



# Vaccine Preventable Diseases and Immunization Programme in the European Region of World Health Organization

**National Vaccinology Congress  
Ankara, Turkey, 29 September 2009**

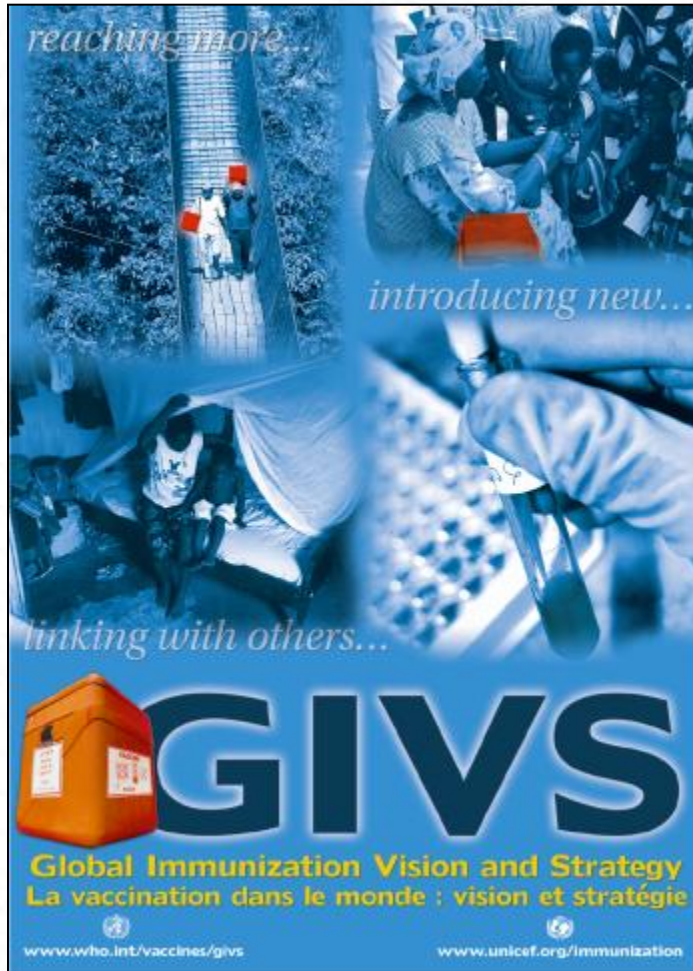
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Regional Office for Europe  
World Health Organization

# Presentation outline

- Immunization policies and coverage rates for routine and new vaccines
- Accelerated disease control programmes
- Advocacy and Communication
- Seasonal Influenza and Pandemic (H1N1) 2009

# Global Immunization Vision and Strategy

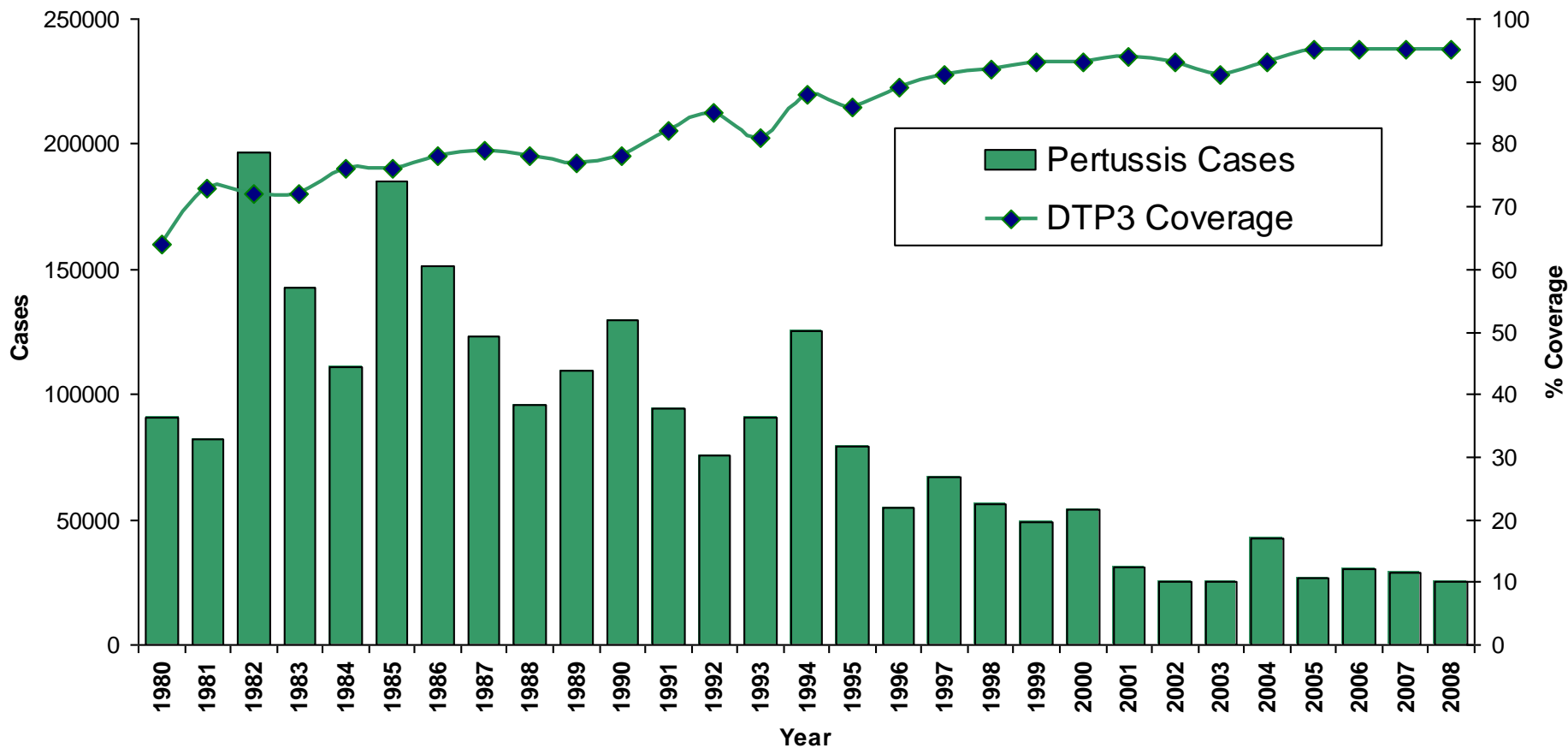


In response to challenges in global immunization, WHO and UNICEF developed the Global Immunization Vision and Strategy (GIVS)

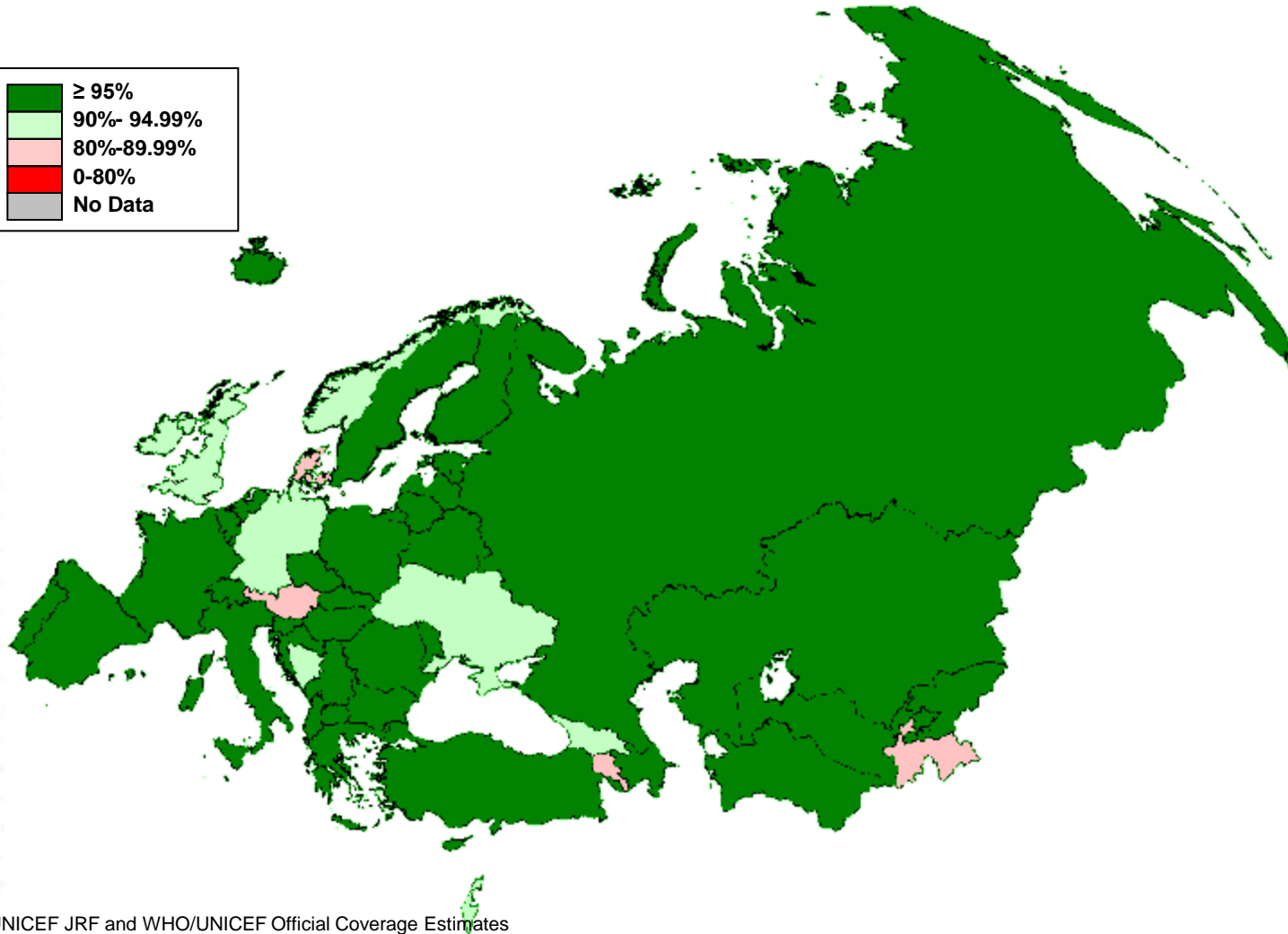
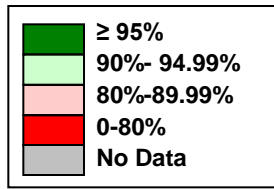
Main aims of GIVS:

1. To immunize **more people** against more diseases;
2. To introduce a range of **newly** available vaccines and technologies;
3. To **integrate** other critical health interventions with immunization; and
4. To manage vaccination programmes within the context of **global interdependence**.

