MEASLES IN THE 21ST CENTURY – A PREVENTABLE RISK FOR TRAVELLERS

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Measles

Highly contagious viral disease with airborne transmission

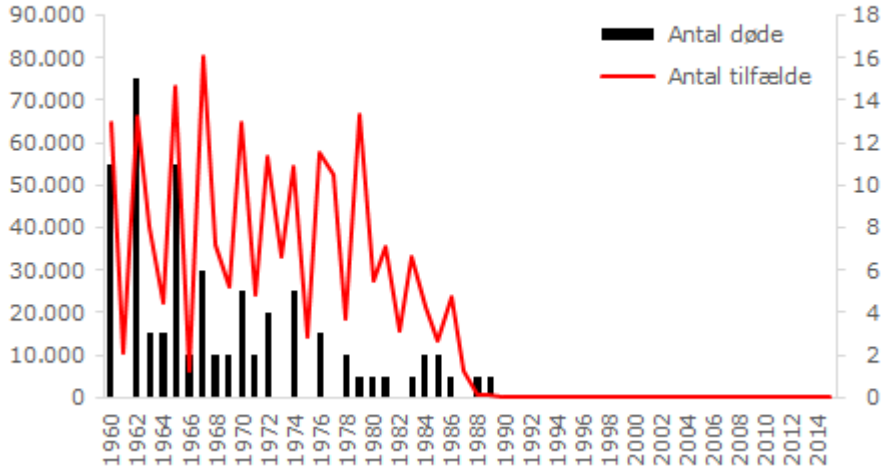
Basic reproductive number 12-18

In order to control the disease/to gain herd immunity it is necessary that 95% of the population is immune.

After two dose of measles vaccine almost all will be immune, so with a 95% vaccine uptake for both doses it will be possible to eliminate measles (if the immune are evenly distributed in the population)

Complications: otitis media (1:15), pneumonia (1:25), encephalitis (1:2500, survivors of this complication often have permanent brain damage and mental retardation), Thrombocytopenia (1:2500), SSPE (Subacute Sclerosing Pan Encephalitis, 1-11:100.000, debut several years after measles)
The risk of death (1:2500 approx., latest numbers from DK show lower mortality 1:12.000) from measles or its complications is greater for infants and adults

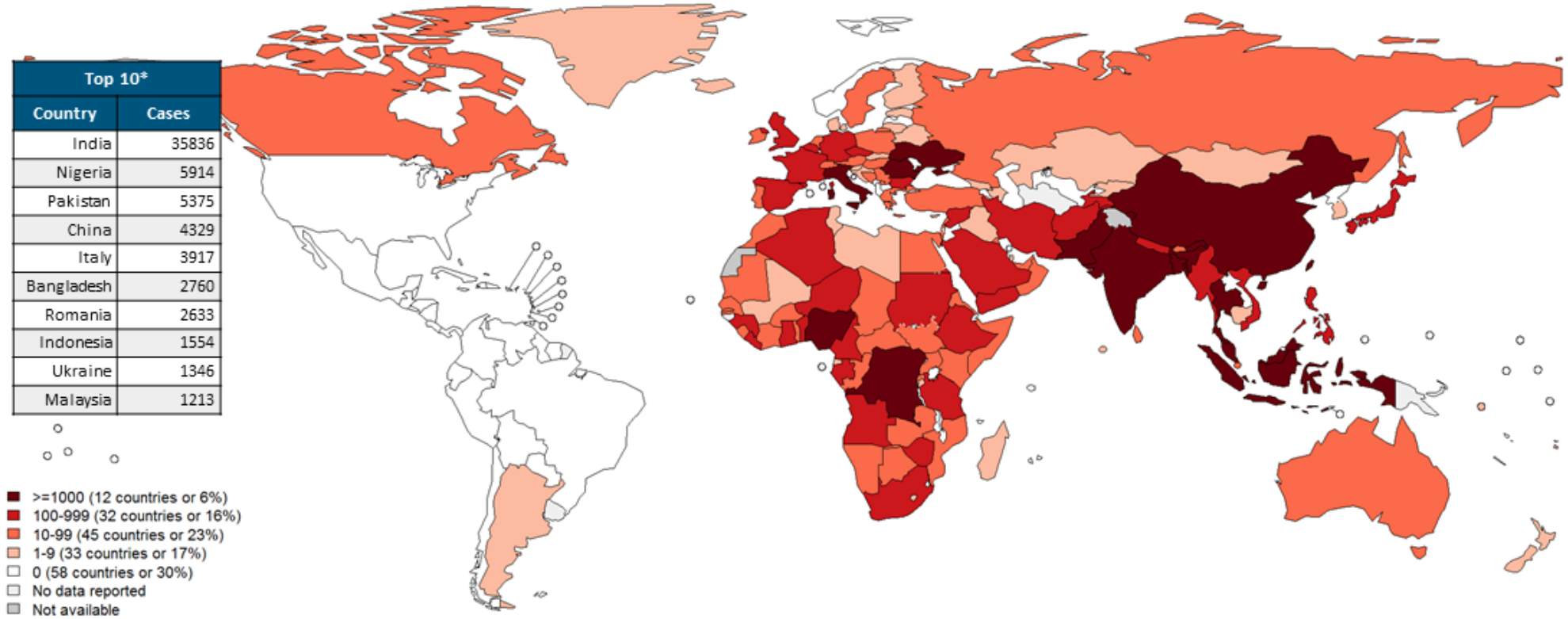
Figur 2. Mæslingetilfælde og antal dødsfald som følge af mæslinger 1960-2014



Many at risk as well as healthy children were vaccinated already from the early eighties

Number of Reported Measles Cases (6M period)

