

ANNEX 6A

Newborn Health Indicators for Routine Data Systems

Incorporate key indicators (**bolded in red and marked with a ***) into national reporting systems. Other indicators are suggested to provide additional information, where feasible.

Indicator	Numerator	Denominator	Disaggregation	Utility and limitations of indicators
Note: Numerator and denominator should always be reported along with the percentages and should be for the same reporting period.				
Outcomes				
* Neonatal mortality rate	Number of newborns who died during the first 28 days (day 0-27) of life in health facilities in a specified time period	Total number of live births (per 1000) in a specified time period	By timing of death (early neonatal death = 0 to 6 days; late neonatal death = 7 to 27 days)	Reports should indicate whether deaths that occur in the community are recorded at a facility.
*Pre-discharge neonatal mortality rate	Number of babies born live in a facility who die prior to discharge from the facility during the first 28 days (day 0-27) of life in a specified time period	Number of babies born live in a facility in a specified time period	By timing of death (early neonatal death = 0 to 6 days; late neonatal death = 7 to 27 days)	
<u>Neonatal cause of death</u>	Number of newborn deaths due to <ul style="list-style-type: none"> • Low birth weight and prematurity • Complications of intrapartum events • Infections (including tetanus, sepsis/meningitis, pneumonia) • Congenital malformations or abnormalities • Other • Unspecified 	Number of newborn deaths recorded at a facility	By timing of death (early neonatal death = 0 to 6 days; late neonatal death = 7 to 27 days)	The indicator is not meant to be interpreted as a case fatality rate but rather provides information on cause of death among known, reported deaths. Reports should indicate whether causes of deaths that occur in the community are recorded at a facility.
*Stillbirth rate in health facility	Number of fetuses and infants born with no sign of life and born with birthweight of 1000g or more, or after 28 weeks gestation, or 35 or more body length in a specified time period	Total number of births (per 1000) at a facility in a specified time period	By timing/type of fetal death or stillbirth (antepartum or intrapartum), where possible ¹	Reports should indicate whether stillbirths that occur in the community are recorded at the facility.
Percent of live births at a facility where the newborn had trouble breathing at birth (or was not breathing at birth)	Number of live births at a facility where the newborn had trouble breathing at birth (or was not breathing at birth)	Number of live births at a facility		The numerator for this indicator serves as the denominator for “Percent of newborns having trouble breathing at birth (or was not breathing at birth) where resuscitation techniques were used” (see below). Interpret this indicator with extreme caution. If non-breathing babies are often misclassified as stillbirths, introduction of a resuscitation program and training may lead to the apparent increase in the number of babies not breathing at birth. At the same time, high numbers of non-breathing newborns can indicate poor quality of intrapartum care.

¹ An antepartum fetal death (stillbirth – macerated) refers to a fetus that has suffered an intrauterine death after the 28th week of gestation and before labour. An intrapartum fetal death (stillbirth – fresh) refers to a baby that has died after the onset of labour and before birth. Fresh stillbirths do not show any signs of maceration.

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Percent of babies born with low birthweight (<2500g)	Number of live-born neonates with weight less than 2500 g at birth	Total number of live births at a facility		Important especially where gestational age measurement is unreliable. While specific birthweight should be taken and recorded for each individual baby, if reporting is weak, one category capturing babies weighing <2500g with a yes/no response can be used in registers instead.
* Percent of births at a facility that are pre-term	Number of newborns born under 37 weeks gestation	Total number of live births at a facility	Disaggregate by gestational age in weeks and days, where possible: <ul style="list-style-type: none"> Moderate to late preterm (32 to <37 weeks) Very preterm (28 to <32 weeks) Extremely preterm (<28 weeks) 	If gestational age for births outside a facility is recorded at the facility, the denominator can be changed to total number of live births (see indicator on preterm birth rate (populations based)). Gestational age is often obtained by asking the pregnant woman for the date of last menstrual period rather than by clinical measurement, and is therefore subject to reliability issues.

