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IMMUNIZATION FACTS AND FIGURES April 2013

Overview

- Immunization is one of the most successful public health initiatives. Each year, immunization averts an estimated 2-3 million deaths from diphtheria, tetanus, pertussis (whooping cough) and measles[i] - life-threatening diseases that disproportionately affect children.
- Immunization has been instrumental in eradicating smallpox and nearly eliminating polio.
- In 2011, an estimated 83% of infants worldwide were vaccinated with the three doses of the vaccine required to immunize them against diphtheria, tetanus and pertussis[ii] (DTP3 vaccine).These three diseases are potentially fatal for children under 5.
- One out of five infants worldwide - nearly 20% of children - does not receive 3 life-saving doses of the diphtheria, tetanus and pertussis vaccine[iii]. The unreached “fifth child,” missed by vaccination campaigns, is defenceless against these killer diseases.
- In 2011, five regions reached over 90% of children with the crucial diphtheria, tetanus and pertussis (DTP3) vaccine: Central and Eastern Europe, East Asia and the Pacific, industrialized countries, Latin America and the Caribbean and the Middle East and North Africa[iv].
- In 2011, 123 countries immunized over 90%[v] of infants against measles. Between 2000 and 2011, vaccination resulted in a 71% drop in measles deaths worldwide[vi].
- Immunization makes economic sense. Recent studies show that scaling up the use of existing vaccines in 72 of the world’s poorest countries could save 6.4 million lives and avert $6.2 billion in treatment costs and $145 billion in productivity losses between 2011 and 2020[vii].

Vaccines – both old and new -- are now more accessible

- One dose of the diphtheria, tetanus and pertussis vaccine costs, on average, US$ 0.20. A life-saving dose of measles-containing vaccine costs US$ 0.24[viii].
- Thanks to the work of numerous partners including UNICEF, the price of new vaccines against certain types of diarrhoea and pneumonia – two of the leading causes of death among children under 5 – has dropped between 3 and 6-fold[ix].

- The introduction of new vaccines is steadily expanding across the globe. New promising vaccines for children include the rotavirus, haemophilus influenza B, hepatitis B and rubella vaccines. By the end of 2011[x]:

    - Infant hepatitis B vaccine was introduced nationwide in 180 countries.
    - *Haemophilus influenzae* type b (Hib) vaccine was introduced in 177 countries – up from 168 in 2010.
    - Rubella vaccine was introduced nationwide in 130 countries. Progress towards the elimination of rubella in the Americas has been remarkable, with a reduction of 99.9% of cases between 1998 and 2011.
    - Approximately 82% of newborns were protected against neonatal tetanus through immunization.
    - Rotavirus vaccine was introduced in 31 countries by the end of 2011 - up from 28 in 2010[xi].

- Many countries have yet to introduce important vaccines such as the rotavirus and pneumococcal vaccines because of insufficient funding, underperforming cold chains or difficult access to vulnerable children.

<u>Immunization is an entry point for other life-saving interventions</u>

- In a survey of "Child Health Days" in 69 countries, more than 3 additional interventions were delivered alongside vaccination in a majority of countries, including insecticide-treated nets, vitamin A supplements and deworming tablets[xii]. Mosquito nets help prevent malaria – which still kills one child every minute in Africa[xiii]. Vitamin A supplements boost the immune system and prevent night blindness in children.

- Since 2007, nutrition screening and water, sanitation and hygiene (WASH) interventions have increasingly been included in immunization rounds.[xiv]

…but one out of five children is still unprotected against vaccine-preventable illness

- Over 70% of these unreached children live in ten countries: Afghanistan, Chad, the Democratic Republic of Congo, Ethiopia, India, Indonesia, Nigeria, Pakistan, the Philippines and South Africa[xv].

- Significant inequalities in child immunization exist between and within countries.

- Polio remains endemic in three countries – Afghanistan, Nigeria and Pakistan – and has re-established transmission in Chad. Several other countries had outbreaks in 2011 due to polio contamination from abroad[xvi].

- Approximately 29% of deaths in children under five are vaccine preventable[xvii]. In 2011 alone, 1.5 million children died from diseases preventable by currently recommended vaccines[xviii].

