



World Health
Organization

Indicator Sheet

**POSTNATAL CARE
COVERAGES –
NEWBORNS/
POSTNATAL CARE
NEWBORNS**

MoNITOR  **R**

The MoNITOR logo icon consists of a green circle containing a white heartbeat line (EKG) that ends in a heart shape.

CONCEPT AND DEFINITION

Concept The vast majority of newborn deaths take place in low- and middle-income countries, mostly at home, without skilled care that could greatly increase the infant’s chances for survival (1). Children who die within the first 28 days of birth suffer from conditions and diseases associated with lack of quality care at birth or skilled care and treatment immediately after birth, and the majority of these deaths are within the first few days of life. The postnatal period is defined as the time following delivery until six weeks after birth. Contact with a health-care provider during the postnatal period immediately after birth for both mother and newborn is a critical step in improving the health and survival of mothers and newborns.

Definition The number of women of reproductive age with a live birth in a specified reference period where the newborn received a postnatal care (PNC) check with a health provider within two days of birth is expressed as a percentage of women in the same age range with a live birth in the same period.

Unit of measurement: Percentage (%)

Level of indicator use: Global, national and subnational (first or second administrative level)

Monitoring and evaluation framework: Outcome (service coverage)

Domain: Service coverage

Continuum of care: Postnatal

MEASUREMENT GUIDANCE

Data sources

There are two common data sources for this indicator:

- a. routinely collected administrative data
- b. population-based household surveys.

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 information systems:

- Health information management system (HMIS) and/or
- District Health Information Management System (DHIS2).

Data from health information systems may collect information on early PNC for newborns who received a health check between the time of birth and discharge from the 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.

Key source of data: Administrative data sources include health facility and health services data abstracted from obstetric and neonatal medical records. Relevant information is recorded about the number and timing of PNC visits among all women who delivered a newborn at 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 and calculation: The indicator is calculated as the percentage of newborns who received PNC by any provider among all births in a health facility during a specified reference period. The indicator includes both women who gave birth in the health facility and those who gave birth outside the health facility.

Numerator: Number of newborns who received PNC within a specified time period

Denominator: Number of live births in the health facility in a specified time period.

The numerator and denominator definition of PNC 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), type of health personnel and timing of health check.

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

Population-based household surveys

The main source of data for this indicator has been through population-based household surveys collected through nationally or subnationally representative and statistically sound questionnaires, such as:

- Demographic Health Surveys (DHS) (2)
- Multiple Indicator Cluster Surveys (MICS) (3)
- Reproductive Health Surveys (RHS)
- Other household surveys with a similar methodological design.

Population-based household survey data are the preferred data source in settings with a low utilization of health facility services or where private health sector data are excluded from routinely collected administrative data sources.

Key source of data: Eligible women of reproductive age (15–49 years) are identified in the household survey for inclusion and interviewing using an individual women’s questionnaire. Women are considered eligible for survey interview if they are either usual residents or visitors of the household who stayed there the night before the interview.

All eligible and interviewed women (between 15 and 49 years old) who had a live birth during a specified reference period, typically 2–5 years prior to the time of the interview, are asked about “*checks on (NAME)’s health after delivery?*”, where “name” refers to the name

of the live birth the individual woman had during the same reference period. The sequence of questions about details of the postnatal health checks that are done for the newborn are done differently depending on whether the birth occurred (a) in a health facility, or (b) outside a health facility.

For births that occurred in a health facility, women are asked “*How long after delivery was (NAME)’s health first checked?*” and “*Who checked on (NAME)’s health at that time?*” in order to establish whether anyone checked on the health of the newborn before they left the health facility where the newborn was delivered. The survey also asks about any checks that occurred after discharge from the health facility. If a health check did occur after leaving the facility, women are asked similar questions about the timing of when the check occurred, who performed the check, and the location where the check took place.

For births that occurred outside a health facility, women are asked if there was any health check on her most recent birth right after delivery. If a postnatal check for the newborn occurred after the delivery, women are asked similar questions about the timing of when the check occurred, who performed the check, and the location where it took place.

The MoH and NSO typically conduct household surveys and compile, analyse and report the results for this indicator in collaboration with the survey programme (e.g. DHS, MICS, RHS) and funding agency.

Indicator definition and calculation: Individual women of reproductive age (15–49 years old) are asked about PNC checks irrespective of the child’s current living status (dead or alive), and are for the most recent live birth that they had during a specified reference period, which is typically 2–5 years before the time of the survey completion. The definition is as follows:

The percentage of newborns who have postnatal contact with a health-care provider within two days of birth, either before discharge from a health facility or at another location following delivery. The indicator consists of the following numerator and denominator:

Numerator: Number of newborns who have postnatal contact with a health-care provider check within two days of birth.