Indicator	Numerator	Denominator	Utility and limitations of indicators
Service utilization, coverage and quality of care			
Antenatal care (at least one visit)	Number of women who were attended by skilled health personnel at least once during the pregnancy that led to their last birth	Total number of women with a live birth	The numerators for these indicators can be used to calculate “Percent of antenatal clients who had a fourth ANC visit” (numerator: number of antenatal clients with 4 th ANC visit; denominator: total number of antenatal clients with a 1 st visit)
Antenatal care (at least four visits)	Number of women who received antenatal care four or more times from any provider during the pregnancy that led to their last birth	Total number of women with a live birth	
Antenatal client 1st visit before 12 weeks gestation	Number of antenatal clients 1st visit before 12 weeks	Total number of antenatal clients with a 1st visit	Marker for women having contact with a provider early enough in pregnancy to permit delivery of essential pregnancy services and early identification of problems that can be addressed to improve outcomes for women and newborns.
* Cesarean section rate	Number of caesarean sections in a specified time period	Total number of women who gave birth at a facility in a specified time period	Marker of comprehensive emergency obstetric care. Large numbers can mean use of non-indicated cesarean sections. Could be disaggregated by urban/rural and/or private versus public sector to capture inequities as well as inappropriate use.
Newborn resuscitation with bag and mask	Number of newborns who were not breathing spontaneously or crying at birth and, subsequently, required resuscitation (stimulation and/or bag and mask) to be performed	Total number of live births at a facility	While important to monitor implementation of resuscitation programs, this indicator needs to be interpreted with extreme caution. See notes above for the indicator percent of live births at a facility where the newborn had trouble breathing at birth (or was not breathing at birth).
Early initiation of breastfeeding	Number of newborns breastfed within one (1) hour of birth in a health facility	Number of total live births in a health facility	It should be noted that the early initiation of breastfeeding indicator is part of essential newborn care, but cannot be used as a proxy on its own for essential newborn care
Newborns receiving essential newborn care	Number of newborns who received all four (4) elements of essential newborn care (immediate and thorough drying; immediate skin-to-skin contact; delayed cord clamping; and initiation of breastfeeding in the first hour)	Total number of live births at a health facility	

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Chlorhexidine (CHX) cord cleansing	Number of newborns who received at least one (1) dose of chlorhexidine digluconate (7.1%) to the cord within 24 hours of birth	Total number of live births	A measure of CHX use for clean cord care, as prevention of infection. In some countries, where other antiseptics are used according to standard guidelines or as routine clinical practice, the indicator may be modified to capture the antiseptic being used.
Postnatal care (PNC) coverage – newborn	Number of newborns who received PNC with a healthcare provider within 2 days of childbirth	Total number of live births	The timing of expected PNC visits may be modified in accordance with the country specific definition by the MoH
Newborns on Kangaroo Mother Care (KMC)	Number of newborns initiated on KMC at a facility (or admitted to KMC unit if separate unit exists)	Total number of live births in the facility	Does not measure the quality of KMC services or whether the newborn received KMC for a sufficient length of time. The total number of preterm or eligible babies is difficult to determine, so this indicator uses a ratio of the number of KMC admissions to the number of live births. Other information (causes of newborn death, etc) should be used in conjunction with this indicator to estimate whether most preterm/LBW births are receiving KMC at facilities.
Newborns treated for neonatal sepsis/ Infection	Number of newborns who receive treatment (at least one injection of antibiotic) for suspected serious bacterial infection in the facility.	Total number of live births in facility	Measure of quality of care because newborns with PSBI must complete treatment (based on national guidelines) to maximize chance of survival. Does not include newborn cases initiating treatment in community settings; denominator could be adapted to national treatment policy if sepsis treatment initiation at community level is included. Best used at local level to monitor and improve quality of care.
Indicators to track antenatal care interventions			
Percent of pregnant women attending ANC who received Tetanus toxoid 2+	Number of women receiving at least two doses of tetanus toxoid	Total number of women with a live birth	Tracking the number of ANC visits is insufficient – this indicator measures whether important components are delivered, many of which can prevent newborn deaths. Longitudinal registers are preferred for tracking these indicators.
Percent of pregnant women attending ANC who received Syphilis screening	Number of antenatal clients screened for syphilis in a specified time period.	Total number of antenatal clients with a first visit in a specified time period.	Tracking the number of ANC visits is insufficient – this indicator measures whether important components are delivered, many of which can prevent newborn deaths. Longitudinal registers are preferred for tracking these indicators.
Pregnant women counselled and tested for HIV	Number of women counselled and offered voluntary HIV testing at ANC before their most recent birth and received their test results	Total number of women with a live birth	Tracking the number of ANC visits is insufficient – this indicator measures whether important components are delivered, many of which can prevent newborn deaths. Longitudinal registers are preferred for tracking these indicators.

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List of Indicators and Questions to Measure Facility Capacity to Provide Key Newborn Health Services

Adapted from Newborn Indicators Working Group, Newborn Services Rapid Health Facility Assessment, June 2012.

