

Measles Eradication in Bolivia

María del Rosario Dávalos Gamboa*

University of San Simon, Bolivia

*Corresponding author: María del Rosario Dávalos Gamboa, University of San Simon, Bolivia, Email: rosariodavalos@hotmail.com

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Commentary

In the Plurinational State of Bolivia, many efforts were made to prevent the spread of measles, until finally measles eradication was achieved, for which since the 1970s, there was a great effort to control the spread of measles [1], because it had one of the highest rates of measles mortality among children under 5 in Latin America. This effort has included training and monitoring in combination with national immunization programs and other organizations such as the World Health Organization and The Pan American Health Organization. Since 1979, in Bolivia, to control the disease, has used the vaccination strategy against measles in the framework of the Expanded Program on Immunization (EPI) for all children from 12 to 23 months years old, who were given an attenuated dose in vivo as part of immunization in childhood [2]. To preserving the collective immunity and prevent outbreaks of measles, the vaccination coverage rate should be between 83 and 95% [3]. In this range, the spread of measles is unlikely to be from person to person. When a large proportions of the community is vaccinated against contagious diseases, the endemicity of the disease decreases.

In 1992, there was the largest epidemic in the last 10 years with the registration of 4,937 cases. In 1994, a national vaccination campaign was carried out targeting children less than 15 years of age and reached vaccination coverage of 96% [4]. In 1995 and 1997, cases of measles were reduced, although routine coverage was quite low (<90%), there was a national epidemic between 1998 and 2000 that involved 2,567 people, most of whom had not been vaccinated [5]. In 1999, the second generation of PAI introduced some new vaccines (DTP-Hib-HepB) and was replaced by others, such as measles, triple viral (measles, mumps and rubella); at the end of the year, a national vaccination campaign was carried out, with which the optimal coverage rate was not achieved, there were areas with low coverage; and only 122 cases of measles were confirmed in 2000 [6]. The official immunization coverage rate decreased drastically from 99% in 2000 to 79% in 2010 [7]. Since 2002, Bolivia has not reported any cases of measles to the World Health Organization.

In May 2010 we did an investigation called, Measles in Bolivia: a "honeymoon period", in children from 5 to 16 years old in Cochabamba, Bolivia, in conclusion, this study found a high prevalence of susceptibility to measles in Bolivian children.

Therefore, it is possible that collective immunity has not been established and that some outbreak occurs. The authorities should correct this situation before the endemic transmission of measles occurs at the national and regional levels, and there is an urgent need to carry out more sero-prevalence studies in the region [8]. Despite the recommendation made with the results of this research, the Health Ministry of Bolivia, in December 2010, sent a report to the World Health Organization on the situation of measles in the country, to obtain the certification "Bolivia free of measles" However, the agency requested Bolivia to vaccinate all children under 5 years of age.

For the total control of measles in Bolivia, 2 vaccination campaigns were carried out in 2011 and 2012, with both campaigns achieving a coverage of 95% [9], which allowed maintaining collective immunity and preventing outbreaks of measles. In 2012, the Pan American Health Organization (PAHO) declared Bolivia free of measles virus, considering that no measles disease has been registered since 2002 [10]. Since 2012 there was a good coverage in MMR vaccination doses (measles, mumps, rubella), which protects children against measles, but every year there were small groups of children who did not access the doses, either by religion, culture or lack of interest [11] that made children not vaccinated for any reason, are exposed to the disease. The World Health Organization had planned to eliminate measles in the Americas until 2016, but it produced an outbreak in the United States at the end of 2014 and its expansion to Canada, Mexico, Brazil and Chile had to change the health emergency in the area of South America [12]. One death was reported in the USA. Given the possible presence of the virus in Bolivia after 15 years of not having confirmed any case, the Ministry of Health conducted a vaccination campaign against measles, rubella and mumps on November 29, 2015 called "measles farewell", in which they achieved up to 85% coverage of children between 2 and 5 years in the country, Campaign that in the departments of Santa Cruz and Beni could not reach the goal set by the Ministry of Health, due to weather conditions [13]. With the threat of spread and low immunization achieved in this vaccination campaign, vaccination continued in Bolivia, especially in the departments where vaccination coverage was not achieved.

In April 2016 Dávalos et al. [8], concluded, that in Bolivia because it is not certain to have a vaccination coverage rate of 95%, there

is a possibility that the virus enters to the territory, since there is no total control, an outbreak could occur in unimmunized children who are still at risk of contracting this disease that in previous years has caused the death of many infants, therefore immunization of all children susceptible to this disease has not been completed [14]. And because there was no certainty of having the protection vaccination coverage rate, in November 2016 mass vaccination was carried out, with the motto "Goodbye to measles with vaccination", the vaccination campaign that began on November 6 was extended until November 29 with the 96% vaccination coverage rate reached [15]. In January 2017 (PAHO / WHO Bolivia), the Health Minister of Bolivia, Ariana Campero Nava, received the Certification of the Elimination of Measles by the Pan American Health Organization (PAHO) [16] Which they declared free of measles in Bolivia and all South America.

In conclusion, in Bolivia since the 70s and after many years of immunization campaigns to control measles, it was achieved that no measles disease has been registered since 2002 until these days. And at the beginning of the year 2017 measles eradication was finally achieved, since the adequate coverage rate was obtained to prevent the spread of measles, an aspect for which it received the Certification of the Elimination of Measles by the Pan American Health Organization (PAHO) and the World Health Organization (WHO). Although it is important to mention that all children susceptible to contracting to contract measles must be always vaccinated, to avoid the honeymoon period and this disease remain eradicated in Bolivia.

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