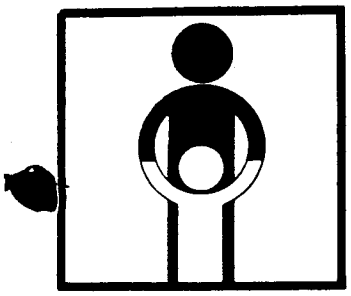

EPI Newsletter

Expanded Program on Immunization in the Americas

Volume II, Number 1 IMMUNIZE AND PROTECT YOUR CHILD February 1980

EPI Global Advisory Group Meeting

The Global Advisory Group of the Expanded Program on Immunization (EPI) consists of 12 members. All WHO Regions are represented, with six members being drawn from panels nominated by the Regional Offices. The remaining six are selected either "at large" or from Regional panels to provide geographical and technical balance.

At the invitation of the Regional Director, WHO Regional Office for South-East Asia, the Group met from 12-16 November 1979, in the Regional Office, New Delhi. Global and regional overviews of program status were presented. Following are the conclusions and recommendations which came out of the meeting.

1. Global Strategies

1.1 Recognizing that the Expanded Program on Immunization is one of WHO's priority efforts to foster the development of primary health care, that the program's success is an essential element in achieving health for all by the year 2000, and that immunizations are most efficiently provided along with other essential health services, it is recommended that the Program:

- Promote the general objectives of primary health care contained in the Declaration of Alma Ata. National commitment to the principles of primary health care and to their implementation is necessary to achieve the orientation of national priorities required to provide a majority of the population access to preventive and curative health services, including immunization.

- Incorporate within EPI training initiatives educational materials supportive to the implementation of other WHO programs within primary health care.

- Work with other WHO programs to provide educational materials relevant to the EPI which can be incorporated within their training activities in developing countries.

- Promote comprehensive reviews of program operations and accomplishments early in the course of program development, preferably including staff from related primary health care programs, as well as staff from other countries. These can serve to improve immunization services and to promote their integration with other primary health care initiatives. They also serve as useful learning experiences for all participants and provide outside collaborators with objective data on which decisions concerning additional support can be based.

1.2 The participation in the EPI of developed countries is essential for program success. One mechanism through which this should be encouraged is to include developed countries within the EPI information system with feedback being made to WHO's governing bodies as well as to individual Member States. Regional Offices should begin approaching developed countries to include them within their Regional EPI information systems during 1980.

1.3 By May 1980, the EPI should prepare a brief promotional document reviewing accomplishments to date and needs for the future which could be shared with collaborators in a position to increase their support to the program, particularly emphasizing the usefulness of bilateral support.

1.4 The establishment of an Expert Committee for the Expanded Program on Immunization is not recommended at this time. Rather, full advantage should be taken to utilize the expertise of existing expert committees and expert panel members, as well as the expertise of members of the Global Advisory Group itself. The use of outside collaborators to help WHO to sponsor groups or individuals to work on particular problem areas should also be encouraged.

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2. Program Implementation

2.1 A primary focus for WHO in promoting the Expanded Program on Immunization should be to support program implementation at national level. It is through direct involvement with implementation of national programs that personnel at all levels can be expected to develop the degree of commitment to program goals required for success.

2.2 The expansion of immunization services should be staged, beginning first in existing facilities, then encompassing outreach services from these facilities and finally covering populations which cannot be reached from existing facilities.

2.3 The Global Advisory Group endorses the present training strategy, noting the importance of providing training in EPI management, with particular emphasis on supervision, to middle level supervisory staff. This training should be provided before the end of 1981 in all countries which are expanding their immunization programs. The Group supports the strategy of presenting EPI training materials to national institutions which train health personnel for their consideration for use within their curricula.

2.4 National plans for expanding immunization services are required. Such plans may be separate or included within more comprehensive plans for the development of national health services, but should include objectives for reducing morbidity and mortality, targets for expanding immunization coverage, strategies for achieving the targets and for measuring that achievement, and the specification of resources required.

2.5 Identifiable budgets and well-defined lines of responsibility for the EPI should be developed within national programs, and management capacities should be strengthened within national programs and within WHO. Although immunizations are to be provided by peripheral workers having multiple health responsibilities, staff whose full-time concern is with immunization services is still required within national programs and WHO to plan, implement and evaluate national, regional and global programs.

