



UNIVERSITÀ DI PISA

# LA SOTTOSTIMA DEI CASI DI MALATTIA INVASIVA DA PNEUMOCOCCO

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Pier Luigi Lopalco

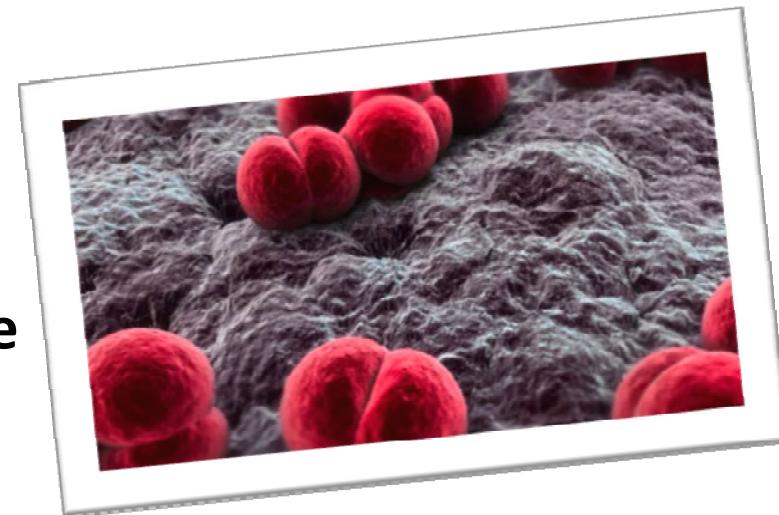
*Firenze, 10 ottobre 2018*

# Gli pneumococchi

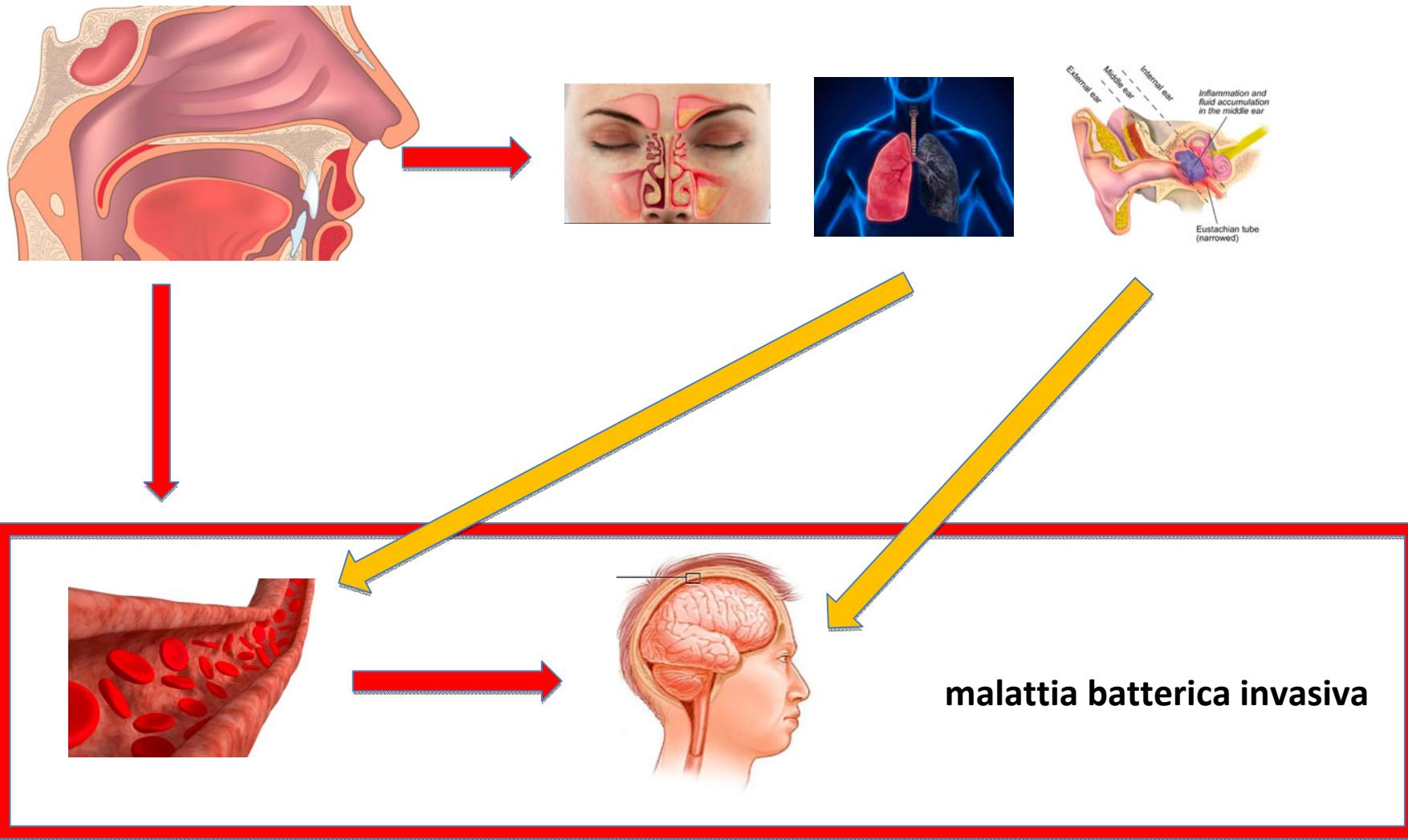
***Streptococcus pneumoniae***

Famiglia di batteri suddivisa in sierogruppi (distinti da un numero) e sierotipi (numero e lettera)

