

EPI Newsletter

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IMMUNIZE AND PROTECT YOUR CHILD

April 1987

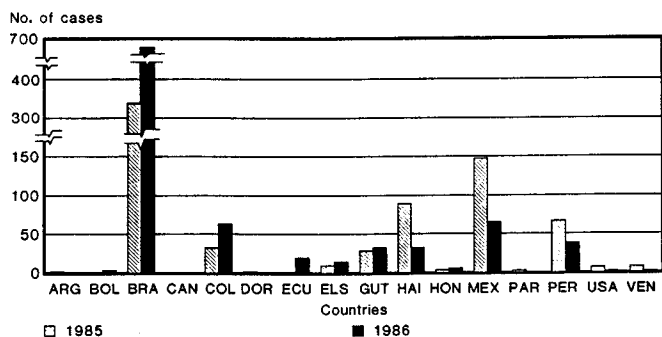
Current Status of Poliomyelitis in the Americas

Weeks 1-23, 1987

In 1986, a provisional total of 897 cases of polio was reported from the Americas, compared to 867 cases reported in 1985 (Figure 1). Brazil contributed 68.2% of the 1986 cases, compared with slightly more than 50% of 1985 cases. Mexico reported a significant decline in reported cases, from 148 cases in 1985 to 66 cases in 1986. On the other hand, Colombia experienced more than a doubling in the number of cases reported, from 33 cases in 1985 to 64 cases in 1986.

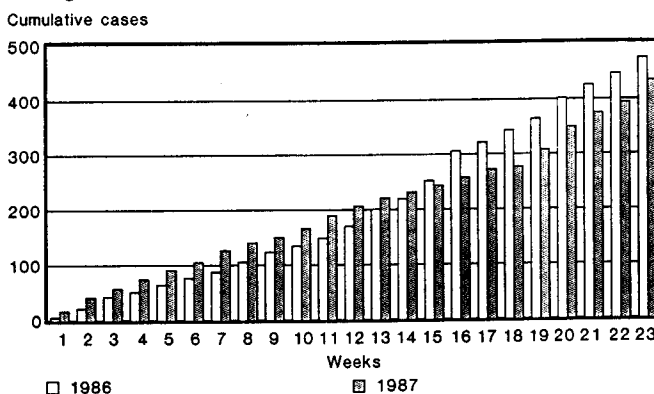
During the first 23 weeks of 1987, a cumulative total of 436 probable and confirmed cases was reported from the Americas (Figure 2). This is only slightly lower than was observed in the same period in 1986, despite improved surveillance (436 compared to 476). Of particular concern is the fact that both Brazil and Colombia are still reporting large numbers of cases. El Salvador, Ecuador, Peru, and Venezuela are all reporting higher numbers of cases in 1987 than they did in 1986 (Figure 3).

Figure 1: Total polio cases reported by country. Region of the Americas. 1985 and 1986.



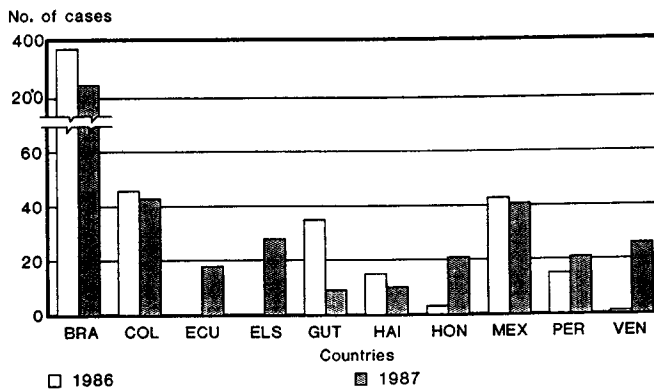
Source: PAHO (provisional data)

Figure 2: Cumulative cases of polio by week reported. Region of the Americas, weeks 1 - 23, 1986 and 1987



Source: PAHO

Figure 3: Polio cases reported by country. Region of the Americas, weeks 1 - 23, 1986 and 1987



Note: Excludes Bolivia (1 case, 1987) and the Dominican Republic (2 cases, 1986). Source: PAHO

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Program Communication

Identification of Audiences to be Reached

A key word in program communication is audience; used to indicate primary beneficiaries of a development project whose informed support is necessary at various times, and at various levels if the project is to proceed as expected. The program communicators' primary concern is to see that the concerns and interests of the various audiences are properly taken into account in both the program or service-delivery side, and in the more strictly communication or demand-creation aspects.