# DTP3 Immunization coverage and pertussis cases WHO European Region, 1980-2008

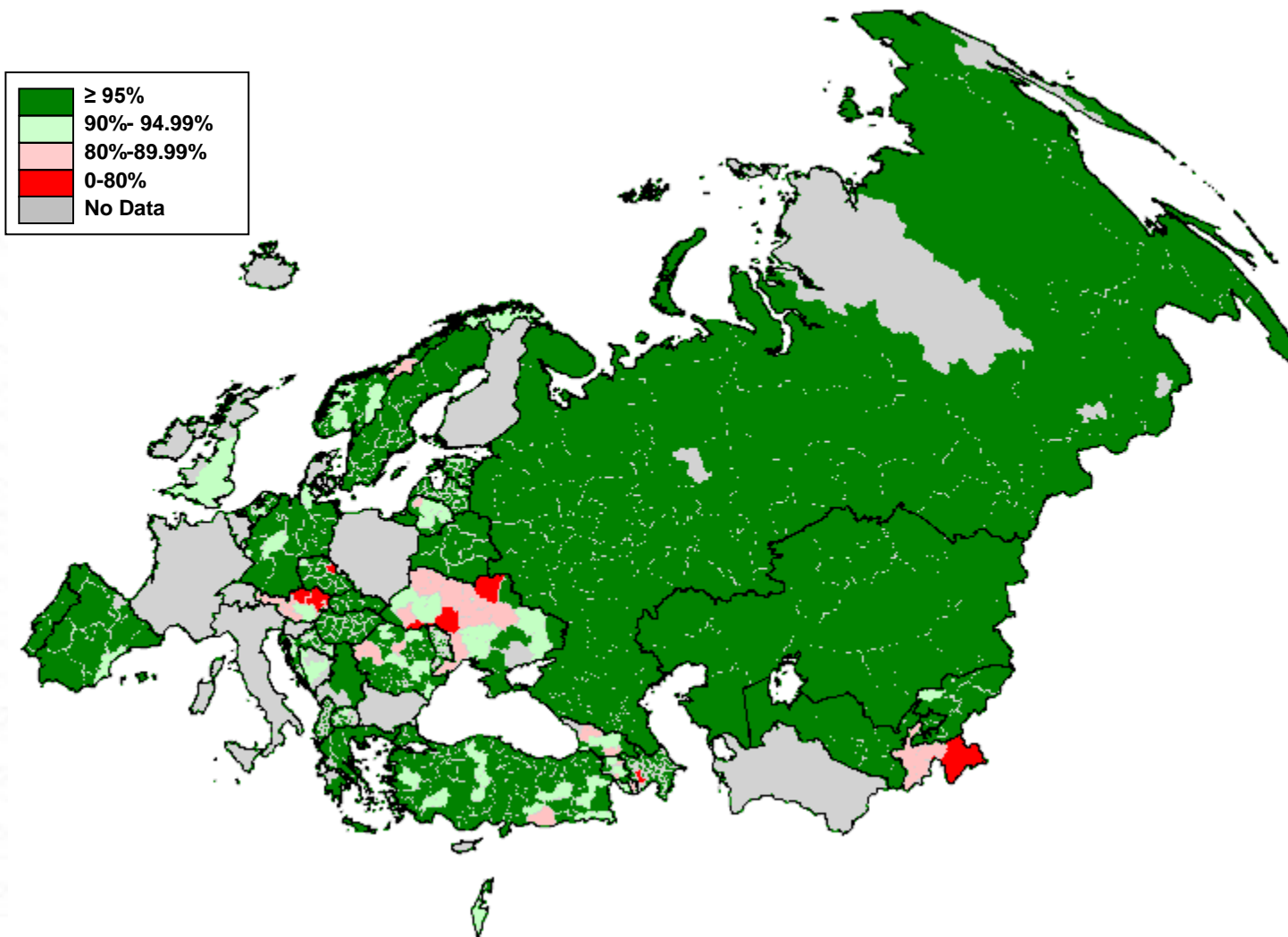


# National 3-dose DTP coverage WHO European Region, 2008



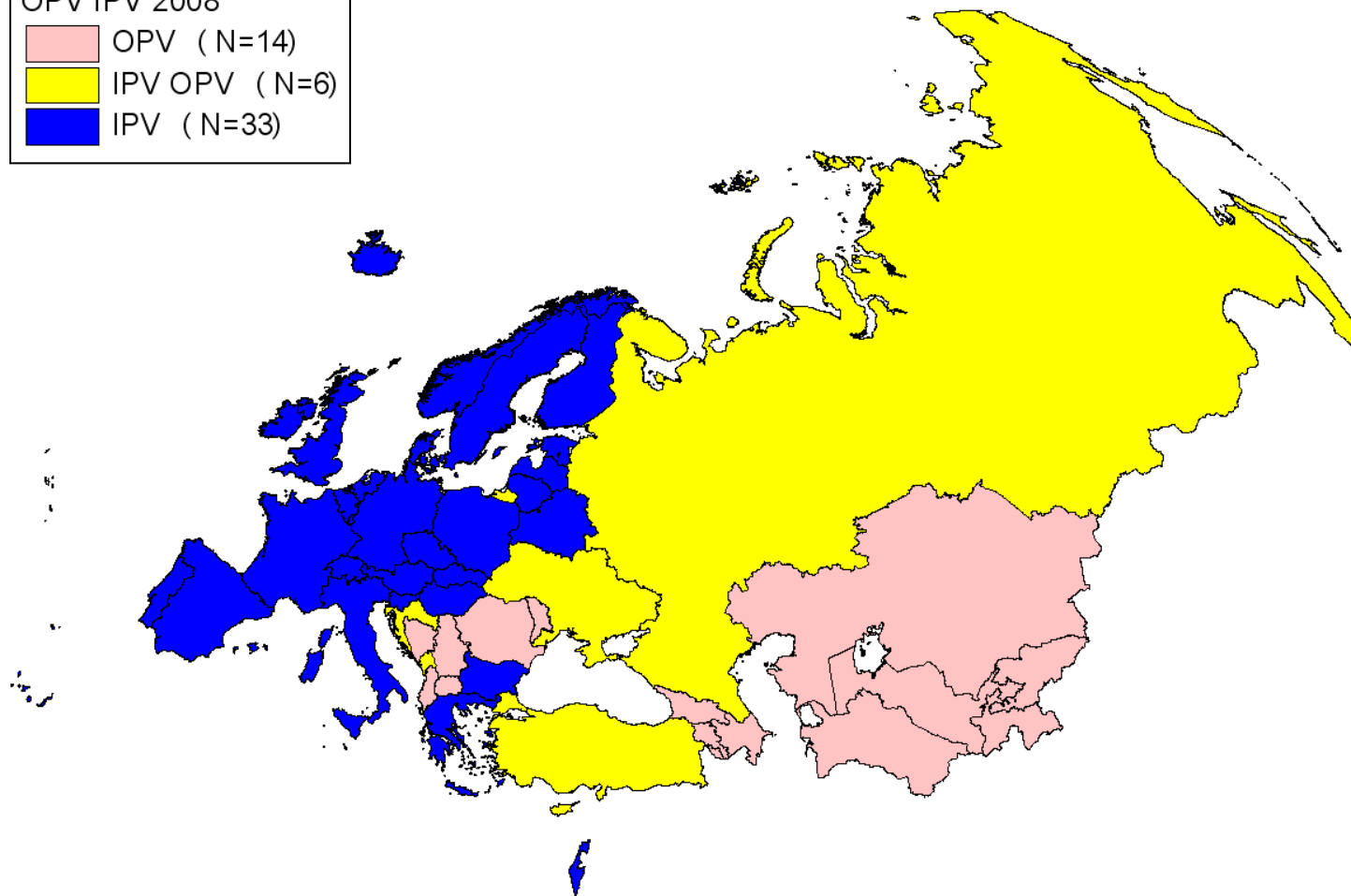
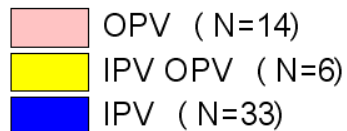
Source: WHO UNICEF JRF and WHO/UNICEF Official Coverage Estimates

# Sub-national 3-dose DTP coverage WHO European Region, 2008



# Polio vaccine policy WHO/European Region, 2008

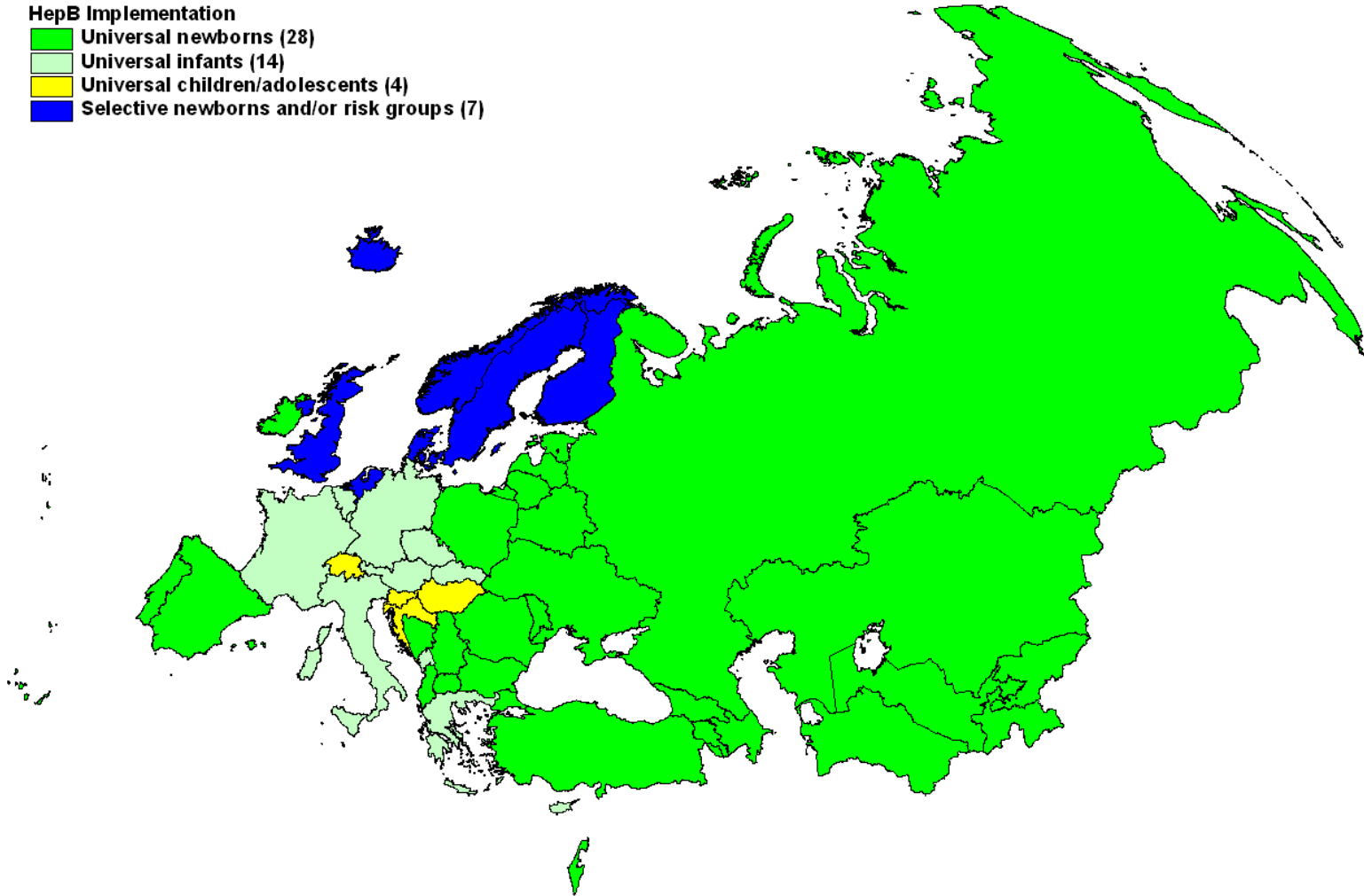
OPV IPV 2008



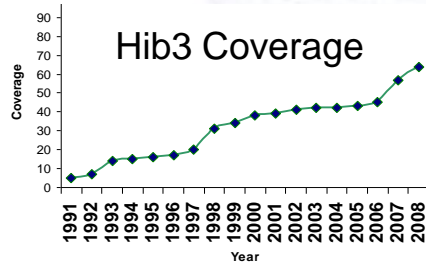
# Hep B Vaccine implementation status WHO European Region, 2009

