

I Vaccini: Ricerca e Benefici per la Sanità Pubblica

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Il valore della vaccinazione



Wyeth®

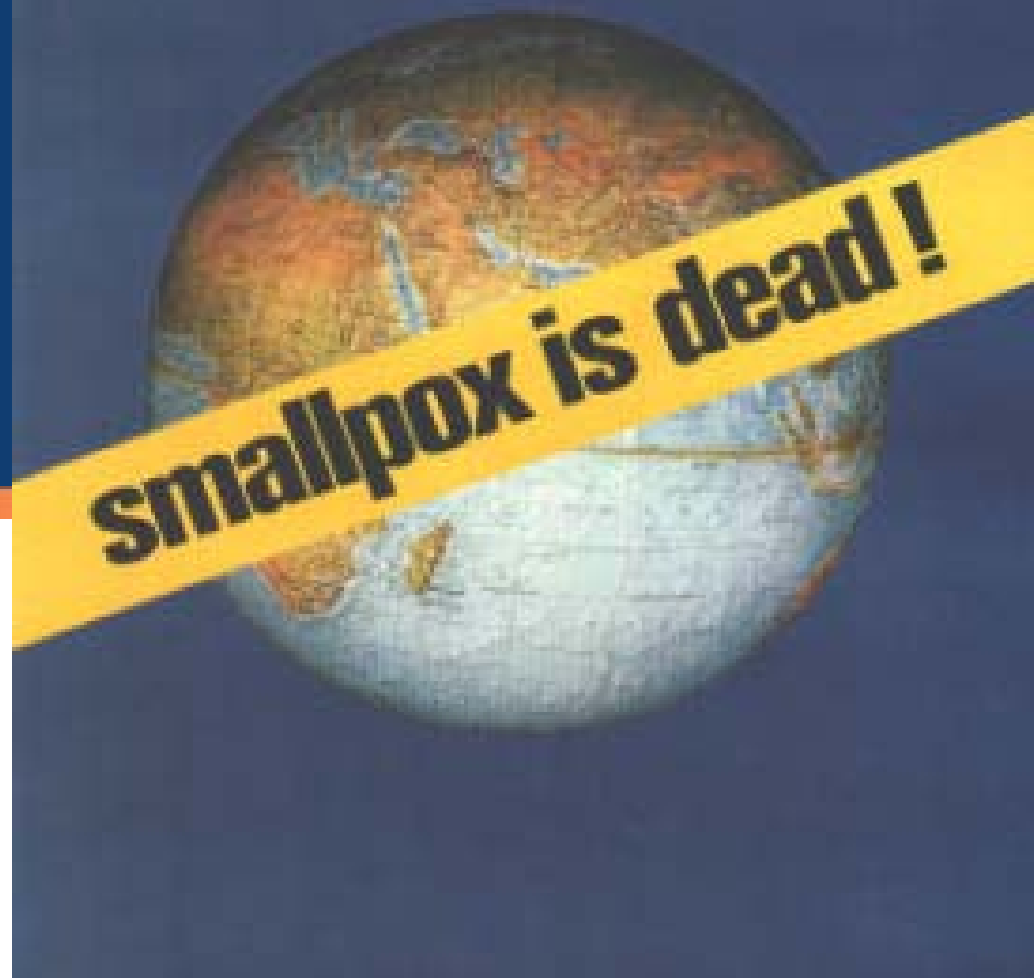
Con **l'eccezione dell'acqua potabile**,
nessun'altra modalità, neppure gli antibiotici,
ha avuto un **maggiore effetto**
sulla riduzione della mortalità
e sulla crescita della popolazione ⁽¹⁾

Così S.L. Plotkin e S.A. Plotkin,
padri della moderna immunoprofilassi,
definiscono **l'importanza**
che hanno avuto i **vaccini**
nella nostra **società** ⁽¹⁾