The priority audience for an EPI is parents, and particularly mothers of children under 5 years of age; and pregnant women who should be immunized against neonatal tetanus. The behavior required of this group is that they should bring their children for the full schedule of vaccinations; and be immunized against neo-natal tetanus in the case of pregnant women.

An important supportive audience to this group are the people with whom they interact daily and who influence their decisions; such as relatives, community leaders, and school teachers. These people may introduce and/or encourage new thinking and behavior patterns among the priority groups if they themselves are convinced.

The next important audience to be considered are the front-line health-staff and vaccinators who should not only know how to provide the services, but also how to communicate the needs for and benefits of immunization in such a way as to convince the mothers, or future mothers, and to banish their fears and concerns.

Where the two latter groups are accessible and credible, it is very important to inform them about the program and their potential role in enlisting support of the primary audience of mothers. In this way, vaccinators are to be turned into communicators, they will need some basic training on the program content, as well as on how to address the questions and concerns of the mothers who bring their children for vaccination. Training materials may need to be developed for this purpose with authorized budget and expertise. In turn, this, of course, involves approaching decision-makers in the Ministry of Health to ensure that modifications to the vaccinators' training course can be made and that there are trainers trained to do that. Supervisors of vaccinators must also give their informed support to this expanded role, as the support of primary school teachers may need the informed support of the higher authorities in the Ministry of Education.

Analysis of Constraints on the Participation of Different Audiences

Once the audiences have been identified, the next important step is to analyze the current constraints—

particularly in terms of behavior, attitude, knowledge level—in operation for each of these audiences, and which will inhibit their participation in the proposed program. This analysis is a reflection of the recognition that simple provision of immunization services does not necessarily bring about behavioral change, and of the parallel recognition by development communicators that simple top-down provision of information about those services will not affect audience response unless the services in question (and, hence, associated communication activities) address community interests and needs. Audience or consumer analysis should uncover these interests and needs, as well as provide information on each audience as it is reached by different electronic and human media.

To take our example again from EPI: in beginning to determine why mothers do not submit their children for vaccination, program communicators would try to learn whether mothers recognize the preventable diseases; whether they know about immunization or the existence of the Expanded Program on Immunization (timing, location and cost); or whether they know about the schedule of vaccination, possible side effects and how to deal with them. Program officers on the other hand need to know about prevalence of different kinds of diseases, the mortality rates at each age; the number of children and mothers to be reached from each service point, and, hence, the number of doses of vaccine needed; previous immunization coverage; the drop-out rate for different immunization schedules. They would work also with different technical experts on establishing and managing the cold chain, on record keeping, and so forth. That is, program officers look at what the coverage is and program communicators look at why the coverage is what it is in terms of audience beliefs and behavior at the present time.

All avenues must be explored during the planning process to ensure the informed participation of the user audience of mothers. The chain is only as strong as the weakest link. Imagine that the medical establishment agrees to strengthening vaccinators' communication capacity and makes an allocation for training; the trainers develop a communication component; the vaccinators are trained and perceive that they should take a more active role in convincing mothers of the benefits of the EPI. If the constraints in terms of lack of initial information from any source and in terms of appropriate services still keep the mothers away from the clinic, then little has been achieved. The key here is to look at communication and training as a total system.

Two further general points can be made at this stage. First that an informed user group can put pressure on the establishment to provide the services which they want. Second, that health communication is not exclusively a matter for the health staff to pursue. Effective com-

munication cannot be confined to a specific sector if it is truly audience-based. Other government and non-government agencies who are reaching the same target group of mothers also should be involved in communication for EPI.

Selecting Appropriate Media for Different Groups and Different Purposes

Media selection is based on consideration of its characteristics; the characteristics of the audience; and the nature of the communication task required in particular circumstances. Effective communication can only be conducted through a combination of media which allows for dialogue and exchange — otherwise known as two-way communication. To address a woman's fears and misunderstandings about EPI, for example, the media chosen should allow questions and response as well as conveying knowledge and information. For this purpose, a well-informed, well-trained, motivated and empathetic human being, who is sensitive/sensitized to the mothers' concerns is the best communicator.

