

Éliminer les épidémies de méningite
en tant que problème de santé publique
en Afrique sub-saharienne

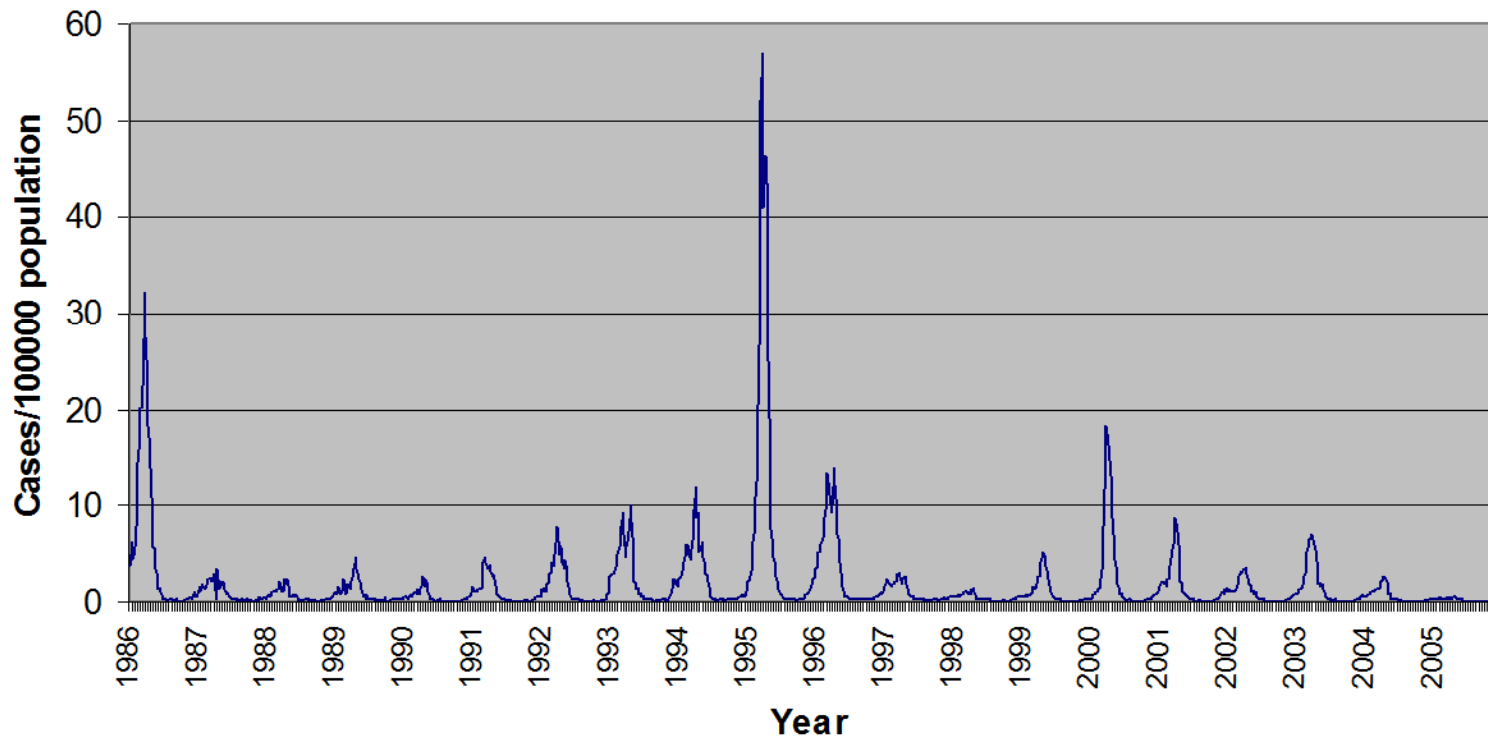


Photos Benoît Lange

***Introduction of a Men A conjugate vaccine:
How will this change meningitis in Africa?***

***GEO Meningitis Environmental Risk Consultative Meeting
Geneva, 26-27 September, 2007***

