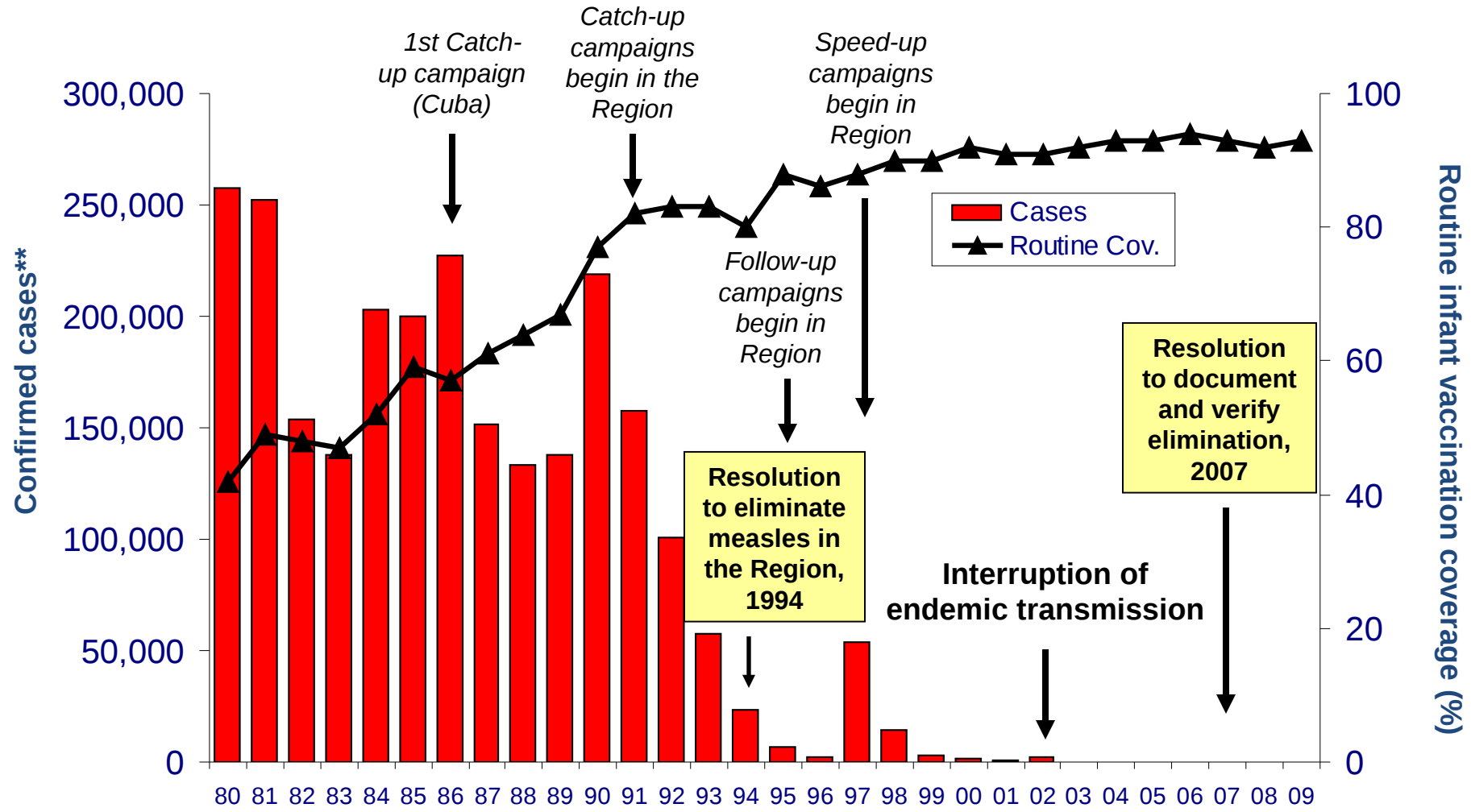


# **Status of the Documentation and Verification of Measles, Rubella and CRS Elimination in the Caribbean Sub-region**

**Dr. Abdel Malik Hashim, MD, MPH, MFPH  
Immunization Consultant, PAHO/WHO-CAREC  
11th Meeting of Caribbean National Epidemiologist and Laboratory  
Directors  
Hyatt Regency Trinidad Hotel, Port of Spain, Trinidad and Tobago, 9-13  
May, 2011**

