The measles and rubella elimination targets in the WHO Region of Europe: indicators and verification process

Childhood immunization progress, challenges and priorities for further action
Luxembourg, 16-17 October 2012

Dr Dina Pfeifer
Programme Manager
Vaccine-preventable Diseases and Immunization

WHO Region of Europe

- 53 member states as of 2006 (+21 since WHA44)
- 15 time zones
- Population 900.000.000
  Infants 11.000.000
  < 5yr 55.000.000
  <15yr 157.000.000
- DPT3+Pol3 94%, MCV 94%

Elimination targets…

EUROPE

Regional Committee for Europe
Fifty-fifth session

Bucharest, Romania, 12–15 September 2005

EUR/RC55/R7
14 September 2005
54245
ORIGINAL: ENGLISH

Resolution

Strengthening national immunization systems through measles and rubella elimination and prevention of congenital rubella infection in WHO's European Region

http://www.euro.who.int/__data/assets/pdf_file/0003/88086/RC55_eres07.pdf

Right direction …

- Substantial progress towards the 2010 regional elimination goal
- Supplementary immunization activities (2005-2008) >>> 27 million doses
- National immunization coverage levels remained high across the Region
- Laboratory reporting completeness approaching 100%
- All 67 national and subnational laboratories are fully accredited
- Evidence for decision making and resources at hand e.g.immunization registries, genotyping data, seroprevalence studies, vaccine supply

Elimination targets…

- **but …** over 50% of Member States (≈70% of population) would not have achieved measles elimination by 2010
- Outbreaks reported from countries that were measles-free for years
- **thus …** target moved to 2015

http://www.euro.who.int/__data/assets/pdf_file/0008/119546/RC60_edoc15.pdf

The whys and wherefores …

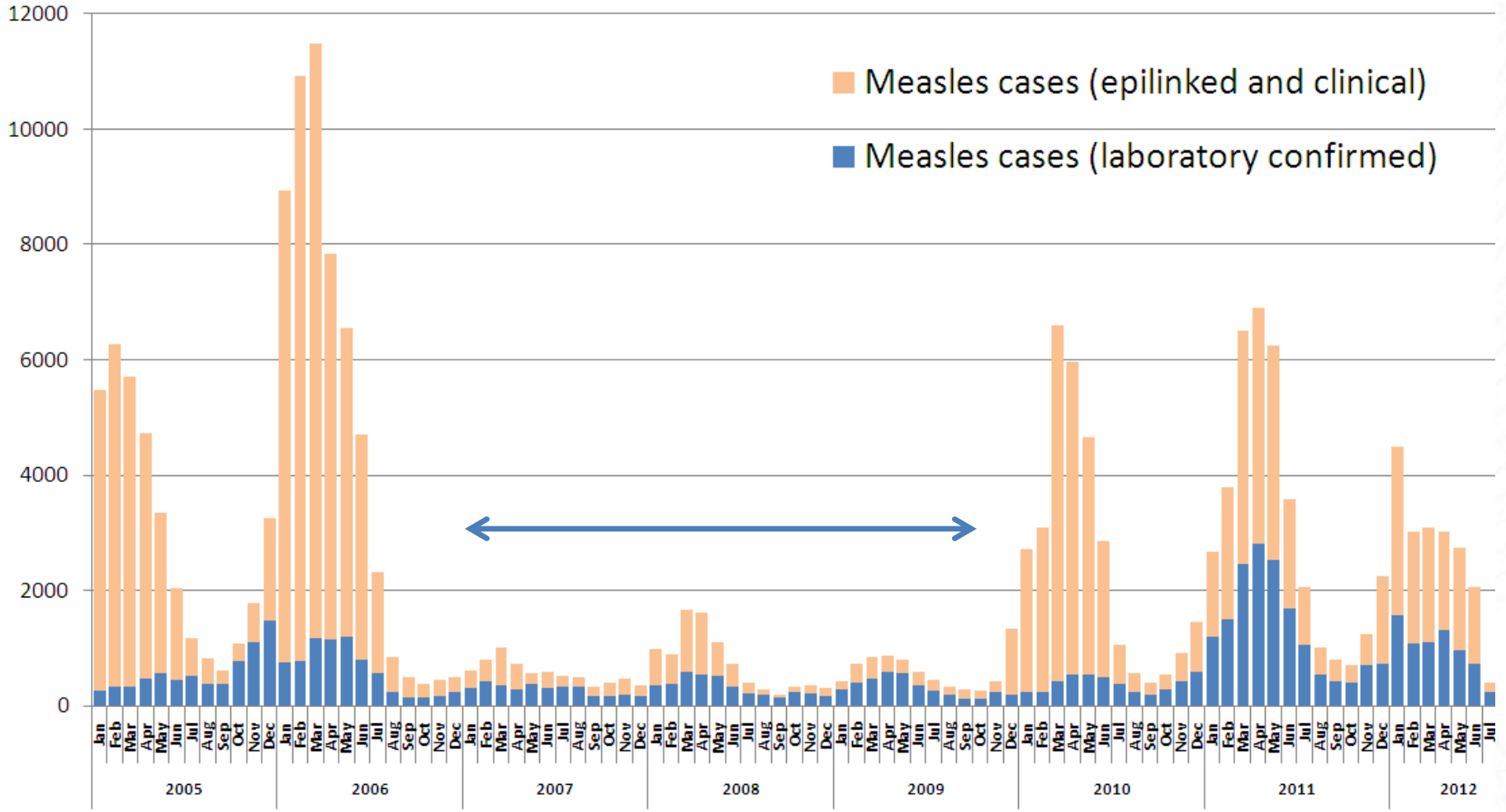
- Historical context
  - gender specific schedules
  - late introduction of 2nd dose
  - use of monovalents, stockouts,
  - programmatic issues

