics also stimulate uterine contractions that compress maternal blood vessels at the placental site after delivery of the placenta *(2–4)*. Maternal morbidity and mortality resulting from PPH occur due to uterine atony soon after birth; the majority of these could be avoided through administration of a prophylactic uterotonic drug to all women during the third stage of labour *(1)*. Improving health care for women during childbirth in order to prevent PPH is an essential step towards reducing maternal morbidity and mortality.

Definition

The number of women who gave birth in a facility who received a prophylactic uterotonic (e.g. oxytocin) immediately[1] after birth for prevention of PPH is expressed as a percentage of the total number of women who gave birth in a facility in the same period *(5)*.

Unit of measurement: Percentage (%)

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

Monitoring and evaluation framework: Outcome

Domain: Service coverage

Continuum of care: Intrapartum

[1] Ideally, immediately refers to within one minute after birth.

MEASUREMENT GUIDANCE

Data sources

The main data source for this indicator is routinely collected administrative data.

Routinely collected administrative data

Data from routinely collected and compiled administrative data sources will provide information as recorded in medical charts/records or registers and are entered into national and/or subnational health management information systems (HMIS).

Data from health information systems may collect information on administration of uterotonic drugs immediately after delivery among all women who delivered at a health facility. Routinely collected administrative data and health facility statistics are the preferred data source in settings with a high utilization of health facility services and where data are recorded in a manner that ensures good data quality for both the public and private health sector. The compiled data in the national HMIS or District Health Information System (DHIS2) should include data from both public and private health sectors, especially when the private sector is a substantial source of service provision to the population. In settings where utilization of health facilities is not high (e.g. settings with a high prevalence of births occurring at home), data may suffer from incompleteness if information about women delivering outside facilities is not captured. In addition, there are often challenges in accurately measuring the numerator and the denominator when routine HMIS data are used to measure this indicator.

Key source of data: Administrative data sources include health facility and health services data abstracted from obstetric and neonatal medical records, including health services registers. Relevant information is recorded by health personnel within health facilities on paper forms completed by health personnel and/or through an electronic medical record. Data from paper or electronic sources are entered or abstracted into a database or registry and are compiled and analysed within the national and/or subnational HMIS. The Ministry of Health (MoH) and/or National Statistical Offices (NSO) are usually responsible for the reporting of this indicator.

Indicator definition and calculation: The indicator is calculated as the percentage of women who received a prophylactic uterotonic immediately (within one minute) after birth for prevention of PPH among all births in a health facility during a specified reference period. The indicator consists of the following numerator and denominator:

Numerator: Number of women who gave birth in a facility who received a prophylactic uterotonic immediately after birth in a specified time period.

Denominator: Number of women who gave birth in the health facility in a specified time period.

[Note: The standard for operationalizing «immediately» is within one minute.]

Unless specified, the statistic may include any woman regardless of age and should include both live births and stillbirths, as defined by the health facility and/or national or subnational vital statistics offices. The type of uterotonic given and timing of administration in the numerator is based on individual health facility report or is in accordance with the country-specific definition by the MoH and/or NSO.

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:

- *Facility level:* Monthly, quarterly, or as needed based on the country and/or facility need
- *Subnational (first and second administrative level):* Monthly or quarterly
- *National level:* Annually (data can be aggregated to provide national-level data).

Disaggregation: By level of facility, location of facility (e.g. urban, rural), subnational administrative units (e.g. districts, provinces, regions), facility type (public, private, nongovernmental, community-based), age of mother and type of health personnel.

Missing values: Missing values are usually not known or not reported.

INTERPRETATION AND USE

Interpretation

The use of uterotonics for the prevention of PPH during the third stage of labour is recommended for all births in order to prevent maternal mortality and morbidity *(1)*. This indicator measures a key component of active management of the third stage of labour and, as a routine indicator for country-level HMIS, helps inform the health-care system on how to allocate resources and improve function *(4)*. The immediate postpartum period is before the delivery of the placenta and is ideally within the first minute after delivery of the newborn. This indicator is a measure of the content and quality of care received within health facilities for women during the intrapartum period. However, the quality of care received at health facilities may vary between and within countries. Although WHO recommends oxytocin, the administration of uterotonic drugs may include several different drugs used to contract the uterus (e.g. oxytocin, ergometrine, carbetocin, misoprostol, or a combination of drugs). A recent large-scale randomized controlled trial comparing oxytocin and carbetocin for the prevention of PPH found that carbetocin, a stable drug at room temperature, is appropriate for administration to women for the prevention of PPH, particularly in low-resource settings where there is no access to proper cold chain procedures *(6)*.

Common challenges

Data collected from administrative and other routine data systems

Administrative data may suffer from poor quality such as irregularities in report generation, data duplication and inconsistencies *(7)*. Reporting challenges exist at the facility level given data quality issues, including incomplete, inaccurate and lack of timely data due to insufficient capacity in the health system or inadequate system design.

