

# MEASLES

## Pre-decision Brief for Public Health Action

Haiti ■ Feb 2010

### Key Recommendations

- Indigenous measles is considered eliminated from the Americas. Thus, the risk for an outbreak is probably low. The highest public health priorities should be adequate shelter, safe water and improved sanitation, nutrition, outbreak surveillance, and reestablishment of primary care.<sup>1</sup> Maintaining camp size at a population of less than 10,000 would reduce the risk of a measles outbreak. Providing improved water, sanitation, and adequate nutrition might reduce the severity of cases if a measles outbreak occurs.
- Since a measles outbreak would arise from importation, persons traveling to Haiti to assist in relief efforts should have evidence of measles vaccination, laboratory evidence of immunity, confirmation of prior disease, or should have been born before January 1, 1957 (as evidence of naturally acquired immunity).
- Fever/rash surveillance should be strengthened and all suspected measles cases should be investigated within 48 hours, with testing at the National Public Health Laboratory (LNSP) or through the PAHO lab network. Any confirmed measles case should trigger more extensive surveillance and development of an aggressive outbreak response strategy based on WHO recommendations.<sup>2</sup> All confirmed cases should receive comprehensive care.
- Where logistically feasible, measles-rubella vaccine (MR) and vitamin A should be provided to high-risk populations (e.g., children 9 months to 6 years of age) to reduce the pool of susceptible persons over the next 2–4 weeks. With the current immunization campaign, relevant technical organizations should monitor progress, estimated coverage, and injection safety. The vaccination plan should be reevaluated after completing vaccination activities in the temporary settlements and before implementing additional activities for broader population groups. Improving routine immunization and communicable disease surveillance systems should be a long-term goal of reconstruction activities.

### 1. What was the situation in Haiti prior to the earthquake?

- In 2000–2001, a measles outbreak occurred in Haiti with 1,149 confirmed cases; the majority occurred in unvaccinated children less than 10 years of age. No cases of measles have been confirmed in Haiti or the Dominican Republic since 2001. Indigenous measles has been considered eliminated from the Americas since November 2002.
- Haiti has a case-based surveillance system for measles/rubella as part of PAHO's comprehensive regional system. In 2009, Haiti reported weekly national data to PAHO. However, a review of the Expanded Programme on Immunization surveillance system in June–August 2009 found that only 40% of departmental sites routinely completed surveillance reports, and departmental completion rates ranged from 0–61% for the study period.
- Haiti introduced monovalent measles (i.e., measles only) vaccine into the immunization program in 1984 with a single dose in children 9 months of age. According to WHO/UNICEF estimates, yearly measles immunization coverage for infants has risen from 21% in 1985 to 58% in 2008. The country switched to MR in 2008.



- Per PAHO guidelines,<sup>3</sup> a measles “catch-up” campaign was conducted in 1994 (9 months to 15 years of age), and “keep-up” campaigns were conducted in 1999 and 2001 (9 months to 5 years of age).
- Another nationwide MR campaign targeting 1- to 19-year-olds was conducted in a phased approach between November 2007 and December 2008. A vaccination coverage survey, conducted with technical assistance from CDC, estimated national coverage at 79%. Coverage in the departments primarily affected by the earthquake was as follows: 73% in the West, 78% in Port-au-Prince, and 89% in the South-east. Coverage in these departments was relatively uniform across age groups: 77% among children 1–5 years of age and 80% among persons 6–19 years of age.

## **2. What is the likelihood of cases/outbreaks of this disease developing in the near future?**

- Infants are usually protected by maternal antibodies until 6–9 months of age. The proportion of infants who are protected by a dose of measles vaccine varies slightly by age at the time of vaccination: 85–90% at 8–9 months, 95% at 11–12 months, and more than 95% at 13 months of age or older. Since some infants fail to respond to their first dose, WHO currently recommends that all children receive two doses of measles-containing vaccines (MCV);<sup>5</sup> receiving more than two doses of vaccine, however, is not harmful. Immunity is thought to be lifelong.
- Due to gaps in measles vaccine coverage, the population remains at risk for outbreaks stemming from imported cases; however, the risk for an outbreak is probably low. The size of the susceptible pool depends on a number of variables, including prior vaccine coverage, vaccine effectiveness, nutrition status, and crowding. The primary risk would be among infants and young children, especially those in crowded temporary settlements who have not been vaccinated or who did not attain immunity following their first dose.

## **3. Should an outbreak occur, how would it be detected?**

- Since measles has been eliminated in Haiti, one case of measles would be considered an outbreak. Ministry of Health (MOH) officials and staff from a variety of international organizations, including CDC, have established an emergency sentinel surveillance system, with daily reporting from primary care clinics using a standard case definition (e.g., fever, rash, and cough, coryza or conjunctivitis; see [http://whqlibdoc.who.int/hq/2001/WHO\\_V&B\\_01.43.pdf](http://whqlibdoc.who.int/hq/2001/WHO_V&B_01.43.pdf)).<sup>3</sup> Any suspect case should be investigated within 48 hours, with blood samples sent to the LNSP or the Caribbean Epidemiology Center (CAREC) laboratory for confirmation.<sup>3</sup>
- Due to the multitude of small clinics established in the earthquake zone, surveillance activities remain incomplete. As of February 14, an average of 25 of the 51 sentinel sites had been reporting daily. Regular coordination meetings of all health NGOs provide additional opportunity for reporting. All providers are instructed to notify the MOH immediately of any suspected measles case.
- No confirmed measles cases have been reported to date. As of February 19, seven suspected cases of measles have been reported, four from Port-au-Prince and three from the city of Jacmel. Four were judged not clinically consistent with measles, and sera from the other three were measles IgM-negative.

## **4. What options for public health action should be considered in the event of an outbreak?**

- If even one case of measles is confirmed, an intensive investigation will be conducted to search for other cases in the surrounding community, especially among recent contacts. Provision of vitamin A and treatment of comorbidities can reduce measles mortality. Public health experts should rapidly evaluate the situation to determine appropriate age groups and priority areas for immunization. This evaluation should include an analysis of prior coverage data, if the population of the affected area had been recently vaccinated.<sup>2,3,4</sup>
- A number of live, attenuated measles vaccines are available, either as monovalent (measles only) vaccine, in combination with rubella vaccine (MR), or in combination with mumps and rubella vaccine (MMR). Internationally available measles vaccines, prequalified by WHO and procured through UNICEF, are safe and effective.

- Given the low but possible risk of a measles outbreak, the MOH is coordinating with PAHO, WHO, UNICEF, and various NGOs to conduct a post-disaster campaign to vaccinate children 9 months to 6 years of age with MR and provide them with vitamin A. Sites are prioritized by population size. Monitoring is taking place to provide rapid estimates of vaccine coverage. Vaccination is scheduled to occur in two phases: (1) in temporary settlements and then (2) in broader affected areas once the situation has stabilized. Separate vaccination posts for children and adults should be provided in temporary settlements when vaccination is provided to multiple age groups. Wider vaccination efforts are supported as long as they are logistically feasible, can be administered safely, and do not divert needed resources from other key public health priorities, such as water, sanitation, and primary health care.
- Local conditions will dictate the specifics of individual vaccination campaigns; however, campaigns should follow the guidelines developed for such disaster situations by PAHO and WHO.<sup>2,4</sup> Special attention should be given to injection safety.

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## References

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