- Controversies
  - Individual rights – collective responsibility >>> Compulsory immunization
  - Autism link
  - Temporal association of vaccination with chronic conditions of multifactorial or unknown aetiology

The whys and wherefores …

- Understanding the diseases/prevention
  - mortality rate is not much different than in the 1960s
  - medical progress (standard of care) not substantially changing the outcomes
  - changes of medical education methodology of mid 1980s and today's curricula

Confirmed measles cases by month, WHO European Region, 2005-2012



Source: Monthly MR reporting to WHO European region
Update: 30-Aug-2012

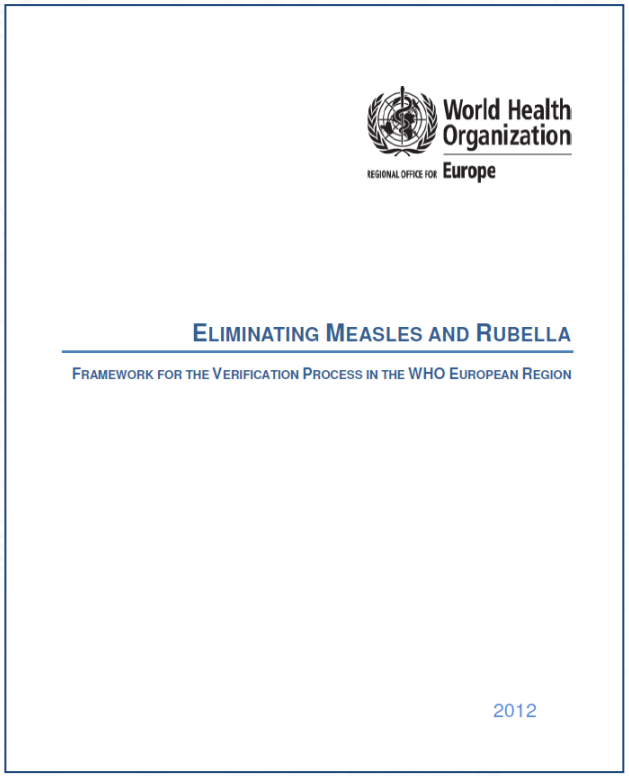
Verification process

2011
- Framework for the verification process

2012
- Regional Verification Commission

From 2012
- National Verification Committees

From 2013
- Documentation process



http://www.euro.who.int/en/what-we-do/health-topics/communicable-diseases/measles-and-rubella/publications/2012/eliminating-measles-and-rubella-framework-for-the-verification-process-in-the-who-european-region

