

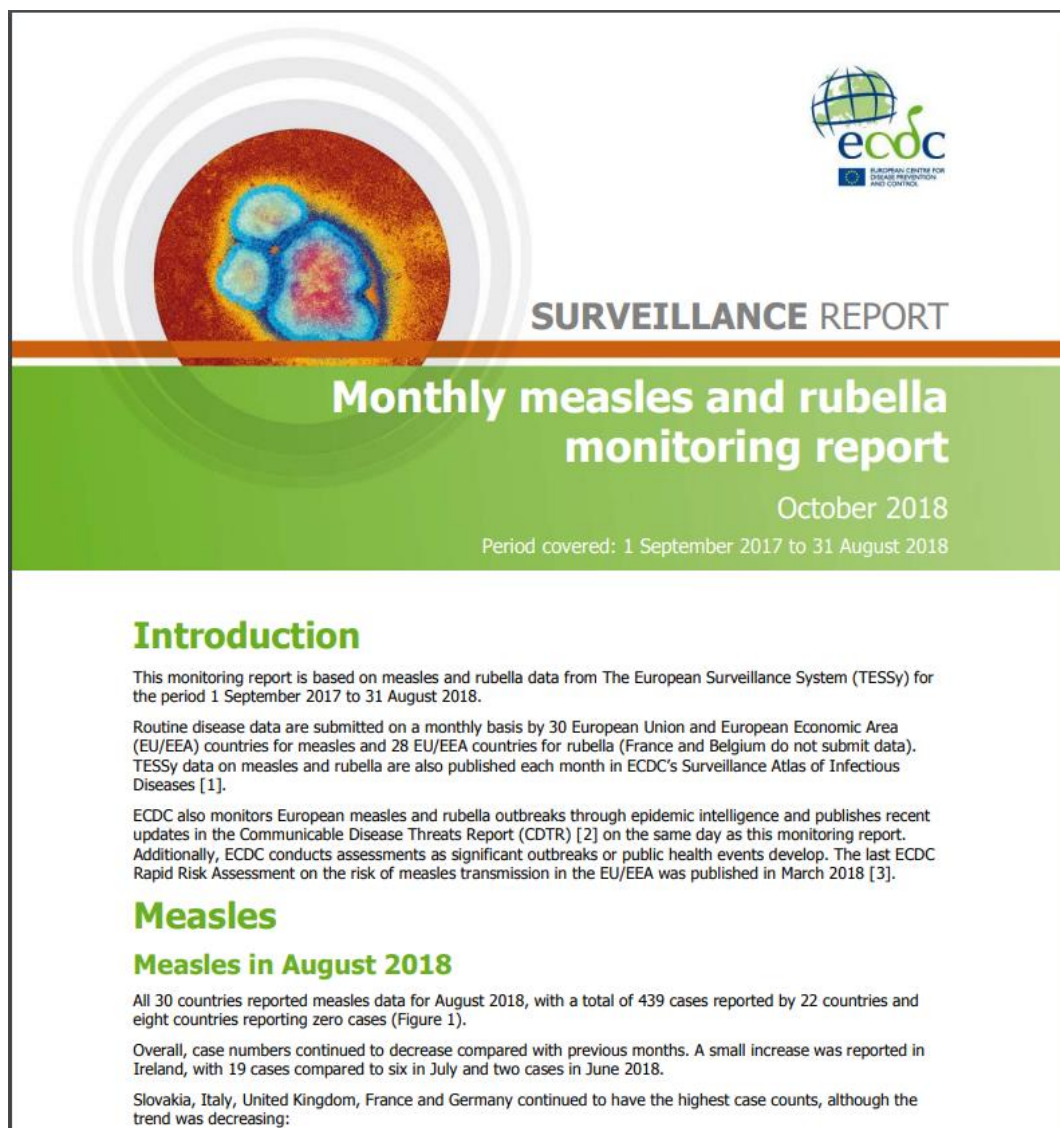


# MEASLES IN EUROPE - CURRENT EPIDEMIOLOGY AND CHALLENGES

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(Slides 13-29 courtesy of Dr. Mark Muscat, WHO Europe)



Data also available in ECDCs "Surveillance Atlas of Infectious Diseases":  
<https://ecdc.europa.eu/en/surveillance-atlas-infectious-diseases>

- ❖ All 30 countries reported measles data for August 2018, with a total of **439 cases** reported by 22 countries and eight countries reporting zero cases
- ❖ Overall, case numbers continued to **decrease** compared with previous months. A small increase was reported in Ireland, with 19 cases compared to six in July and two cases in June 2018
- ❖ **Slovakia, Italy, United Kingdom, France and Germany continued to have the highest case counts**, although the trend was decreasing:
- ❖ **Slovakia** reported **87** cases, a decrease from 257 cases in July and 72 cases in June
- ❖ **Italy** reported **66** cases, compared with 257 cases in July and 273 in June
- ❖ **United Kingdom** reported **38** cases, a decrease from 177 cases in July and 327 in June
- ❖ **France** reported **30** cases, compared with 81 cases in July and 191 in June
- ❖ **Germany** reported **29** cases, a decrease from 54 in July and 94 in June

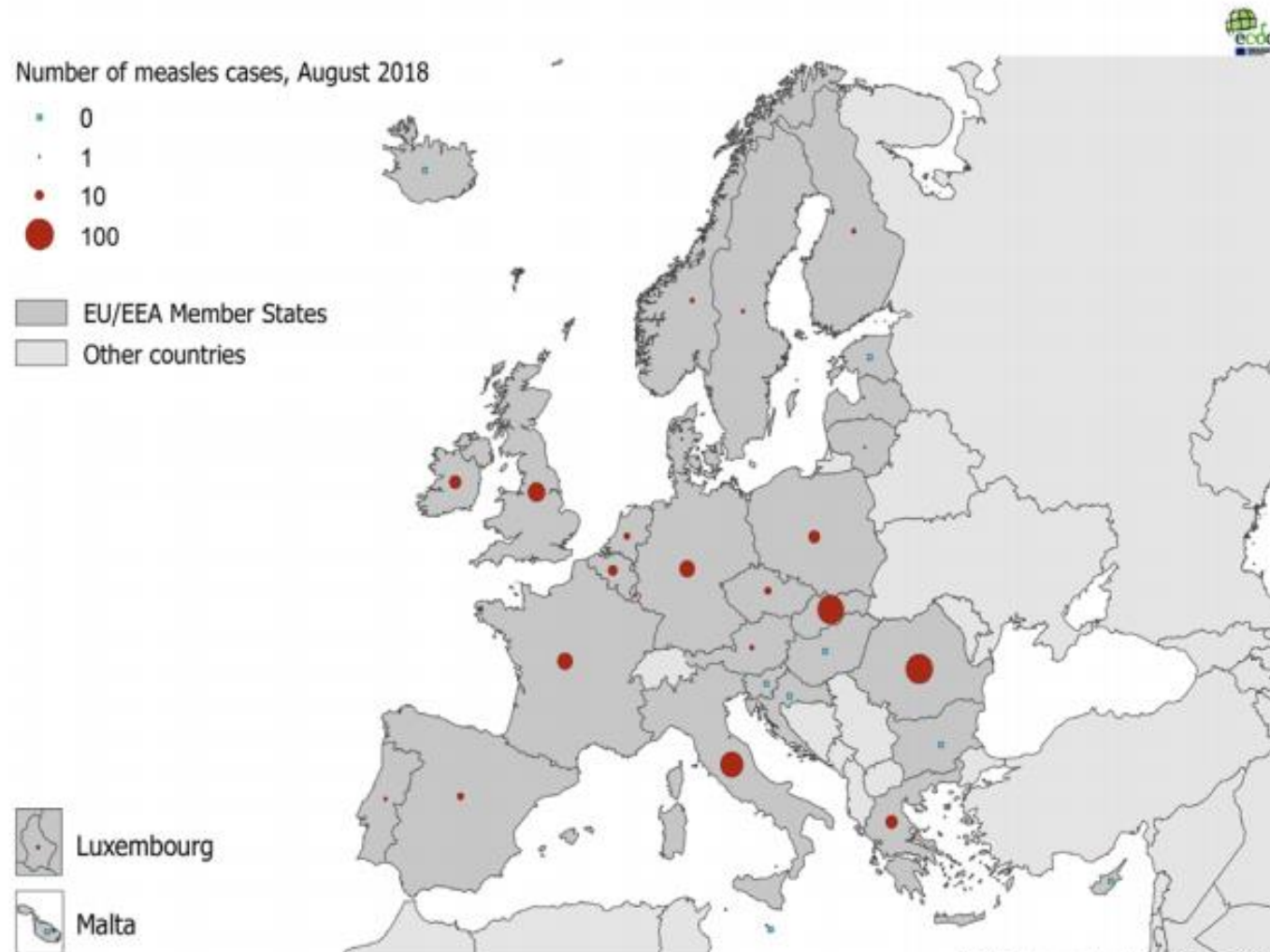
# NO. MEASLES CASES BY COUNTRY, AUG. 2018