Oltre 90 sierotipi identificati



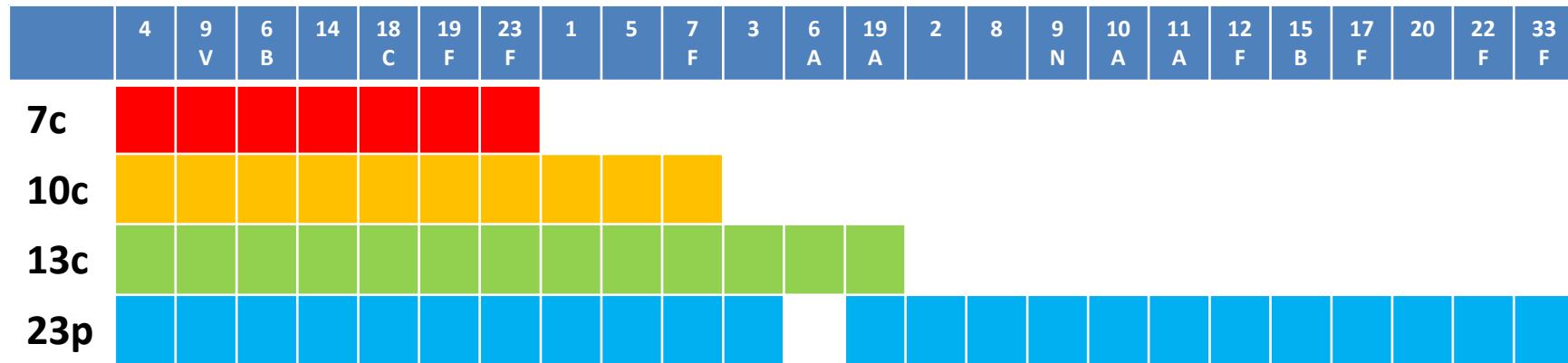
# Carriage e malattia da pneumococco



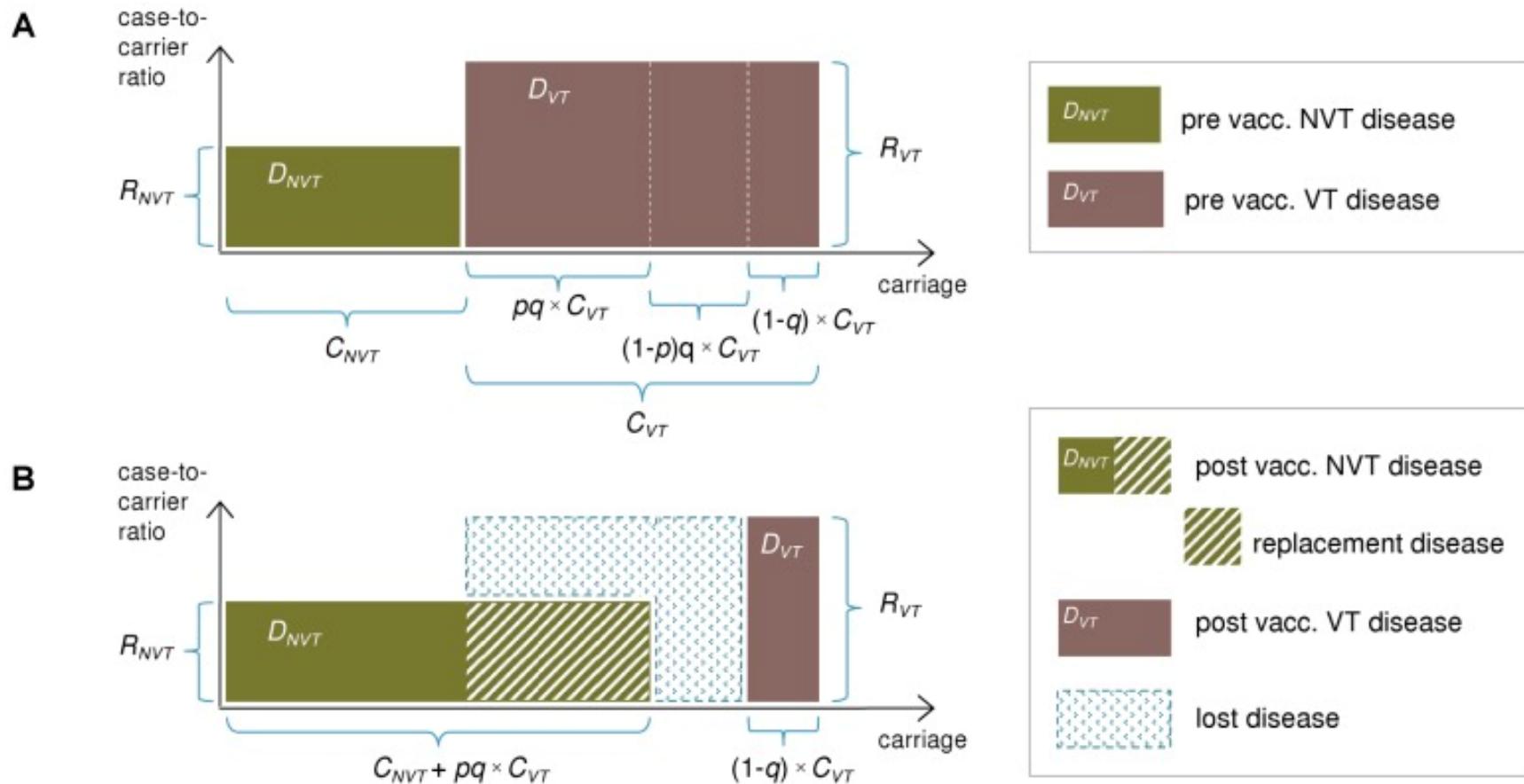
# Sorveglianza delle malattie invasive batteriche (MIB) in Italia

- Include sorveglianza di MIB da *H. influenzae*, *N. meningitidis* e *S. pneumoniae*
  - Sistema di sorveglianza speciale
  - Raccoglie informazioni aggiuntive dai laboratori (sierotipi/sierogruppi)
  - Obiettivo secondario: monitoraggio dei fallimenti vaccinali
- Nel 2014 è stata adottata la definizione di caso Europea

