The under-five mortality rate: The indispensable gauge of child health

The under-five mortality rate, often known by its acronym U5MR or simply as the child mortality rate, indicates the probability of dying between birth and 1,000 population – all of which are means to an end.

First, it measures an ‘outcome’ of the development process rather than an ‘input’, such as per capita calorie availability or the number of doctors per 1,000 population – all of which are means to an end.

Second, the U5MR is known to be the result of a wide variety of inputs: the nutritional status and the health knowledge of mothers; the level of immunization and oral rehydration therapy; the availability of maternal and child health services (including prenatal care); income and food availability in the family; the availability of safe drinking water and basic sanitation; and the overall safety of the child’s environment, among other factors.

The under-five mortality rate, therefore presents a more accurate, if far from perfect, measures of child survival than, for example, per capita gross national income (GNI per capita). This is because the natural scale does not allow the children of the rich to be 1,000 times as likely to survive, even if the human-made scale does permit them to have 1,000 times as much income. In other words, it is much more difficult for a wealthy minority to affect a nation’s U5MR, and it is much more difficult for a poor minority to do the same difference.

Third, the U5MR is less susceptible to the fallacy of the average than, for example, per capita gross national income (GNI per capita). This is because the natural scale does not allow the children of the rich to be 1,000 times as likely to survive, even when the human-made scale allows the children of the rich to be 1,000 times as likely to survive.

The centrepiece of the report looks at several of the most promising approaches – community partnerships, the continuum of care framework and health-system strengthening for outcomes – to reach those mothers, newborns and children who are currently excluded from essential interventions. By highlighting examples from countries and districts where these have been successful, as well as exploring the main challenges to their expansion, this report offers practical ways to jump-start progress.

Investing in children is also wise from an economic perspective. According to the World Bank, immunization and vitamin A supplementation are two of the most cost-effective public health interventions available today.

Improving vitamin A status can strengthen a child’s resistance to disease and decrease the likelihood of childhood mortality. For only a small sum, a child can be protected from vitamin A deficiency and a number of deadly diseases, including diphtheria, pertussis, tetanus, polio, measles, childhood tuberculosis, hepatitis B and Hib (Haemophilus influenzae type b), which is a major cause of pneumonia and meningitis.

Providing cotrimoxazole, a low-cost antibiotic, to HIV-positive children dramatically reduces mortality from opportunistic infections.

Improvements in child health and survival can also foster more balanced population dynamics. When parents are convinced that their children will survive, they are more likely to have fewer children and provide better care to those they do have – and countries can invest more in each child.

The report begins by examining the state of child survival and primary health care for children, with a strong emphasis on trends in child mortality. It then appraises the lessons from failures and successes in child survival over the past century. The centrepiece of the report looks at several of the most promising approaches – community partnerships, the continuum of care framework and health-system strengthening for outcomes – to reach those mothers, newborns and children who are currently excluded from essential interventions. By highlighting examples from countries and districts where these have been successful, as well as exploring the main challenges to their expansion, this report offers practical ways to jump-start progress.

Why child survival matters

Investing in the health of young children makes sense for a number of reasons beyond the pain and suffering caused by even one child’s death. Depriving infants and young children of basic health care and denying them the nutrients needed for growth and development sets them up to fail in life. But when children are well nourished and cared for and provided with a safe and stimulating environment, they are more likely to survive, to have less disease and fewer illnesses, and to fully develop thinking, language, emotional and social skills. When they enter school, they are more likely to succeed. And later in life, they have a greater chance of becoming creative and productive members of society.

Underlying and structural causes of maternal and child mortality

Maternal, newborn and under-five deaths and undernutrition have a number of common structural and underlying causes, including:

- Poorly resourced, unresponsive and culturally inappropriate health and nutrition services.
- Food insecurity.
- Adequate feeding practices.
- Lack of hygiene and access to safe water or adequate sanitation.
- Female illiteracy.
- Early pregnancy.
- Discrimination and exclusion of mothers and children from access to essential health and nutrition services and commodities due to poverty and geographic or political marginalization.

These factors result in millions of unnecessary deaths each year. Their wide-ranging nature and interrelatedness require them to be addressed at different levels – community, household, service provider, government and international – in an integrated manner to maximize effectiveness and reach.

The solutions to these impediments are well known, particularly those relating to the direct causes of maternal, neonatal and child deaths. The necessary interventions involve the provision of packages of essential primary health-care services for children across a continuum of care that spans pregnancy, childbirth and after delivery, leading to care for children in the crucial early years of life (see Panel, page 17, for a full definition of the continuum of care).