SURVEILLANCE REPORT

Monthly measles and rubella monitoring report, October 2018

**Figure 1. Number of measles cases by country, EU/EEA, August 2018 (n=439)**

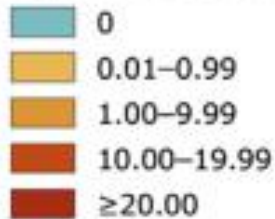


ECDC. Map produced on: 27 Sep 2018  
ECDC map maker: <https://emma.ecdc.europa.eu>

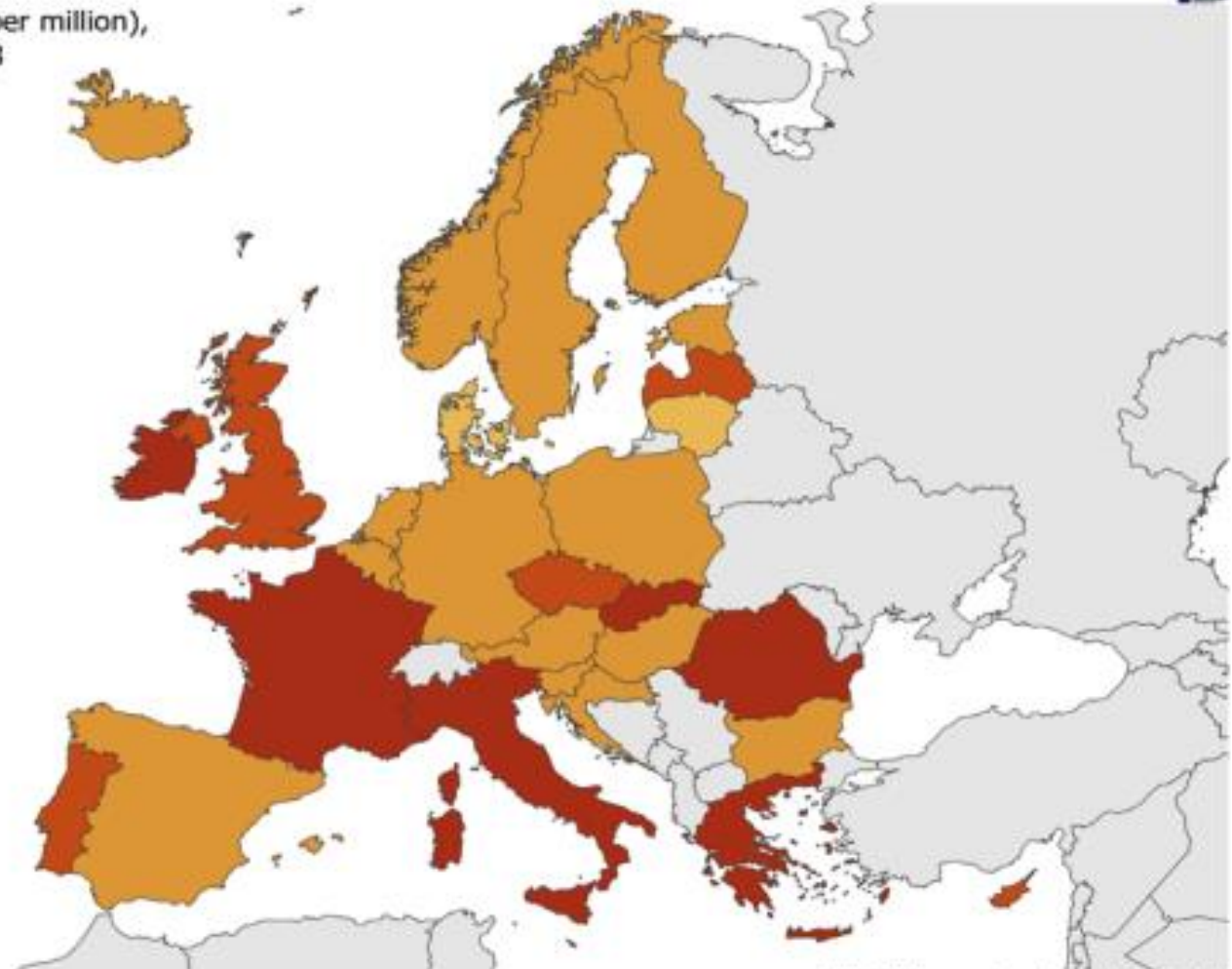
- 30 EU/EEA Member States reported **13.547** cases of measles, of which 9.364 (**69%**) were laboratory-confirmed
- The majority of cases were reported by Greece (3.171), France (2.792), Italy (2.718), Romania (1.765) and United Kingdom (1.007), accounting for 23%, 21%, 20%, 13% and 7% of all cases respectively. (**84%** in total)
- Notification rates per million population **above** the EU/EEA average (26.2) were reported by Greece (294.5), Romania (89.8), Slovakia (81.5), Italy (44.9) and France (41.7)
- The number of measles cases reported to TESSy may in some cases be an **underestimation**. This may particularly apply to Romania where a sustained outbreak has caused delays in case-based reporting to TESSy

# MEASLES NOTIFICATION RATE PER MILL. POP., BY COUNTRY, 1 SEPTEMBER 2017–31 AUGUST 2018

Notification rate of measles (per million),  
September 2017–August 2018



Not included



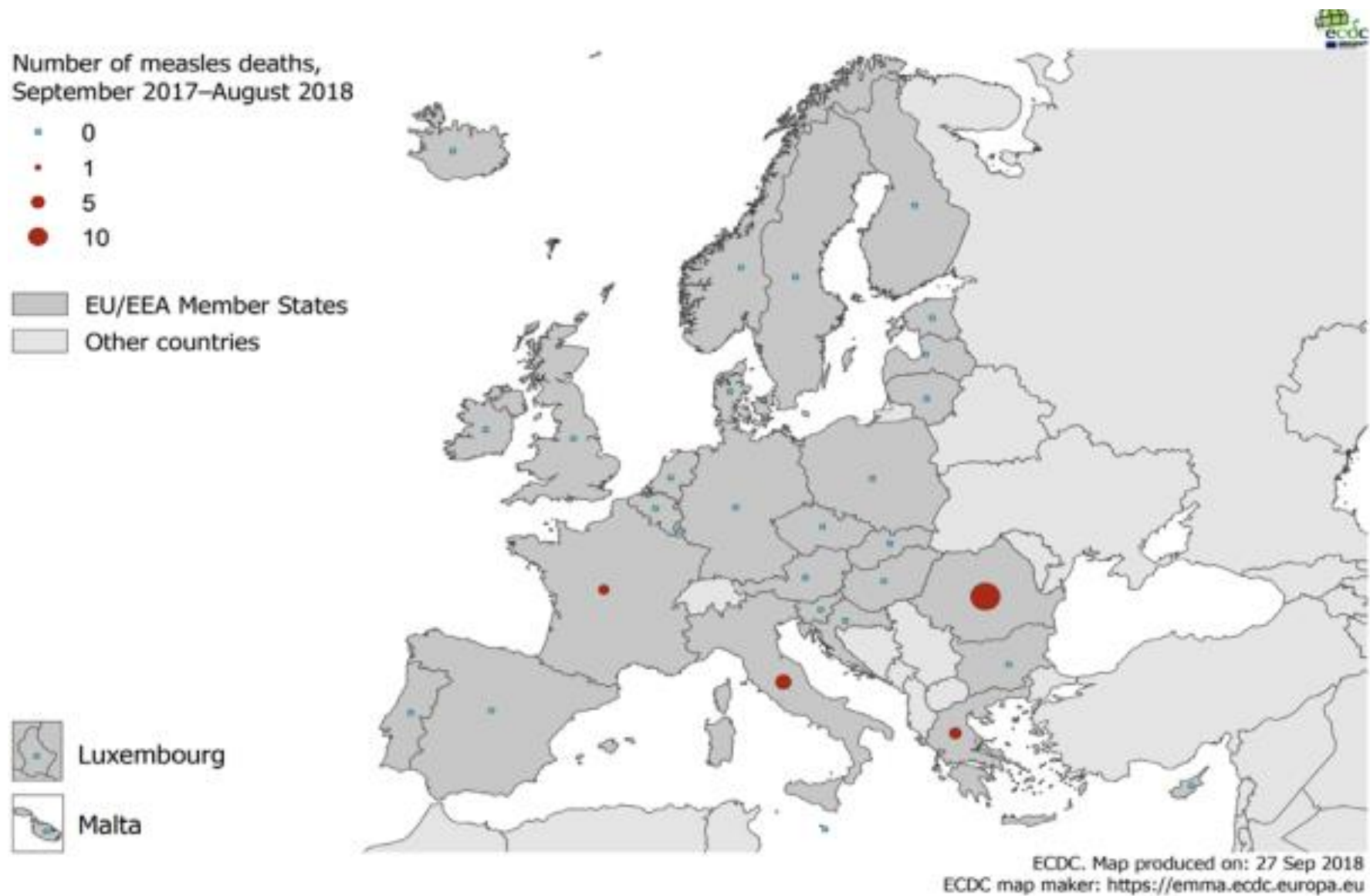
ECDC. Map produced on: 27 Sep 2018

ECDC map maker: <https://emma.ecdc.europa.eu>

Thirty-eight deaths attributable to measles were reported to TESSy during the 12-month period; 24 in Romania, seven in Italy, four in Greece and three in France (Figure 3).



