

Concretely, out of the meeting was formed an ad hoc task force which has now been called the "International Task Force on Child Survival." Its executive committee will be the four convenors; that is, the Directors of UNICEF, WHO, the World Bank, and the UNDP.

I am very pleased to be able to say that Dr. Bill Foege, a truly distinguished international health professional and the former Director of the U.S. Centers for Disease Control, has agreed to take the chairmanship on a part-time basis of this ad hoc committee, beginning now, working as a joint consultant to UNICEF and WHO.

Dr Foege and others will be working in the next months with the governments of India, Senegal, and possibly Colombia to develop accelerated programs of immunization.

Parallel to that effort, there has been another ad hoc task force on the research front formed to try and develop a network related to the relevant research that is now going on and to develop priority areas for further research, both biomedical research and operations research.

Both of these task forces, under Dr Foege's direction, will be developing proposals for submission and hopefully funding from the major bilateral and multilateral donors.

This is viewed initially as a 1-year effort. The group will reconvene, perhaps in Bellagio, again in about a year's time and see where we are, how far and fast we have been able to move without creating yet another formal institutional structure, but with tremendous energy and real optimism from all the parties involved.

I think all of us came back from Bellagio with a renewed sense of excitement and commitment.

Thank you.

Chairman PATTERSON. Thank you, Dr Joseph. Dr. Henderson.

STATEMENT OF DR. DONALD A. HENDERSON, M.D., M.P.H., DEAN, THE JOHNS HOPKINS UNIVERSITY SCHOOL OF HYGIENE AND PUBLIC HEALTH

Dr HENDERSON. Thank you very much, Mr. Chairman. I am very pleased to be here.

I have submitted testimony, but I will plan to depart from that, if I may, and not repeat what Dr Joseph has said.

Chairman PATTERSON. Surely. Your entire written testimony will be put in the record, and you may summarize it and proceed as you wish.

Dr. HENDERSON. Thank you.

As you have noted, I did spend some 11 years with WHO in the smallpox eradication program and since have returned to Johns Hopkins School of Public Health, which is the country's oldest and largest school of public health, and its primary concerns are in the area of public health, very dominantly in the international sector.

My own concerns, apart from humanitarian problems, relate to the question of population as the basic issue in all development. Whatever we do, we do have the concern about population issues.

Relevant to those and intrinsically related to them are the health issues. We know only too well that healthy, wanted children

are really what is involved, and the two must go together very closely.

I would like to say a word about the smallpox program, but only a word, because it did have, I think, a major impact in indicating what can be done in programs in the developing world.

The program began in 1967, and at a time when there were between 10 and 15 million cases per year and with 20 percent deaths occurring among those afflicted. It was causing a lot of blindness in kids--34 countries at that time had the disease.

The goal was set to eradicate smallpox in 10 years, and the goal was missed by 9 months and 26 days, but in the 10-year period, this was not a large percentage miss, but a miss.

The cost of that program in all international assistance was \$8 million per year. The savings around the world approximated \$2 billion per year, and I think, Mr Chairman, when we look to the question of what the United States should or should not be putting into international assistance, I think we need to bear in mind in the United States that in current dollars, we save today \$300 million per year because we are no longer vaccinating children, we are no longer maintaining the elaborate quarantine services that we have.

The United States had a very definite benefit from this program which was designed really to help developing countries.

I think the appreciation of how much could be done and with how little provided an impetus to many countries to look at what else could be done, and so the immunization program was something which followed on and has had notable success, but it has a very long way to go.

In addition, the developing countries in 1978 at the conference in Alma Ata recognized that for them, the appropriate direction was that of providing services of a simple sort rather than the elaborate tertiary hospitals to which so much money had gone, that they really needed to extend appropriate services out to villages. And this has been a tenet, I think, of most health policy in the developing countries.

The UNICEF initiatives have been particularly notable. I think the so-called Gobi initiative of simplified appropriate health interventions has been a major impetus, and I think at this time, as we look at it, we are on the verge, I think, of being able to do a very great deal that was not there before. I think we have the commitment and interest of countries, we have appropriate technologies, we see many more in terms of vaccines and other things, and it seems like this is an appropriate time to move.

The question is: Where are our problems? First of all there is a problem in dollars and available money.