WORLD HEALTH

THE MAGAZINE OF THE WORLD HEALTH ORGANIZATION · MAY 1980



WHO

QUALI SONO I VALORI DELLE VACCINAZIONI? ⁽²⁾

Valori economici

Valore percepito



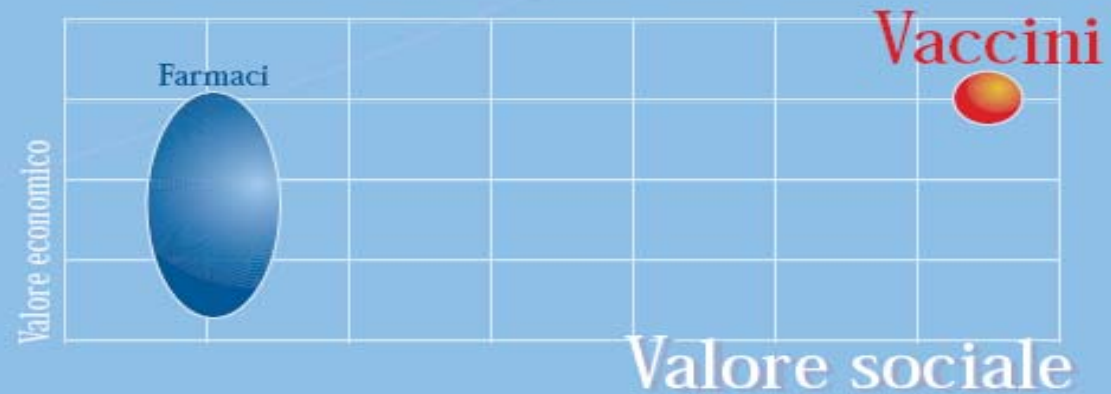
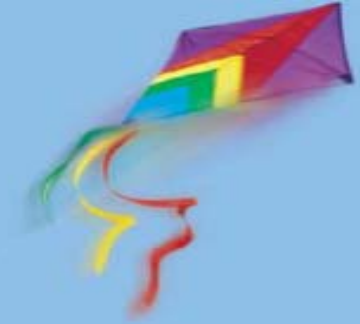
Valori sociali

Valore non percepito

La vaccinazione ha contribuito a eliminare alcune patologie di importante *valore sociale* che, però, è sottostimato di

10-100 volte

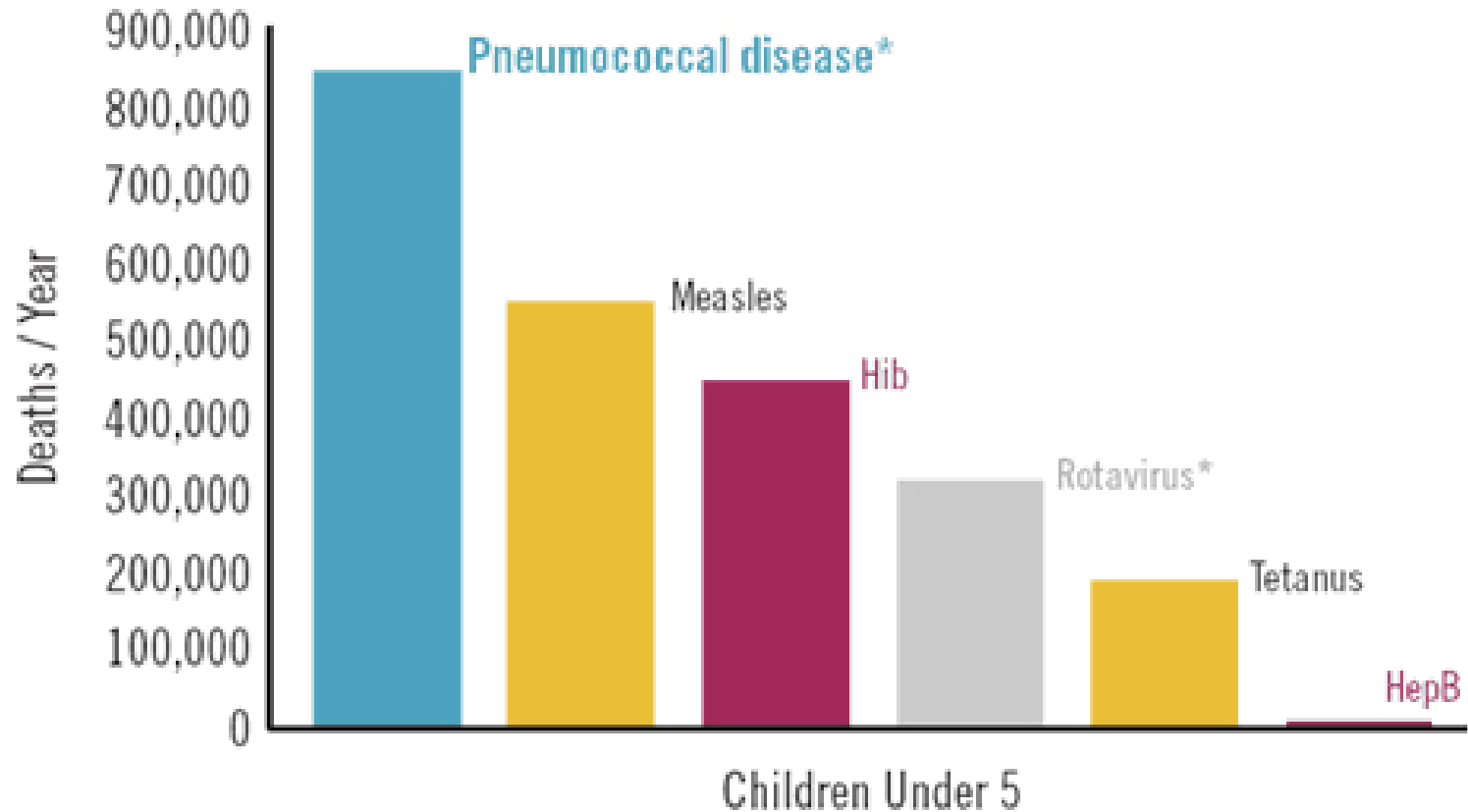
Anche se il valore in termini di costi dei vaccini non è equiparabile a quello dei farmaci, il **valore sociale** è elevatissimo ⁽³⁾