Posters, despite their great and continuing popularity —for many people communication is posters—are actually of very limited value on their own. They cannot speak and do not listen. A poster could be used for a simple statement which will stand on its own—*Immunization Services Are Available Here*—or to repeat, remind or highlight points from other communication efforts. Billboards and even radio spots can be used the same way. But these assume that the reader has already gained a lot of information from elsewhere; that they already know what immunization is and why they should have it; it assumes that they can read, and, that they are at the clinic already. For some communication tasks where a process is being taught it is clear that a medium which can show movement, such as video-tape would be the correct choice.

One also needs to question the durability of the information to be communicated: how long will the information be valid and current? Does the audience need the same basic information in progressively more detailed doses? How changeable are the technical and domestic terms used in this subject area?

Overall Communication Strategy Development

A priority throughout the planning and the implementation of a communication strategy is to keep constantly informed about the development and phasing of other program components. It is not simply a question of phasing communication inputs accurately, relative to each other. The delivery of EPI services and the creation of demand for those services, for example, should be carefully timed. Mis-timing results in a dissatisfied consumer group who cannot find what they want at the health center or, alternatively, with trained and equipped health staff who have no one to vaccinate.

Training is an important part of the communication process. It is also important to review and analyze the training components of the program as a whole and that a budget has been secured for this training. The decision-makers in the medical establishment should be informed about the new thinking on child care. Each link in the chain of communication and training should be connected.

These activities should be viewed as a continuum when developing and implementing communication/training strategies. Each activity is a mechanism for checking with the user audience how appropriate the program is to their various needs. An important activity following at a later stage in program development is the pre-testing of audiovisual materials for their comprehensibility and acceptability to the intended audience of users. This again is an important and often neglected aspect, which needs to be planned and budgeted for and to be conducted by a person not only skilled but also committed to the exercise of listening to other people's views.

The conduct of monitoring and evaluation of activities does, of course, depend entirely on having established the baseline situation and on having defined a series of objectives, and indices of achievement of these objectives against which to measure actual progress.

Excerpted from: Programme Communication. A Handbook on Communication Strategy Development for Child Survival and Development Programmes. PSC and Training Section, UNICEF. East Asia and Pakistan Regional Office, Bangkok, Thailand. 1985.

Fourth Meeting of the EPI Technical Advisory Group (TAG) on Eradication of Poliomyelitis in the Americas

Antigua, Guatemala, 20-22 April 1987

In the 7 months since the Third Meeting of the Technical Advisory Group (TAG) in Brasilia, major efforts were devoted to securing the necessary external resources to carry out the eradication program. This has

now been achieved, and commitments or pledges have been made that will provide more than US \$50 million to support the eradication program in the period 1986-1990. This total includes \$20.6 million from USAID (in addition to substantial funds to be supplied in direct bilateral support), \$16 million from UNICEF, \$15 million from

Rotary International, \$7 million from PAHO, and \$5.5 million from the Inter-American Development Bank.

Other important accomplishments since the Third TAG Meeting include the completion of the Laboratory Manual and the Field Guide, which is ready for publication. A course in surveillance and investigation of poliomyelitis has been conducted in Brazil with participants from 14 countries. In addition, a course in serological and virological techniques in polio diagnosis was conducted in Brazil and attended by personnel from 14 different countries. At the end of the course, participants received small quantities of cell lines, antisera, reagents, and supplies necessary to carry out these studies. Six laboratories (Argentina, Brazil, Colombia, Guatemala [INCAP], Mexico, and Trinidad [CAREC]) have been identified to serve as sub-Regional reference laboratories and a specialized course will be conducted in Atlanta in September, 1987. Supplies and equipment are being ordered for these laboratories and should be in place before the end of the year. Efforts are underway to recruit 4 sub-Regional epidemiologists (to be located in Brazil, Honduras, Mexico, and Haiti).

The Interagency Coordinating Group met in January and found that, although there was good coordination of activities at the Regional level, there were still problems of coordination at the country level. They recommended the formation of coordinating committees in each country and the full involvement of these committees in the development and implementation of national plans of action. Such activities are now in progress. In the country work plans now being developed, issues of financial commitment and accountability are being addressed directly.

Several National Vaccination Days have been held since the last TAG meeting and, in a good example of multi-national coordination, the Central American republics held a Central American Vaccination Day on April 5. An important feature of this activity was a joint television appearance by the Presidents of the various countries.

