

THE IMMUNIZATION PROGRAM OF THE DEPARTMENT OF HEALTH IN THE FACE OF DEMOGRAPHIC CRISIS

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Abstract

The Expanded Program on Immunization (EPI) of the Department of Health is a priority public health program aimed at reducing the morbidity and mortality among children against the seven vaccine-preventable diseases: polio, measles, neonatal tetanus, diphtheria, pertussis, hepatitis B and extrapulmonary tuberculosis. EPI strategies include routine immunization, national and subnational campaigns and outbreak-response campaigns. Demographics plays a very important role in the planning and implementation of public health programs. An increase in population translates to a greater budgetary requirement for routine and special immunization activities. Some of the related issues concern the determination of a more reliable population statistics, updating the birth rate and fertility rate values, inclusion of new vaccines and expansion of services to other high risk groups. The challenges to DOH and local government units are outlined.

Key words: immunization program, demographics, Philippines.

Introduction

The Expanded Program on Immunization (EPI) of the DOH aims to reduce the morbidity and mortality among children against the seven vaccine-preventable diseases nationwide. These include polio, measles, neonatal tetanus, diphtheria, pertussis, hepatitis B and extrapulmonary tuberculosis. Towards this end, targets, schedules for mothers & children, and strategies have been

set. The EPI remains to be a priority public health program.

What then is the implication to the program of what we acknowledge as demographic crisis? What happens if the population continues to increase with more children, an aging population and increasing burden on the economically productive age group? The interplay of targets, budget and personnel or human resources becomes evident. More people means more target children and mothers to immunize both during routine and special immunization activities. This translates into larger budgetary requirements for the program especially for the vaccines, more out-of-pocket expenses, and the need to source additional funds from other donors. This in turn relates to the need for a steady if not increased supply of health workers who are going to deliver the services so that the target children and mothers can be reached.

The challenge for the DOH remains to be ensuring sufficient vaccines and achieving and maintaining high targets. And there are many ways of cushioning the impact of demographic crisis on the program. These are already enunciated in the latest policies for the program and the options to reach and maintain a critical mass for disease prevention and reduction.

The objectives of this paper are (1) to give an overview of the Expanded Program on Immunization (EPI) of the Department of Health (DOH), (2) to define the implications of the Demographic Crisis on the Program – this presupposes that there is indeed a demographic crisis, and (3) to identify other issues and challenges, either related to use of population or stemming out of the implications of the Crisis.

The Expanded Program on Immunization (EPI)

The over-all goal of EPI is to reduce the morbidity and mortality among children against the seven vaccine-preventable diseases nationwide. Specifically, the EPI aims (1) to immunize all 0-11 months old children (these are our priority targets) against these diseases, (2) to sustain the polio-free status of the country, (3) to eliminate measles infection, to eliminate neonatal tetanus (the three as part of disease reduction strategies), and (4) to control diphtheria, pertussis, and hepatitis B infections, and (5) to prevent extrapulmonary tuberculosis among children. Pulmonary tuberculosis (TB) remains to be a very big problem in the country and the Philippines is one of the twenty-two high burden countries for TB worldwide. However, the BCG vaccine affords greater protection against the extrapulmonary TB rather than pulmonary TB.

The schedule for immunization has been studied and is in accordance with WHO/UNICEF guide taking into account public health perspectives and impact, operational and technical considerations. This schedule is as follows: BCG at birth, first doses of OPV, DPT and hepatitis B (where resources permit) at six weeks, then four weekly intervals for second and third doses, respectively. Anti measles vaccine (AMV) is given at nine months where it can have it opti-

mal effect given the Philippine situation.

For pregnant mothers, a tetanus toxoid (TT) schedule is given with the primary intention of preventing neonatal tetanus. First dose is given at the 5th to 6th month of pregnancy, then after four weeks to ensure protection for the newborn. Given these primary doses, the subsequent doses are used as booster doses for the succeeding pregnancies. Studies show that after five tetanus toxoid shots, a mother or woman of reproductive age is already fully protected and does not need additional doses. The targets as presented include infants less than 1 year old, computed since many years ago as 3% of the population and pregnant women at 3.5%. These are now reflected as Fully Immunized Child (FIC) and TT2+ targets. It is only the Philippines which uses the FIC as indicator to refer to a child less than one year of age, receiving all the vaccines except for hepatitis B as shown in the schedule.

The strategies in EPI include (1) routine immunization done in the facilities or even at home in certain instances, following the schedule in the previous slides, (2) national campaigns – done for certain purposes which may include additional age groups and vaccines given are considered extra doses, (3) subnational campaigns, and (4) outbreak response immunization. The *Patak Polio* campaign was aimed at having the Philippines declared as polio-free. On the other hand, the *Ligtas Tigdas* campaign is part of the Philippine Measles Elimination Campaign with the catch-up in 1998 and a follow-up in 2004. The *Iwas Tigdas* in high-risk areas in the National Capital Region (NCR), Regions III and IV was done in response to increasing number of measles cases and deaths, without clustering of these cases. Outbreak response is done when there is clustering of cases like in measles when several children in a sitio or barangay have the disease and certain age groups around the area are given. We had the *Balik Patak Polio* in response to a vaccine-derived polio virus isolated in suspected polio cases after the Philippines was declared polio-free.