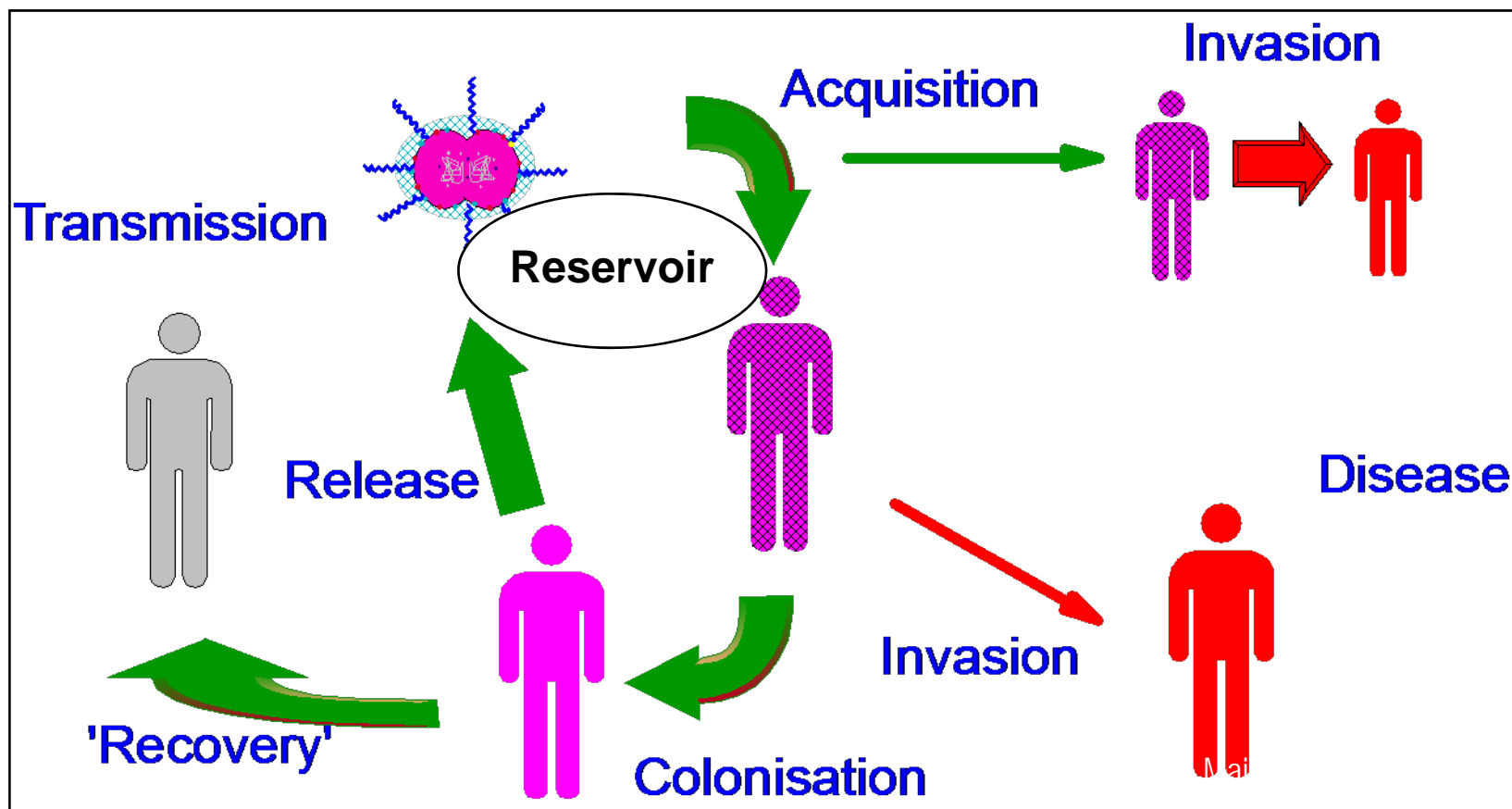
Country-Level Attack Rate - NIGER



Outline of Presentation

1. How does *Neisseria meningitidis* spread in a population?
2. Can this spread be blocked by immunization?
3. Likely public health impact after the introduction of a Men A conjugate vaccine
4. What will not happen

