



GLOBAL MATERNAL, NEWBORN, AND CHILD HEALTH: SO NEAR AND YET SO FAR

Medical Science

S. A. Tabish

FRCP, FAMS, FACP, FRCPE, MD, Doctorate in Educational Leadership (USA) Sher-i-Kashmir Institute of Medical Sciences, Srinagar

ABSTRACT

Health is a foundational investment in human capital and economic growth without which children are unable to go to school and adults can't be productive. Over 500 million people do not have access to a dependable health facility for quick diagnosis of disease and its proper treatment. Around 800 women die each day due to complications during pregnancy and childbirth. Every day, 16,000 children under the age of 5 die from mainly preventable or treatable causes; that is 5.9 million children a year. Close to half of these under-5 deaths occur within the first month of life. One million children die on the day they are born, 2 million within the first week. Many lives can be saved with packages for maternal preventive care and childcare, packages for newborn resuscitation and care, and packages related to community-based case detection and management. The effect of several intervention packages is considerably enhanced by innovations for scaling up coverage. Most innovations relate to low-cost interventions and diagnostic tools in the hands of health workers and to communication and information-technology platforms. The integration of new maternal and child health interventions with existing programs for maternal, newborn, and child health is critical. Health insurance is emerging as an important financing mechanism to meet the health care needs of the poor and disadvantaged. By managing risks, those who have micro-insurance policies are in a better position to protect the meagre wealth they accumulate and generate more income to look after their families. Community-based insurance is widely acknowledged an appropriate way of reaching the outreach. There is a strong need to strengthen public health system to ensure access to quality care at an affordable cost. Disease prevention and health promotion are critical to success of any secondary and tertiary care facility. Countries must consider establishing a National Health Service will go a long way to provide accessible, affordable, cost-effective, quality care to most, if not all, the population.

KEYWORDS

Maternal Health, Child Health, Morbidity, Mortality, Infectious Diseases, Immunization, Universal Health Coverage, Life Expectancy, Determinants Of Health

Health is influenced by many factors – family background, lifestyles, the health and other services we receive and the wider physical, social and economic environment in which we are raised, live and work. According to WHO and UN estimates, today, there is a 36-year gap in life expectancy between countries. A child born in Malawi can expect to live for only 47 years while a child born in Japan could live for over 83 years. In Chad, every fifth child dies before they reach the age of 5, while in the WHO European Region, the under-five mortality rate is 13 out of 1000.¹⁻³

Between 2000 and 2017, the maternal mortality ratio (MMR, number of maternal deaths per 100,000 live births) dropped by about 38% worldwide. 94% of all maternal deaths occur in low and lower middle-income countries. Young adolescents (ages 10-14) face a higher risk of complications and death as a result of pregnancy than other women.¹⁻³ Skilled care before, during and after childbirth can save the lives of women and newborns.¹⁻³

Maternal mortality is unacceptably high. About 295 000 women died during and following pregnancy and childbirth in 2017. The vast majority of these deaths (94%) occurred in low-resource settings, and most could have been prevented.¹⁻³

Sub-Saharan Africa and Southern Asia accounted for approximately 86% (254 000) of the estimated global maternal deaths in 2017. Sub-Saharan Africa alone accounted for roughly two-thirds (196 000) of maternal deaths, while Southern Asia accounted for nearly one-fifth (58 000).

At the same time, between 2000 and 2017, Southern Asia achieved the greatest overall reduction in The high number of maternal deaths in some areas of the world reflects inequalities in access to quality health services and highlights the gap between rich and poor. The MMR in low income countries in 2017 is 462 per 100 000 live births versus 11 per 100 000 live births in high income countries.

In 2017, according to the Fragile States Index, 15 countries were considered to be “very high alert” or “high alert” being a fragile state (South Sudan, Somalia, Central African Republic, Yemen, Syria, Sudan, the Democratic Republic of the Congo, Chad, Afghanistan, Iraq, Haiti, Guinea, Zimbabwe, Nigeria and Ethiopia), and these 15 countries had MMRs in 2017 ranging from 31 (Syria) to 1150 (South Sudan).¹⁻³

The risk of maternal mortality is highest for adolescent girls under 15

years old and complications in pregnancy and childbirth are higher among adolescent girls age 10-19 (compared to women aged 20-24)⁴⁻⁶

Women in less developed countries have, on average, many more pregnancies than women in developed economies, and their lifetime risk of death due to pregnancy is higher. A woman's lifetime risk of maternal death is the probability that a 15 year old woman will eventually die from a maternal cause. In high income countries, this is 1 in 5400, versus 1 in 45 in low income countries.

Globally, 2.2 million children die each year because they are not immunized, 15 million children orphaned due to HIV/AIDS. 1.4 million die each year from lack of access to safe drinking water and adequate sanitation.

Less than one per cent of what the world spent every year on weapons was needed to put every child into school by the year 2000 and yet it didn't happen. The poorest 40 percent of the world's population accounts for 5 percent of global income. The richest 20 percent accounts for three-quarters of world income, and 80 percent of humanity lives on less than \$10 a day.

Every single day, 21,000 children die before their fifth birthday of pneumonia, malaria, diarrhoea and other diseases. Despite substantial progress in reducing under-five mortality around the world, children from rural and poorer households remain disproportionately affected. Children from the poorest 20 percent of households are nearly twice as likely to die before their fifth birthday as children in the richest 20 percent. According to the latest estimates, the number of people living in hunger in the world is over a billion, the highest on record. Half of the world's workers – nearly 1.53 billion people – are in vulnerable employment. These workers do not tend to have formal work arrangements or receive social security and health benefits.¹⁻³

Globally, about 150 million people a year face catastrophic health-care costs because of direct payments such as user fees, while 100 million are driven below the poverty line. Even if they could pay, access to doctors would be a challenge. Low-income countries have ten times fewer physicians than high-income countries. Nigeria and Myanmar have about 4 physicians per 10 000, while Norway and Switzerland have 40 per 10 000.^{4,5}

In Afghanistan, Somalia and Chad, the maternal mortality ratio is over 1000 (out of 100,000 live births) while the same average figure for the WHO European Region is 21. Developing countries account for 99%

of annual maternal deaths in the world, with the decline being the slowest in WHO's Eastern Mediterranean and African Regions.⁷

About 16 million girls aged 15 to 19 years give birth every year – roughly 11% of all births worldwide. Most adolescents' births occur in developing countries. Young people, 15 to 24 years old, accounted for 40% of all new HIV infections among adults in 2009. In any given year, about 20% of adolescents will experience a mental health problem, most commonly depression or anxiety.

