



EUROPEAN IMMUNIZATION WEEK

Prevent. Protect. Immunize.

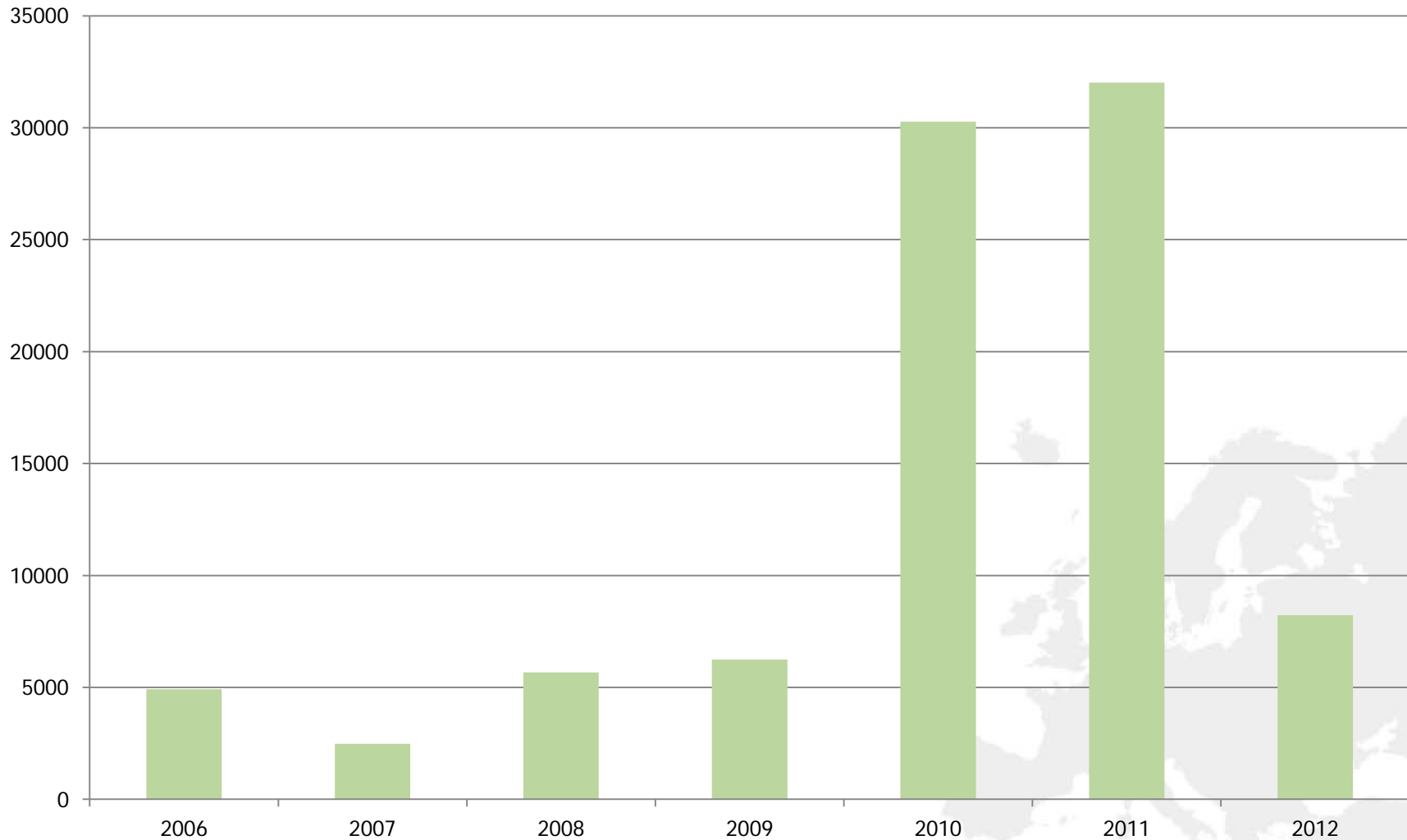
## European Centre for Disease Prevention and Control

Eliminazione del morbillo e della rosolia congenita:  
stato dell'arte e processo di verifica del  
raggiungimento degli obiettivi di eliminazione nella  
regione Europea

*Pier Luigi Lopalco, Head of Vaccine Preventable Disease Programme*

Roma, 17 Aprile 2013

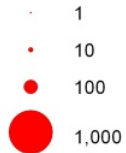
# Casi di morbilo riportati nella UE nel periodo 2006-2012



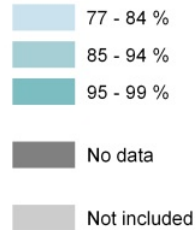
# L'Europa ha il morbillo

*casi notificati Marzo 2012 – Febbraio 2013*

## Number of cases



## Measles vaccine coverage (two doses, 2011)

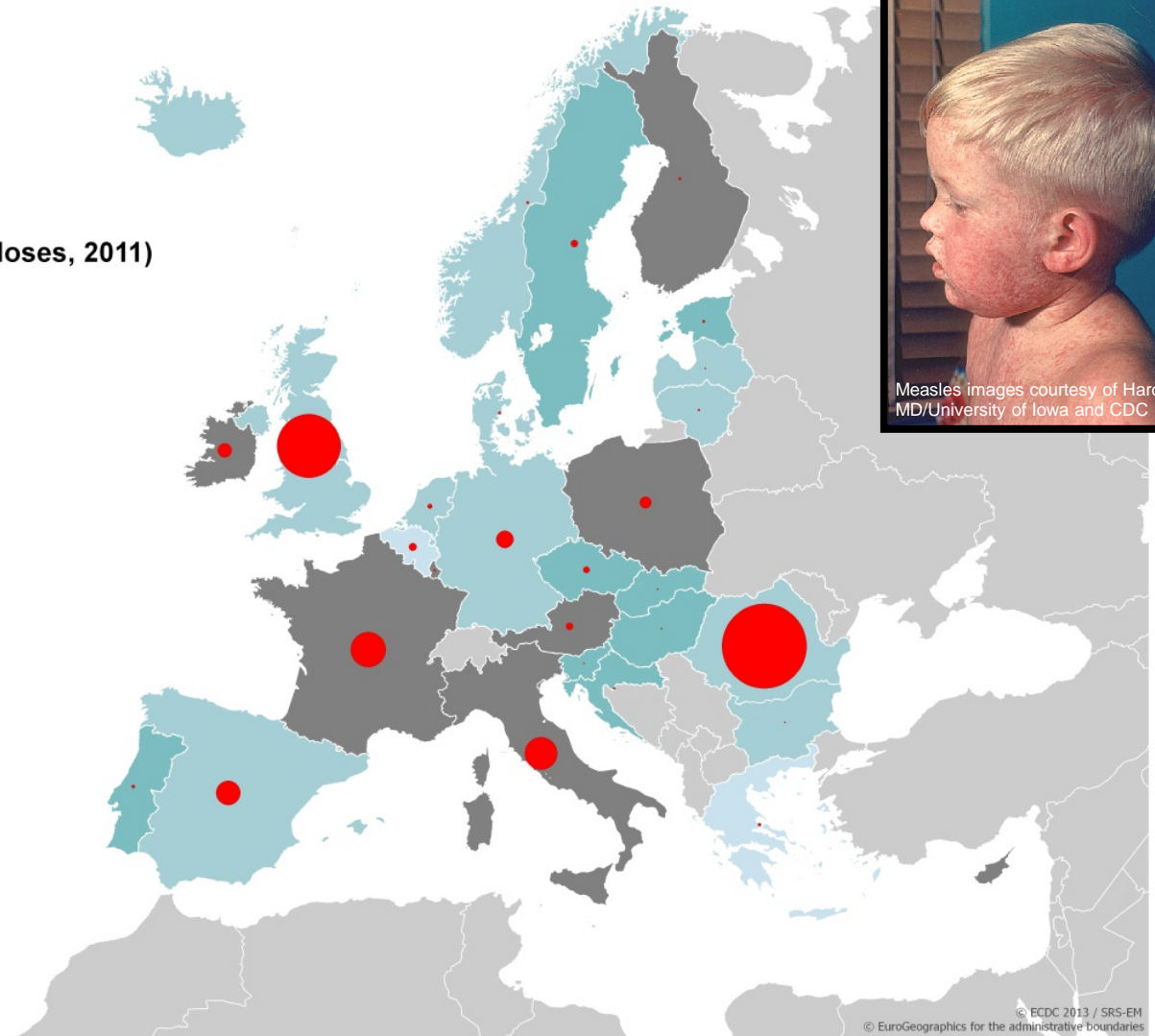


Source: TESSy.

Date of data retrieval 2/4/2013



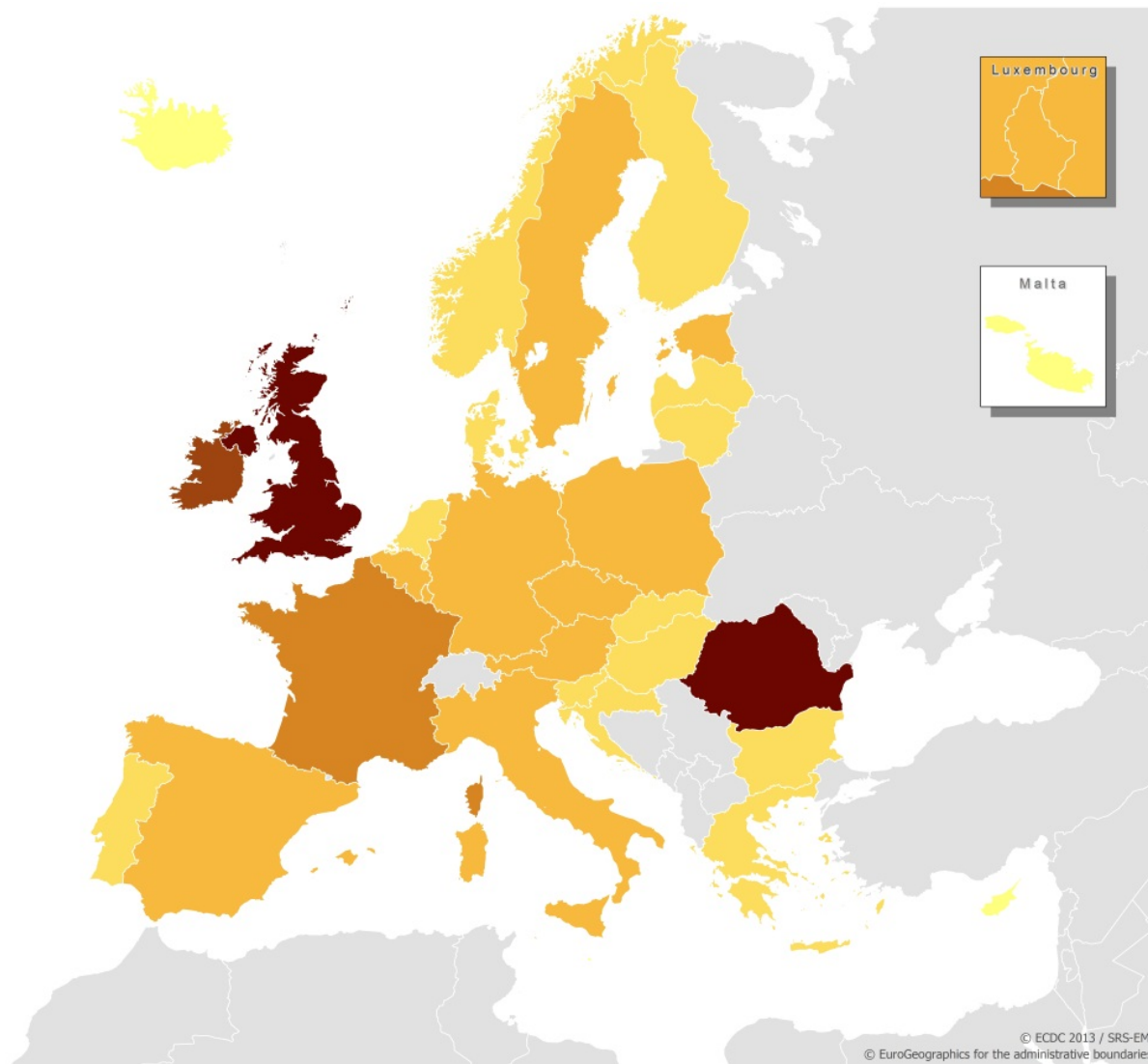
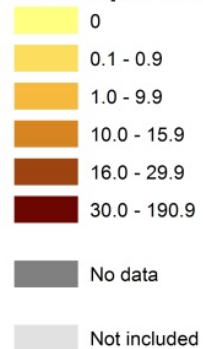
\* Note: The map shows the distribution of human cases shaded according to notification rate, based on manual breaks classification method per 1 million population (EUROSTAT population data 2011).



