Case definition: Measles

- Rationale for Surveillance
- Recommended Case Definitions
- Recommended Surveillance Measures
- Recommended Minimum Data Elements
- Principal Use of Data for Decision-Making
- Main Surveillance Indicators

Rationale for Surveillance

Introduction (Updated May 2003):
In 1994, the Pan American Sanitary conference established the mutual goal of measles eradication from the Western Hemisphere by the year 2000. Great progress has been made towards interrupting measles transmission in the Americas. As of May 2003, the Western Hemisphere the Americas has sustained six consecutive months without indigenous transmission of measles in the Western Hemisphere. This is a result of intensified vaccination efforts guided by surveillance activities and the active search of cases. The full implementation of PAHO's recommended vaccination for measles eradication remains the cornerstone of the efforts in interrupting indigenous measles virus transmission in the Americas.

Surveillance:
Measles surveillance is critical for measuring progress towards the goal of measles eradication in the Americas and for detecting problem areas. Efforts that are urgently needed to improve the quality of measles surveillance throughout the Region include:

- All suspected measles cases should be investigated within 48 hours of illness onset, and a serum sample should be collected from the patient upon initial contact with the health provider. This sample must be collected within 30 days of rash onset to be considered adequate;
- To monitor progress toward the achievement of measles eradication, all countries should provide data on a weekly basis to the Region-wide measles eradication surveillance system (MESS)
- Each country should periodically have its measles surveillance system objectively evaluated using the standardized evaluation protocol developed by PAHO. Countries should constantly work to improve the quality of the reporting system;
- Virologic surveillance and molecular epidemiology can provide important information to an eradication program. Appropriate clinical specimens for viral isolation should be obtained from every chain of measles transmission, including all sporadic cases and approximately 5-10 cases from every outbreak. Urine, the most practical specimen to collect for measles virus isolation, should be obtained within 7 days of rash onset and forwarded to a reference laboratory capable of performing measles virus isolation;
- In all countries, measles and rubella surveillance should be integrated.

- In the case of laboratory-confirmed rubella or dengue outbreaks, the total number of samples that are negative for either rubella or dengue might be overwhelming. In such a case, the surveillance team, in conjunction with the laboratory, should decide which samples to test for measles.

Investigation and reporting:

- The reporting system must cover health facilities, private practitioners, hospitals and laboratories and have at least one reporting source for every geopolitical unit;
- Written material should be provided to all health personnel describing their responsibilities and how to report cases, collect samples and send them for laboratory confirmation;
- Investigation of all suspected cases should take place within 48 hours of rash onset. It should include:
    - Filling the case report form,
    - Investigation of contacts of the suspected case to determine if other cases have occurred,
    - Taking blood samples and samples for viral isolation (usually urine) from all sporadic cases and from 5-10 cases from each outbreak.
- Weekly reporting of data, even in the absence of cases, is critical;
- Timely feedback to all participants of the surveillance system, keeping them informed of where and when cases are occurring, is essential;
- The reporting system must be monitored monthly using the surveillance indicators;
- Cooperation from the private medical community by reporting suspected cases to the system is essential for all surveillance efforts.

Recommended minimum data elements

Case-based data (to be linked using the unique identifier to specimen-based data for analysis): (I) unique identifier; (II) geographical area (district and province); (III) name; (IV) date of birth; (V) date of rash onset; (VI) date of notification; (VII) date of case investigation; (VIII) date of specimen collection; (IX) date when specimens were sent to the laboratory; (X) number of doses of measles-containing vaccine received; (XI) date of last doses of measles-containing vaccine; (XII) if source of infection was identified; (XIII) results of serology; (XIV) results of viral isolation; (XV) final classification; (XVI) name of investigator. See attached Measles-Rubella case report form.

Specimen-based data (to be linked to case-based data for analysis): (I) unique identifier (MESS number when available); (II) specimen number; (III) date of rash onset; (IV) date of blood (or urine, or nasopharyngeal secretion) specimen collection; (V) date specimen sent to laboratory; (VI) date specimen received in laboratory (VII) results of serology; (VIII) results of viral isolation.