Top 10*	
Country	Cases
India	35836
Nigeria	5914
Pakistan	5375
China	4329
Italy	3917
Bangladesh	2760
Romania	2633
Indonesia	1554
Ukraine	1346
Malaysia	1213



World Health Organization

Map production: World Health Organization, WHO, 2017. All rights reserved
Data source: IVB Database

Disclaimer:
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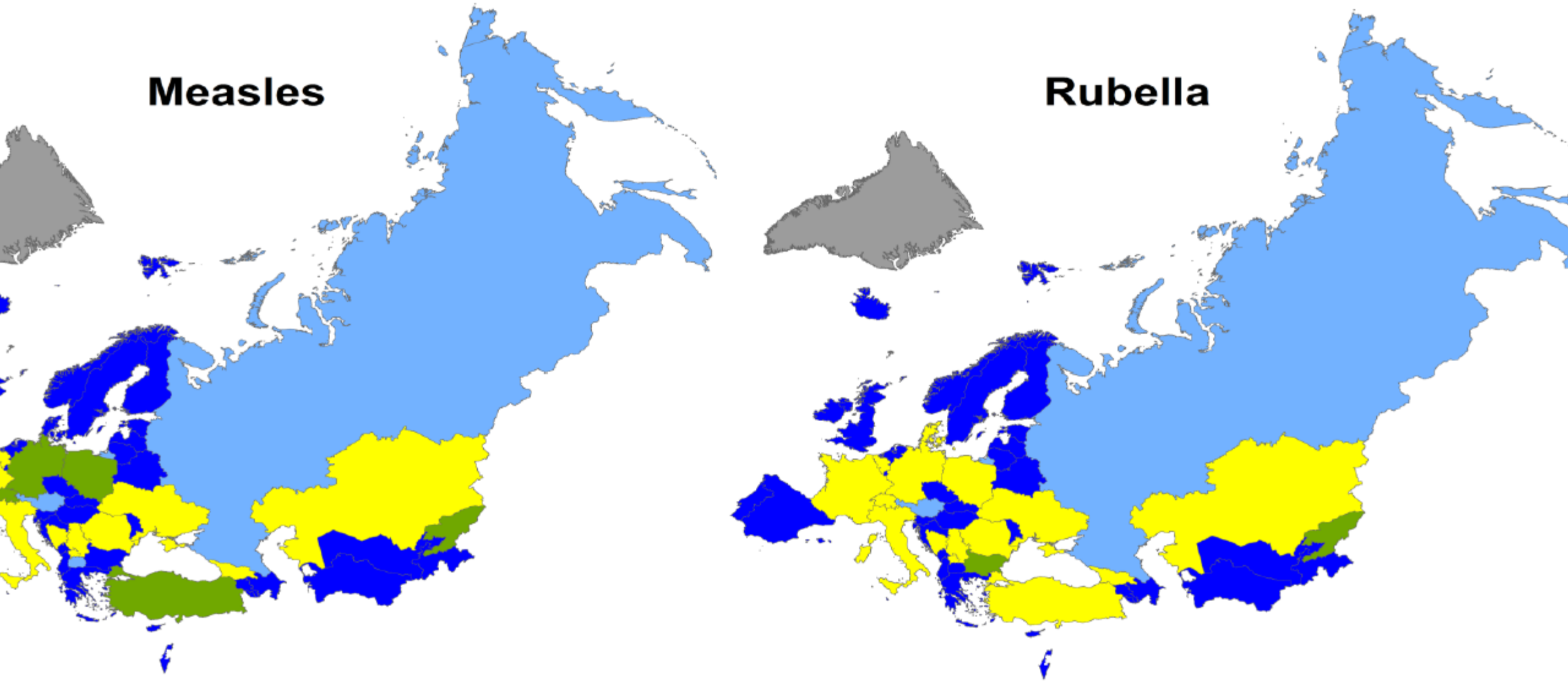
Based on data received 2017-09 - Surveillance data from 2017-02 to 2017-07 - * Countries with highest number of cases for the period

http://www.who.int/immunization/monitoring_surveillance/burden/vpd/surveillance_type/active/measles_monthlydata/en/