2.6 The creation of simple national, regional and global information systems which measure immunizations performed, coverage achieved, and morbidity and mortality from the target diseases should be an objective for 1980-1981. This is important for internal management, to serve as a basis for soliciting support from outside contributors, and to permit the use of the EPI itself as an index of success in expanding the coverage of primary health care.

2.7 Further strengthening of evaluation is essential for the achievement of program goals. Evaluation should include:

- Assessment of the efficacy of the cold chain, including verification of vaccine potency at the time of use.
- Measurement of the proportion of fully immunized children.
- Review of management procedures through program audits.
- Estimation of morbidity and mortality from the target diseases. Special surveys may be required at first, but efforts should be made to strengthen national surveillance systems to permit such data to be obtained routinely.

2.8 All vaccines used in the EPI should meet WHO requirements. The global system to monitor conformity to this recommendation should be strengthened.

2.9 Further improvement is required in planning for vaccine needs, to permit firm orders, based on realistic estimates of actual vaccine use, to be placed with adequate lead times. The success of one Region(1) in meeting vaccine needs through the operation of a revolving fund was noted. This may be studied by other Regions as one solution.

3. Research and Development

3.1 Research to improve program implementation should be an integral part of all immunization programs. The following actions are suggested:

- Develop and evaluate simple and accurate methodologies to estimate morbidity and mortality from the target diseases.
- Continue to develop simple and inexpensive ways to evaluate the efficacy of existing cold chain systems and to develop improved equipment.
- Pursue research on minimizing adverse reactions associated with immunization.
- Review current immunization schedules in the light of recent improvements in vaccines and advances in the general field of immunology so as to permit recommendation of schedules which provide immunity to children in their first year of life, with a minimum number of contacts with health services.
- Pursue research on the vaccines used in the EPI, particularly to produce more stable pertussis and poliomyelitis vaccines, to produce more potent and less reactogenic pertussis vaccines, and to provide additional data on the effectiveness and the cost of both killed and live poliomyelitis vaccines under various conditions of use.
- Pursue operational research to improve immunization coverage. This should be oriented toward finding ways to ensure the full participation of the community in the program and should include the measurement of the effectiveness and the costs of providing immunizations in various health settings and at various intervals.

Source: Wkly Epid Rec, 55:9-16, 1980.

(1)The Region of the Americas

Training Activities

Summary of EPI Courses, 1979

A regional EPI workshop on the planning, administration and evaluation of immunization programs was held in Lima, Peru, in January 1979 for participants from all South American countries. This workshop completed the first phase of EPI training activities which began with the regional EPI workshop held in San José, Costa Rica, in July 1978. These two workshops were directed mainly towards top level public health officials involved with immunization activities at the national level.

The second phase of training activities, directed towards middle level supervisory personnel who are involved in the day-to-day management of these activities, started in February 1979. In all, six countries held national EPI workshops in 1979, with a total of 373 participants. Map 1 shows the countries which held these EPI workshops.

Map 1
Participants in 1979 EPI Training Courses

The last EPI workshop held in 1979 took place in St. Kitts in December, with the participation of 35 nursing officers from eight Caribbean countries (see following article). The costs of preparing the English-language curriculum for this workshop were borne by PAHO's Expanded Program for Textbooks and Instructional Materials, which will also finance the training materials used in future EPI workshops.

The text used in the workshop is divided into five modules (EPI Diseases, Vaccines, the Cold Chain, Programming and Evaluation), which are further divided into units. The text is designed for self-instruction so that each participant can study the material and answer the written problems individually. The participants then meet in small groups to discuss their answers and exchange ideas and experiences. The emphasis throughout is on individual participation within the group. Though a coordinator is available to provide expert advice, it is the participants themselves who determine what direction the discussion will take and how the various issues which arise should be resolved.

A test was developed as part of each EPI workshop which is given to participants before and after the workshop in order to provide an objective measurement of what is learned in each area of instruction. Results of the test given in the latest workshop, in St. Kitts, showed that the average test score rose from 36% on the pre-test to 72% on the post-test. These scores are in line with those obtained in the previous workshops held in 1979, and indicate that participants are returning to their areas of work with a good grasp of the concepts and procedures involved in implementing the EPI in their countries. These national workshops are followed by local ones which are organized by course participants after adaptation of the training materials to the requirements of each country.