Against this background, the Fourth Meeting of the TAG was held in Antigua, Guatemala, April 20-22, 1987. The Meeting was inaugurated by Dr. Carlos Armando Soto Gomez, Minister of Health and Social Welfare, and Dr. Fernando Antezana, PAHO/WHO Country Representative. The Meeting was chaired by Dr. D.A. Henderson; Dr. Alan Hinman served as rapporteur. The following represents a brief summary of the main agenda items and the conclusions and recommendations of the TAG.

Conclusions and Recommendations

The assurance of adequate external financial support added to national resources and the national political will now permits the program to be developed as was originally

envisaged. The task now is to use these resources wisely and to apply them expeditiously in order to achieve the goal of eradication by 1990. Substantial progress has been made, but because of delays in obtaining funds, the eradication program has fallen behind schedule and will have to be intensified in order to meet the target. In this regard, several points are important; many of these have been made in earlier TAG reports but bear repeating.

1. *Surveillance and investigation.* Surveillance is clearly the critical element in disease control and eradication and must be given the highest priority. Although surveillance is improving in many countries, it is still not adequate in any and remains to be established in many.
 - a. A reporting network should be established consisting of at least one reporting unit in each *municipio* (or comparable small geopolitical unit) which should report each week whether or not suspected cases have been seen and their number. All health units (including hospitals and rehabilitation units) where cases are likely to be seen must be included as reporting units. A roster should be kept indicating whether or not each reporting unit has reported each week and steps should be taken to ensure that all units report promptly and regularly. Such a reporting network should include health facilities from all providers of health care (e.g., private sector, Social Security, Ministry of Health) and should be in place and operational in all countries before the end of 1988.
 - b. "Suspected" cases which should be reported include *all* cases of paralytic illness occurring in persons less than 15 years of age as well as adults in whom the diagnosis of poliomyelitis is suspected. *All cases of Guillain-Barre Syndrome in persons less than 15 years of age should be considered "probable" polio unless proven otherwise.* Recent experience suggests that the diagnosis of GBS is inappropriately made in some children. Development of specific diagnostic criteria for GBS could be quite helpful in this regard.
 - c. The case definitions/classifications developed by TAG should be used in all countries, with particular attention paid to the time limitations for the various categorizations. All "suspected" cases should be visited by an epidemiologist trained in the clinical diagnosis of polio within 48 hours and classified either as "probable" or "not polio". It must be stressed that this classification is to be made by the epidemiologist based on the clinical and epidemiological information available, not by the attending clinician. Within 10 weeks, "probable" cases should be classified as either "confirmed" or "not polio". If insufficient evidence is available at 10 weeks to readily categorize a "probable" case, it should be categorized as "confirmed". All "probable" and "confirmed" cases should be reported to PAHO even before final categorization.