Women in the richest 20% of the global population are up to 20 times more likely to have a birth attended by a skilled health worker than a poor woman. Closing this coverage gap between rich and poor in 49 low-income countries could save the lives of more than 700,000 women between now and 2015.⁸

The European Parliament has estimated that losses linked to health inequalities cost around 1.4% of GDP within the European Union - a figure almost as high as the EU's defence spending (1.6% of GDP).⁹

DETERMINANTS OF HEALTH

Human health is influenced and determined by more than our genetics or our access to health care. More important influences are our lifestyle behaviours and the wider determinants of our health – the physical, social and economic conditions in which we are born, raised and live. These also help to explain systematic inequalities in health between different groups, whether defined by gender, age, socio-economic class, income, ethnicity or other characteristics. Access to the right health care at the right time, for example for hypertension and cholesterol control for those at high risk of cardiovascular disease, is probably the single quickest thing that can be done to reduce inequalities in health.

Social determinants of health are the conditions in which people are born, grow, live, work, and age; these circumstances are shaped by the distribution of money, power and resources at global, national, and local levels. Much of the burden of maternal and child mortality and ill health is concentrated among the poorest populations in countries of sub-Saharan Africa and South Asia. In many of these countries, the highest mortality is observed among the marginalized and poor, who frequently reside in remote and rural areas with limited access to health care services.

Recent international trends in life expectancy tell a remarkable story of improvement. In England, life expectancy from birth has doubled since 1840 and, from 1982 to 2012, has increased by about 8 years for men (from 71.3 years to 79.2 years) and 6 years for women (from 77.3 years to 83.0 years). This most recent change equates to more than 6 h of life expectancy gained per day survived for men, and more than 4 h for women.¹⁰

The major reasons of child mortality include poor health, conflict, extreme violence, child marriage, early pregnancy, malnutrition, exclusion from education and child labor. These factors have created a global childhood crisis of massive proportions. The majority of these children live in disadvantaged communities in developing countries, where they have been bypassed by progress that has lifted up many of their peers. Many suffer from a toxic mix of poverty and discrimination – excluded because of who they are: a girl, a refugee, from an ethnic minority or a child with a disability. These threats to childhood are also present in high-income countries.

Millions of children have their childhoods cut short because of who they are and where they live. There have been major gains for children in last three decades, but recent progress in fighting extreme poverty has often not reached those children who need it most – because of geography, gender, ethnicity, disability or because they are victims of conflict. Children's experience of childhood is largely determined by the care and protection they receive, or fail to receive, from adults. Children have the right to survival, food and nutrition, health and shelter.¹¹

Worldwide, half as many children under age 5 now die from preventable causes compared to the year 1990 because of improved coverage and quality of maternal and child health care, immunizations, treatment of pneumonia, diarrhea, malaria and other deadly diseases. Improved nutrition and access to family planning have also saved many lives. Yet many of the poorest children are still vulnerable to all

of these conditions and more. Lack of universal health coverage, inadequate diets and unsafe water put the most disadvantaged children at the highest risk of death. Birth complications and newborn infections also factor heavily. Of the estimated 5.9 million child deaths in 2015, almost 1 million occurred on the day of birth, and close to 2 million took place in the first week.¹²

Every year, nearly 3 million babies die within the first month of life, most from preventable causes. More than a third of these babies die on their first day of life – making the birth day the riskiest day for newborns and mothers almost everywhere. Over 287,000 women die during pregnancy or childbirth, and 6.9 million children die before reaching their fifth birthday. Almost all these deaths occur in developing countries where mothers, children and newborns lack access to basic health care. While child mortality rates have declined in recent decades, 19,000 mothers still mourn the loss of a child each and every day – an unthinkable number of heartbreaks.¹⁻³

More than 1 million babies die on the first day of life – making the birth day the most dangerous day for babies in nearly every country, rich and poor alike. The world has made unprecedented progress since 1990 in reducing maternal and child deaths. Working together, governments, communities, nongovernmental organizations and families have reduced the annual number of children under 5 who die each year by over 40 percent – from 12 million to 6.9 million.¹⁻³

The first day of life is the most dangerous day for mothers and babies. Worldwide, the day a child is born is by far the most dangerous day in a child's life. First-day death rates are almost as high in Democratic Republic of the Congo, Mali, and Sierra Leone. Mothers in these four countries are also at high risk on this day. Most newborn and maternal deaths could be prevented by ensuring that mothers and newborns have access to low-cost, lifesaving interventions through improved and expanded health care systems. Ensuring access to well-trained and equipped health care workers during childbirth is part of the solution.

Babies born to mothers in the poorest fifth of the population were on average 40 percent more likely to die compared to those in the richest fifth. Disparities within countries like Bolivia, Cambodia, India, Sierra Leone 8 Save the children · Many newborn lives could be saved by ensuring services reach the poorest families in developing countries.

To invest in low-cost, low-tech solutions which health workers can use to save lives during pregnancy, at birth and immediately after birth. Most newborn deaths could be prevented by ensuring access to lifesaving products and approaches, including: treatment of infections in pregnant women; access to low-tech equipment that can help babies breathe; clean cord care using chlorhexidine; prompt treatment of newborn infections; and basic education for mothers about the importance of proper hygiene, warmth and breastfeeding for newborns. Increasing the use of these services and these practices can prevent up to 3 out of 4 newborn deaths.

There is a need to strengthen health systems and address demand-related barriers to access and use of health services. Investing in skilled birth attendants and other frontline health workers is a critical piece of a broader movement to ensure Universal Health Coverage so that everyone – starting with the most vulnerable – receives essential, high-quality care without financial hardship. The success of Universal Health Coverage should be judged by its success in delivering health outcomes, including reducing newborn, maternal and child mortality.¹³

Sustained improvements in life expectancy have transformed the age profile of countries, with implications for health and care services, fiscal policy, the insurance market, and commerce generally.

Reducing child mortality also reduces the gap between those who die earlier than expected and those who live longer on average.¹⁴

Around 800 women die each day due to complications during pregnancy and childbirth. Every day, 16,000 children under the age of 5 die from mainly preventable or treatable causes; that is 5.9 million children a year. Close to half of these under-5 deaths occur within the first month of life. One million children die on the day they are born, 2 million within the first week. **These preventable deaths primarily occur in resource-limited settings** where women and children lack access to basic health care services before, during, and after pregnancy and childbirth. **The most effective interventions**

often don't require expensive tools or services and **are best provided as a package in order to achieve optimal outcomes.**

Women die as a result of complications during and following pregnancy and childbirth. The major complications that account for nearly 75% of all maternal deaths are: severe bleeding (mostly bleeding after childbirth), infections (usually after childbirth), high blood pressure during pregnancy (pre-eclampsia and eclampsia), complications from delivery and unsafe abortion. Most maternal deaths are preventable, as the health-care solutions to prevent or manage complications are well known. The main factors that prevent women from receiving or seeking care during pregnancy and childbirth are: poverty, distance to facilities, lack of information, inadequate and poor quality services, and cultural beliefs and practices.