## HepB Implementation

- Universal newborns (28)
- Universal infants (14)
- Universal children/adolescents (4)
- Selective newborns and/or risk groups (7)

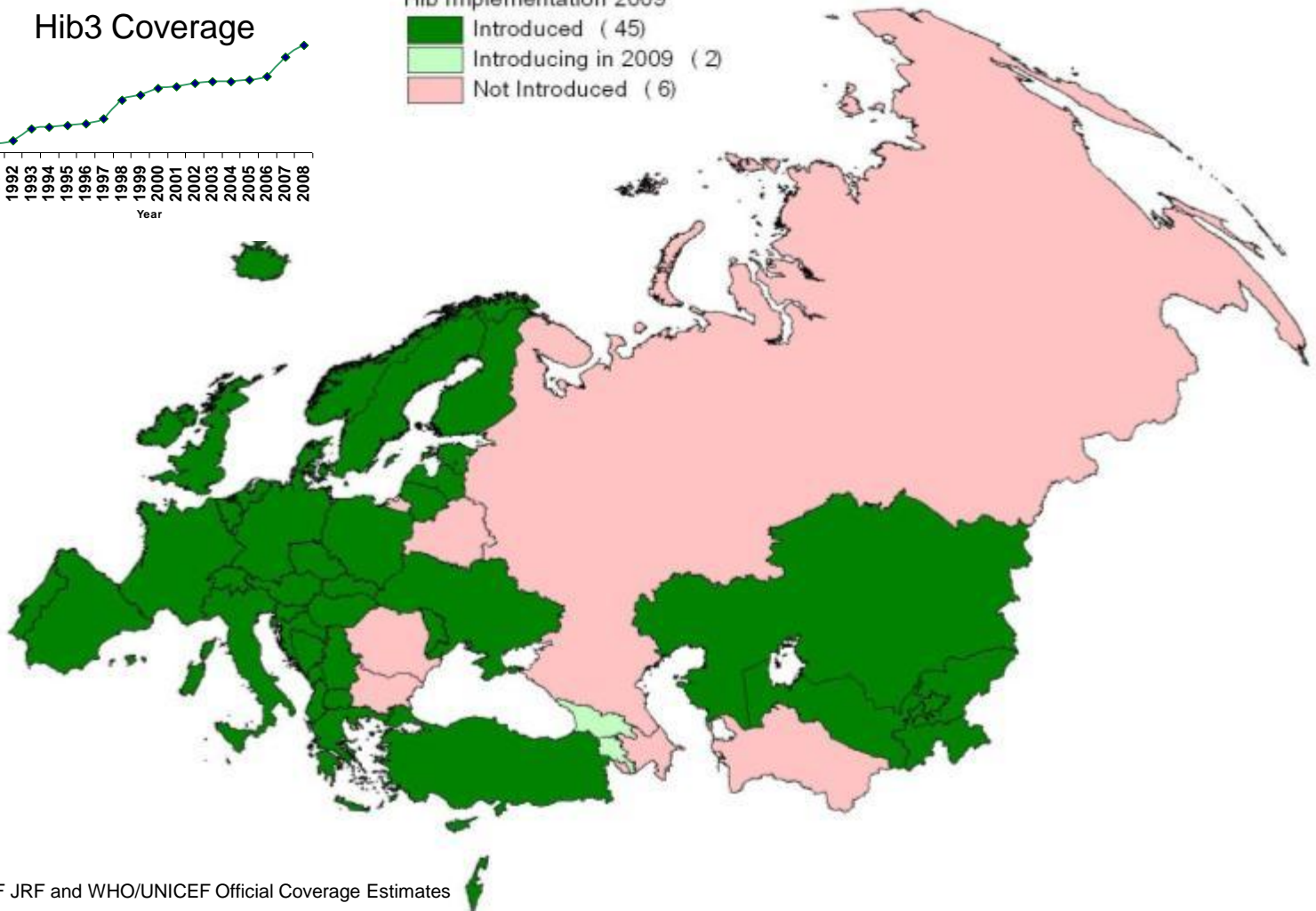


# Hib implementation status WHO European Region, 2009



**Hib Implementation 2009**

- Introduced ( 45)
- Introducing in 2009 ( 2)
- Not Introduced ( 6)

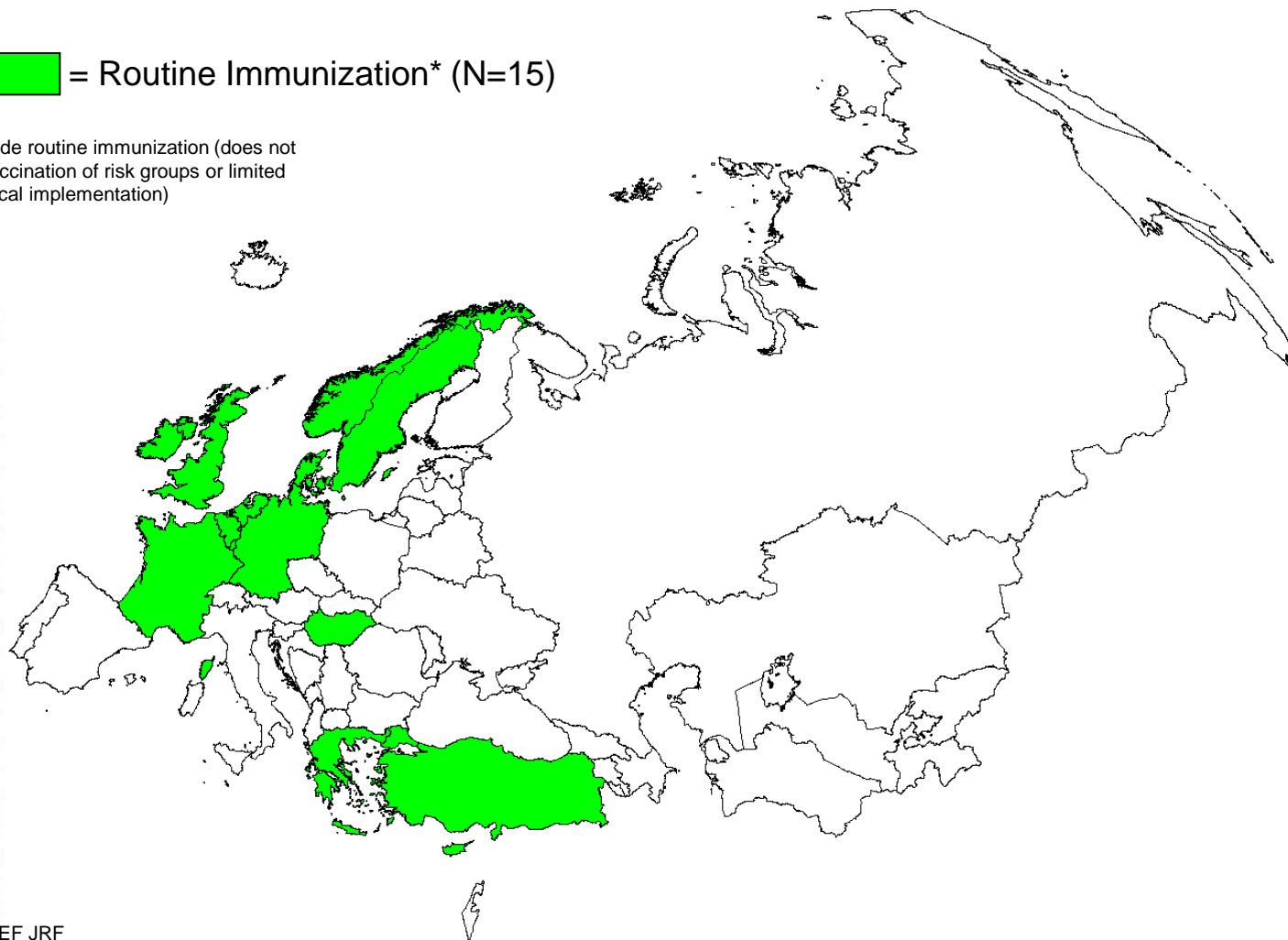


Source: WHO UNICEF JRF and WHO/UNICEF Official Coverage Estimates

# Pneumococcal Vaccine implementation status WHO European Region, 2009

 = Routine Immunization\* (N=15)

\*Nation-wide routine immunization (does not include vaccination of risk groups or limited geographical implementation)



Source: WHO UNICEF JRF

# Rotavirus vaccine introduction WHO European Region, 2009

## ***Universal immunization:***

- Austria***
- Belgium***
- Luxemburg***
- Finland***

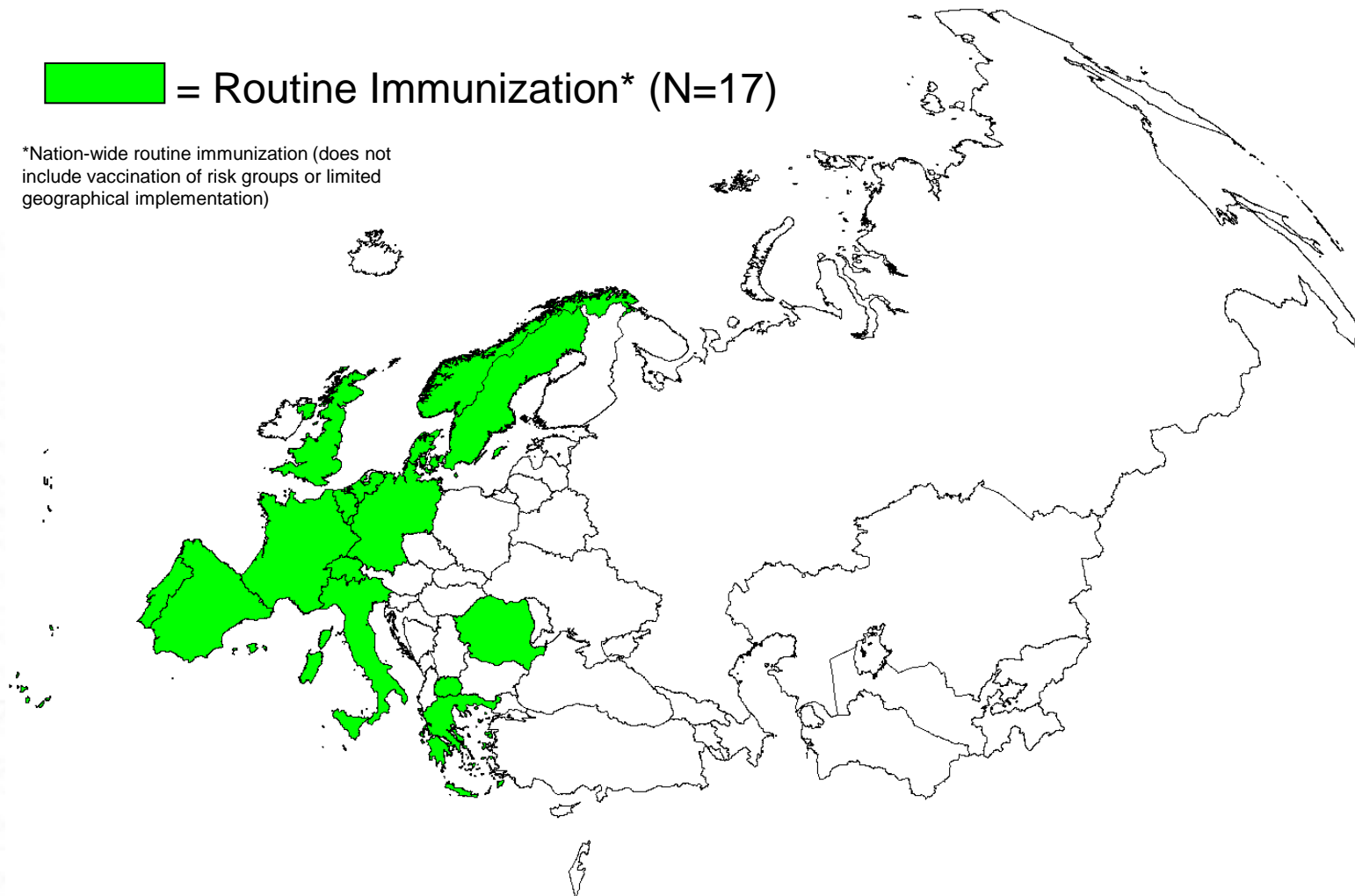
## ***Scientific society recommendations:***