Status reports

(Builds up on the process established for poliomyelitis eradication)

Requirements:

- established National Verification Committee
- access to all relevant information/evidence
- consider data quality aspects
- formulate conclusions

- Section 1 – National Verification Committee
- Section 2 – Measles and rubella profile
- Section 3 – Update on programme activities

Criteria

Definition of elimination:

"the absence of endemic measles transmission in a defined geographic region for ≥ 12 months in the presence of a well performing surveillance system"

- Absence of endemic measles and rubella cases in all Member States, resulting from complete interruption of endemic virus transmission, and in the presence of high quality surveillance for a period of at least 3 years from the last known case

- Demonstrated ≥95% of all population is protected against measles and rubella

Targets

- At least 95% coverage annually with both MCV1 and MCV2 and RCV in all districts or their administrative equivalents and at the national level

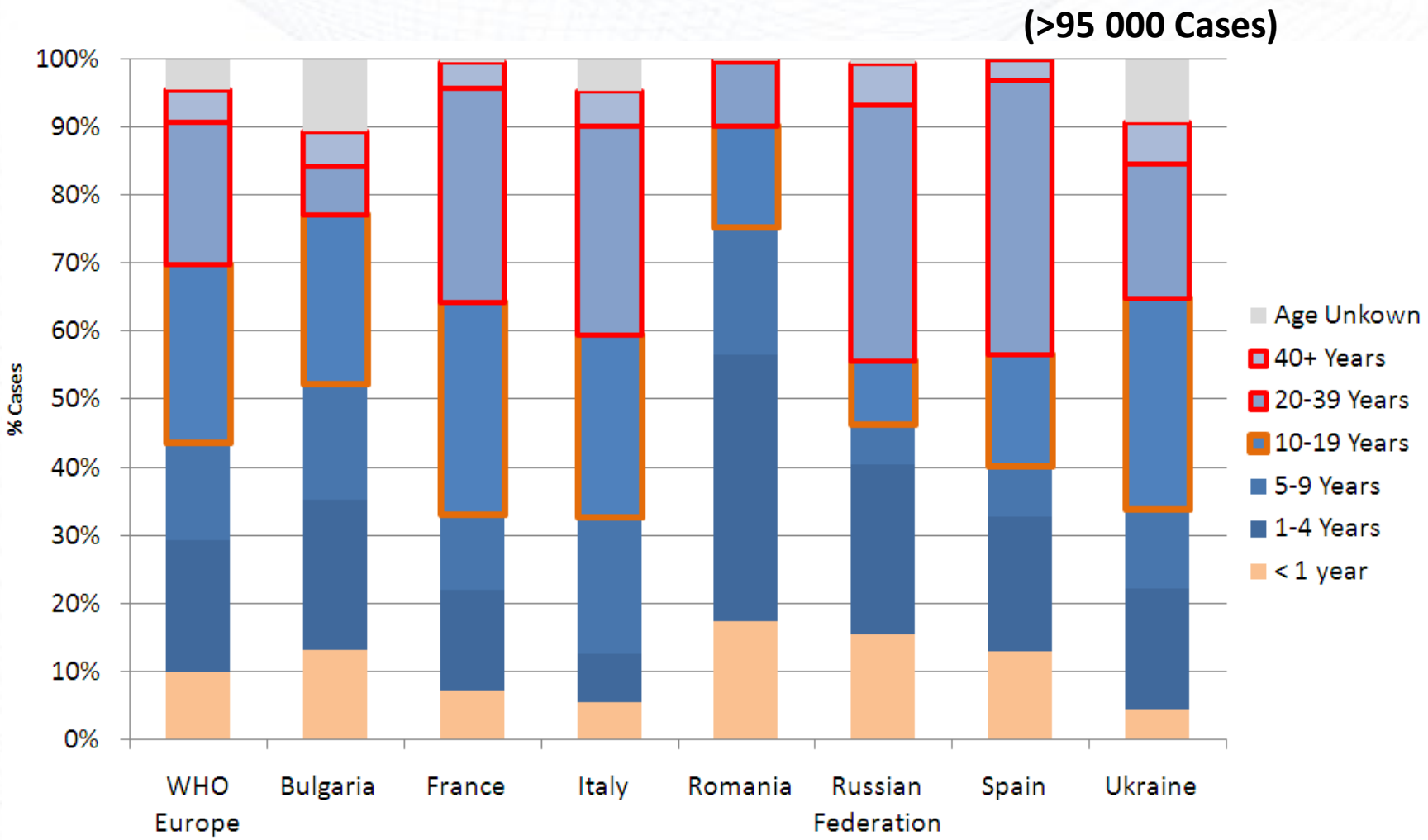
- Less than one measles/rubella case per million population, excluding imported cases