- d. A detailed list should be maintained of all "suspected" cases and explanations provided for their categorization as "probable", "confirmed", or "not polio". It is particularly important to document why cases are discarded as "not polio". It may be useful to request review of individual cases by an expert or a panel of experts to assist in final categorization.
 - e. In countries where polio has not been reported recently it is particularly important that special visits be made to hospitals and rehabilitation centers to review charts and discharge summaries to determine if cases have been seen that might represent polio.
 - f. The Field Guide provides detailed recommendations for development and implementation of surveillance systems. It should be widely distributed and used.
 - g. Efforts should be made to ensure virus isolation and serotyping on as many cases of polio as possible to detect other P3 outbreaks should they occur. If outbreaks of P3 are detected, consideration should be given to alternative approaches to control (e.g., use of monovalent vaccine or enhanced potency TOPV).
2. *Vaccination strategy and coverage.* Achievement and maintenance of high immunization levels are key to eradication of polio. Several points are worth mentioning.
- a. National Vaccination Days should be undertaken at least twice each year in all Group 1 (polio-infected) countries. Multi-national efforts such as the recent Central American Vaccination Day should be encouraged. These days should be separated by at least one month and should include the administration of DTP, measles, and tetanus toxoid (for adult women) wherever possible. As countries gain experience in such programs, it is expected that all will include the administration of several antigens.
 - b. Every effort should be made to ensure that NVDs help to strengthen the development of permanent, ongoing immunization services.
 - c. Coverage should be monitored for each *municipio* (or comparable small geopolitical unit) and a list made of all *municipios* with coverages of less than 80%.
 - d. Although PAHO/EPI techniques for assessing coverage are appropriate for ongoing services, it is not clear that they are the most effective means of assessing coverage where National Vaccination Days are an important component of the strategy. PAHO is asked to convene a small working group to develop recommendations for the most appropriate way to assess vaccination coverage in the EPI (including identification of the most appropriate age groups to be monitored). This should be accomplished before the next TAG meeting.
 - e. Wherever possible, a dose of OPV should be administered immediately after birth. This should not be counted as part of the routine schedule.
3. *Laboratory support.* Some progress has been made in developing a network of laboratories but substantial work remains to be done to assure that specimens are processed and reported promptly and results are reliable.
- a. At the present stage of the eradication program, laboratory examinations frequently show long delays between the taking of specimens and the availability of results and results are of uncertain reliability in many areas. Thus, in many areas at present, laboratory findings are of little help in reaching a timely diagnosis. However, as programs progress, the laboratory will play an increasingly important role in confirming the diagnosis, indicating the virus type, and whether it is wild or vaccine-like.
 - b. As stated in the report of the Second TAG Meeting "establishing and maintaining competent and reliable laboratory support is both difficult and costly. Moreover, for a laboratory to maintain expertise, a monthly average of approximately 50 specimens for enterovirus isolation is needed". This should be kept in mind in determining whether national laboratories should continue to be used for poliovirus isolation or whether the sub-Regional reference laboratories should be used.
 - c. Special efforts should be made to assure that all 6 sub-Regional reference laboratories are fully equipped and functional before the end of 1987.
 - d. If national laboratories are going to continue poliovirus work once the reference laboratories are operational, they should send duplicates of all polio specimens to the reference laboratories.
 - e. Arrangements for appropriate shipping and handling of laboratory specimens (and payment of shipping fees) should be in place before the end of 1987.
4. *Containment activities.* Containment activities should be carried out promptly in response to all "probable" cases of poliomyelitis. This will normally involve at least several hundred to several thousand vaccinations. The purpose of the containment activities is not only to attempt the interruption of wild poliovirus transmission. The occurrence of a case of polio provides an indication that coverage in the immediate area is not good and the containment activities provide an opportunity to improve coverage. Additionally, the publicity surrounding the occurrence of a case usually enhances public interest and acceptance of immunizations.
5. *Research priorities.* In addition to discussions of research needs growing out of the P3 outbreak in Brazil, there was detailed consideration by TAG of a proposed research agenda for EPI in the Americas. The TAG feels

that the primary thrust of research (as in programs) should be in the area of surveillance. The following were identified as priority areas for research during the next 18 months. Resources should be sought to carry out these studies, which are not listed in order of priority.

- a. Determination, as quickly as possible, of the best formulation and schedule of administration of OPV under conditions pertaining in the Americas. The occurrence of the type 3 epidemic in Brazil in 1986 and the demonstration of lower-than-desired seroconversion rates to P3 (and to a lesser extent to P1) warrant this action.
- b. Review of official country guidelines for contraindications. This should be combined with efforts to ensure official adoption of the guidelines issued by EPI and endorsed by the Latin American Pediatric Association.
- c. Identification of the percentage of children visiting health facilities who are eligible to receive immunizations but who are not vaccinated and the reasons for withholding vaccines.

- d. Development of techniques to evaluate the effectiveness and efficiency of National Vaccination Days.
 - e. Comparison of the efficacy of Edmonston-Zagreb (E-Z) and Chicken Allantoic Membrane (CAM) measles vaccines in infants 6 to 9 months of age.
 - f. Evaluation of efficacy of alternative measles immunization strategies (e.g. 2-dose strategies or mass campaign strategies).
 - g. Development and utilization of rapid detection techniques for the identification and characterization of polioviruses.
 - h. Evaluation of the impact of neonatal tetanus in the Americas.
 - i. Development of effective surveillance methods for pertussis.
6. *Next meeting.* The Fifth TAG Meeting was tentatively scheduled for the week of 25 January 1988, provisionally in Lima. The reason for the prolonged interval between the Fourth and Fifth Meetings is to permit fuller implementation of national programs now that adequate external financial resources have been made available.

Routine Skin Preparation before Injection: An Unnecessary Procedure

Introduction

Medical students were taught (if indeed were lucky enough to have any formal teaching on the subject) to prepare the skin of every patient with some form of antiseptic before giving an injection. This teaching has been accepted and repeated uncritically for generations. It is time that it was looked at critically.

