

Saving 10 million more lives through immunization: the price tag, the shortfall

With the launch of the joint World Health Organization (WHO)-UNICEF Global Immunization Vision and Strategy (GIVS), and the announcements last year of the International Finance Facility for Immunization and pledges from several other donors (Norway, Canada, and the Bill & Melinda Gates Foundation) of major new support for the GAVI Alliance, the questions on everybody's minds are: How much money do we need to reach immunization goals? Is there still a funding gap? Is it financially feasible to introduce new vaccines such as those for rotavirus and pneumococcal disease?

These are complex questions, because until recently, very little information on how much countries themselves were spending on immunization had been systematically collected and analyzed. But the work of the GAVI Alliance over the last few years has resulted in more than 40 countries completing financial sustainability plans (FSPs). This information, together with recent advances in health economics forecasting, such as the work developed by WHO known as "WHO-CHOICE" (**CHO**osing Interventions that are **CO**st-**E**ffective), provides the evidence base necessary to develop a model to forecast the future costs of achieving the immunization goals outlined in the Global Immunization Vision and Strategy.

A new costing study, the culmination of nearly two years of work led by WHO and UNICEF, estimates the cost, in the 72 countries eligible for GAVI Phase II support, of reaching 90% coverage with all existing vaccines (three doses of diphtheria-tetanus-pertussis, oral polio vaccine, *Haemophilus Influenzae* type B, and hepatitis B; two doses of measles, and one dose each of rubella and yellow fever); introducing new vaccines as they become available (rotavirus, pneumococcal disease, meningococcal disease, and Japanese encephalitis vaccines); and conducting immunization campaigns to rapidly protect at-risk populations against tetanus, measles, yellow fever, and meningococcal meningitis. This programme of interventions would reduce vaccine-preventable disease mortality and morbidity by two thirds by 2015.

Status report: immunization in 2005

Immunization coverage levels in the 72 countries are currently around 70% - far below the 90% goal. Surveillance and monitoring in many countries still must be strengthened in many places. Spending on immunization has risen over the last five years, from an average of US \$1.1 billion per year in 2000 to US \$2.5 billion in 2005 (see figure 1). These cost increases are attributable to a number of factors: the introduction of the more expensive hepatitis B and *Haemophilus Influenzae* type B vaccines, together with the associated costs of expanding the cold chain to accommodate them; and the enhanced efforts for polio eradication, neonatal tetanus elimination, and measles mortality reduction. And while immunization is currently saving the lives of 2-3 million children every year, of the 10.5 million child deaths that occur annually, 2.5 million are due to diseases that are preventable by vaccines.

Total costs for 2006-2015: US \$35 billion

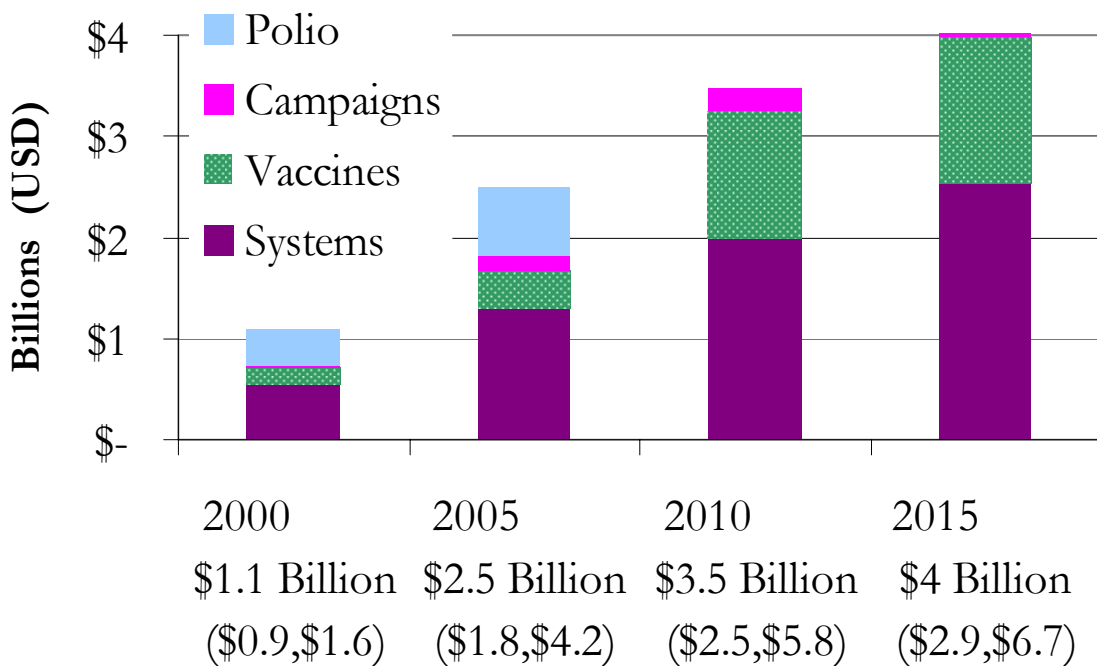
The costing study looked at ambitious - but realistically achievable - trajectories for scaling up immunization coverage and introducing new vaccines. If we are able to scale up immunization in a strategic, forward-planning manner, there are actually cost-savings that can be realized - for example, by adding to the cold chain in a way that anticipates future needs, rather than scaling up to accommodate only the increase in immediate need. Costed multi-year immunization plans - soon to replace the FSPs - are meant to help with this. Overall, it was estimated that an additional 10 million lives can be saved over the next

decade, on top of the 30 million lives that would be saved if today's status quo was simply maintained.