- France***
- Germany***
- Spain***
- Italy***
- Poland***

# HPV Vaccine implementation status WHO European Region, 2009

 = Routine Immunization\* (N=17)

\*Nation-wide routine immunization (does not include vaccination of risk groups or limited geographical implementation)



# Presentation outline

- Immunization policies and coverage rates for routine and new vaccines
- Accelerated disease control programmes
  - Polio Eradication Programme
  - Measles and rubella elimination programme
- Advocacy and Communication
- Seasonal Influenza and Pandemic (H1N1) 2009

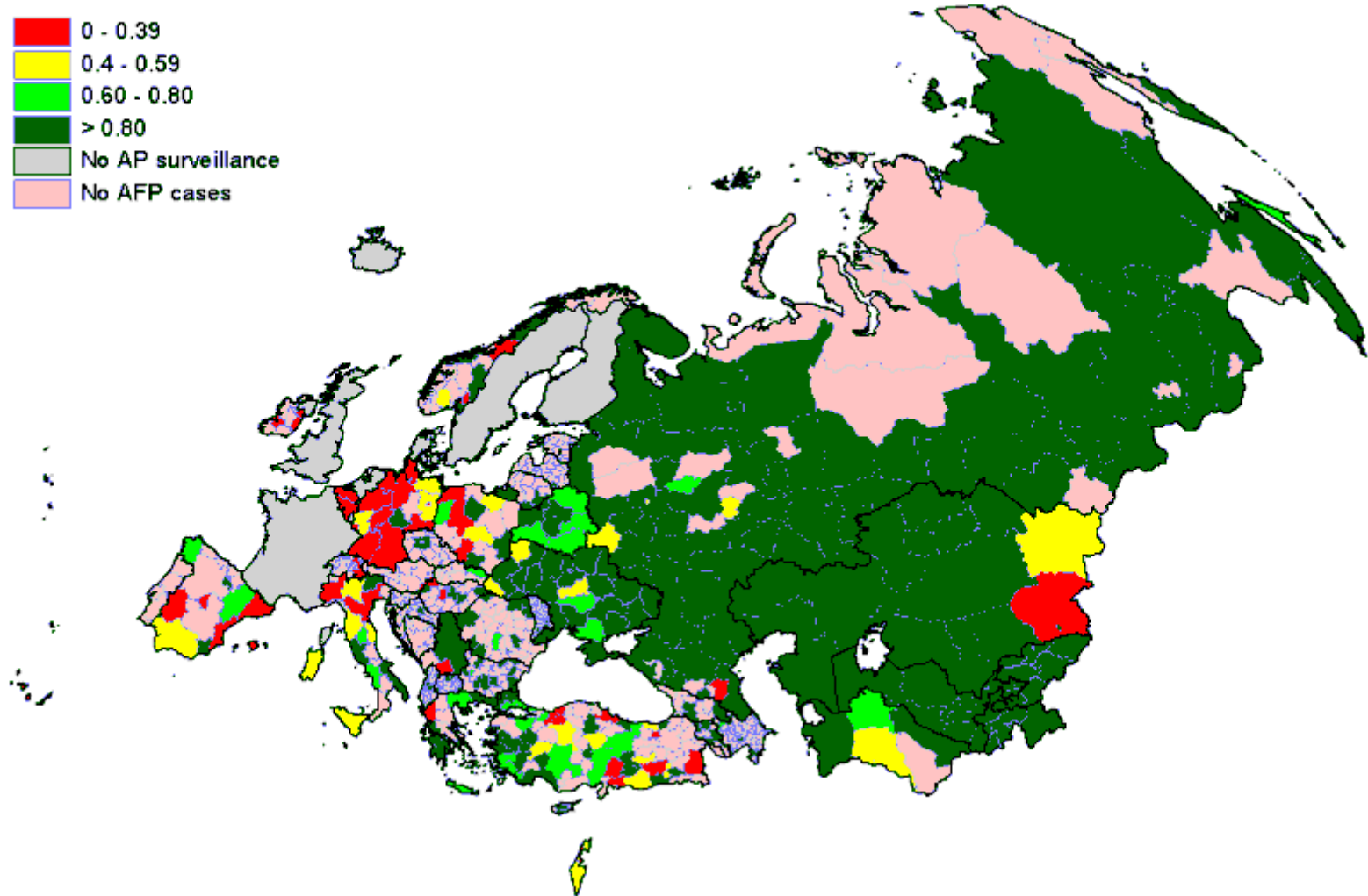
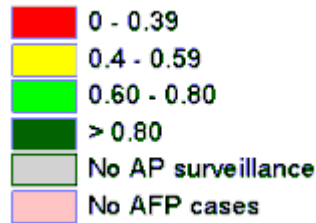
# AFP surveillance performance WHO European Region (N=43), 2004-2009\*

Indicators	2004	2005	2006	2007	2008	2009*
Number of AFP Cases	1593	1495	1491	1448	1348	380
Number of countries reporting AFP surveillance	43 <sup>§</sup>					
Non Polio AFP Rate (Annualized for 2008)	1.16	1.15	1.13	1.11	1.04	0.59
2 Adequate Stool Collection Rate	81%	82%	82%	82%	82%	83%
Compatible cases	0	0	2	2	0	1
% of AFP cases where at least one stool collected within 14 days of onset	87	86	86	87	87	87
% of AFP cases with ≤ 7 days between onset and notification	75	74	76	76	76	76
% of AFP cases with ≤ 48 hours between notification and investigation	87	86	86	87	87	87
% of AFP cases where follow up is done 60 to 90 days after onset	79	81	80	80	81	67

\*Data as week 20, 2009

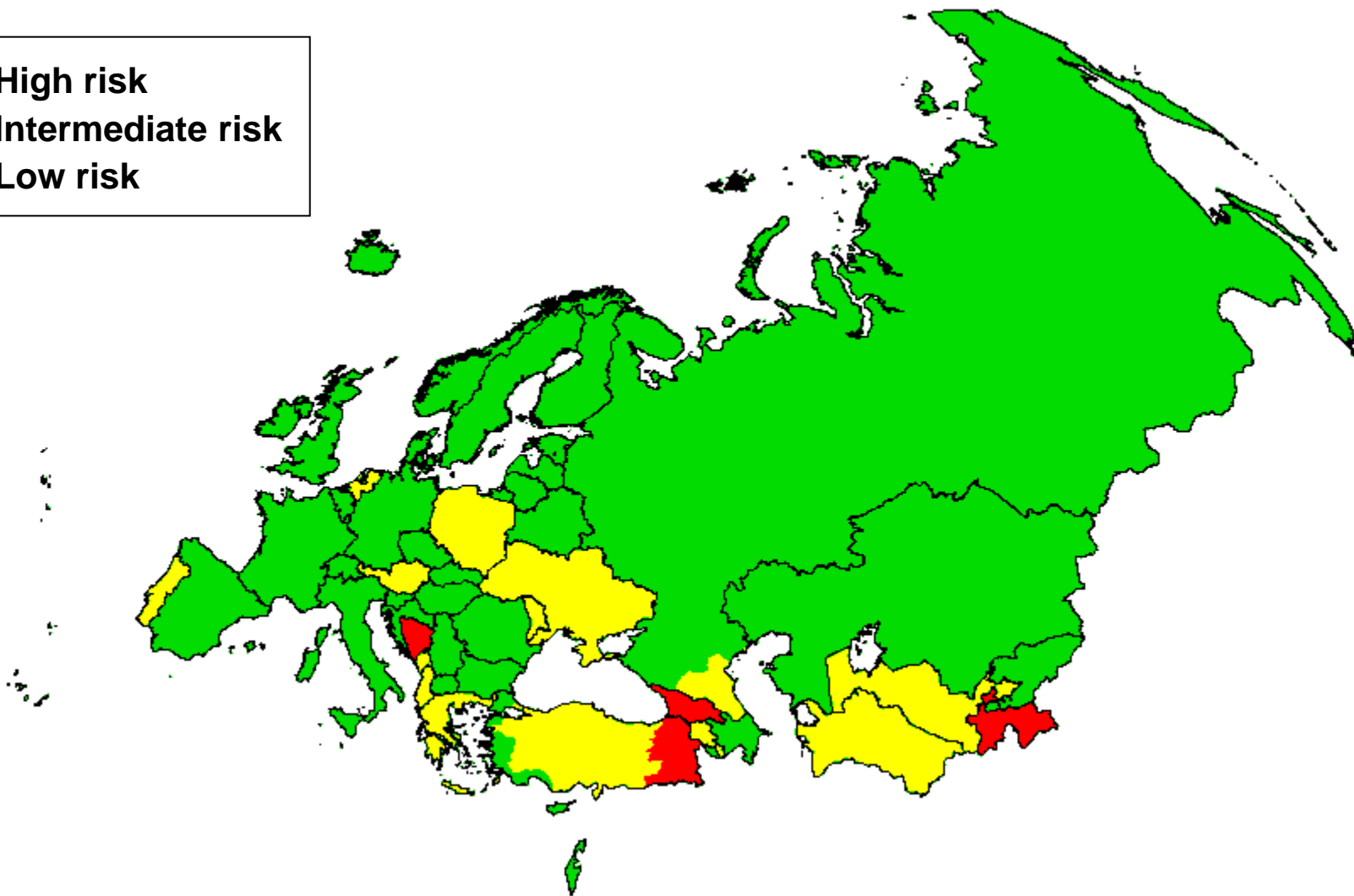
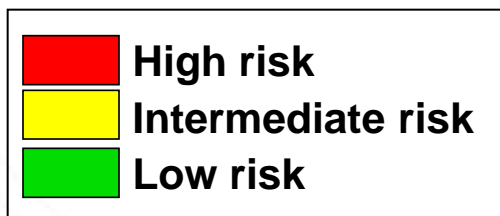
<sup>§</sup> Countries not reporting: Denmark, Finland, France, Iceland, Netherlands, UK, San Marino, Sweden, Luxembourg and Monaco

