



Pan American Health Organization



*Regional Office of the
World Health Organization*

Surveillance Performance Indicators: Outbreak size

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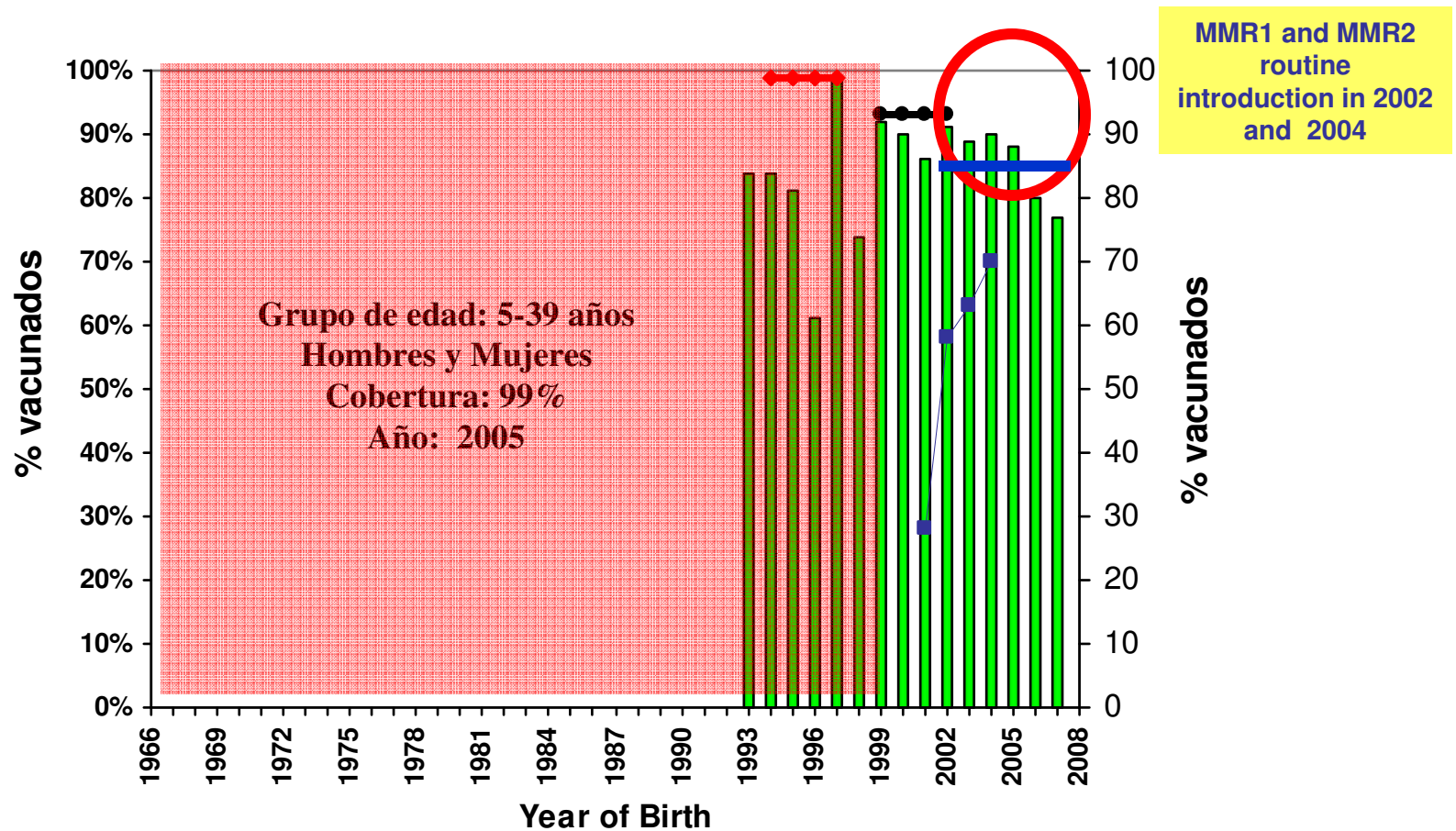
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Difficulties to establish an outbreak size indicator

- The entry of the measles virus to a measles- free area
 - High population density
 - Low population density
- Accumulation of susceptible in the area where measles virus has entered.
- Measles outbreak rapid response.
- Population size should be considered when calculating the indicator.

Streamlining Vaccination Interventions to Ensure the Protection of Populations, Paraguay 1966-2008



■ Routine Program
 ◆ FU 1998 (1-4)-MCV-99%
 ● FU 2003 (1-4)-MR-91%
 ■ 2nd dose (4y)

Follow up campaign 2009: 1-8 years old

Source: Country report to PAHO/WHO



Country	Imported	Import-related	Ratio of imported to imported related cases	Source of origin
2008: secondary cases in a range of (0-52) by imported case				
Canada	8	53	6.62	France, India, Israel, Morocco, Pakistan and Switzerland
United States**	24	102	4.25	Belgium, China, Germany, India, Israel, Italy, Philippines, Switzerland, Russia, UK and Vietnam
Jamaica	1	1	1	UK
Ecuador	1	0	0	Italy
Peru	1	0	0	India
2009*: secondary cases in range of 0-15 by imported case				
Canada	4	10	2.5	Belgium, China, France and UK
Argentina	1***	2	2	UK
	1	0	0	UK
United States**	29	29	1	Cape Verde, China, France, India, Italy, Philippines, South Africa, Vietnam and UK
Chile	1	0	0	France