Demographics plays a very important role in planning and implementing public health programs. When there is a demographic crisis, programs like the EPI are affected because a crisis means increase in population, more children and younger age group and therefore a greater burden on the productive age group. Fortunately at this point, there are no vaccines for the aging population as they can compete for resources and services for the children and pregnant mothers. The implications of a demographic crisis are seen in the cycle of targets, budget and personnel. With increase in the number of targets both for routine and other special immunization activities, greater budgetary resources are needed. Currently, most of vaccines are funded by government subsidy, unlike before when there were donors for the different vaccines. With more targets and no corresponding proportional increase in government budget, more out-of-pocket expenses need to be shelled out, or other funds should be sourced out. Budgetary constraints also affect the number and quality of technically capable staff that will deliver the services. The cycle continues if there is no

steady supply of human and logistics resources to meet the demands for children and pregnant mothers to be immunized.

The Expanded Program on Immunization is the model for other programs. The annual targets for the routine immunization program for infants use 3% of the total population. The 3% was based on WHO estimates at the start of EPI. The sample target for children for 1998 to 2004 is presented in Figure 1, which shows the increase in number of targets in the cycle with 31,000 to 67,000 added every year. In comparison, the budget for EPI (Figure 2) shows no corresponding proportionate increase in 2003, the budget was even lower, thus the need for more out-of-pocket expenses and sourcing of outside funds.

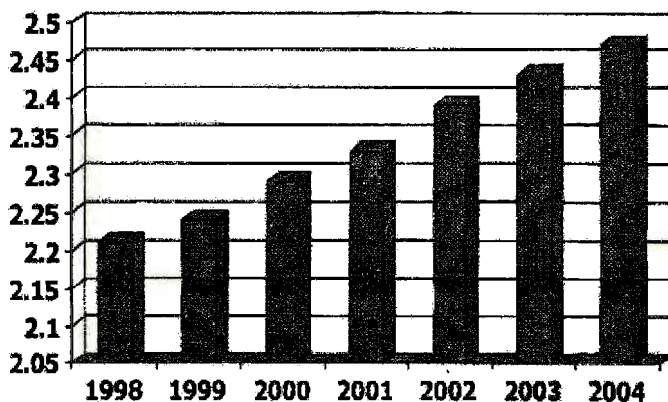


Figure 1. Number of target children, 1998 to 2004 for Immunization.

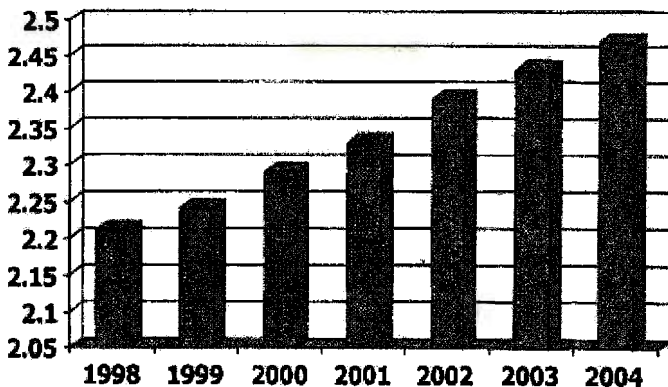


Figure 2. Budget of the Expanded Program on Immunization (EPI) from 1998 to 2003.

Let us look at a particular vaccine, the anti measles vaccine (AMV). Although the doses required have been increasing due to increase in targets, the increasing costs initially were increasing were cushioned by shifting to Vaccine Independence Initiative (VII) procurement through UNICEF. UNICEF puts some pressure on international manufacturers to sell at a lower price. This is good since the DOH can purchase the vaccines at lower costs but this scheme has also started to put strain on manufacturers who are now shifting to multi antigen vaccines to have more profits. There are now fewer manufacturers for the measles vaccine because they have shifted to MR (measles and rubella) or MMR (with mumps), which are also in demand in developed countries at higher costs that cannot be afforded by developing countries.

With hepatitis B vaccine, the DOH is unable to subsidize the full cost of the total requirements for three doses of this vaccine. As a result, parents have to pay some amount if they are not included in the target of the facility. The cost of this vaccine is also higher than that of other vaccines.

Table 1. Doses and costs of anti measles vaccine from 1998 to 2004.

Year	AMV Doses (million)	Total Cost (million Php)
1998	4.4	26.6
1999	4.5	27.0
2000	4.6	29.5
2001	4.7	28.1
2002	5.9	34.1
2003	6.0	34.7
2004	6.2	35.3

Table 2. Requirements and costs of hepatitis B vaccine from 1998-2004.