Table 1 gives a summary of all EPI workshops held during 1979.

Table 1

1979 EPI WORKSHOPS

Workshop	Place	Date	No. of Participants
II Regional Course for EPI Managers	Lima, Peru	15-26 Jan.	45
National EPI Workshop	Lima, Peru	26 Feb.- 3 Mar.	46
National EPI Workshop	Cochabamba, Bolivia	18-23 Jun.	81
National EPI Workshop	Bogotá, Colombia	2-7 Jul.	35
National EPI Workshop	Guatemala, Guatemala	5-9 Nov.	66
National EPI Workshop	Baños, Ecuador	19-23 Nov.	58
National EPI Workshop	St. Kitts, W.I.	10-14 Dec.	42
Total number of participants			373

A series of national EPI workshops are being planned for 1980. Information on dates and locations of these workshops will be published in forthcoming issues of the EPI Newsletter.

Continuing Education in Family Health Nursing

A project on "Continuing and Post-Basic Education in Advanced Family Health Nursing" was funded by the United Nations Fund for Population Activities (UNFPA) in March 1979 for the Governments of Antigua, Barbados, Dominica, Grenada, Montserrat, St. Kitts-Nevis-Anguilla, St. Lucia, and St. Vincent. This project was formulated over an eight year period by health leaders in the English speaking Caribbean in collaboration with PAHO/WHO. The headquarters for the project is in St. Vincent.

In recognition that nursing manpower forms the core of primary health care in these countries, and that Ministries of Health and nursing leaders have identified additional training as a priority in meeting health needs of the Region, a major component of the project is for training activities.

The goal of the project is to improve the health status of the population of participating countries. Long-term objectives are to:

1. Increase the quality and coverage of family health care available and accessible to the population in the English-speaking Caribbean.

2. Increase the use of curative and preventive health care services by the population in participating countries.

Immediate objectives are to:

1. Increase the knowledge and clinical skills of graduate nurses and other health care personnel who provide care to mothers, children and families.

2. Strengthen and expand the maternal and child health, family planning, and family health content of nursing and nurse-midwifery educational programs in each country.

3. Improve knowledge and skills in the management of family health services by health care personnel of all levels in each of the participating countries.

4. Educate the population to take actions regarding preventive and curative health.

5. Increase the availability and use of community-based health services and preventive health services.

The project supports regional multidisciplir continuing education in Management of Family Hearth Services and local continuing education for all levels of personnel, based on a country's specific needs and priorities. The project also supports a 10 month post-basic course in Advanced Family Health Nursing (Family Nurse Practitioners) for graduate nurse-midwives. This course is based in St. Vincent.

The objectives and content of the post-basic course, as well as all continuing education activities, are based on the priorities and needs of the health services in participating countries to assist in extending coverage and quality of services. Since accessibility of immunizations is a priority health program for participating countries, and since the target set by the World Health Assembly for the EPI is to provide immunization services to all children of the world by 1990, the EPI training package is included at all levels of continuing education activities and the post-basic Family Nurse Practitioners Course.

EPI personnel, together with the Caribbean Epidemiology Center (CAREC), collaborated with PAHO's Division of Comprehensive Health Services in integrating the EPI training materials into the first workshop on the Management of Family Health Services, held in Basseterre, St. Kitts, from 26 November to 13 December 1979. The EPI training materials were incorporated during 10-13 December. Twenty-two nursing leaders from the eight countries participating in the project attended the entire two-session workshop, and will me again from 23 March to 3 April 1980. During the EPI training session 12 additional participants from St. Kitts-Nevis joined the workshop.

This workshop marked PAHO's first attempt to integrate EPI training activities into a broader context of continuing education in health; it was also the first EPI workshop to be presented for participants from English speaking countries in the Caribbean. The EPI training materials, through continued collaboration with CAREC, will be included in regional and local continuing education activities in the Caribbean, as well as the post-basic course sponsored by the UNFPA project.

Status of Immunization Programs in the American Region

A summary table showing the status of immunization programs in the Region of the Americas is presented on page 5. These data are believed to provide an index to the progress of the regional program, recognizing that their incompleteness is itself a reflection of the stage of development of different countries' information systems. As more information becomes available, it is expected that this table will be periodicall updated and published in future issues of the EPI Newsletter in order to provide a follow-up on program development and implementation.

