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Child Health

Nearly 11 Million Children Under Age Five Die Annually From Largely Preventable Causes

Before 1800, deaths of infants and children were commonplace even in rich families. And poor childhood nourishment left most people stunted by today's standards.

Now, however, many infectious diseases are under control, and better nutrition and overall health conditions have lowered mortality rates for everyone, especially children. But sadly, these gains have not been uniform and have not happened at the same rate around the world. As of 2001, some 19 percent of global deaths were among children—and 99 percent of all child deaths took place in low- and middle-income countries. For example, a child born in Ethiopia today has a 20 percent chance of dying before age five, compared with a less than 1 percent chance for a child born in North America or Western Europe.

Communicable diseases remain the major killers of children in the developing world (see table) and are responsible for about 60 percent of all child deaths in low- and middle-income countries. In contrast, communicable diseases account for less than 10 percent of child deaths in high-income countries. Overall, the 10 leading causes in low- and middle-income countries account for 80 percent of all child deaths in those countries and worldwide.

Diarrheal Disease

In the developing world, diarrheal disease is one of the top five preventable killers of children under age five. Diarrheal disease primarily affects those living in poverty. Its frequency and severity are exacerbated by lack of access to sufficient clean water and sanitary disposal of human waste; inadequate feeding practices and hand washing; poor housing conditions; and lack of access to adequate and affordable health care.

Vaccine-Preventable Diseases

The greatest burden of vaccine-preventable diseases is in Sub-Saharan Africa. This region accounts for 59 percent of all measles deaths, 41 percent of tetanus deaths, 80 percent of yellow fever deaths, and 58 percent of pertussis (whooping cough) deaths. East Asia and the Pacific has the greatest burden from hepatitis B—62 percent of deaths worldwide. South Asia also has a high disease burden, particularly for tetanus and measles. Nearly one-half of all tetanus deaths and more than one-fourth of measles deaths occur in South Asia.

Acute Respiratory Infections

Acute respiratory infections (ARIs) are the most common causes of illness and death in children under five, with pneumonia alone responsible for about one-fifth of the nearly 11 million deaths per year in young children. Each year, children under five average three to six episodes of ARI regardless of country of residence or economic situation. The severity of these infections is usually worse in children in developing countries, who often lack access to effective treatment. Complicating this picture is the increasing number of children infected by HIV/AIDS, which makes them not only more vulnerable to developing tuberculosis, pneumonia, and bronchitis, but also more likely to succumb to these infections.

Undernutrition

About 130 million children under age five are underweight, with the highest prevalence rates in Sub-Saharan Africa and South Asia. Undernutrition and micronutrient deficiencies, like vitamin A, iron, iodine, and zinc deficiencies, contribute

The 10 Leading Causes of Death in Children Ages 0-14 in High-Income and Low- and Middle-Income Countries, 2001

Low and Middle Income Countries			High Income Countries		
Cause	Deaths (millions)	Percentage of total deaths	Cause	Deaths (millions)	Percentage of total deaths
1. Perinatal conditions	2.49	20.7	1. Perinatal conditions	0.03	33.9
2. Lower respiratory infections	2.04	17.0	2. Congenital anomalies	0.02	20.0
3. Diarrheal diseases	1.61	13.4	3. Road traffic accidents	0.01	5.9
4. Malaria	1.10	9.2	4. Lower respiratory infections	0.00	2.5
5. Measles	0.74	6.2	5. Endocrine disorders	0.00	2.4
6. HIV/AIDS	0.44	3.7	6. Drownings	0.00	2.4
7. Congenital anomalies	0.44	3.7	7. Leukemia	0.00	1.9
8. Whooping cough	0.30	2.5	8. Violence	0.00	1.2
9. Tetanus	0.22	1.9	9. Fires	0.00	1.2
10. Road traffic accidents	0.18	1.5	10. Meningitis	0.00	1.2

Source: Mathers, C. D., A. D. Lopez, and C. J. L. Murray. 2006. Table 3.8. Global Burden of Disease and Risk Factors. New York: Oxford University Press.

substantially to the global burden of disease and account for up to 4 percent of all deaths globally. Impoverished communities experience high rates of undernutrition and increased exposure to infectious diseases caused by crowding and inadequate water supply and sanitation. Undernutrition and infectious diseases have a synergistic relationship: Undernutrition reduces the body's capacity to defend against disease, and disease depletes and deprives the body of essential nutrients. Over time, undernutrition and micronutrient deficiencies result in impaired intellectual development, lost wages, and increased health care costs, all exacerbating the cycle of poverty.

Interventions

Promote better and more hygienic feeding practices.

Few health interventions are as cost-effective as programs that promote appropriate feeding and correct micronutrient deficiencies. More hygienic feeding practices, including exclusive breastfeeding during a child's first six months of life, can save many lives lost to diarrhea as well as decrease the prevalence of stunted development. Eliminating undernutrition could not only prevent the deaths of many young children, primarily in South Asia and Sub-Saharan Africa, but could also reduce

the risk and cost of chronic diseases in the future. Nutritional interventions preserve or improve cognitive function and contribute to improved adult stature and worker productivity. In addition, reducing undernutrition frees scarce health resources for other health conditions.

Immunize against preventable childhood diseases.

Immunization is one of the most cost-effective of all health interventions. Increased immunization coverage for children is a crucial step in further eliminating vaccine-preventable diseases in developing countries. By reducing mortality and morbidity, immunization can contribute substantially to achieving the Millennium Development Goal of reducing the mortality rate among children under five by two-thirds between 1990 and 2015. Immunization against preventable childhood diseases could avoid up to 3 million childhood deaths each year. The cost to immunize a child against measles, diphtheria, tetanus, whooping cough, polio, and tuberculosis is approximately US\$20. But maintaining immunization programs demands continuous and predictable program financing, and these recurring costs are the most expensive part of these programs. Governments in developing countries as well as their development partners are challenged to find ways to finance and sustain immunization programs,

especially as they seek to achieve higher coverage levels and introduce new vaccines.

Provide access to clean water and sanitation. Poor sanitation, lack of access to clean water, and inadequate

personal hygiene are responsible for an estimated 90 percent of childhood diarrhea cases. Access to clean water and sanitation can dramatically reduce the prevalence of diarrhea. Hand washing reduces diarrhea incidence by an average of 33 percent.

For More Information

See the following chapters in Jamison, D. T., J. G. Breman, A. R. Measham, G. Alleyne, M. Claeson, D. B. Evans, P. Jha, A. Mills, and P. Musgrove. 2006. *Disease Control Priorities in Developing Countries*, 2nd ed. New York: Oxford University Press.

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