# Routine MCV1 Coverage and Measles Elimination Campaigns, the Americas, 1980-2009



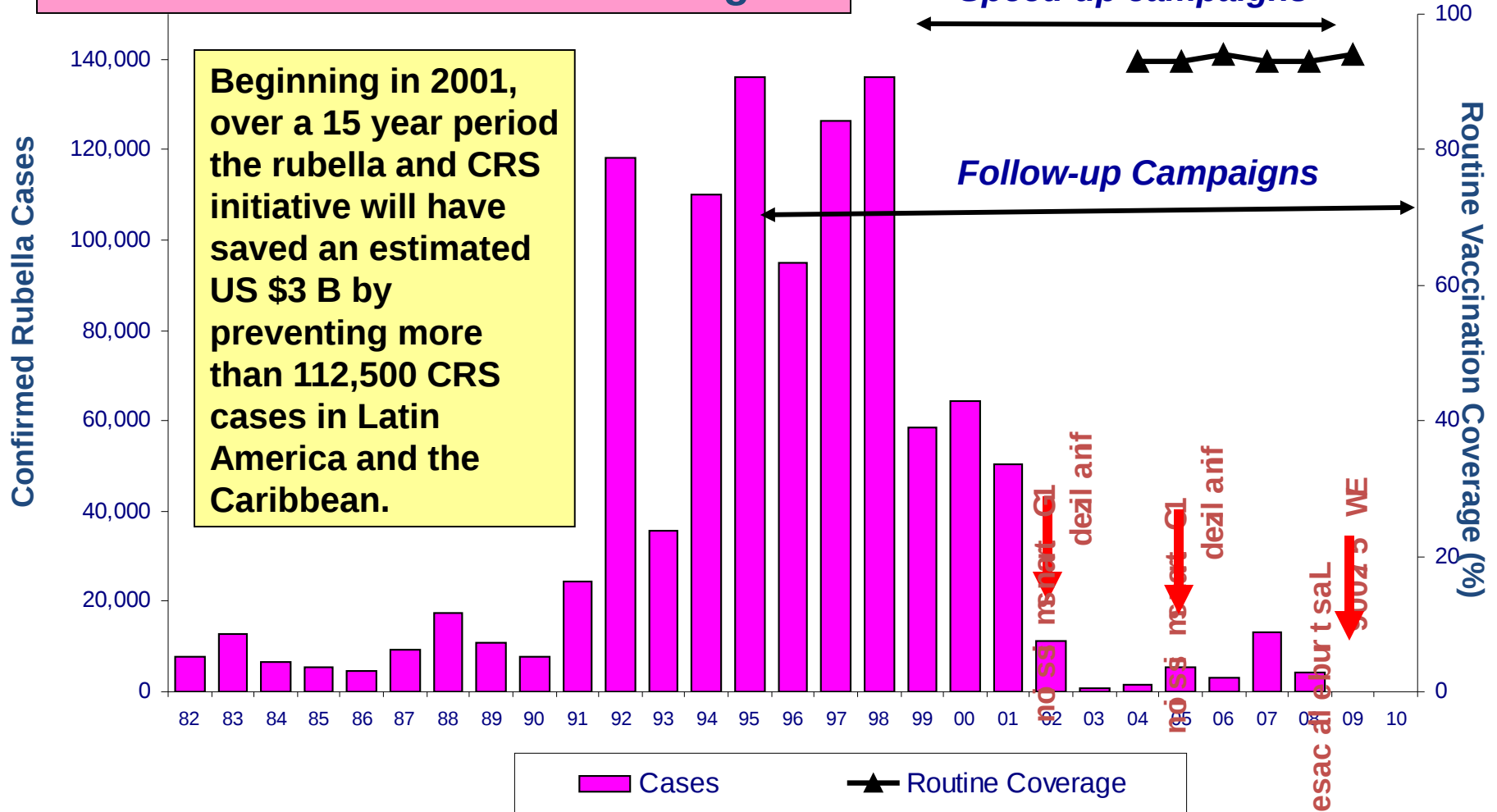
**During the period 2000-2020, the measles elimination program in the Americas will have prevented 3.2 million cases of measles and 16,000 deaths, saving US\$ 208 million in treatment costs.**

\*Data until EW 52/2009. \*\*Prior to 1995, reported cases.  
Source: Country reports to PAHO.



# Rubella Elimination in the Americas, 1982-2010\*

22 months without confirmed endemic rubella cases in the Region.