- Maternal and neonatal tetanus persist as public health problems in 30 countries, mainly in Africa and Asia[xix]. It is a swift and painful killer disease that killed 58,000 newborns in 2010 alone[xx].

- Measles continues to kill about 430 children each day, mainly in Africa and Asia[xxi].

UNICEF and its partners are uniquely placed to create demand for vaccines, manage logistics and ultimately reach the unreached "fifth child". UNICEF helps governments to implement effective policies and to extend the benefits of immunization to all children.

- UNICEF and its partners support immunization programs in over 100 countries[xxii], as part of UNICEF's integrated approach to giving children the best possible start in life. Activities include[xxiii]:
    - Communication for development to work with communities and create demand for vaccines.
    - Logistics support for vaccine purchases and delivery, improving cold chains and monitoring
    - Policy support and technical assistance to help government partners plan and roll out immunization campaigns more effectively, to ultimately reach every last child.

- UNICEF supports programme country governments to develop effective immunization plans, which provide for the cost of vaccines and for their delivery to infants and children nationwide.

- UNICEF is the largest buyer of vaccines in the world. In 2012, UNICEF procured close to 2 billion doses of vaccine and over 500 million syringes - reaching 36% of the world's children[xxiv].

- In 2011, UNICEF spent 5 times more on vaccines than it did ten years ago – and uses 55% of the supplies it procures in Sub-Saharan Africa (compared with 42% in 2002)[xxv].

- UNICEF is involved in numerous partnerships to ensure as much action as possible in regard to immunization. The organization is a core partner of the Global Alliance for Vaccines and Immunization, GAVI, one of the founders of the Measles and Rubella Initiative and the Global Polio Eradication Initiative (GPEI), in addition to working closely with sister UN Agencies, donor and programme countries governments, international development and finance organizations and the pharmaceutical industry to make immunization accessible to all children.

Remaining challenges – and what needs to change

- In 2011, only 152 out of 194 WHO member states had dedicated budget lines for immunization[xxvi] - a central part of effective planning to reach all children with life-saving vaccines.

- More funding is required. Current international financing for vaccines is not sufficient to sustain both progress in coverage and the introduction of new, crucial vaccines.

- Since December 2012, health workers delivering vaccines and other services essential to child survival have been killed in Nigeria and Pakistan – two of three countries where polio remains endemic. These dedicated workers are at the forefront of protecting children – particularly those who lack access to health care and to a host of other vital resources.

********** **About vaccine-preventable childhood diseases**********

- **Diphtheria** is a serious disease caused by a poison made by bacteria. It causes a thick coating in the back of the nose or throat that makes it hard to breathe or swallow. It can be deadly.[xxvii]
- **Hepatitis B** is a serious infection that affects the liver.
- **Haemophilus influenzae type B (Hib)** can cause severe pneumonia, meningitis and other serious diseases almost exclusively in children under the age of 5.
- **Measles** is a highly contagious respiratory disease caused by a virus[xxviii]. Measles causes fever, runny nose, cough and rashes all over the body. About one in 20 children with measles also gets pneumonia. For every 1,000 children who get measles, one or two will die[xxix]
- **Pertussis** (whooping cough) is a highly contagious respiratory disease, which produces violent, uncontrollable coughing which often makes it hard to breathe. Pertussis most commonly affects infants and young children and can be fatal, especially in babies less than 1 year of age[xxx].
- **Pneumococcal disease** can cause pneumonia, meningitis, or blood infection. In its worst forms, pneumococcal disease kills one in three people who contract it[xxxi].
- **Polio** (poliomyelitis) mainly affects children under five years old. One in 200 infections leads to irreversible paralysis. Among those paralyzed, 5% to 10% die when their breathing muscles become immobilized[xxxii].
- **Rotavirus** is the leading cause of severe diarrhea in infants and young children. Globally, it causes more than half a million deaths each year in children under 5[xxxiii].
- Children whose mothers have **rubella** during the early stages of pregnancy often contract congenital rubella syndrome (CRS). Children with CRS are born with lifelong disabilities and are at risk for other developmental problems such as congenital heart disease and mental retardation[xxxiv].
- Mothers and newborns contract **tetanus**, an extremely deadly and paralyzing disease, when deliveries happen in unhygienic conditions – as can be the case in remote and underdeveloped areas[xxxv].
- **Tuberculosis** (TB) is a disease that typically attacks the lungs. If not treated properly, TB disease can be fatal[xxxvi].
- **Yellow fever** is found in tropical climates and is transmitted to humans by the bite of an infected mosquito. Illness ranges in severity from a self-limited febrile illness to severe liver disease with bleeding. Up to 50% of people who develop severe illness and are not treated may die[xxxvii].