# I vaccini contro lo pneumococco

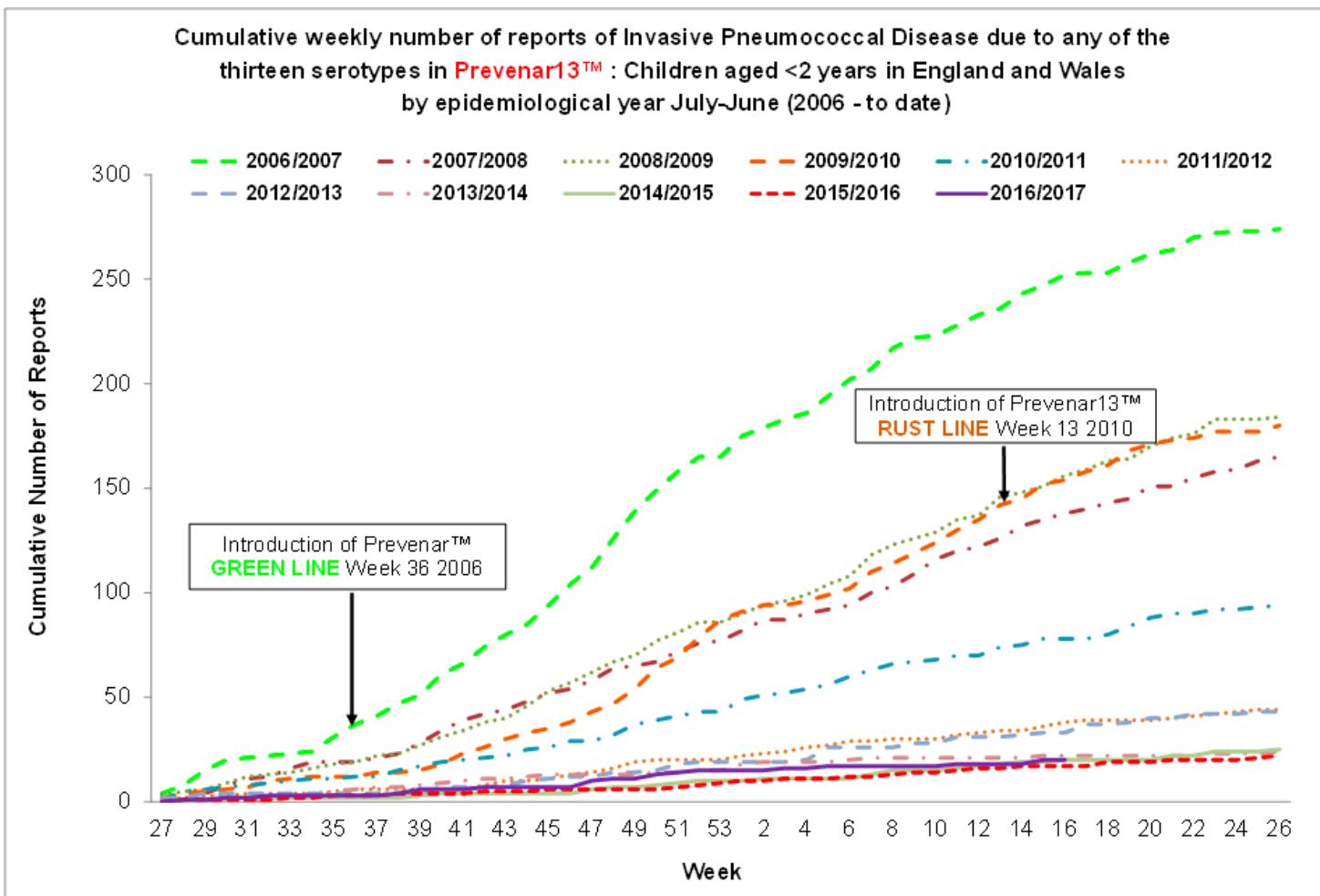


# Rapporto carrier-malattia e replacement

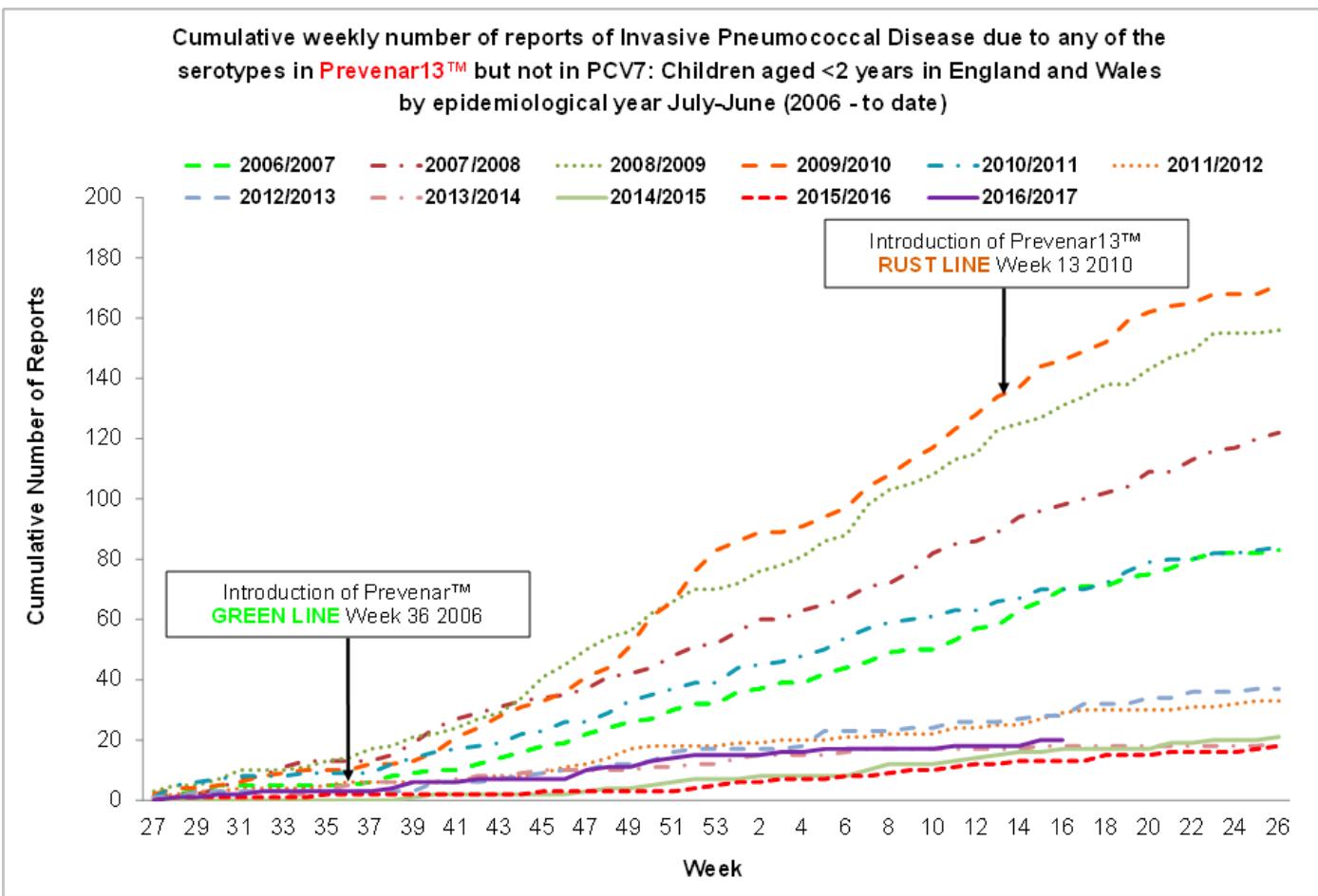


Nurhonen M, Auranen K. Optimal Serotype Compositions for Pneumococcal Conjugate Vaccination under Serotype Replacement. PLoS Comput Biol. 2014 Feb; 10(2): e1003477.