Flow of *Neisseria meningitidis* Through a Population

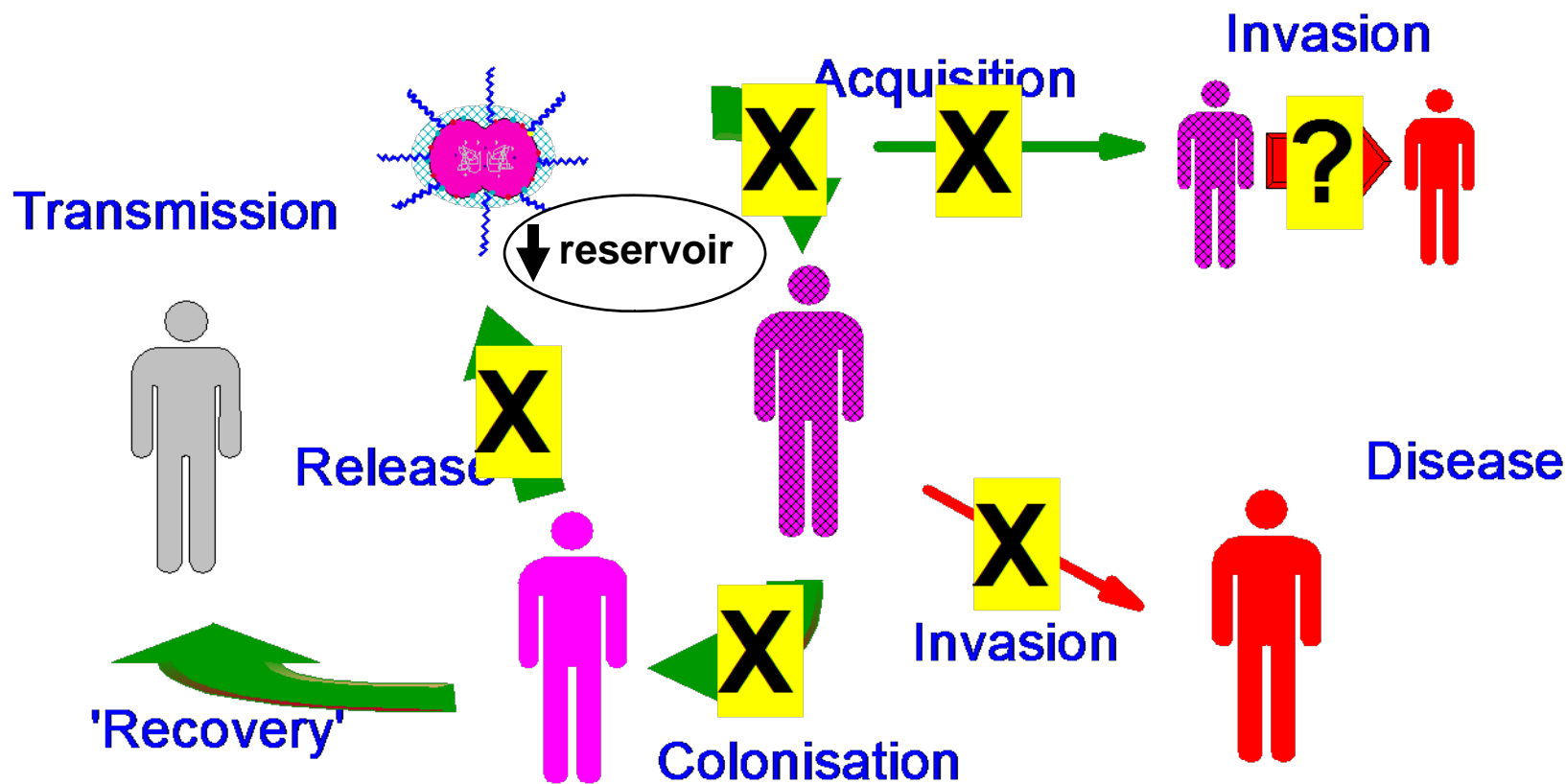


Courtesy Dr. Martin Maiden

Why are conjugate vaccines different?

- In addition to providing individual protection against serious disease, they also reduce asymptomatic carriage
- Reduced carriage → lower transmission → indirect protection
 - even unvaccinated individuals in the population are at reduced risk of disease