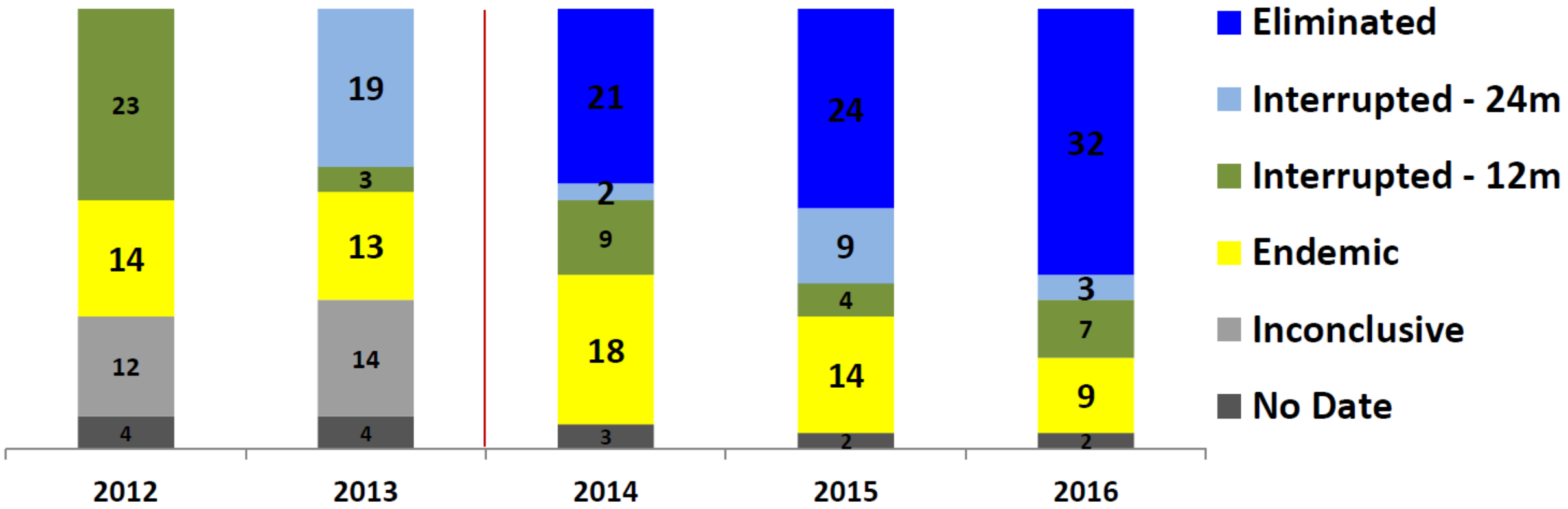
World Health Organization



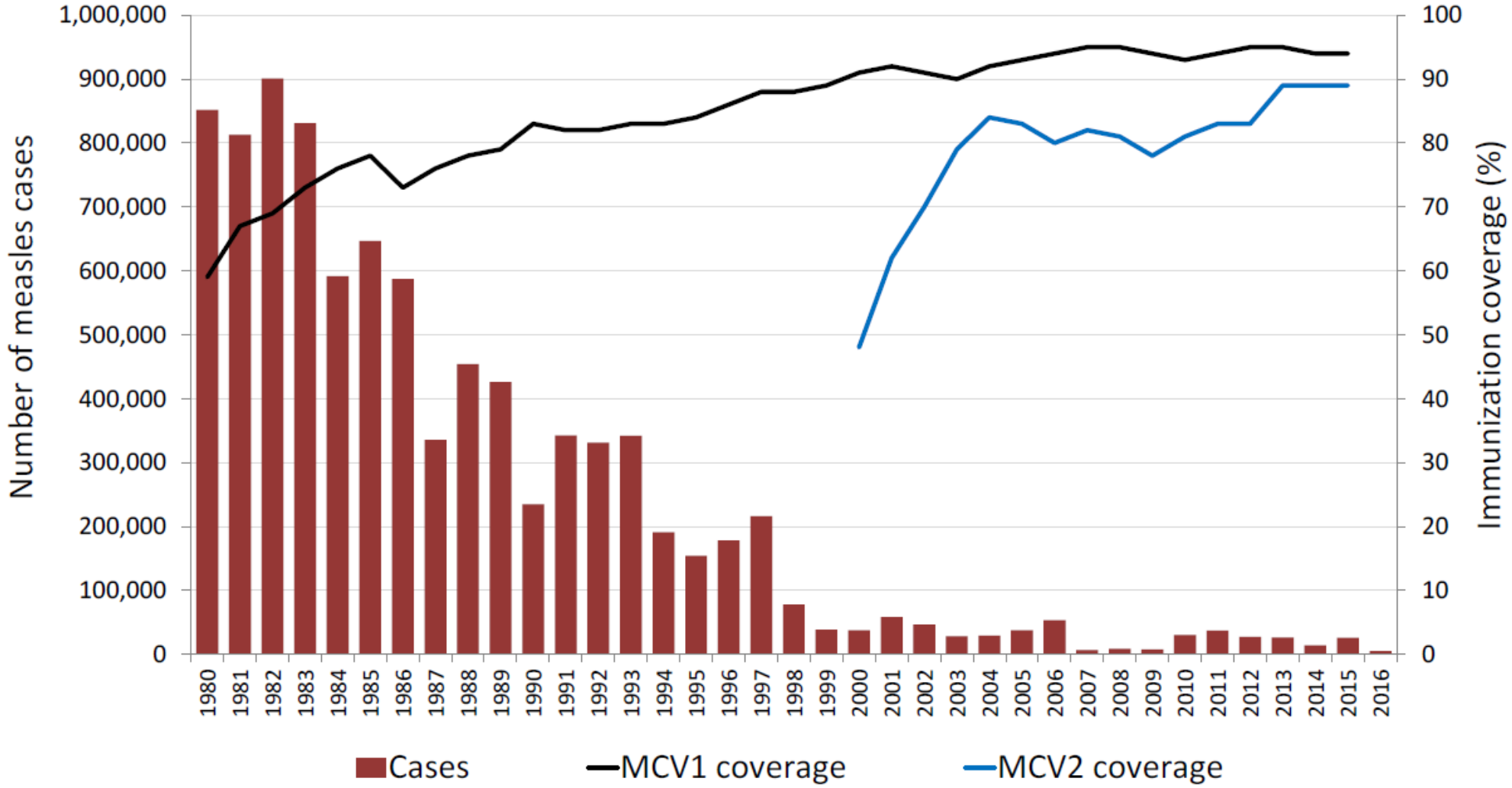
n Committee Report 2016

eventable Diseases and Immunization (VPI),
cies and Communicable Diseases (DEC),
Regional Office for Europe