# Sorveglianza dello pneumococco in UK – sierotipi coperti dal 13v

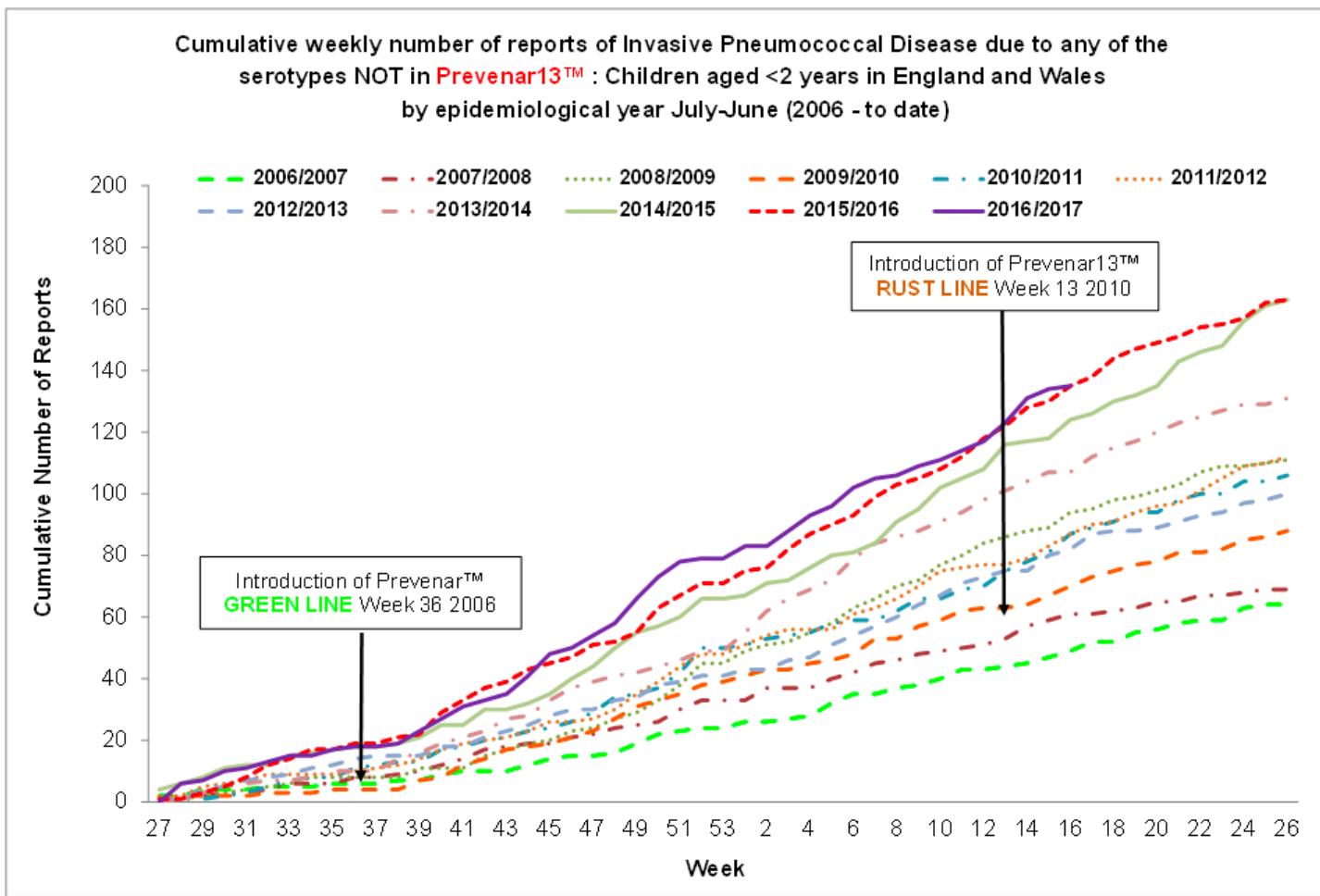


# Sorveglianza dello pneumococco in UK – sierotipi coperti dal 13v non presenti nel 7v



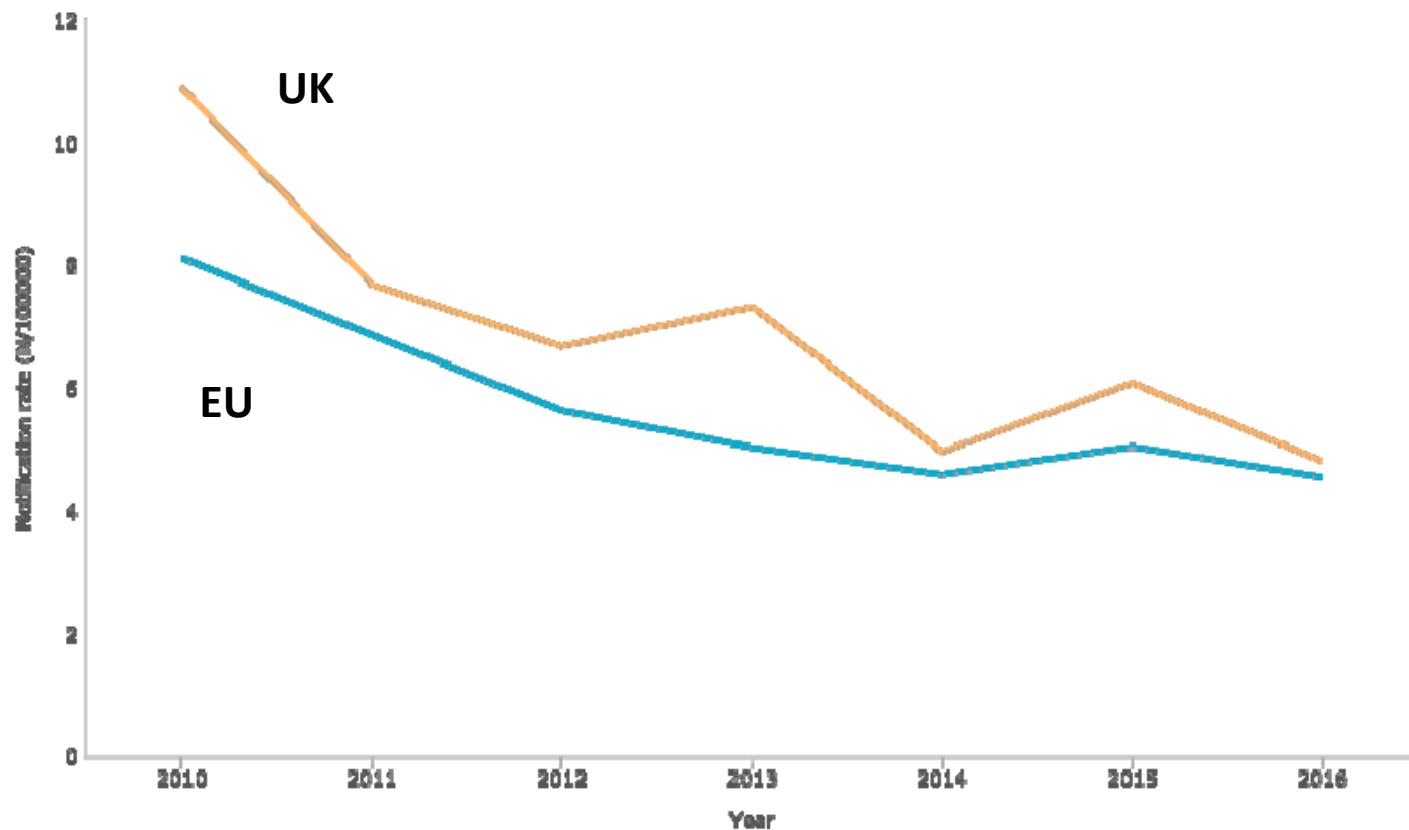
Fonte: Public Health England