La Banca Mondiale ha identificato la vaccinazione come **il primo passo per migliorare le condizioni economiche di un Paese** ⁽³⁾

5

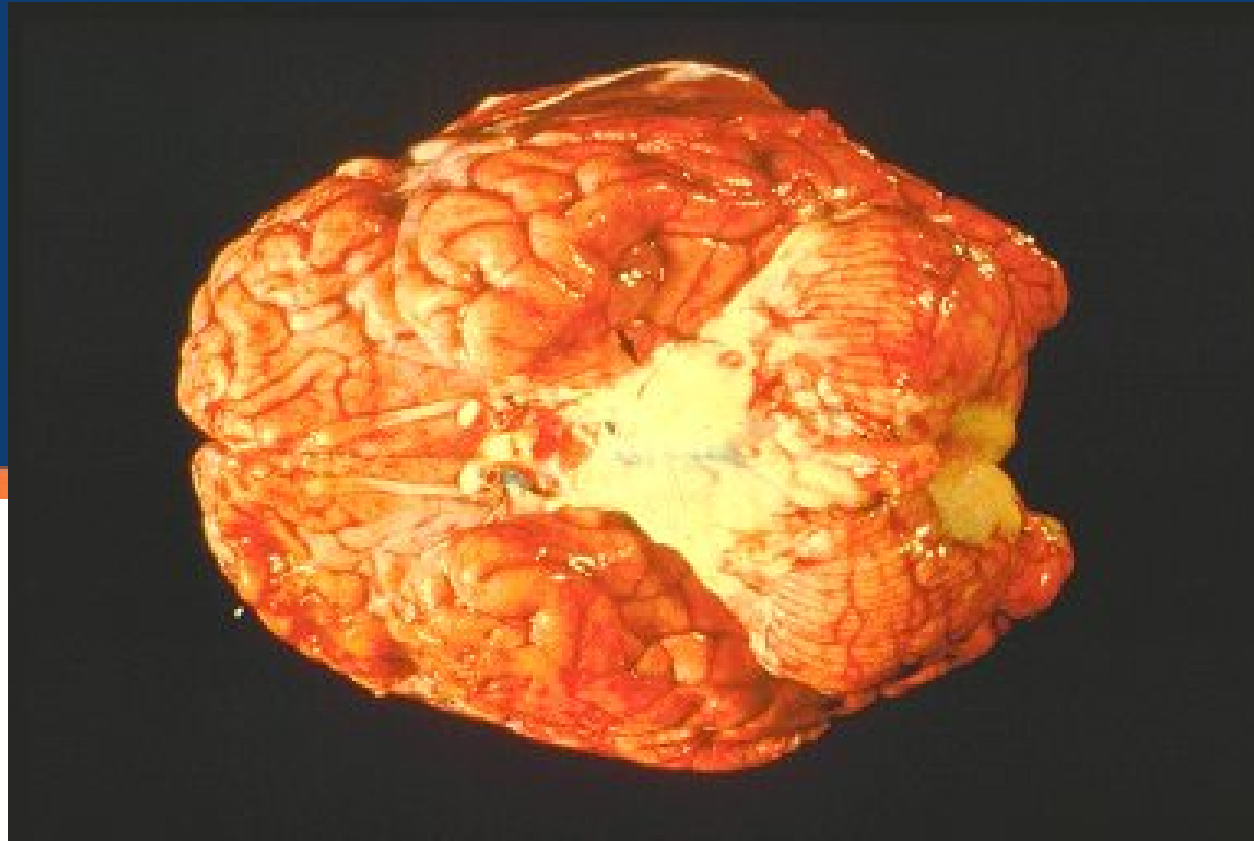
Leading Causes of Vaccine-Preventable Death in Children <5 Years Old