Denominator: Total number of last live births.

Frequency of measurement: Household surveys are typically conducted every 3–5 years.

Disaggregation at population level: Type of health personnel, place of delivery, mode of delivery, place of residence (e.g. urban, rural), sex of live birth, birth order, socioeconomic status (e.g. education level, wealth quintile), age of woman at the time of delivery, births attended by skilled health personnel, timing and location of PNC health check.

Missing values: Included in the distribution as “don’t know” or missing.

INTERPRETATION AND USE

Interpretation

The main purpose of an indicator for early PNC is to provide information on the utilization of health services and to provide a measure of access to services for newborns in this critical period. Early PNC coverage should respond to programme interventions aimed at increasing coverage in the short term.

This indicator should be interpreted with caution as it is a measure of contact with the health system for the newborn within the first two days (48 hours of life) and does not take into account the content and quality of care received. Receiving PNC after delivery does not guarantee the receipt of evidenced-based interventions that are effective in improving newborn health and survival. It should not be assumed that newborns received PNC in accordance to country-specific recommendations/guidelines. Similarly, the indicator does not capture whether there was joint PNC received by both the mother and newborn at the same time, which is the aim of some PNC programmes. Therefore, this indicator should be complemented with information on the content and quality of interventions received during the PNC check in order to more effectively monitor and evaluate the effectiveness and impact of maternal and newborn health interventions.

In addition, the lack of an internationally agreed-upon operational definition of early PNC for women and newborns implicates the global comparability of this indicator. Early PNC is a package of services and not one single intervention. Since the content and quality of care may vary between and within countries, comparison of similar coverage estimates from one context to another may not necessarily reflect similar levels of care received.

It is important to note that while the recommendation is for a PNC check to first occur within 24 hours of delivery, this indicator instead only measures contact within the first two days. The idea behind a longer time period is to allow some flexibility in responses, which women often report in days, particularly for births that occurred late at night or occurred over the course of more than one calendar day.

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 (4).

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 postnatal information for women who delivered a birth at a health facility. In some instances, the denominator may include births or deliveries by women of an unspecified age range and may also

include both live births and stillbirths. As this often only represents those women who present to health facilities for deliveries, it does not capture the number of pregnancies and demand for PNC within the total population. These differences in definitions compromise the ability to compare data between countries.

Some routine HMIS may also not collect data on PNC coverage within a specified time period, implicating the ability to measure early PNC checks done within two days and the comparability with data from household surveys. Ideally, data from HMIS should stratify the percentage of PNC checks for the newborn by the age of the newborn after birth to better measure access to services in the immediate postnatal period for newborns.

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.

In settings where routine HMIS data lack information on pregnancies and/or births or deliveries that occur outside the public sector – for example, in homes or in private sector facilities – the total number of births in the HMIS should not serve to estimate the denominator for this indicator. Where data on the total numbers of live births for the entire population for the denominator are unavailable, evaluators can calculate total estimated live births using census data for the total population and crude birth rates in a specified area (total expected live births = estimated population x the total crude birth rate).

Data collected through household surveys

Women may not be able to accurately recall details around childbirth when data are collected through household surveys (5). There is also a time lag as the recall period is up to 2–5 years before the survey data were collected.

Of note, this indicator is sometimes reported as one visit combining the mother and the newborn in a PNC check into the numerator. The most commonly reported denominator is the number of women with a live birth in the years preceding the survey, which acts as a proxy for the number of pregnant women. This indicator is prone to survivor bias in that only those women who are alive at the time of the interview would be included, and underestimates the total number of newborns requiring care during pregnancy.

The indicator usually measures visits with any provider because national-level household surveys do not always collect provider data for each PNC check for the mother and/or newborn. In addition, standardization of the definition of health personnel is sometimes difficult because of differences in naming conventions, competencies and training of health personnel between and within countries (6).

Both DHS and MICS questionnaires have recently been modified to ensure that the data are reliable and relevant; however, this indicator may still be affected by recall problems. Changes in the measurement

approach over time means that trend data may not be comparable and should be interpreted with caution. In these surveys, women are asked about their most recent live birth and when, if at all, their newborn's health was checked following delivery. This should include both live births that were delivered at home and those delivered in a health facility. However, older iterations of household surveys may only obtain this information for births at home and this should be taken into consideration when reviewing older data.

Validation studies

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

Publications

Amouzou A, Mehra V, Carvajal-Aguirre L, Khan SM, Sitrin D, Vaz LM. Measuring postnatal care contacts for mothers and newborns: an analysis of data from the MICS and DHS surveys. *J Glob Health*. 2017;7(2):020502 (<https://doi.org/10.7189/jogh.07.020502>, accessed 23 October 2020).