# Sorveglianza dello pneumococco in UK - sierotipi non coperti dal 13v

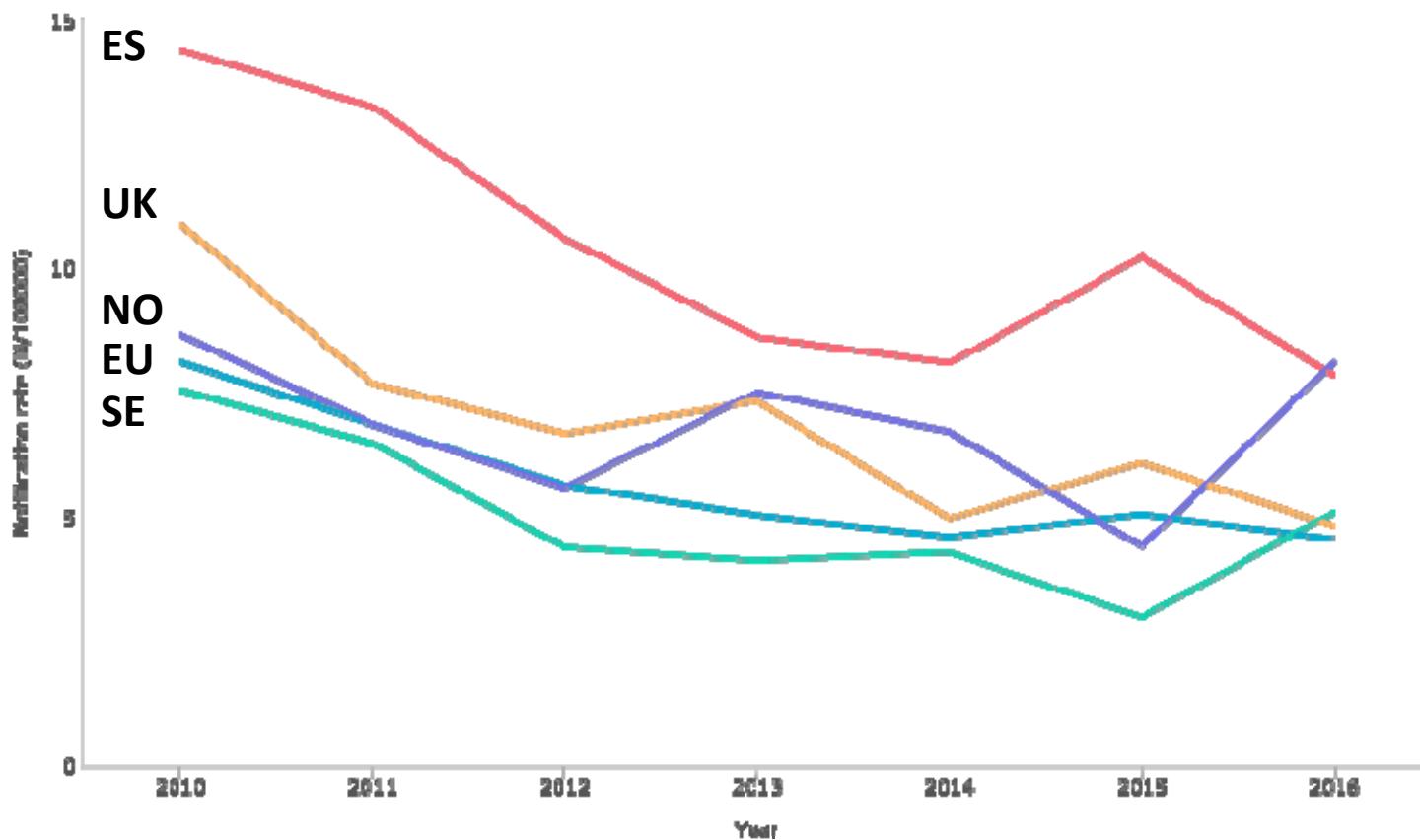


Fonte: Public Health England

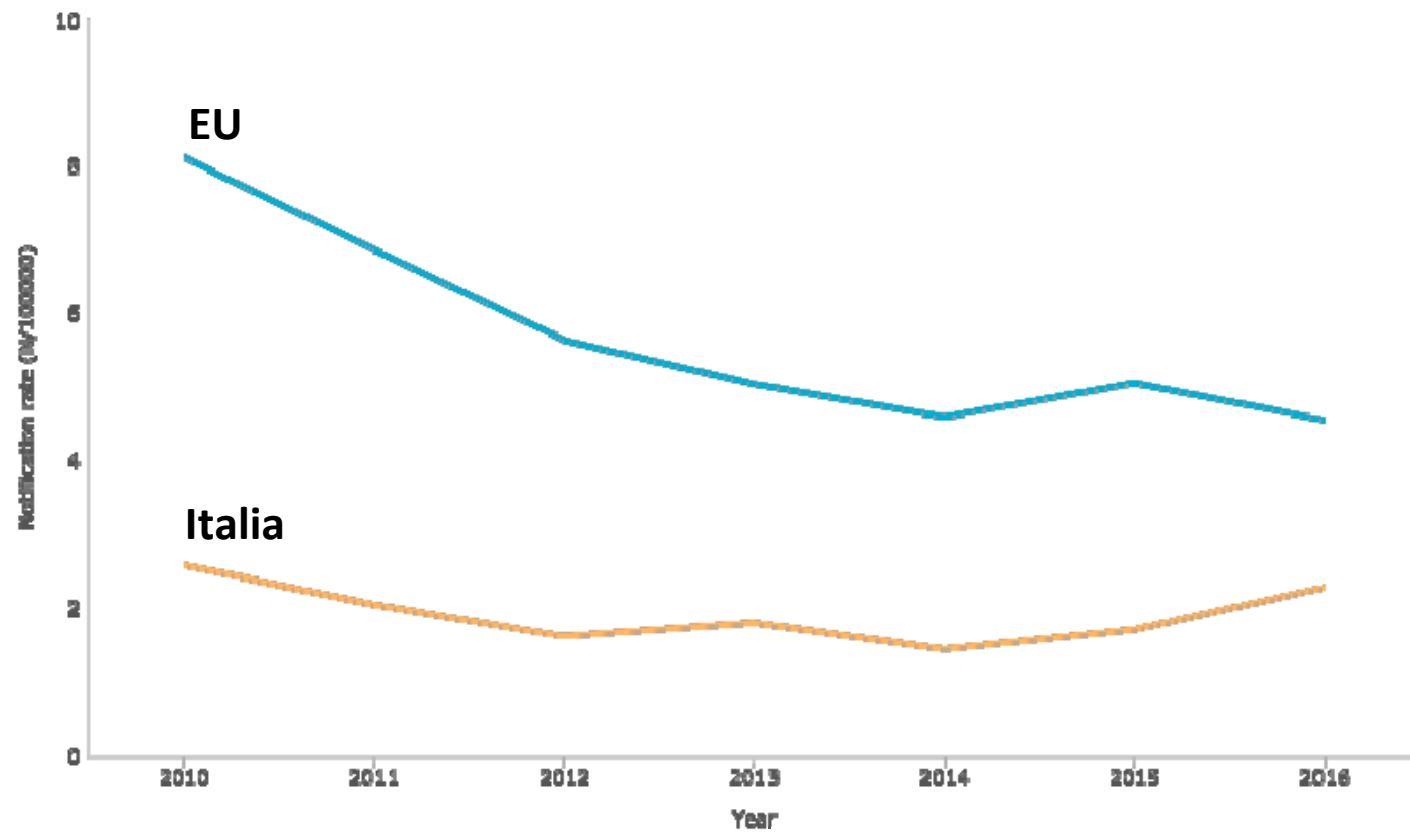
# Incidenza di malattia invasiva da pneumococco in UK ed EU – 1-4 aa