Status of Immunization Programs in the American Region

Country	Year of participation in EPI training (a)		All vaccines used in EPI considered to meet WHO requirements 1979 (b)	Purchase of one or more vaccines thru EPI Revolving Fund - 1979	Prog Mgr named (c)	Estimated pop < 1 year (d) 1978	Vaccination Coverage in Children < 1 yr of age (prov) - 1978									Reported Cases per 100,000 Population - 1978				
							BCG	DPT			MEASLES	POLIO			TET TOX (e)	MEASLES	POLIO	WHOOPING COUGH	DIPHTHERIA	TETANUS
	Reg'l Course	Nat'l Course					%	I dose %	II dose %	III dose %	%	I dose %	II dose %	III dose %	%					
Argentina	1979			yes	yes	569,300	42	...	...	...	45	...	...	...	...	36.2	0.0	64.5	1.0	1.0
Bahamas			yes	yes	yes	6,380	63	...	...	...	...	...	...	...	...	98.7	0.4	0.9	--	0.4
Barbados			yes	yes	yes	4,050	...	79	77	66	...	74	72	59	8	14.0	--	5.6	8.0	4.8
Bolivia	1979	1979	yes	yes	yes	193,500	...	20	10	2 (f)	9	20	10	2 (f)	...	51.7	0.3	4.2	0.8	1.8
Brazil	1979				yes	3,735,500	40	40	44	10 (f)	39	43	31	41	7	42.4	1.2	28.1	4.2	2.6
Canada (g)			yes		yes	356,760										24.9	0.0	11.3	0.5	0.0
Chile	1979				yes	259,910	81	94	90	91	81	92	89	88	...	141.7	--	8.2	4.9	--
Colombia	1979	1979		yes	yes	804,400	35	30	20	14	7	30	19	14	...	79.7	1.2	62.2	0.7	2.9
Costa Rica	1978		yes	yes	yes	59,800	83	87	71	58	19	92	65	50	...	17.1	--	4.5	--	1.9
Cuba					yes	193,950	72	71	60	58	19	81	83	...	...	192.8	--	15.1	--	0.4
Dominica			yes	yes	yes	2,760		90	56	53	47	18	12	17	...	--	--	54.3	--	3.7
Dom. Rep.	1978		yes	yes	yes	176,000	...	...	...	...	...	...	...	...	...	113.1	2.9	19.4	6.5	3.0
Ecuador	1979	1979		yes	yes	301,000	84	26	16	...	11	23	12	7	2	11.1	0.2	25.1	0.3	1.5
El Salvador	1978				yes	169,470	76	75	61	...	64	76	60	...	36	36.4	0.2	54.2	--	2.8
Grenada			yes	yes	yes	3,330	...	...	...	...	...	...	...	...	...	203.1	--	--	--	5.2
Guatemala	1978	1979			yes	290,200	...	...	...	...	...	...	...	...	...	31.7	0.6	16.5	0.1	1.0
Guyana				yes	yes	30,775	10	43	33	23	...	42	33	23	3	0.6	--	...	--	--
Haiti	1978			yes	yes	159,500	...	...	...	...	...	...	...	...	...	27.8	0.8	21.2	0.8	9.8
Honduras	1978			yes	yes	150,600	9	53	29	6 (f)	23	57	30	7 (f)	...	151.8	2.2	50.8	--	0.6
Jamaica					yes	71,660	...	...	...	...	...	...	...	...	...	37.4	--	1.2	0.5	1.1
Mexico	1978				yes	2,638,000	...	...	...	...	...	...	...	...	...	4.6	1.1	4.6	--	0.7
Nicaragua	1978			yes	yes	89,290	26	39	28	20	...	77	69	18	...	6.7	0.0	26.0	--	0.5
Panama	1978		yes	yes	yes	59,400	56	61	45	33	37	85	46	34	19	128.5	--	5.0	--	1.5
Paraguay	1979		yes	yes	yes	112,300	...	...	...	...	...	...	...	...	...	38.0	2.3	49.6	0.2	9.3
Peru	1979	1979	yes	yes	yes	648,000	67	40	24	18	21	48	28	20	...	31.6	0.8	61.1	1.3	5.0
Suriname			yes	yes	yes	14,130	...	...	...	...	...	...	...	...	...	...	...	...	0.8	--
Trin. & Tob.					yes	23,700	...	60	51	39	...	67	57	45	...	67.8	--	2.0	--	1.1
U.S.A. (h)			yes		yes	3,203,000				72 (i)	44 (j)			49		12.3	0.0	0.9	--	0.0
Uruguay	1979		yes	yes	yes	54,500	...	90	68	55	22	81	54	...	36	19.3	--	39.3	--	0.5
Venezuela	1979			yes	yes	469,800	50	67	48	41	33	105	94	82	10	162.9	0.3	39.4	0.3	...