The Reality Check

The Millennium Development Goals (MDGs) included reducing the number of young children dying before their fifth birthdays, keeping their mothers alive, and tackling diseases and deprivations that threatened their futures. Nearly 180 countries have pledged to make child survival a priority. Since 2000, the lives of 48 million children under 5 have been saved. These results, in every region of the world represent one of the first great achievements of the new millennium.¹⁻³

Focusing on the hardest to reach and most vulnerable children can actually be more cost-effective over time, saving more lives for every dollar spent. Scaling up simple, proven, cost-effective interventions can prevent most of the under-five deaths. That focusing on reaching mothers and their newborns — who currently account for 45 per cent of all under-five deaths — can yield huge gains. That stronger community-based health systems — linking critical interventions and services from antenatal care to immunization to nutrition — can greatly increase our ability not only to save the lives of more children but to help those children reach their full potential. If governments, international organizations, the private sector, civil society, communities and families work together, we can save the lives of 38 million children over the next 15 years. We can shape the future we want for the world's children. Efforts must be made towards the right of every child to survive and thrive. A world in which we honour our promises is one in which millions more children will live to fulfil their own promise — to the benefit of us all. Tremendous advances are possible, even in places with scarce resources and with substantial burdens of child mortality. Wealth does not have to determine destiny; past performance does not have to overshadow future potential; the child mortality curve can be bent. We can choose a better future for the world's children.

Enhanced efforts are needed to drive faster progress, particularly within the countries, regions and populations where serious inequities persist. Most under-five deaths are still caused by diseases that are readily preventable or treatable with proven, cost-effective interventions.

Globally, infectious diseases, prematurity and complications during labour and delivery are the main causes of death for children under age 5. Infectious diseases account for about half of global under-five deaths. Forty-five per cent of global under-five deaths occur during the neonatal period. While the highest-burden regions have accelerated progress in reducing under-five mortality, the burdens that remain are still very unevenly distributed. Sub-Saharan Africa remains the region with the highest under-five mortality rate in the world. One child in 12 there dies before his or her fifth birthday. In high income countries, the ratio is 1 in 147. Sub-Saharan Africa and South Asia account for more than 80 per cent of global under-five deaths. Low- and lower-middle-income countries account for nearly 9 in 10 under-five deaths worldwide, although they only account for around 60 per cent of the world's under-five population and live births. Children in fragile contexts face nearly twice the risk of dying before their fifth birthday as children in nonfragile contexts. Higher rates of under-five mortality reflect longstanding sources of disadvantage and persistent inequities. Children from the poorest households are, on average, 1.9 times as likely to die before the age of 5 as children from the richest households. Children from rural areas are 1.7 times as likely to die before the age of 5 as children from urban areas. Children of mothers who lack education are 2.8 times as likely to die before the age of 5 as children whose mothers have secondary or higher education.¹³

The maternal mortality is yet another important public health problem.

Every day, approximately 830 women die from preventable causes related to pregnancy and childbirth. 99% of all maternal deaths occur in developing countries. Maternal mortality is higher in women living in rural areas and among poorer communities. Young adolescents face a higher risk of complications and death as a result of pregnancy than other women. Maternal mortality is unacceptably high. About 830 women die from pregnancy- or childbirth-related complications around the world every day.

Annual child mortality rates in India have decreased between 1.7% and 2.3% in the last two decades. Large differences in overall child survival between India's diverse regions have been previously documented. The under-five mortality rate per 1000 livebirths was 85.8 (81.8 for boys and 90.2 for girls). Five causes accounted for 62% (1.46 M/2.35 M) of all child deaths: pneumonia, prematurity & low birthweight, diarrhoeal diseases, neonatal infections and birth asphyxia & birth trauma.¹⁻³

The State of World's Mothers

The State of the World's Mothers – Save the Children Report states that, “If all newborns in India experienced the same survival rates as newborns from the richest Indian families, nearly 360,000 more babies would survive each year.” It also states that India has the highest number of maternal deaths a year, though this is calculated by total number rather than as a percentage of the population.

Lack of access to healthcare both during and after the pregnancy can have severe consequences to the health of the child. Without regular check-ups, the health of both mother and child are at risk. This is worsened by the lack of medical assistance during the birth itself. In isolated rural areas with limited access to healthcare, this is a common occurrence.

Simple interventions such as feeding a newborn with breast milk within 6-8 hours of birth is essential as it was found to potentially reduce the infant mortality rate by over 10% annually. This was revealed by a study conducted by the National Family Health Survey (NFHS-3) in 2011.

A 2012 survey found that Delhi has the highest infant mortality rate of the then-four Indian metros. The report, titled 'Ending Newborn Deaths, Ensuring Every Baby Survives' was released by Save the Children. It states that Delhi's infant mortality rate (IMR) was as high as thirty out of every thousand live births. Delhi's IMR is higher than those of Mumbai (20), Chennai (15) and Kolkata (20). According to data from 2012, of the children who died before their first birthday in Delhi, 64% died within the first 28 days of their birth.¹⁵

Despite of the boom in the medical and health sector that India has witnessed in the past decades, progress in reducing maternal mortality at the national level is disappointing. Despite of all the economic growth in the past decades in India, the maternal mortality rates are still unacceptably high (SRS, 2013; WHO, 2015). National, state and district level surveys of the country presents a grim picture of maternal health status highlighting the underachievement of the government.¹⁶

With new Sustainable Development Goal (SDG) to reduce maternal mortality ratio to 70 per 100,000 live births by the year 2030, India needs to move beyond the hospital-based approach in addressing the reproductive health issues. The determinants of maternal mortality need to be studied through the lens of social phenomenon to understand its multidimensional nature.

Between 2000 and 2017, the maternal mortality ratio (MMR, number of maternal deaths per 100,000 live births) dropped by about 38% worldwide. 94% of all maternal deaths occur in low and lower middle-income countries. Young adolescents (ages 10-14) face a higher risk of complications and death as a result of pregnancy than other women. Skilled care before, during and after childbirth can save the lives of women and newborns.¹⁷⁻²⁰

Maternal mortality is unacceptably high. About 295 000 women died during and following pregnancy and childbirth in 2017. The vast majority of these deaths (94%) occurred in low-resource settings, and most could have been prevented.¹⁷ Sub-Saharan Africa and Southern Asia accounted for approximately 86% (254 000) of the estimated global maternal deaths in 2017. Sub-Saharan Africa alone accounted for roughly two-thirds (196 000) of maternal deaths, while Southern

Asia accounted for nearly one-fifth (58 000). However, between 2000 and 2017, Southern Asia achieved the greatest overall reduction in MMR: a decline of nearly 60% (from an MMR of 384 down to 157). Despite its very high MMR in 2017, sub-Saharan Africa as a sub-region also achieved a substantial reduction in MMR of nearly 40% since 2000. Additionally, four other sub-regions roughly halved their MMRs during this period: Central Asia, Eastern Asia, Europe and Northern Africa. Overall, the maternal mortality ratio (MMR) in less-developed countries declined by just under 50%.¹⁷⁻²⁰

Health inequities

The high number of maternal deaths in some areas of the world reflects inequalities in access to quality health services and highlights the gap between rich and poor. The MMR in low income countries in 2017 is 462 per 100 000 live births versus 11 per 100 000 live births in high income countries.¹⁷⁻²⁰

Today, there is a 36-year gap in life expectancy between countries. A child born in Malawi can expect to live for only 47 years while a child born in Japan could live for as long as 83 years. In Chad, every fifth child dies before they reach the age of 5, while in the WHO European Region, the under-five mortality rate is 13 out of 1000. There is no biological or genetic reason for these alarming differences in health and life opportunity. There are significant gaps in health outcomes within countries, too – rooted in differences in social status, income, ethnicity, gender, disability or sexual orientation.

