

New Technologies and Underused Vaccines

The GAVI Alliance was launched in 2000 to radically improve access to both established and underused vaccines and to accelerate the development and introduction of priority new vaccines in the world's poorest countries.

These countries need access to new technology in order to meet Millennium Development Goals. The ability to expand and sustain access to vaccination is dependent on the level of existing healthcare infrastructure and more specifically immunization systems in each country. New and underused technologies will increasingly provide the opportunity to leap forward in terms of development possibilities—particularly in health. Utilising their full potential to strengthen healthcare delivery systems is key to achieving both GAVI's immunisation targets and the health-related Millennium Development Goals, and significant new financing will be vital. Underscoring the importance of new technologies, "introducing new vaccines and technologies" is one of the 4 strategic areas of the WHO/UNICEF Global Immunization Vision and Strategy 2006-2015.

New and underused vaccines and technologies are already improving immunization rates among children who are the poorest and hardest to reach. Combination vaccines rationalise vaccination delivery whilst other new methods and products will radically alter the health outcomes

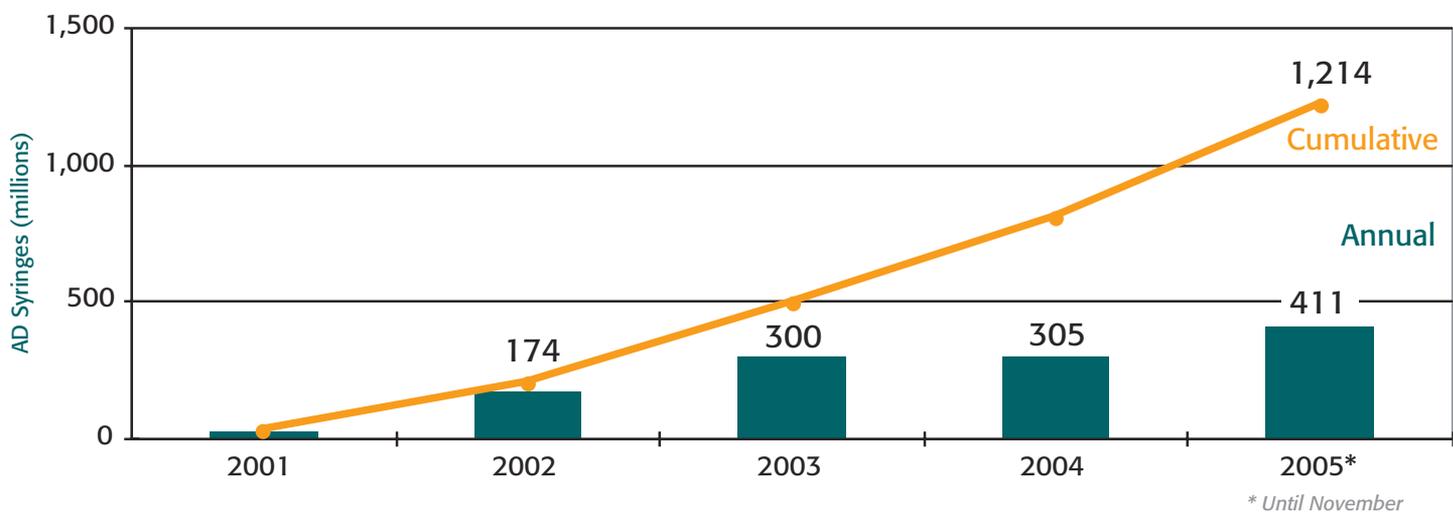
possible in forthcoming years. Some examples include pre-filled injection devices (available but underused), new formulations to improve vaccine stability, and devices for the non-injectable administration of vaccines (anticipated by 2015). In addition, a range of simple but underused technologies can have a major impact on healthcare delivery—such as expanding health information and management systems—which are so crucial for measuring disease burden and communicating what is working.

Some of the new and underused technologies which are currently being introduced through GAVI Alliance support include:

Single-Use Auto-Disable Syringes

- Most of the infections that result from immunization can be attributed to the re-use of injection equipment. Single-use auto-disable (AD) syringes become disabled after one use, protecting the injection recipient from any blood-borne pathogens. This has increased the demand for routine immunization by eliminating the risk of HIV infection from dirty needles.
- Since 2000, the GAVI Alliance has provided 1.214 billion non-reusable syringes (single-use auto disable syringes) to developing country partners to help improve injection safety.

Auto-Disable (AD) Syringes Received by GAVI-Supported Countries



Combination vaccines

- Combination vaccines (which protect children against several diseases in a single shot) such as the pentavalent vaccine which includes DTP, hepatitis B and Hib vaccines, provide a great opportunity in terms of simplifying vaccination delivery. Combination vaccines therefore reduce part of the existing burden on health systems.
- The introduction of the pentavalent vaccine has proved to be more difficult than anticipated, due to low supply, high prices, and a weak evidence-base regarding the burden of Hib disease in some countries. GAVI is therefore supporting studies to estimate the burden of Hib disease in eligible countries.
- There is currently only one pre-qualified vaccine that combines vaccines against diphtheria, tetanus, pertussis and hepatitis B in a single shot. Ten suppliers submitted bids to UNICEF in 2003 to supply this vaccine in 2006. However, whilst a number of these suppliers have already initiated the pre-qualification process, this is one case where progress has been disappointing. Despite the safe and effective track record of Hib vaccines, uptake by countries has been slower than anticipated.

Lifesaving Pneumococcal and Rotavirus vaccines

GAVI identified two priority vaccines, Streptococcus pneumonia and rotavirus, for its initial efforts to support global R&D. The rapid introduction of these vaccines into the developing world could have a profound effect on childhood mortality.

Pneumococcal vaccines

- New, lifesaving pneumococcal vaccines are now available. They are safe and highly effective in preventing pneumococcal disease, including pneumonia and meningitis. The pneumococcal conjugate vaccine for infants has been specifically designed against the strains of pneumococcal bacteria that are prevalent in the United States. However, because different strains of bacteria are present in developing countries, a vaccine must be specifically designed to prevent disease in these areas.

- To accelerate the evaluation of and access to new pneumococcal vaccines, the GAVI Alliance established PneumoADIP at Johns Hopkins Bloomberg School of Public Health. Newer formulations which are appropriate for most developing countries are now in advanced stages of development and testing and are expected to be available as early as 2008.

Rotavirus vaccine

- Virtually all children are infected with rotavirus in the first three to five years of life, but many are asymptomatic and most cases are mild. However, rotavirus is responsible for hundreds of thousands of deaths annually in the developing world, from severe dehydration due to diarrhea, vomiting and fever. The high incidence and attack rates of rotavirus in both developing and developed countries indicates that other preventive measures, such as improved water and sanitation and hygienic conditions, have not reduced the transmission of the virus, and vaccination is the most promising method to controlling the disease.
- GAVI has provided support to create the Rotavirus Vaccine Program at the Program for Appropriate Technology in Health (PATH) to accelerate rotavirus vaccine development and introduction.