I think to put this into perspective, what we are talking about and I refer to Mr Conrow's notation that something close to 7 or 8 percent was being put into health programs I would make note that most of that money is in safe water and sewage supplies--building of sewage systems. And while this is, without question, a valuable and important initiative to take in preserving health, we take all of the other initiatives dealing with population, with health and nutrition, and they amount to less than 1 percent of

what the banks are spending, according to these figures that are shown here it is a very small amount, indeed.

We are looking at amounts of money needed in this program which are—perhaps we are looking at 2 and 3 percent, figures in that order of magnitude. It is not huge amounts of money that we are talking about.

There is a second and very major problem in regard to the banks themselves that they have in dealing with the provision of support for health, population, and nutrition programs, and I refer to documents prepared by the banks in which they have noted that in the social sectors they have grave difficulties in preparing the loans and programs for the transfer of funds.

The procedures are basically set up for large capital projects—a dam—which is going to cost a large amount of money, and you can set specific goals every year: so much is to be built, so much is to be made available, and the whole mechanism of making funds available is really based on this.

To deal with the small amounts of money that are required for many countries in the health, population, and nutrition area is a real problem. It is an administrative problem of formidable proportions.

Second, it is a problem that is difficult to solve in terms of planning—what is to be anticipated 1 year, 2 years, 3 years down the road? When one is working in the social sector, one must depend on a series of opportunistic interventions, involvements of a lot of different people, organizations, and it is very difficult to know where you are going to be 1 year or 2 years, 3 years ahead, and if one is in the straitjacket of a 3-year or 5-year plan, with so much to be done and so much is to be done in just a precise way, one is sharply constrained in realizing the optimum benefit from the funds which are made available.

The last problem we have, if we look at not only the dollars but how the funds are made available, and the third problem is that of identifying really capable, imaginative and well-motivated people in this country and in other countries.

Dr. Joseph and I have talked about this, as we have with those in the World Health Organization, and really we have. I would say, a plethora of imaginative, intelligent people, very few with training or experience in the international health sector. This is a problem which also needs to be addressed. As an educator, I have to mention that because I think it is important.

Thank you.

[The prepared statement of Dr. Henderson follows.]

TESTIMONY

Subcommittee on International Development, Institutions and Finance

Donald A. Henderson, M.D., M.P.H.
Dean
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I am pleased to have the opportunity to appear before you today to express personal views and concerns regarding opportunities and constraints in the provision of assistance for health and population programs in the developing countries. My own involvement in the field now extends over more than 20 years and includes 11 years' service with the World Health Organization in the capacity of Chief of the Smallpox Eradication Program. For the past seven years, I have served as Dean of the Johns Hopkins School of Hygiene and Public Health, the oldest and largest such School in this country and one which for 65 years has been deeply engaged in research, education and implementation of health and population programs throughout the developing world as well as in the United States.

My personal commitment to this field rests on two simple premises. The first is that the solution to longer-term problems of our existence as a global community depends heavily on the health and well being of peoples throughout the world - healthy, wanted children are a basic foundation to this. The second is that the international bridges and relationships intrinsic to our role as an amicable neighbor are most readily developed through collaborative initiatives in health and population.

The development of successful programs in population and health require patience, flexibility and time to evolve and mature satisfactorily. In general, they tend to be less visible physically and less immediately dramatic in impact. However, they are far less costly than capital projects involving dams, roads or munitions; they are far more difficult to plan and implement; and, to date, they have received far less support and attention than is warranted.

The program of smallpox eradication was for all of us a startling revelation in how much could be achieved with international goodwill and cooperation, the addition of only modest resources, and a modicum of management and organization. With just \$8 million per year in all forms of international assistance, it was possible in 10 years to eradicate a disease which in 1967 afflicted between 10 and 15 million people each year in 34 countries. The last case occurred on October 26, 1977. The United States has now ceased to vaccinate its citizens and has all but disbanded an elaborate quarantine structure. Because of the savings realized, the United States recaptures its entire investment in the global program every 26 days and will do so forever.

Through this program, it became apparent to even the least developed countries that they were capable of effecting dramatic change if indeed cost-effective health interventions could be identified and with appropriate collaborative assistance, well-conceived and well-managed programs could be implemented. Today, most countries are more strongly motivated to undertake health and population programs than ever before in history.

Our problem today is to devise ways by which this can be done.