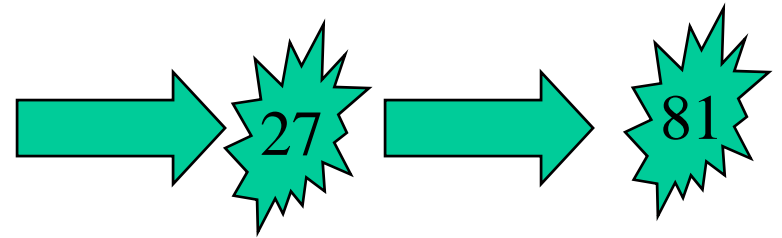
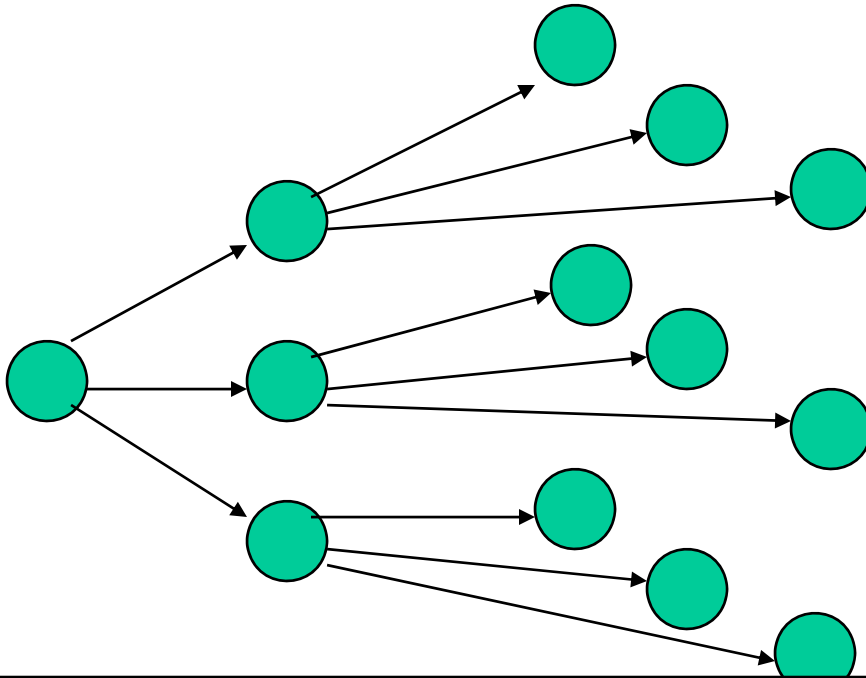
Population Effects of Men C Conjugate Vaccines: The Development of Herd Immunity



Courtesy Dr.Martin Maiden

Flow of colonization in a population where all are susceptible

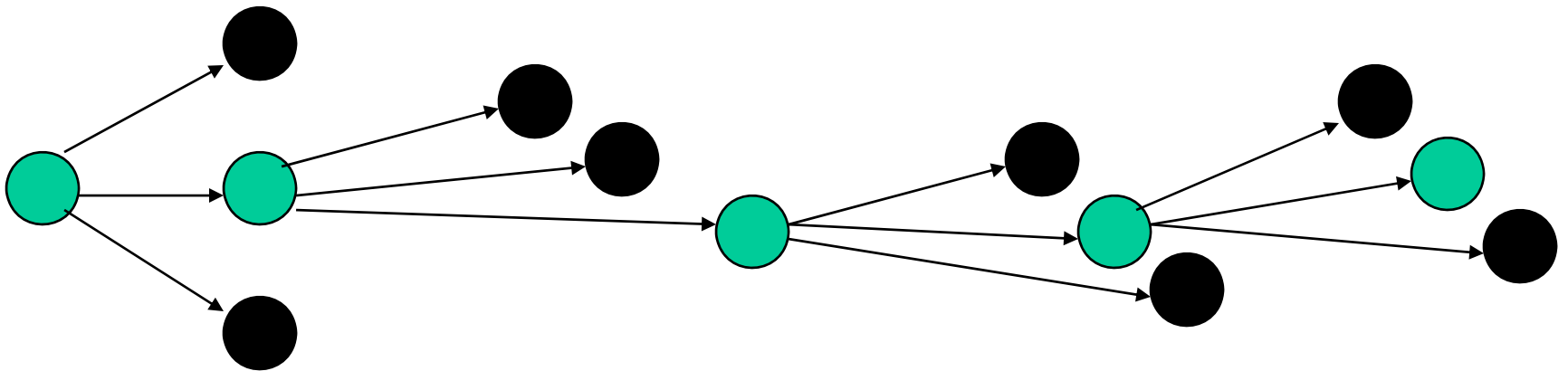
Number of infectious cycles				
1	2	3	4	5



Number colonized per infectious cycle				
1	3	9	27	81

Flow of colonization in a population where two thirds of the population are protected

