Measles and Rubella
Global Update

SAGE
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WHO HQ, IVB/EPI
Overview

- Global update
- Regional update
- Summary
Measles and Rubella Targets

Global: World Health Assembly, 2010

Milestones by 2015:
1. MCV1 coverage ≥ 90% national & ≥ 80% in every district
2. Measles reported incidence <5 cases/million
3. Measles mortality reduction of 95% vs. 2000

Regional elimination (GVAP, 2012):

By 2015:
- Elimination of measles in 4 WHO Regions
- Elimination of rubella in 2 WHO Regions

By 2020:
- Elimination of measles & rubella in 5 WHO Regions
Global Update
Measles Global Annual Reported Cases and MCV1* and MCV2** Coverage, 1980-2017

*MCV1 coverage: first dose of measles-containing vaccine as estimated by WHO and UNICEF.

**MCV2 coverage estimates are only available from 2000 when global data collection started, however some countries introduced MCV2 earlier.


Date of slide: 20 August 2018
Global Milestone #1: MCV1 coverage ≥ 90% national & ≥ 80% in every district
Immunization coverage with 1st dose of MCV in infants, 2017

- **118 (61%)** countries have ≥90% coverage with 1st dose of MCV
- **44 (23%)** with MCV1 coverage ≥ 90% national and ≥ 80% in every district

Number of countries having introduced 2\textsuperscript{nd} dose of measles containing vaccine (MCV2) and global MCV2 coverage, 2000-2017

27 countries not yet introduced MCV2

Countries with rubella vaccine in the national immunization programme and planned introductions in 2018

- Global RCV coverage, 2017 = 52%
- 25 countries lack RCV

Data source: WHO/IVB Database, as of 15 May 2018
Map production: Immunization Vaccines and Biologicals (IVB), World Health Organization

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Global Milestone #2: Measles Incidence <5 cases/million

Measles incidence for 2017

2010: 60% countries <5 cases/million
2017: 61% of countries <5 cases/million
Global Milestone #3

95% Reduction in Measles Deaths

20.4 million deaths prevented from 2000-2016 by measles vaccination

Measles deaths down 84%!
Regional Update
Reported Measles Cases by Region
2014-2017

Source: WHO/UNICEF Joint Reporting Form
Measles outbreaks in the post elimination era. The Americas, 2003-2018* (incidence rate per million)

*Data as of epidemiological week 40-2018

Source: SysVPD (ISIS) and country reports sent to PAHO/WHO.
Reported Measles cases by Epidemiological Weeks, Venezuela 2018

Clasificación de casos notificados de sarampión, SE 1-32
Venezuela 2018

5,936 casos notificados
4,602 casos confirmados
*1,463 casos confirmados por laboratorio
*1,976 casos confirmados por clínica
*1,163 confirmados por nexo epidemiológico
273 en investigación
1,061 descartados

Measles case distribution (WPR), 2014-2018

Notes: Based on data received 2018-07 - Data Source: IVB Database
Measles case distribution (EUR), 2014-2018

Notes: Based on data received 2018-07 - Data Source: IVB Database
## Scorecard on Verification of Elimination, Sept. 2018

<table>
<thead>
<tr>
<th>WHO Region (no. countries)</th>
<th>Regional Verification Commissions Established</th>
<th>Elimination Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of countries</td>
</tr>
<tr>
<td>Americas (n=35)</td>
<td>Yes</td>
<td>Measles: 34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubella: 35</td>
</tr>
<tr>
<td>Europe (n=53)</td>
<td>Yes</td>
<td>Measles: 37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubella: 37</td>
</tr>
<tr>
<td>Western Pacific (n=27)</td>
<td>Yes</td>
<td>Measles: 6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubella: 2</td>
</tr>
<tr>
<td>Eastern Mediterranean (21)</td>
<td>Yes</td>
<td>-</td>
</tr>
<tr>
<td>South-East Asia (n=11)</td>
<td>Yes</td>
<td>Measles: 4</td>
</tr>
<tr>
<td>Africa (n=47)</td>
<td>Yes</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>Measles: 81 (42%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubella: 74 (38%)</td>
</tr>
</tbody>
</table>

EUR: 6 additional countries interrupted measles transmission for >12 m but <36 m.
5 additional countries interrupted rubella transmission for >12 m but <36 m.
Key Regional Achievements

- One Region achieved and sustained rubella elimination (AMR). Rubella elimination verified in an additional 39 member states.

- Three regions with all countries having introduced RCV (AMR/EUR/WPR).

- India and Indonesia introducing rubella vaccine in 2017-2018 (>470 million targeted through SIAs). Six countries in SEA verified as having controlled rubella.

- 12 AFR countries near measles elimination* and an additional 14 on track for the 2020 goal.

- 7 EMR countries are close to measles elimination with 4 (Bahrain, Jordan, Oman & Palestine) reporting interruption of transmission for more than 36 months (pending verification).

- High coverage with 2 doses of MCVs (AMR/EUR/WPR).

- RVC established in all 6 Regions. With three regions verifying rubella elimination (AMR/EUR/WPR).

