Rubella surveillance in the European Region of the World Health Organization

Clinical/epidemiological/laboratory Progress Toward Rubella Elimination and CRS Prevention in Europe

February 8-10, 2012; Rome, Italy

Dragan Jankovic
Vaccine Preventable Diseases & Immunization Division of Communicable Diseases, Health Security & Environment WHO Regional Office for Europe Copenhagen, Denmark
“Top of the iceberg”

- Not good enough if surveillance towards elimination and eradication
Strengthening surveillance - one of the key measles and rubella elimination strategies

- Strengthen surveillance systems by rigorous case investigation and laboratory confirmation of suspected sporadic cases and outbreaks.

- In general, a good surveillance system is one that can collect, collate, and analyze complete data in timely manner, and create operational information and feedback for implementing adequate and timely response measures.

- For elimination of diseases a case-based surveillance to detect and facilitate the investigation and laboratory confirmation of all clinical cases is required.
The regional surveillance guidelines

- To synchronize and standardized surveillance activities in the Region and help countries for documenting elimination of measles and rubella
- Document prepared and available since 2009
- A “live” document on the web
  - Ongoing modifications
Surveillance system towards disease elimination

- Standardized
- Comprehensive - countrywide, all population
- Sensitive - detect all clinical measles/rubella cases
- Specific - capable to confirm measles/rubella (critical role of laboratory)
Objectives of measles and rubella surveillance

1. Detect, investigate and characterize sporadic cases and clusters
   - cases and contacts management
   - reasons (e.g. importation, failure to vaccinate or failure of the vaccine);
   - assess the sustainability of transmission
   - identify populations at risk
   - ensure public health response

2. Monitoring of disease incidence and circulation of the virus
   - provide information for preventive programmes and control measures;
   - assess and document progress towards elimination
   - identify changes in risk groups and disease epidemiology;
   - circulation of virus genotypes
Cooperation is critical for good surveillance

- Clear surveillance structure map with persons/institutions involved in surveillance - who
- Clear roles and responsibilities of persons/institutions involved in surveillance - what
- Clear scheme and timeframe for information exchange - when and how
- Good surveillance = clinical + epidemiological + laboratory (national, subnational...)

Diagram:
- Clinicians
- Lab
- Epid
Epidemiological investigation with laboratory confirmation for all clinical cases

- An **EPID number** (unique case identifier)
- Epid-investigation –vaccination status, pregnancy status, travel history (source/origin of infection)
- Specimens for laboratory confirmation/virus isolation
- Investigation of contacts
  
  *(All data in case investigation form)*

Followed with adequate **laboratory** procedures and **reporting** procedures
Case definition for case-based surveillance

- Case definition for standardization of surveillance
  - Not same as a clinical diagnosis for medical management
  - Especially important for rubella in pregnant
- The WHO/Europe and EU/ECDC developed and use consistent case definitions
  - Synchronization allows merging and analysis of data
  - CLASSIFICATION
  - Countries developing national case definitions in national guidelines according to Regional
- The WHO/Europe is not recommending surveillance for “rash and fever”
Rubella case-based surveillance reporting, WHO European Region, 2011

CASE- BASED REPORTING IS CRITICAL FOR ELIMINATION
Measles and rubella monthly surveillance data reporting

<table>
<thead>
<tr>
<th></th>
<th>TESSy</th>
<th>CISID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case-based</td>
<td>28</td>
<td>12</td>
</tr>
<tr>
<td>Aggregate</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Not reporting</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>24</td>
</tr>
<tr>
<td>Rubella</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case-based</td>
<td>23</td>
<td>5</td>
</tr>
<tr>
<td>aggregate</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Not Reporting</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>24</td>
</tr>
</tbody>
</table>

1 Monaco and San Marino
2 Belgium, France and Germany
3 Bosnia and Herzegovina, Czech Republic, Kazakhstan, Kyrgyzstan
Monaco, Russian Federation, San Marino, Serbia, Turkey
Turkmenistan, Ukraine
Recommended reporting to WHO

- Recommendation for weekly reporting with “zero” reporting inside the national surveillance system
- Monthly reporting to the WHO/Europe, with “zero” reporting
  - Challenging inside the national system
  - Additional burden during outbreaks
  - Delays in reporting to the Regional organization for a few months
Challenge of timeliness and completeness

Measles

Rubella
25 Member States reported 737 clinical/suspected cases
Of these, 17 MS with 213 laboratory confirmed cases
Rubella genotypes, WHO/Europe 2010

2B, 1E

2B, 1h, 1E

2B

1E
CRS surveillance overview

- Does not capture the entire spectrum of outcomes of rubella in pregnancy but
  - Allows detection of infants with clinically apparent manifestations
  - Allows standardization for reporting and comparison purposes
- Prospective sentinel site surveillance
- Focused on:
  - Infants <1 year of age
  - Most common clinical manifestations of CRS
  - Laboratory testing of identified cases suggestive of CRS
Establishing and conducting CRS surveillance

- The goal - to establish sentinel* site surveillance that captures the majority (ideally, all cases) of infants with suspected CRS

