Countdown to 2030
Women’s Children’s & Adolescent’s Health

Countdown Mortality Transition Model: A Tool to Understand Change and Inform Strategic Planning

- Integrates data on maternal mortality, stillbirths, and neonatal mortality.
- Combines stillbirth and neonatal mortality into one measure: stillbirth + neonatal deaths (SBNMR) per 1,000 births.
- Identifies five phases of the mortality transition from high (phase I) to low mortality (V); a country proceeds to the next phase when both mortality thresholds for maternal, and for stillbirth + neonatal mortality are passed.
- Presents a tool to compare country indicators with typical patterns observed in 151 countries, with populations of at least 1 million in 2000, during the last two decades: mortality and cause of death patterns, fertility patterns, health system factors, intervention coverage levels, inequalities in intervention coverage, and socioeconomic development are typical for each of the five phases.

Mortality Transition by Region During 2000-2020: Major Regional Progress But Not Everywhere

- West and Central Africa is the only region still in phase I because of its high maternal mortality and slow decline.
- The global 2030 SDG target is located within phase IV, with a maternal mortality of 70 per 100,000 live births and stillbirths plus neonatal mortality of 24 per 1,000 births.³
- The ratio of the number of stillbirths and neonatal deaths compared to maternal deaths becomes much larger as mortality declines: the ratio increases from less than 10 in phase I to over 50 stillbirths + neonatal deaths to one maternal death in phases IV and V.

Country Situation in 2020 According to the Phases in the Mortality Transition

- An association exists between maternal mortality and stillbirth-neonatal mortality but with some major outliers such as Pakistan in phase II and Turkmenistan in phase III.
- By 2020, 5 countries (3%) were phase I (Chad, Central African Republic, Nigeria, Sierra Leone and Somalia), and 23 (15%), 32 (21%), 42 (28%) and 49 (32%) countries were in phases II to V, respectively.
- Among the 116 countries in phases I to IV in 2000, 73 (63%) progressed at least one phase during 2000-2020 and 6 countries progressed two phases: Angola, Bangladesh, Ethiopia, Kazakhstan, Rwanda and Tanzania.
- Three countries regressed one phase during 2000-2020: United States, Venezuela, and Vietnam, all because of increases in maternal mortality.
The coverage of births delivered in hospital and lower-level facilities for each phase was computed from 301 national surveys during 2000-2020; the median coverage for the countries in each transition phase are shown by place of delivery.

A major increase in facility births as countries transition from the highest mortality phase I to phase II (32% to 56%) is mostly driven by a major increase in births in lower-level facilities (e.g., health centers or smaller).

After phase II, the rapid increase in institutional births to universal coverage in phase V is entirely driven by increases in hospital births.

The role of hospitals in the mortality transition is essential and should be a priority issue in countries in phases I to III.

The mortality transition is associated with a strong long-term fertility decline.

The total fertility rate median with inter-quartile range, based on 151 countries in 2020, can be interpreted as typical values for each phase of the mortality transition.

The total fertility rate drops from over 5 children per woman to less than 2 as maternal, stillbirth and neonatal mortality decline from phase I to V.

Fertility drops most when countries transition from phase II to phase III (the median goes down from 4.5 to 3.1).

Adolescent fertility also declines from levels of over 100 births per 1,000 women aged 15-19 years in phases I and II, to about 60 in phase III, 40 in phase IV and about 15 in phase V.

The medians of caesarean section rates by phase were computed by wealth quintile based on data from 287 national surveys during 2000-2020.

Among the poorest, there is a large unmet need for caesarean section in phase I and II. The unmet need for the poorest women persists into phase III (median coverage 4.3%).

By phase IV, the median caesarean section rate among the poorest was 15%, suggesting that most need is met.

Among the richest, overuse (non-medically indicated caesarean section), is prominent from phase III and peaks in countries in mortality transition phase IV.


2. SDG 3.1 for maternal mortality is 500 deaths per 100,000 live births; SDG 3.2 for neonatal mortality is 11 deaths per 1,000 live births; ENAP target for stillbirths is 12 deaths per 1,000 live births.

3. WHO proposed that a population level caesarean section rate of 10% is indicative of met need for emergency caesarean section; higher rates are not associated with reductions in maternal and newborn mortality rates