# Il morbillo è endemico nella maggior parte dell'UE

*tassi di notifica Marzo 2012 – Febbraio 2013*

## Cases per million



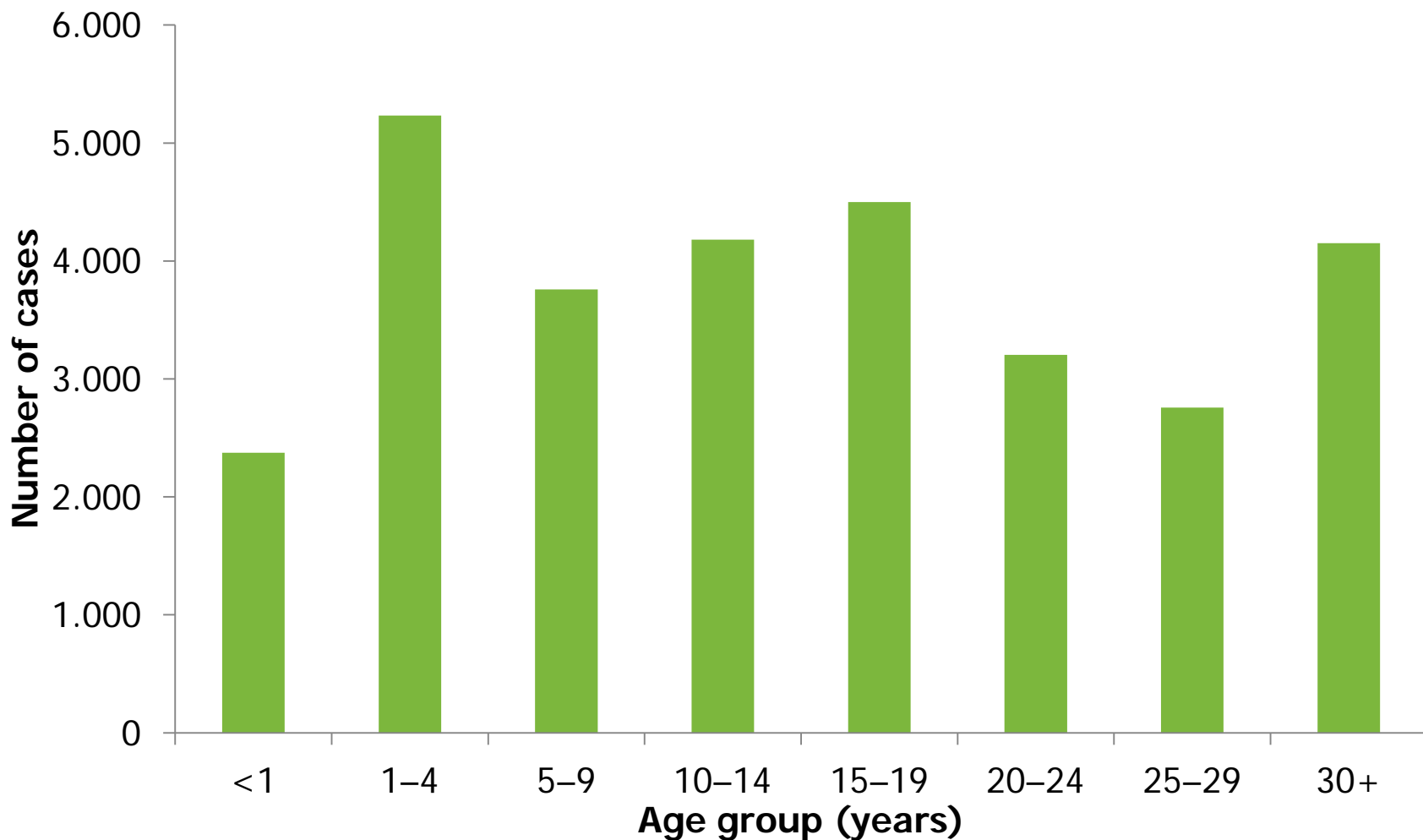
Source: TESSy.

Date of data retrieval 2/4/2013

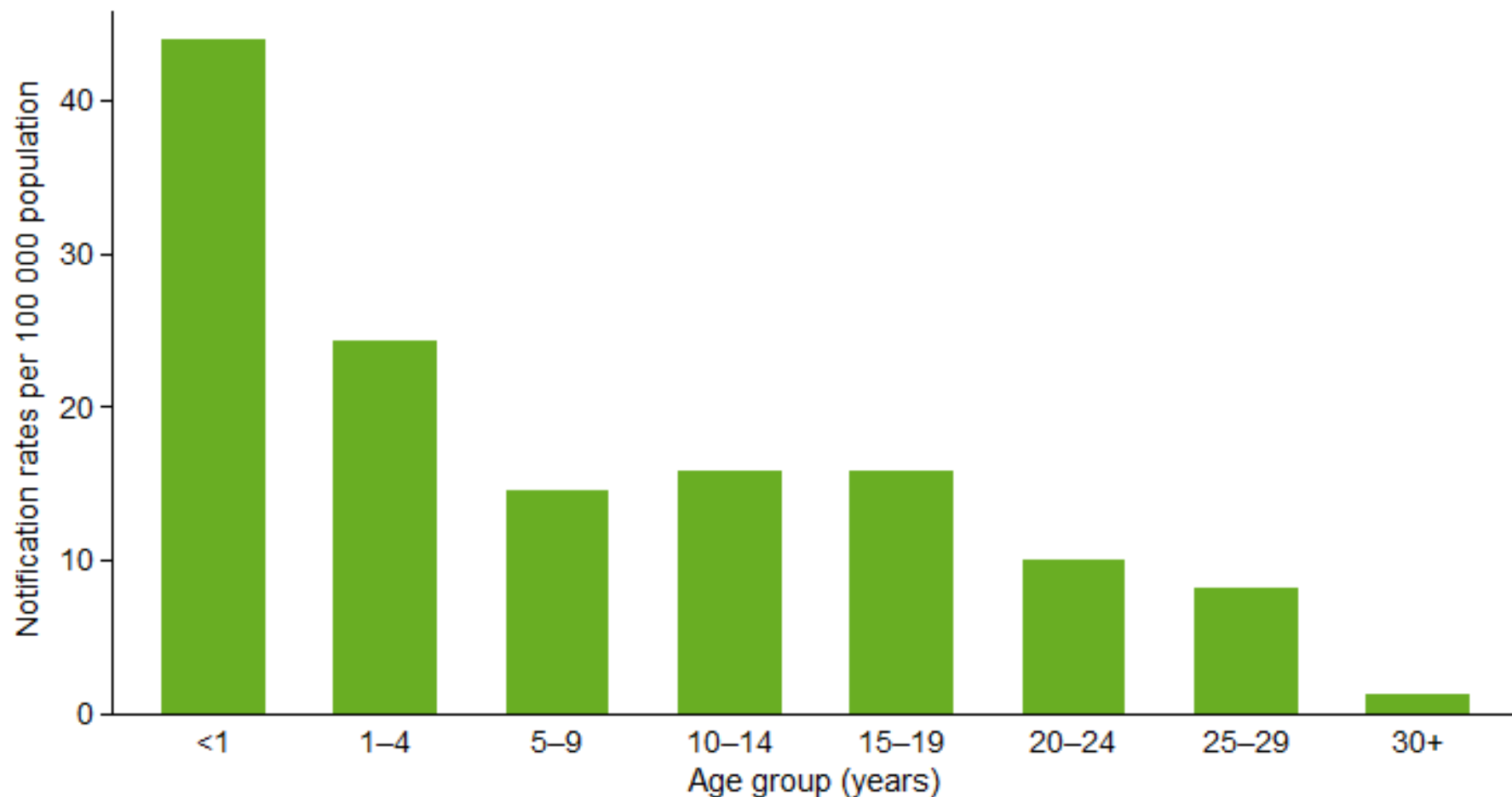
0 220 440 880 Kilometers

\* Note: The map shows the distribution of human cases shaded according to notification rate, based on manual breaks classification method per 1 million population (EUROSTAT population data 2011).