- Establishing process (simplified)
  - Define reporting and surveillance units
  - Initiate system in a few key facilities
  - Monitoring surveillance performance (6 months to one year)
  - Expanded to include other providers and sites

- Coordination and periodic evaluations critical
Overall quality of measles and rubella surveillance

- Surveillance performance indicators
  - Timeliness
  - Completeness
  - Lab confirmation rate
  - Detection rate
  - Chains of transmission/outbreaks with genotype dates
  - Source/origin of infection
  - Adequacy of investigation
VPD data reporting and immunization monitoring, WHO/Europe

- Monthly measles and rubella aggregate and case-based data
- Monthly measles and rubella Lab aggregate lab data
- Case-based AFP data
- Online Polio Lab Data Management System (LDMS)
- Online MR LDMS
- Annual communicable disease reporting form (Section 2 and 3)
- WHO/UNICEF Joint Reporting Form (Coverage, incidence and indicator)
- Measles rubella outbreak aggregate data
- Monthly Diphtheria aggregate data
Information available as feedback to national systems and to the public

Vaccines and immunization

What do we do ▲
Health topics ▲
Disease prevention ▲
Vaccines and immunization
News
Policy
European Immunization Week
Activities
Country work
» Facts and figures
Publications
Partners
Contact us

Vaccines and immunization

Facts and figures
Monthly data summary tables for vaccine-preventable diseases

Please click on the links below to view the most current data summary tables regarding vaccine-preventable diseases in the WHO European Region, as well as past data tables. Data contained in these tables are reported to WHO/Europe by Member States. The tables are also published as part of WHO Epidemiological Brief:

- VPD data summary table January-October 2011
- VPD data summary table January-September 2011
- VPD data summary table January-August 2011
- VPD data summary table January-July 2011
- VPD data summary table January-June 2011
- VPD data summary table January-May 2011


Publications

EURO Immunization Monitor

The "EURO immunization monitor" provides regular information on immunization-related activities occurring in the European Region while monitoring the performance of poliomyelitis, measles and rubella surveillance and immunization coverage rates. With the introduction of new vaccines in the Region, it will also monitor the performance of surveillance for such diseases as Haemophilus influenzae type b and rotavirus. The newsletter provides strategic information on immunization and vaccine-preventable diseases in an integrated manner to strengthen the synergy of activities in countries.

- EURO Immunization Monitor April 2011
Synchronized SIA, 11th meeting of ETAGE, new online lab reporting


WHO Epidemiological Briefs

- WHO Epidemiological Brief 18: Measles outbreak, Member State response, measles exportation to the Americas Region, AFP surveillance and the polio outbreak in China
- WHO Epidemiological Brief 17: Measles outbreak, rubella surveillance, AFP surveillance, regional polio-free status and invasive bacterial disease surveillance
- WHO Epidemiological Brief 16: Measles outbreak, rotavirus surveillance and response to importation of wild poliovirus
- WHO Epidemiological Brief 15: Measles outbreak and response to importation of wild poliovirus
- WHO Epidemiological Brief 14: Measles outbreak and importation of wild poliovirus in the European Region
- WHO Epidemiological Brief 13: Measles outbreak and importation of wild poliovirus in the European Region
- WHO Epidemiological Brief 12: Importation of Wild Poliovirus and Response Measures in the European Region


CISID home

Welcome to the centralized information system for infectious diseases (CISID).

- All infectious diseases (numbers of cases, incidence)
  - HIV/AIDS
  - Sexually transmitted infections (STI)
  - Tuberculosis
  - Malaria
  - Poliomyelitis (acute flaccid paralysis, poliomyelitis laboratory)
  - Measles, rubella, congenital rubella syndrome
  - Diphtheria
  - Hepatitis B, Haemophilus influenzae b
  - Vaccination schedule, Vaccination coverage
  - Immunization programme indicators
  - HIV Prevalence Database


About CISID

WHO European Region use of the data
WHO/Europe support to Member States

- Technical support on development/updating of national surveillance guidelines and establishing and strengthening of the system
- Development of the measles and rubella case-based reporting tool (software module)
- Support to national reference laboratories and their integration in Regional Reference Laboratories network
- Country-specific support as needed (assessments and monitoring missions, trainings, support in response to outbreaks)
Way forward

- All 53 member states to report measles case-based data by 2012 and rubella case-based data by 2013.
- ≥ 80% Timeliness and completeness of monthly reporting for measles and rubella
- All 53 member states sub-national level MCV1 and MCV2 (i.e. RCV1 and RCV2) coverage and CRS in annually WHO/UNICEF JRF
- Start reporting discarded cases
- High quality and timely data to enable WHO to document measles and rubella elimination
Conclusion

- Regardless to progress need to strengthen surveillance in all Member States
- Integrated VPD and other diseases surveillance system
- Data analysis with should use all available information (e.g. immunization coverage) to define policies and action
- It is critical to implement, monitor and evaluate performance of surveillance systems
- Only high quality surveillance system can allow documenting and verifying elimination