Measles verification status, 2012-2016

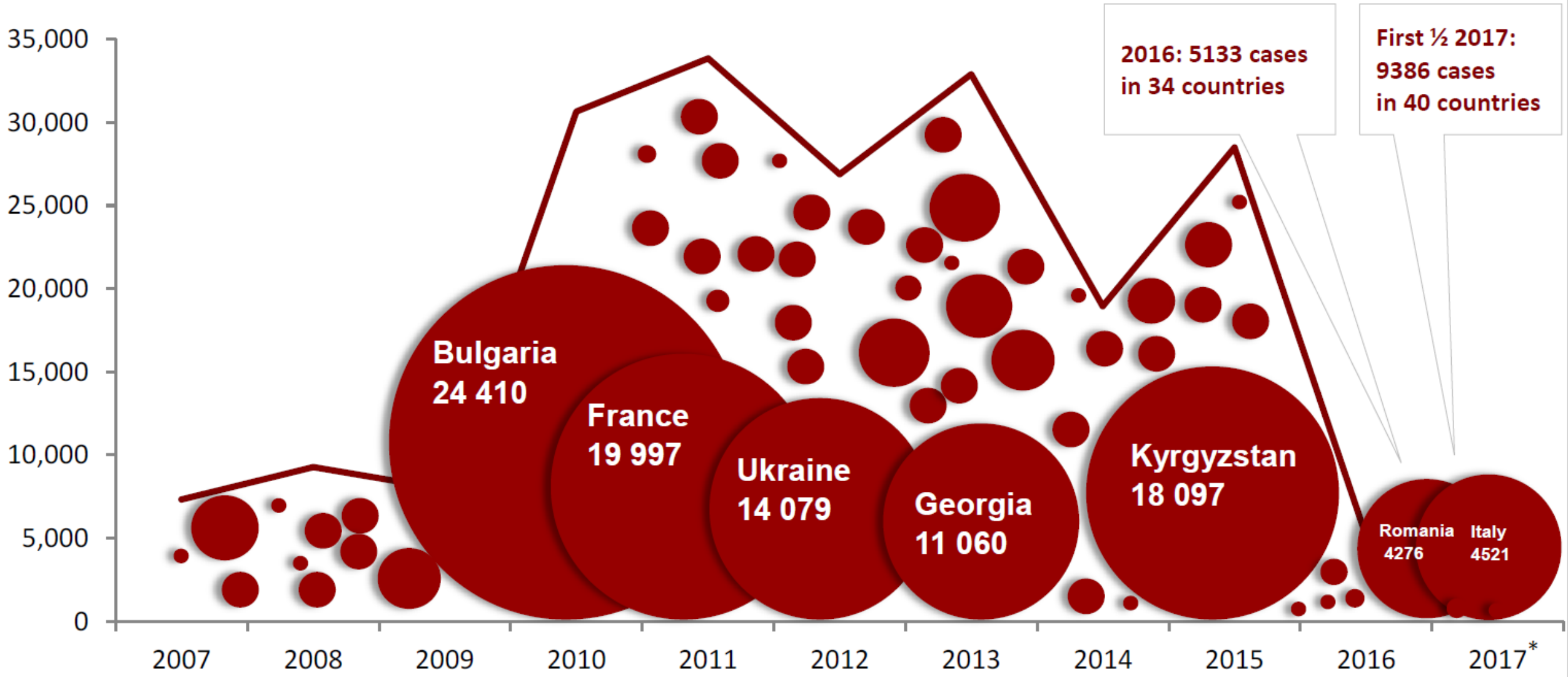


Number of measles cases and coverage with measles-containing vaccine, WHO European Region, 1980-2016



Data source: Coverage data - WHO/UNICEF JRF, Cases - CISID

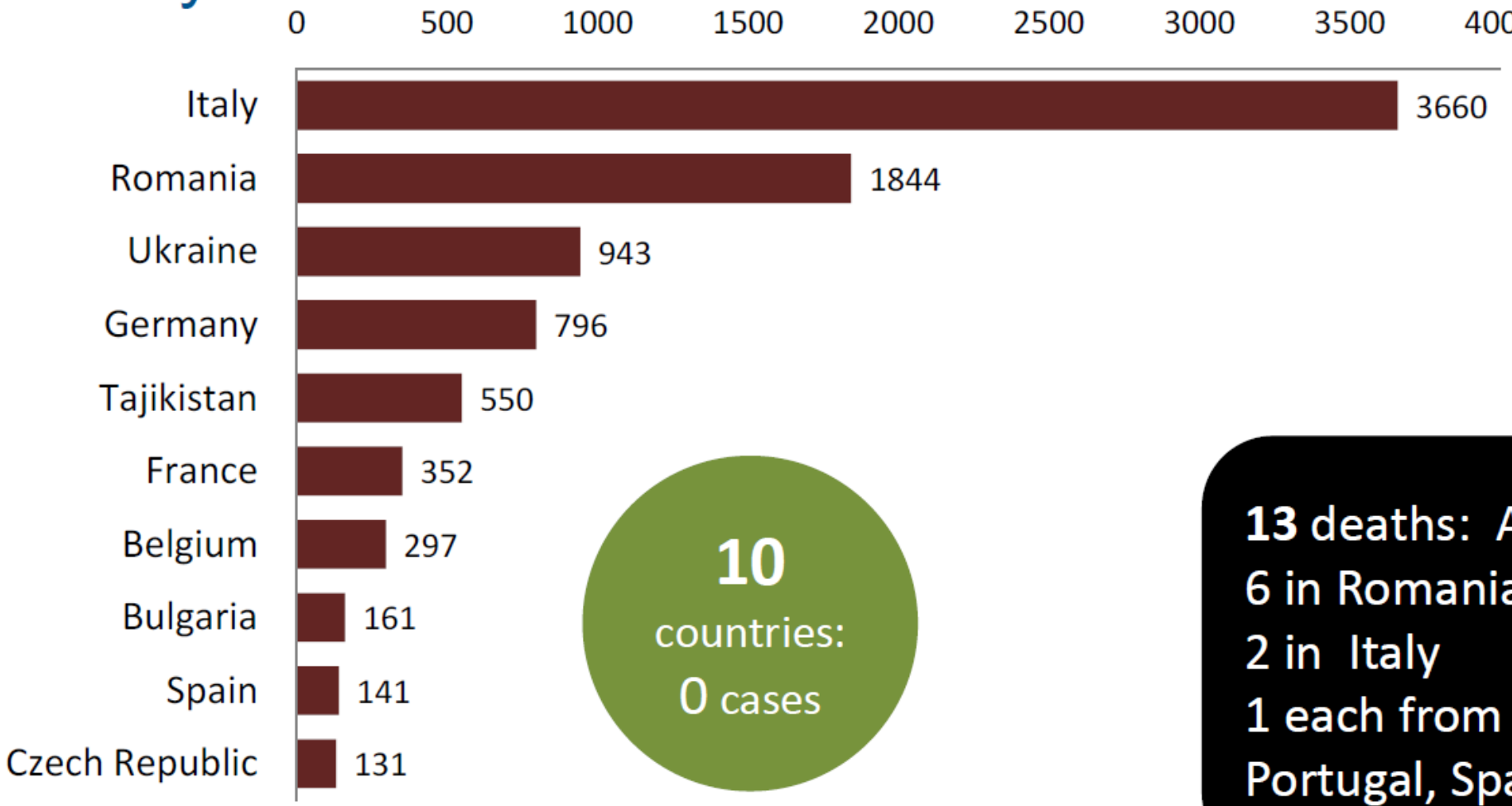
Number of measles in the WHO European Region, 2007-2017*



