

The Right Wall We Need to Build

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One of the hottest topics in the international discussion at the moment is the building of a wall that seeks to physically separate human communities, cultures and families [1]. Historical evidence seems to point to – at least from a global health security perspective – the ineffectiveness of building “impenetrable” walls. Whatever the real reason, there are far more important walls we need to build.

Paving the way towards an infectious disease elimination

In 2001, the World Health Organization (WHO) launched an initiative to control and eliminate measles and rubella, subsequently revised for Global Measles and Rubella Strategic Plan: 2012 - 2020 [2]. The plan focuses on the implementation of five core components.

1. Achieve and maintain high levels of population immunity by providing high vaccination coverage with two doses of measles- and rubella-containing vaccines.
2. Monitor disease using effective surveillance, and evaluate programmatic efforts to ensure progress.
3. Develop and maintain outbreak preparedness, respond rapidly to outbreaks and manage cases.
4. Communicate and engage to build public confidence and demand for immunization.
5. Perform the research and development needed to support cost-effective operations and improve vaccination and diagnostic tools.

Measles is one of the most infectious human diseases and can cause serious illness, life-long complications and death. Prior to mass vaccination began in 1980, measles infected over 90% of children before they reached 15 years of age. These infections were estimated to cause about 2.6 million deaths and between 15,000 and 60,000 cases of blindness annually worldwide. The intensification of vaccination activities has had a decisive influence on the reduction of deaths. It is estimated that between 2000 and 2015 the vaccine against measles prevented 20.3 million deaths. The annual incidence report decreased 75%, from 146 to 36 cases per million inhabitants. However, since adoption and coverage of measles- and rubella-containing vaccines remain uneven around the world, measles and rubella continue to pose a significant threat to the lives of children and families everywhere.

Measles in our region

In the Americas, between 1971 and 1979 measles caused about 102,000 deaths. A study on the effectiveness of measles elimination in Latin America and the Caribbean has estimated that with vaccination, 3.2 million measles cases and 16,000 deaths in the region between 2000 and 2020 will have been avoided [3].

In 2002, the last endemic case of measles in the Americas was reported, which represented the interruption of virus transmission. However, the circulation of this one at global level maintains the risk of its reintroduction and spreading. Between 2003 and 2014, the

total number of imported cases of measles or related to importation reached 5,077 in the Americas. During 2015, 614 cases of measles were reported in the Americas and by 2016 the number decreased to 74, which means a reduction of 88% [4].

In September 2016, after 22 years of tremendous work, the region of the Americas was declared free of measles. The elimination of measles was verified over a six-year period by an International Committee of Experts convened by the Pan American Health Organization (PAHO). The Committee presented its final report to the health ministers of member countries of PAHO, participating in the 55th meeting of its Directing Council [5].

Measles in Mexico

Before the 1950s, measles in Mexico was among the main causes of morbidity and mortality with the occurrence of biannual epidemics [6]. For the period 1961 to 1979 the disease showed a regular epidemiological pattern, during this stage almost 680,000 cases of measles were reported with an average of 35,744 per year, which changed substantially after the mass vaccination of 1972 - 1980. During this period, more than 18,000 deaths were reported. As of 1973, outbreaks were reported every four years; however, in 1989 there was a significant increase in cases when there were 20,381 cases with a rate of 24.2 per 100 thousand inhabitants. In 1990, 68,782 cases of measles were recorded, with a rate of 80.2 cases per 100,000 inhabitants. The mortality for 1993 was 20 deaths with a rate of 0.02 per 100,000 inhabitants. In general, following the mass vaccination, there has been a tendency towards a decrease, except in the epidemic of 1989-1990. Also noteworthy was the establishment in 1992 of the Epidemiological Surveillance System for Febrile Rash Illness focused on the timely detection of cases and guaranteeing the elimination of the indigenous transmission of measles, having the last autochthonous measles case recorded in 1996. During the period from 1997 to 1999 there were no cases in the country until 2000 when an outbreak began driven by imported cases. In 2001 three imported cases were identified in Cancun. In 2003, 44 imported cases of measles were registered in 4 central states of Mexico, identifying the H1 genotype that was then circulating in Japan, Korea and China. The same genotype was identified the following year in 2 northern and 3 central states of Mexico, recording 64 imported cases of measles. Between 2005 and 2006, two outbreaks of USA-imported measles occurred: The first one was an imported case from California, genotype D9, the other one was coming from New York and were identified in Mexico City and its suburbs, B3 genotype (originally coming from Kenya). In the period 2007 to 2010 neither autochthonous nor imported cases were reported. In 2011, three imported cases were identified in the two central states of Mexico, identifying the D4 genotype by that time circulating in Canada, England, France, Ukraine and USA. By 2013, two confirmed cases were imported from England, genotype D8. The Mexico's International Health Regulations National Focal Point reported 3 imported cases of measles with history of travel to USA in 2014: Two cases arrived in a cruise as crew members in Playa del Carmen and the third one was a 22-month-old female from Baja California Sur, Mexico with history of travel to a Disney Park in California in December 2014. Finally, the last case of measles in the country occurred in 2015 in a resident physician 37-year-old, unvaccinated female from Nuevo León state, whose only history of recent travel was to San Francisco, California in December 2014 (genotype D9).

Laboratory surveillance in Mexico

Laboratory confirmation of measles and rubella cases is considered essential in the post elimination era and is recommended for every case. Since 1992 Mexico's National Reference Laboratory (InDRE, Mexico City) belongs to WHO Global Measles and Rubella Laboratory Network (LabNet) and provides valuable global information about the circulation of measles and rubella infections in Mexico [7]. In December of that same year, the Mexican Public Health Laboratory Network for Febrile Rash Illness (MPHLN-FRI) was structured, with the purpose of strengthening the etiological diagnosis of febrile rash illness, mainly measles and rubella, as well as to support epidemiological control programs, particularly the Measles Elimination Program in Mexico. Currently, the MPHLN-FRI is made up of 31 State Laboratories and the Central Laboratory of the Mexican Social Security Institute. In order to guarantee the quality of epidemiological information on measles / rubella and the adequate adoption of control measures, the system is evaluated through international indicators, which have been satisfactorily fulfilled in recent years by the entire network. Despite all this tremendous effort, international travelers are still at risk

of acquiring measles/rubella, even in those countries that have interrupted endemic transmission; this underlies the importance of immunization in those travelers during the post elimination phase [8].

This is the kind of wall we must be building day by day, a wall to protect us from outbreaks, epidemics and, in this particular case, from infectious diseases in process of elimination. A public health laboratory network (managing local health systems and programs) led by a national reference laboratory (stablishing nationwide public policies) coordinated by an international organism (guiding toward global diseases elimination) is an example of virological surveillance, disease control and prevention in the Americas. Most important, is an example of sanitary shielding and health security in our region. This is the real wall we must be building at all times, a wall that protects not a wall that divide us.

“The content of this article reflects only the opinion of the author”.

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