The price of delaying measles eradication

On September 27, 2016, the Pan American Health Organization (PAHO) verified that the Americas had eliminated endemic measles transmission.[1] This phenomenal achievement provides irrefutable empirical evidence supporting the determination reached by a global technical consultation, convened by WHO in 2010, that global measles eradication is biologically, technically, and operationally feasible.[2] The prospect of a world where no child dies because of measles has resonated with global leaders and all WHO regions have established goals to eliminate measles by 2020 or before. Against this backdrop of proven feasibility and stated political will, it is truly disappointing that the recently completed mid-term review of the Global Measles and Rubella Strategic Plan, 2012–2020, states that "recent years have seen a slowing of progress" and "it is premature to set a timeframe for eradication at this point".[3]

The increasing global coverage with measles vaccination accounted for a cumulative estimated 17·1 million lives saved between 2000 and 2015.[4] However, with the stagnation of progress, tragically an estimated 114 900 people, mostly children, died due to measles in 2014.[5] These deaths could have been prevented with a simple, safe, cost-effective health measure—timely measles vaccination.

The gains in reducing measles mortality and morbidity are fragile—each new birth cohort requires effective vaccine delivery to ensure that at least 95% of individuals are immune or measles virus comes back with a vengeance to discover the immunity gaps.[6] Unfortunately many mature immunisation programmes have cohorts of older children or young adults remaining susceptible to measles owing to incomplete reach of immunisation programmes in previous years. Once children leave school, they are difficult to reach with immunisation. Global surveillance data show 40% of confirmed cases in the European region and 29% in the Western Pacific region were 15 years of age or older, and 19% in the European region and 13% in the Western Pacific region were 25 years of age or older.[7]

Waning immunity could be more important than previously recognised with the window for eradicating measles potentially closing. Older generations, who were immune through natural infection, are dying and being replaced with infants with lower levels of immunity who are born to mothers immune through vaccination. Reinfection of fully vaccinated individuals with transmission of infection to others might present a real risk in elimination settings where natural boosting is no longer occurring.[8] Sustaining herd immunity while the rest of the world catches up is now the greatest challenge facing the Americas and countries in other regions that have been verified as having interrupted endemic measles transmission.

Responding to outbreaks in countries that have achieved, or are close to achieving, elimination of endemic transmission can be enormously expensive and disruptive to the health service and society. Thus, it is not surprising that the Columbian Minister of Health, Alejandro Gaviria Uribe, will present a resolution calling for a measles eradication target date at the 2017 World Health Assembly, a proposal supported by all Latin American Ministers of Health.[9]

Measles vaccination, providing each child with two immunisation doses either through the routine programme or campaigns, is one of the most cost-effective public health interventions but eradication is even more financially attractive because treatment costs for measles infections are avoided (>US$2 billion per year) and prevents disability-adjusted life year (DALY) losses prevented (>15 million DALYs per year valued at >$63 billion).[10] Measles vaccination can also prevent congenital rubella syndrome through combining measles and rubella vaccines, and there is the potential to add a range of other health interventions.

Important ethical drivers exist to complete measles eradication. The 1989 Convention on the Rights of the Child states that children have the right to the best health care possible and that rich countries should help poorer countries achieve this. Every government and the international donor community have a duty of care to ensure that children enjoy the protection offered by measles vaccine, which is both affordable and effective in preventing severe disease and death. The rule of rescue demands that those that are able, in this case governments and international donors, rescue identifiable individuals facing avoidable death if personal sacrifice is not excessive. Because children who are at high-risk for missing out on vaccine, including

migrants, nomadic communities, and the rural poor, are often at greatest risk of severe disease because of poor nutrition, co-infections, and limited access to health care, reaching them with immunisation can have a real effect on health inequities. Measles could be called the equity virus: without vaccination, everyone gets measles, and without equitable health-care systems to deliver vaccination, measles will continue to present a threat to the most vulnerable. We should not risk waiting for the perfect day to set a target. An aspirational vision could fan the flames of optimism we need to drive us to the target of eradication faster. The world needs a global measles eradication target supported by a global verification commission; we should not settle for less.

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