Data source: CISID, extracted 1 August 2017

* Jan-Jun 2017

Top 10 countries with measles cases, WHO European Region, January-June 2017



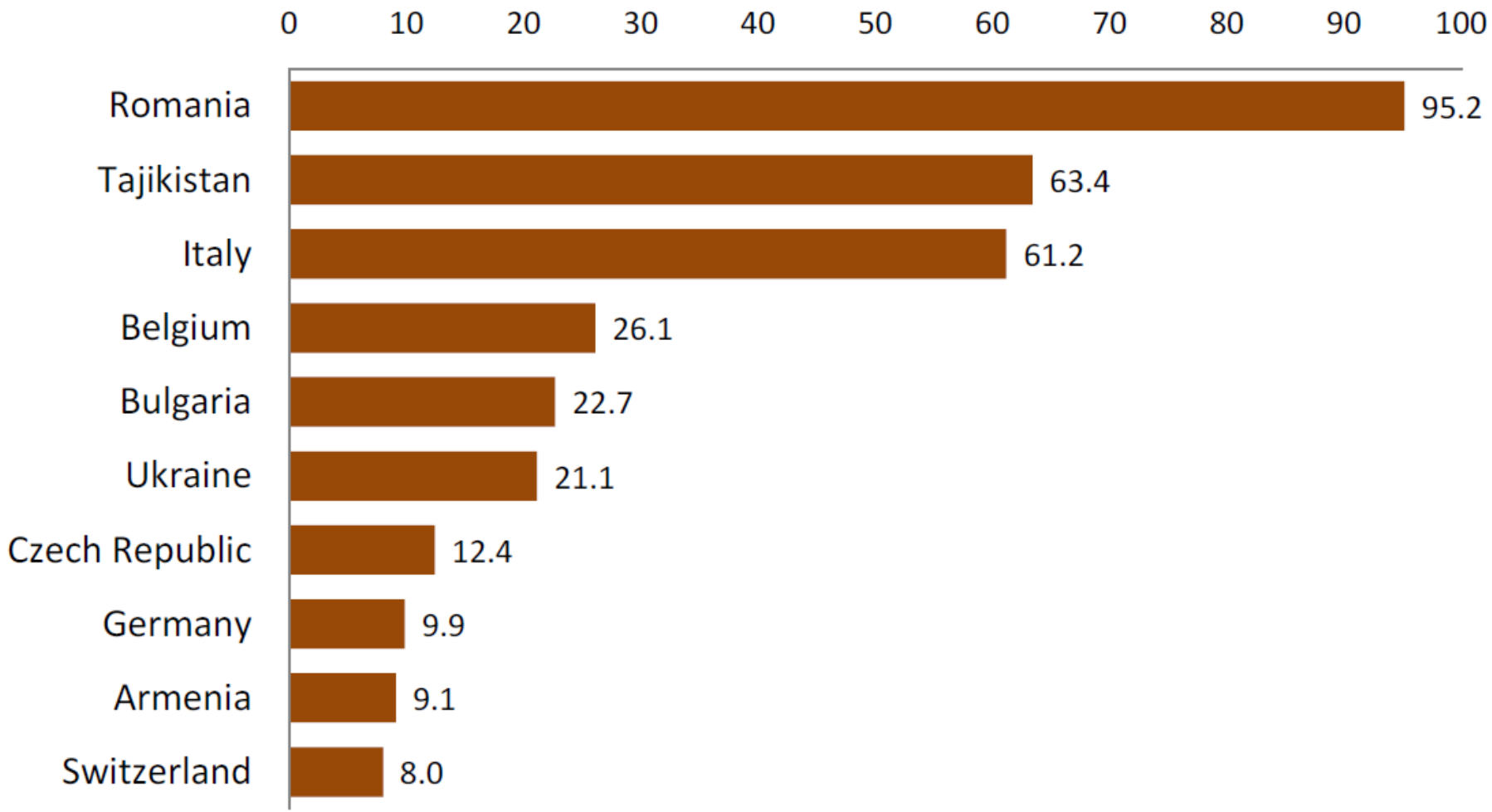
59% of cases in the Region in **2** countries *(n=5504)*

10 countries: 0 cases

13 deaths: All age groups
6 in Romania
2 in Italy
1 each from Bulgaria, Germany, Portugal, Spain and Switzerland