Traditional patterns of development assistance, which have served us well in other sectors are ill-suited to this challenge. This has been amply documented in studies by the World Bank and the International Monetary Fund and is summarized in the paper which I presented last week in Bellagio. This is submitted for the record.

The time is uniquely opportune for strengthened and new programs in both health and population; UNICEF and the Bellagio Conference offer complementary blueprints. The investment required is miniscule compared to the costs of continuing, ever increasing human misery and strife.

Healthy, wanted children define the country's future and that of the world. To achieve this goal requires a greatly strengthened and sustained effort transcending this administration and the next and the next. It requires cooperative, innovative efforts on the part of all multilateral and bilateral assistance agencies.

In: *Protecting the World's Children: Vaccines and Immunization: A Bellagio Conference, March 13-15, 1984. Rockefeller Foundation, 1984.*

CHILDHOOD IMMUNIZATION AS AN IMPETUS TO PRIMARY HEALTH CARE

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SUMMARY

The Alma-Ata Declaration on Primary Health Care, as its principal tenet, affirmed that essential health care, as a basic human right, should be universally accessible at a cost that individuals and the community can afford. "Essential health care" is broadly defined to include a range of promotive, preventive, curative and rehabilitation services.

To provide the range of essential services envisaged at Alma-Ata will require a quantum change in the structure and nature of health care systems in virtually all developing countries. In most such countries today, health services of any type are available to only a proportion of the population, none of whom are afforded more than a few of the essential services; resources everywhere are limited both in quantity and quality. Projects which have so far been undertaken to develop broadly-based primary health care systems have proved to be both disappointing and costly. Moreover, many health officials, confronted with all too modest resources and managerial skills, have viewed the Alma-Ata objectives as utopian, beyond realization and sometimes beyond comprehension. Frustration in their inability to realize the revolutionary totality of change has engendered paralysis.

Needed are initiatives to define first steps in what is clearly a long journey. Experience in other community-based programs for health care as well as in other development sectors shows that the limiting constraint is institutional and managerial capacity. A strategy which explicitly addresses this constraint is both logical and necessary.

To build institutional and managerial capacity requires the practical experience gained in the execution of a program. Programs best equipped to do this are those with clearly defined and measurable objectives and which, at first, involve a few rather than many interventions. An ideal choice is a program emphasizing childhood immunization whose ultimate objective is to embrace other effective but inexpensive health measures. In the process of implementing such a program, certain of the objectives set forth at Alma-Ata will be realized. More important, an institutional capacity will be developed and a structural and managerial framework evolved which will facilitate ultimately the realization of the Declaration.

PRIMARY HEALTH CARE - AN IMPORTANT BUT DECEPTIVELY SIMPLE CONCEPT

Knowledge and technology is now available to prevent or alleviate a substantial number of health problems extant throughout developing countries. However, even now, only a small proportion of those living in developing countries have access to the most basic of essential health services. Resources allocated to health by governments and donors alike have been meager and, until the past decade, have been heavily concentrated in the development of expensive curative services, e.g., hospitals, which serve a comparatively small number.

Recognition of the need for a fundamental change in a development policy for health culminated in 1978 in the Declaration of Alma-Ata. This Declaration enunciated a set of principles which give priority to the extension of affordable basic health services throughout the population. Defined as "primary health care," the services envisaged include at a minimum (Mahler, 1981):

- o "education concerning prevailing health problems and the methods of identifying, preventing, and controlling them;

- o "promotion of food supply and proper nutrition;
- o "an adequate supply of safe water and basic sanitation;
- o "maternal and child health care, including family planning;
- o "immunization against the major infectious diseases;
- o "prevention and control of locally endemic disease;
- o "appropriate treatment of common diseases and injuries;
- o "provision of essential drugs."

The objectives are laudable in that they shift the health strategy toward the provision of more cost-effective measures for all in the population from expensive curative programs available for the few.

The difficulty in providing the array of services encompassed by the deceptively simple phrase, "primary health care" must not be underestimated, however. Although industrialized countries now make such services available to all or most in their populations, they do not offer suitable institutional models for others because they utilize prohibitively large resources in money and manpower. The Declaration does not elaborate on possible institutional structures and experience to date in the development of appropriate capacity has provided little guidance.