# NUMBER OF MEASLES DEATHS BY COUNTRY, 1 SEPTEMBER 2017–31 AUGUST 2018 (N=38)

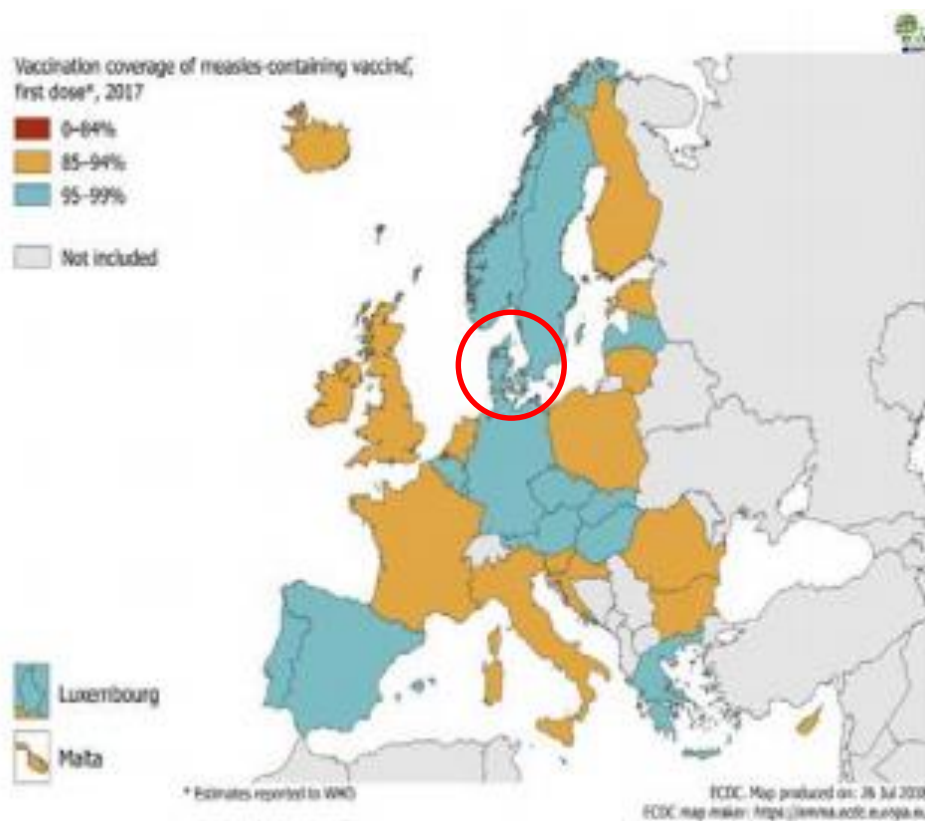


- ❖ Importation status was reported by 30 countries and known for 12.268 cases (93%).
- ❖ Among cases with known importation status:
  - ❖ 8.712 (**69%**) were reported to be endemic,
  - ❖ 3.243 (**26%**) were import-related, and
  - ❖ 613 (**5%**) were imported.
- ❖ Of 13.544 cases with known age, 4.167 (31%) were children **under five years** of age, while
- ❖ 6.698 (**49%**) were aged 15 years or older
- ❖ The highest notification rate was in **children under one year** (285.6 cases per million) and **children aged 1–4 years** (128.3 cases per million)

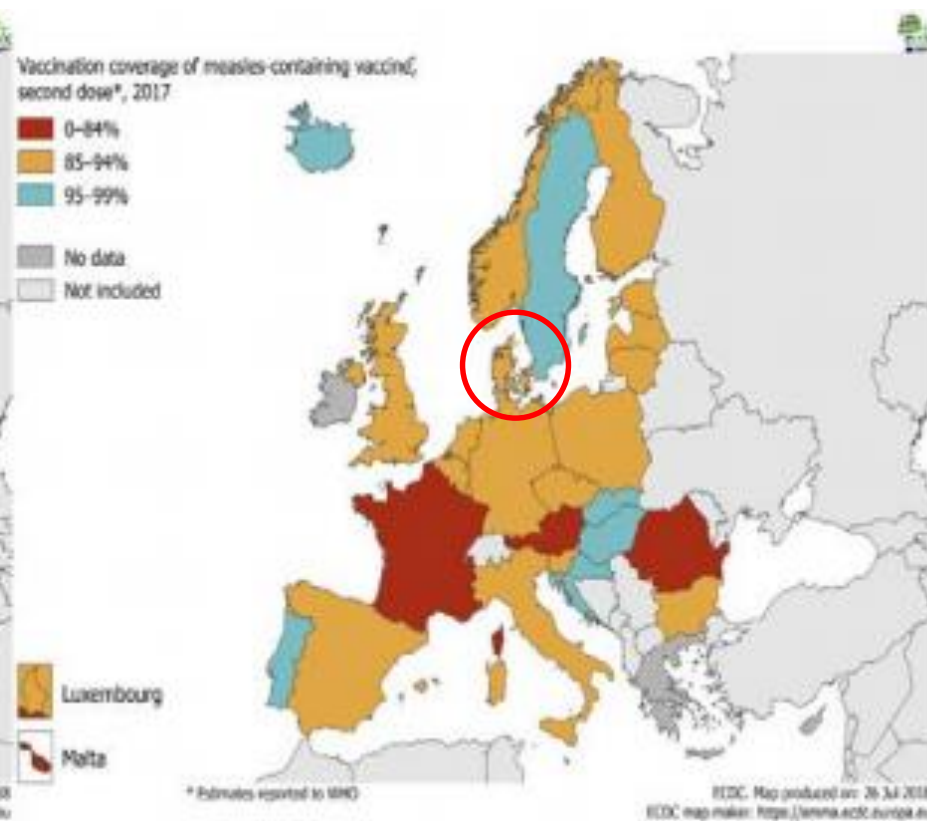


- ❖ A total of 1.382 (**10%**) of all cases had **unknown** vaccination status
- ❖ The proportion of cases with **unknown** vaccination status was highest in **adults aged 30 years and over**, reaching **21%**
- ❖ Of 12.162 cases (90% of all cases) with known age and vaccination status, **82% were unvaccinated**, **11% were vaccinated with one dose** of measles-containing vaccine, **6% were vaccinated with two or more doses**, and 1% were vaccinated with an unknown number of doses
- ❖ The **proportion of unvaccinated cases** was highest among **children under one year (94%)**, as they were **too young** to have received the first dose of the measles-containing vaccine
- ❖ Infants below the age of one year are particularly vulnerable to complications of measles and are best protected by herd immunity
- ❖ Among **cases aged 1–4 years**, **80% were unvaccinated**, 14% were vaccinated with one dose, 2% with two doses or more, 0% with an unknown number of doses, and 4% had an unknown vaccination status