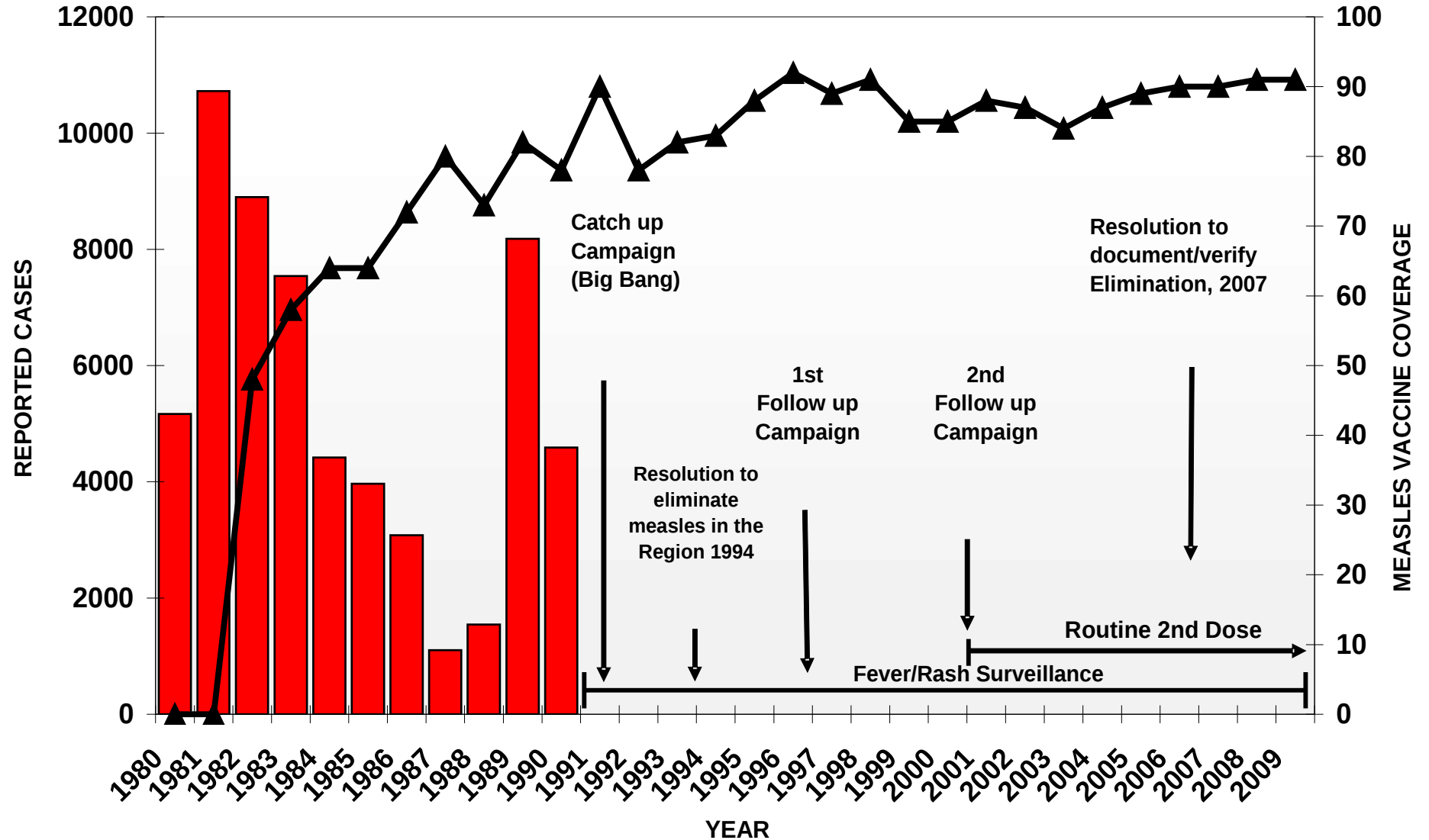


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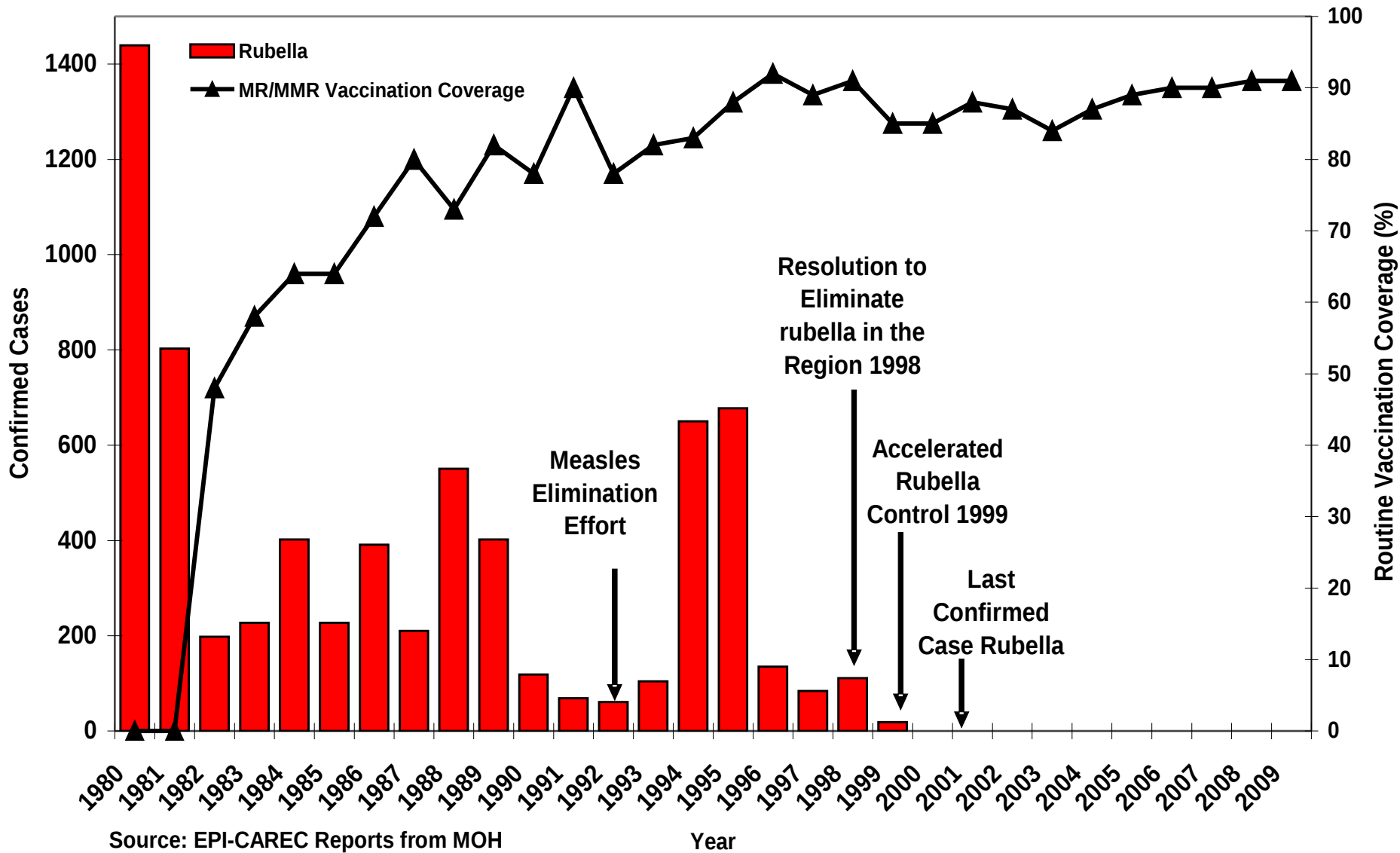
Source: Country reports to PAHO/WHO.  
\*Data until EW 47/2010.