Over the past decade, support has been provided for the development of a number of primary health care projects, but the results have been disappointing. A recent analysis of experience with 52 primary health care projects (APHA International Health Programs, 1982) reveals how extraordinarily difficult it has been to translate principle into reality. As the report describes, it is, intrinsically, a formidable task to provide essential support services to numerous and scattered health

service points which characterize a community-based program. Project plans have uniformly failed to recognize a multitude of practical problems encountered in implementation; all have been far behind schedule and recurrent costs have been substantially greater than anticipated. Most important is the observation that institutional capacity to organize and manage such programs is woefully inadequate - a problem which all but precludes innovative solutions and program evolution.

The findings documented in the above report are reaffirmed by a recent analysis of World Bank projects (Israel, 1983) which reveals that the development of health delivery systems has been among the most difficult and least satisfactory of any sector. Primary health care systems are not separately discussed, but of all health delivery systems, these require the most sophisticated institutional structures. In broad outline, a primary health care program requires that services be offered by large numbers of persons working alone or with a few others in widely scattered locations. Inevitably, in such circumstances, supervision and measurement of progress is difficult, the distribution of necessary vaccines, drugs and supplies is complex, and approaches in rendering services must be varied from area to area to take into account varying cultural factors and political realities. To date, programs with characteristics such as these have frustrated the best and most competent efforts of those concerned with institutional development in all sectors - and, no less, those concerned with primary health care. The problems and levels of success contrast sharply with experience in institutional development where other characteristics pertain, such as in industry, telecommunications and plantation-type agriculture.

A STRATEGY FOR THE DEVELOPMENT OF A PRIMARY HEALTH CARE STRUCTURE

Given their nature, the development of necessarily innovative and effective primary health care structures cannot follow simple blueprints, nor will they be rapid in evolution, nor will the strategy be wholly replicable from country to country or even from one area to another within the same country. To date, however, little attention has

been given to the examination of possible solutions. Indeed, the intrinsic difficulties of institutional development in this sector have tended to be minimized or ignored.

At present, health delivery systems in many developing countries are inadequately funded, poorly managed, primarily concerned with curative procedures and lacking in systems to evaluate performance. For the resources and manpower provided, productivity by almost any measure is poor. Most are ill-equipped and poorly structured even to provide curative care. At the same time, efforts to define a more appropriate system have provided little instructive guidance. Most have been of the "pilot project" type, usually located outside of the agency with program responsibility and rarely able to be replicated beyond the immediate area concerned. Indeed, as many have noted, the health landscape is strewn with small pilot projects.

A new development strategy in health is needed. Instructive in devising such a strategy is an analysis by Korten (1980) of the factors involved in the evolution of five Asian rural development projects in different sectors. He concludes that the most successful have been those characterized by "an organization with a capacity for embracing error, learning with the people and building new knowledge and institutional capacity through action." In such programs, changes in approach and definition of goals have been an ongoing process as the program adapted flexibly to unanticipated local realities and opportunities.

Important conceptually is Korten's focus on the development of institutional capacity rather than on the execution of traditional "blueprint" projects, elaborately preplanned, completed within a finite time frame and carefully specifying all resource requirements in advance. Although, as he notes, the project approach has served well in industrial development, for example, he believes it to be counterproductive in the building of institutional capacity necessary for community-based programmes such as those in the health delivery sector. These latter require flexibility, a latitude to be opportunistic and a sustained commitment of interest and resources.

If it is accepted that the development of a primary health care system requires that priority first be given to building institutional capacity, attention may be directed to identifying which program services will best serve this end rather than trying to devise methods to deliver whatever products or services may happen to be available or superficially attractive. Logic suggests and experience shows that "fewer services in the early period of implementation should be provided.... Specific, well-defined primary health care projects with limited goals and objectives and selected interventions of proven effectiveness have the best chance of becoming established and of effecting improvements in health" (APHA International Health Program).

The array of primary health care services envisaged differ greatly in character and require quite different approaches in their delivery. They may be divided into two broad groups: (1) services for individuals who become ill and seek relief (curative services); and (2) services for individuals who are not ill (immunization, health education and other preventive measures).

Curative services are usually provided by medical and/or paramedical staff working in health centers and hospitals and by such as traditional healers. Characteristically, those who are ill will travel considerable distances in hope of obtaining relief. Thus, a curative health center, for example, might attract patients from a catchment area which is 10 to 15 kilometers or more in radius. However, the provision of basic but adequate curative services poses an array of difficult problems, including those of training and supervising large numbers in the diagnosis and therapy of many different diseases and of providing quantities of a diverse array of drugs and biologicals. Moreover, even when such programs are financed, in part, by recipients, the costs to government compared to benefits have invariably been great and the logistics formidable.