Blanc AK, Diaz C, McCarthy KJ, Berdichevsky K. Measuring progress in maternal and newborn health care in Mexico: validating indicators of health system contact and quality of care. *BMC Pregnancy Childbirth*. 2016;16(1):255 (<https://doi.org/10.1186/s12884-016-1047-0>, accessed 23 October 2020).

Blanc AK, Warren C, McCarthy, KJ, Kimani J, Ndwigwa C, RamaRao S. Assessing the validity of indicators of the quality of maternal and newborn health care in Kenya. *J Glob Health*. 2016;6(1):010405 (<https://dx.doi.org/10.7189/jogh.06.010405>, accessed 23 October 2020).

McCarthy KJ, Blanc AK, Warren CE, Mdawida B. Women's recall of maternal and newborn interventions received in the postnatal period: a validity study in Kenya and Swaziland. *J Glob Health*. 2018;8(1):010605 (<https://dx.doi.org/10.7189/jogh.08.010605>, accessed 23 October 2020).

McCarthy KJ, Blanc AK, Warren CE, Kimani J, Mdawida B, Ndwigwa C. Can surveys of women accurately track indicators of maternal and newborn care? A validity and reliability study in Kenya. *J Glob Health*. 2016;6(2):020502 (<https://dx.doi.org/10.7189/jogh.06.020502>, accessed 23 October 2020).

Munos MK, Stanton CK, Bryce J, the Core Group for Improvement Coverage Measurement for MNCH. Improving coverage measurement for reproductive, maternal, neonatal and child health: gaps and opportunities. *J Glob Health*. 2017;7(1):010801 (<https://dx.doi.org/10.7189/jogh.07.010801>, accessed 23 October 2020).

Willey B, Waiswa P, Kajjo D, Munos M, Akuze J, Allen E, Marchant T. Linking data sources for measurement of effective coverage in maternal and newborn health: what do we learn from individual-vs ecological-linking methods? *J Glob Health*. 2018;8(1):010601 (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5823029/>, accessed 23 October 2020).

Reports

Berdichevsky K, Diaz-Olavarrieta C, McCarthy K, Blanc A. Validating the indicators of the quality of maternal health care: final report, Mexico. Mexico City: Population Council; 2014 (https://www.popcouncil.org/uploads/pdfs/2014RH_MHTF-Mexico.pdf, accessed 23 October 2020).

Warren C, Kimani J, Kivunaga J, Mdawida B, Ndwiga C, McCarthy K, Blanc A. Validating the indicators of the quality of maternal health care: final report, Kenya. Nairobi: Population Council; 2014 (https://www.popcouncil.org/uploads/pdfs/2014RH_MHTF-Kenya.pdf, accessed 23 October 2020).

GLOBAL MONITORING

Global database

The United Nations Children’s Fund (UNICEF) maintains databases for global monitoring and reporting of the percentage of newborns who received postnatal checkup within two days after delivery and includes newborns who received a checkup from a doctor, midwife, nurse, feldsher, or traditional birth attendant. UNICEF obtains data from nationally representative household surveys or routinely collected administrative data or services statistics. Before data can be included in the global databases, UNICEF undertakes a process of data verification that includes correspondence with field offices to clarify any questions regarding the reported statistics. More information about the global databases for PNC coverage can be found at: <https://data.unicef.org/topic/maternal-health/newborn-care/>.

Key initiatives

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

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

UNICEF Data: Monitoring the Situation of Children and Women: Newborn care: <https://data.unicef.org/topic/maternal-health/newborn-care/>

UNICEF – Multiple Indicator Cluster Surveys: <http://mics.unicef.org/tools>

The DHS Program: <https://dhsprogram.com>

MEASURE Evaluation: Family Planning and Reproductive Health Indicators Database:
Percent of newborns receiving a postnatal care check within two days of birth: https://www.measureevaluation.org/prh/rh_indicators/womens-health/nb/percent-of-newborns-receiving-a-postnatal-care

WHO and UNICEF Guidance for RMNCAH programme managers: https://www.who.int/healthinfo/FacilityAnalysisGuidance_RMNCAH.pdf

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2. The DHS Program [website]. Rockville: ICF International; 2020 (<http://www.dhsprogram.com/>, accessed 21 October 2020).
3. Multiple Indicator Cluster Surveys (MICS) [website]. New York: UNICEF; 2020 (<http://mics.unicef.org>, accessed 21 October 2020).
4. 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).
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6. DHS Program [website] (<https://dhsprogram.com/>, accessed 11 November 2020).