# Distribuzione per età dei casi di morbillo notificati in UE nel 2011



# Tassi di notifica per morbillo età specifici per 100.000 abitanti, UE, 2011





# Max, 18 anni, vittima della panencefalite subacuta sclerosante (PESS o SSPE)

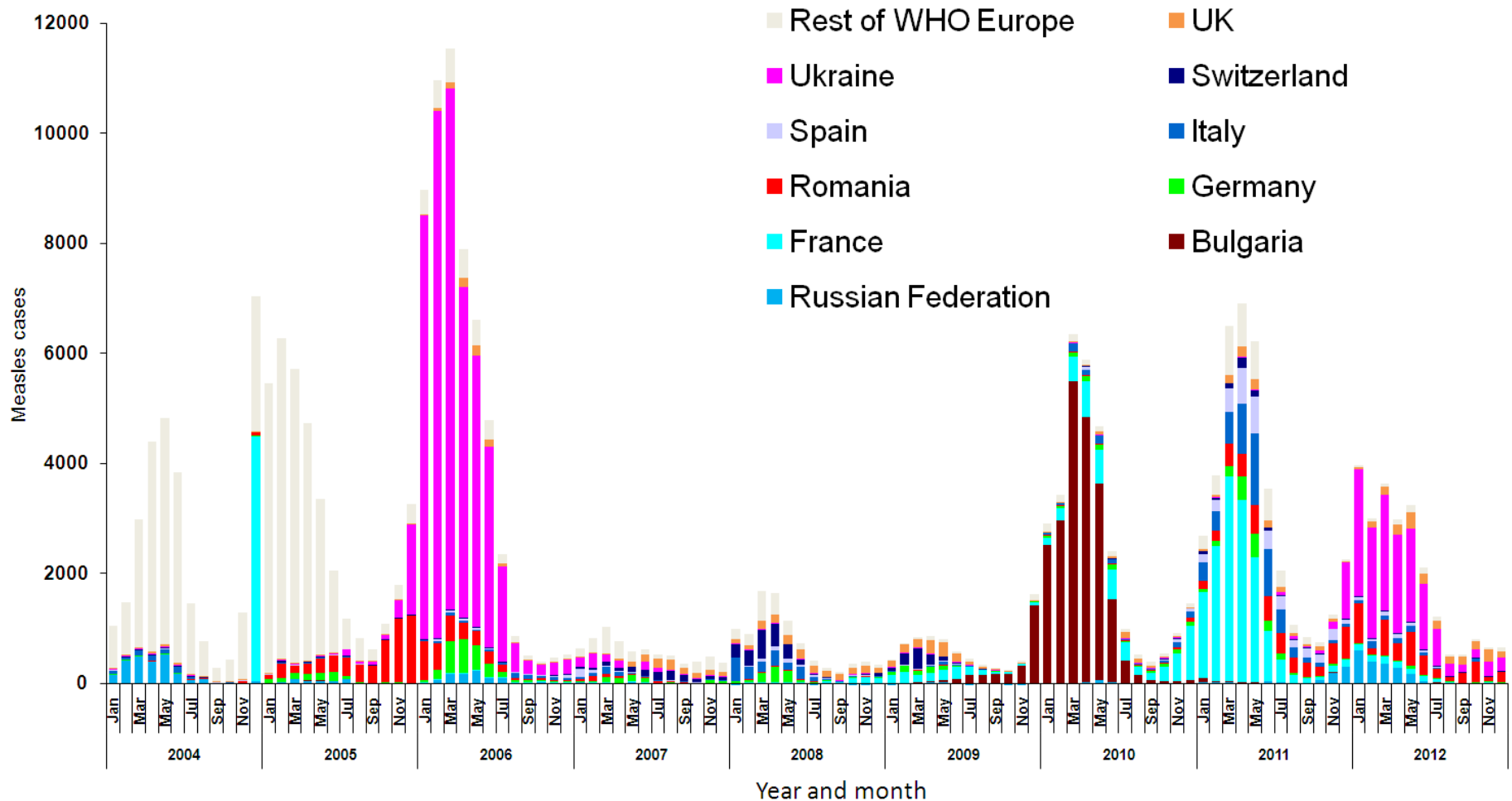


December 2004



October 2012

# Measles Cases by Month and Year, WHO European Region, 2004-2012





# Measles and *Rubella* Regional Elimination Goals

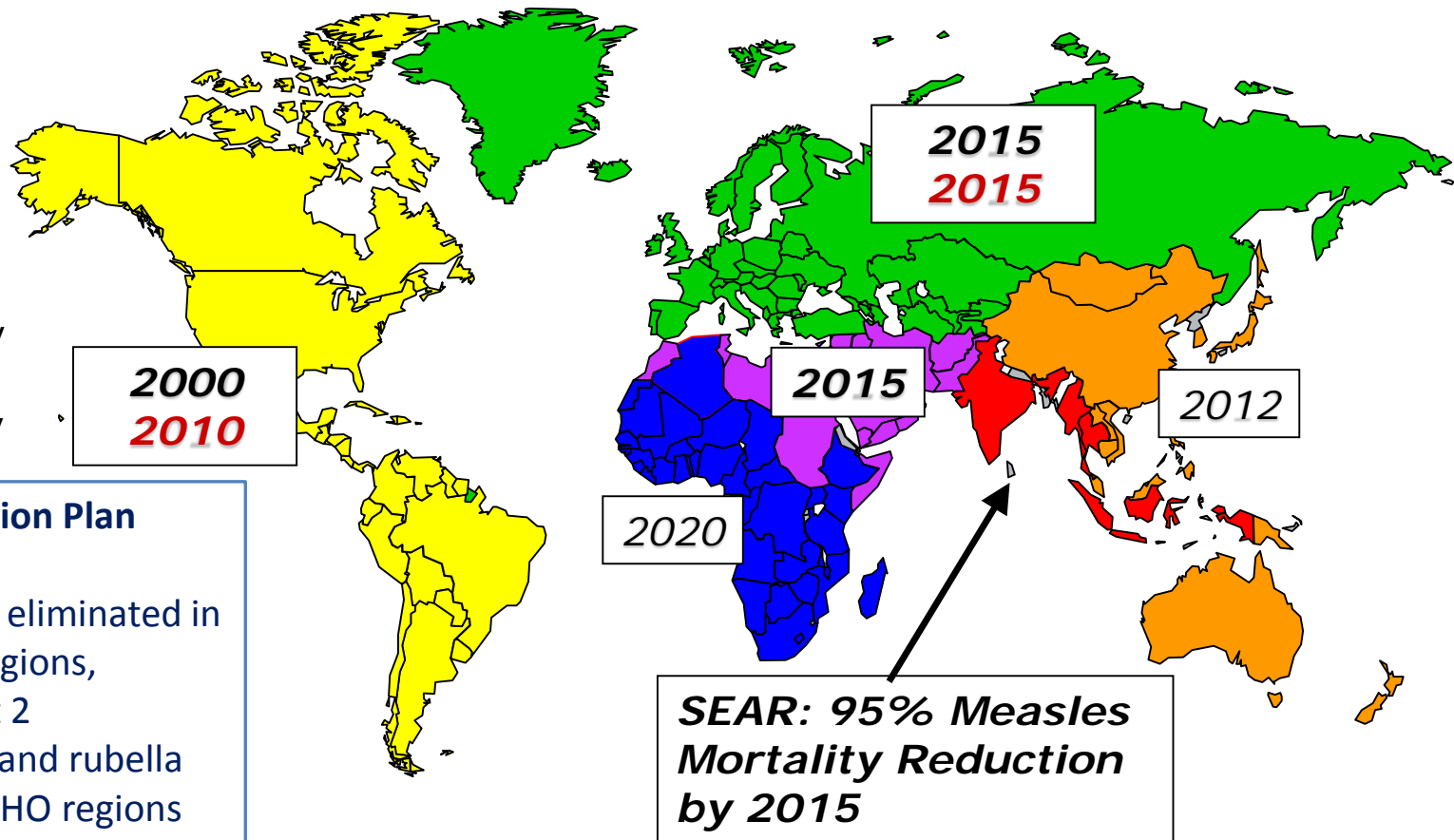
## Decade of Vaccines goal:

- Meet vaccination coverage targets in every region, country and community

## Global Vaccine Action Plan

### Targets:

- By 2015: Measles eliminated in at least 4 WHO regions, Rubella in at least 2
- By 2020: Measles and rubella eliminated in 5 WHO regions



# La velocità conta: il caso della polio

- Un modello sviluppato in India suggeriva la necessità di intensificare gli sforzi per eliminare la polio in tempi brevi
- Avvicinarsi lentamente alla soglia necessaria per l'eradicazione (linea blu) era estremamente svantaggioso
- Il recente successo raggiunto in India nella lotta contro la polio ha dimostrato la fondatezza del modello

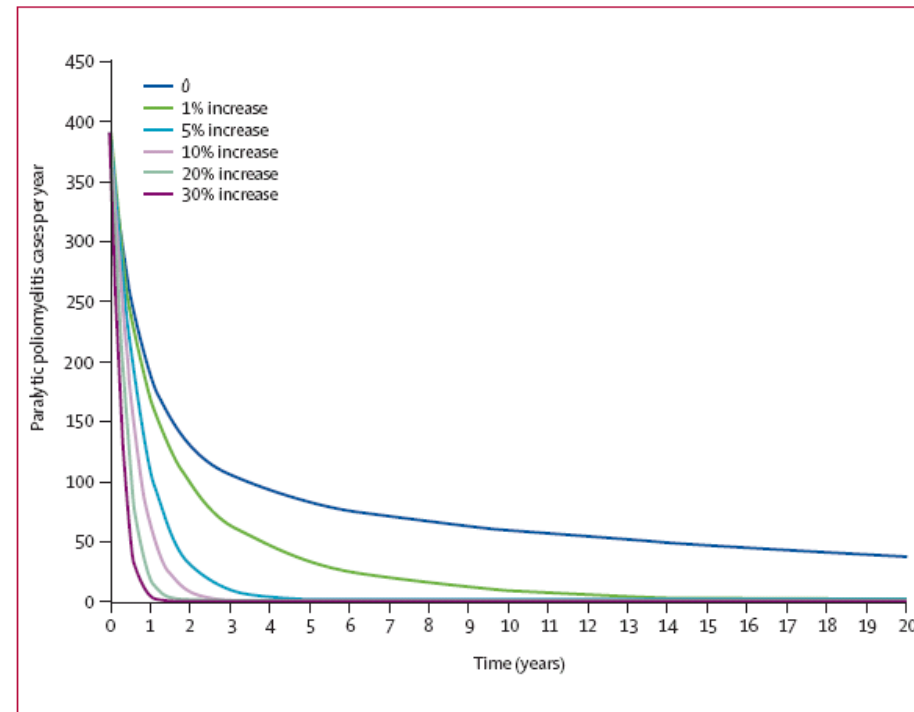
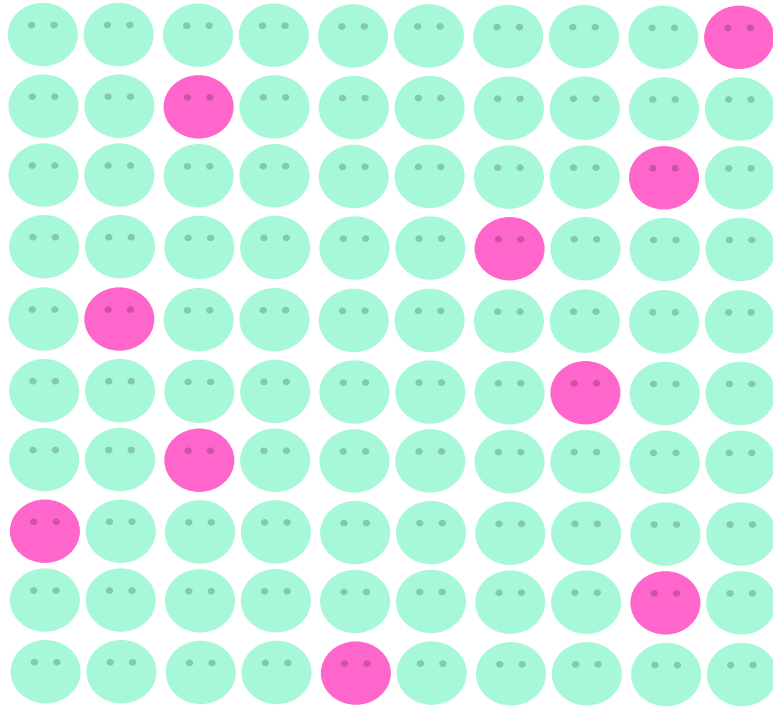


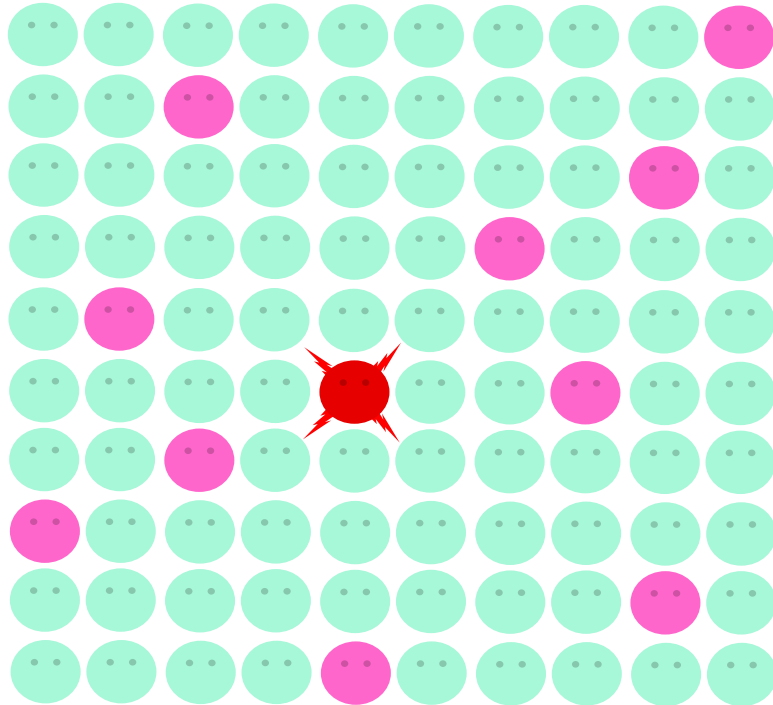
Figure 1: Paralytic poliomyelitis cases per year in the Indian states of Uttar Pradesh and Bihar with the fraction of susceptible people that become immune due to exposure to oral poliovirus vaccine virus per year ( $u$ ) equal to or greater than the threshold ( $\hat{u}$ ) needed for eventual eradication

