

VALUE OF VACCINATION

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The theory of vaccination is originated in China in the early 18th century. Physicians observed that certain illness could only be contracted once, so they experimented with giving healthy individuals doses of diseases, such as smallpox. The doses would be too small to make them ill, but large enough to stimulate immunity. This is term variolation.

The term Vaccination was coined by Jenner in 1798 after he published his findings of immunity to smallpox after an injection of cowpox virus to a child. The world has come a long way since Jenner's experiment. Vaccines are now widely regarded as an effective and cheap tool for improving health. Children in all countries are now routinely immunised against major disease. Vaccinations have had a major impact on global health as the following list of successes shows¹:

- Smallpox, which had killed two million people per year until 1960s, was wiped out in 1979 after a massive worldwide immunisation campaign.
- The number of polio cases fell from 30,000 per year in the 1980s to just 2,000 in 2002.
- 2/3 of developing countries have eradicated neonatal tetanus.
- Whooping cough cases have fallen from three million per year to less than 1/4 million in 2002.
- Diphtheria cases have declined from 80,000 in 1975 to less than 10,000 in 2003.
- The Haemophilus influenzae vaccine has reduced the incidence of HIB meningitis in Europe by 90% in ten years.

Despite these advances, however, immunisations coverage remains far from universal, and the developing countries remain vulnerable to vaccine-preventable diseases. Vaccination has proven to be cost effective and a remarkably efficient way of improving health, and has saved millions of lives. It has the potential to be more effective still and renewed efforts are needed to improve the coverage.

Developing countries lag behind the West in terms of vaccination coverage. Measles immunisation rates are over 90% in Europe, but below 70% in South Asia and 60% in Sub-Saharan Africa. Ten developing countries reported cases of polio in June 2005, despite the massive and largely successful global effort to eradicate the virus. As many as 62% of

countries had not achieved full routine immunisation coverage in 2003. This loss of momentum could be due to several factors:

- Many vaccine campaigns have yet to reach people living in areas inaccessible and out of range of clinics and health services. Many poor countries also lack the infrastructure to store and transport the vaccines.
- Parents may be reluctant to vaccinate their children because of bad vaccine publicity on the safety of vaccine. Incidences which abetted such perceptions are:
 - a. The withdrawal of half of the US supply of flu vaccine in 2004 due to contamination at the manufacturer Chiron's UK plant by the swine flu vaccine, which led to deaths of some of those immunised.
 - b. The misconceptions and alarm caused by the Wakefield's study published in the Lancet that MMR vaccine causes autism.
 - c. The withdrawal of Rotashield vaccine for rotavirus after reports were received of acute intussusception occurring shortly after delivery of the vaccine.
 - d. Potential harm of vaccination. With the oral polio vaccine, there is a one in a million chance of paralysis. In some societies where mass vaccinations have eliminated the disease, the risk of paralysis is greater than that of catching polio itself.
- Political disruptions pose problems. For public health campaigns to be effective, legislations are important. Many countries' vaccination rates have fallen rapidly in the past decade because of political disruption, such as war and social breakdown.

Medical cost savings and averting illness are not the only benefits of vaccinations. It is an important tool for improving survival and strengthening economies. It has long term effects on the development of the individual by boosting their cognitive abilities as demonstrated by a sample of 1975 children from the Cebu Longitudinal Health and Nutritional Survey².

Health maintenance and prevention is important domain of the family physicians. Opportunities are abundant for us to improve the uptake of vaccination in both children and adults, especially during child development assessment and adult health assessments.

REFERENCES

1. Birmingham, Stein C: "The Burden of vaccine-preventable Disease" The Vaccine Book: Academic Press, San Diego 2003.
2. David E. Bloom, David Canning, Mark Weston: "The Value of Vaccination". World Economics vol 6 no 3 July-September 2005.