# Sub-national AFP surveillance index WHO European Region, 2008



# Risk of transmission following importation of wild poliovirus: WHO European Region, 2009

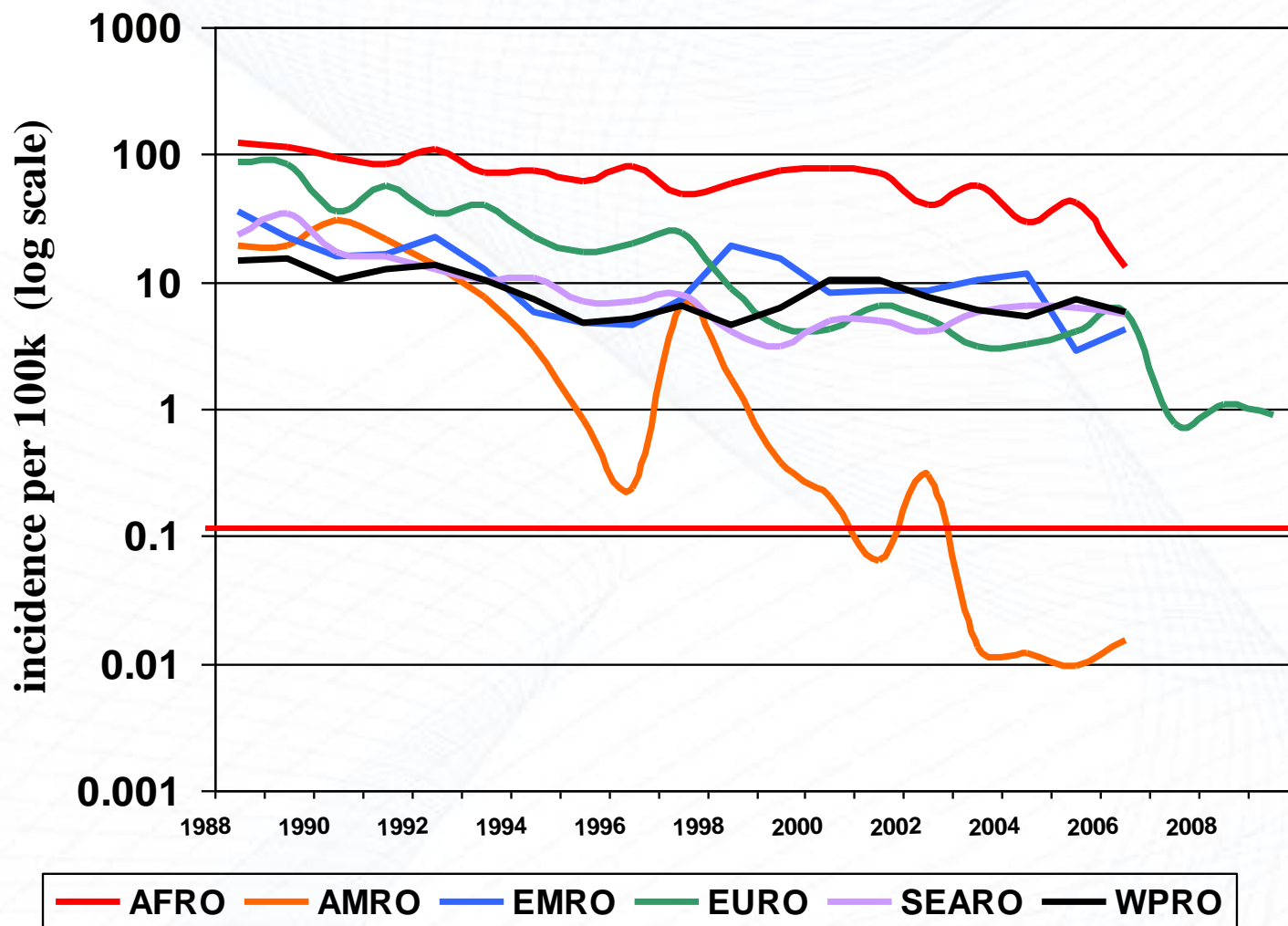
focus on high risk areas



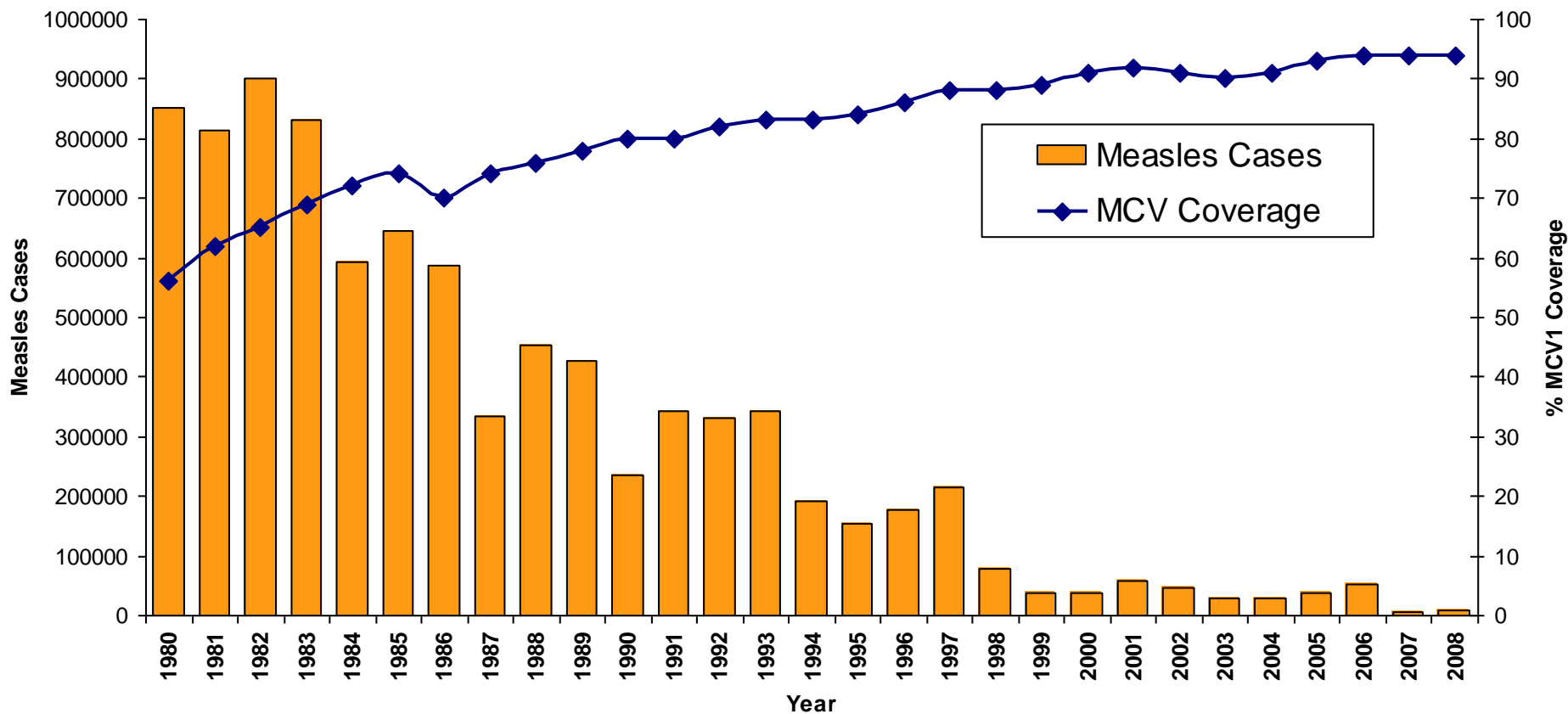
# Challenges to maintaining polio-free status in the WHO European Region

- Most countries in the European region achieved >95% immunization coverage, but...
  - timely provision of immunization is a problem in several countries
  - national data often reveals under-performing districts
  - completeness and accuracy of data at sub-national level remain sub-optimal in some countries
- Slow declining quality of AFP surveillance
- Quality of National Certification Committee work declining

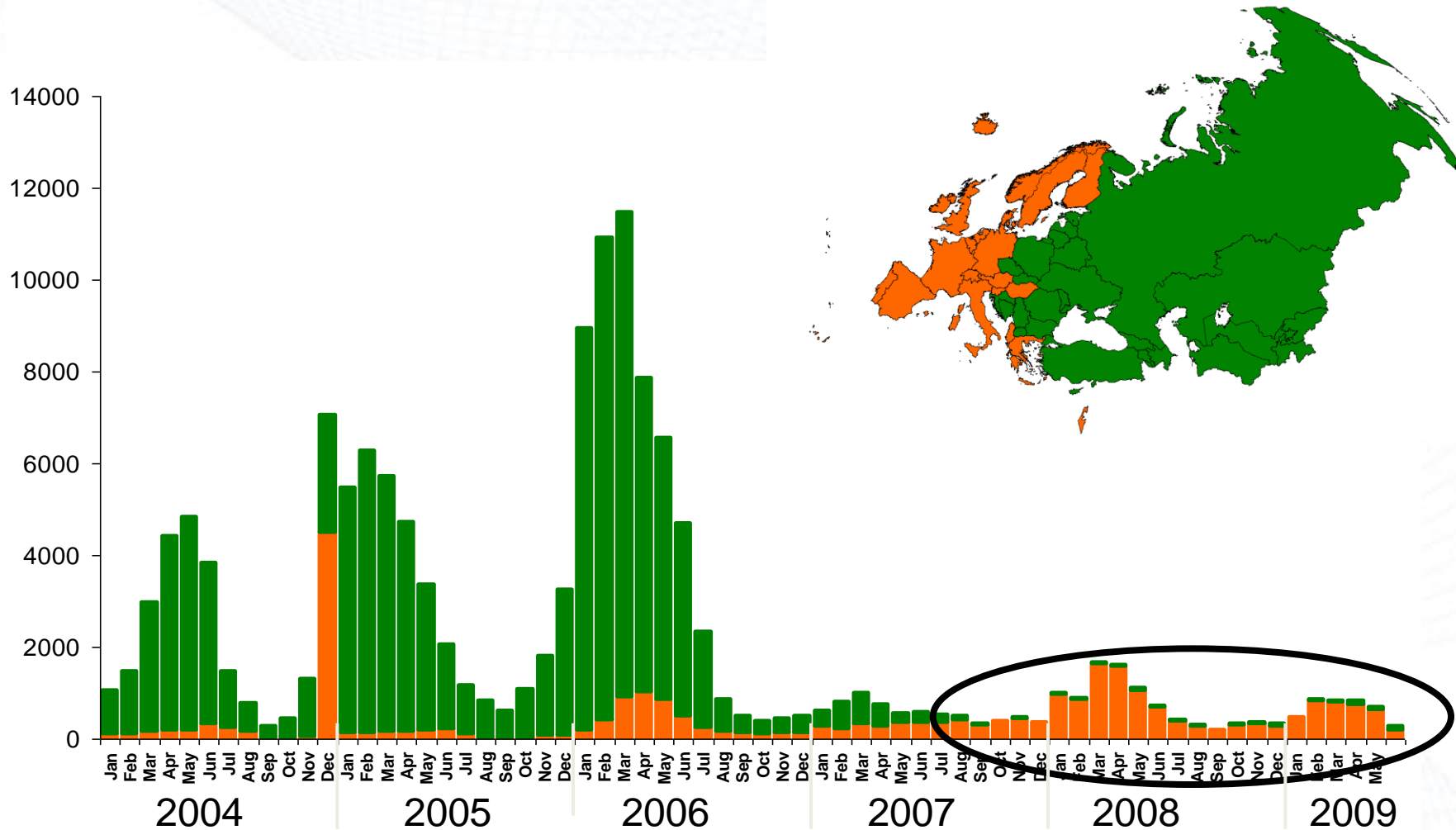
# Reported measles incidence by WHO Region, 1988-2009