# Perché il morbillo è ancora endemico in Europa?

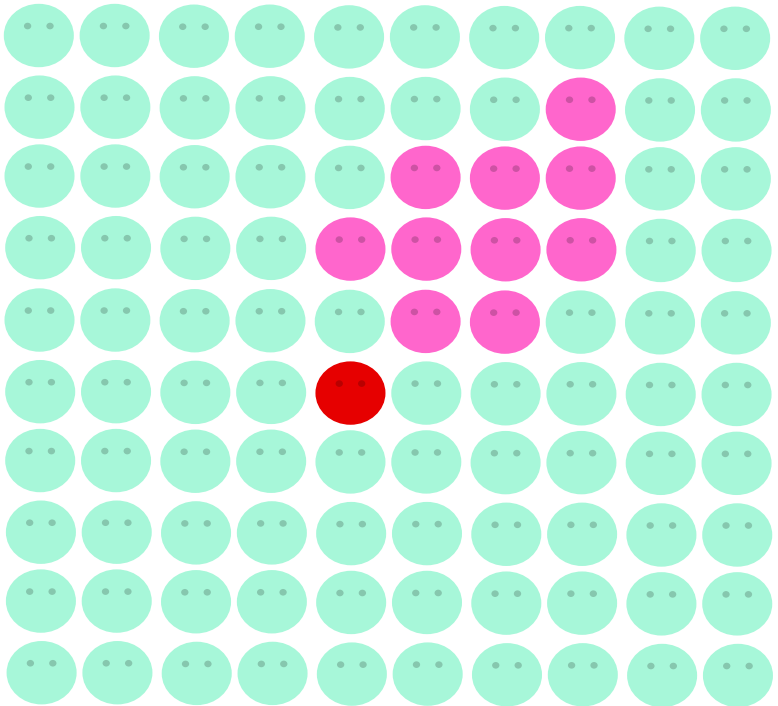
# Herd immunity



# Herd immunity

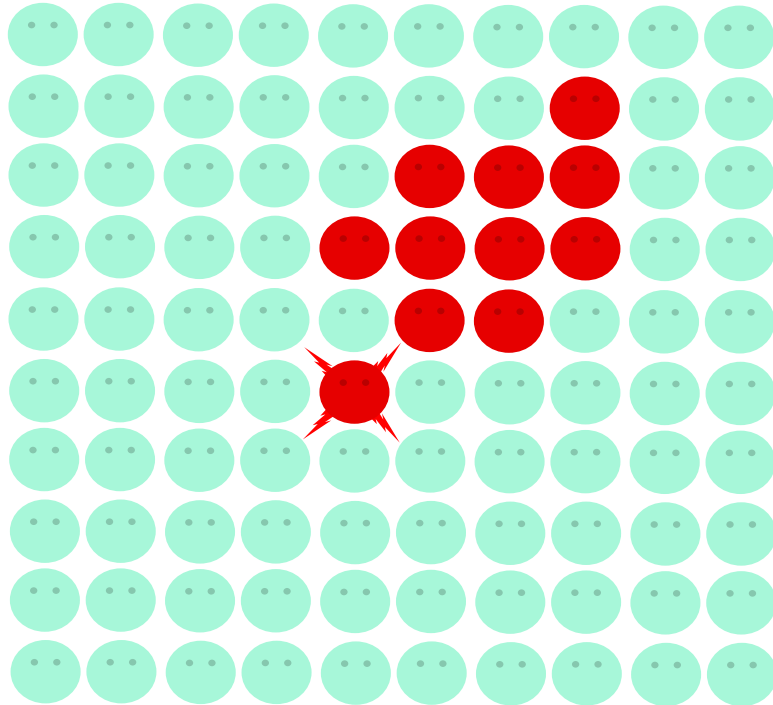


# Herd immunity





# Herd immunity

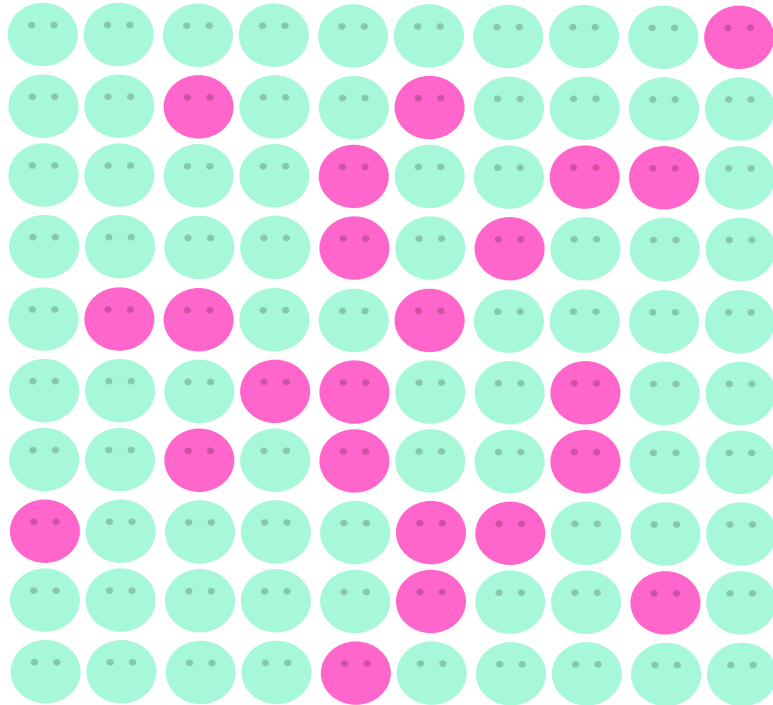


# Epidemia di morbillo in Bulgaria, 2010

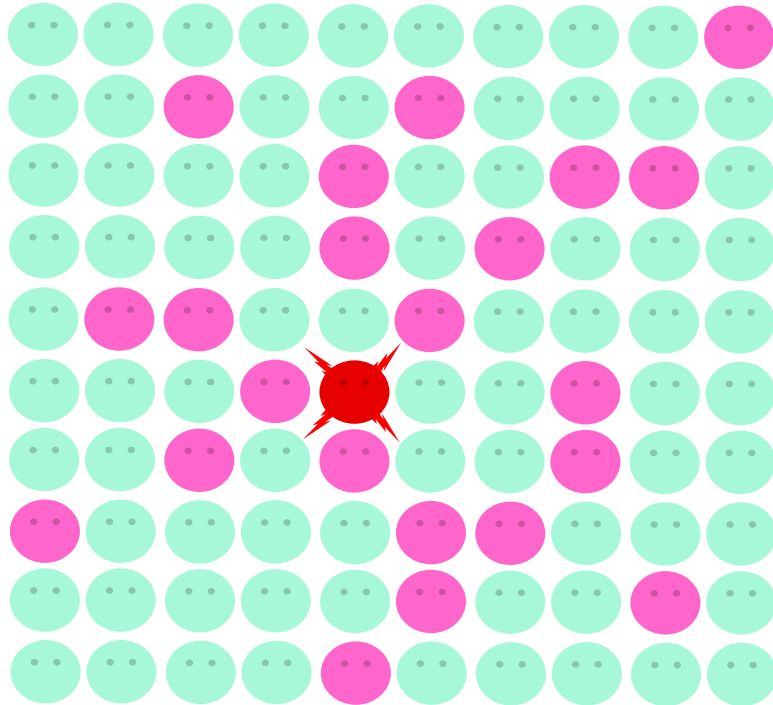
**>24,000 casi**  
**90% nella comunità**  
**Rom**  
**25 morti**



# Herd immunity - failure



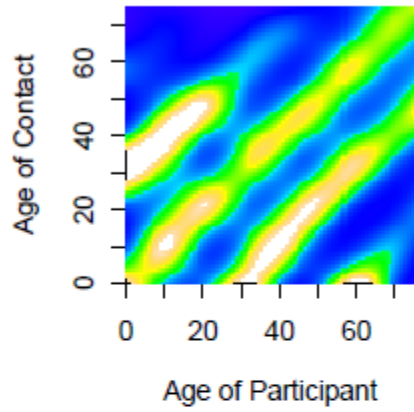
# Herd immunity - failure



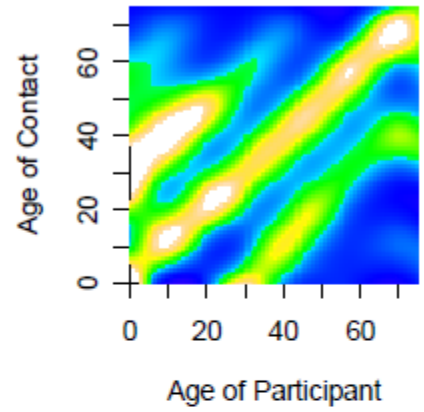
# Social contacts and mixing patterns relevant to the spread of infectious diseases



