Lessons Learned and Best Practices of Achieving and Maintaining Measles and Rubella Elimination in the Americas

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Presentation Outline

✓ Update situation of measles in the Americas

✓ Challenges to maintain measles elimination

✓ Next steps
Measles Elimination in the Western Hemisphere

RESOLUTION
CSP24.R16
EXPANDED PROGRAM ON IMMUNIZATION

THE XXIV PAN AMERICAN SANITARY CONFERENCE,

Having considered the progress report presented by the Director (Document CSP24/14 and Add. I) on implementation of the Expanded Program on Immunization and the Plan of Action for the Eradication of Wild Poliovirus from the Americas;

Noting with great pride that transmission of wild poliovirus appears to have been interrupted in the Region of the Americas, insasmuch as no cases have been reported in the past three years, since the detection of a case in Junín, Peru, on 23 August 1991;

Further noting that national and multinational initiatives to eliminate measles are having a major impact in the incidence of this disease, that at the end of 1993 the Region of the Americas reported the lowest number of cases in its history, and that transmission may have been interrupted in several countries or areas (e.g., Chile, Cuba, and the English-speaking Caribbean countries);

Considering that efforts to eliminate neonatal tetanus have been very successful and that the Region has reached the goal set by the World Summit for Children of less than one case per 1,000 live births at the regional level;

Realizing that immunization coverage levels have continued to increase in most of the countries, reaching a regional level of 80% in the last two years for all the vaccines being administered (DPT, polio, measles, BCG, and TT);

Considering that strategies are being developed for controlling hepatitis B and rubella, and that the possibility of introducing new vaccines—for example, a vaccine against Haemophilus influenzae b—in national immunization programs is now being considered by several of the Member States;

Resolves:

(4) “to establish the regional goal of elimination of measles by the year 2000 and urges Member governments to make every effort to achieve this goal”;

PAHO’s VALUES:
Equity and Social Inclusion; Solidarity; Pan-Americanism
Measles elimination in The Americas, 1970-2011*

*MR in children aged 1 year as countries introduced measles-rubella containing vaccines

Source: Country reports to FCH-IM/PAHO.
Measles genotypes identified in the Americas, 2001-2010

- Importations cause limited outbreaks
- Genotypes do not continue

Source: Country reports to FCH/IM. Global Measles Laboratory.
Data as of EW 52/2010.
Risk of Virus Importations from Other Regions

~150 million tourists have arrived to the Americas in 2010, which is an increase of 6% compared with 2009.
Distribution of Confirmed Measles Cases Following the Interruption of Endemic Transmission, the Americas, 2003-2011*

Rate: 1.315 X 1,000,000 pop.

Confirmed Cases

Regional rate

Brazil Canada Mexico USA Venezuela Others Regional rate

* Data as of EW 47/2011.
Source: Country reports to PAHO/WHO.
Confirmed measles cases in the Americas, 2011

TOTAL = 1309 cases

1 dot = 1 case

Note: Cases were imported, import-related or unknown.

*Data as of EW 52/2011
Source: MESS and country report to PAHO/WHO
OUTBREAK IN CANADA

Largest outbreak in the region accounting 61% of all reported cases from the Americas in 2011

- Total of 803 cases reported by EW52/2011
- Genotype identified: D4
- Outbreak duration of 8 months from April to November, 2011
OUTBREAK IN CANADA: CHARACTERISTICS

Affected Population in Quebec
54% (n=610) acquired the infection in a school, 41% in the community
- Most affected: 10-19 years olds
- 79% were not vaccinated

Geographic
One region, Quebec, accounts 70% of the cases (n=764)
- 10 regions affected

Onset in April 2011
Last rash onset in November 2011

Geographic
One region, Quebec, accounts 70% of the cases (n=764)
- 10 regions affected
OUTBREAK IN ECUADOR

Demography and geographical distribution

Most affected group: indigenous populations committed to trade/commerce
Most affected age group: children 6 months-1 year
6 districts affected: most cases from Tungurahua (131), Pichincha (31), Guayas (47)
Low immunity among affected populations

Development of outbreak

Index case 15/7/2011
Number of confirmed cases = 222
197 cases by EW52/2011
25 cases by EW/2012
Genotypes: B3, D4

3 importations: 1 from Asia (D9), 1 from Brazil (D4) with 2 secondary cases, and 1 from United States (D4) with 1 secondary case.