(a) Course on Planning, Management and Evaluation, including the Cold Chain.
(b) In countries not listed as "yes," the status of one or more vaccines is either unknown, or known not to meet WHO requirements. All vaccines purchased through the EPI Revolving Fund meet WHO requirements.
(c) Part or full time.
(d) Provisional PAHO estimates based on country population distributions and UN population estimates.
(e) Coverage of pregnant women with two or more doses of tetanus toxoid.
(f) Two-dose schedule used.
(g) Canada does not collect vaccination data nationwide.
(h) Data from national survey of children 12-23 months of age.
(i) Three or more doses.
(j) Children 15-23 months of age.

... Data not available
-- No cases

EPI Revolving Fund

First Quarter Operations, 1980

A comparison of 1st quarter 1980 Revolving Fund procurements with those for 1st quarter 1979 shows that vaccine orders for the current quarter are up by 74.2% or 6 million doses over the same period last year. Out of a total of 27 countries and territories which are procuring their 1980 vaccine needs through the EPI Revolving Fund, 25 countries and territories placed 1st quarter orders totalling $591,374.

Out of the 13.9 million doses ordered for 1st quarter 1980, the orders for polio vaccine accounted for 5.6 million doses or 40.1% of all doses procured. DPT vaccine accounted for 4 million doses or 28.5%, followed by BCG vaccine which accounted for 2.7 million doses or 19.5% of all doses ordered. Measles vaccine accounted for only 1.02 million doses or 7.4%, while TT vaccine accounted for 5 million doses or 3.7% of the total number of doses procured for the 1st quarter.

The 74.2% increase over 1st quarter 1979 is mainly due to an increase in orders for polio and BCG vaccines. Polio vaccine orders were up by 97% while BCG vaccine orders increased by 89.9% as compared to the same period last year. Measles vaccine, on the other hand, showed only a 6.6% increase over 1st quarter 1979, while both TT and DPT vaccine orders were about 60% greater than those for the same period last year.

A comparison of 1st quarter figures for 1980 and 1979 indicates that participants in the EPI Revolving Fund are expanding activities to increase their vaccination coverage. However, the data also indicate that countries are still in a "catch-up" phase. This is evidenced by the fact that, while there should be a 3:1 ratio between the number of DPT/polio and measles doses applied, the actual ratio of these vaccines procured is approximately 4:1 for DPT and 5:1 for polio. While the ratio between BCG and measles doses administered should be 2:1, the actual number of doses of these vaccines being procured through the Revolving Fund is about 2.5:1.

It is understandable that countries will initially need to order more doses of vaccine than warranted by the size of their under-one populations so as to permit vaccination of older age groups who were not vaccinated as infants. However, it is expected that this catch-up phase will have been completed after the first two years of expanded immunization activities, by which time countries will be able to program their vaccine requirements based on the number of children under one year of age--the prime target group for EPI activities.

Vaccines

Live Attenuated Measles Vaccine

The fact that live attenuated measles vaccine is manufactured under a number of different brand names often causes problems for program managers in deciding which product to use in the national program. In order to understand how the different brands relate to each other, it is useful to review the history of measles vaccine development.

Over 25 years ago, in 1954, Dr. John Enders succeeded in isolating the measles virus from David Edmonston, an 11 year old boy from Bethesda, Maryland (USA) who was suffering from measles. After isolating the virus on primary tissue culture, Enders was able to adapt and propagate the virus on Chick Embryo Tissue Culture (CE). The CE adapted strain, which was designated EDMONSTON A, proved to be too virulent for vaccine purposes, therefore Enders applied himself to further attenuating the strain. This was done by means of further passages on CE fibroblasts, giving rise to a second generation attenuated virus which he named EDMONSTON B. Though this was an improvement on its predecessor, it was still too virulent to be applied on a large scale. Further attenuation, therefore, was essential before the vaccine could receive wider acceptance.