Source: WHO official mortality rates — June 2003

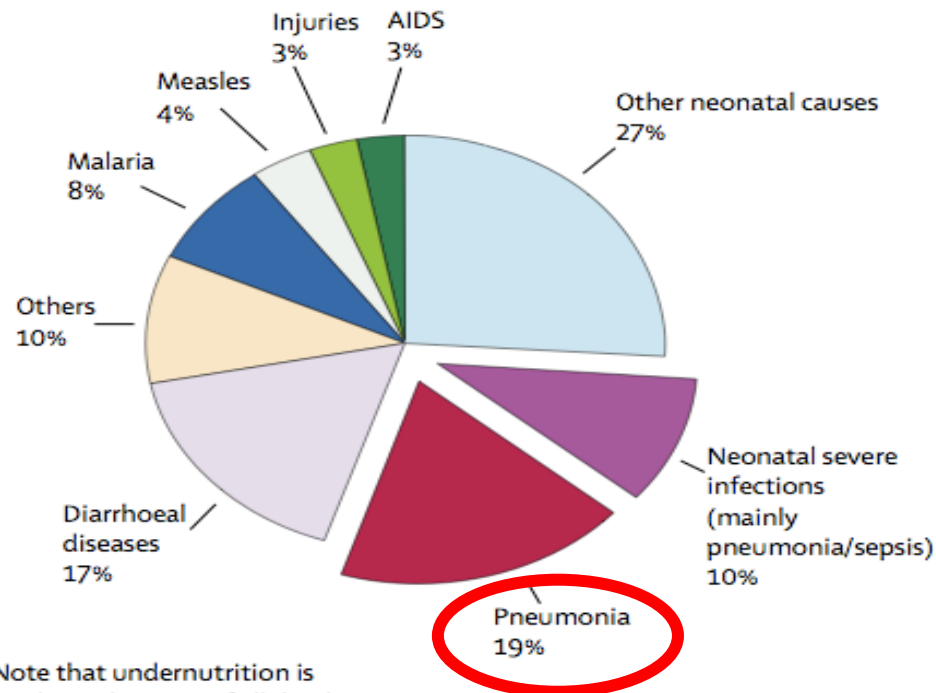
* Provisional estimates

Streptococcus pneumoniae



CDC

Polmonite: il principale killer dei bambini



Note that undernutrition is implicated in 53% of all deaths among children under 5.