# VACCINATION COVERAGE FOR FIRST AND SECOND DOSE OF MEASLES-CONTAINING VACCINE, 2017



FIRST DOSE



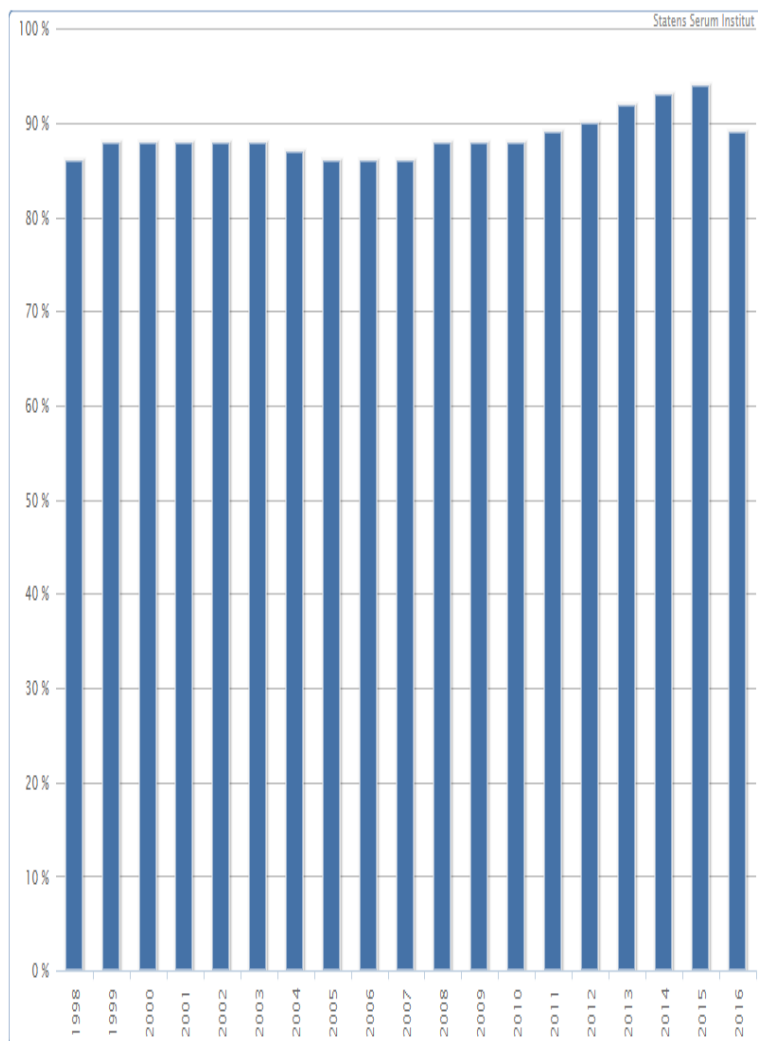
SECOND DOSE



# MFR1 OG MFR2 DÆKNING I DANMARK

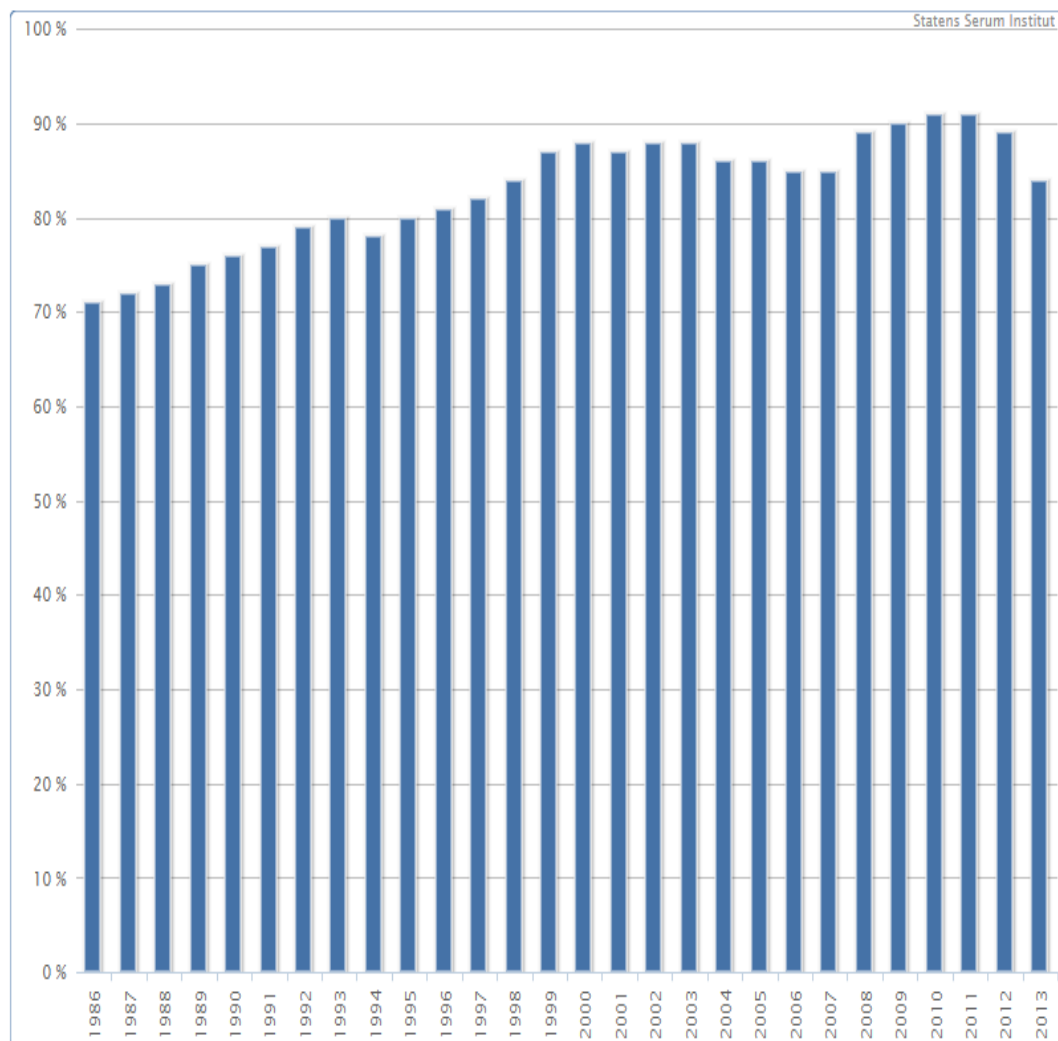
Andel vaccineret med MFR 1, Fødselsår: 1998-2016

 Grafer  Tabel  Kort



Andel vaccineret med MFR 2, Fødselsår: 1986-2013

 Grafer  Tabel  Kort



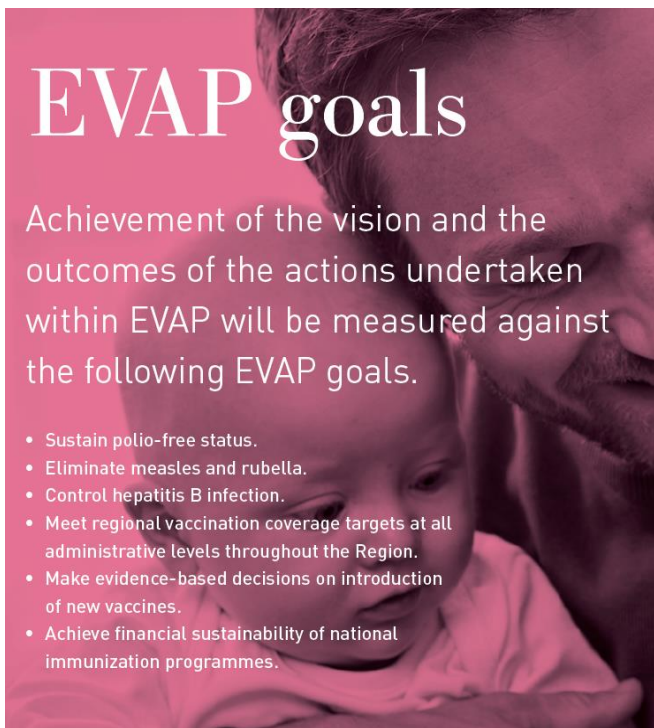
- ❖ Measles continues to spread across Europe **because vaccination coverage in many countries is suboptimal**
- ❖ The latest WHO data on national vaccination coverage for the first and second doses of measles-containing vaccine show that **only four EU/EEA countries reported at least 95% vaccination coverage for both doses of measles-containing vaccine for 2017**
- ❖ If the elimination goal is to be reached, vaccination coverage for children **and adults** needs to increase in a number of countries
- ❖ Sustained vaccination coverage of at least 95% for both the first and the second dose must be achieved at all subnational levels and in all communities to interrupt measles circulation

# European Vaccination Action Plan (EVAP): VISION

*“A European Region **free** of vaccine-preventable diseases, where all countries provide **equitable** access to **high-quality**, **safe**, **affordable** vaccines and immunization services throughout the **life-course**”*



# European Vaccination Action Plan (EVAP): GOALS



## EVAP goals

Achievement of the vision and the outcomes of the actions undertaken within EVAP will be measured against the following EVAP goals.

- Sustain polio-free status.
- Eliminate measles and rubella.
- Control hepatitis B infection.
- Meet regional vaccination coverage targets at all administrative levels throughout the Region.
- Make evidence-based decisions on introduction of new vaccines.
- Achieve financial sustainability of national immunization programmes.