Indicator	Numerator	Denominator	Disaggregation	Utility and limitations of indicators
Service Availability				
24/7 Skilled birth attendance	Number of facilities with inpatient maternity services with a provider skilled in conducting deliveries present at the facility or on call at all times (24 hours a day, 7 days per week) and schedule observed	Total number of facilities with inpatient maternity services that are assessed	Type of facility (e.g. hospital versus health center)	
Availability of functional emergency obstetric and newborn care facilities (EmONC) (per population)	<p>Number of obstetric care facilities that provided EmONC signal functions in the last three months:</p> <p>Basic emergency obstetric and newborn care (BEmONC):</p> <ul style="list-style-type: none"> -Parenteral administration of antibiotics for treatment of sepsis -Administration of uterotonic drugs (e.g., parenteral oxytocin or misoprostol tablets) for treatment of postpartum hemorrhage and intravenous tranexamic acid in addition to standard care for women with clinically diagnosed postpartum hemorrhage -Parenteral administration of anticonvulsants (i.e., magnesium sulfate) to manage severe pre-eclampsia and eclampsia -Assisted vaginal delivery (e.g., vacuum extraction) -Manual removal of placenta -Removal of retained products of conception after delivery or an incomplete abortion -Neonatal resuscitation (e.g., with bag and mask) <p>Comprehensive emergency obstetric and newborn care (CEmONC):</p> <ul style="list-style-type: none"> -All 7 BEmONC signal functions -Obstetric surgery (i.e., cesarean section) -Safe blood transfusion observing universal infection prevention precautions 	Total population (per 500,000)	<p>Type of facility</p> <p>Type of service (BEmONC / CEmONC)</p> <p>Facility caseload (e.g., facilities with <10 births per month versus facilities with ≥10)</p>	UN guidance on monitoring emergency obstetric care identifies at least five EmONC facilities (including at least one providing CEmONC) for every 500,000 population. In sparsely population areas, or locations with major access constraints, more facilities may be needed to ensure services are available to meet population need
Availability of Kangaroo Mother Care (KMC)	Number of facilities in which a space is identified for KMC and where staff have received KMC training (< 2 years)	Total number of facilities with inpatient maternity services that are assessed	Type of facility	

Indicator	Numerator	Denominator	Utility and limitations of indicators
Service Readiness			
* Percent of facilities with inpatient maternity services with no stockouts in the past 3 months of:	<p>Number of facilities with inpatient maternity services with no stock-outs in the past 3 months of:</p> <ul style="list-style-type: none"> • Magnesium sulfate 	Total number of facilities with inpatient maternity services that are assessed	Provides information on whether commodities are available, but not if they are used as intended or if commodities are functional/unexpired.
• Magnesium sulfate			

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<p>* Percent of facilities with inpatient maternity services with no stockouts in the past 3 months of:</p> <ul style="list-style-type: none"> • Bag & mask (newborn size) 	<p>Number of facilities with inpatient maternity services with no stock-outs in the past 3 months of:</p> <ul style="list-style-type: none"> • Bag & mask (size 0 and 1) 	<p>Total number of facilities with inpatient maternity services that are assessed</p>	<p>A stock-out is defined as the complete absence of a commodity or supply at a delivery point for at least one day during the reporting period. Data should be extracted from the national logistics management information system if the system provides details on pharmacy supply availability at the health facility level.</p>
<p>*Percent of facilities with inpatient maternity services with no stockouts in the past 3 months of:</p> <ul style="list-style-type: none"> • Dexamethasone (corticosteroid) 	<p>Number of facilities with inpatient maternity services with no stock-outs in the past 3 months of:</p> <ul style="list-style-type: none"> • Dexamethasone (corticosteroid) <p>ACS is expected to provided only in facilities where the following conditions can be met:</p> <ul style="list-style-type: none"> • gestational age assessment can be accurately undertaken; • the preterm newborn can receive adequate care if needed (including resuscitation, thermal care, feeding support, infection treatment and safe oxygen use). • gestational age assessment can be accurately undertaken 	<p>Total number of facilities with inpatient maternity services that are assessed</p>	<p>Key commodities may vary by country; adapt indicators based on national essential drug/ commodity lists.</p>
<p>*Percent of facilities with ANC services with no stock-outs in the past 3 months of:</p> <ul style="list-style-type: none"> • Iron/Folate • Sulfadoxine Pyrimethamine (IPTP-SP if policy) • Tetanus Toxoid Vaccine 	<p>Number of facilities with ANC services with no stock-outs in the past 3 months of:</p> <ul style="list-style-type: none"> • Iron/Folate • IPTp-SP • Tetanus Toxoid Vaccine 	<p>Total number of facilities with ANC services that are assessed</p>	
<p>* Percent of facilities with newborn care services with no stock-outs in the past 3 months of:</p> <ul style="list-style-type: none"> • Injectable gentamicin • Injectable benzylpenicillin or ampicillin • Oral amoxicillin 	<p>Number of facilities with newborn care services with no stock-outs in the past 3 months of:</p> <ul style="list-style-type: none"> • Injectable gentamicin • Injectable X-Penicillin • Oral amoxicillin 	<p>Total number of facilities with inpatient maternity services that are assessed</p>	
<p>Injectable uterotonic for PPH prevention/management</p>	<p>Number of facilities with inpatient maternity services and injectable uterotonic available (observed and at least one dose valid)</p>	<p>Total number of facilities with inpatient maternity services that are assessed</p>	<p>Type of facility</p>