# Routine MCV1 Coverage/Measles Elimination Campaigns, English-speaking Caribbean and Suriname, 1980 - 2009



■ No. of Confirmed Measles Cases
 ▲ Measles Vaccine Coverage

# Rubella Elimination in the English-speaking Caribbean and Suriname, 1980-2009



# Resolution CSP27.R2



PAN AMERICAN HEALTH ORGANIZATION  
WORLD HEALTH ORGANIZATION



27th PAN AMERICAN SANITARY CONFERENCE  
59th SESSION OF THE REGIONAL COMMITTEE

Washington, D.C., USA, 1-5 October 2007

CSP27.R2 (Eng.)  
ORIGINAL: ENGLISH  
5 October 2007

## RESOLUTION

CSP27.R2

### ELIMINATION OF RUBELLA AND CONGENITAL RUBELLA SYNDROME IN THE AMERICAS

#### THE 27th PAN AMERICAN SANITARY CONFERENCE,

Having considered the progress report presented by the Director on the elimination of rubella and congenital rubella syndrome (CRS) in the Americas (Document CSP27/7);

Noting with satisfaction that tremendous progress has been achieved in obtaining the interruption of endemic rubella virus transmission, thus reducing the number of rubella cases in the Region by 98%, and that incidence is at its lowest to date in the Americas; and

Recognizing that considerable efforts will be needed to support and reach the elimination goal by 2010, requiring further commitment on the part of governments and the partner organizations that are collaborating on the elimination initiative, and the strengthening of ties between public and private sectors,

#### RESOLVES:

1. To congratulate all Member States and their health workers on the progress achieved to date in the elimination of rubella and congenital rubella syndrome (CRS) in the Americas, which demonstrates their level of commitment to the health of the population of the Western Hemisphere.
2. To express appreciation and request continued support from the various organizations that, together with PAHO, have offered crucial support to national immunization programs and national endeavors to eliminate rubella and CRS, including the U.S. Department of Health and Human Services Centers for Disease Control and Prevention, the Canadian International Development Agency, the Global Alliance for Vaccines and Immunization, the Inter-American Development Bank, the International Federation of Red Cross and Red Crescent Societies, the Japanese International Cooperation Agency, the March of Dimes, the Sabin Vaccine Institute, the United Nations Children's Fund, the United States Agency for International Development, and the Church of Jesus Christ of Latter-day Saints.
3. To urge all Member States to:
  - (a) Achieve the elimination of rubella and CRS in the Americas by finalizing the implementation of vaccination strategies, intensifying integrated measles/rubella surveillance, and strengthening CRS surveillance;
  - (b) Establish national commissions to compile and analyze data to document and verify measles, rubella and CRS elimination, for review by an expert committee.
4. To request the Director to:
  - (a) Continue efforts to mobilize additional resources necessary to surmount the challenges described in the progress report;
  - (b) Form an Expert Committee responsible for documenting and verifying the interruption of transmission of endemic measles virus and rubella virus.

(Second plenary meeting, 1 October 2007)

## Urges all Member States to:

- ✓ the establishment of national commissions to compile and analyze data to document and verify measles, rubella and CRS elimination, for review by an expert committee.

## Requests the Director:

- ✓ the formation of an International Expert Committee to be responsible for documenting and verifying the interruption of endemic measles virus and rubella virus transmission in the Americas.

1. Establish concepts and criteria, provide methodologies, and identify required data elements to document the interruption of endemic transmission in the Americas.
3. Standardize the verification process in countries of the Region to facilitate the collection of required documentation for review by the International Expert Committee.

**Plan of Action:  
Documentation and  
Verification of  
Measles,  
Rubella, and  
Congenital Rubella  
Syndrome Elimination  
in the Region of the Americas**

Family and Community Health  
Comprehensive Family Immunization



**The regional Plan of Action was endorsed by the members of the Technical Advisory Group on Vaccine-preventable Diseases during the XVIII meeting in San Jose, Costa Rica in August 2009.**

Caribbean Working Group Meeting, July 2010, Barbados





# Barbados Working Group Meeting, 26-30 July 2011

- Develop template for draft report
- Guidelines for chapters on:
  - Epidemiology of measles, rubella, and CRS
  - Quality of Surveillance of measles, rubella, and CRS
  - Vaccinated population cohort
  - Sustainability of the immunization programs
  - Others
- Prepared questionnaires to interview: pediatricians, obstetricians/gynecologists; ENT specialists, Ophthalmologists, cardiologists, schools for special needs children, ..etc.
- Nominated the Caribbean Sub-region Commission members and prepared a term of reference

# **Caribbean Sub-region Commission Members**

- **Commission members**

1. Mr. Henry Smith, Belize,  
PAHO-CAREC  
Immunization Advisor  
(retired)
2. Prof. Peter Figueroa,  
Jamaica, Public Health

# Caribbean Sub-regional Commission for Documentation and Verification of Measles, Rubella



## Term of Reference of the Caribbean Sub-regional Commission

- To meet and review what has been put forward – guidelines, timelines, etc.
- Commission should meet to ratify - the prepared guidelines for the countries, - the procedure put together re assessment – all documents produced by the working group meeting.
- Oversee the process for documenting and verifying the achievement of elimination of the countries.
- Receive and review the final reports submitted to the assessment/review team for each country. *If clarifications are needed, it is sent back to the MOH.*
- The Commission to provide feedback to the countries regarding the status of the reports.
- Conduct field visits to the countries as deemed necessary.
- Prepare and submit the Final Report for the sub-region.
- After finalization of the report, to submit to WDC. CAREC (Secretariat)

# Documentation and Verification of Measles, Rubella, and CRS in the Americas



## Members of the International Expert Committee

- ❖ Louis Cooper
- ❖ Merceline Dahl-Rejis
- ❖ José Ignacio Santos
- ❖ Walter Orenstein
- ❖ Isabel Pachón
- ❖ Natasha Crowcroft
- ❖ José Cassio de Moraes

The first annual meeting of the International Expert took place at PAHO HQ on 9-10 December 2010.

The second meeting

**34 countries and 3 territories (FRA, HOL, UK) have established national/subregional\* commissions.**

\*The English & Dutch-speaking Caribbean has established a subregional commission.