Data source: CISID, extracted 1 August 2017

Highest incidence countries for measles per million inhabitants WHO European Region, January-June 2017

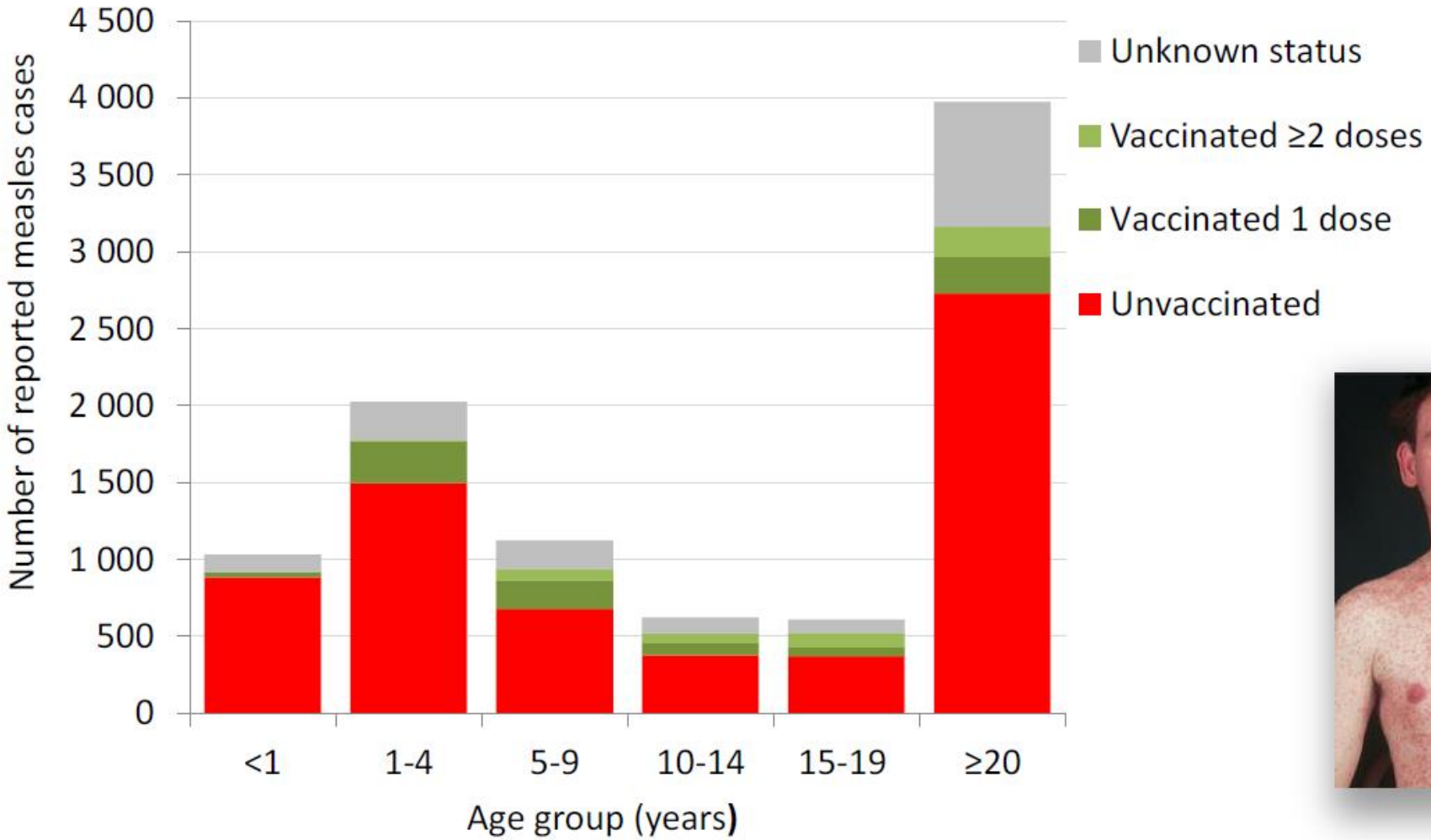


7 countries

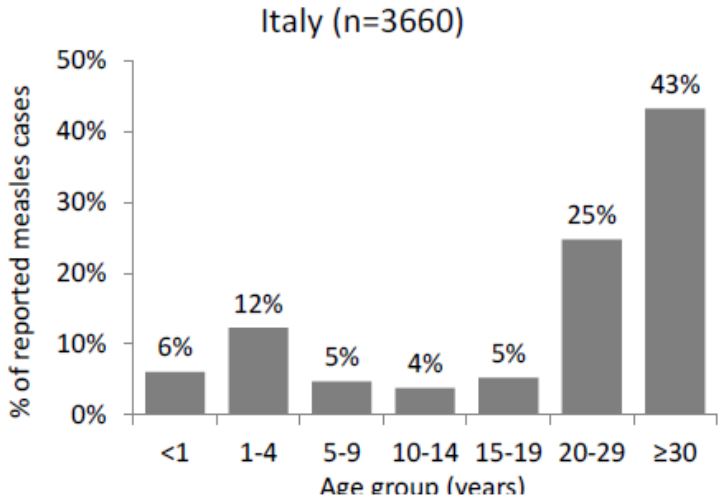
Highest incidence of >10 per million inhabitants