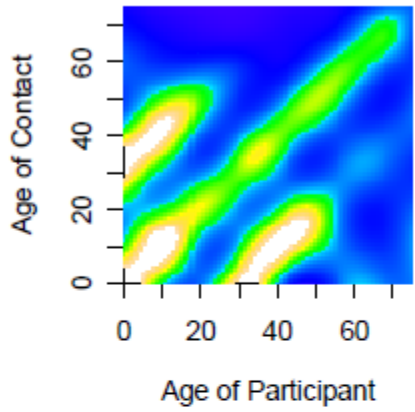
BE



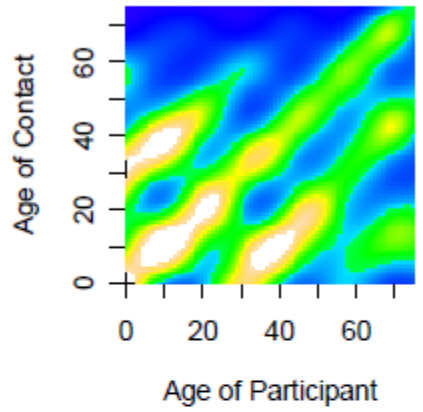
DE



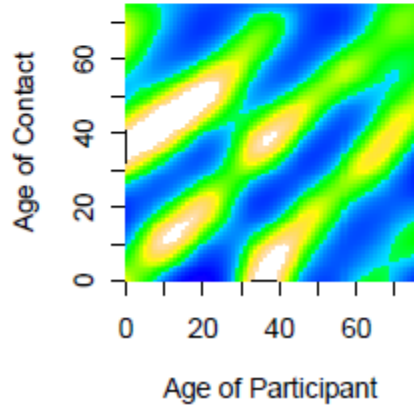
FI



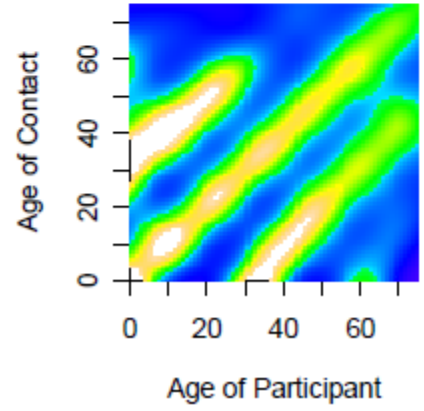
GB



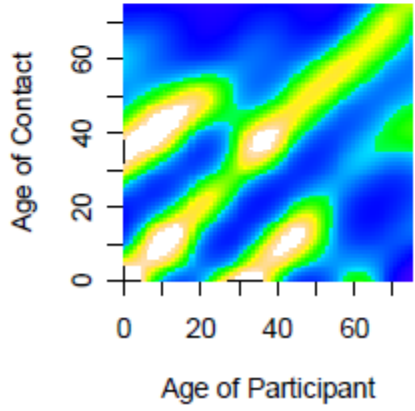
IT



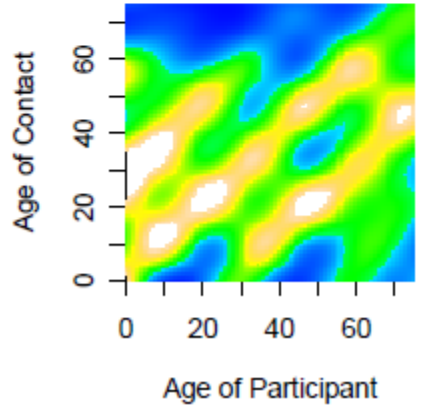
LU



NL



PL



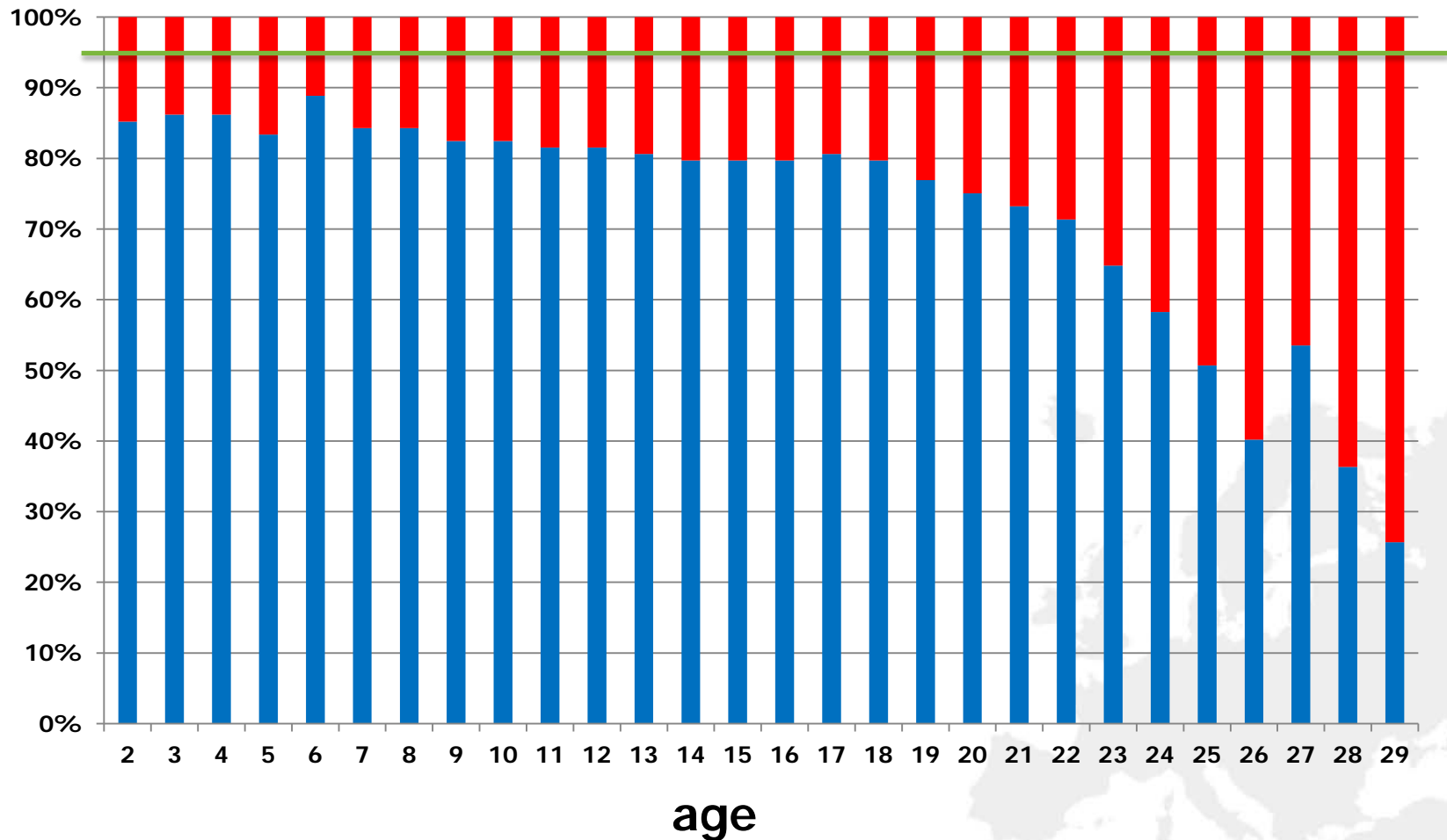
# Copertura per una dose di MPR in UE 2000-2010

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Austria	74.7	78.5	78.5	78.8	73.5	91	80	77	83	76	
Belgium	82.2	82.2	82.2	82.2	82.2	88	91.9	91.9		94	
Bulgaria	88.6	90.1	92.1	95.5	94.7	96.2	95.7	96	95.9		
Cyprus	85	85	85	86	86.3	86.3	87	87	87		
Czech Republic	98	98	99	99.1	96.9						
Denmark	100	94	102.4	96	96	95	100				
Estonia	93	94.7	95.2	95.2	95.5	95.9					
Finland	96	96	95.8	97	97						
France	84	85	85	86	86						
Germany	91.7	91	91	92							
Greece	88	88	88								
Hungary	100	100									99.9
Iceland	90										94
Ireland	78									90.4	90
Italy											
Latvia								97	96.6	95.7	90.1
Lithuania						85.4	96.6	96.9	97	96	96.1
Luxembourg					86.01	94	79	78	82	82	72.55
Malta					96.27	96.3		95.9	96.2	96.2	95.9
Netherlands			84	88	90	91	92	93	92	92	93
Poland			97.6	97.5	97.4	98.2	98.2	98.3		98.3	98.2
Portugal		86.8	91.9	96.3	94.8	92.6	96.69	95	96.6	95	96
Romania		97.8	98.2	97.2	97.1	96.7		97.1			95
Slovakia	98	98.6	98.6	98.6	98	98	98.4	98.8	99	99	98.5
Slovenia	95.2	94	93.5	86.7	94		96.1	95.56	96	95	95
Spain	94	96	96.6	97.15	97.3	96.8	96.9	97.1	97.8	97.5	95.1
Sweden	94.2	88.5	95	95	94.5	95.4	95.4	96.2	96.2	96.7	96.5
UK	99	98.76	83	80	81	82.1	84.9	86.2	85.5	86	93

4,900,000 non vaccinati nella coorte  
1998-2008

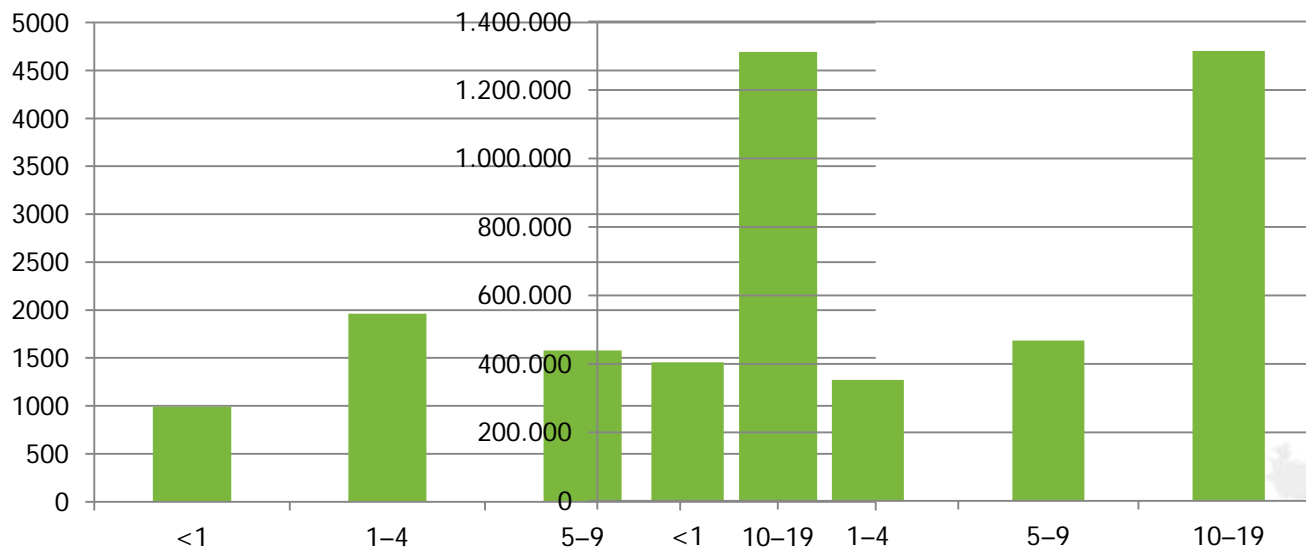


# Popolazione potenzialmente suscettibile in Francia nel 2012, sulla base dei dati ufficiali di copertura vaccinale\*



\* Stima basata su dati CISID, assumendo una efficacia vaccinale del 95% dopo una dose di MPR, senza considerare l'effetto di richiami o booster naturali

# Casi di morbillo notificati e popolazione potenzialmente suscettibile in Francia, 2011

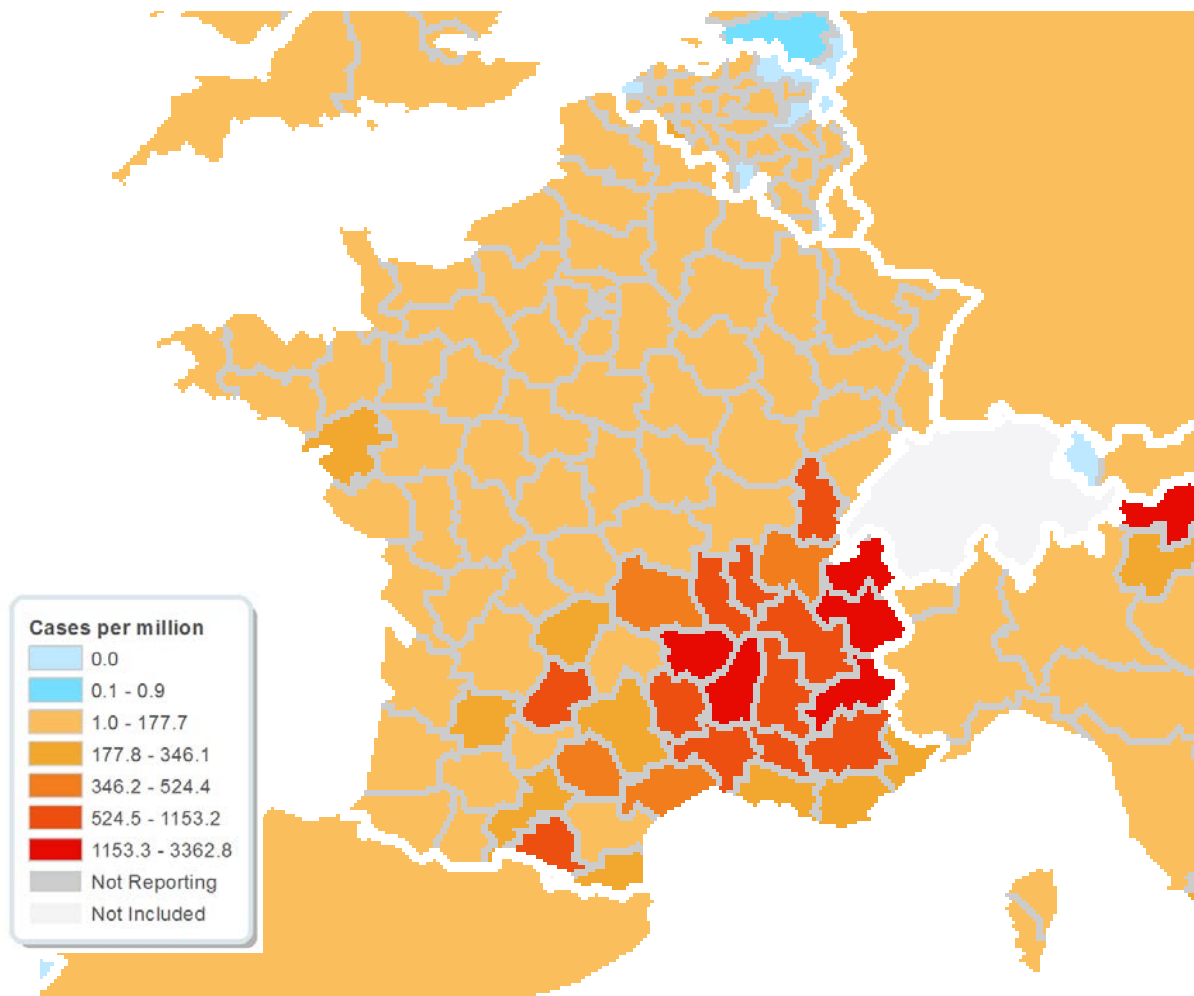


Numero di casi di morbillo notificati e popolazione potenzialmente suscettibile nel 2011