# Definitions of Elimination

## *Definition of Measles Elimination*

**Interruption of endemic measles virus transmission in all the countries of the Americas for  $\geq 12$  months, in the presence of high-quality surveillance.**

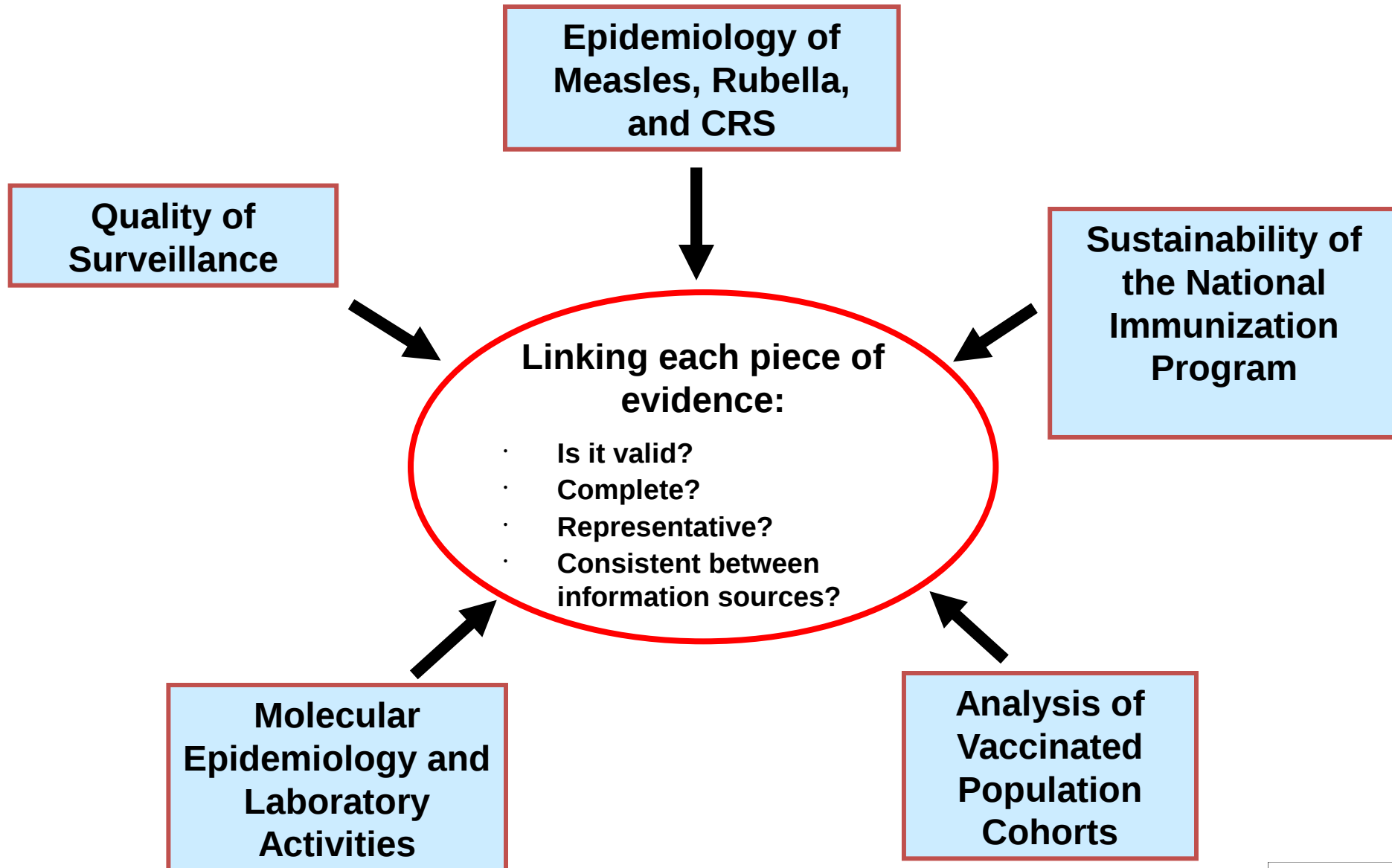
## *Definition of Rubella Elimination*

**Interruption of endemic rubella virus transmission in all the countries of the Americas for  $\geq 12$  months without the occurrence of CRS cases associated with endemic transmission, in the presence of high-quality surveillance.**

**Source:** PAHO. 16th Meeting of the PAHO Technical Advisory Group on Vaccine Preventable Diseases. EPI Newsletter 2004;26(6):1-7.

PAHO. Meeting of Experts to Discuss the Essential Data Elements for the Regional Plan of Action for Documenting the Interruption of Endemic Measles and Rubella Transmission in the Americas. August 28-29, 2008. Washington, DC.

# Documentation and Verification Components



# Essential Criteria of Elimination

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- **Verify the interruption of endemic measles, rubella and CRS cases in all countries of the Americas for a period of at least 3 years from the last known endemic case, in the presence of high-quality surveillance: *zero cases of endemic transmission.***
- **Maintain a high-quality surveillance system sensitive enough to detect imported and import-related cases.**
- **Verify the absence of endemic measles and rubella virus strains through viral surveillance in the Region of the Americas.**



# Roadmap for Documenting and Verifying Measles and Rubella Elimination



**Final country reports should be submitted to the IEC by December 2011**

Eight (8) countries/territories draft reports were submitted to the Caribbean Sub-region Commission – they are being reviewed and comments and feedback are being provided

# Countries Draft Reports Received by

the

- St. Kitts/Nevis
- Antigua/Barbuda
- Grenada
- Anguilla
- BVI
- Montserrat
- Dominica
- St. Vincent