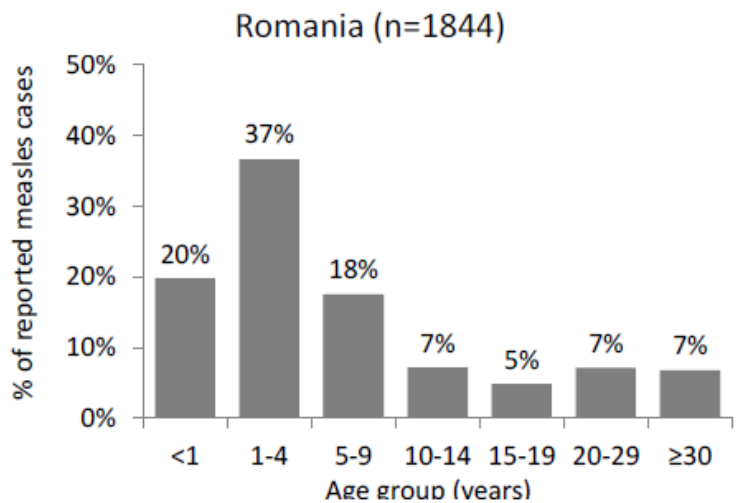
Data source: CISID, extracted 1 August 2017

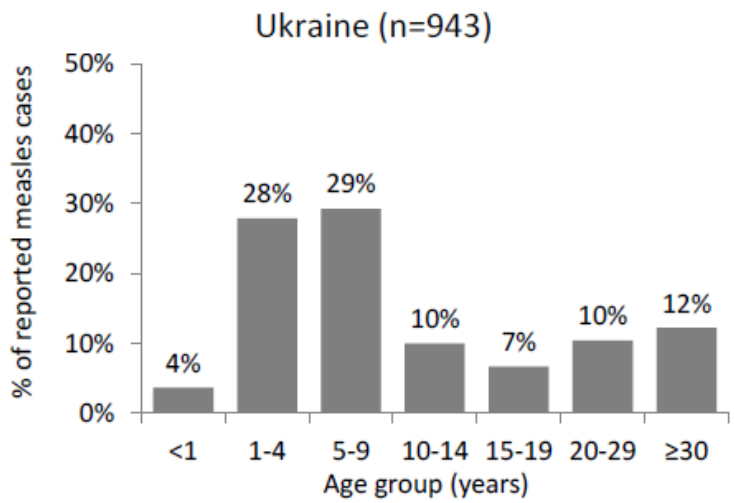
Age distribution and vaccination status of measles cases, WHO European Region, January-June 2017

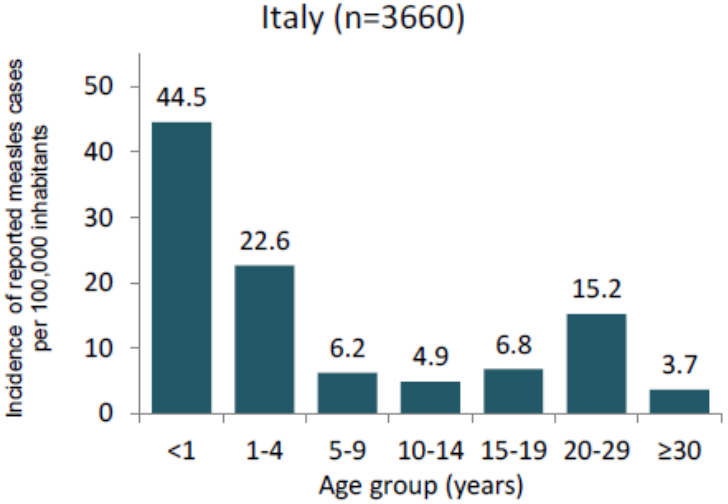


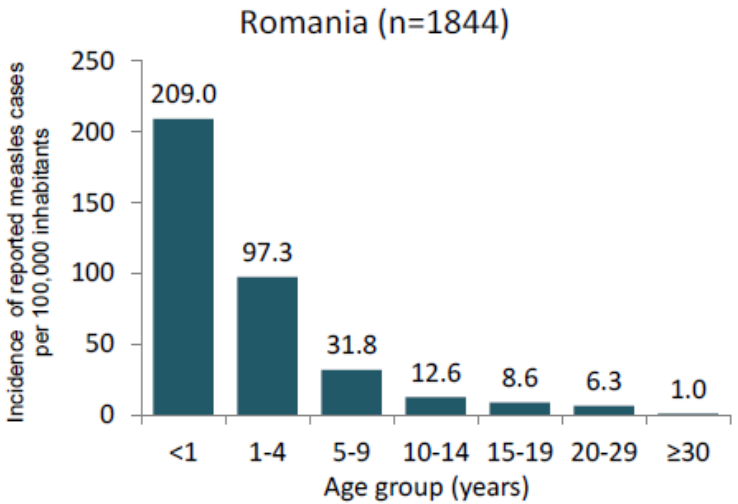
Age distribution of measles cases in selected countries, WHO European Region, January-June 2017