According to the latest estimates, the number of people living in hunger in the world is over a billion, the highest on record. Half of the world's workers – nearly 1.53 billion people – are in vulnerable employment. These workers do not tend to have formal work arrangements or receive social security and health benefits. Closing this coverage gap between rich and poor in 49 low-income countries could save the lives of more than 700,000 women between now and 2015.

Burden of Disease and Mortality

Nearly 20% of all deaths are of children less than five years old. Neonatal mortality (deaths during the first 28 days of life per 1000 live births) accounts for a large proportion of child deaths in many countries. Neonatal mortality rates are considered a useful indicator of overall maternal and newborn health and the care that mothers and babies receive. Countries with low life expectancy invariably have high levels of child mortality. For example, life expectancy at birth in the WHO African Region was estimated at only 52 years in 2007, compared with 76 years in the WHO Region of the Americas. Child mortality in the two regions was 145 per 1000 live births and 19 per 1000, respectively.

Cause-specific mortality and morbidity

Out of every 10 deaths worldwide, 6 are due to noncommunicable conditions; 3 to communicable, reproductive or nutritional conditions; and 1 to injuries. Many developing countries have mortality patterns that reflect high levels of infectious diseases and the risk of death during pregnancy and childbirth, in addition to the cancers, cardiovascular diseases and chronic respiratory diseases that account for most deaths in the developed world.

Years of life lost (YLL) consider the age at which deaths occur by giving greater weight to deaths occurring at younger ages and lower weight to deaths occurring at older ages. Globally, communicable diseases account for 51% of years of life lost, with noncommunicable diseases accounting for 34% and injuries for 14%. However, there are large variations across regions. In high-income countries, communicable diseases account for only 8% of years of life lost, compared with 68% in low-income countries.

Today, infectious diseases continue to be the leading cause of death for children and they are also a major cause of death in adults. Globally, three of the top ten causes of death are infectious diseases. These also account for 16% of deaths each year. Most of these deaths occur in poor and developing countries and they are attributable to preventable or treatable diseases such as diarrhea, respiratory infections, HIV/AIDS, tuberculosis and malaria. Although there have been significant advances in interventions to prevent and treat most of these diseases, such interventions are not always available for the populations that need them.

Lifestyle (Non-communicable chronic) diseases (NCDs) as a whole are responsible for a significant proportion of the world's burden of diseases, accounting for almost two-thirds of global deaths (36 of the 57 million deaths in 2008). The main health problems in this group are cardiovascular diseases, cancers, chronic respiratory diseases (such as COPD and asthma) and diabetes. Although other diseases, such as mental and neurological diseases (including various forms of dementia), contribute to the high burden of morbidity (lower mortality), they have not been prioritized in global plans. NCDs are increasing rapidly in developing countries, where they impose large-scale human, social and economic costs, many of which could be avoided with well-known, cost-effective and feasible interventions. About 80% of NCD deaths occur in developing countries.

Noncommunicable diseases, such as diabetes, cancer and heart disease, are collectively responsible for over 70% of all deaths worldwide, or 41 million people. This includes 15 million people dying prematurely, aged between 30 and 69.¹⁻³

Over 85% of these premature deaths are in low- and middle-income countries. The rise of these diseases has been driven by five major risk factors: tobacco use, physical inactivity, the harmful use of alcohol, unhealthy diets and air pollution. These risk factors also exacerbate mental health issues, that may originate from an early age: half of all mental illness begins by the age of 14, but most cases go undetected and untreated – suicide is the second leading cause of death among 15-19-year-olds. Global target of reducing physical inactivity by 15% by 2030 – through such actions as implementing the ACTIVE policy toolkit to help get more people being active every day, is critical.¹⁻³

Emergent Infection

In 2018, the Democratic Republic of the Congo saw two separate Ebola outbreaks, both of which spread to cities of more than 1 million people. One of the affected provinces is also in an active conflict zone. This shows that the context in which an epidemic of a high-threat pathogen like Ebola erupts is critical. Strategies need to be in place for responding to the growing challenges of tackling outbreaks and health emergencies in urban areas. Focus on priority research and development includes Ebola, several other haemorrhagic fevers, Zika, Nipah, Middle East Respiratory Syndrome Coronavirus (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS), H5N1, H1N1, and disease X, which represents the need to prepare for an unknown pathogen that could cause a serious epidemic. Challenges posed by emerging infectious disease needs appropriate response on a war-footing basis.¹⁻³

Antimicrobial resistance

The development of antibiotics, antivirals and antimalarials are some of modern medicine's greatest successes. Now, time with these drugs is running out. Antimicrobial resistance – the ability of bacteria, parasites, viruses and fungi to resist these medicines – threatens to send us back to a time when we were unable to easily treat infections such as pneumonia, tuberculosis, gonorrhoea, and salmonellosis. The inability to prevent infections could seriously compromise surgery and procedures such as chemotherapy. Resistance to tuberculosis drugs is a formidable obstacle to fighting a disease that causes around 10 million people to fall ill, and 1.6 million to die, every year. In 2017, around 600 000 cases of tuberculosis were resistant to rifampicin – the most effective first-line drug – and 82% of these people had multidrug-resistant tuberculosis. Drug resistance is driven by the overuse of antimicrobials in people, but also in animals, especially those used for food production, as well as in the environment.¹⁻³

RISK FACTORS

Certain risk factors are associated with increased mortality and morbidity. The most common preventable risks are poor infant feeding practices, low birth weight, being overweight or obese, childhood and maternal under-nutrition, unsafe sex, use of tobacco, harmful use of alcohol, unsafe water and lack of sanitation. Collectively, these preventable risks contribute to over 40% of the 58 million deaths that occur worldwide annually and one third of global loss of healthy life years.