Many HMIS databases or registries are event-based and only include women who delivered a birth at a health facility. An indicator based only on facility deliveries is easier to measure and its quality is high; however, this indicator is not appropriate for a country where a significant proportion of births occur in the community.

The indicator only measures whether an uterotonic was administered immediately postpartum to prevent PPH. It does not capture whether the uterotonic was administered correctly (appropriate drug and correct dosage) and at the correct timing (within one minute of birth/fetal delivery). It is also common to misclassify uterotonics given prophylactically versus for treatment purposes, especially in the instance that the PPH occurs soon after delivery. This may result in an overestimation of the administration of prophylactic uterotonic drugs for the prevention of PPH if doses administered for the purpose of treatment are counted in the calculation of this indicator.

Administrative data should be interpreted with caution in settings where data quality is poor and the percentage of births at public

and private sector health facilities is low, or where data from the private health sector are not compiled within the HMIS reporting. It is recommended that pre-service and in-service training include appropriate and timely administration of prophylactic uterotonics and instruction on how to record this information in order to ensure accurate measurement of this indicator.

Validation studies

Technical work to improve the specificity of this indicator has been conducted via the following:

Publications

Gallos ID, Williams HM, Price MJ, Merriel A, Gee H, Lissauer D, et al. Uterotonic agents for preventing postpartum haemorrhage: a network meta-analysis. Cochrane Database Syst Rev. 2018;4(4):CD011689 (https://doi.org/10.1002/14651858.CD011689.pub3, accessed 23 October 2020).

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, accessed 23 October 2020).

Consultation on improving measurement of the quality of maternal, newborn and child care in health facilities. Geneva: World Health Organization; 2013 (http://apps.who.int/iris/bitstream/10665/128206/1/9789241507417_eng.pdf, accessed 23 October 2020).

GLOBAL MONITORING

Global database

There is currently no global database responsible for monitoring and tracking progress of the percentage of women who gave birth in a facility who received a prophylactic uterotonic immediately (within one minute) after birth for prevention of PPH.

Key initiatives

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

Global Strategy for Women's, Children's, and Adolescent's Health (2016-2030): http://www.who.int/life-course/partners/global-strategy/en/

ADDITIONAL RESOURCES

MEASURE Evaluation: Family Planning and Reproductive Health Indicators Database: Prevention of postpartum haemorrhage in health facilities: https://www.measureevaluation.org/rbf/indicator-collections/service-quality-indicators/quality-of-intrapartum-care

Standards for improving quality of maternal and newborn care in health facilities: https://apps.who.int/iris/bitstream/handle/10665/249155/9789241511216-eng.pdf

WHO recommendations: Intrapartum care for a positive childbirth experience: http://apps.who.int/iris/bitstream/handle/10665/260178/9789241550215-eng.pdf

WHO recommendations for the prevention and treatment of postpartum haemorrhage: https://apps.who.int/iris/bitstream/handle/10665/75411/9789241548502_eng.pdf

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2. WHO/UNICEF/UNFPA joint statement: appropriate storage and management of oxytocin – a key commodity for maternal health. Geneva: World Health Organization; 2019 (https://apps.who.int/iris/bitstream/handle/10665/311524/WHO-RHR-19.5-eng.pdf, accessed 11 November 2020).
3. Gallos ID, Papadopoulou A, Man R, Athanasopoulos N, Tobias A, Price MJ, et al. Uterotonic agents for preventing postpartum haemorrhage: a network meta-analysis. Cochrane Database Syst Rev. 2018;12(12):CD011689 (https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011689.pub3/full, accessed 11 November 2020).
4. Natarajan A, Ahn R, Nelson BD, Eckardt M, Kamara J, Kargbo S, et al. Use of prophylactic uterotonics during the third stage of labor: a survey of provider practices in community health facilities in Sierra Leone. BMC Pregnancy Childbirth. 2016:16(23) (https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-016-0809-z, accessed 23 October 2020).
5. Analysis and use of health facility data: Guidance for RMNCAH programme managers. Working document. October 2019. Geneva: World Health Organization; 2019 (https://www.who.int/healthinfo/FacilityAnalysisGuidance_RMNCAH.pdf, accessed 23 October 2020).
6. Widmer M, Piaggio G, Nguyen TMH, Osoti A, Owa OO, Misra S, et al. Heat-stable carbetocin versus oxytocin to prevent hemorrhage after vaginal birth. N Engl J Med. 2018;379(8):743–52 (https://www.nejm.org/doi/10.1056/NEJMoa1805489, accessed 23 October 2020).
7. Abouzahr C, Boerma T. Health information systems: the foundations of public health. Bull World Health Organ. 2005;83(8):578–83 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2626318/, accessed 22 October 2020).