Sustain  
polio-free  
status



Eliminate  
measles  
and  
rubella



Control  
hepatitis  
B



Meet regional  
vaccination  
coverage  
targets



Evidence-  
based  
decisions on  
introduction of  
new vaccines



Immunization  
programmes  
are  
financially  
sustainable



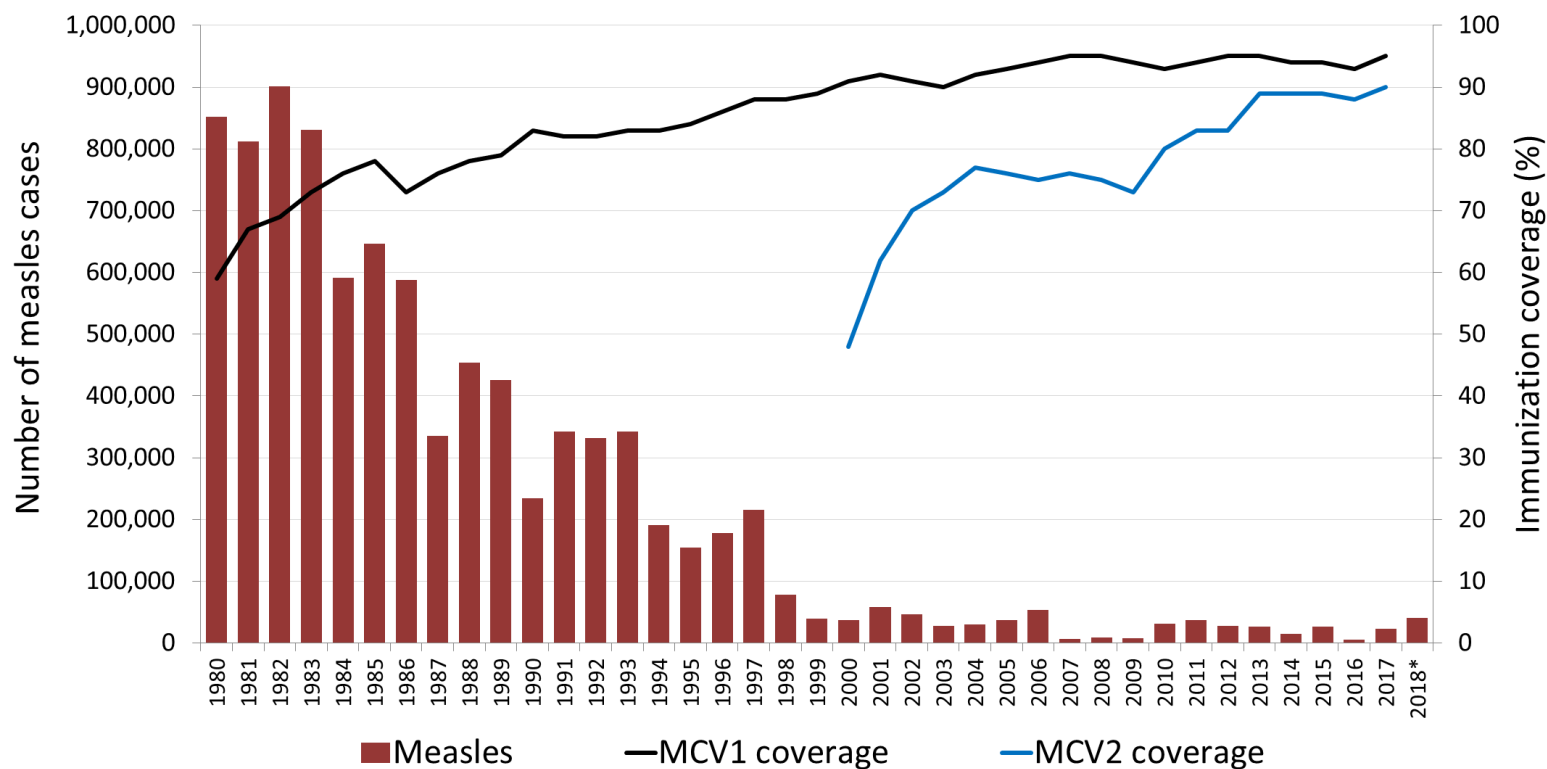


# MEASLES (1980-2018\*) AND COVERAGE WITH MEASLES-CONTAINING VACCINE, WHO EUROPEAN REGION



Eliminate  
measles and  
rubella

Goal 2

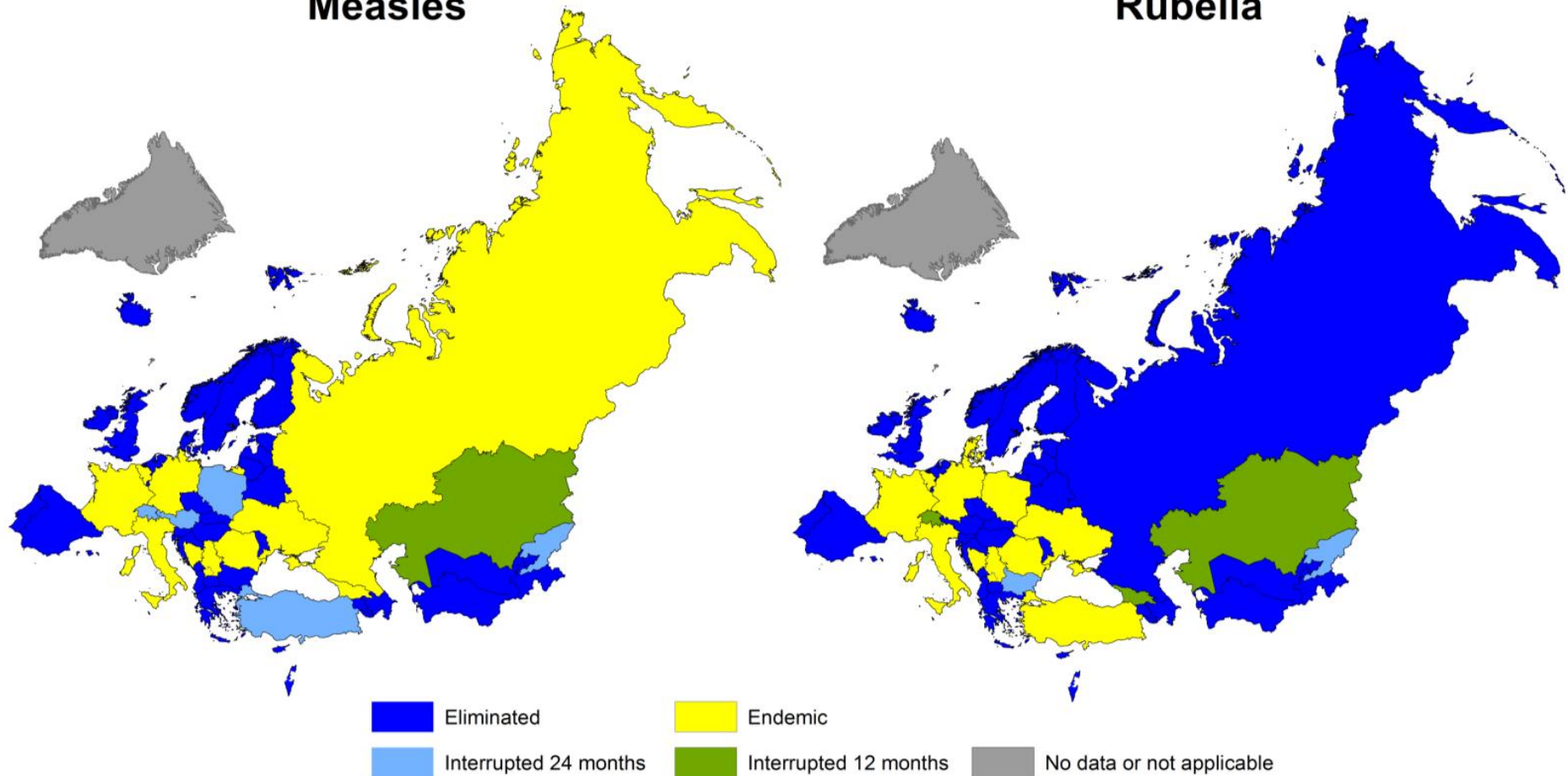


Data source: Coverage data - WHO/UNICEF JRF, Cases – CISID \* 2018 data is for Jan-May 2018

# Verification Status – Measles-Rubella Elimination, 2017

## Measles

## Rubella



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 and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