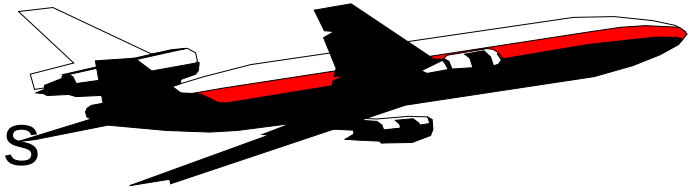
CAREC

Caribbean Sub-regional Commission &

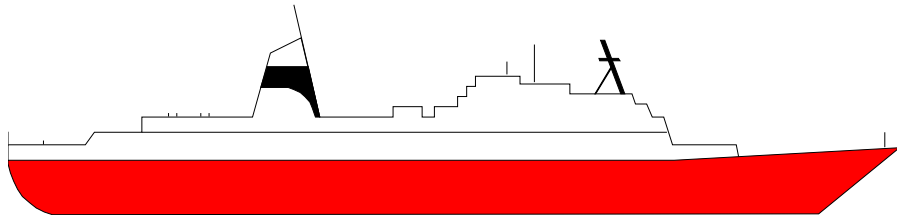
# Caribbean Travel and Tourism, 2009\*

- In addition to the resident population the Caribbean hosts a large transitory population.

- 15.3 million stay-over arrivals
- 14 million cruise-ship arrivals



- Risk of diseases/EIDs increase



\* Partial figures to November 2009.

# Importation of measles and rubella cases challenge

- According to the World Tourism Organization, about:
  - 190 million visitors come to the Americas, mostly by planes
  - World Air Traffic (see the slide)