Indicators

- Vaccination coverage of MCV1, MCV2, and RCV whether delivered through routine or supplementary immunization activity, as per national schedule

- Measles and rubella incidence (laboratory confirmed, epidemiologically-linked and clinical cases)

Proportion of measles cases by age groups, seven countries and the Region, 2009-2012



Data Source: Monthly MR reporting to WHO European Region
*Data as of 13 Sep 2012

Population immunity through analysis of MR vaccinated population cohorts

Immunization coverage (≥95%)

- Administrative reports (MCV/RCV1 and MCV/RCV2, SIA)
- Rapid coverage monitoring and survey
  At national and sub national levels
- Historic data - consider year of vaccine introduction , changes in vaccination strategies/calendar, coverage
- Additional information sources - specific population groups, vaccination dropout rate, modelling accumulation of susceptible,… - to triangulate data

Indicators

- Vaccination coverage of MCV1, MCV2, and RCV whether delivered through routine or supplementary immunization activity, as per national schedule

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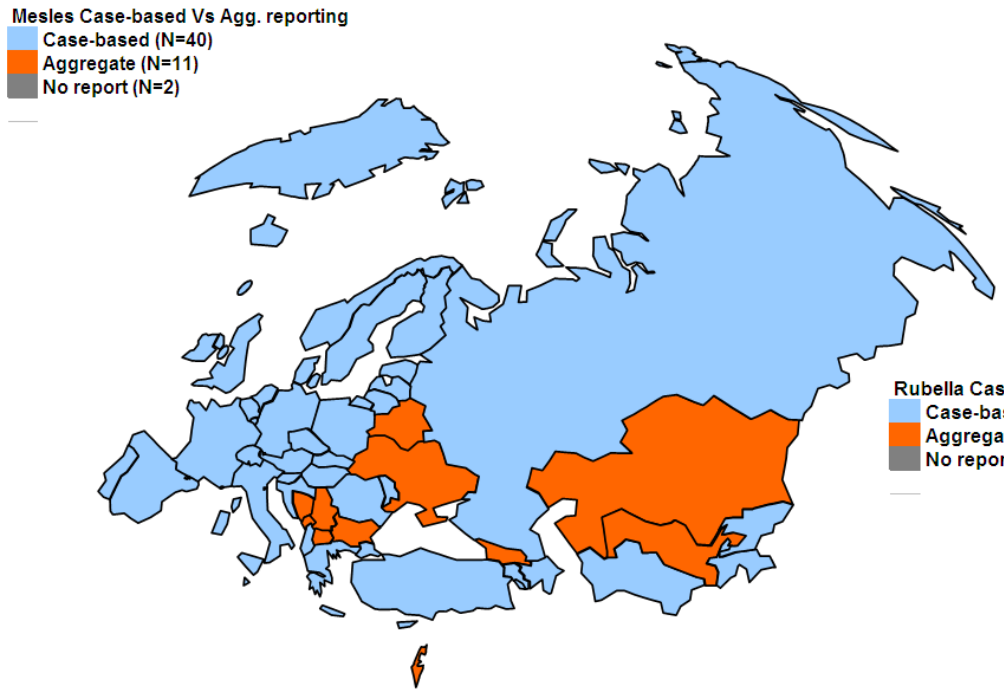
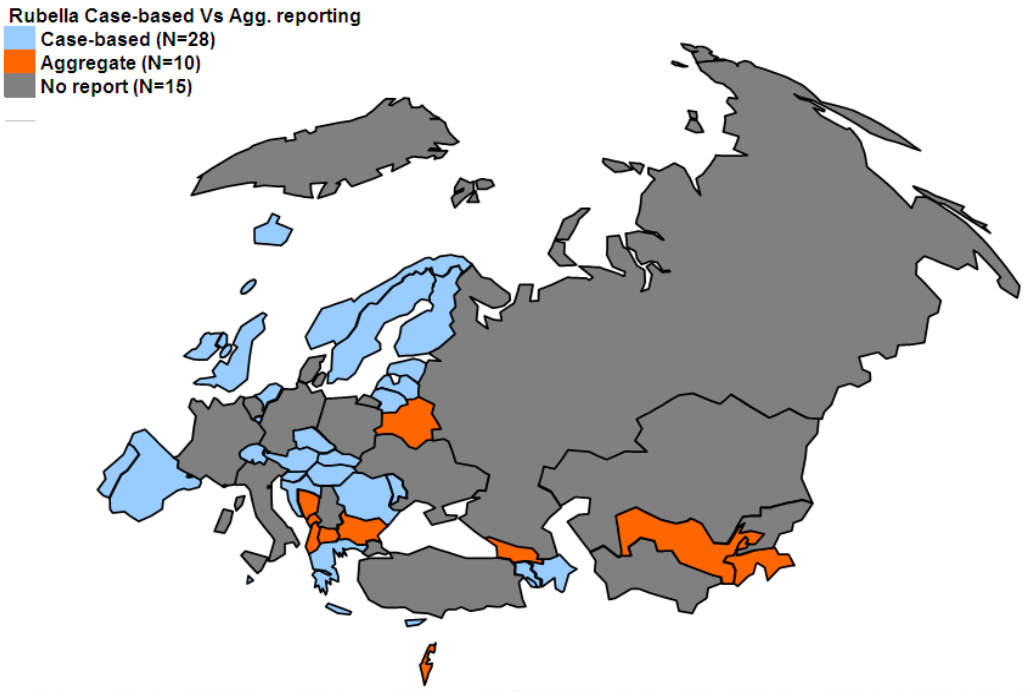
The issues …



CASE- BASED REPORTING
IS
CRITICAL
FOR ELIMINATION



Molecular epidemiology of measles and rubella viruses

- Part of surveillance critical for elimination, identify origin of the virus > endemic or imported?
- Linkage of clinical and epidemiological segments by unique case ID
- WHO laboratory network as source of information
- Genetic baseline with genotype map of viruses and follow-up on currently circulating viruses

Epidemiology of measles, rubella and CRS during the previous 36 months

- Case-based measles, rubella and CRS surveillance data, monthly reported to the WHO
- Standard routine and periodical analysis
  - By time (trends)
  - By persons (age, immunization, group of risk)
  - By place (national, sub-national)
- Investigation and analysis of outbreaks, clusters or chains of transmission
  - Index case; reasons for outbreak; response and follow up