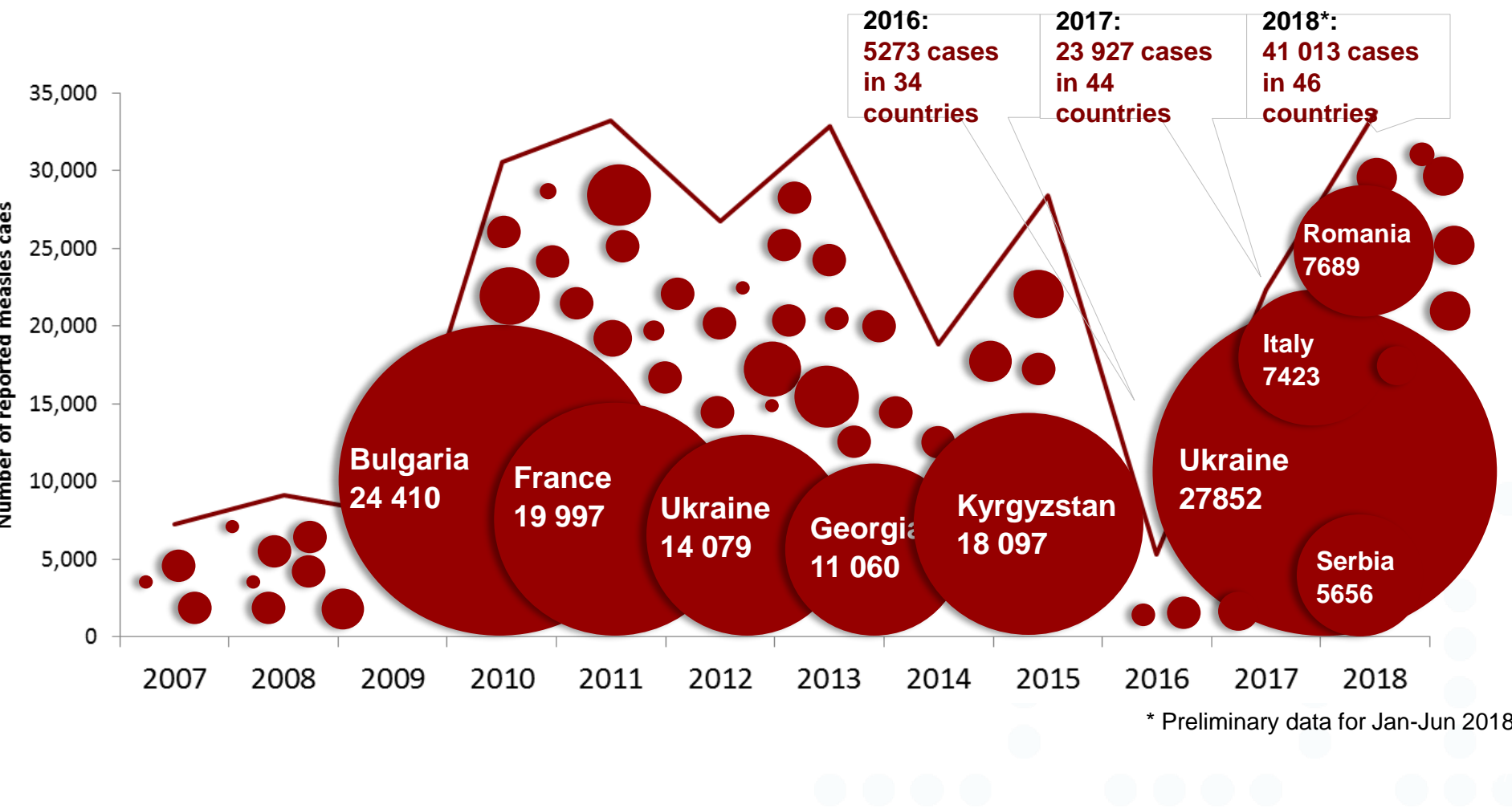
© WHO 2018. All rights reserved.

Source: Regional Verification Committee Report 2017

Updated as of: 24 Aug 2018

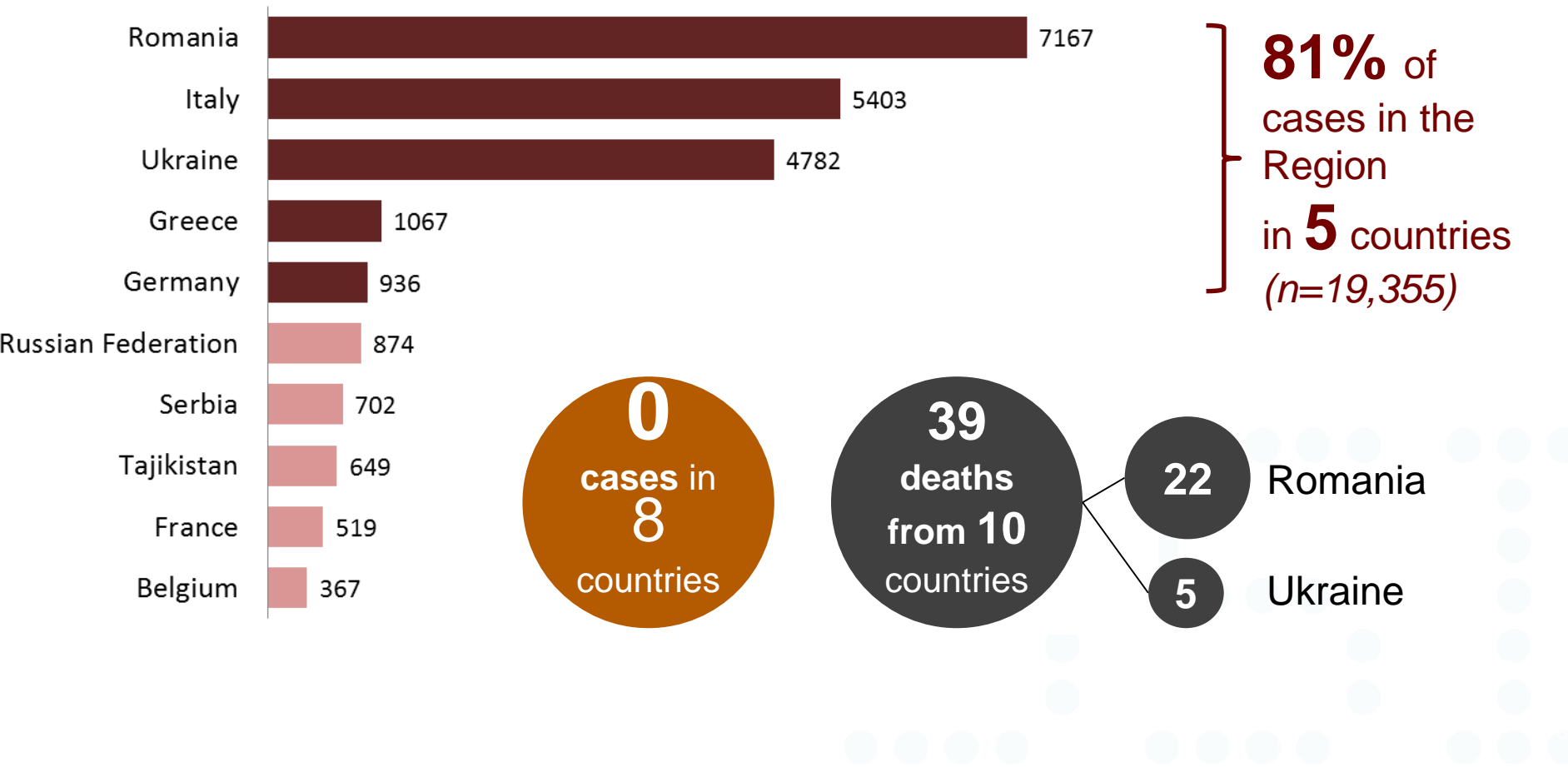
Map Production: Vaccine-preventable Diseases and Immunization (VPI),  
Division of Health Emergencies and Communicable Diseases (DEC),  
World Health Organization Regional Office for Europe.