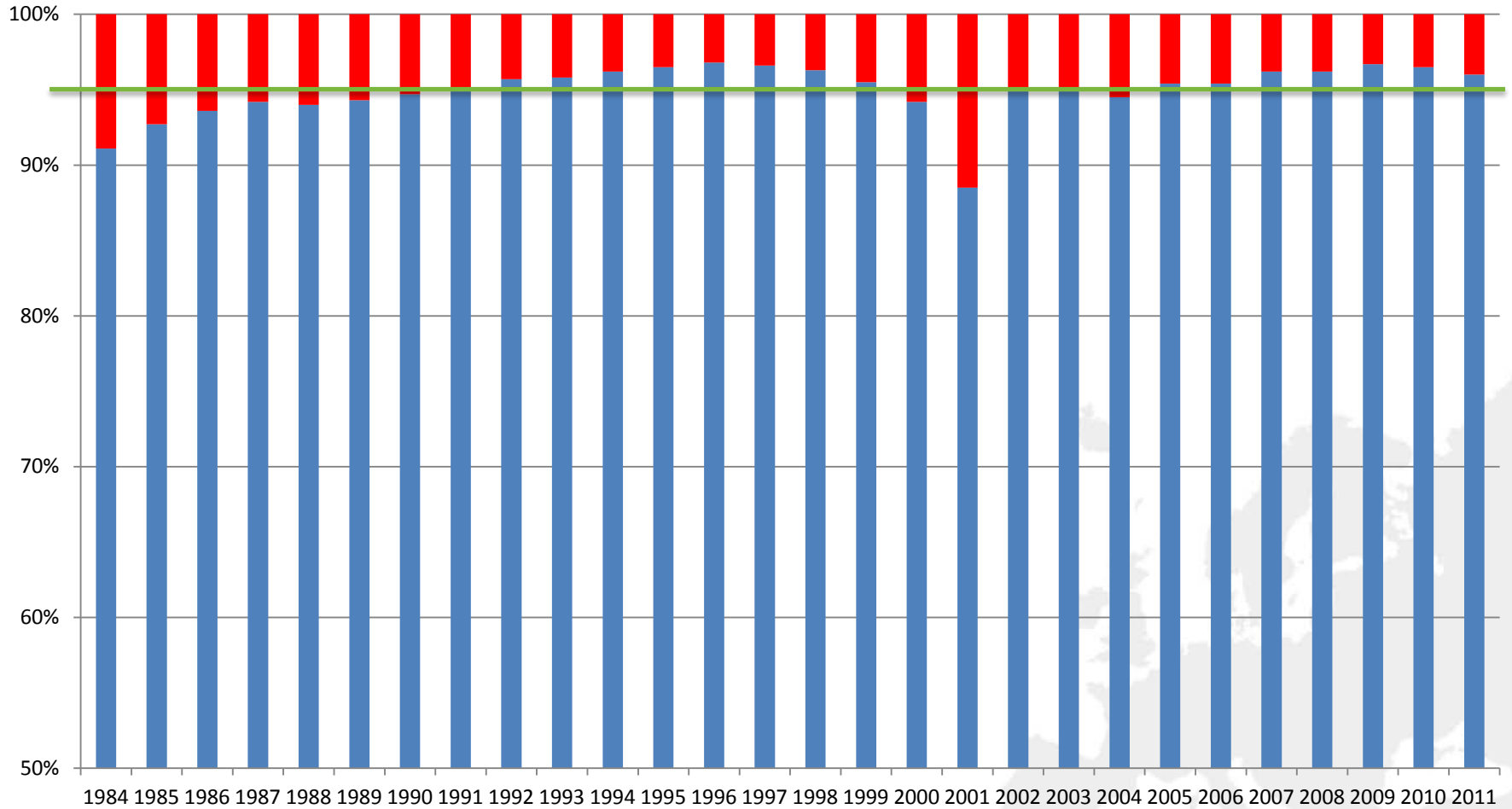
2.4‰ – 5.6‰ della popolazione suscettibile ha contratto il morbillo

2.5 milioni di soggetti potenzialmente suscettibili nella fascia di età 0-19 hanno generato oltre 9.000 casi

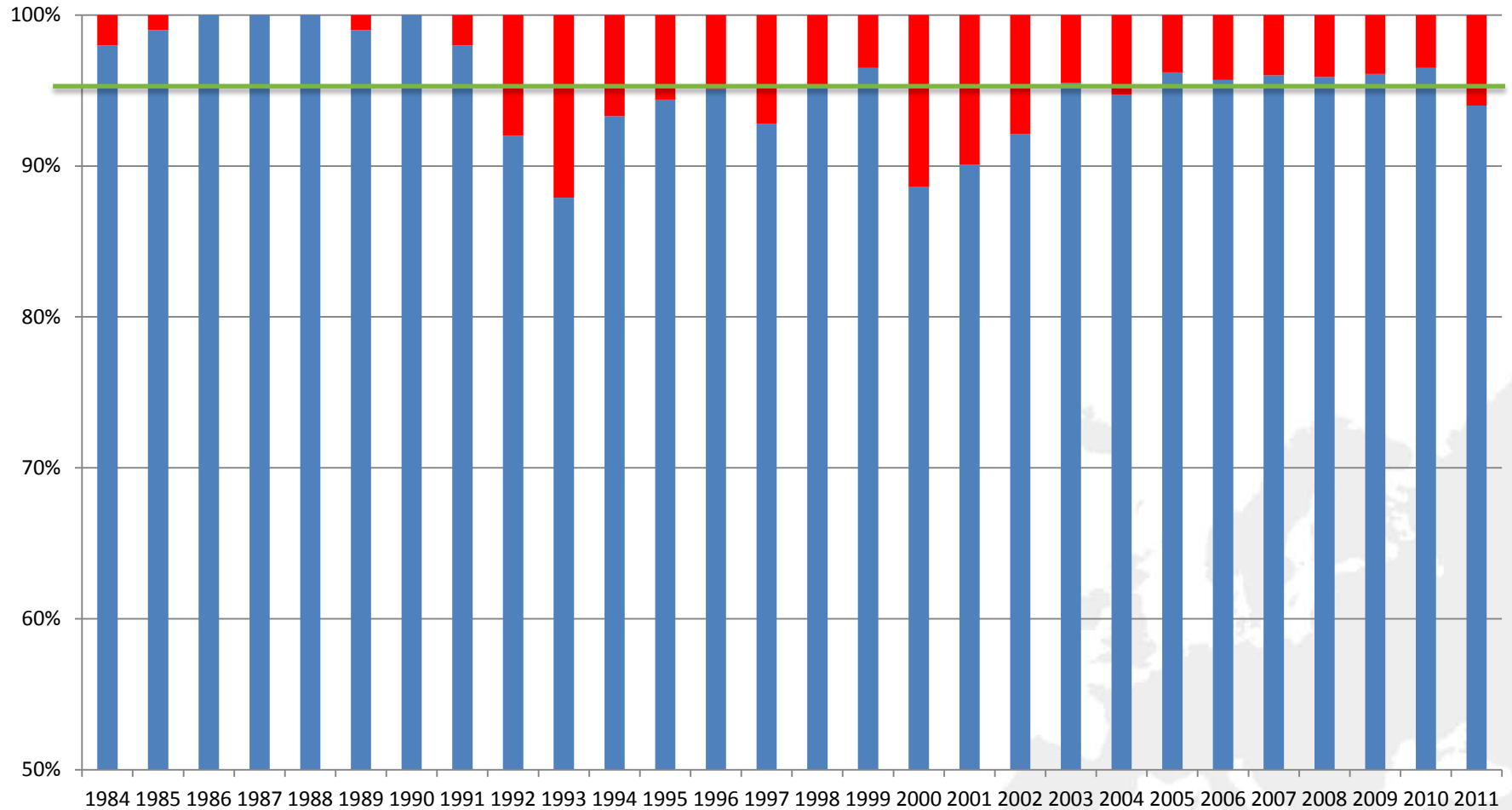
# Tassi di notifica per morbillo, dettaglio geografico a livello di provincia - 2011