Year	Annual requirement (million doses)	% provided by DOH	Total cost (Php)
1998	7.9	0	126.4
1999	8.0	60	128.0 ^a
2000	8.2	0	131.2
2001	8.4	80	134.4 ^b
2002	10.7	35	217.5
2003	10.9	55	221.1
2004	11.2	80	225.4

^a 1997 procurement

^b 1999 procurement

The special immunization campaigns are either national, subnational or outbreak response activities. The resources used for the *Ligtas Tigdas* Campaign in 1998, *Balik Patak Polio* Campaign in 2002 and the subnational *Iwas-Tigdas* in 2002 are shown in Table 3. The special campaigns require more resources but what is worthwhile noting is that the health workers are able to deliver because of their dedication.

Table 3. Summary of special immunization campaigns.

	Ligtas Tigdas 1998	Balik Patak Polio 2002	Iwas Tigdas in high risk areas
Target children	28.0 M	11.9 M	507,463
Number immunized	25.5 M (96%)	11.7 (98.5%)	495,000 (98%)
Number of doses used	33.0 M AMV	29.3 M OPV	651,040
Cost of campaign	7.6 M US\$	126 M PhP	3.9 M PhP
Human resources		140,000 door-to-door	3,500 door-to-door
Number of fixed sites		25,000	

Demographic Issues that Affect EPI

Their are three sources of population at present: the 1995 municipality-based population projection, the 2000 census projection both from the National Statistics Office and the actual population based on active masterlisting, the latter being conducted by field health workers. The door-to-door strategy of *Balik Patak* Polio showed that in certain areas, there were really more children than projected by any of the three populations used. At present, the local health planners use the 2000 NSO census projection. While this is good for logistics purposes, some health workers complain that the number of eligibles much greater than the number of children present. Actual population would be a good demographic basis for planning but this is dependent on active and "religious" masterlisting at the health facility level. Another factor that influences population estimates is the rate of migration. People tend to flock more to the cities because of better job opportunities, education, etc. This often leads to problems in the distribution of logistics.

The eligible population for the Fully Immunized Child is at 3% of the total population. This is based on the birth cohort of infants less than a year old since the start of EPI in the late 1970s. The birth rate of 2.3% has been used since the 1990s and has not been changed as basis to estimate logistic requirements. It is

the same with the targets for TT2+ who are the pregnant women at 3.5% of the total population. Even with the advent of different family planning methods, the target percentage of pregnant women has not been changed up to the present. A survey should be conducted to determine the annual birth cohort to justify changes in the eligible populations for EPI.

Other issues of EPI that are related to demographic concerns include whether to continue giving tetanus vaccine to non-pregnant women of reproductive age, when can government provide 100% hepatitis B requirements and 100 % Auto-Disabled (AD) syringes and needles? What is the possibility of introducing new vaccines and expanding services to other high-risk groups?

Challenges for the DOH and LGUs

The challenges for the DOH and the Local Government Units to ensure a good EPI program in the face of demographic crisis are: (1) ensuring sufficient EPI vaccines and logistics at all levels for routine EPI and Special Immunization Activities (SIA), (2) achieving and maintaining at least 95% routine immunization coverage of infants in all areas, (3) strengthening of political/societal support for routine and SIAs, and (4) maintaining adequate number of technically capable health staff at all levels. We can meet these challenges with good leadership at all levels starting with the Secretary of Health and maintaining EPI as a priority public health program.

The new EPI policies issued this year already answer some of the issues and challenges presented. These are (1) inclusion of hepatitis B vaccine in FIC when supply is stable, (2) use of the recommended autodisable syringes and needles during mass campaigns and still allow regular disposables for routine immunization while funds are being sourced, and most importantly, (3) EPI vaccines, except hepatitis B at the moment, shall be bulk-procured by DOH through VII-UNICEF to ensure quality and low cost and shall be provided free at the health facilities, and (4) Open vial policy for tetanus toxoid, DPT, hepatitis B and OPV vaccine – previously the vial of vaccine opened for the day should be discarded at the end of the day, however, with certain conditions followed, the use of the vial of vaccine that has been opened can be extended for several days.

To further cope with the implications of the demographic crisis on EPI, options have been made available to address the issues without sacrificing the over-all goal of reducing cases and deaths. These include prioritizing the most vulnerable or at-risk, like (1) limiting age group of target children, (2) limiting geographic areas, (3) limiting doses of vaccine – only providing the doses that will already ensure public health impact without need to comply with the very ideal doses and schedules as recommended for the individual child, (4) operational techniques like limiting opening vaccine only when there are a number of children are available, but without sacrificing opportunities for children who

may not come back for immunization again, and (5) limiting vaccine distribution to public health facilities. When there are not enough vaccines, however, these can be shared with private practitioners, especially in the light of shortages worldwide because they also help the public sector achieve the goal of EPI.

Other future options that would be worth looking into are (1) proposals to Bill Gates' Global Alliance for Vaccine Initiative (GAVI), other donors and partners especially for mass campaigns (the Japanese government is our partner for the measles follow-up campaign in 2004), (2) augmentation of logistics other than vaccines (requiring advocacy to local government chief executives, and (3) look into financing schemes like inclusion in PhilHEALTH outpatient benefit package.

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