# Number of measles in the WHO European Region, 2007-2018\*

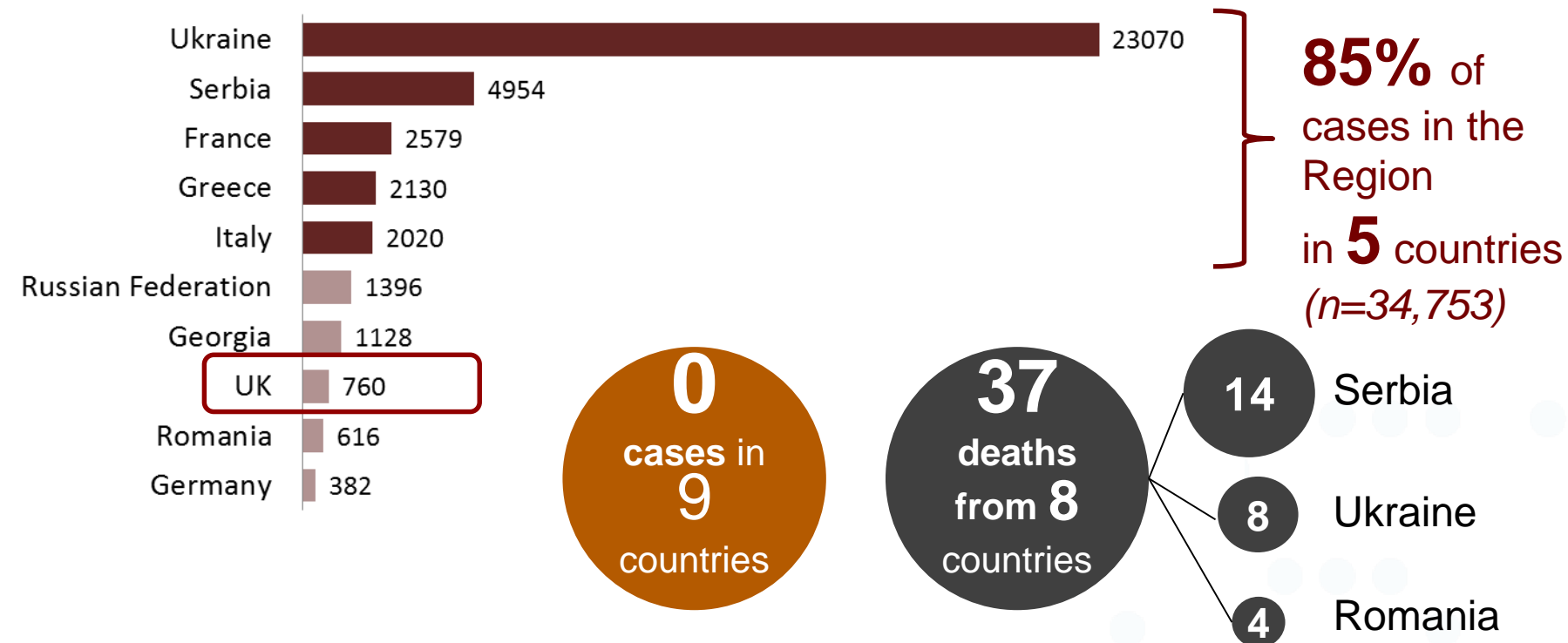


\* Preliminary data for Jan-Jun 2018

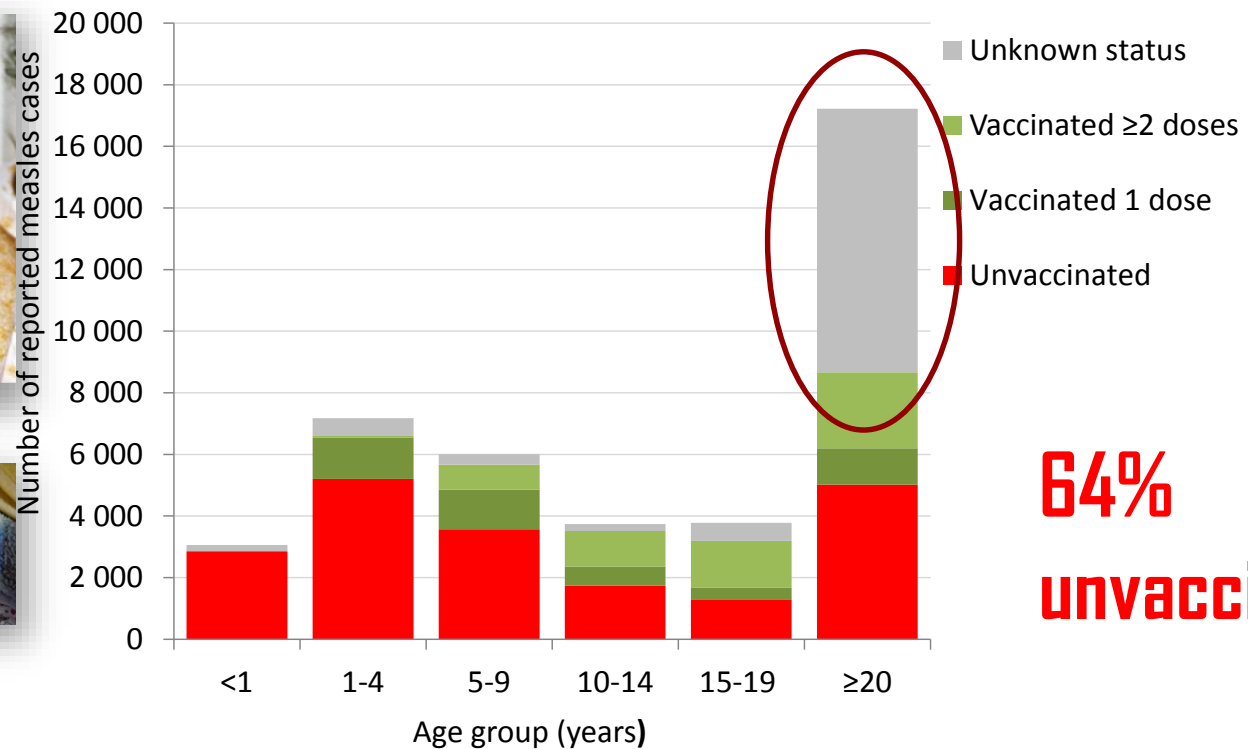
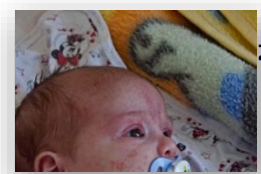
# Top 10 countries with measles cases, WHO European Region, 2017



# Top ten countries with the highest numbers of measles cases in the European Region, January-June 2018



# Age distribution and vaccination status of measles, WHO European Region, January-June 2018 (n=30,511)

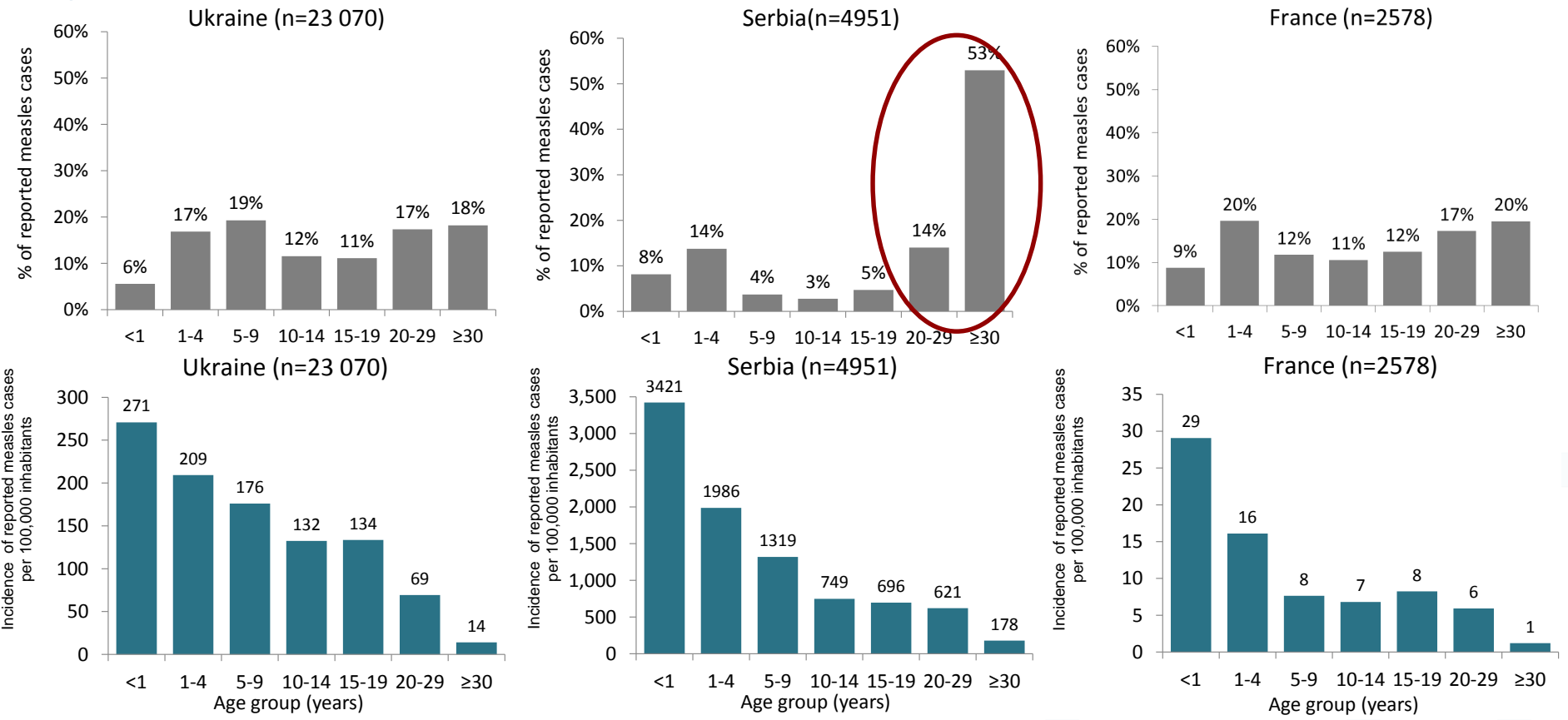


**64%**  
**unvaccinated**

Unknown status and age in 10,472 cases (26% of total)