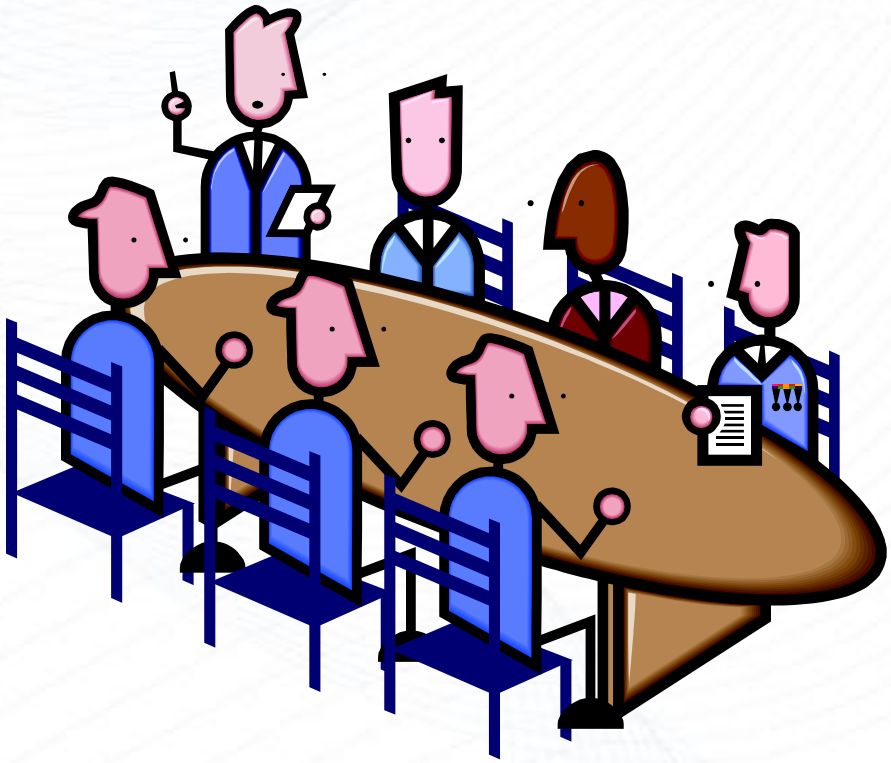
Overall quality of measles and rubella surveillance

Surveillance performance indicators

- Timeliness
- Completeness
- Lab confirmation rate
- Detection rate
- Chains of transmission/outbreaks with genotype data
- Source of infection
- Adequacy of investigation

Verified by external independent panel

- Not involved in the managerial or operational aspects of their respective national immunization programmes
- Not involved in surveillance or laboratory components of the elimination activity
- Nor have a direct responsibility in the achievement of the goal at the regional or national level
- Conflict of interest should be sought and declared



Note !!!

- Verification of measles or rubella elimination is done independently of another, therefore ellimination may be reached at different points in time.

- The verification is confirming elimination in the WHO Region of Europe, not in individual Member States.

Sustainability of the National Immunization Program (NIP)

- At national and sub national levels
- Consider effects of health system reform; decentralization; privatization
- Capacity to monitor programme, to recognize and respond to threats
- Indicators
  - Adequate planning - NIP Strategic Plan
  - Adequate technical implementation - Standard Operating Plan
  - Adequate funding – Funds for MCV and RCV secured
  - Adequate vaccine supply - Stockouts of MCV or RCV

Public acceptance of the measles/rubella elimination goal

- Need for effective advocacy and information, education and communication (IEC) strategies
- Methods - ad hoc surveys, periodic operational research activities
- Eventual indicators of performance or achievements under consideration

Components

Components for verification	Data source
Population immunity against measles and rubella disease.	Joint Reporting Forms (JRF)
Epidemiology of measles, rubella and CRS incidence during the previous 36 months.	JRFs, routine surveillance and sentinel sites (CRS)
Molecular epidemiology of measles and rubella viruses.	Routine surveillance, lab reports
Performance of measles, rubella, and CRS surveillance.	Routine surveillance, lab reports
Sustainability of the National Immunization Program.	JRF
Public acceptance of the measles/rubella elimination goal.	*Ad hoc* surveys, operational research, public information sources