Mass immunisation campaigns: do they solve the problem?

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Summary

Mass immunisation campaigns have been successfully used for vaccine delivery in countries such as Brazil and Turkey as well as in a number of instances locally. Although in some circumstances mass campaigns have been advantageous, they are not recommended as a basic policy for South Africa. Immunisation services should be incorporated into routine primary health care delivery as part of maternal and child services. If these services are adequately delivered there would be no need for mass campaigns.

The principle involved in mass immunisation campaigns is to attain the greatest possible immunisation coverage of a target population over a short period of time. Mass immunisation campaigns have been used routinely to prevent diseases from occurring in susceptible populations but have also occasionally been used reactively to prevent epidemics from developing or spreading. In addition, some researchers advocate mass immunisation campaigns for poliomyelitis as an alternative to continuous immunisation because it is thought that oral polio vaccine works best when a large mass of virus is given to a community at one time allowing oral-faecal spread to occur.

International mass campaigns

The EPI was initiated by the World Health Organization in 1974. Its goal is to immunise all children of the world against 6 important vaccine-preventable diseases. Since then there have been numerous mass immunisation campaigns of various types in different parts of the world. Different approaches to mass immunisation campaigns are illustrated by some examples:

Brazil organised annual national poliomyelitis vaccination days in June and August each year between 1980 and 1985. These were so successful that the incidence of poliomyelitis, which was one of the highest in the world, dropped from 2.1/100000 to < 0.1/100000.2 Turkey instituted three national mass campaigns between 1980 and 1985. These campaigns differed in the reasons for their being done, in the types of vaccination offered and in the types of population over a short period of time. Mass immunisation campaigns have been used routinely to prevent diseases from occurring in susceptible populations but have also occasionally been used reactively to prevent epidemics from developing or spreading. In addition, some researchers advocate mass immunisation campaigns for poliomyelitis as an alternative to continuous immunisation because it is thought that oral polio vaccine works best when a large mass of virus is given to a community at one time allowing oral-faecal spread to occur.

Local campaigns

Because immunisation coverage in South Africa has not been adequate7 there has been a necessity for mass immunisation campaigns in the past. In recent years several campaigns have been conducted. These campaigns differed in the reasons for their being done, in the types of vaccination offered and in the types of population involved.

In the urban township of Alexandra a mass immunisation campaign was conducted in June 1986 to prevent the spread of what was thought to be the start of a poliomyelitis epidemic.8 In the rural district of Mhala in Gazankulu in 1983 a proven poliomyelitis epidemic in the neighbouring Letaba region was probably halted by a mass poliomyelitis campaign.9 Both of these campaigns were followed by more ambitious campaigns where multiple vaccinations were given.

Other examples of multiple mass immunisation campaigns were those conducted in the rural district of Letaba in 1984, 1985 and 1986 against measles and poliomyelitis.10 In peri-urban Muldersdrift, north of Johannesburg, there was a mass campaign against measles, pertussis, tetanus, diphtheria and poliomyelitis in 1986.11 All of these campaigns attempted to improve the herd immunity as earlier research in these areas had shown immunisation coverage to be inadequate.12,13 These South African campaigns were thought to be successful in their limited objectives of preventing the spread of poliomyelitis and increasing the immunisation coverage against the target diseases in the local area.

In Alexandra more than 10000 doses of oral poliomyelitis vaccine (OPV) were delivered by 10 teams in 2 days while in Mhala over 30000 under-5 year olds received OPV in 15 days. In Letaba 7000 under-5 year olds were immunised in 4 weeks. All of these campaigns relied quite heavily on the community (in different ways) for assistance with education, informing parents, keeping records and giving oral polio drops.

The Muldersdrift campaign was organised by medical students from the University of the Witwatersrand in conjunction with field workers selected from the community. Approximately 500 farm children were immunised in 4 weeks.

However, all of these campaigns had problems as a result of being limited local campaigns. The geographical area covered by the immunisation campaign was restricted to the health ward concerned and susceptible individuals in adjacent areas were not
immunised; vaccines were occasionally in short supply as a result of inappropriate distribution; health personnel were diverted from their normal jobs which were consequently neglected and the media sometimes gave conflicting messages about the campaign to the public.

Discussion

Mass immunisation campaigns have some undeniable benefits. They are most effective as 'fire-fighting tools' to prevent the spread of epidemics. They are also useful if they are viewed as being the first step along the road towards an acceleration of the EPI, in mobilising people, in building community awareness of health and in introducing the community to the health care system in general and PHC in particular. This was the case in Burkino Faso where illiterate communities were educated and informed about the need for immunisation and where the 'vaccination commando' operation aimed to extend routine immunisation services and PHC throughout the country by the creation of a health post in every village. However, the lack of sustainability and the lack of integration of mass campaigns into the existing health services is a common reason given by critics arguing against such campaigns. Mass campaigns are usually implemented as 'vertical' programmes where special teams of workers are diverted from other areas of the health service to staff the campaign. This can lead to duplication of activity and inefficient use of resources since each programme needs its own infrastructure and administration.

The so-called 'horizontal' approach sees vaccination programmes and community involvement integrated with the general health programmes on a permanent basis. This is the only method that will ensure that the goals of the EPI are being met in the long term. Ofusu-Amaah has argued that in Africa the high cost of special immunisation campaigns and the limited duration of their impact point to the necessity of incorporating them into the general health services.

An extensive mass immunisation campaign, which is not followed by further mass campaigns or routine immunisation services, can produce an equally extensive epidemic. The reason for this is that a large immunisation coverage achieved only briefly can temporarily suppress the transmission of the disease. Newborns can then accumulate as susceptible children until disease transmission again becomes easy. It is at this point that an epidemic may occur.

In South Africa at present the lack of co-ordination of the health services at a central level, the lack of involvement of high profile leaders in motivating for health improvement and the lack of good grass-roots community organisation because of the political structures, all militate against the long-term sustainability and success of mass campaigns. The logical approach for vaccine delivery here would be to extend the existing inadequate health infrastructure so as to ensure that MCH services are available and accessible to the whole population.

It is felt that vaccine delivered as part of MCH leads to a greater continuity of follow-up, better recording of vaccines given, less 'lost immunisation' opportunities (i.e. any child presenting at the health service for any reason is immunised routinely) and more timeous immunisations. Vaccine delivered in this way can be viewed as a 'supermarket package' where going to the health service gives an individual a number of benefits besides immunisation. Immunisation as part of PHC services increases overall PHC acceptability and use by the community and opens the way to progress in other aspects of care. Examples of this are screening for health problems and health education on subjects like oral rehydration for diarrhoeal disease, breast feeding and the importance of safety in the home. All of these are important in reducing infant and child mortality and morbidity rates in South Africa.

Conclusion

Although mass immunisation campaigns have been successfully conducted in local areas of South Africa, it is not recommended that they be used as a long-term vaccine delivery policy. Vaccines should be delivered as part of routine MCH services which should be promoted countrywide and for which resources should be made available.

Mass immunisation campaigns should be reserved for emergencies and for special instances as an initial step to the start of an acceleration of the EPI. A successful MCH approach will see the need for mass immunisation campaigns waning and disappearing in a short space of time.

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