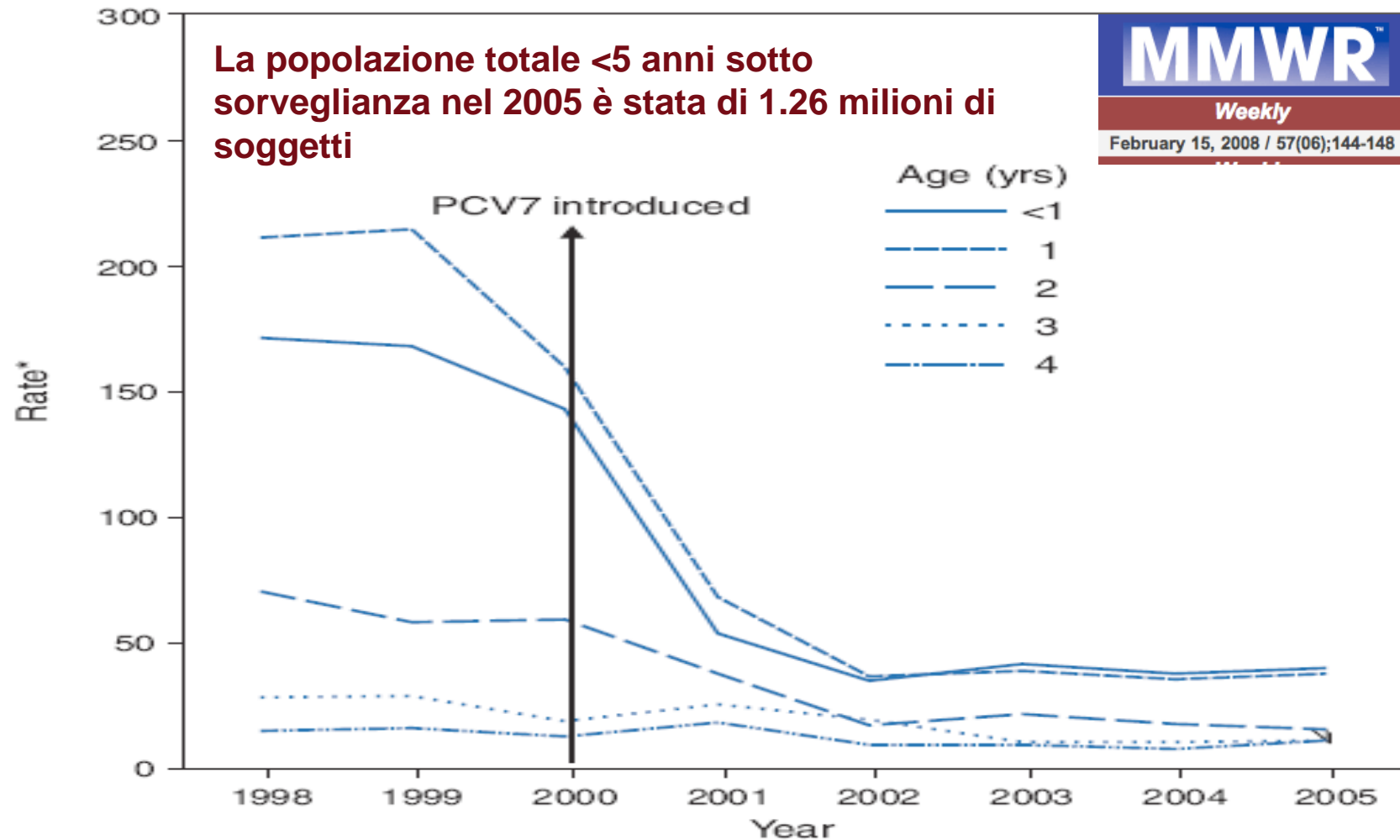
Counting under-5 deaths from pneumonia

Pneumonia causes 19% of all under-5 deaths. This figure, however, does not include deaths caused by pneumonia during neonatal period. It is estimated that 26% of neonatal deaths, or 10% of under-5 deaths, are caused by severe infections. Large proportion of these infections are caused by pneumonia/sepsis. If these deaths were added to the overall estimate, pneumonia would account for up to 3 million, or as many as one-third (29%) of under-5 deaths worldwide.

Pneumonia kills more children than any other illness—more than AIDS, malaria, and measles combined (figure). More than 2 million children under 5 years of age die from pneumonia each year, accounting for almost one in five under-5 deaths worldwide. Yet few headlines report the effect of pneumonia on children's lives.

Wardlaw T. et al., *The Lancet* 2006

FIGURE 1. Changes in incidence rate* of invasive pneumococcal disease (IPD) among children aged <5 years before and after introduction of 7-valent pneumococcal conjugate vaccine (PCV7), by age and year — Active Bacterial Core surveillance, eight states,† 1998–2005