Exclusive breastfeeding among children under six months of age has increased in recent years and the rate in developing countries is almost 40%. Low birth weight is an important predictor of health and survival of the newborn and reflects maternal malnutrition, ill-health and overwork and inadequate health care in pregnancy. The countries with

the highest incidence of low-birth-weight infants are located in Africa or South-East Asia, where at least 22% of infants are affected. A high proportion of infants are not weighed at birth, and estimates rely on mothers' subjective assessments.^{1,5}

Lack of safe water and poor sanitation are important risk factors for mortality and morbidity, including diarrhoeal diseases, cholera, worm infestations and hepatitis. Unsafe water supplies and inadequate sanitation and hygiene increase the transmission of diarrhoeal diseases, schistosomiasis, trachoma, hepatitis and cholera. Although more people have access to safe water and improved sanitation globally compared with those in 2000, rapid population growth has hampered improvements in many countries. Close to a billion people are still without access to improved water supplies, half of whom live in the African and Western Pacific Regions. Over 2 billion people are without improved sanitation.

MAJOR CAUSES OF DEATH

Major causes of death in newborns include complications of premature birth (14.1% of deaths among children younger than 5 years of age [1.1 million deaths; uncertainty range, 0.9 to 1.3 million]); intrapartum-related complications, previously labelled as birth asphyxia (9.4% [0.7 million deaths; uncertainty range, 0.6 to 0.9 million]); and sepsis or meningitis (5.2% [0.4 million deaths; uncertainty range, 0.3 to 0.6 million]). Other leading causes of death among children younger than 5 years of age included pneumonia (18.4% of deaths [1.4 million deaths; uncertainty range, 1.2 to 1.6 million]), diarrhea (10.4% [0.8 million deaths; uncertainty range, 0.6 to 1.2 million]), and malaria (7.4% [0.6 million deaths; uncertainty range, 0.4 to 0.8 million]).¹⁷⁻²⁰

A sizable proportion of deaths occurs among the urban poor, who live in slum conditions with limited social-support networks and abysmal living conditions. Environmental health factors such as overcrowding, poor air quality, and poor sanitary conditions may be much worse in urban slums than in many rural areas and can adversely affect women and children. This clustering of deaths also reflects the lack of access to quality health services in both rural and urban settings for a number of reasons, including the paucity of trained medical personnel and transportation facilities in rural populations and the lack of knowledge about health services among marginalized, socially isolated migrant families in urban slums.

The close link between poverty and undernutrition is also well recognized. It has been estimated that 45% of all deaths among children younger than 5 years of age may be associated with undernutrition, as manifested by fetal growth restriction, stunting, wasting, deficiencies of vitamin A and zinc, and suboptimal breast-feeding (e.g., partial or no breast-feeding and early weaning). The reductions in rates of stunting in Africa and Asia remain very slow, although there have been improvements elsewhere in the world. The concern regarding undernutrition has also been heightened because of economic crises and an unprecedented increase in food prices. The global food-price indexes are at their highest in decades, with the greatest increases occurring in the prices of cereals, dairy products, and oils.

The relationship of excess child mortality with armed conflict and population displacement is well recognized. Not only are women and children much more vulnerable to excess risks than men are, but more than one third (36%) of the total global burden of maternal death, child death, and stillbirth exists in countries that have ongoing national or subnational armed conflict.

The disproportionate effect of poverty on the lives of women and children is intertwined with issues of female empowerment and gender equity. The contribution of maternal education to a reduction in child mortality is well described. Closely linked with female-empowerment and sociocultural factors are issues of fertility and population growth.

The availability of essential medicines at public health facilities in developing countries is often poor. A survey in about 30 developing countries indicate that availability of selected medicines at health facilities was only 35% in the public sector and 63% in the private sector. Lack of medicines in the public sector forces patients to purchase medicines privately. In the private sector, however, generic medicines are often sold at several times their international reference price, while originator brands are generally even more expensive.

India's Health Scenario

India has shown good progress in the MDGs' era and narrowly missed its MDG 4 target for under five mortality, achieving an under five mortality rate of 43 per 1000 against the target of 42 per 1000 live births. The burden still remains high with India contributing to one fifth of under-five mortality burden and a quarter of neonatal deaths globally. In terms of absolute numbers, this translates into 1.1 million under 5 deaths, of which 630,000 happen during the first four weeks of life. The major causes of newborn deaths in India are prematurity/preterm (35 per cent); neonatal infections (33 per cent); intrapartum related complications/ birth asphyxia (20 per cent); and congenital malformations (9 per cent). Most newborn deaths are preventable by improving quality of care during delivery and care at birth. Simple interventions like skilled birth attendance and access to emergency obstetric care can reduce NMR by 41 per cent while early initiation of breast feeding can reduce NMR by per cent. In the post-newborn period, most deaths occur due to preventable diseases and infections like pneumonia, diarrhoea, malaria and measles. About 39 per cent of children have not been fully immunized.¹⁻³

For millions of people, the high cost of treatment continues to undermine economic progress. According to a study, 54 percent of the health professionals in India do not have proper qualifications, while 20 percent of adequately qualified doctors are not part of the current workforce. The growth of health facilities has been concentrated in the private sector. The lack of proper infrastructure, insufficient human resource and poor quality of care in public sector, has led to rapid mushrooming of unregulated private providers, which constitutes nearly 93 percent of all hospitals, 64 percent of beds and 85 percent of all doctors in the country. This leads to further widening of the gap in access to health care among different social class categories. Health care expenses are a major cause of impoverishment for the working class. Private health facilities are highly expensive and unaffordable to majority of the people in India. Out-of-pocket expenses on health leaves hardly any money to be spent on the education of children, housing, food and any long-term plan. Out-of-pocket expenditure contributes to nearly 86 percent of private expenditure and 60 percent of the overall healthcare expenditure.¹⁻³

Nearly 63 million people are pushed into poverty due to health care expenses. In comparison to 3.5 beds per thousand people (as recommended by WHO), India has 0.9 beds per thousand population.

Health workforce, infrastructure, essential medicines

Globally, there are 13 physicians per 10 000 population, with large variations between countries and regions. In the African Region, there are only 2 physicians per 10 000 compared with 32 per 10 000 in the European Region. Globally, there are 28 nurses and midwives per 10 000 population, ranging from a low of 11 per 10 000 in the African Region to a high of 79 per 10 000 in the European Region.¹⁻³

While there are no gold standards for assessing the sufficiency of the health workforce, WHO estimates that countries with fewer than 23 health-care professionals (counting only physicians, nurses and midwives) per 10 000 population will be unlikely to achieve adequate coverage rates for the key primary health-care interventions prioritized by the Millennium Development Goals.

Estimates of the numbers and density of the health workforce refer to the active health workforce: people currently participating in the health labour market.