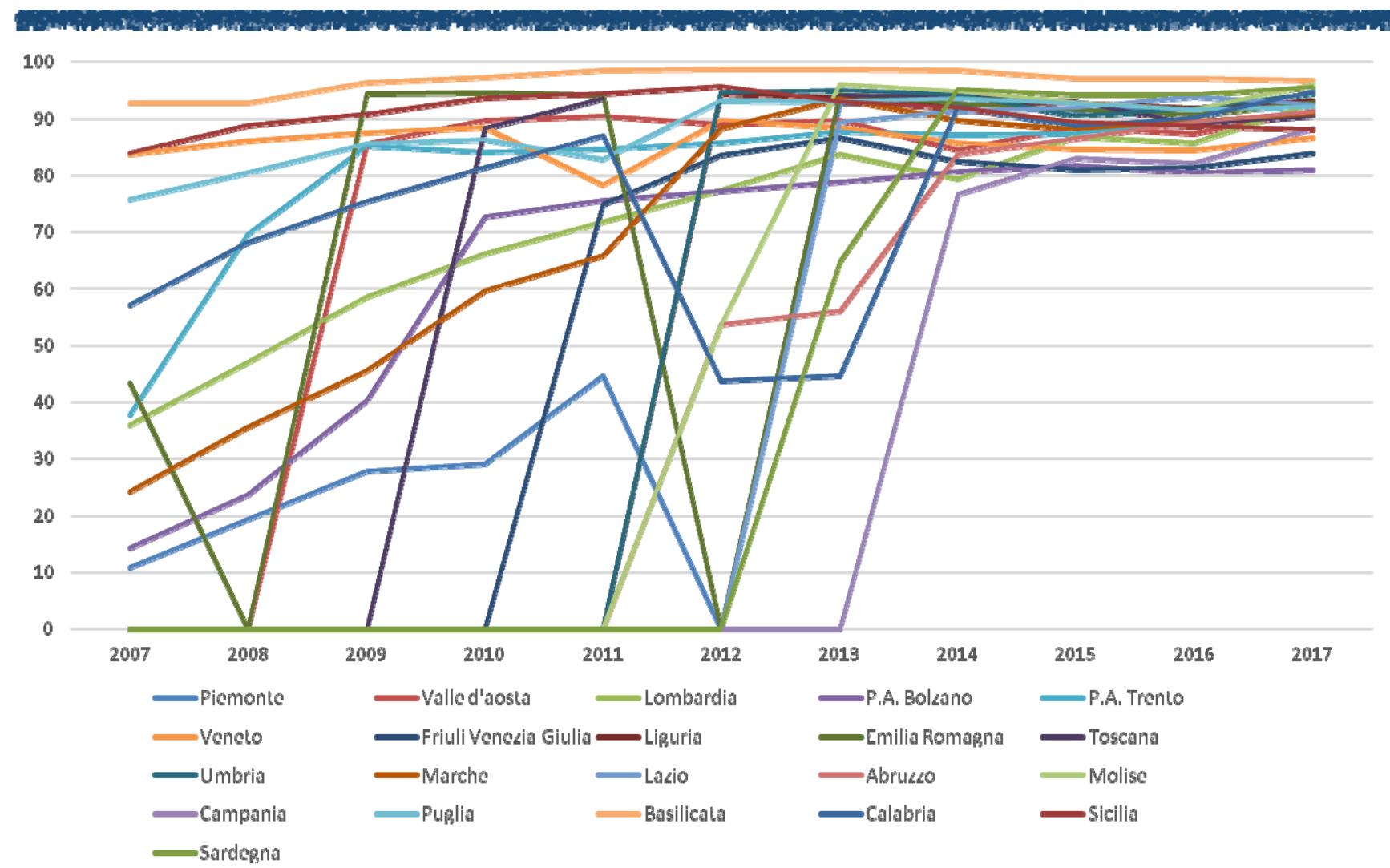
# Incidenza di malattia invasiva da pneumococco in alcuni paesi EU – 1-4 aa



# Incidenza di malattia invasiva da pneumococco in Italia ed EU – 1-4 aa



# **Copertura vaccinale anti-pneumococcica a 24 mesi in Italia – 2007-2017**



# Variabilità di incidenza di MIP in Italia, anno 2012 – tot popolazione



media Italia

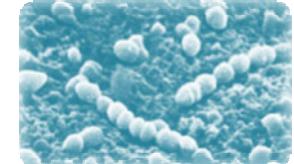
0,0      1,3

min

8,4

max

# Pneumococcal invasive disease in Tuscany



3 data sources

National surveillance system (IBD - MBI)

IBD case reported in Tuscany in 2016

Regional laboratory based surveillance

S. Pneumoniae isolate from blood or cerebrospinal fluid in Tuscany  
in 2016

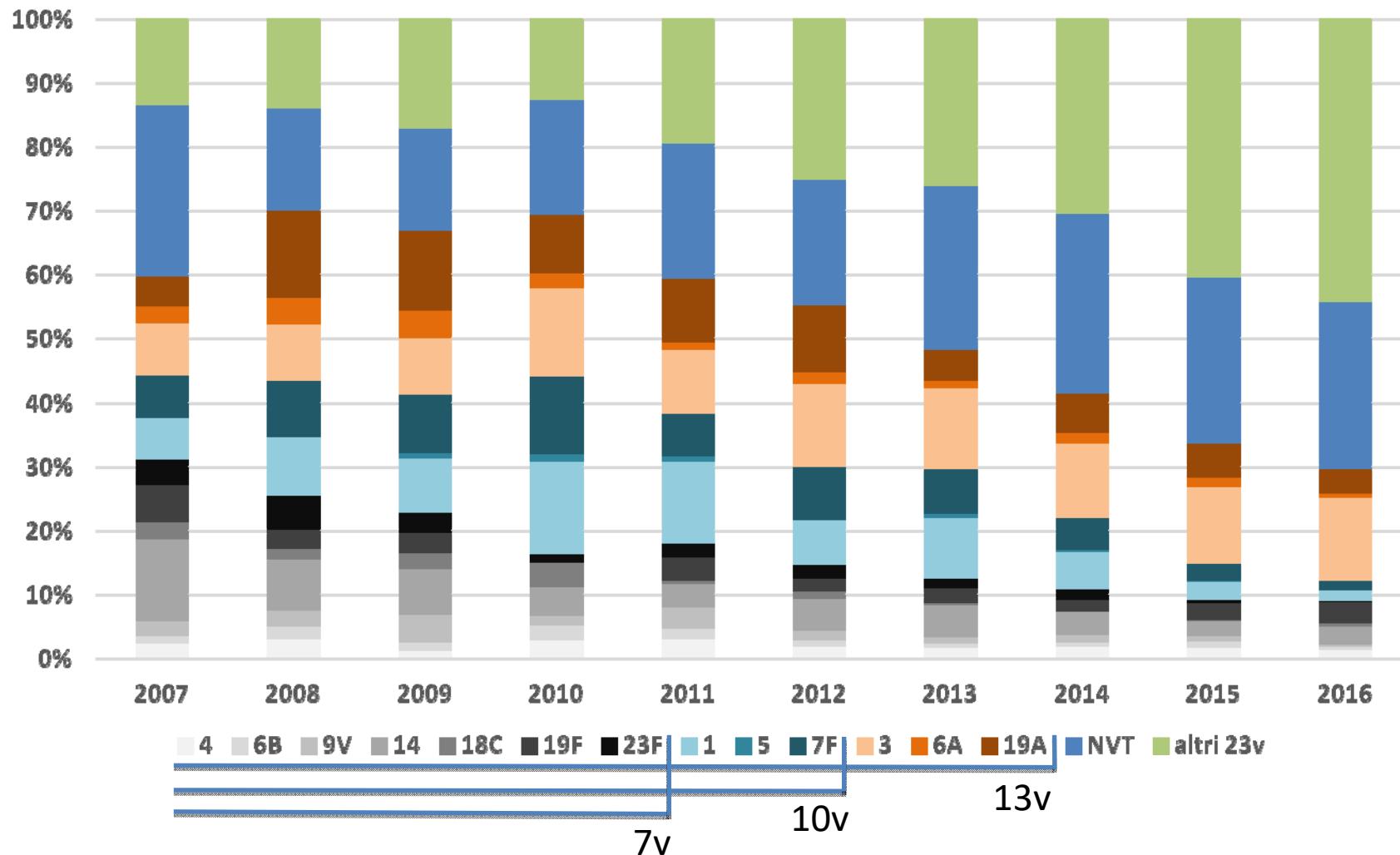
Hospital Discharge Record

Hospital discharge with an ICD diagnostic code:

038.0, 038.2, 041.2, 320.1, 320.2, 567.1, 711.0

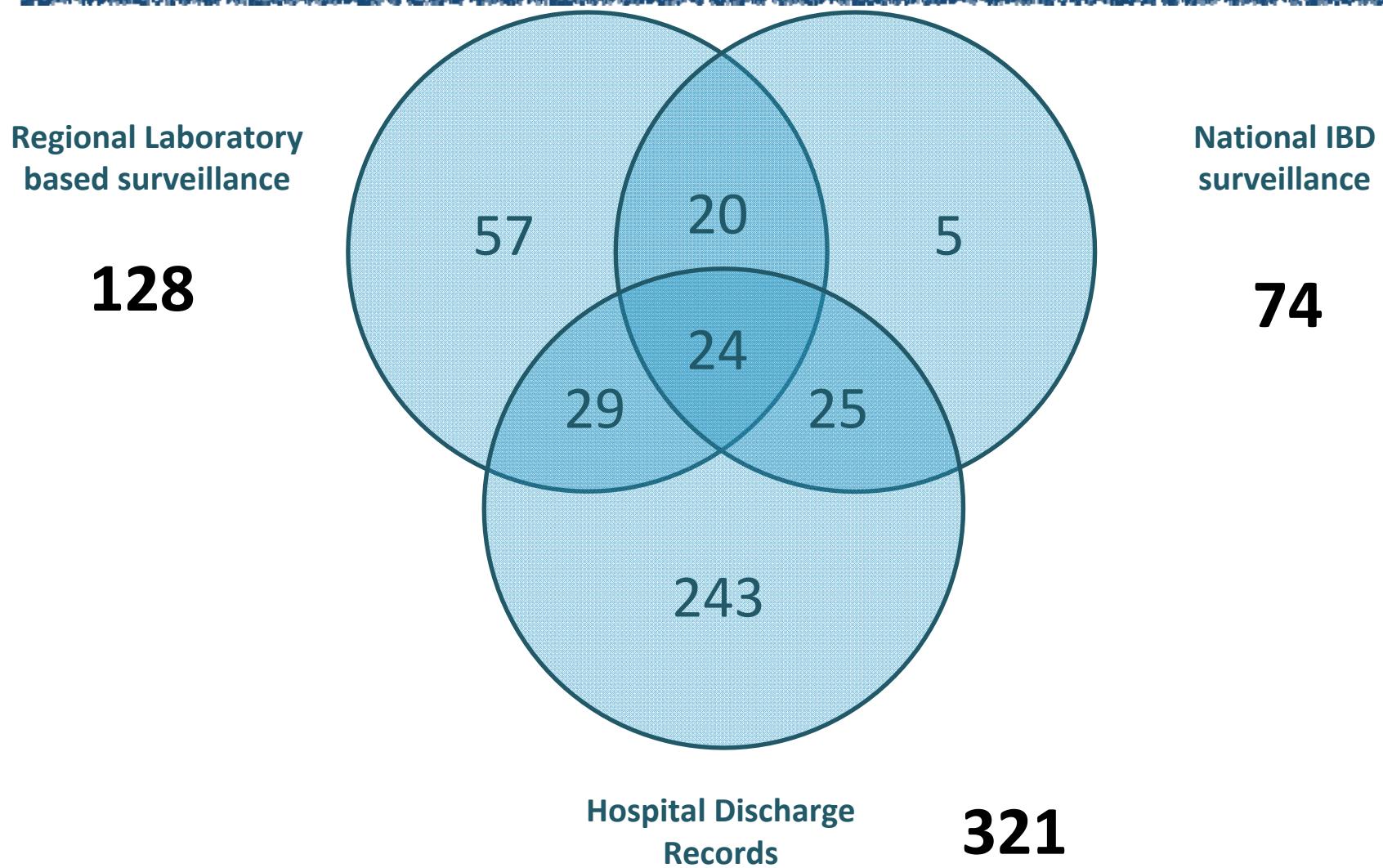
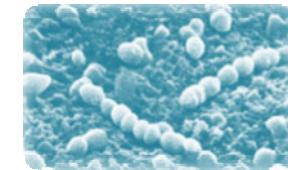
(meningitis, sepsis, etc.)

# Distribuzione sierotipi segnalati al sistema nazionale sorveglianza MIP

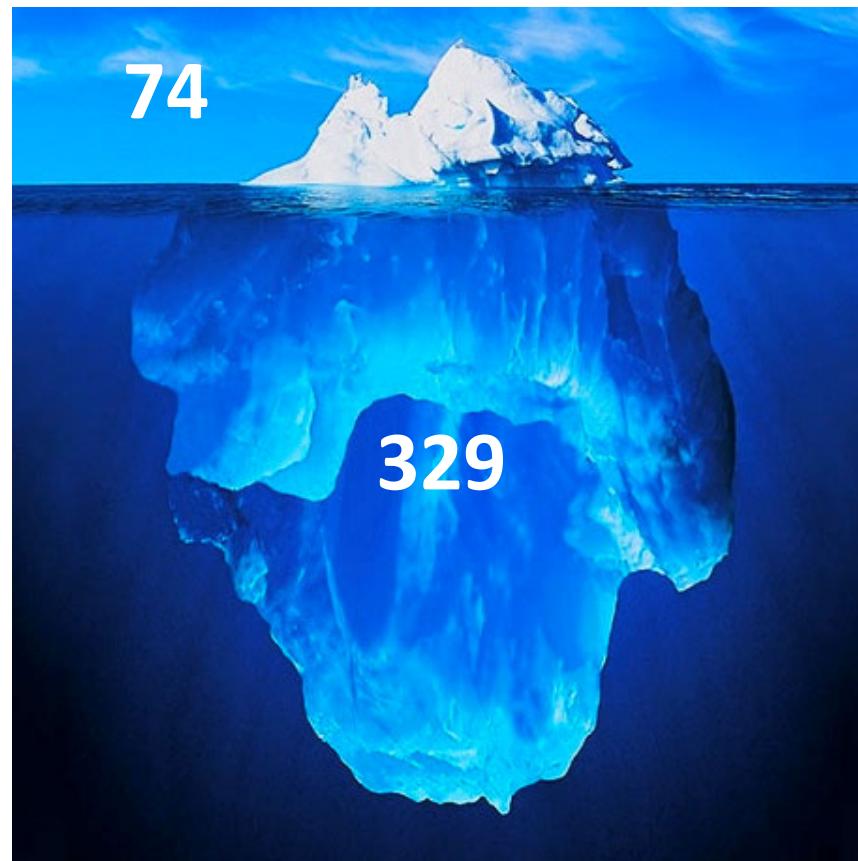
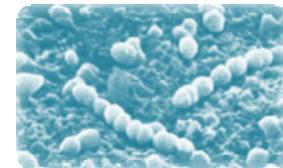