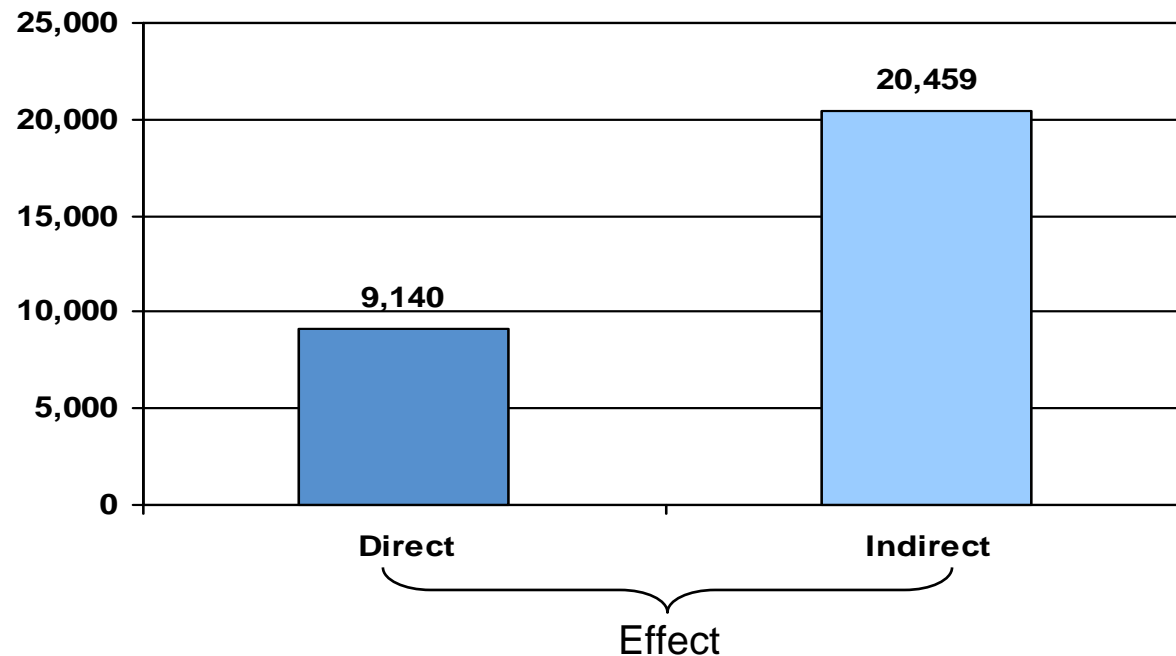


* Per 100,000 population.

† California (one county); the state of Connecticut; Georgia (20 counties); Maryland (six counties); Minnesota (seven counties); New York (seven counties); Oregon (three counties); and Tennessee (four counties).

Vaccine Effectiveness - Indirect Effect

US IPD Data from the CDC: 2003



The US CDC estimated that for every vaccine serotype IPD case prevented in an immunized child, 2 additional IPD cases are prevented in the unimmunized.

Weekly epidemiological record

Relevé épidémiologique hebdomadaire

23 MARCH 2007, 82nd YEAR / 23 MARS 2007, 82^e ANNÉE

No. 12, 2007, 82, 93–104

<http://www.who.int/wer>



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Pneumococcal conjugate vaccine for childhood immunization – WHO position paper

Vaccin antipneumococcique conjugué pour la vaccination infantile – note d'information de l'OMS

Recognizing the heavy burden of pneumococcal disease occurring in young children and the safety and efficacy of PCV-7 in this age group, WHO considers that it should be a priority to include this vaccine in national immunization programmes, particularly in countries where mortality among children aged <5 years is >50/1000 live births or where >50 000 children die annually.

Reconnaissant l'ampleur de la charge de morbidité due aux pneumocoques chez les jeunes enfants d'une part, et l'innocuité et l'efficacité du vaccin antipneumococcique conjugué 7-valent dans cette tranche d'âges d'autre part, l'OMS considère comme prioritaire d'inclure ce vaccin dans les programmes nationaux de vaccination, notamment dans les pays où la mortalité chez les moins de 5 ans est supérieure à 50 pour 1000 enfants nés vivants et dans ceux où la mortalité infantile annuelle est supérieure à 50 000.