Data as of epidemiological week 34

Source: Ministry of Health, Chile
Number of import/imported related measles cases per country, The Americas - 2011

<table>
<thead>
<tr>
<th>Country</th>
<th>Import</th>
<th>Import related</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>1</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Brazil</td>
<td>9</td>
<td>24</td>
<td>9</td>
</tr>
<tr>
<td>Chile</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Canada*</td>
<td>26</td>
<td>4</td>
<td>772</td>
</tr>
<tr>
<td>Colombia</td>
<td>1</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Dominican Rep.</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ecuador</td>
<td>1</td>
<td>196</td>
<td>0</td>
</tr>
<tr>
<td>Guadalupe**</td>
<td>7</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>French Guiana</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Martinique</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Mexico</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Panama</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>United States</td>
<td>110</td>
<td>89</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>172</td>
<td>332</td>
<td>806</td>
</tr>
</tbody>
</table>

* It does not include clinical cases reported.
** Five cases have been notified in the island of Saint Martin (1 import and 4 import-related).

Data as of EW 34
Measles Genotypes in selected Latin American countries, 2011

Argentina: D4, from France or Germany and Italy
Chile: D4 from New York USA and D9 Malaysia
Dominican Republic: D4 from Italy
French Territories: D4 from France
Panama: D4 from Poland
Colombia: D4 from Europe (?)
Ecuador: B3 from Kenya, D4
Brasil: D4, from USA, France, and unknown source; G3 from Canada, Spain, UK, Malaysia
Argentina: D4, from France or Germany and Italy
Measles/Rubella Weekly Bulletin

**Measles and Rubella Surveillance in the Americas**

**Week ending 28 November 2011**

**Table 1. Measles/Rubella Surveillance in Ecuador**

- **Ecuador continues its vaccination efforts for people aged <15 years, reaching a coverage of 95% in children aged <5 years (1,288,071 applied doses), and a coverage of approximately 60% in children aged 5-14 years (1,615,499 applied doses).**

**Table 2. Measles and Rubella Cases by date of Rash Onset and Provinces, Ecuador 2011**

<table>
<thead>
<tr>
<th>Week/Week</th>
<th>Cases</th>
<th>Provinces</th>
<th>Total</th>
<th>Provinces</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18</td>
<td>6</td>
<td>24</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>7</td>
<td>27</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td>3</td>
<td>25</td>
<td>8</td>
<td>33</td>
<td>8</td>
<td>33</td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td>9</td>
<td>39</td>
<td>9</td>
<td>39</td>
</tr>
<tr>
<td>5</td>
<td>35</td>
<td>10</td>
<td>45</td>
<td>10</td>
<td>45</td>
</tr>
</tbody>
</table>

**Table 3. Measles/Rubella Suspect Cases Under Investigation**

<table>
<thead>
<tr>
<th>Subregion</th>
<th>Country</th>
<th>Reported</th>
<th>Pending</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN</td>
<td>BOL</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>COL</td>
<td>12</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>ECU</td>
<td>13</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Table 4. Indicators of Integrated Measles/Rubella Surveillance**

- **No report received.**

(c) Countries using GIS
On going support to strengthen measles/rubella surveillance system Indicators, Region of the Americas, 2007-2011*

Source: Country reports to PAHO. *Data until EW 52/2011.
# Source of Infection, Region of Americas – 2011*

<table>
<thead>
<tr>
<th>Región OMS</th>
<th>Total de casos importados</th>
<th>Países</th>
<th>Genotipo</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFRO</td>
<td>2</td>
<td>Kenia (1) y Nigeria (1)</td>
<td>B3 (2)</td>
</tr>
<tr>
<td>AMRO</td>
<td>7</td>
<td>Brasil (1), Estados Unidos (5) y República Dominicana (1)**</td>
<td>D4 (5),</td>
</tr>
<tr>
<td>EURO</td>
<td>56</td>
<td>Francia (35), Italia (6), Polonia (1) Romania (1), España (1), Alemania (1), Reino Unido (4), Polonia/Israel (4)<em>, Francia/UK (1)</em>**, Francia/Italia/España/Alemania (1)*</td>
<td>D4(17), G3 (1)</td>
</tr>
<tr>
<td>SEARO</td>
<td>20</td>
<td>India (19), Indonesia (1)</td>
<td>D8 (6), D4 (1)</td>
</tr>
<tr>
<td>WPRO</td>
<td>8</td>
<td>China (2), Filipinas (4), Filipinas/Vietnam/Singapur/Malasia (1)<em><strong>, Tailandia/Malasia (1)</strong></em></td>
<td>H1 (1), D9 (3)</td>
</tr>
</tbody>
</table>

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*Data by EW 24.