Hospital beds are used to indicate the availability of inpatient services. There is no global norm for the density of hospital beds in relation to total population. In the European Region, there are 63 hospital beds per 10 000 population compared with 10 per 10 000 in the African Region. In most developing nations the availability of medicines - where these are provided through public health facilities at a low cost or free of charge - is very poor. In all regions, availability is better in the private sector, but can still be poor. Surveys in about 30 developing countries indicate that only 35 % of selected medicines were available in the public sector and 63 % were available in the private sector. In the private sector, medicines cost on average about 650% more than the international reference price, while in the public sector - where patients pay for medicines - the average cost is 250% more than the international reference price.¹⁻³

Universal Health coverage

According to UN-mandated Sustainable Development Goals,

Universal Health Coverage shall ensure that all people receive proper and adequate health care without suffering financial hardship in order to make the most of country's human capital. Health service coverage indicators reflect the extent to which people in need actually receive important health interventions. Such indicators include the care of women during pregnancy and childbirth, reproductive health services, immunization to prevent common childhood infections, vitamin A supplementation in children, and treatment for common childhood diseases and infectious diseases in adults. However, there are significant variations between regions. The highest immunization rates are found in the Americas and Europe and the lowest rates in the South-East Asia Region.

The Sustainable Development Goals

One target under Sustainable Development Goal 3 is to reduce the global maternal mortality ratio to less than 70 per 100 000 births, with no country having a maternal mortality rate of more than twice the global average. The high number of maternal deaths in some areas of the world reflects inequities in access to health services and highlights the gap between rich and poor. Almost all maternal deaths (99%) occur in developing countries. More than half of these deaths occur in sub-Saharan Africa and almost one third occur in South Asia. More than half of maternal deaths occur in fragile and humanitarian settings.

The maternal mortality ratio in developing countries in 2015 is 239 per 100 000 live births versus 12 per 100 000 live births in developed countries. There are large disparities between countries, but also within countries, and between women with high and low income and those women living in rural versus urban areas.¹⁻³

The risk of maternal mortality is highest for adolescent girls under 15 years old and complications in pregnancy and childbirth is a leading cause of death among adolescent girls in developing countries.

Women in developing countries have, on an average, many more pregnancies than women in developed countries, and their lifetime risk of death due to pregnancy is higher. A woman's lifetime risk of maternal death – the probability that a 15-year-old woman will eventually die from a maternal cause – is 1 in 4900 in developed countries, versus 1 in 180 in developing countries. In countries designated as fragile states, the risk is 1 in 54; showing the consequences from breakdowns in health systems.¹⁻³

Essential Care

Poor women in remote areas are the least likely to receive adequate health care. This is especially true for regions with low numbers of skilled health workers, such as sub-Saharan Africa and South Asia. Globally in 2015, births in the richest 20 per cent of households were more than twice as likely to be attended by skilled health personnel as those in the poorest 20 per cent of households (89 per cent versus 43 per cent). This means that millions of births are not assisted by a midwife, a doctor or a trained nurse.

In developed economies, almost all women have at least four antenatal care visits, are attended by a skilled health worker during childbirth and receive postpartum care. In 2015, only 40% of all pregnant women in low-income countries had the recommended antenatal care visits. Other factors that prevent women from receiving or seeking care during pregnancy and childbirth are: poverty, distance, lack of information, inadequate services, cultural practices.

Most maternal deaths are preventable, as the health-care solutions to prevent or manage complications are well known. All women need access to antenatal care in pregnancy, skilled care during childbirth, and care and support in the weeks after childbirth. Maternal health and newborn health are closely linked. It was estimated that approximately 2.7 million newborn babies died in 2015, and an additional 2.6 million are stillborn. It is particularly important that all births are attended by skilled health professionals, as timely management and treatment can make the difference between life and death for both the mother and the baby. To improve maternal health, barriers that limit access to quality maternal health services must be identified and addressed at all levels of the health system. Serious efforts must be made towards addressing inequalities in access to and quality of reproductive, maternal, and newborn health care services; ensuring universal health coverage for comprehensive reproductive, maternal, and newborn health care; addressing all causes of maternal mortality, reproductive and maternal morbidities, and related disabilities.

Focus on Children

An estimated 800 million people worldwide are chronically hungry. One in six children in developing countries is underweight, and more than one-third of deaths among children under five are attributable to malnutrition. Insufficient access to safe and nutritious food exists even though global food production is enough to cover 120% of global dietary needs.

Children are especially sensitive to social and environmental adversities. Despite advances in recent decades, it is estimated that 6.3 million children under the age of five died in 2013, mostly due to preventable causes in poor or developing countries. Children in sub-Saharan Africa are 15 times more likely to die before their fifth birthday than children in the world's developed regions. In 2015, the highest mortality rate was observed in Afghanistan (115 deaths per 1,000 live births) and the lowest was in Monaco (1.8 deaths per 1,000 live births). From 1990, when the Millennium Development Goals were established, to 2015 the global infant mortality rate fell from 62 to 32 deaths per 1,000 live births. Despite this substantial reduction (around 50%) the established target was not reached, which was to reduce the 1990 rate by two-thirds.¹⁻³

Tackling Health inequities

In many countries there are significant inequities. For example, in half the countries, child mortality rates are at least 1.4 times higher in rural areas compared with urban areas and at least 1.9 times higher among the poorest 20% of households compared with the richest 20% of households. In 64% of countries, the proportion of births attended by skilled personnel is at least 20% higher in urban than in rural areas. There appears to be less inequity in measles immunization; the urban-rural difference is 20% or higher in only 10% of countries.

In 2018, the top 26 wealthiest people owned \$1.4 trillion, or as much as the 3.8 billion poorest people. The year before, it was the top 43 people. Women and girls are hit hardest by the growing wealth gap. Girls are pulled out of school first when the money isn't available to pay fees, and women clock up hours of unpaid work looking after sick relatives when healthcare systems fail. One percent wealth tax would be enough to educate 262 million out of school children and to save 3.3 million lives.¹⁻³

Socioeconomic inequalities, related to e.g. income, employment, education, as well as demographic differences, such as age or gender, are associated with unequal exposure to environmental risk factors. They contribute to health inequities and most often put disadvantaged groups at significantly higher risk for environmental health effects. In the European Union alone about 80 million people are living in relative poverty. Many of these people live in damp homes, with insufficient heating and inadequate sanitary equipment.

Demographic and socioeconomic statistics

Demographic and socioeconomic factors are major determinants of health. As fertility declines, income rises, populations age and become more urbanized, and epidemiological profiles also shift, with an increasing share of the burden of disease accounted for by noncommunicable diseases, accidents and other external causes. Increasing education, especially of women, also has a major impact on the use of health care and on health status.

The world's population continues to grow but at a slower rate than a decade ago. There are large regional differences in growth rates. Fertility is on the decline worldwide, particularly in the Eastern Mediterranean Region, where women now have two children fewer than the previous generation. Despite such declines, fertility is still relatively high compared with other regions, at an average of 3.4 children per woman compared with 2.7 in South-East Asia and 2.2 in the Americas. In the African Region in 2007, the average women had around 5 children, only a slight decline from the fertility levels of 1990. By contrast, levels of fertility in the European Region are below replacement level, with an average of 1.6 children per woman. The world's population is shifting towards urban areas.

