The societal value of vaccination in developing countries

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Abstract

The vaccination of children against childhood illnesses not only carries the obvious medical and economic benefits, but there exists numerous indirect and often far reaching added societal benefits.

In developing countries, vaccination forms the basis of village operated primary health care (PHC) activities leading to a sustained PHC programme. Vaccination programmes provide an opportunity for the provision of other primary care services, as it can be the only recurring activity in primary care, that brings mother and child into contact with health services on a predictable and frequent basis.

Vaccination leads to a direct and measurable reduction of child mortality rates and this has been proven to families and communities, resulting in families choosing to have fewer children. Vaccination becomes an opportunity for a higher standard of living as it encourages smaller families and in this way contributes to successes in family planning programmes.

The vaccination of children has a great impact on the lives of women in developing countries as they are the principle carers of children. Protecting the lives of children directly through vaccination and through other PHC activities is a major strategy towards improving the lives of women as it liberates their time, energy and resources. The opportunity and provision of vaccination empowers women to protect their own health and that of their children through their own actions, giving an added psychological feeling of control and empowerment in their lives.

Therefore, while vaccination services can be delivered alone, they are best delivered along with other services needed by children in their first year of life and by pregnant women: the persons who constitute the priority groups for primary health care services in the developing world. In addition to the monitoring of the growth of the child, the use of oral re-hydration to treat diarrhoea and the promotion of breast-feeding, these services may include malaria treatment and prophylaxis, and counselling with respect to child spacing, nutrition during pregnancy, weaning practices, and clean water and sanitation. © 1999 Published by Elsevier Science Ltd. All rights reserved.

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1. Introduction

The vaccination of children against childhood illnesses not only carries the obvious medical and economic benefits, but there exists numerous indirect and often far reaching added societal benefits.

Reducing the burden of disease, especially from the poor is both a social need and an economic security issue, as it releases the energies of the individual to become more economically and socially productive. In the developing world, Primary Health Care (PHC) has been the most appropriate approach to achieving this goal. Governments have devoted their resources in the following areas:

- Maternal and child health care including family planning;
- Expanded Programme on Immunisation;
- Health Education;
- Nutrition;
- Communicable disease control;
- Provision of safe water and adequate sanitation;
- Provision of essential curative care for common conditions; and
- Procurement, storage and distribution of essential drugs.

In the past few decades, developing countries have seen tremendous progress in health and other social in-
dicators. The main factor behind these improvements has been the effort of the international health community to focus on affordable, accessible, acceptable and low-technology child survival techniques, such as immunisation and the use of oral re-hydration therapy (ORT) for diarrhoeal dehydration.

The World Development Report (1993) [1] has demonstrated that immunisation is the most cost-effective public health intervention. Public health programmes such as immunisation work in three ways:

- they deliver specific services to the population
- they promote healthy behaviour and
- they promote healthy environments.

2. Methodology

A literature review on the wider societal benefits of vaccination was undertaken, including review of reports from proceedings of meetings on the subject of immunisation and its delivery within the developing world context [2–11]. In addition a desk research and analysis of studies done in Malawi and Zimbabwe on the subject showing correlative relationships were used.

3. Results

The immunisation of children against childhood diseases is an opportunity not only for the obvious and direct benefits of disease prevention which have been demonstrated to be cost effective, but also some indirect, intangible and often unpriced societal benefits.

For the purpose of analysis, the benefits of immunisation to society have been divided into two categories, namely:

- the benefits arising from the actual process of vaccination or immunisation delivery strategies; and
- the benefits from the outcomes of immunisation.

3.1. Benefits arising from the actual process of vaccination or immunisation delivery strategies

- vaccination programmes provide an opportunity for other primary health care (PHC) services.
- they are the only recurring activities in PHC that bring mothers and children into contact with health services on a predictable and frequent basis, providing an opportunity for family health education.
- infrastructural developments for efficient delivery of vaccines have also provided an enabling environment for other PHC activities, for example outreach activities have reached the most inaccessible and remote populations.

3.2. Benefits from the outcomes of immunisation

- communities have benefited from resources mobilised during national immunisation days (NID’s) e.g., extra vehicles and new “ambassadors” for advocacy activities.
- the collaboration and participation of non governmental organisations and other donor agencies during NID’s has led to the formation of long-term partnerships for the health sector.
- the involvement of the communities in surveillance of EPI diseases has developed a culture for early detection of other health problems.
- continual training on EPI has improved the general managerial skills of health workers.
- improved vaccine procurement systems have also improved the management of other drugs in the health sector.
- improvements in the quality of immunisation programmes through the promotion of safe injections and safe disposal of sharps, has increased public awareness and demand for safety of injections even outside the EPI.
- attention to vaccine quality assurance has strengthened the National Control Authorities in ensuring the use of quality and safe medicines in developing countries.