Number of infectious cycles				
1	2	3	4	5

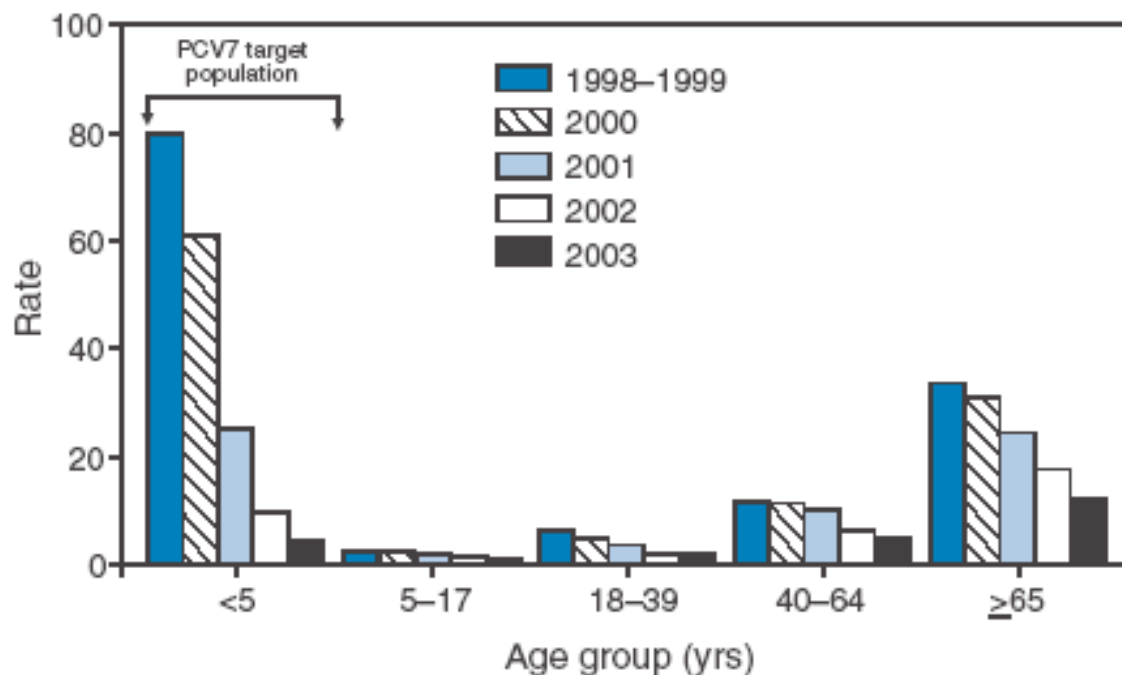


Number colonized in each infectious cycle				
1	1	1	1	1



Impact of PNC-7 vaccination in USA

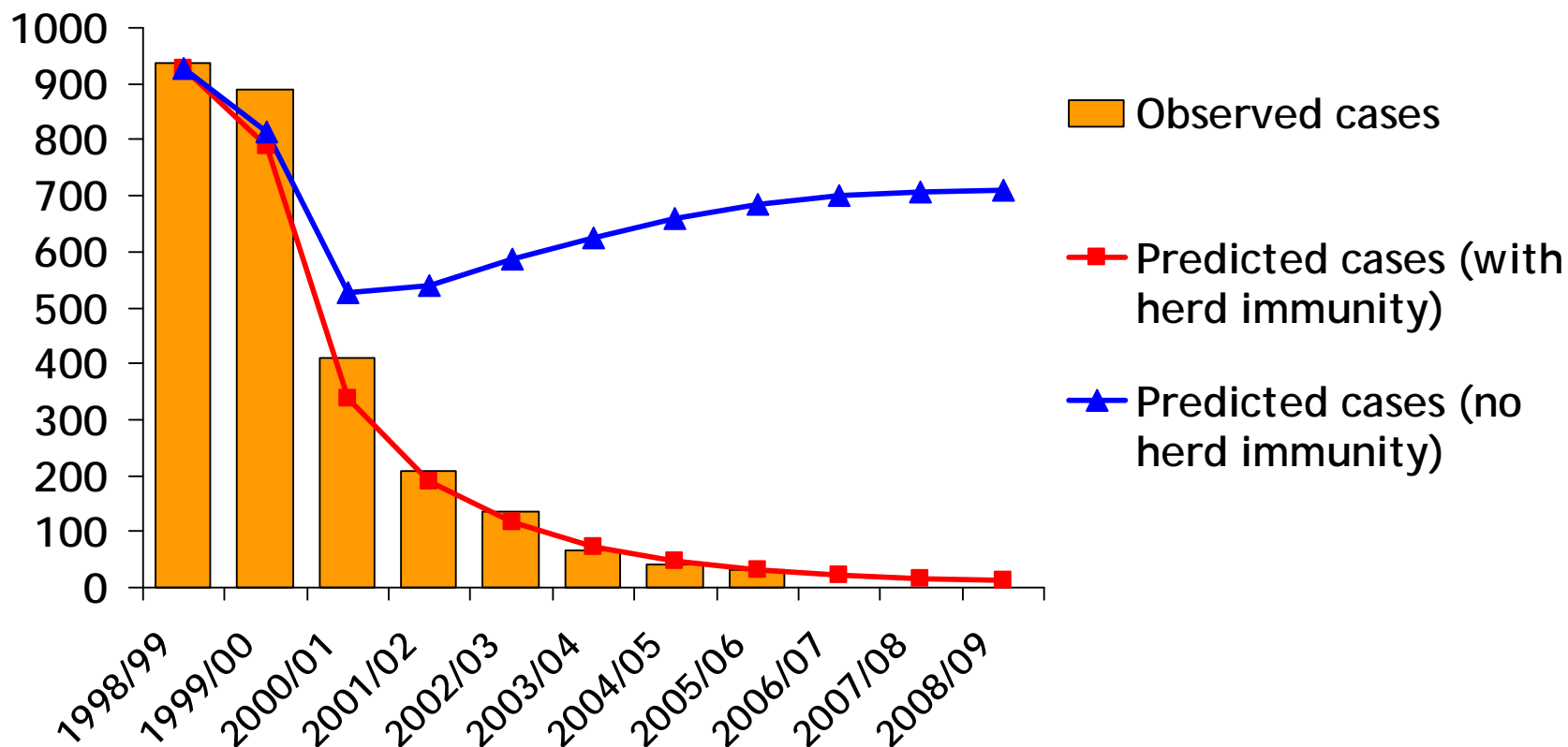
FIGURE 1. Rate* of vaccine-type (VT) invasive pneumococcal disease (IPD) before and after introduction of pneumococcal conjugate vaccine (PCV7), by age group and year — Active Bacterial Core surveillance, United States, 1998–2003