# Age distribution of measles in top 3 reporting countries of the WHO European Region, January-June 2018



# Measles outbreaks affects several susceptible populations

**Unvaccinated  
infants and  
children**

**Unvaccinated  
adolescents**

**Unvaccinated  
adults**

**Roma  
communities**

**Health workers**

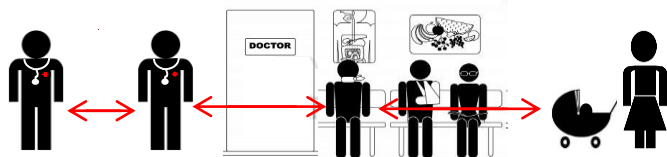
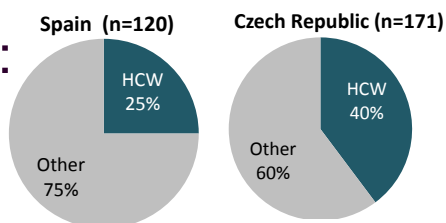
**Inequities in vaccine uptake and disease persist**

# Main public settings for measles outbreaks

## Health-care settings

**12** countries reported nosocomial transmission in recent years

In 2014:



**13-19** times higher risk of acquiring measles in susceptible HCWs than for the general public

## Educational facilities

Day care centres

Kindergardens

Schools

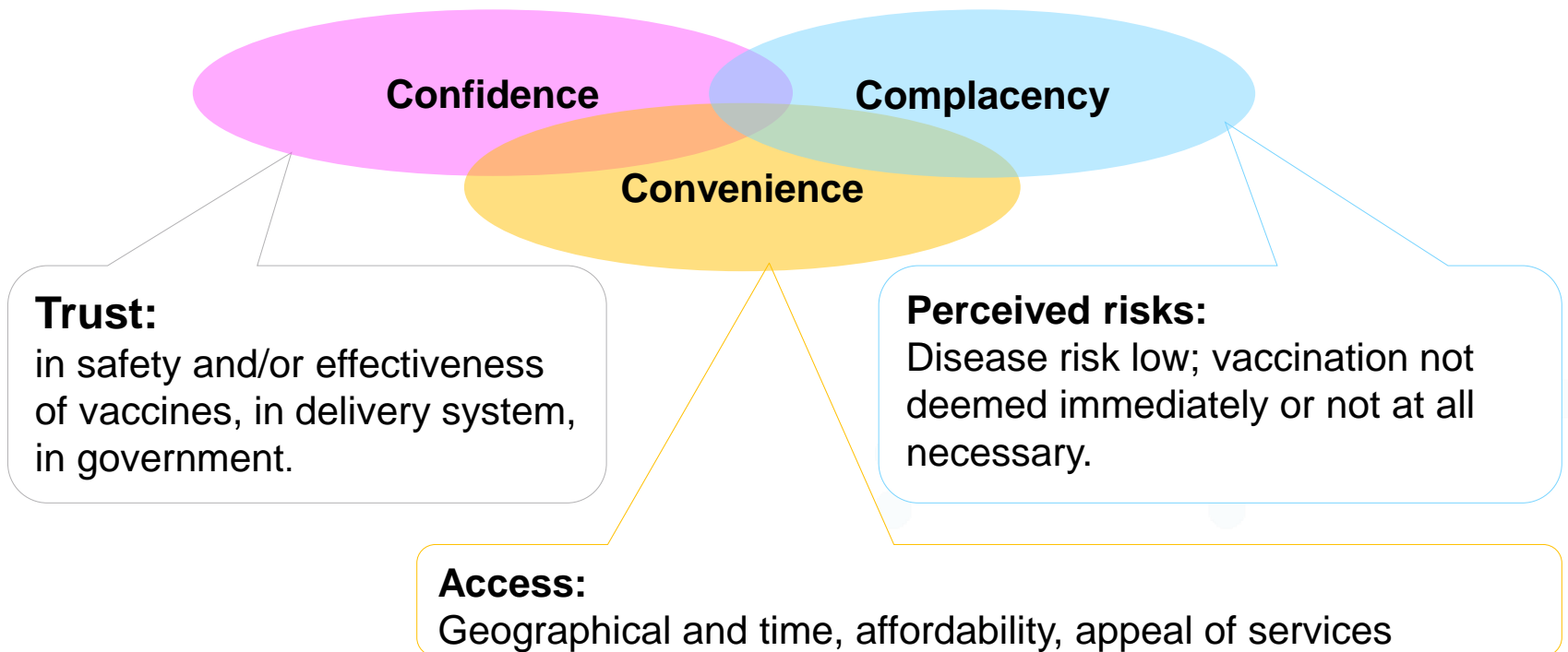
Anthroposophic  
Schools

Universities

At least **8** countries have reported outbreaks in educational facilities in recent years

# Vaccine hesitancy

- refers to delay in acceptance or refusal of vaccines despite availability of vaccine services
- complex and context specific varying across time, place and vaccines

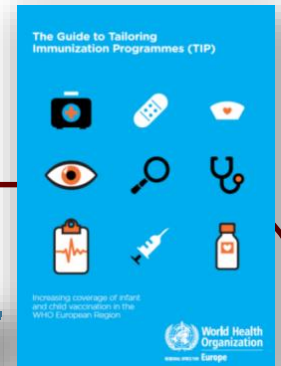


## Immunization programme limitations

- Lack of timely monitoring of coverage
- Limited ability to follow up unvaccinated individuals/groups
- Lack of communication strategies
- Health professionals not properly educated on vaccines
- Inflexibility of vaccine services
- Vaccine supply issues
- Delayed outbreak response

# Examples of activities and policies to reach and maintain high population immunity

- Vaccination registers with reminder systems
- Supplementary immunization activities
- Tailoring Immunization Programmes
- Opportunity vaccination
- Pre-school entry policies
- Pre-travel vaccination
- Health workers policies

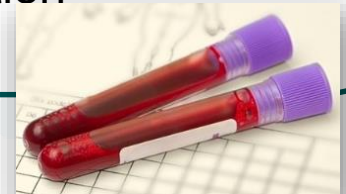




# High-quality surveillance

- Inadequate reporting of **suspected** cases
- Sub-optimal laboratory testing rate
- Insufficient genotyping especially for rubella

- Reporting of **suspected** cases
- Epidemiological investigation
- Laboratory confirmation
- Genotyping and sequencing
- Establish national operating procedures for epidemiological and laboratory investigation



# Knowledge and training

- Widespread misinformation and myths
  - Lack of education and training on vaccines in medical curricula
  - False contraindications
  - Lack of information
  - Lack of personal knowledge and disease awareness
- Web-based information on diseases and benefits of vaccines
  - Medical and nursing curricula
  - Continued medical education
  - Training in communication
  - School-based learning
  - Health care workers to promote vaccines

- Complacency in translation of political commitments into action
- ∴ Attaining and maintaining high national coverage; low coverage contributed by:
  - Lack of access or lost to follow-up or low demand
  - Vaccine hesitants/Vaccine refusals/Distrust in vaccine or health authorities
- ∴ Performing high quality surveillance of elimination standard
- ∴ Closing knowledge and communication gaps

# MMR VACCINATION OF CHILDREN < 15 MONTHS?

- ❖ Children aged 12-14 months can be vaccinated as normal (including together with the other vaccines given at 12 months – or at any interval to these)
- ❖ The vaccine is considered "valid" and is reimbursed by the Health Insurance
- ❖ There is no general recommendation to give earlier than 15 months, but could be considered if travelling to known risk country
- ❖ Infants aged 9-11 måneder can also be vaccinated, if travelling to risk country (The vaccine is approved for use from 9 months of age)
- ❖ Infants aged 6-8 months can also be considered for vaccination, if going to high risk area, i.e. with on-going outbreak (not country but specific area)
- ❖ Vaccinated infants less than 12 months should be vaccinated again at 15 months (and at 4 years)
- ❖ For infants less than 12 months whom are vaccinated on "travel indication" only, the parents will have to bear the cost of the vaccination
- ❖ (MMR-vaccine given as PEP is free for all)
- ❖ The clinician should define exposed persons at risk (and vaccinate/give HI)
- ❖ The Danish Patient Safety Authority gives guidance but doesn't do the actual work!

- EPI-NEWS 50/15 and SSI.DK under "Vaccination og "Efter eksposition":  
"Mæslingeekspositionsprofylakse" (in Danish only)



# THANK YOU FOR YOUR ATTENTION

❖ Questions/comments?