*Algeria, Burkina, Cape Verde, Rwanda, Eritrea, Gambia, Ghana, Mauritius, Senegal, Seychelles, Sao Tome, Zimbabwe
Key Regional Challenges (1)

- Gaps in population immunity due to:
  - Weak and fragile health systems in many countries (AFR/EMR)
  - Vaccine demand and hesitancy (EUR; SEAR)
  - Civil unrest, famine, active conflict, socio-economic/political crisis (EMR/PAHO)
  - Declining maternal antibody levels

- Susceptible distributed across increasingly wide age groups, making eventual elimination more expensive & more technically difficult (EUR/EMR/SEAR/WPR).

- Outbreaks affecting adolescent and adults, healthcare workers, migrants, indigenous and religious groups (EUR/PAHO/WPR/SEAR)

- Infants <1 year old affected by measles (EUR/EMR/SEAR/WPR/PAHO)
Key Regional Challenges (2)

- Maintaining elimination in the face of ongoing importations both within and between regions (PAHO/EUR)
- No target for rubella / CRS elimination (AFR/EMR/SEAR)
- No target date for rubella elimination (WPR)
- Low political commitment to elimination in some member states
- Inadequate resources to fully implement recommended strategies:
  - Inadequate resources for wide age-range campaigns to address population immunity gaps
  - Steadily declining resources through M&R Initiative
  - MICs left out
  - Lack of resources for surveillance (AFR/EMR/SEAR)
  - Polio transition (AFR/EMR/SEAR)
Summary

• Substantial progress in measles control/elimination since 2000
  – Global number of cases and estimated deaths significantly reduced
  – Lowest ever measles incidence in WPR in 2017

• Concerns
  – Compared to 2016, resurgence of measles in 4 of the 6 Regions
  – Regional measles elimination can be achieved but sustainability remains a challenge
  – 2015 global milestones and 3 regional targets were not met

• The recent trends highlight the fragility of gains made in measles elimination
  – Urgent need to step up efforts towards achieving and sustaining the global and regional goals.
  – Without strong and equitable routine systems, elimination, when achieved, is not likely to be sustained.
Thank you!

**Thanks to:**
- MR SAGE WG members
- MR Regional focal points
- SIG team
EXTRA SLIDES
Strengthening of RI Systems

• RI is critical for achieving the elimination goals:
  – > 95% coverage with 2 doses of MCV is needed
  – Central theme for M&R Initiative Strategic Plan (2012-2020) and ongoing activities
  – 2/3 of measles cases averted through RI (J. Inf Dis. 204, 2011)

• Studies demonstrate that properly planned SIAs can strengthening RI (E.g.,):
  – Improve micro-planning, training and supervision of HCW
  – Improvement of CC, waste management system & injection-safety standards
  – strengthened AEFI surveillance

• MCV2 in the 2YL offers an ideal opportunity by:
  – fixing an immunization/health check contact during 2YL (e.g. growth monitoring, booster doses, Vit A)
  – catch-up vaccination for all missed vaccines

• Measles vaccination school entry checks can improve coverage of other VPDs.

• Measles Outbreaks as an indicators of weak RI:
  – Measles is highly infectious and seeks out susceptibles; disease is highly visible,
  – Outbreaks identifies gaps in RI programs and population groups missed by RI.
Challenge: Polio Transition

16 countries with largest polio assets

88% of estimated measles deaths occur in these countries
Most of the world’s rubella and CRS cases (100,000)
Polio field staff spend nearly 1/3 of their time working on RI & MR.
Critical for SIA quality and surveillance
Estimated $77 million (70%) of annual needs for VPD/MR surveillance are coming from polio $$
Over 2500 polio-funded staff are supporting VPD/MR surveillance

RISKS:
- Polio virus transmission if re-introduced
- Resurgence of measles and rubella
Distribution of confirmed measles cases by countries. The Americas 2017 and 2018.*

2017
- CAN=45
- USA=120
- ARG=3
- VEN=727
Total=89

5

2018*
- Argentina= 11
- Antigua and Barbuda=1
- Brazil= 2,044
- Canada=25
- Colombia=105;
- Ecuador=19;
- Guatemala=1
- Mexico= 5
- Peru= 36
- USA=137
- Venezuela=4,605 (58 deaths)
Total= 6,989

Sources: Surveillance country reports sent to the Immunization Unit of PAHO/WHO and Epidemiological Update of Measles
Reported Measles Cases by Classification and Epidemiological Week. Venezuela EW-26, 2017 – EW-40, 2018

2017

n= 1451
Confirmed (727)
• Laboratory (507)
• Epi Link (220)

2018

n= 7068
Confirmed (5, 598)
• Clinic (3, 218)
• Laboratory (1,946)
• Epi Link (534)

Source: Immunization Direction, Ministry of Popular Power for Health
Rubella containing vaccine 1st Dose (RCV1) coverage* by WHO region, 1980-2017

global coverage at 52% in 2017

Immunization Vaccines and Biologicals, (IVB), World Health Organization.
194 WHO Member States. Date of slide: 15 July 2018.

*coverage estimates for the 1st dose of rubella containing vaccine are based on WHO and UNICEF estimates of coverage of measles containing vaccine.
Immunization coverage with 2nd dose of measles containing vaccines by administered schedule, 2017


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<50% (12 countries or 6%)
50-79% (36 countries or 19%)
80-89% (34 countries or 18%)
90-94% (32 countries or 17%)
>=95% (50 countries or 26%)
2nd dose of measles containing vaccines in schedule but no coverage data available (3 countries or 2%)
Not available/ Not introduced (27 countries or 14%)
Not applicable