



DISEASES AND VACCINES



Can you imagine what the world would be like without vaccines? From the dawn of time, infectious diseases have been the scourge of humankind, causing untold misery. They have been called plagues and curses, causing more morbidity and mortality than all the wars of the world combined. Fortunately, they fascinated great minds who, whilst searching for the causative agents, came up with ways to prevent these diseases from occurring. Thus even before the technology to identify the aetiologic agents was available, immunisation against these diseases was being practised, an example being variolation against smallpox. This process involved the introduction of dried pus from smallpox lesions either to the skin of healthy individuals, or by blowing the powdered scabs into their noses. These individuals would develop a mild form of the disease and upon recovery, would be immune for life.

Vaccination, initially as variolation, as a way of controlling infectious diseases has been in use for hundreds of years, but only entered the realm of western public health practice following the successful 1774 inoculation by an Englishman called Benjamin Jesty, of his wife and two children with cowpox, to avoid infection with smallpox. This cattle farmer knew from experience that those who were exposed to cowpox did not succumb to smallpox. His experiment was repeated about twenty years later with similar success, by a man who became known as the father of vaccination, Edward Jenner. In 1798 Jenner published his work *Variolae Vaccinae*, in which he emphasised the merits of inoculation with cowpox, an obscure animal disease, to safeguard humankind's survival against one of the deadliest scourges faced at the time.

Vaccines have since been developed for the prevention of a number of infectious diseases, especially those that cause severe morbidity and mortality in young children. Most of these vaccines have, from 1974, been included in the early childhood health plan: the Expanded Programme on Immunisation. Vaccination is now the cornerstone of the public health system, as it has shown that it is cost-effective in terms of money and lives saved. With vaccination, the ultimate objective is the eradication of disease, and in the short term, to prevent infection. Following the certification of global eradication of smallpox on 8 May 1980, the next disease targeted for eradication is poliomyelitis and while measles is targeted for elimination. These diseases have already been eliminated in most of the industrialised countries of the world, and South Africa was certified polio free in 2006. This does not mean the country is free from the risk of importation of wild polio as there are still cases of polio being reported in the Southern African region.

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