**Possibly acquired from a French tourist

**Cases visited more than one country during their visit in the Region.
World Youth Day concluded on August 21, in Madrid, Spain.
Copa América Argentina 2011: July 1 – 24

FIFA U-17 World Cup: June 18 – July 10

FIFA U-20 World Cup: July 29 – August 20

Rock in Rio: September 23 – October 2

WYD 2011 Madrid: August 16 – 21

Mundial de Beisbol: October 2 – 15
Epidemiological Alerts

• Mass-gathering events
  – Encouraging travelers to follow-up their evidence of immunity to measles and rubella.
  – Travelers should be aware and take notice of symptoms.
  – What to do if the traveler believes that they have measles or rubella.

• Entry points of the countries (airports)

• Strategic alliances with key stakeholders to maximize alert dissemination (airlines, travel agencies)
Strengthening routine immunization services by maintaining measles, rubella and CRS elimination and polio eradication in Haiti

- Reorganization of routine immunization services.
- Revitalization of management of the EPI.
- General training for those responsible for vaccination activities at national and departmental levels.
- Systematization of procedures and vaccination techniques.
- Strengthening of epidemiological surveillance of VPDs with a contingency plan in place.
- Implementation of the follow-up campaign.
Documentation and Verification Components

Linking each piece of evidence:

- Is it valid?
- Complete?
- Representative?
- Consistent between information sources?

Epidemiology of Measles, Rubella, and CRS

Quality of Surveillance

Molecular Epidemiology and Laboratory Activities

Sustainability of the National Immunization Program

Analysis of Vaccinated Population Cohorts
Surveillance of susceptible populations for measles and rubella through Rapid Coverage Monitoring (RCM)

- Focusing particularly on high-risk areas that share the following main characteristics:
  - Located on a high-traffic border and touristic.
  - Difficult to reach geographically, culturally or socioeconomically.
  - Densely populated, especially those with fringe settlements.
  - Dedicated to commerce/trade (fairs, markets, etc) or highly industrialized areas.
  - With low vaccination coverage or high-drop out rates.
  - With epidemiological silence (not reporting).
• PAHO with partners will also carry out rapid, external assessments of the current measles, rubella and CRS surveillance systems.

• All countries should have implemented high-quality follow-up campaigns in the last 5 years (2009-2013) with the purpose of obtaining high levels of immunity, by the time the Americas is verified as free of endemic transmission of measles and rubella.

- **Chile**: Inicio Nov 2010 (1-5y) — MMR
- **Mexico**: Abr 2011 (1-4y) — MR
- **Costa Rica**: May 2011 (1-9 y) — MMR
- **Ecuador**: Oct 2011 (1-14 y)—MMR, MR
- **Peru**: May 2011 (1-5 y)—MMR
- **Bolivia**: Oct 2011 (1-5y) — MMR
- **Brazil**: Jul 2011 (1-6 y) – MMR
- **Haiti**: 2012 (9m-8y)—MR + OPV
- **Canada**: 2011-2012
- **Complementaria Colombia**: 2012
- **El Salvador**: 2012
- **Nicaragua**: 2012
Sharing Experiences in 2011

- Launching of the rubella JID supplement during the PAHO Directing Council: September 29.

- Study Tour to Brazil and Chile: Visit of Technical Staff of the MOH-China to observe surveillance strategies for CRS: 14-22 November.
A dream made possible

[Logos of various organizations]

Pan American Health Organization
Regional Office of the World Health Organization

www.paho.org
The countries of the Americas request…

Measles eradication activities should be used to accelerate the control of rubella and the prevention of CRS, while cementing the achievements of polio eradication and introduction of new vaccines.
THANK YOU!
Measles cases and vaccination strategies in São Paulo state, Brazil, 1980-2011

Source: Sao Paulo Health State - Brazil

8 years for a follow-up campaign

When should the follow-up be conducted? It will depend on the accumulation of susceptible = One new born cohort)