# Svezia

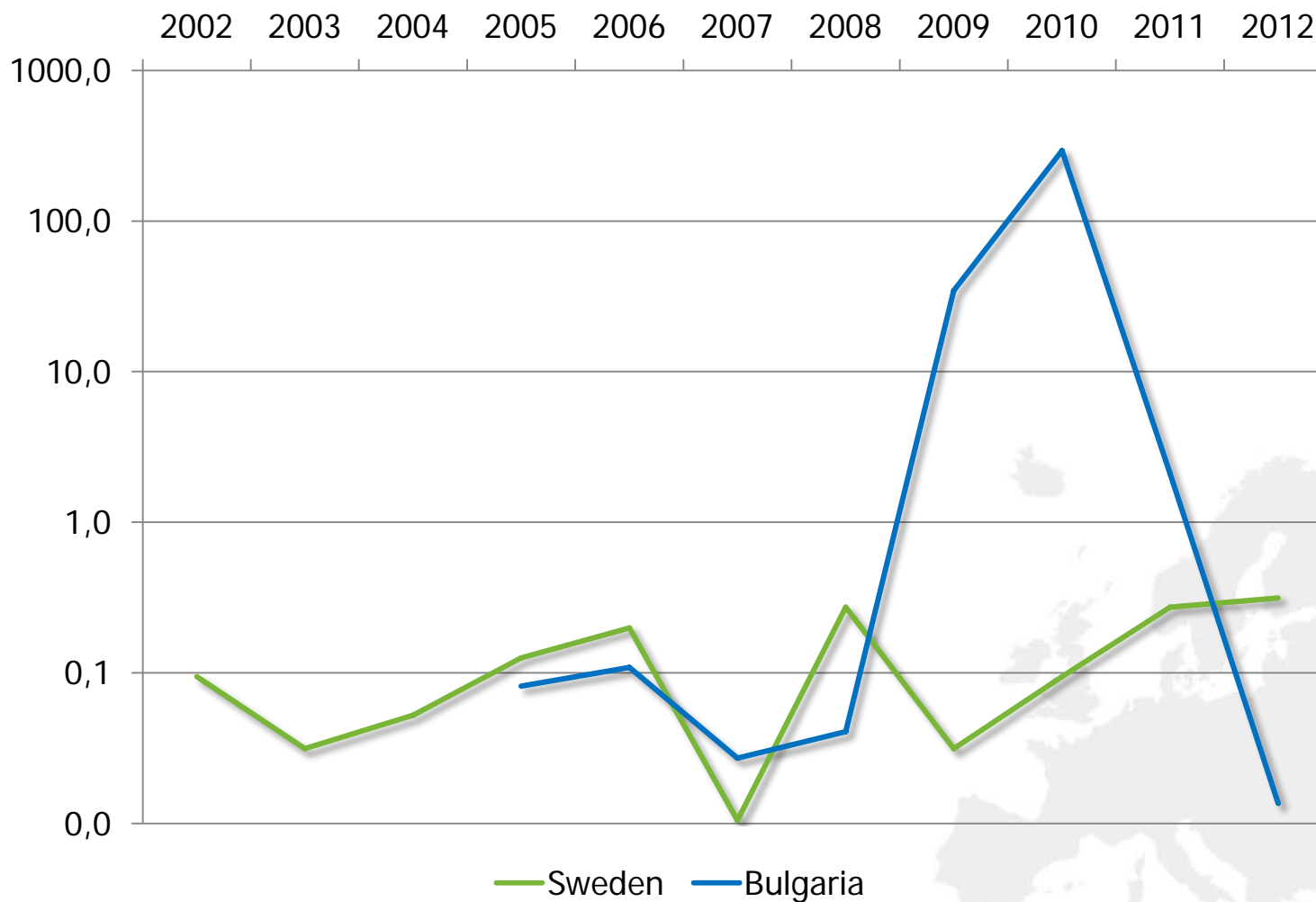


# Bulgaria



# Tassi di notifica per morbillo

*casi per 100.000 - 2002/2012*





# Ruolo delle diseguaglianze sociali

**>24,000 casi**  
**90% nella comunità**  
**Rom**  
**25 morti**



# % popolazione suscettibile al morbillo in alcuni paesi UE

Country or area	Measles seronegative (%)				
	2-4 years	5-9 years	10-19 years	20-39 years	40+ years
<b>WHO target</b>	< 15	< 10	< 5	< 5	< 5
<i>Low susceptibility</i>					
Czech Republic	1.0	0.8	1.5	3.2	0.2
Hungary	2.9	3.8	3.5	8.5	0.3
Luxembourg	5.4 <sup>a</sup>	4.7	5.0	2.6	0.2
Slovakia	3.8	4.8	3.3	6.1	0.3
Slovenia	4.0	3.2	4.2	6.1	1.5
Spain	5.0	7.2	4.0	0.8	–
Sweden	1.0	5.8	4.7	5.9	0.5
<i>Intermediate susceptibility</i>					
Australia	10.8	8.0	7.9	9.4	–
Israel	9.1	6.9	5.2	7.0	1.4
Lithuania	4.7	9.8	9.6	12.4	0.3
Malta	9.6	4.3	6.9	5.3	3.1
<i>Higher susceptibility</i>					
Belgium	12.4	14.1	13.3	4.6	2.0
Bulgaria	30.4	25.9	20.7	10.1	9.0
Cyprus	21.8	21.8	13.2	5.9	1.0
England and Wales	18.9	10.2	6.9	2.8	0.2
Ireland	14.2	11.8	8.6	7.8	7.6
Latvia	19.0	42.9	39.8	30.8	3.5
Romania	24.3	11.4	4.2	1.4	0.3

Serve una conoscenza dei livelli vaccinali anche nei gruppi di popolazione svantaggiati

# Studi di sieroprevalenza sempre necessari?



## *Seroprevalence of Measles-, Mumps- and Rubella-Specific IgG Antibodies in German Children and Adolescents and Predictors for Seronegativity*

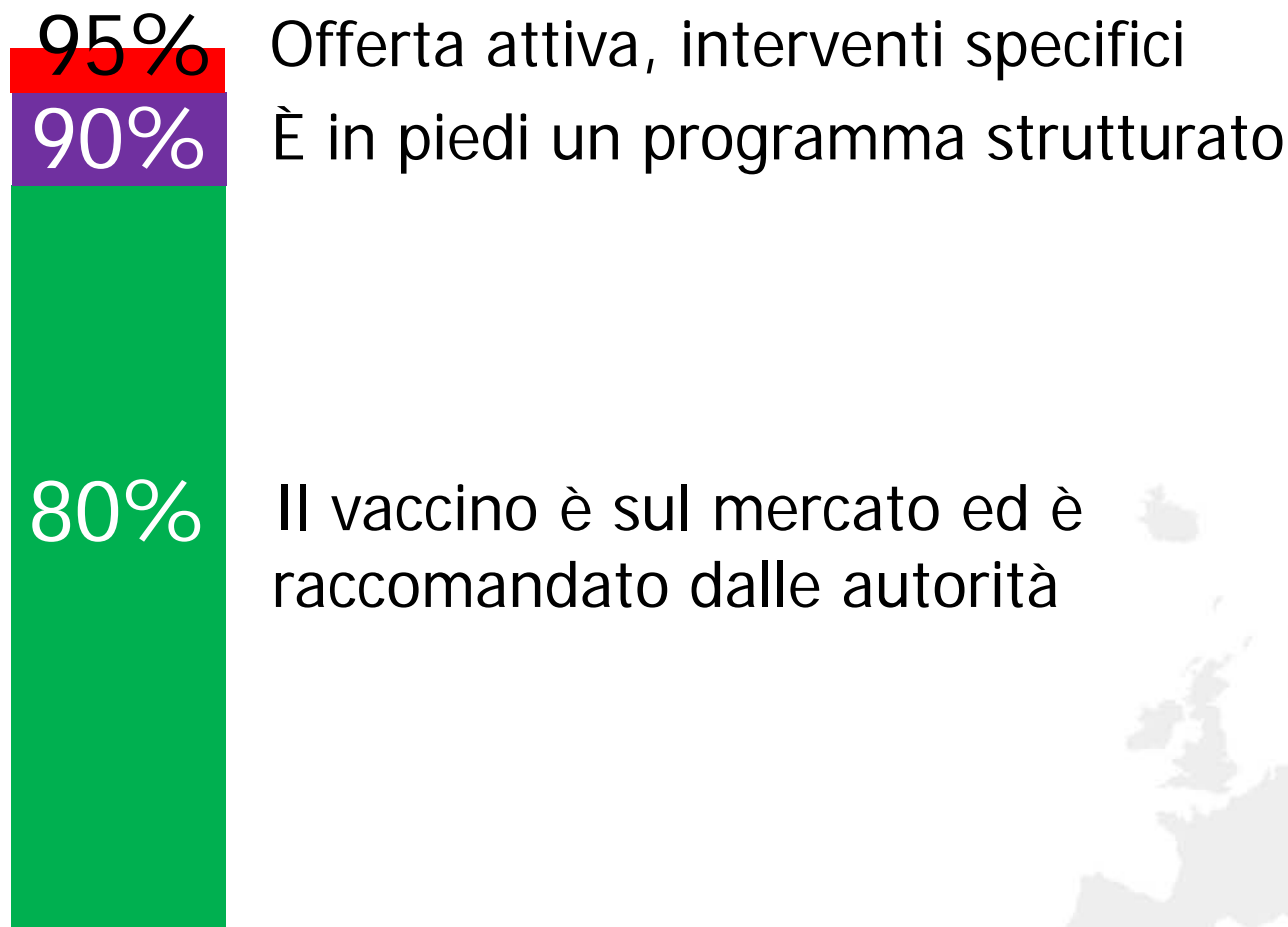
*Christina Poethko-Müller, Annette Mankertz*

*PLoS ONE, 2012*

“During 2003 to 2006, concomitant **seroprevalence** of antibodies to measles, mumps and rubella was **below 80%** in German children and adolescents, while the **vaccination rate was 88.8%**”