# % MCV1 Immunization Coverage and measles cases WHO European Region, 1980-2008



# Reported Measles Case, 2004-2009 (Jun) WHO European Region




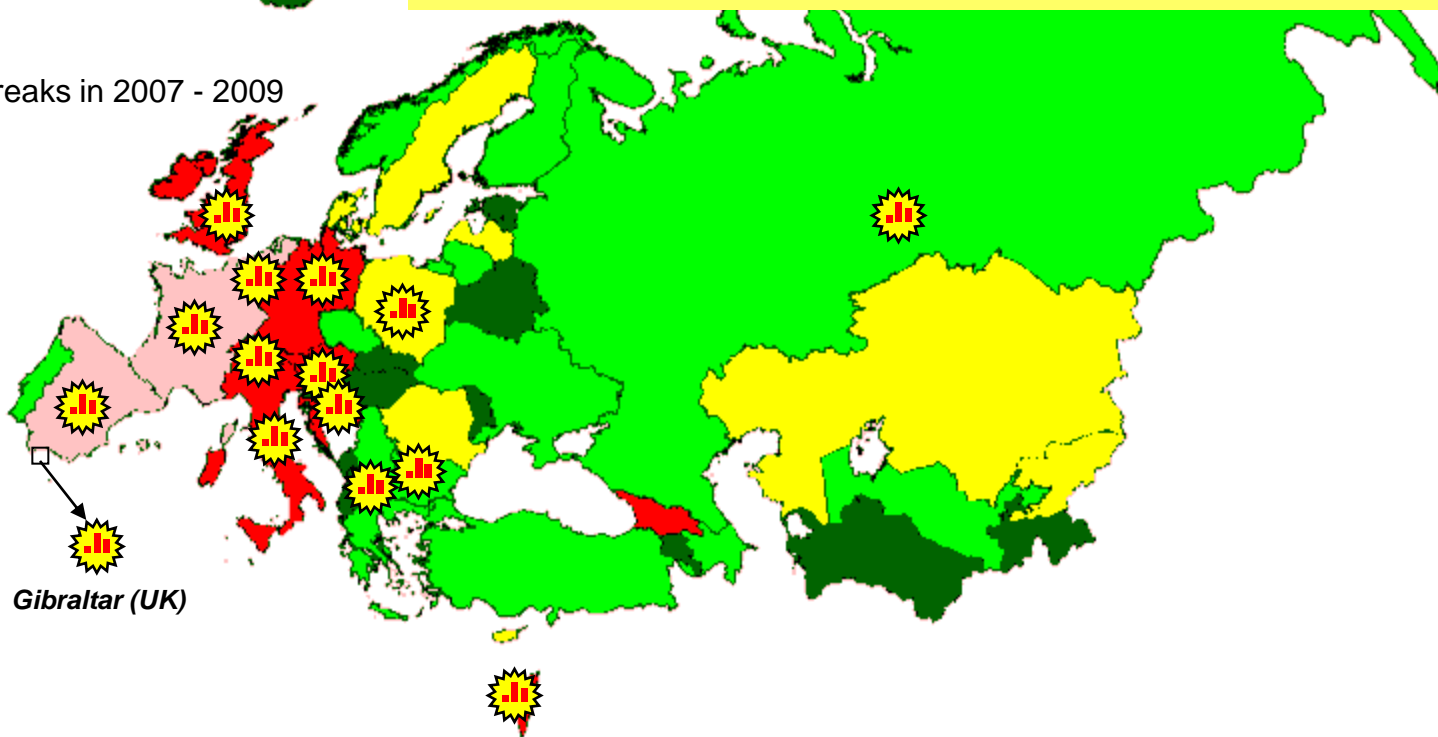
Source: Monthly MR Surveillance data, CISID (As of 31 Jul 2009)

# Measles incidence and major outbreaks WHO European Region, 2007-2009

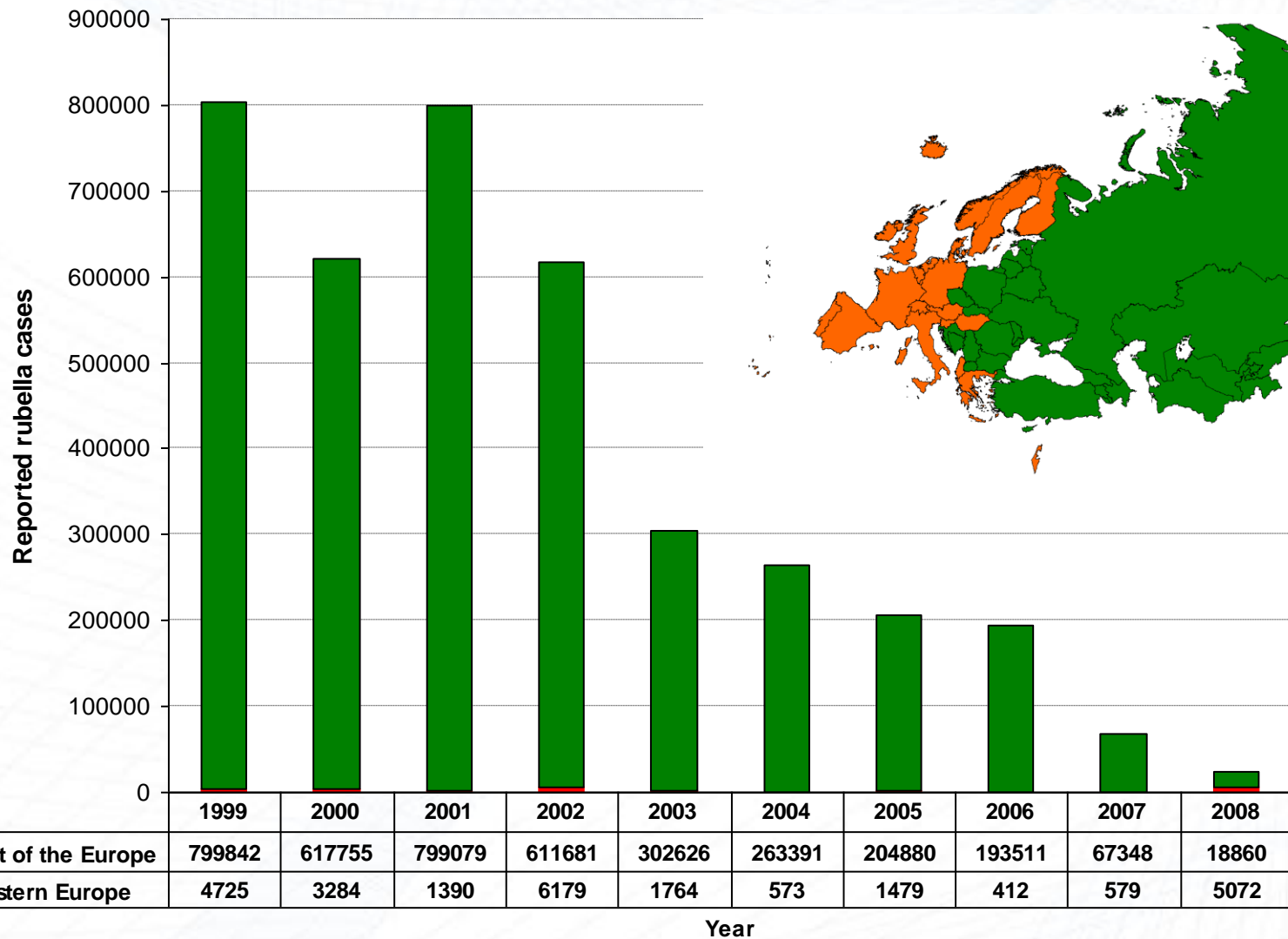


**In 2008, 82% of reported cases occurred among unvaccinated individuals and 38% among people aged  $\geq 15$  years**

 Measles outbreaks in 2007 - 2009



# Reported Rubella Cases (JRF) WHO European Region, 1999-2008



# Key activities for WHO EURO and Member States, 2009-2010

- Increasing routine coverage
- Reaching susceptible populations
- Strengthening surveillance
  - Expand case-based reporting for measles/rubella/CRS
- Starting validation process
  - Start with documenting elimination status
  - Standardize with other regions & global M&E indicators
  - Coordinate strategy with ECDC

# Presentation outline

- Immunization policies and coverage rates for routine and new vaccines
- Accelerated disease control programmes
- **Advocacy and Communication**
- **Seasonal Influenza and Pandemic (H1N1) 2009**

# European Immunization Week 2009

20-26 April 2009

[www.euro.who.int/eiw](http://www.euro.who.int/eiw)

e-mail: [vaccine@euro.who.int](mailto:vaccine@euro.who.int)



# European Immunization Week 2009



The screenshot shows the WHO Regional Office for Europe website for European Immunization Week 2009. The page features a navigation menu with categories like 'Country information', 'Health topics', 'Media centre', 'Data and publications', 'About WHO', and 'Programmes and projects'. The main content area is titled 'European Immunization Week' and includes a sidebar with links to 'Home', 'Reasons for vaccinating', '10 vaccination myths', 'Questions and answers', and 'Research'. The central focus is a video player with the title 'Prevent, Protect, Immunize.' and a 'YouTube' logo. To the right of the video is a 'Facts' section with three bullet points: 'Did you know that the highly contagious measles virus can remain in the air for 2 hours after an infected person has left the room?', 'Did you know 3 people in Europe are infected with measles every hour?', and 'Did you know 653,200 children in the Region have not been vaccinated against measles?'. Below the video is a call to action: 'We need your help. Please watch the film and share it to everyone you know who cares about children's health. It is an important matter for all of us!'. At the bottom, there is a list of countries for more information: Albania, Andorra, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, Moldova, Monaco, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Serbia and Montenegro, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, and United Kingdom.

**“Back to Basics”**

A reminder to countries:

*Vaccination is safe!*

Vaccination is an effective public health tool that can prevent disease and deaths

Existing strategies are highly effective when fully implemented

[www.euro.who.int/eiw2009](http://www.euro.who.int/eiw2009)

# Presentation outline

- Immunization policies and coverage rates for routine and new vaccines
- Accelerated disease control programmes
- Advocacy and Communication
- Seasonal Influenza and Pandemic (H1N1) 2009

# Seasonal influenza

- Global burden of influenza infections
  - \* Extrapolated globally, these figures would add up to 1 billion cases, 3-5 M severe cases and 300-500,000 deaths annually worldwide.
  - \* Influenza viruses can cause disease in persons of any age; attack rates of 5-15% reported in seasonal epidemics in adults and 20-30% in children
  
- Economic burden
  - In Western Europe and North America the costs associated with seasonal influenza vary between \$ 1 to 6 million per 100,000 inhabitants annually
  - A pandemic is expected to increase the costs 5 to 10 fold