[i] Global Immunization Data 2012, WHO & UNICEF
[ii] *Immunization summary – A statistical reference containing data through 2011* – UNICEF & WHO, November 2012
[iii] Global Immunization Data 2012, WHO & UNICEF – Children who do not receive the required 3 doses of the diphtheria, tetanus and pertussis vaccine are not fully immunized.
[iv] *Immunization summary – A statistical reference containing data through 2011* – UNICEF & WHO, November 2012
[v] *Ibid*
[vi] http://www.who.int/mediacentre/factsheets/fs286/en/index.html
[vii] http://www.jhsph.edu/news/news-releases/2011/ivac-vaccine-studies.html and UNICEF Executive Director Anthony Lake opening speech to the Global Consultation on Addressing Inequalities in the Post-2015 Development Agenda, Copenhagen, Denmark 02/19/2013
[viii] *Immunization summary – A statistical reference containing data through 2011* – UNICEF & WHO, November 2012
[ix] Rotavirus and pneumococcal, respectively, *ibid*
[x] Global Immunization Data 2012, WHO & UNICEF
[xi] *ibid*
[xii] Child Health Days 1999–2009: Key Achievements and the Way Forward, UNICEF Joint Working Group on Child Health Days, New York, July 2011
[xiii] http://www.who.int/mediacentre/factsheets/fs094/en/
[xiv] Child Health Days 1999–2009: Key Achievements and the Way Forward, UNICEF Joint Working Group on Child Health Days, New York, July 2011
[xv] Global Immunization Data 2012, WHO & UNICEF
[xvi] http://www.polioeradication.org/Infectedcountries.aspx
[xvii] Global Immunization Data 2012, WHO & UNICEF
[xviii] *Ibid.* WHO recommended vaccines: BCG, Hepatitis B, Polio, DTP, Hib, pneumococcal, rotavirus, measles, rubella, HPV. http://www.who.int/immunization/policy/Immunization_routine_table2.pdf
[xix] *http://www.who.int/immunization_monitoring/diseases/MNTE_initiative/en/index4.html*
[xx] http://www.unicef.org/health/index_43509.html
[xxi] http://www.who.int/mediacentre/factsheets/fs286/en/index.html
[xxii] http://www.unicef.org/media/files/PFCUNICEFrole.pdf
[xxiii] For more information, consult *Scaling Up UNICEF's Contribution to Immunization Programmes:* Supporting governments to "*Reach the Fifth Child*" September 2012
[xxiv] UNICEF Supply Division 2012
[xxv] *UNICEF Supply Division Annual Report 2011*
[xxvi] http://apps.who.int/immunization_monitoring/en/globalsummary/IndicatorTS_Result.cfm
[xxvii] http://www.who.int/ith/diseases/diphtheria/en/
[xxviii] http://www.who.int/mediacentre/factsheets/fs286/en/index.html
[xxix] www.cdc.gov/measles
[xxx] http://www.who.int/immunization_monitoring/diseases/pertussis/en/
[xxxi] http://www.cdc.gov/vaccines/vpd-vac/pneumo/default.htm#disease
[xxxii] http://www.who.int/mediacentre/factsheets/fs114/en/
[xxxiii] http://www.who.int/nuvi/rotavirus/en/
[xxxiv] http://www.who.int/mediacentre/factsheets/fs367/en/
[xxxv] http://www.who.int/topics/tetanus/en/
[xxxvi] http://www.who.int/mediacentre/factsheets/fs104/en/index.html
[xxxvii] http://www.who.int/mediacentre/factsheets/fs100/en/