# Solutions?

# La dura legge del successo dei programmi vaccinali



# Offerta attiva della vaccinazione

## *un approccio razionale*

Il vaccino è sicuro ed efficace

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Offerta attiva di MPR

Problemi legati all'offerta

Problemi legati alla  
domanda

Assenza di registri

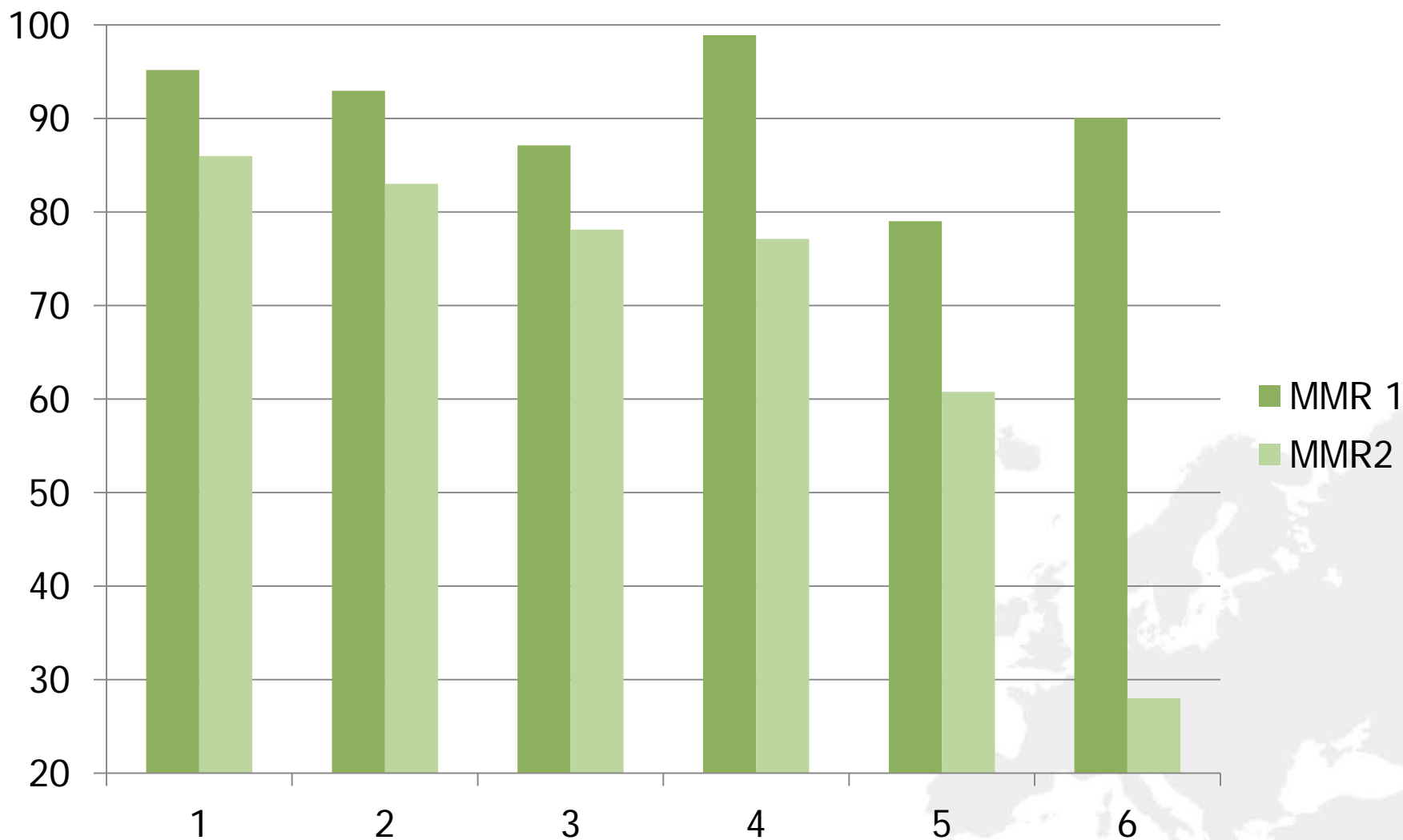
Assenza di sistemi di richiamo

Resistenza fra i sanitari

Anti vaccinisti

Gruppi svantaggiati

# Differenze fra copertura per prima e seconda dose di MPR in 6 paesi UE





# Che sia l'indolenza il maggior problema?

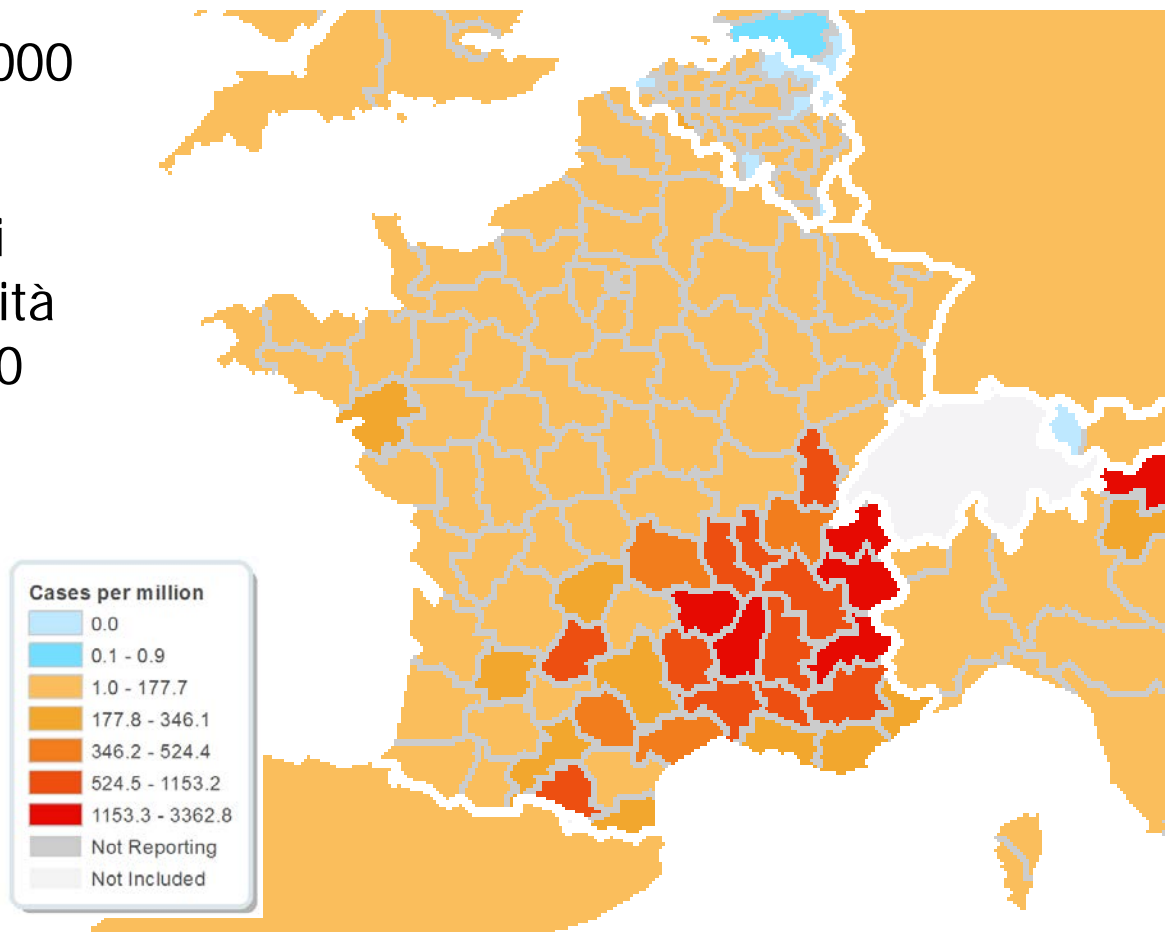




# Tasso di notifica per morbillo, dettaglio geografico a livello di provincia - 2011

150:1,000,000

7 o 8 casi  
in una località  
con 50.000  
abitanti



# Il processo di verifica OMS

# Ongoing ...

Measles and rubella elimination  
in all Member States



Declaration of  
measles and rubella elimination

0

1

2

3

4

5

6

Annual review of status at  
country level

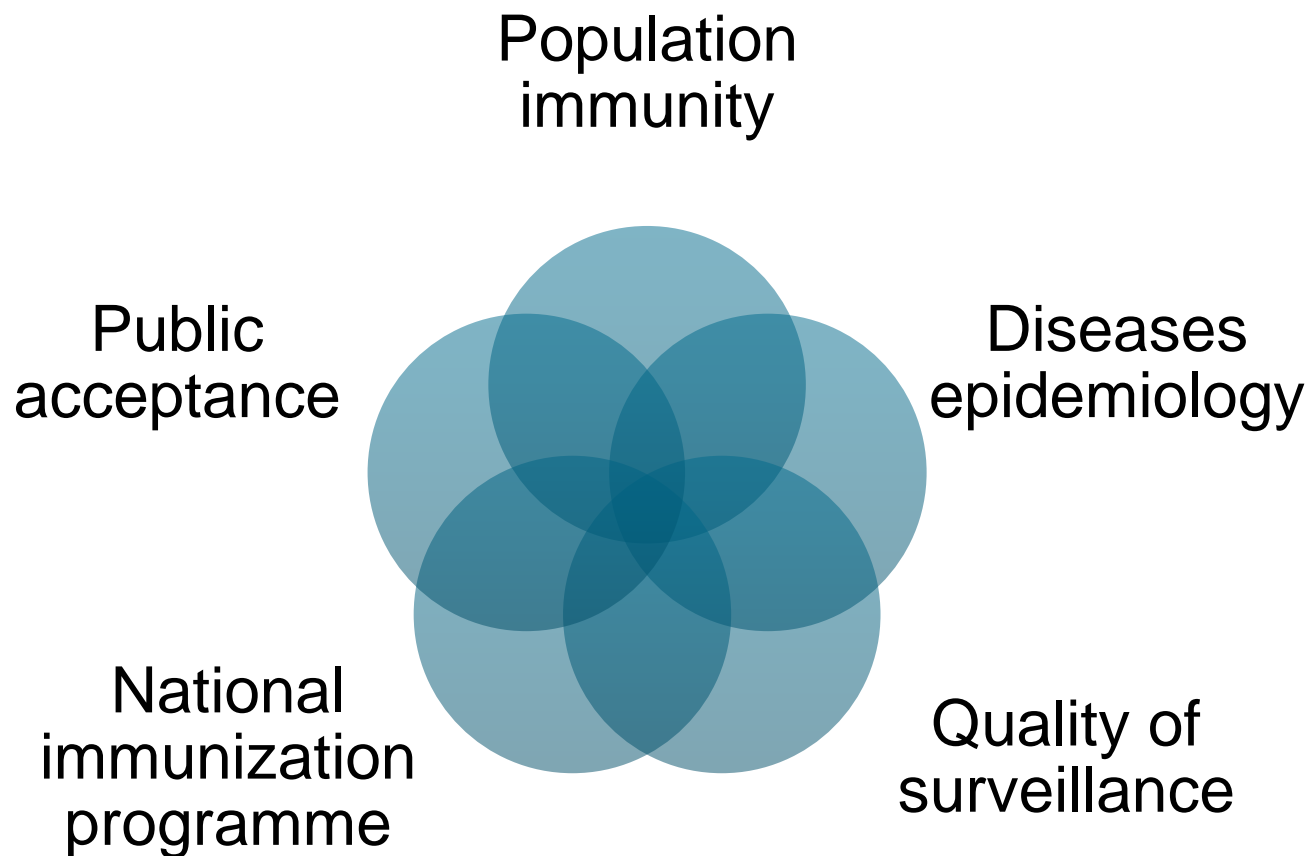
Annual review  
of status at  
country level

Annual reporting  
of status from all countries

## Verification process

## Regional elimination

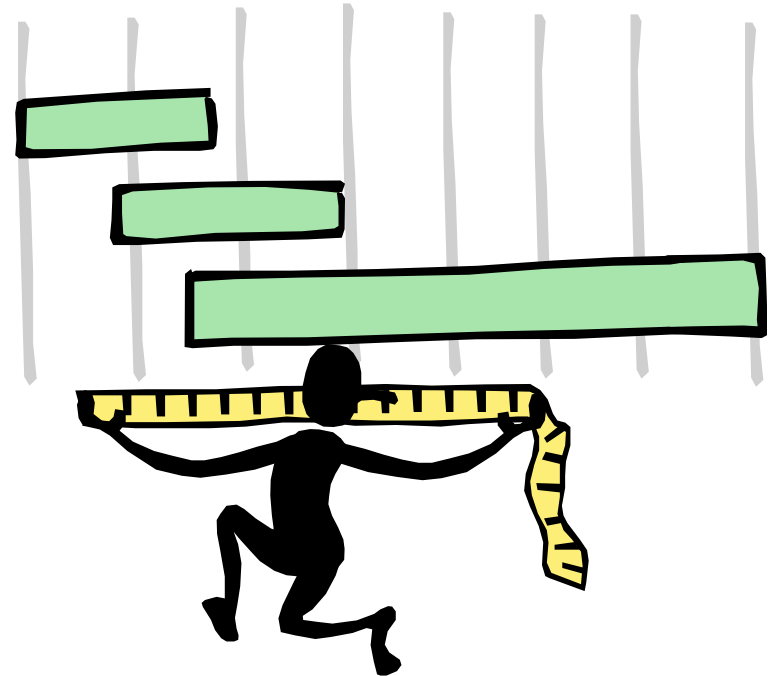
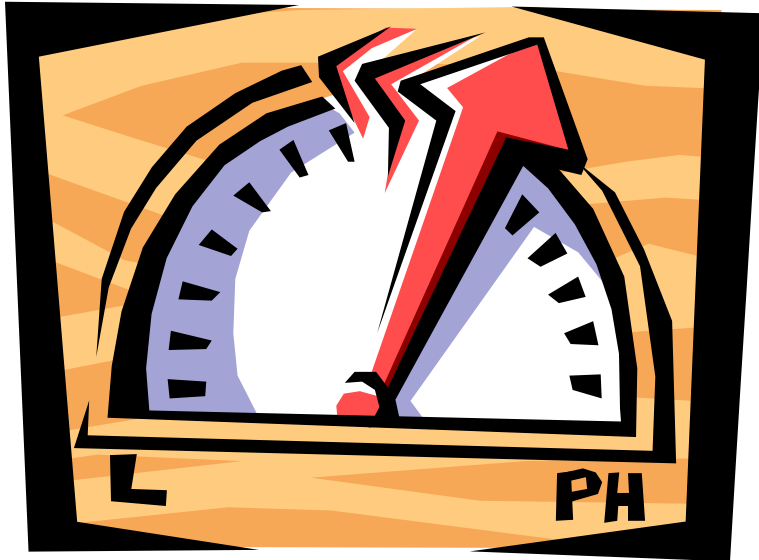
# Evidence based...



# Measurable ...

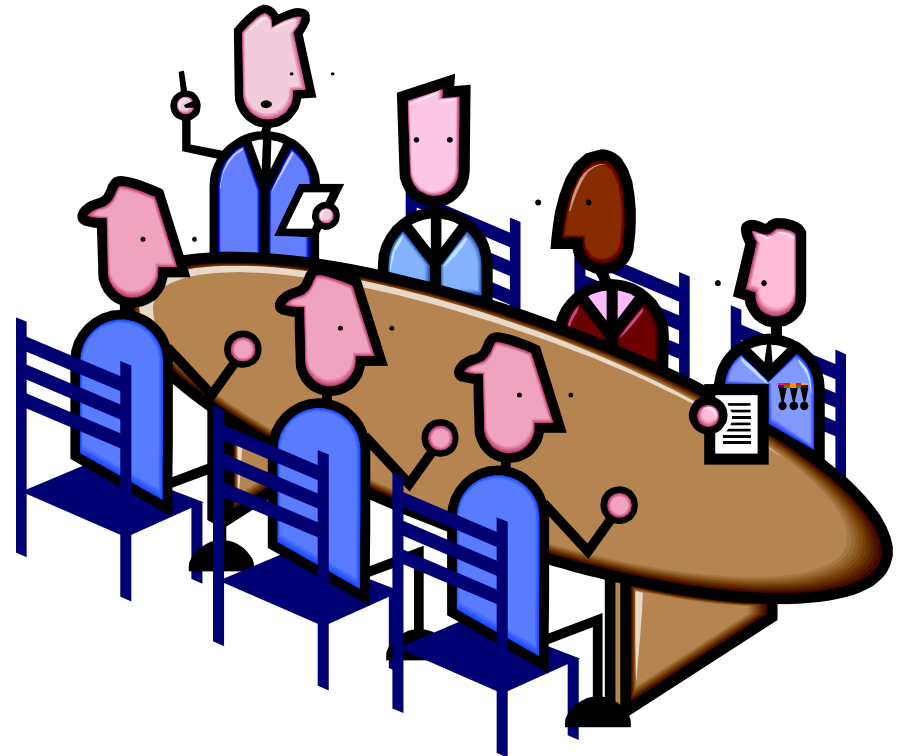
- Indicators

Measures



# Independent...

- Non coinvolti in aspetti operativi o manageriali del programma vaccinale
- Non direttamente coinvolti nella sorveglianza del morbillo
- Senza diretta responsabilità nel raggiungimento dell'obiettivo di eliminazione
- Assenza di altri conflitti di interesse



# Cosa fare?

Offerta attiva  
della  
vaccinazione alla  
popolazione  
target

Costruire un forte  
rapporto di  
fiducia per poter  
mantenere livelli  
di copertura  
elevati

Grazie

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