Pursuing this need, laboratories continued to pass EDMONSTON B on CE until a third generation of more attenuated strains was finally developed. These latter strains are known by various names, and differ from each other in the number of times the parent strain, EDMONSTON B, was passed on CE. They provide the seeds for the vaccines now commercially available. The relationship among the different strains is shown in the following list:

1. From EDMONSTON B:

   a) Seed strains developed on CE fibroblasts:

      -SCHWARZ: 85 passages
      -BECKENHAM: 20-71 passages
      -MORATEN: 64 passages
      -MILOVANOVIC: 94 passages

   b) Seed strain developed on primary tissue cultures of different species of animals, including CE, and adapted on Human Diploid Wistar 38:

      -EDMONSTON ZAGREB

      Some of the trade names for live attenuated measles vaccine derived from the EDMONSTON B strain are: Rimevax (RIT), Attenuvax (MSD), Rouvax (Merieux), Lirugen (Merieux), Morbilvax (Sclavo), Mevilin (Evans & Glaxo), and Moraten.

2. At almost the same time as Enders, Smorodintsev in the USSR succeeded in developing on CE a different parent seed known as LENINGRAD 16.

Whether EDMONSTON B or LENINGRAD 16 is used as the seed strain, all vaccine manufacturers prepare the live attenuated measles vaccine by culturing the seed on CE tissue culture, except in the case of Yugoslavia where human diploid tissue culture is used for making vaccines. The measles vaccines supplied through the EPI program in the Americas are all prepared from seeds derived from EDMONSTON B.

Reported Cases of EPI Diseases in the Americas

NUMBER OF REPORTED CASES OF MEASLES, POLIOMYELITIS, TETANUS, DIPHTHERIA AND WHOOPING COUGH
FROM 1 JANUARY THROUGH THE LAST PERIOD REPORTED IN 1979
AND FOR THE COMPARABLE PERIOD IN 1978, BY COUNTRY

COUNTRY	DATE OF LAST REPORT	MEASLES		POLIOMYELITIS		TETANUS		DIPHTHERIA		WHOOPING COUGH	
		1979	1978	1979	1978	1979	1978	1979	1978	1979	1978
ARGENTINA	06 OCT	6,274	5,961	13	--	180	201	110	214	12,409	11,089
BAHAMAS	29 DEC	1,659	222	--	1	2	1	--	--	--	2
BARBADOS	29 DEC	16	35	--	--	7	9	13	20	2	14
BOLIVIA	11 AUG	1,855	...	371	...	73	...	25	...	782	...
BRAZIL	01 DEC	45,323	38,641	1,844	1,192	2,169	2,558	3,685	4,233	22,959	26,211
CANADA	29 DEC	22,527	5,865	3	8	...	5[a]	83	119	2,116	2,673
CHILE	15 DEC	33,285	12,143	--	--	...	17[a]	358	538	414	869
COLOMBIA	09 SEP	13,327	13,425	378	233	...	695[a]	120	134	8,411	11,309
COSTA RICA	29 DEC	6,883	355	--	--	23	40	--	--	311	93
CUBA	15 DEC	7,387	18,080	1	--	25	37	--	1	143	1,451
DOMINICA	29 DEC	178	--	--	--	2	3	--	--	1	44
DOMINICAN REP.	03 NOV	5,223	4,937	9	118	236	139	141	287	482	841
ECUADOR	24 NOV	3,987	714	5	15	80	108	17	20	1,859	1,845
EL SALVADOR	29 DEC	10,359	1,513	3	10[a,b]	114	112	--	5[a]	812	2,362
GRENADA	29 DEC	3	197	--	--	2	5	--	--	6	--
GUATEMALA	17 NOV	3,193	1,564	23	32	59	59	4	5	1,340	773
GUYANA	22 DEC	899[c]	11[c]	--[c,d]	2[c,d]	20[c,e]	16[c,e]	5[c]	1[c]	...	...
HAITI	29 DEC	259	277	1	28	72	91	7	8	216	185
HONDURAS	31 DEC	4,895	5,219	226	74	47	36	2	1	2,451	1,746
JAMAICA	29 DEC	126[c]	4,900[c]	--	...	10[c,f]	27[c,f]	9[c]	17[c]	37	...
MEXICO	27 OCT	30,500	2,599	652	549	...	439[a]	...	12[a]	4,077	2,724
NICARAGUA	29 DEC	1,270	160	--	1	1	13	11	--	267	623
PANAMA	01 DEC	4,212	1,627	--	--	37	23	--	--	631	86
PARAGUAY	29 DEC	1,606	614	17	37	185	151	7	4	1,015	802
PERU	01 DEC	4,149	1,433	55	48	174	144	147	89	8,325	3,384
SURINAME	06 OCT	...	...	1	--	...	...	1	3	...	...
TRINIDAD & TOBAGO	29 DEC	394	768	--	--	32	13	1	--	47	23
U.S.A.	29 DEC	13,448	26,915	26*	15 ≠	75	85	65	76	1,394	2,065
URUGUAY	30 NOV	1,196	479	1	--	14	22	--	--	194	985
VENEZUELA	29 DEC	20,663	17,008	52	17	...	...	3	27	1,736	4,110