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Indicator	Numerator	Denominator	Disaggregation
Equipment and Supplies			
Newborn bag & mask	Number of facilities with inpatient maternity services with premie and newborn bag (size 0 and 1) & mask available and functioning in delivery area (observed)	Total number of facilities with inpatient maternity services that are assessed	Type of facility
Resuscitation table	Number of facilities with inpatient maternity services with resuscitation table with a heat source available and functioning in delivery area (observed)	Total number of facilities with inpatient maternity services that are assessed	
Infant scale	Number of facilities with inpatient maternity services with infant scale available and functioning in delivery area (observed)	Total number of facilities with inpatient maternity services that are assessed	
Soap or hand disinfectant	Number of facilities with inpatient maternity services with soap or hand disinfectant in delivery area (observed)	Total number of facilities with inpatient maternity services that are assessed	
Towel for drying	Number of facilities with inpatient maternity services with towels for drying babies in delivery area (observed)	Total number of facilities with inpatient maternity services that are assessed	
Protocols or guidelines	Number of facilities with each of the following protocols or guidelines available (observed): <ul style="list-style-type: none"> • Integrated management of pregnancy and childbirth (all facilities) • Referral of sick newborns (all facilities) • Comprehensive emergency obstetric care (facilities with inpatient maternity services) • Management of preterm labor (facilities with inpatient maternity services) 	Total number of facilities with inpatient maternity services that are assessed	
Documentation			
Up-to-date delivery register	Number of facilities with inpatient maternity services with up-to-date delivery register (birth outcome for the infant and birthweight recorded for the last 10 births) (observed)	Total number of facilities with inpatient maternity services that are assessed	Type of facility
Monitoring postnatal care	Number of facilities with documentation of monitoring ² of postnatal care for newborns	Total number of facilities that are assessed	Type of facility
Training			

² Observed register, report, wall chart/ graph or other documentation of monitoring service data.

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Trained providers	<p>Number of interviewed providers of delivery/newborn services trained in the past 12 months in each of the following areas:</p> <ul style="list-style-type: none"> • Neonatal resuscitation using bag and mask • Breastfeeding (early and exclusive) • Newborn infection management (including injectable antibiotics) • Thermal care (including immediate drying and skin-to-skin care) • Sterile cord cutting and appropriate cord care • KMC for low birthweight babies • Special delivery care practices for PMTCT of HIV • Use of corticosteroids for preterm labor 	Total number of interviewed providers of delivery/newborn services	Type of facility
Facilities with trained providers	<p>Number of facilities with at least half of interviewed providers³ trained in the past 12 months in each of the following areas:</p> <ul style="list-style-type: none"> • Neonatal resuscitation using bag and mask • Breastfeeding (early and exclusive) • Newborn infection management (including injectable antibiotics) • Thermal care (including immediate drying and skin-to-skin care) • Sterile cord cutting and appropriate cord care) • KMC for preterm and/or low birth weight babies • Special delivery care practices for PMTCT of HIV • Use of corticosteroids for preterm labor 	Total number of facilities with interviewed providers of delivery/newborn services	Type of facility
Supervision			
Facilities with routine supervision	Number of facilities with routine supervision (at least half of interviewed providers reported being personally supervised at least once during the 6 months preceding the survey.)	Total number of facilities with interviewed providers of delivery/newborn services	Type of facility
Mortality surveillance and response			
<u>Neonatal death review (audit) process in place</u>	Number of facilities with inpatient maternity services that audit or review of newborn deaths to understand causes/circumstances of death and identify actions to mitigate future occurrences	Total number of facilities visited with inpatient maternity services	Type of facility
<u>Facility stillbirth review (audit) process in place</u>	Number of facilities with inpatient maternity services that audit or review intrapartum stillbirths to understand causes/circumstances and identify actions to mitigate future occurrences	Total number of facilities visited with inpatient maternity services	Type of facility
<u>Percent of perinatal deaths reviewed</u>	Number of stillbirths and newborn (perinatal) deaths that were audited	Total number of stillbirths and neonatal deaths at a facility	Type of facility

³ If only one provider interviewed at a facility, then criteria met if that provider was trained in each area.