CRITIQUE OF EPI PROGRESS AND EVALUATION REPORT OF THE WHO DIRECTOR GENERAL
(EB 77/27 OF 19 NOVEMBER 1985 TO EXECUTIVE BOARD)

AND PROPOSAL OF DIFFERENT STRATEGY FOR RAPID ELIMINATION AND
CONTINUING CONTROL OF THE PRIORITY VACCINE PREVENTABLE CHILDREN'S
DISEASES IN DEVELOPING COUNTRIES

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The WHO Expanded Program on Immunization (EPI), established in 1974 with
the goal of providing immunization for all the world's children by 1990, within
primary health care has certainly protected many more children than would
otherwise have been possible. However, the magnitude of the unsolved problem
in 1985, no matter how crude and unreliable the current WHO estimates may be
(see Table 1), is witness to the fact that the previous WHO strategy of
year-round vaccination cannot achieve the goal by 1990 and not for a long time
thereafter.

The purpose of my comments is to indicate why I believe that the "mixed
modified strategy" proposed by WHO to the executive board for 1986 and
thereafter will also fail to achieve the goal set for the EPI by 1990 and for a
long time thereafter, and 2) the strategy of annual national days of
vaccination by existing health services aided by thousands of well-organized
and trained nonprofessional community volunteers that should be established
with the initial help of large numbers of specially trained EPI immunization
teams could achieve the rapid elimination and continuing control of polio and
as soon as possible thereafter also of measles and neonatal tetanus.
Critique of EPI Report to the Executive Board. Many statements in this report reveal that the EPI program for the poverty-stricken, developing countries in the tropics and subtropics continues to be modeled after the successful programs in the temperate climate developed countries where the epidemiology of diseases like polio and measles are quite different. The EPI year-round programs concentrate on the individual child receiving three doses of trivalent oral polio vaccine (OPV) which is adequate for a maintenance program in the temperate climate countries but not for producing or maintaining a break in the chain of transmission in the poor countries of the tropics and subtropics where the amount of year-round circulation of the naturally occurring viruses is 10-100 times greater. The EPI programs disregard the need for an initial, rapid break in the chain of transmission of naturally occurring polioviruses to achieve protection of the community and take no cognizances of the fact that the kind of vaccine coverage that may be adequate to achieve it in temperate climate countries with good sanitation and hygiene is inadequate in the tropical and subtropical countries. The EPI programs also disregard the fact that national days of immunization, that are merely designed to achieve accelerated coverage, excluding children who have records of having received three doses of OPV or one dose of measles vaccine (however poorly preserved the vaccines used in year-round immunization may have been), cannot be expected to break the chain of transmission of naturally occurring polio and measles viruses especially when large numbers of children who either live too far from the fixed vaccination centers or are too young to walk to the centers are not immunized.

All EPI documents give the misleading impression that the annual national days of antipolio vaccination which have been so highly successful in the rapid
elimination and continuing control of polio in Cuba since 1963, in Brasil since 1980, and in the Dominican Republic since 1983, which were organized and implemented annually without EPI or UNICEF, are the same as the national days of vaccination organized by UNICEF in 1984 in Colombia and in 1985 in El Salvador. The Colombia and El Salvador programs, which also used large numbers of community volunteers were "make-up" programs for polio and DPT (only up to 3 doses and none for those who already had a record of 3 doses) and for measles (only for those with no record of previous vaccination) all at the same time in fixed vaccination posts many of which were too far for parents to bring their children.