Source: Thomas Cherian & Peter Carrasco, IVB, WHO

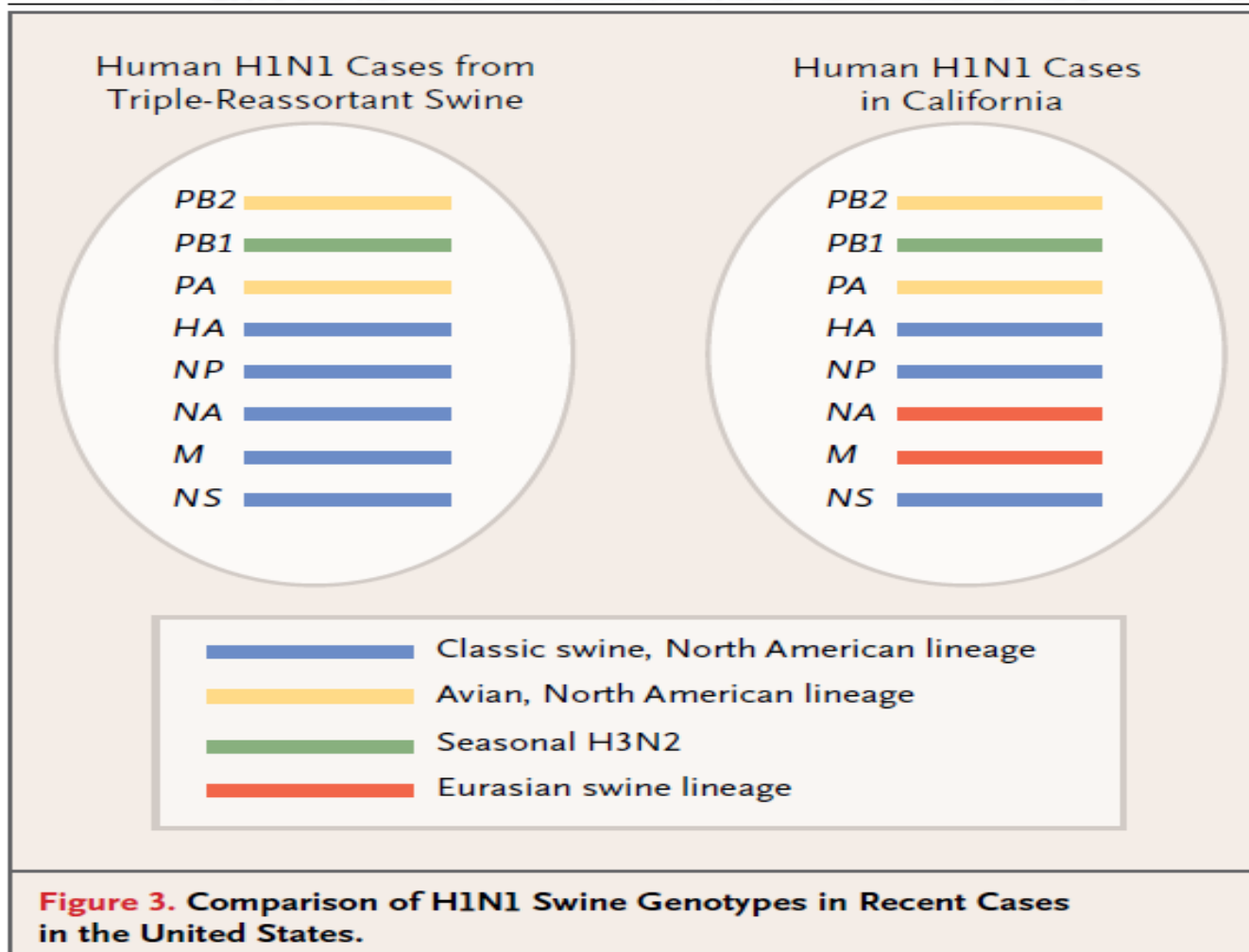
# WHO Recommendations of Seasonal Influenza Vaccines: Target Groups (WHO Position Paper, 2005)

1. Residents of institutions for elderly people and the disabled.
2. Elderly, non-institutionalized individuals with chronic heart or lung diseases, metabolic or renal disease, or immunodeficiencies.
3. All individuals >6 months of age with any of the conditions listed above.
4. Elderly individuals above a nationally defined age limit, irrespective of other risk factors.
5. Other groups defined on the basis of national data and capacities, such as contacts of high-risk people, pregnant women, health-care workers and others with key functions in society, as well as children 6–23 months of age.

# Seasonal influenza advisory group recommendation for southern hemisphere 2010

- A/Perth/16/2009 (H3N2) -like virus
- B/Brisbane/60/2008 (H1N1) -like virus
- A/California/7/2009 (H1N1) -like virus
  
- H3N2 strain in the vaccine for seasonal influenza in northern hemisphere in 2009-2010 not included due to mismatch

# Emergence of a novel Influenza A strain: 2009



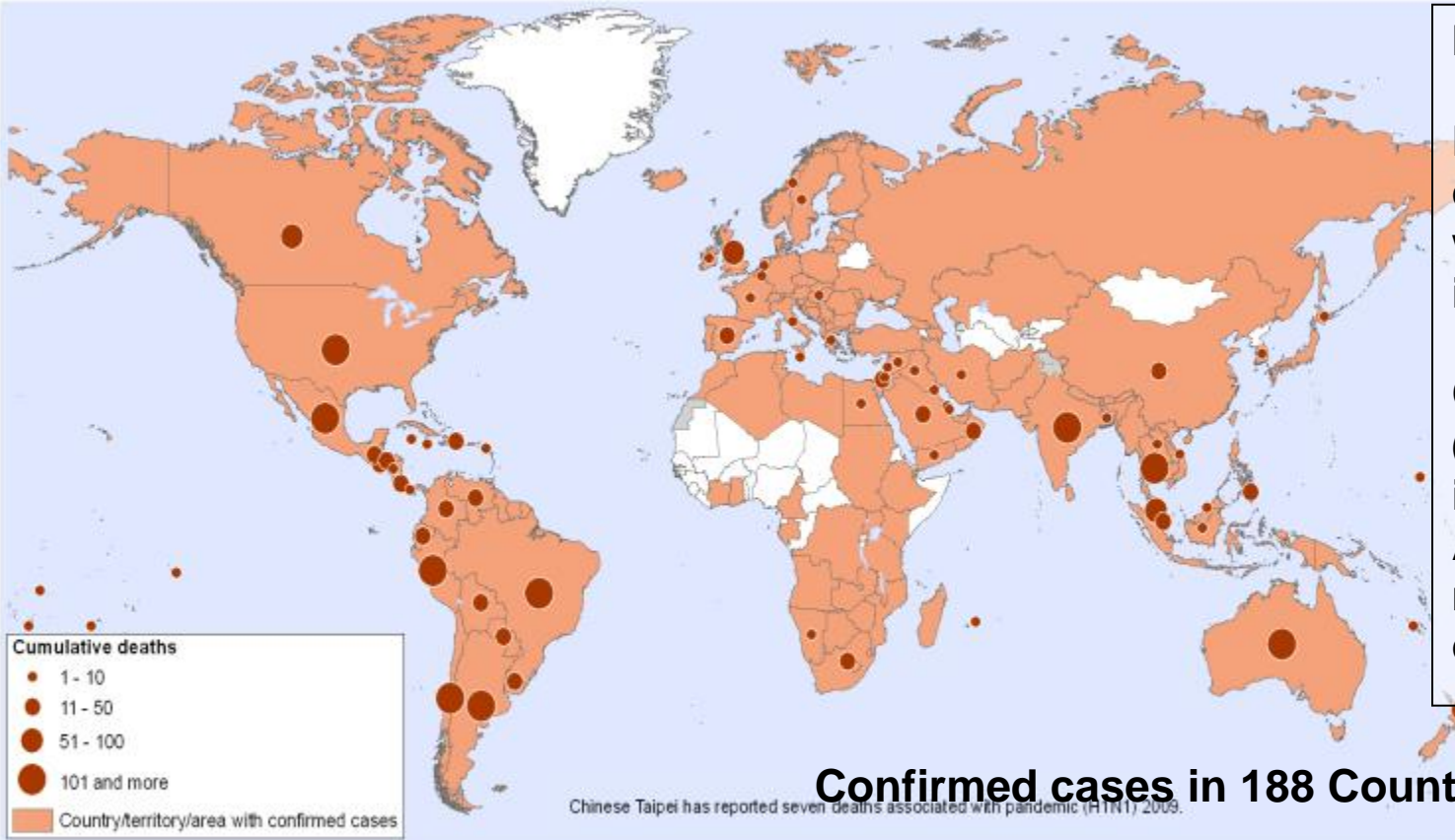
Source: NEJM  
May 5 2009

# Global Spread of Pandemic (H1N1) 2009

Pandemic (H1N1) 2009

Status as of 13 September 2009

Countries, territories and areas with lab confirmed cases and number of deaths as reported to WHO



**European Region**

**Four countries currently report widespread influenza activity**

**Confirmed cases (>52,000) reported in 48 countries**  
**At least 140 deaths reported from 13 countries**

**Confirmed cases in 188 Countries & Territories**

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

Data Source: World Health Organization  
Map Production: Public Health Information and Geographic Information Systems (GIS)  
World Health Organization



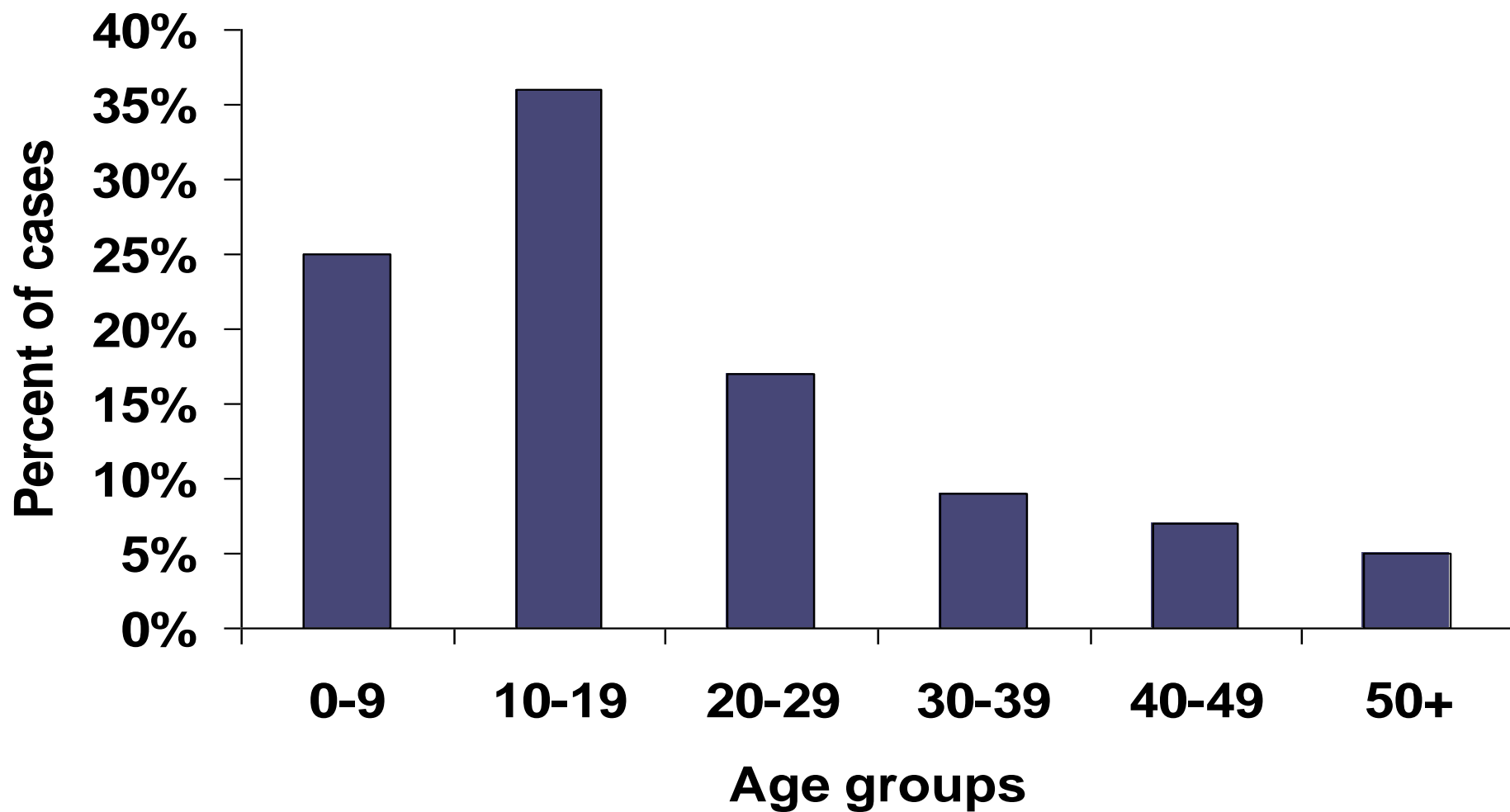
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# Pandemic H1N1 (2009) epidemiology