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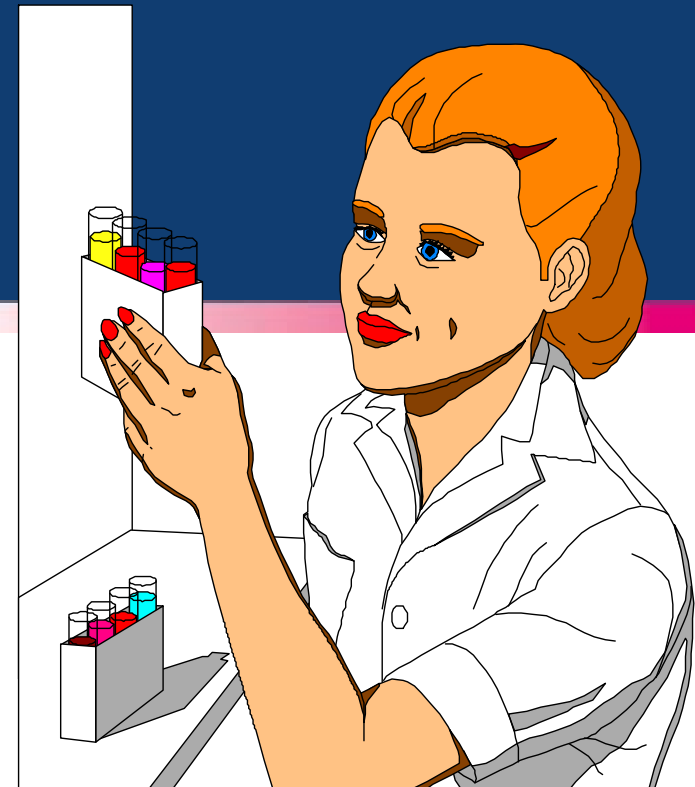
Five nations and the Bill & Melinda Gates Foundation launch Advance Market Commitment for vaccines to combat deadly disease in poor nations

US\$1.5-billion pilot programme expected to save 5.4 million lives, protecting children from pneumonia, meningitis

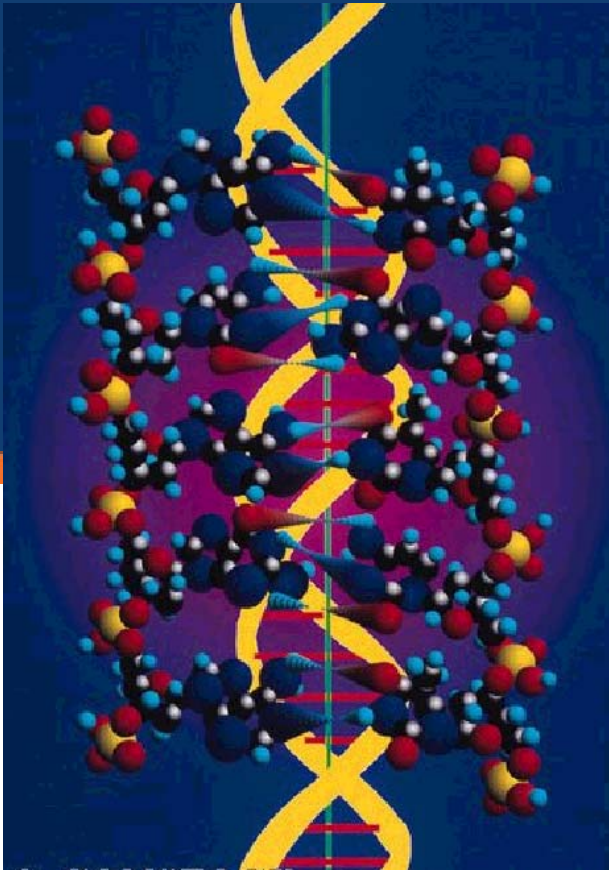
Rome, Italy, 9 February 2007 – Canada, Italy, Norway, Russia, the United Kingdom, and the Bill & Melinda Gates Foundation today committed US\$1.5 billion to launch the first Advance Market Commitment (AMC) to help speed the development and availability of a new vaccine which is expected to save the lives of 5.4 million children by 2030. The AMC pilot represents the first step in a historic effort to create a market for life-saving vaccines for children in the world's poorest countries. The new initiative will target pneumococcal disease, a major cause of pneumonia and meningitis that kills 1.6 million people every year.

Vaccines Under Development For Diseases Caused By:

- **AIDS/HIV¹¹⁰**
- **Malaria¹¹¹**
- **Respiratory syncytial virus¹¹²**
- ***Neisseria meningitidis*
group B⁴⁴**
- **Hepatitis C virus¹¹³**
- ***Helicobacter pylori*¹¹⁴**
- **Herpes simplex virus¹¹⁵**



Novel Delivery Systems



- Microencapsulated antigens for continuous release⁸¹
- Intranasal vaccines⁸¹
- “Edible” vaccines⁸¹
- Genetic engineering⁸¹
- Transdermal immunization⁸¹