[a] Source: Annual PAHO/WHO questionnaires
[b] Paralytic cases only
[c] Source: CAREC Surveillance Report
[d] Figures for poliomyelitis up to 30 December
[e] Figures for tetanus up to 20 November
[f] Figures for tetanus up to 29 September

-- No cases
... Figures not available
* 22 paralytic cases
≠ 9 paralytic cases

Irrespective of their parental lineage, vaccines prepared from the aforementioned strains are very effective, inducing a protective level of HAI antibodies which persists for several years after vaccination. Contrary to what might be expected, a stronger concentration of viral content per vaccination dose does not necessarily prolong immunity. The immunization dose recommended by WHO is a volume of the vaccine which contains not less than 1000 TCD50.

Though it has been observed that some vaccines are better tolerated than others, one should expect a variable percentage of vaccinees to come down with fever for a couple of days within nine or ten days of vaccination. This is by no means uncommon and does not speak against the vaccine.

The stability of the vaccine does not depend on the virus, as there is no major difference between strains with regard to their temperature tolerance. More important, no doubt, are the quality of the lyophilization technique and other factors such as the residual moisture content in the dry vaccine and the use of stabilizers. Various stabilizers have been tested, but because proteins could be allergenic, manufacturers are excluding them from their preparations and putting more reliance on a well balanced system of buffers.

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Cold Chain

Regional Cold Chain Center

CIMDER (Center for Multidisciplinary Investigations for Rural Development, Cali, Colombia) the reference center for cold chain research for the Region, has completed phase I of a three-phase project on the identification and development of equipment for the transport of vaccines between the various links of the cold chain.

Phase I, which involved an evaluation of needs and the identification of possible manufacturers, was unable to identify the necessary equipment for use in the cold chain. Briefly, the reasons for this are as follows: (a) Country EPI programs are changing, therefore some equipment that is now being used or would be designed would be/become obsolete; (b) Inter-country operations are different, consequently some equipment that might be developed would have no application outside certain countries; (c) Some cold chains are not completely developed, therefore it has not been possible to identify their needs.

As a result of the findings of phase I, phase II will involve the development of twelve different containers (cold boxes and thermos jugs) from which countries may choose to fit their needs. However, so that countries can select the most appropriate equipment for their use, country EPI Managers should initiate careful studies of the transport of vaccines along the cold chain.

Under phase II CIMDER will also undertake a more extensive investigation of the possible manufacturers for the production of containers within Latin America. These manufacturers will be visited to seek their support for the production of appropriate containers. In addition, various prototypes will be manufactured for testing at CIMDER, after which they will be field tested in phase III. Concurrently with the investigation on the possible production of containers, CIMDER will attempt to identify possible manufacturers of icepacks for use with the containers.

Phase III, which will complete the project on cold chain containers, has as its objective the investigation and development of an icemaker, and the field testing of a limited number of laboratory-tested equipment in a few countries. In addition, project personnel will visit several countries for a closer examination of transport operations at the various levels of the cold chain, as well as to conduct a study on icemaking needs at the different levels of the cold chain.

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