The strategies and training required for the rapid elimination and continuing control of the priority diseases cannot be the same for polio, measles, neonatal tetanus, and pertussis although ultimately they could all be carried out during annual, national days of vaccination. The current EPI recommendation for a "mix" of programs is inadequate to meet the challenge, but it is unavoidable for the short-term until predictably more effective programs of annual national days of vaccination adapted to the special conditions of poor tropical and subtropical countries in different stages of underdevelopment can be introduced. In accepting the EPI recommendations of the Director-General verbatim, the Executive Board at its meeting on 17 January 1986 (document EB 77.R7) added the following words to the last sentence: "and to propose the necessary means to achieve the 1990 goal" (my emphasis). This addition suggests that the Executive Board was not convinced that what the EPI recommended would achieve "the 1990 goal."
Proposal for a Different EPI Program for the Rapid Elimination and Continuing Control of Polio, Measles and Neonatal Tetanus. The strategy that I shall briefly describe here was published in the 22 February 1986 issue of the British Medical Journal (volume 292:531-533). I am proposing that the strategy successfully used for the rapid elimination of polio by Cuba (1963), Brasil (1980), the Dominican Republic (1983), and more recently also in Paraguay (1985), and Mexico (1986) should be recommended by WHO-EPI for use in the developing countries of Asia, Africa and Latin America. The basic primary requirement is the organization of the thousands of nonprofessional, community volunteers (about 3,000 per million total population) to work with the existing health services during the two annual, national days of vaccination. This organization of volunteers, the necessary involvement of the heads of state and of communities, and the many details needed for the orderly functioning of these auxiliary volunteer health armies cannot be carried out in most countries only by manuals describing how it was done in other countries. Teams specially trained by WHO-EPI-UNICEF would have to become available to work with willing governments until such time as the governments can help themselves in the ongoing annual performance of these programs or until it is evident that they don't have the people to help themselves.

In my judgment, it is best to start only with polio because of the ease with which nonprofessional volunteers can be trained to give the oral vaccine. The vaccine should be given to all children from birth to under 3, 4 or 5 years of age, depending on the age of which about 90 percent of the cases have been occurring - and regardless of the number of doses they have had before, because the objective is to create the maximum resistance to reinfection which is not synonymous with seroconversion. This must be repeated annually for the same age groups in order to maintain the break in the chain of transmission.
Although older children may be eliminated subsequently, the annual national days of vaccination must continue for all children under three.

The elimination and continuing control of measles could be carried out during the same annual days of antipolio vaccination, but only after WHO-EPI has taken the initiative to induce pharmaceutical manufacturers to produce either lyophilized vaccine in "Ezeject" form (a single dose in a polyethylene vial with an attached needle) at an acceptably low price or a simplified technology for giving the vaccine by aerosol. The initial program for breaking the chain of transmission of measles virus would have to include a broad group of susceptible age groups up to the age at which 95 percent of the recognized cases occur - and this without reference to previous record of vaccination because of frequent lack of potency of stored vaccines. Because this initial mass vaccination would have to involve large numbers of children, it should be carried out on a national day of vaccination only for measles. In subsequent years measles vaccine could be given annually during the national days of antipolio vaccination only to those who were too young at the time of the first national campaign or failed to get it then.

For the control of neonatal tetanus, tetanus toxoid could be administered to the women of child-bearing age during the annual national days of antipolio vaccination. Putting the toxoid in "Ezeject" vials is also an important preliminary to its use by nonprofessional volunteers.

These new auxiliary armies of health volunteers as a permanent adjunct to existing health services could also be useful in dealing with other public health problems, e.g. control of xerophthalmia blindness by distributing vitamin A and of certain parasitic diseases by vermilifuges, participation in better organized programs for home oral rehydration therapy of diarrheal diseases, for bringing more water by the supervised construction of wells, for
improving sanitation by supervised construction of privies, etc. This new approach to immunization can indeed become a new approach to improvement of public health in general in the poor, economically undeveloped countries — and this is a challenge to an unprecedented cooperative effort by all developed nations to help those who cannot help themselves to learn how to help themselves.
<table>
<thead>
<tr>
<th>Year</th>
<th>Measles</th>
<th>Neonatal Tetanus</th>
<th>Pertussis</th>
<th>Total</th>
<th>Polio paralytic cases</th>
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<td>1983&lt;sup&gt;1&lt;/sup&gt;</td>
<td>2,489,000</td>
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<td>4,312,000</td>
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<td>1,135,000</td>
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<tr>
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<td>803,000</td>
<td>606,000</td>
<td>3,450,000</td>
<td>265,000</td>
</tr>
</tbody>
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1 Bellagio conference report, 1984, p. 9
3 EPI progress and evaluation report by Director-General of WHO (document EB 77/27, 19 November, 1985) to Executive Board, p.3

* Estimates of mortality are based on estimates of immunization coverage which are notoriously unreliable in most developing countries - note rise from 1983 to 1984, and drop in 1985.