# Reported Measles Cases in the Americas, 2011\*

**TOTAL CASES**  
Measles: n= 88

**Canada:**  
measles=21

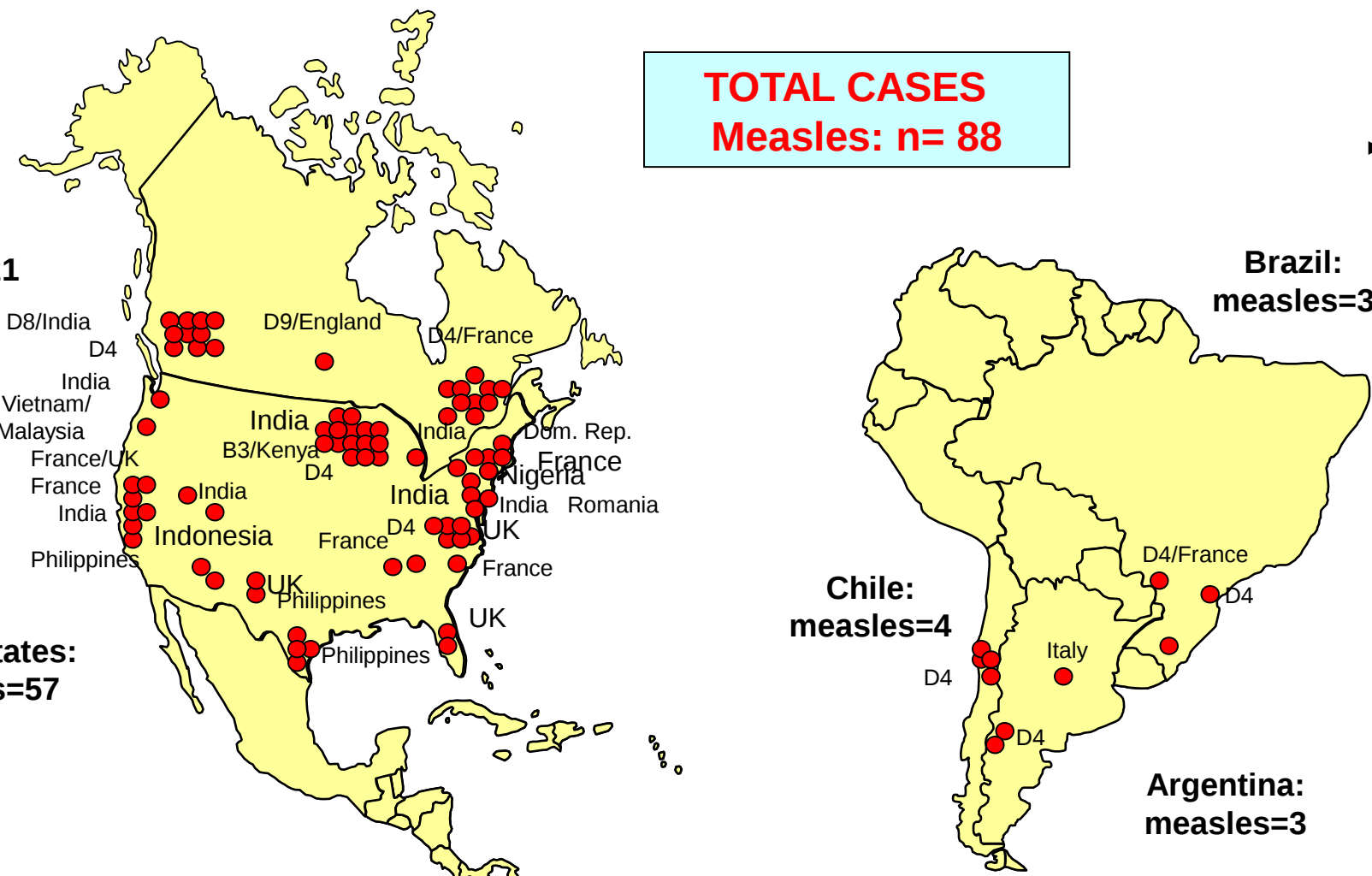
**Brazil:**  
measles=3

**United States:**  
measles=57

**Chile:**  
measles=4

**Argentina:**  
measles=3

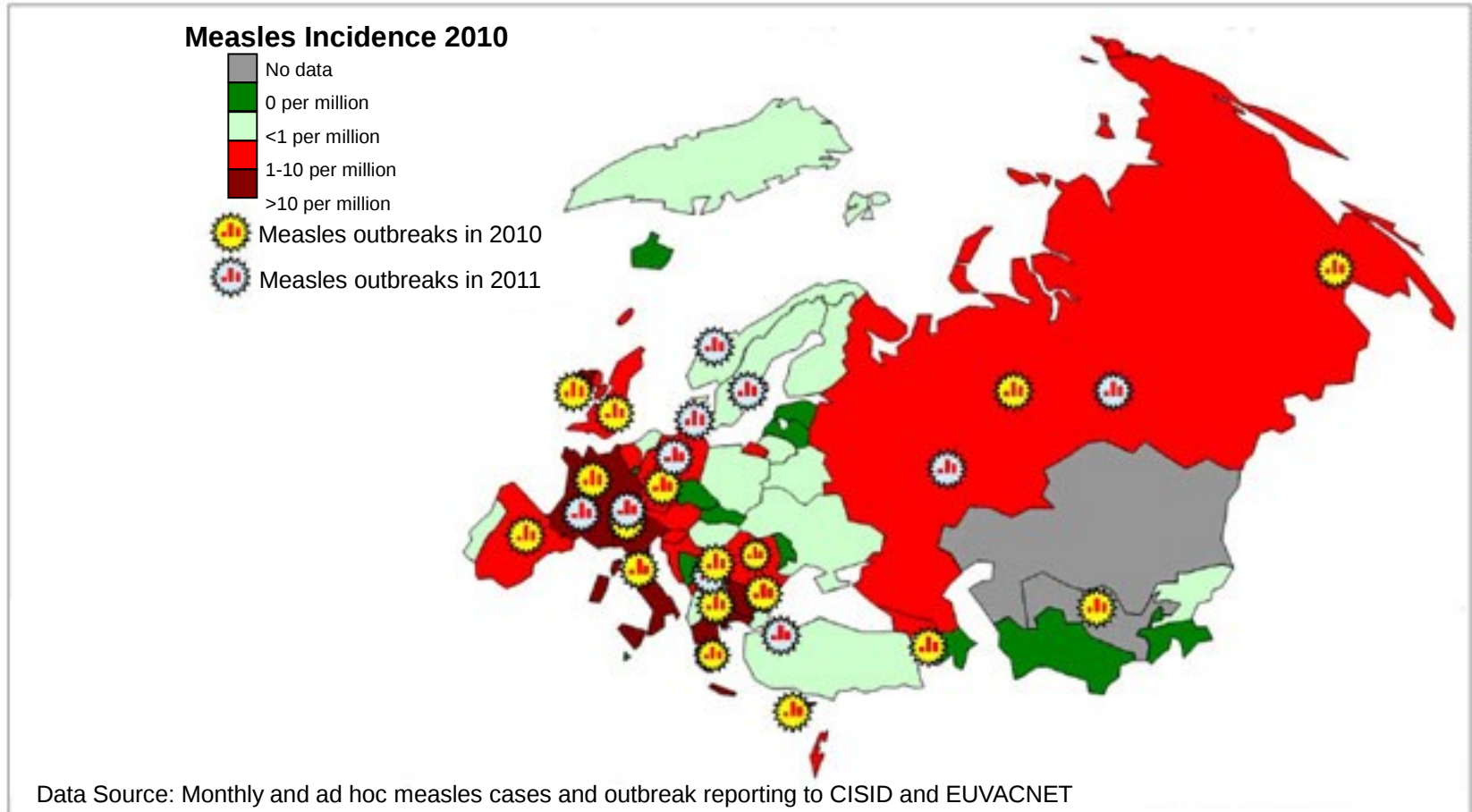
● 1 dot = 1 measles case



Note: Cases were imported, import-related, or of unknown origin.  
\*Data until EW14/2011.

**Source:** Country reports to PAHO, the US Centers for Disease Control and Prevention, and the Public Health Agency of Canada.