The assumption behind the teaching is that if the skin is not sterilized, then infection may be introduced from it into the tissues by the entering injection needle. However, no experiments have ever been done in a series of patients to prove this; Darmady (1), discussing infection following injections, did not mention infected skin at all. Moreover, dentists have for decades been giving injections into the gums and soft tissues of the mouth without any attempt at sterilizing or cleaning the mucous membranes and without any obvious harmful effect. And even the Ministry of Health (2) no longer considers skin preparation to be necessary before smallpox vaccination, as it did previously, provided that the skin is reasonably clean. When infection does follow injections, it is usually shown to be due to infected syringes and needles, or infected injection solutions.

Let us suppose, however, that the risk of introducing bacteria or rather bacterial infection (for these two are

different matters) into the deeper tissues does in fact exist. This is the supposition behind the use of antiseptics in preparing the skin before injection. What antiseptics are used for this purpose, and how effective are they? The list recommended by various workers is itself varied, and includes 70% ethyl alcohol (with and without various additions such as iodine and chlorhexidine), isopropyl alcohol, acetone, and ether. The variety of preferred antiseptics suggests, by analogy with diseases where many different drugs are recommended, that none are really effective when used as they are in practice.

This is confirmed by study of the action of these antiseptics. The normal time taken to rub an injection site is a few seconds, usually about five. The fastest-acting skin antiseptics are the alcohols. According to Williams et al. (3), alcohols kill vegetative bacteria "very rapidly", but have no action on spores. Gardner (4) found that 2% iodine in 70% ethyl alcohol produced virtual sterility (sic) in fifteen seconds. According to Lowbury (5), the maximum temporary reduction in the number of organisms detectable on the skin is approximately 80%, whatever method is used, although Price (6) and Story (7) obtained a complete kill of all skin flora after thirty seconds' swabbing. But there is no evidence that anytime at all will sterilize the normal skin after a mere five seconds' swabbing.

What about simply rubbing the bacteria off the skin

Reported Cases of EPI Diseases

Number of reported cases of measles, poliomyelitis, tetanus, diphtheria and whooping cough, from 1 January 1987 to date of last report, and for same epidemiological period in 1986, by country

Subregion and Country	Date of last report	Measles		Polio-myelitis§		Tetanus				Diphtheria		Whooping Cough	
		1987	1986	1987	1986	Non-neonatal		Neonatal		1987	1986	1987	1986
						1987	1986	1987	1986				
NORTHERN AMERICA													
Canada	11 Apr.	1 302	7 941	—	—	—	1**	—	...	1	—	379	676
United States	14 Jun.	2 326	3 807	—	—	13**	20**	...	...	1	—	783	1 246
CARIBBEAN													
Antigua & Barbuda	*	...	...	—	—	...	...	...	...	...	...	...	...
Bahamas	23 May	23	17	—	—	—	—	—	—	—	—	—	—
Barbados	25 Apr.	2	—	—	—	—	1	—	—	—	—	—	—
Cuba	28 Mar.	349	897	—	—	3	2**	—	...	—	—	24	89
Dominica	23 May	64	24	—	—	—	—	—	—	—	—	—	—
Dominican Republic	28 Mar.	37	241	—	1	3**	18	...	5	7	20	2	74
Grenada	23 May	4	3	—	—	—	—	—	—	—	—	1	7
Haiti	*	...	...	10	15	...	...	...	...	...	...	...	...
Jamaica	*	...	...	—	—	...	...	...	...	...	...	...	...
St. Christopher/Nevis	*	...	...	—	—	...	...	...	...	...	...	...	...
Saint Lucia	31 Jan.	1	—	—	—	—	—	—	—	—	—	—	—
St. Vincent and the Grenadines	*	...	...	—	—	...	...	...	...	...	...	...	...
Trinidad & Tobago	25 Apr.	184	1 497	—	—	3	1	—	—	—	—	5	4
CONTINENTAL MID AMERICA													
Belize	20 Jun.	193	15	—	—	—	—	—	—	1	—	—	7
Costa Rica	25 Apr.	2 202	5	—	—	—	1**	—	...	...	—	35	28
El Salvador	28 Feb.	19	36	28	—	...	5	1	2	—	—	14	71
Guatemala	28 Feb.	33	...	9	35	...	...	...	...	...	...	23	...
Honduras	25 Apr.	81	286	21	3	9	2	2	4	—	—	93	33
Mexico	31 Jan.	65	403	6	19	15	...	...	...	15	—	134	35
Nicaragua	28 Feb.	163	425	—	—	...	...	1	5	—	—	19	84
Panama	28 Mar.	1 037	1 509	—	—	1	2	1	—	—	—	4	14
TROPICAL SOUTH AMERICA													
Bolivia	*	...	...	1	—	...	...	...	...	...	...	...	...
Brazil	25 Apr.	23 135	15 829	218	323	470	510	118	128	390	404	6 161	5 448
Colombia	*	...	...	43	39	...	...	...	...	...	...	...	...
Ecuador	02 Jan.	839	...	0	2	88	...	74	...	11	...	907	...
Guyana	*	...	...	—	—	...	...	...	...	...	...	...	...
Paraguay	28 Mar.	64	116	—	—	12	12	6	12	7	4	48	50
Peru	25 Apr.	375	...	21	15	8	...	12	...	1	...	314	...
Suriname	28 Mar.	—	20	—	—	—	—	—	...	—	—	—	—
Venezuela	25 Apr.	8 072	4 242	—	—	—	1	3	...	—	1	304	859
TEMPERATE SOUTH AMERICA													
Argentina	31 Jan.	398	304	—	—	9**	5**	...	...	—	—	135	261
Chile	23 May	784	3 387	—	—	6	10	1	—	64	68	16	11
Uruguay	*	...	...	—	—	...	...	...	...	...	...	...	...