Fragile and vulnerable settings

Fragile settings exist in almost all regions of the world, and these are where half of the key targets in the sustainable development goals, including on child and maternal health, remains unmet. More than 1.6 billion people (22% of the global population) live in places where protracted crises (through a combination of challenges such as

drought, famine, conflict, and population displacement) and weak health services leave them without access to basic care. Strengthening health systems is critical so that they are better prepared to detect and respond to outbreaks, as well as able to deliver high quality health services, including immunization.

Vaccine hesitancy

Vaccination is one of the most cost-effective ways of avoiding disease – it currently prevents 2-3 million deaths a year, and a further 1.5 million could be avoided if global coverage of vaccinations improved. Measles, for example, has seen a 30% increase in cases globally. The reasons for this rise are complex, and not all of these cases are due to vaccine hesitancy. However, some countries that were close to eliminating the disease have seen a resurgence. The complacency, inconvenience in accessing vaccines, and lack of confidence are key reasons underlying hesitancy. Health workers, especially those in communities, remain the most trusted advisor and influencer of vaccination decisions, and they must be supported to provide trusted, credible information on vaccines.

FUTURE TRENDS

Medical Innovation

The year 2018 has been iconic for the global healthcare industry, where medical innovations and various healthcare technologies brought new hope of healthy, disease-free life for everyone. Currently, the global healthcare industry has reached a growth rate of 4.82%. With new innovations like Nobel award recognized cancer therapies, artificial pancreas, IoMT (Internet of Medical Things), ICT breakthroughs, and drug manufacturing advancements, 2018 has created new foundations to build a better healthcare ecosystem in future. The legacy continues in 2019 with value-based care supported by Artificial Intelligence, Big Data Science, Blockchains, and Medical R&Ds. Some of the innovations that will create new benchmarks in the Healthcare Industry are:

EHRs (Electronic Health Records)

The deployment of ICT (Information and Communication Technology) and a series of cloud-based networks have brought almost every area of the globe in one interconnected network, especially benefitting the healthcare penetration across geographies despite all odds. Telemedicine is tapping more people across the globe with EHRs. These cloud-based and blockchain based EHRs have enhanced the efficiency of remote patient monitoring, resolved infrastructure concerns and balanced the doctor-population disparity across the world. These medical records will be accessed by doctors for more effective treatment of patients.

Precision Medicine

EHRs have not just facilitated healthcare for the larger population but have also brought alive the concept of precision medicine. This next stage of telemedicine will allow doctors to prescribe treatments based on their complete medical history and genetic understanding. Instead of experimenting with different drugs and drug dosages to monitor and cure diseases (both CDs and NCDs), doctors can analyze the patient's symptoms, vitals, immunity level, and medicine response with help of EHRs and AI based medical analysis tools to prescribe targeted medicine. In 2019, Precision Medicine will have greater roles in the treatment of NCDs (Non-Communicable Diseases) and Hereditary Diseases like cancer, diabetes, cardiac issues, and others.

Gene Therapy

2018 witnessed breakthroughs in retinal treatment through gene therapy and treatment of various other hereditary diseases through genomics. Gene editing tools like CRISPR (Clustered, Short Palindromic Repeats, Regularly Interspaced), and other gene makeup technologies, which introduce curative genes through viral vectors for treatment have been successfully developing throughout 2017 and 2018. Future will see widespread implementation of these gene therapies to cure numerous diseases in different stages of human life – from embryos to matures. Furthermore, these tools will also help in analyzing human genetics and finding cures for various diseases.

AI-powered Equipment and Wearables

Artificial Intelligence and Machine Learning are continually shaping the future of the healthcare industry. With greater investment and collaborative R&Ds, the healthcare sector will become the largest industry for AI-based activities. Robotics and Deep Learning have also eased up a number of surgical procedures including invasive and non-

invasive therapies. Pharmaceuticals are also investing greatly in AI-powered equipment in devising medicine with ultra-precision. Apart from AI-enabled health monitors, the cloud-based connection of wearables and smart sensors are also playing a crucial role in health diagnosis and recording vitals. The SaaS/PaaS based digital healthcare models will realize the dream of quality healthcare for everyone across the world in 2020.

Infrastructure drives Quality

Despite all the development, India still lacks the fundamental infrastructure in the healthcare sector to provide quality treatment to its population of 1.3 billion. The situation of public healthcare in rural areas is even worse. Doctors need an efficient work environment to diagnose their patients and provide all possible support to treat them. Lack in the basic facilities in public OPDs is one of the major limitations for doctors to treat their patients and sometimes even leave the position and move towards private practice of medicine. There are many factors that are responsible for the poor infrastructure of public healthcare facilities in the country: **lack of government investment, policy gaps** in the policies implemented by the government, and **corruption**.

Right to Education

The Right to Education been recognized as a human right in a number of international conventions, including the International Covenant on Economic, Social and Cultural Rights which recognises a right to free, compulsory primary education for all, an obligation to develop secondary education accessible to all, in particular by the progressive introduction of free secondary education, as well as an obligation to develop equitable access to higher education, ideally by the progressive introduction of free higher education. The governments, as the prime duty-bearers, must respect, protect and fulfil the right to education by making education available, accessible, acceptable and adaptable.

The aim of education is to produce healthy normal human beings who understand the meaning of life and what it demands from them. Education is a must for world citizenship. The highly educated people have a critical intelligence of an exceptional order. They can form independent conclusions from given facts. Sustainable development of economy and society is closely related to education. The most important resource of a nation is its human capital. Education also helps in building the character of a person. An educated man should have infinite curiosity, the passion to know and understand things in a scientific way, with complete objectivity. An investment in knowledge pays the best dividends.

Action Required

There is a need to end preventable child and maternal deaths in a generation with financial and technical assistance, through support for the MCH account and in coordination with other priority global health accounts, increase support for bilateral and multilateral maternal and child health programs and provide robust funding for other global health and development initiatives that are vital to achieving maternal, newborn, and child health goals and promote rapid scale-up of proven interventions; ensure sustained quality of proven interventions, including medical products; and invest in research and development of critical tools, such as vaccines and other essential health commodities, to improve the health of women and children around the world and address the causes of death and disability. Investments in maternal and child health have proven to be a best-buy.

Health providers have to ensure access to high-quality antenatal, labour and delivery, and postpartum care; providing nutrition for women who are pregnant or recently gave birth, as well as for children; delivering lifesaving vaccines; saving newborns from severe infections; protecting young children from the risks of diarrhea, pneumonia, and malaria; supporting healthy timing and spacing of births through the provision of voluntary family planning to protect both women and children; and addressing co-morbidities, including HIV, malaria, and tuberculosis. There is a need for investments in innovation to improve health, the Saving Lives at Birth grand challenge.