Spending on immunization will need to rise from today's US \$2.5 billion per year to US \$3.5 billion by 2010 and US \$4 billion by 2015. The biggest leap - from US \$1.1 billion to US \$2.5 billion - has already been made in the last five years, so we know the kind of increases being proposed are within reach. And at under US \$1000 per life saved, immunization remains one of the best public health "buys" available in the market today - especially when one considers the additional economic benefits of an 18% return on investment that can accrue, as recently described in the Harvard study by Bloom and Canning¹.

There is, of course, some uncertainty in this type of forecasting (see figure 1) - uncertainty about prices of vaccines, uncertainty about vaccine uptake, etc., and the further into the future the forecast goes, the greater the uncertainty.

Figure 1: Estimated spending 2000-2005 and forecasted expenditures 2010-2015 for immunization programmes in 72 low-income countries



Source: WHO-UNICEF GIVS Costing December 2005.

One third of the US \$35 billion for 2006-2015 will be spent on vaccines, rising from about US \$350 million in 2005 to nearly US \$1.5 billion per year by 2015, as coverage is expanded with underused vaccines², and new vaccines³ are introduced. The remainder will be spent on immunization delivery systems, including shared costs that strengthen the overall health system to improve immunization coverage in the 72 GAVI supported countries. US \$2.2 billion will go towards immunization campaigns, such as those for polio, measles and tetanus.

¹ David E. Bloom, David Canning & Mark Weston, (2005) "The Value of Vaccination", *World Economic Forum*, 6:3, 15-39.

² Hepatitis B, *Haemophilus influenzae* type b (Hib), rubella and yellow fever

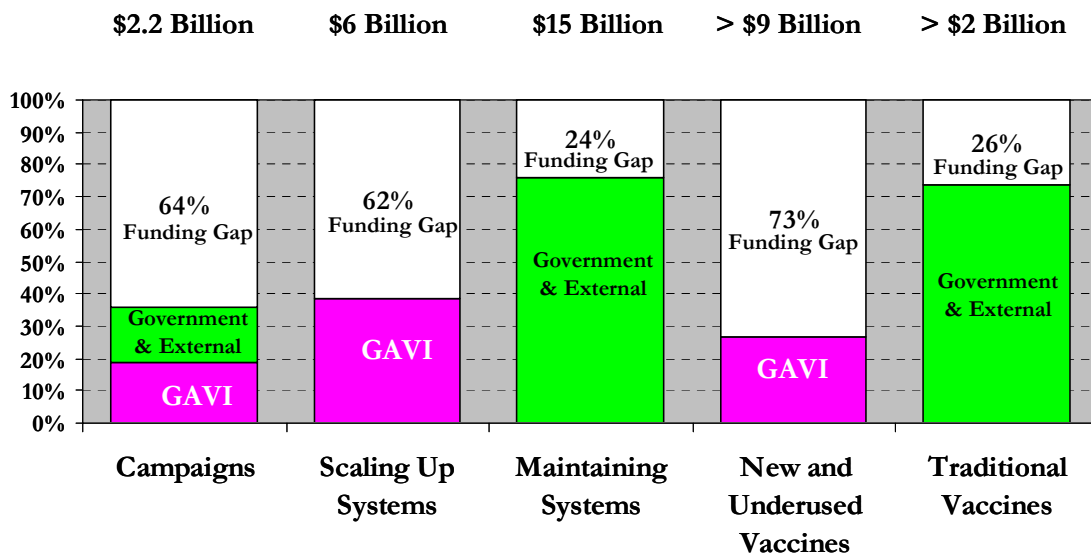
³ Pneumococcus, rotavirus, meningitis A and Japanese encephalitis

The funding shortfall: US \$11-\$15 billion

The poorest countries currently finance, on average, about one third of their immunization expenses. Immunization is a global public good and until these countries are able to take on a greater proportion of their immunization expenses, it is in the interest of high-income countries to cover some of the long-term costs. In an interconnected global community, there is increasing vulnerability to the spread of disease, making immunization even more critical.

The GAVI Alliance is already filling part of the gap (see figure 2) primarily in the areas of systems strengthening, measles mortality reduction, and financing new and underused vaccines. But still more funds are needed, and innovative concepts - like Advanced Market Commitments and International Development Association (IDA) buydowns - need to be further explored to identify additional financial resources for immunization.

Figure 2: Funding gaps 2006-2015, by type of spending



Source: WHO/UNICEF GIVS costing

Further details on the immunization costing study will be posted on the GIVS web site in mid-2006, and we expect to update this study every few years as new information becomes available. But for now, we have a fairly comprehensive starting point that identifies the funding needs and gaps for immunization. It is now time to start working on filling the gap.

For further information:

- <http://www.who.int/choice/en/>
- http://www.who.int/immunization_financing/en/
- <http://www.who.int/vaccines/GIVS/>