* Per 100,000 population.

† For each age group, the decrease in VT IPD rate for 2003 compared with the 1998–1999 baseline is statistically significant ($p < 0.05$).

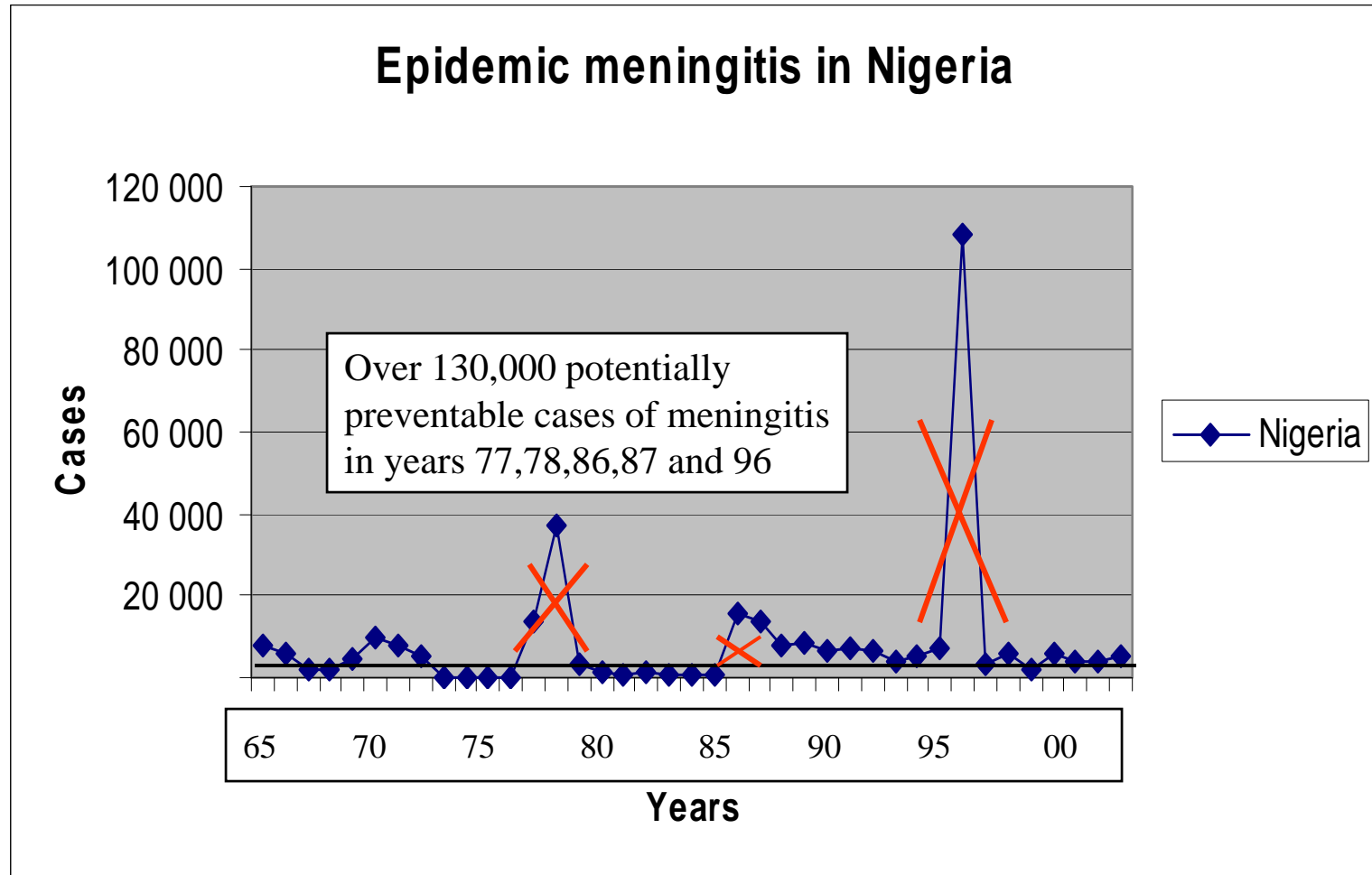
MenC vaccination in England & Wales



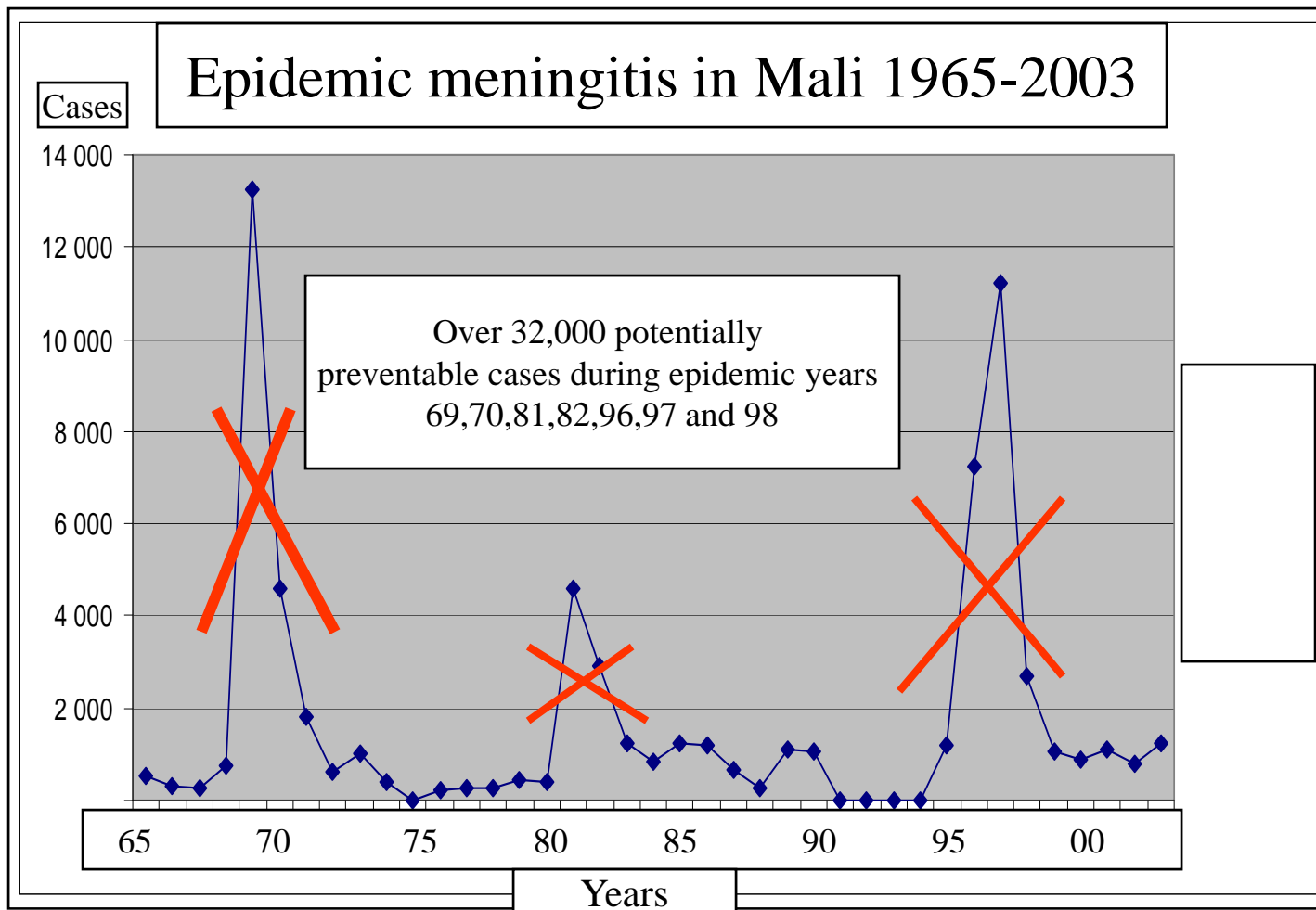
Introduction of Men A conjugate vaccine in Africa