Children and young people carry the hopes of all our futures. Their health and wellbeing are of paramount importance to those futures. A strong commitment to the health of children and adolescents is needed. Disadvantaged children confront social inequalities in health in their

everyday lives. Childhood obesity is just one of the health problems disproportionately experienced by disadvantaged youth. Applying a social justice perspective to children's health inequalities is essential. Improving children's health will require improving the well-being of their families. Children's growth and development during the formative years are critical areas to address in the quest for social justice in children's health.

The Global Strategy

The Global Strategy (2016-2030) is a roadmap to achieve right to the highest attainable standard of health for all women, children and adolescents –to transform the future and ensure every newborn, mother and child not only survives, but thrives. The new Strategy builds on the success of the 2010 Strategy and its Every Woman Every Child movement as a platform to accelerate the health-related Millennium Development Goals and puts women, children and adolescents at the heart of the new UN Sustainable Development Goals.

The Ending Preventable Maternal Mortality (EPMM) targets and strategies are grounded in a human rights approach to maternal and newborn health and focus on eliminating significant inequities that lead to disparities in access, quality and outcomes of care within and between countries. Concrete political commitments and financial investments by country governments and development partners are necessary to meet the targets and carry out the strategies for EPMM.

Extending basic maternal health services, improving quality of care and eliminating unmet need for contraception are all key to reducing maternal mortality. A range of clinical interventions is available, and these have been proven effective at addressing all the main causes of maternal deaths. The challenge is to make sure that every woman in need receives these interventions in a timely fashion at each stage of her reproductive life: while planning pregnancies and during pregnancy, childbirth and the postpartum period. Meeting this challenge will require organized and persistent action at both the health services and community levels. More research is required to determine the effectiveness of interventions.

Time to respond

There is arguably no single preventive health intervention more cost-effective than immunization. Time and again, the international community has endorsed the value of vaccines and immunization to prevent and control many infectious diseases and, increasingly, several chronic diseases that are caused by infectious agents. Expanding access to immunization is crucial to achieving the Sustainable Development Goals (SDGs). Not only do vaccinations prevent the suffering and death associated with infectious diseases such as diarrhoea, measles, pneumonia, polio and whooping cough, they also help enable national priorities like education and economic development to take hold. GVAP aims to strengthen routine immunization, accelerate control of vaccine-preventable diseases with polio eradication as the first milestone, introduce new vaccines, and spur research and development for the next generation of vaccines and technologies.

Several evidence-based interventions had the potential to reduce child mortality by nearly two thirds. Since then, much progress has been made in refining the evidence base for interventions. Interventions that have a relatively narrow delivery channel and separate management, such as immunizations, do achieve high coverage, whereas those that require functional health systems and facilities, such as skilled birth attendance and postnatal care, reach barely half the population in need.

Change the World

Assessing and managing children at primary health-care facilities to prevent overweight and obesity in the context of the double burden of malnutrition. Depression after childbirth is common. It causes mental anguish and can prevent people from being able to carry out family responsibilities fully. Yet depression can be prevented and treated. A better understanding of depression will help reduce the stigma associated with the condition, and lead to more people seeking help. All women and newborn have a right to a quality of care that enables a positive childbirth experience that includes respect and dignity, a companion of choice, clear communication by maternity staff, pain relief strategies, mobility in labour and birth position of choice. Breastfeeding is one of the most effective, and cost-effective ways to save and improve the lives of children everywhere, yielding lifelong health benefits for infants and their mothers.

CONCLUSION

At least half of the world's population cannot obtain essential health services, according to a new report from the World Bank and the World Health Organization. And each year, large numbers of households are being pushed into poverty because they must pay for health care out of their own pockets.

Though India accounts for highest burden of under-5 deaths, it has shown faster decline in under-5 mortality reduction compared with the global fall. Worldwide, the under-5 mortality rate reduced by 49 per cent from 90 per 1000 live births in 1990 to 46 per 1000 live births in 2013, while India achieved a reduction of 59 per cent in under-5 mortality from 126 in 1990 to 52 in 2012. India has shown good progress in the MDGs' era and narrowly missed its MDG 4 target for under five mortality, achieving an under five mortality rate of 43 per 1000 against the target of 42 per 1000 live births.

However, the burden still remains high with India contributing to one fifth of under-five mortality burden and a quarter of neonatal deaths globally. In order to accelerate progress it is important that preventing neonatal deaths has been prioritized. Undernutrition is an underlying factor in 38 per cent of under-5 deaths and breaking the intergenerational cycle of malnutrition needs to focus on nutrition of adolescent girls and pregnant women. It is critical to focus on improving breastfeeding rates, Water, Sanitation and Hygiene (WASH) practices at both facility and household level. Mothers and children in the lowest economic bracket have about a two and a half times higher mortality rate. Social norms and socio-cultural factors often affect accessibility to healthcare and nutrition as well as water and sanitation services and facilities in many regions.

Each of the major causes of neonatal deaths can be prevented or treated with known, highly effective and widely practicable interventions such as improvements in prenatal care, intrapartum care, postnatal family-community care and tetanus toxoid immunization.

While efforts to reduce maternal and child mortality rates over the past 20 years have had a striking impact, stillbirths and newborn deaths have over the same period missed out on the attention they need.

Looking Ahead

The world is facing multiple health challenges ranging from outbreaks of vaccine-preventable diseases like measles and diphtheria, increasing reports of drug-resistant pathogens, growing rates of obesity and physical inactivity to the health impacts of environmental pollution and climate change and multiple humanitarian crises. Reaching this goal will require addressing the threats to health from a variety of angles.

A key issue that will needs attention includes Air pollution and climate change. Nine out of ten people breathe polluted air every day. In 2019, air pollution is considered by WHO as the greatest environmental risk to health. Microscopic pollutants in the air can penetrate respiratory and circulatory systems, damaging the lungs, heart and brain, killing 7 million people prematurely every year from diseases such as cancer, stroke, heart and lung disease. Around 90% of these deaths are in low- and middle-income countries, with high volumes of emissions from industry, transport and agriculture, as well as dirty cookstoves and fuels in homes.

The primary cause of air pollution is also a major contributor to climate change, which impacts people's health in different ways. Between 2030 and 2050, climate change is expected to cause 250 000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress. Innovations such as the deployment of community health workers and the use of mobile phones to reach hitherto difficult-to-reach populations and households have enormous potential to improve access to care. These innovations also include improved ways of delivering interventions, the use of low-cost technology and tools to screen for biomarkers, and improved methods of drug and vaccine delivery.

Many lives can be saved with packages for maternal preventive care and childcare, packages for newborn resuscitation and care, and packages related to community-based case detection and management.

The effect of several intervention packages is considerably enhanced

by innovations for scaling up coverage. Most innovations relate to low-cost interventions and diagnostic tools in the hands of health professionals and to communication and information-technology platforms. The integration of new maternal and child health interventions with existing programs for maternal, newborn, and child health is critical.

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