Editorial

Successes and challenges in global immunization efforts

Vaccination is one of the most cost-effective health interventions and has become a major part of the strategy towards achieving Millennium Development Goal (MDG) 4, the reduction in deaths of children under 5 years of age by two-thirds (between 1990 and 2015). Immunization can become an even more effective health intervention when combined with other health services and treatments relevant to the particular population being targeted. Child Health Days supported by UNICEF are an example of linked interventions, when people are offered vaccinations along with other services such as vitamin A supplementation, nutritional screening, deworming tablets, oral rehydration salts and distribution of insecticide-treated bed nets.

On 17 November 2009 the WHO announced the launch of the largest ever yellow fever vaccination campaign. The week-long campaign supported by the WHO and a number of partners aimed to target nearly 12 million people across three African countries—Benin, Liberia and Sierra Leone—where there is a high risk of yellow fever outbreaks. Earlier in 2009 the largest phase 3 malaria candidate vaccine trial was initiated. The trial aims to involve around 16,000 children below 2 years of age across seven countries in sub-Saharan Africa, and by November 2009 5000 children had been enrolled. Depending on how the trial progresses, the researchers aim to submit the RTS,S candidate vaccine for regulatory consideration as early as 2012.

At the same time as the phase 3 malaria vaccine trial continues to recruit participants countries all over the world are immunizing at-risk populations against pandemic influenza A (H1N1) virus. In an effort to reach some of the world’s poorest communities, in November 2009 GlaxoSmithKline signed an agreement with the WHO and a number of partners aimed to target nearly 12 million people across three African countries—Benin, Liberia and Sierra Leone—where there is a high risk of yellow fever outbreaks. Earlier in 2009 the largest phase 3 malaria candidate vaccine trial was initiated. The trial aims to involve around 16,000 children below 2 years of age across seven countries in sub-Saharan Africa, and by November 2009 5000 children had been enrolled. Depending on how the trial progresses, the researchers aim to submit the RTS,S candidate vaccine for regulatory consideration as early as 2012.

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The vaccine market is clearly booming, nearly tripling in size since 2000, with new vaccines in development and undergoing clinical trials, and the expansion of vaccine coverage of traditional vaccines to poorer populations. Vaccines for adolescents (e.g. human papillomavirus vaccine) and adults (e.g. influenza vaccines) are also contributing to this growth. A report published in October 2009 by the WHO, UNICEF and The World Bank highlights the achievements that have been made in worldwide vaccinations, with a record 106 million infants being immunized in 2008. Much of this success is in part due to the actions of the GAVI Alliance, a public–private partnership, which has funded the vaccination of over 200 million children. Funding and support from the GAVI Alliance has helped make immunization initiatives possible, not only through the direct funding of vaccination and vaccine stockpiling but also through identifying high-risk populations and supporting surveillance.

Despite these achievements, inequity in access to vaccines still exists, with current vaccination programmes failing to reach around 24 million children. An additional US$ 1 billion will be needed per year in order to deliver vaccines to children in the 72 poorest countries. This is needed not just to expand coverage of traditional childhood vaccines but to include new vaccines such as those protecting against rotavirus, pneumococcal disease and meningococcal meningitis. Increasing coverage also requires investment in training staff, promotion and surveillance. Reaching remote populations can also increase costs. In 2010 immunizing a child is expected to cost on average US$ 18 per live birth. In the future, it is thought that scaling up vaccine coverage to meet the MDGs and the Global Immunization Vision and Strategy goals will result in a cost of over US$ 30 per live birth.

Innovative funding mechanisms are being developed to help meet these increasing costs and to ensure the sustainability of worldwide vaccinations. These include the Advance Market Commitment, the International Finance Facility for Immunisation and the GAVI Alliance co-financing system. This encourages countries supported by GAVI to contribute towards the cost of vaccines based on their gross national income per capita.

In addition to increased funding other needs have to be met if vaccination is to be scaled up successfully. The infrastructure for testing vaccine quality and assessing safety is lacking in many countries, which must be addressed if the capacity of manufacturers in low- and middle-income countries is to increase. Improved disease monitoring and surveillance are also important for ensuring efforts are directed appropriately.
Ongoing research to produce new vaccines, such as those against HIV, tuberculosis and malaria, and to develop more stable vaccines and new delivery systems, together with infrastructure building and increased funding are all important challenges. These factors need to be addressed if we are to achieve the reductions in child mortality outlined in MDG 4, in addition to other MDGs and Global Immunization Vision and Strategy goals.

References