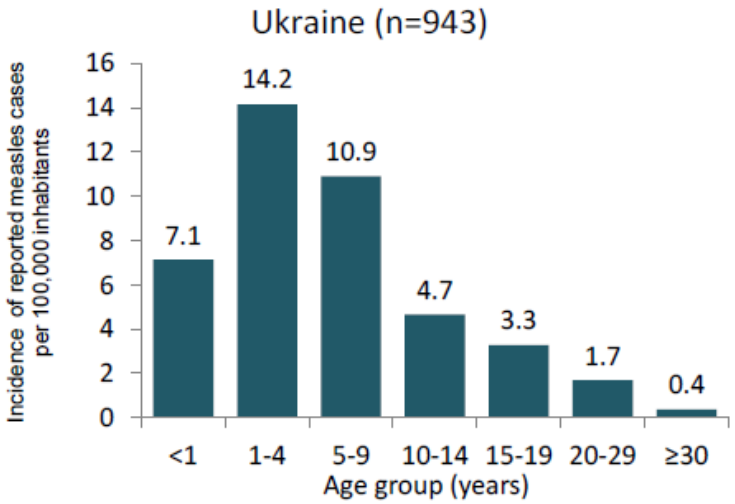






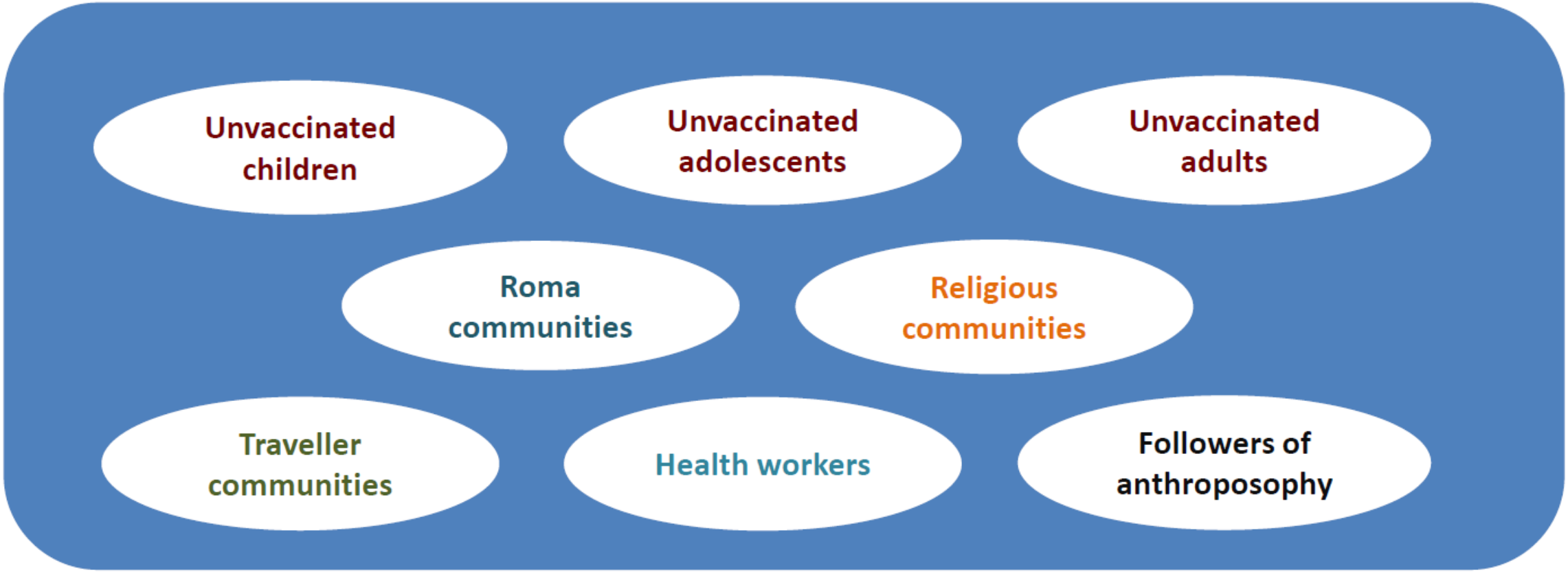






Data source: CISID, extracted 2 August 2017

Measles outbreaks occurred in several susceptible populations



Inequalities in uptake and disease persist

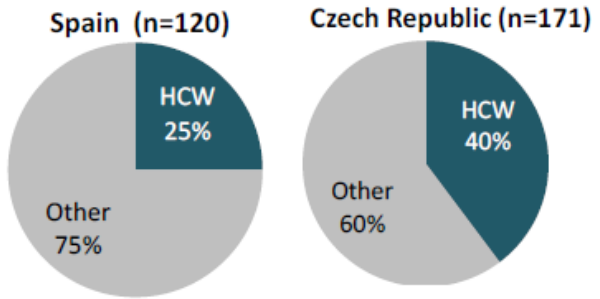
Just as health inequalities are unfair and avoidable, so are inequalities in immunization coverage.

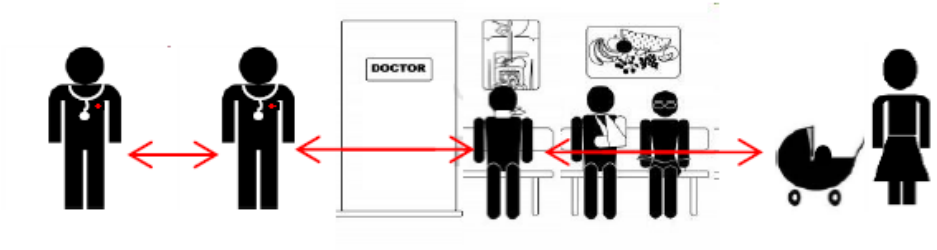
Main public settings for measles outbreaks

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

Further reading: WHO EpiBrief, 2014, 2:1–9. www.euro.who.int/__data/assets/pdf_file/0020/254234/EpiBrief_2_2014-rev3-with-data.pdf?ua=1

Who should be offered vaccination?

1. Persones who haven't had measles and are not vaccinated with two doses of measles vaccine.
2. Persons above 40 years of age are very likely to have suffered from measles. However when in doubt then vaccinate.
3. Vaccination to adults >18 years is not free of charge, however for females in the child bearing age it can be administered free of charge.

4. For infants travelling on longer breaks to regions with local outbreaks, and who are likely to meet local families, you can give MMR vaccine as early as from 6 months of age (off-label before 9 months of age).
5. However, as the response to vaccine in infants is sub-optimal, discount any dose given before 12 months of age.
6. Vaccines can be given with one month interval

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Acknowledgements.

Mark Muscat, Vaccine preventable diseases and Immunization unit, WHO regional office for Europe

Any questions?