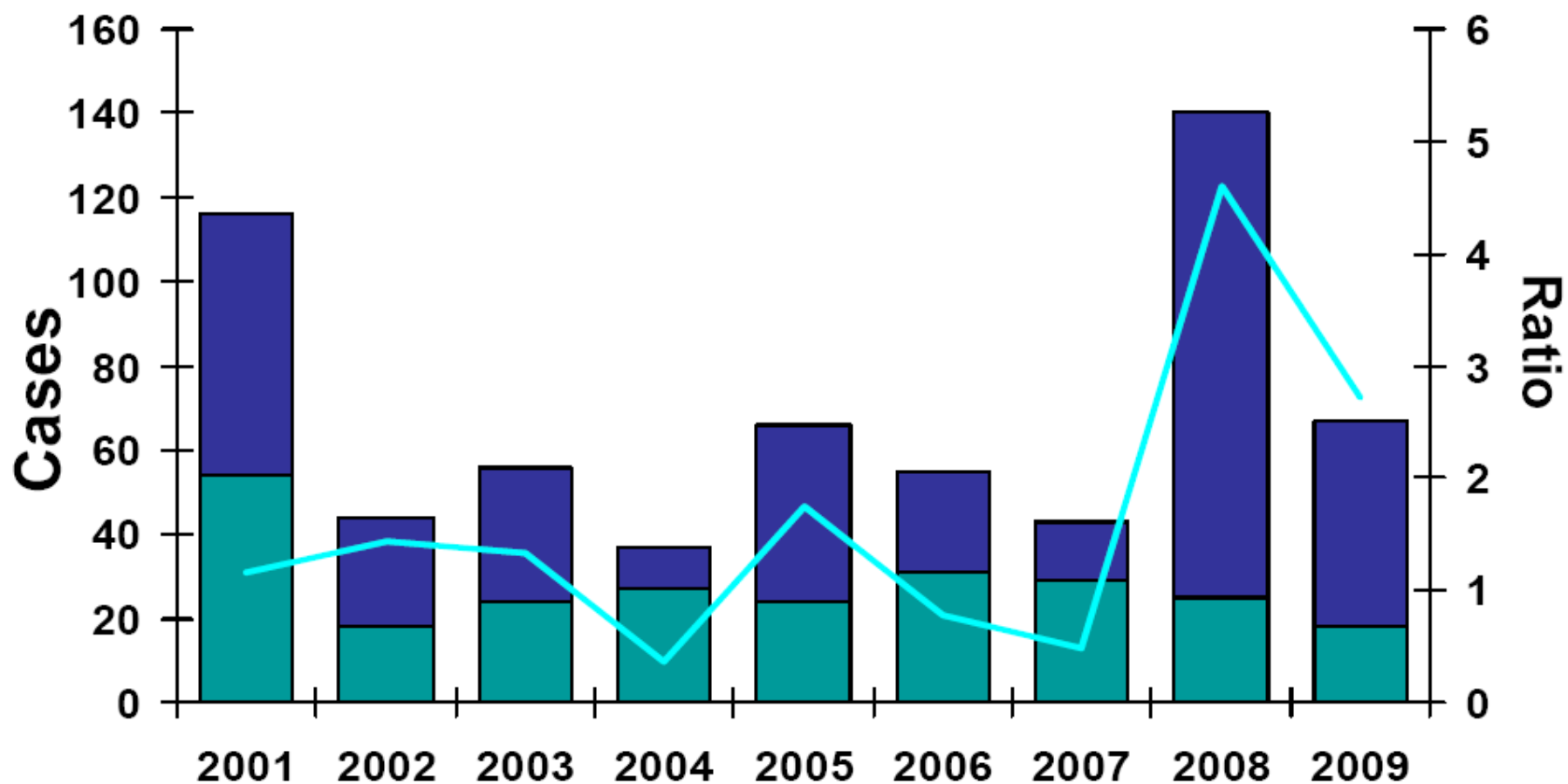
*Data until EW 38/2009.

**In 2008, the United States reported 14 cases and in 2009 10 cases with unknown source.

*** Case corresponded to EW 51/2008; secondary cases appeared in EW 2/2009.

Source: Country reports to PAHO/OMS

Ratio of Non-imported to Imported Cases, U.S., 2001-2009*



■ Total non-imports ■ Total imports — Ratio of Non-Imports to Imports

*2009 data through Aug 1

Source: Paul Rota/CDC

Preparation and rapid response to measles outbreaks

The essential pillars of an effective response to prevent the spread of a measles virus importation:

- ✓ High-quality surveillance system for the early detection of imported cases.
- ✓ High level of population immunity obtained through routine program and supplementary immunization activities.
 - Continuous monitoring of vaccination coverage and the accumulation of susceptible

National Plans for Preparation and Rapid Response to an Importation

Best practices in measles outbreak response

- The early detection of cases facilitates timely outbreak investigation and control allowing for the implementation of vaccination strategies in places of case exposure, among contacts during the period of transmissibility and in places commonly frequented by potential contacts:

Get ahead of the virus

- Implementation of vaccination activities, while conducting contact tracing; these activities should conclude with rapid coverage monitoring to ensure the achievement of the goal.
- Implementation of active search, necessary for the timely detection of suspect cases in silent areas.

Best practices in measles outbreak response (2)

Measles outbreaks in the post elimination era require the follow up of international contacts cross the Region of the Americas.