Fonte: rapporti sorveglianza MIB

# Cases distribution



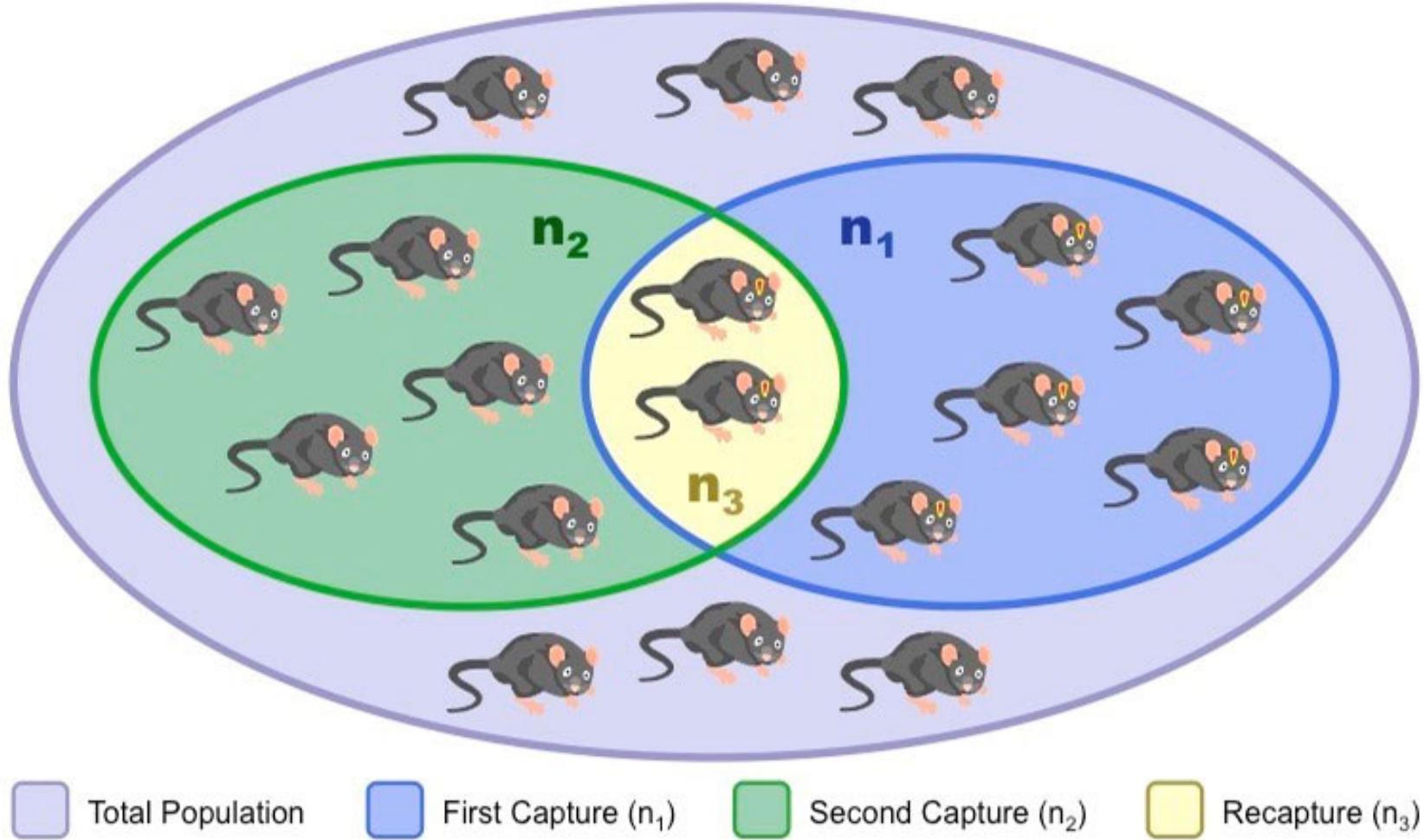
# Under-reporting



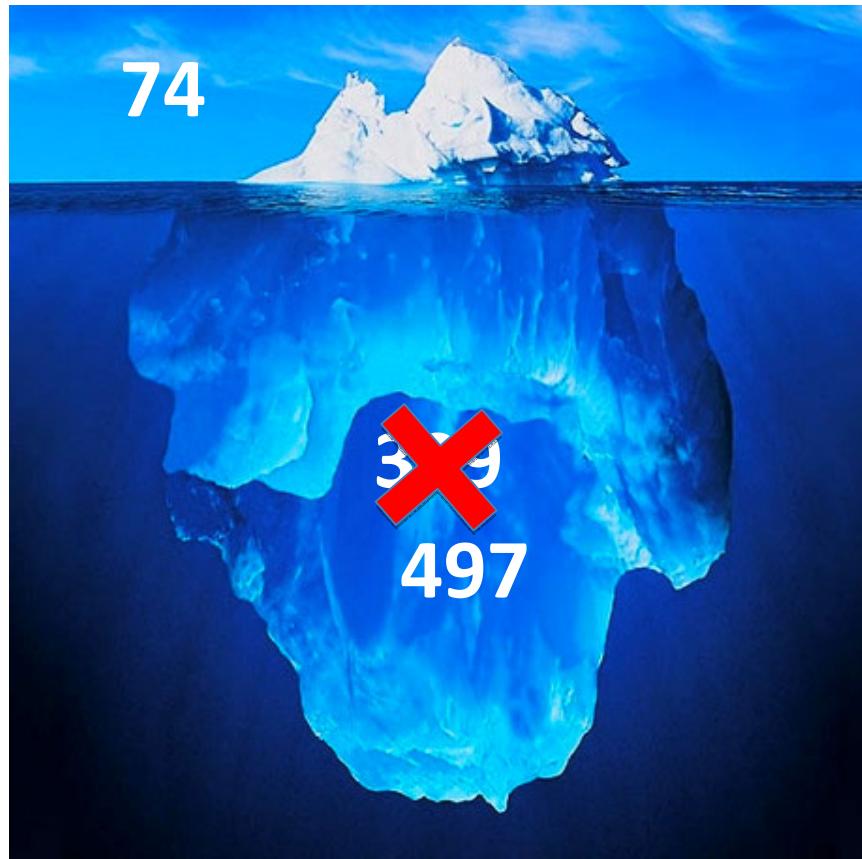
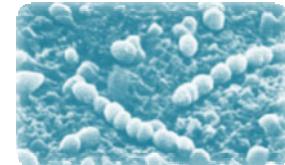
National IBD  
surveillance

**18.4%**  
**completeness**

# Capture-mark-recapture



# Under-reporting capture-recapture estimate



National IBD  
surveillance

12.9%  
completeness

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