* No 1987 reports received.

— No cases

** Tetanus data not reported separately for neonatal and non-neonatal cases.

... Data not available

Total tetanus data is reported in non-neonatal column.

§ Data for polio is through week 23 (ending 13 June 1987).

mechanically? Since cotton-wool swabs soaked in effective antiseptics seem to be relatively, if not completely, ineffective in obtaining sterility, it seems hardly likely that dry swabs or swabs soaked in nonantibacterial substances would do any better, and no one has suggested that they do.

In theory, then, routine skin preparation before injection will at best reduce the risk of infection, and probably has no useful effect whatever.

Experimental Evidence

This has been proven in practice over several years. At first, all injections given at the medical center at the University College of Swansea over a two-year period (1963-1965) by the sister and myself were formally recorded. All patients had no skin preparation unless the skin was obviously dirty (which even in students it rarely was—in six cases only, in fact). No attempt was made to differentiate "special-risk" patients (e.g., diabetics and the anemic) from the rest. A total of 1,078 injections was given by all routes from intradermal to intravenous, using a variety of drugs (excluding antibiotics and antibacterial drugs) and vaccines. There were no cases of infection, local or systemic, in any of them. And, lest it be thought that all the injections were given to students, the majority of course were, but the age of the patients ranged from 4 months to 66 years, and they included natives of various countries from all the continents of the world. The adults included not only academics, but also "dirty" workers such as cooks, gardeners, and porters.

Since then the practice has been continued, and it is now also used by the doctor and nurse who joined the staff in 1965, still without any infection. By now over 5000 injections must have been given. Are we just lucky? And are the dentists just lucky...? I don't think so.

There are, of course, doctors who have been doing the same for many years before I even qualified. When I first wrote on this subject (8) one doctor told me that he had

been doing this successfully for over thirty years (including injecting himself, a diabetic). And wasn't there a famous diabetic specialist who used to inject himself through his trousers? Many doctors agree with the principle in theory, but are frightened to introduce it in practice. They needn't be, because it works. Surprisingly, too, their patients will not question them, but will merely be glad to have done with the unpleasant coldness and smell and the post-injection stinging feeling of the more commonly used antiseptics. There are also, of course, worse side-effects, such as iodine-sensitivity rashes, and even deaths have been attributed to the use of benzalkonium chloride before injections (9, 10).

There are occasions when strict asepsis must be enforced—e.g., for intrathecal and intra-articular injections, and perhaps for severely ill patients and those on high doses of corticosteroids. But in such cases a proper technique of skin preparation must be used, and this entails swabbing for at least two minutes with an appropriate antiseptic—e.g., chlorhexidine or 1-2% iodine in 70% ethyl alcohol (11, 12). So much for the routine rub... it's rubbish.

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Source: Dann, T.C., *The Lancet*, July 12, 1969

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Editor: Ciro de Quadros
Assistant Editors: Roxane Moncayo Eikhof
Peter Carrasco

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Expanded Program on Immunization
Maternal and Child Health Program
Pan American Health Organization
525 Twenty-third Street, N.W.
Washington, D.C. 20037
U.S.A.