# Measles Incidence in 2010 and Measles Outbreaks Between January 2010 and February 2011 European Region



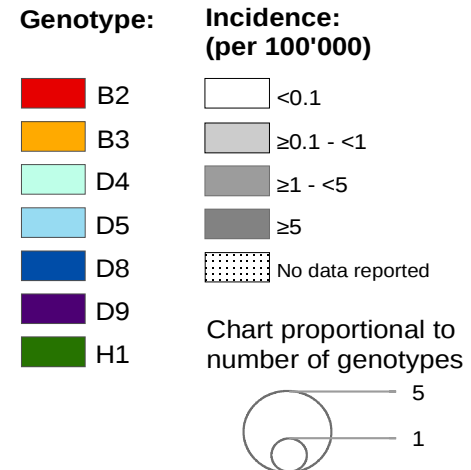
Graph source: EURO/WHO

# Global Measles Genotype Distribution, 2010

## 2010 Distribution of measles genotypes

West Africa inset

West Europe inset

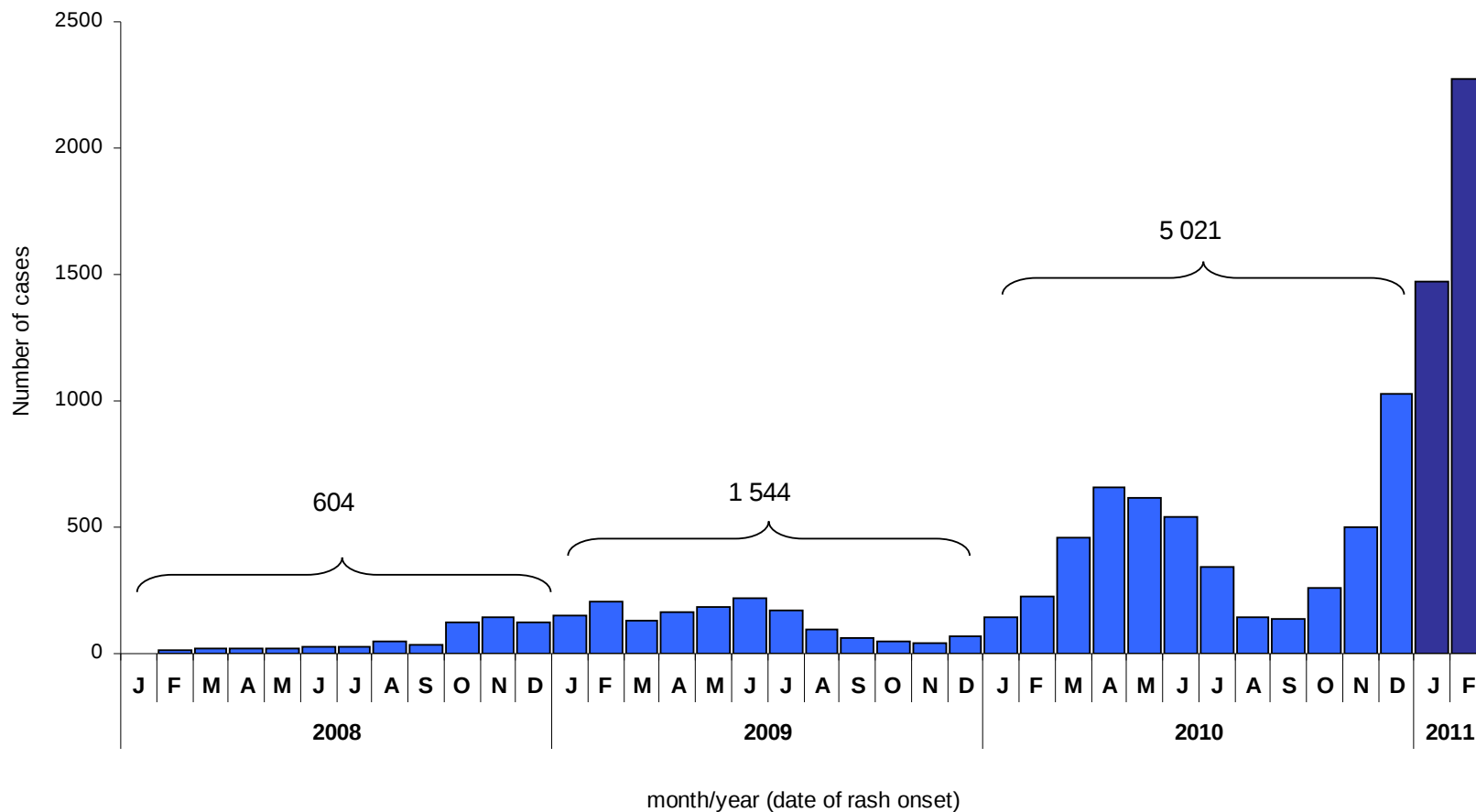


The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.



# Reported Measles Cases, France, 2008-2011\*

3 749



\* Provisional data as of 23 March 2011

Source : mandatory case reporting data – InVS, France. Available at: <http://www.invs.sante.fr/surveillance/rougeole/index.htm>

# Epidemiology/Surveillance

## Units/ National Public Health

- Update all health care workers on the fever rash surveillance and the importance of reporting, with complete case investigation and laboratory forms – especially hot cases (visitors, tourists, residence recently was travelling abroad, ..etc.).

- Strengthen CRS surveillance: by ensuring that all paediatricians, obstetricians, ENT specialist , ophthalmologists, cardiologists

Table 1: Diagnoses to guide hospital review

Diagnoses	ICD-9	ICD-10
Congenital Rubella Syndrome	771.0	P35
Cataract (bilateral or unilateral)	743.3	Q12
Congenital glaucoma		H40
Deafness/Auditory Deficiency	389.1	H90
Patent Ductus Arteriosus	745	Q25.0
Peripheral Pulmonary Stenosis	747	Q25.6
Microcephaly	742.1	Q02
Dermal Erythropoiesis	759.89	P83.8
Meningoencephalitis associated with rubella	323.9,056.01	B06.0, G02.2

# Conclusion (1)

- No un-reported fever/rash cases found during countries visits
- Un-reported number of congenital abnormalities were found during the assessment – most of them are not fitting the case definition for CRS – and most of the children mothers have had their MMR vaccination – few still under investigation.
- MMR vaccine was used in most the opportunities provided to the population cohort of 1- 48 years of age
- All evidence found during the assessment - documented the interruption of endemic measles and rubella viruses due to the early introduction of Measles/MMR vaccine and functioning fever/rash surveillance since end of 1991

## Conclusion (2)

- The CRS surveillance is not functioning as the M/R surveillance system
- The system of reporting the 2nd dose of MMR coverage is not as well developed, there is difficulty in estimating the denominator
- We have to define a systematic way of validating the MMR2 coverage in countries – a school vaccination coverage survey – could be one of the options...

# Acknowledgement

- We acknowledge the work done or being done by all countries MOHs, national epidemiology and surveillance units, National Public Health Laboratories, National Teams for documentations and verification of measles, rubella, and CRS elimination to ensure that draft countries reports are being prepared and submitted on time
- We also acknowledge the positive responses we are getting from all public and private physicians and their associations in answering the documentation questionnaires and sending them to MOHs/CAREC