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<tr>
<td>Total fertility rate</td>
<td>7.1</td>
<td>6.5</td>
<td>5.5</td>
<td>4.9</td>
<td>4.3</td>
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<tr>
<td>Contraceptive prevalence rate</td>
<td>36.0</td>
<td>38.4</td>
<td>43.1</td>
<td>46.2</td>
<td>48.0</td>
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<tr>
<td>Infant mortality rate (per 1000 live births)</td>
<td>79.0</td>
<td>77.0</td>
<td>73.0</td>
<td>66.0</td>
<td>57.0</td>
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<tr>
<td>Child mortality rate (per 1000 live births)</td>
<td>34.0</td>
<td>32.0</td>
<td>29.0</td>
<td>26.0</td>
<td>25.0</td>
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- protecting the lives of children directly through vaccination and through other PHC activities is a major strategy towards improving the lives of women as it liberates their time, energy and resources.
- immunisation coverage rate has been used as an indicator of the general efficiency of the health delivery system, therefore a decline in coverage attracts prompt investigation into the health delivery system as a whole.
- Within Maslows hierarchy of needs, immunisation can be classified as one of the basic physiological needs that has to be fulfilled together with other survival needs to be able to progress to other higher societal needs. See Fig. 1.

4. Discussion

Vaccination forms the basis of grass-roots operated PHC activities, leading to a sustained PHC Programme. UNICEF (1986) [12] has reiterated that immunisation programmes can serve both as an end and as a means of primary health care, achieving both immediate protection against specific disease and the involvement of whole societies in the wider and longer-term cause of health promotion.

The delivery of immunisation programmes has resulted in communities benefiting from organisational developments in the form of general improvements of infrastructure for the efficient delivery of vaccines. Immunisation programmes have provided enabling environments for other PHC programmes and have sometimes pioneered the ways and means to bring basic health technology to the most inaccessible and remote populations.

The success of immunisation programmes have enhanced the image and credibility of the health sector, as well as strengthening the overall confidence of the community in the health service delivery.

In Zimbabwe, the significant decrease in infant and child mortality rates over the past decades, has seen a significant decrease in the fertility rate as a result of increased contraceptive prevalence rate.

The results of a study done in Malawi though, showed that women still preferred to have many children because of the high infant and child mortality rates. One mother said that she had 14 children and only one survived, who then had 10 children with 6 surviving. The mothers acknowledged that immunisation of children has resulted in the decline in infant mortality rates. Therefore, families now have confidence in the survival of their children.

According to UNICEF (1986) [12], less deaths–less birth; several breakthroughs which now make it possible to save the lives of several million children each year have been reported. But the most commonly asked question about this potential for a revolution in child survival is “won’t it lead to even more rapid population growth?” Paradoxically, the answer is “no”. A sharp reduction in child deaths would lead to an eventual reduction in population growth.

Many parents “insure” against child death by having more children. if parents become confident that their existing children will survive, they tend to have only the number of children they actually want. As the late Indira Gandhi said in 1983, “parents are more likely to restrict their families if they have reasonable assurance of the healthy survival of their two children”.

In the developing world, particularly in Africa, births too close together can produce what is often termed the “maternal depletion syndrome” resulting from the lack of time for the mother’s body to recover adequately from the last pregnancy. This is likely to be particularly important when women who are malnourished, breast feed their children and perform the heavy physical work typical of life in the developing world.

In conclusion, the mix of decreased child mortality rates and decreased fertility rates has improved the lives of women in the developing world. This scenario has liberated women’s time, energy and resources, thus empowering them to protect their own health and that of their children, through their own actions, giving an added psychological feeling of control and empowerment in their lives.

Therefore, while vaccination services can be delivered alone, they are best delivered along with other services needed by children in their first year of life and by pregnant women: the persons who constitute the priority groups for primary health care services in the developing world. In addition to the monitoring of the growth of the child, the use of oral re-hydration to treat diarrhoea and the promotion of breast-feeding, these services may include malaria treatment and prophylaxis, and counselling with respect to child spacing, nutrition during pregnancy, weaning practices, and clean water and sanitation.

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References