- Earliest reports among travelers, contacts and in schools
- Efficient person-to-person transmission from start
  - High but variable transmissibility in countries
  - High secondary attack rates in schools and closed communities
  - New infections caused by each case:
    - Pandemic (H1N1) 2009: 1.4 - 3.5
    - Seasonal influenza: 1.2 - 1.4
- Some aspects very different from seasonal influenza
  - High levels of summer disease in North Hemisphere
  - 5-45 years old people most commonly affected
  - Severe and fatal disease in young adults higher
  - Deaths primarily associated with rapid respiratory failure

# Distribution of Cases by Age Group

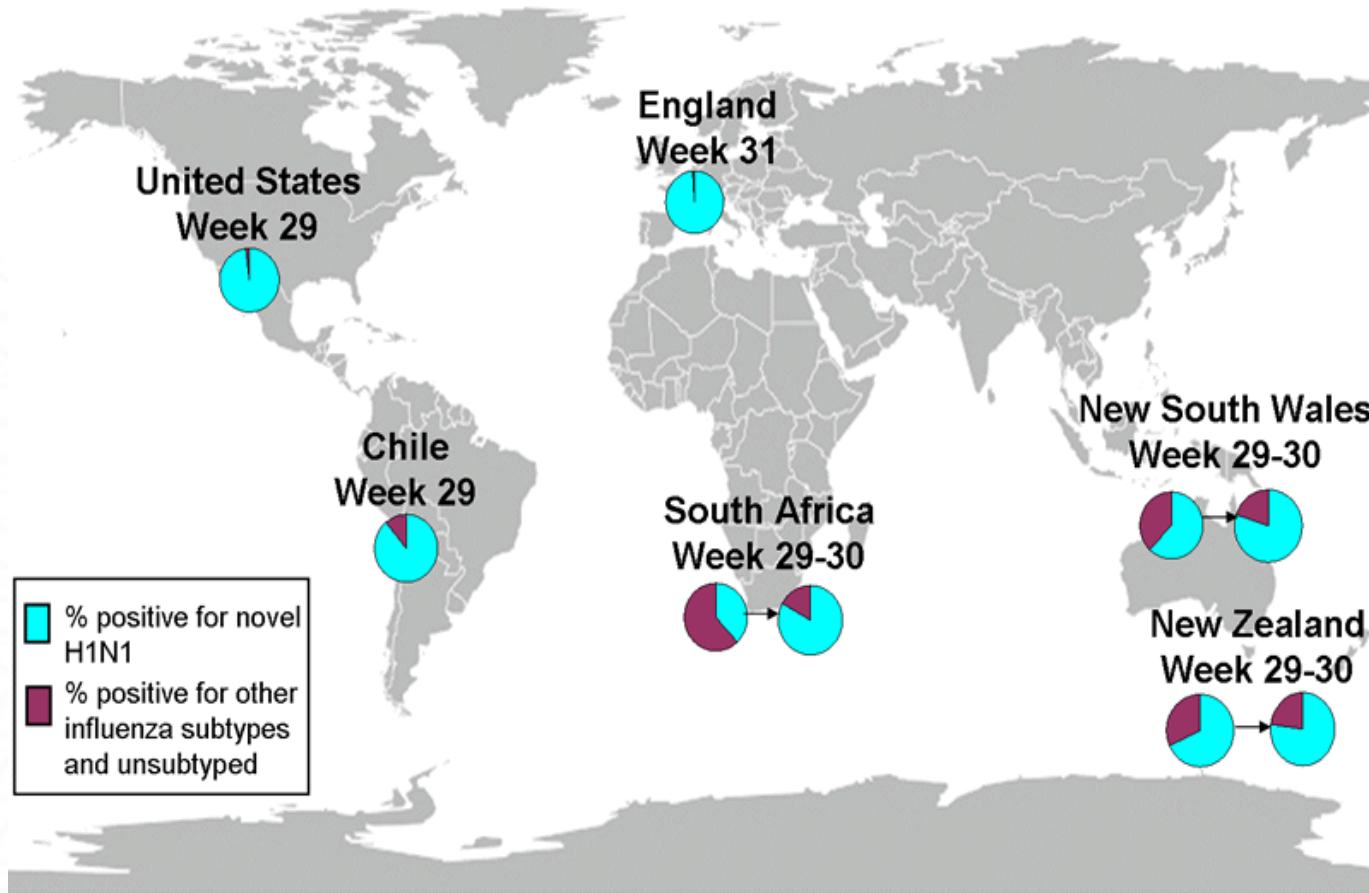
Lab-confirmed cases in EU/EFTA, Chile, Japan, Panama, Mexico



# Clinical spectrum of infection

- Majority of cases have uncomplicated influenza resolving without antivirals
  - More GI complaints (emesis, diarrhoea...) than for seasonal influenza
  - Non-febrile, mild, and asymptomatic (viral RNA+) cases
- Hospitalization: 2-10% of confirmed cases worldwide
- Case fatality < 1% of confirmed cases
  - Higher risk in adults (> 20 yrs old) and those with co-morbidities
- Majority of deaths caused by severe viral pneumonia → Acute Respiratory Distress Syndrome (require ICU)
- 50-80% of severe cases have underlying conditions
  - Pregnancy, asthma or other lung disorders, cardiovascular, diabetes, immunosuppression, neurologic disorders
  - Obesity appears to be newly recognized risk factor
- Severe cases and deaths have occurred in young and previously healthy adults and less often in children

# Co-circulation of Pandemic (H1N1) 2009 and Seasonal Influenza

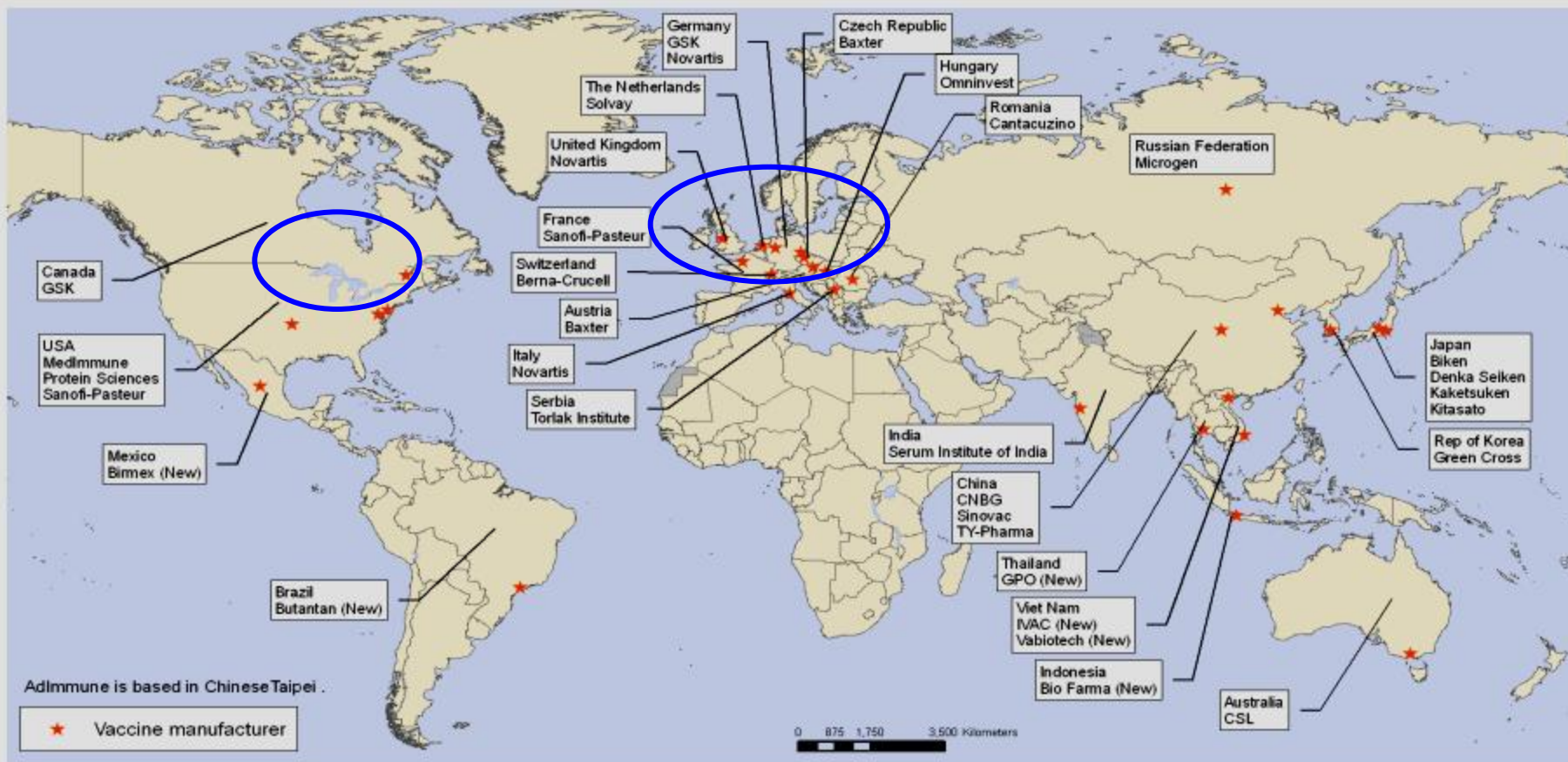


# SAGE recommendations

- Immunization of health care workers is a first priority  
(1-2% of population)
- Stepwise approach to vaccinate particular groups based on country epidemiology and objectives
  - Pregnant women (2% of the population)
  - Those with chronic medical conditions
  - Healthy young adults 16-49 years;
  - Healthy children
  - Healthy adults 50-65 years
  - Healthy adults >65 years

# Potential influenza A(H1N1) Vaccine Manufacturers

New influenza A H1N1: Vaccine Manufacturers



Gap between vaccine potential demand and anticipated supply (94 million/week, but low yield)

# Pandemic vaccine licensure

- Pandemic vaccines licensed in Australia, China, USA
  - Trials released from healthy people in National Institute of Health
  - Good response (from 80 to 96%)
  - No adverse events reported
- Positive scientific opinion by EMEA, European Commission authorisation as of 29 September
- Early data suggest that single dose will be sufficient, however still early to draw conclusions

# WHO Global pandemic vaccine stockpile

- WHO stockpile (global): 150M doses assured
- WHO access at reduced price: under negotiation
  - Timeframe for both: October 2009-April 2010
- Donations from countries (USA, Australia, Brazil, France, Italy, New Zealand, Norway, Switzerland and UK)
- WHO decision on country eligibility will depend on global equity, epidemiology and whether countries have secured access
- WHO initiated vaccine deployment and forecasting tools and training
- First batches of donated vaccine expected to be distributed starting in November

# Tesekkur ederim