All 1-29 year olds in Burkina Faso to receive one dose of Men A conjugate vaccine	2008
Campaigns in Mali and Niger	2009
Begin campaigns in Nigeria, Sudan and Ethiopia	2010
Add more belt countries	2011-2020

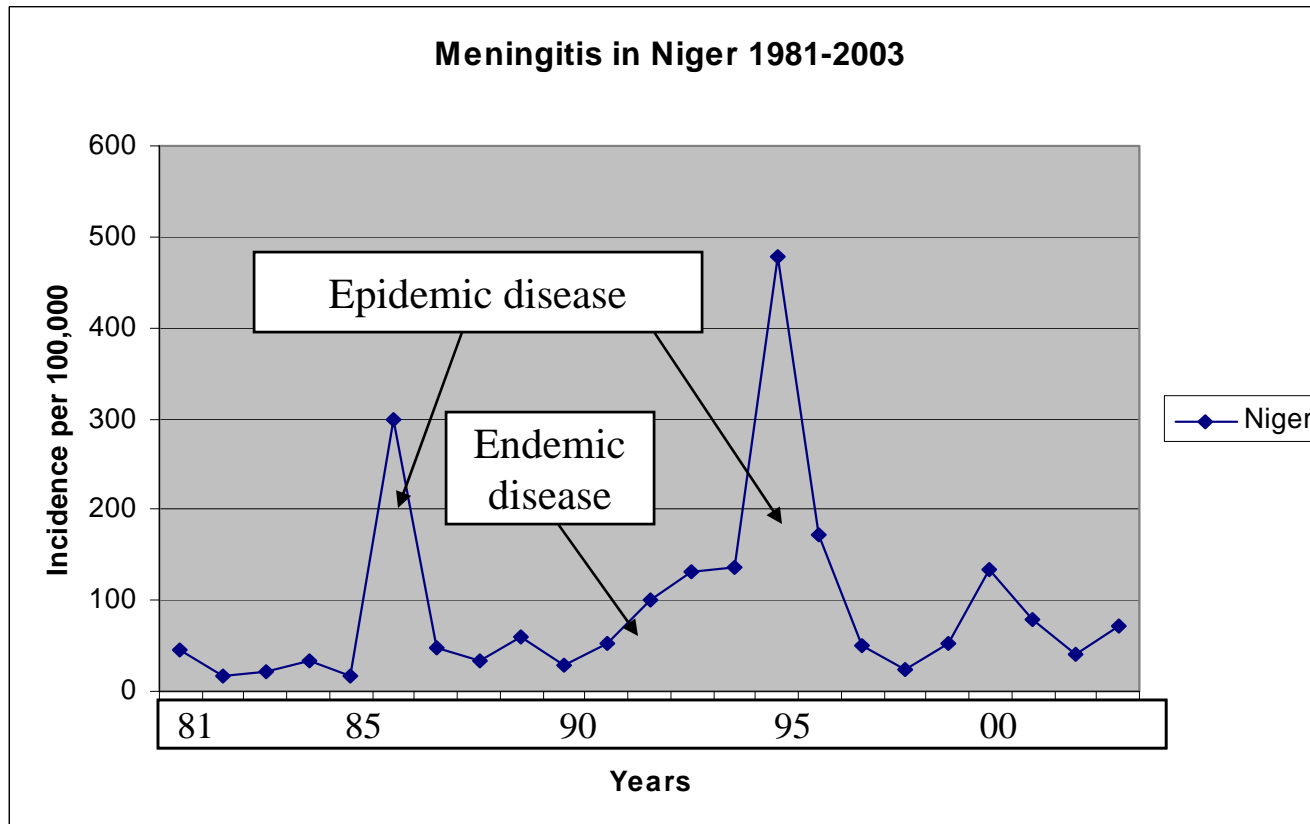
Potential Public Health Benefit From a Men A Conjugate Vaccine in Nigeria



Potential Public Health Benefit from the Prevention of Men A Epidemics in Mali



Potential Impact of a Men A Conjugate Vaccine



What will not happen

- Acute meningitis cases will ***not*** be eliminated

(particularly important in the group less than two years of age where most cases of acute bacterial meningitis are due to *Hemophilus* and pneumococci)

The Meningitis Vaccine Project