The second category of services are those which are offered to individuals who are not in ill health and include such as immunization to

prevent illness, education regarding the use of oral rehydration solutions when diarrhea occurs and family planning materials. For almost every intervention of this type, the benefit-cost ratios are high, often extraordinarily so; the cost of the illness or the death or disability caused by vaccine-preventable disease, diarrhea or the unwanted pregnancy being far greater than the cost of prevention. Delivering these services, however, poses special problems. Healthy individuals in a community are not strongly motivated to seek such services. In rural areas, for example, few will travel more than a few kilometers to a health clinic in order to obtain vaccination. Even among those living near a health center, attendance to obtain preventive services is proportionately low in the absence of continuing, effective promotional campaigns. Moreover, experience shows that in health centers, curative care receives first priority in time and resources; other activities of a preventive nature are conducted only if specially promoted and supervised.

Not surprising is the fact that successful prevention programs have required a different approach in providing services than those concerned with curative interventions. Such programs are characterized by two principles: (1) provision of the services at a convenient location near the residence of recipients and at a convenient time; and (2) active promotion of the service being offered. When immunization, for example, is brought to the residence at a time of day when villagers are not in the fields or at the market, acceptance by 90% or more is common. Comparable results are obtained if immunization is offered at convenient assembly points which are not too distant provided that the program is well-organized and promoted. Even in populations to which immunization is alien or resisted, remarkably high levels of acceptance have been achieved when educational and promotional methods have been imaginative. It is obvious that different types of preventive programs, such as the provision of oral rehydration packets and family planning materials, require somewhat different patterns of activity than does an immunization program, but the most successful have adhered to the two principles cited. Neither are intrinsic to the provision of curative services.

It is apparent that the beguilingly simple phrase "primary health care system" does not define a simple system but an array of services which must be delivered using quite different approaches and which differ in their relative costs and benefits. Where resources are limited, it would seem logical to give priority to the development of institutional capacity to provide community-based preventive services.

Of the possible preventive interventions, immunization is clearly preferred. It offers the highest benefit-cost ratio and promises even more when other, still experimental antigens become available. An immunization program requires the development of an organizational and management structure which extends from a national center through each level of government, which relates to all existing health units and which involves village-level participation. It requires the establishment of a distribution system for a manageable few biologic agents and supplies and requires that a reporting and assessment system be established to measure progress in program inputs and success in controlling disease. For building institutional capacity, it is perhaps the best of any of the possible preventive interventions. Once established, one could envisage the addition of other primary health care activities which require community-based participation and health promotion.

IMPLEMENTATION OF IMMUNIZATION PROGRAMS

To many who have not had field experience, the phrase "immunization program" conveys the image of a comparatively simple and straightforward set of activities amenable to definition in a "blueprint" type of project. Such programs, however, although less elaborate than those for a broader-based primary health care, must take into account a complex of variables and so will vary, sometimes greatly, from area to area. Some of the factors to be taken into account can be anticipated in the planning stage but many cannot. Effective programs, therefore, are characterized by continuing assessment, flexibility and evolutionary change. As such, they are ideal vehicles for what Korten (1980) describes as "action based capacity building." Illustrating this are five sets of factors which must be considered in such a program.

First are the factors associated with the vaccines employed and their method of administration. Different groups of vaccines will be used in some areas than others. Some programs may employ many antigens but others will use fewer, because of problems of cost or logistics or because a particular disease is not present in the area, e.g., yellow fever. Depending on the vaccine and on epidemiological patterns of the disease, the targetted age groups in the population will differ. To prevent neonatal tetanus requires vaccination of women in their child-bearing years; to prevent measles where transmission is rapid, as in parts of Africa, requires vaccination of children as soon after nine months of age as is practicable. The logistics of administration must be considered for each antigen in deciding, for example, whether to give inactivated polio vaccine by needle and syringe or attenuated live vaccine by mouth. Each of the vaccines has different characteristics of heat stability and these must be taken into account in storage and distribution. Design of the program requires that the substantial economies of cost in packaging vaccines in multi-dose containers be considered and delivery systems utilized which permit vaccination daily of as many persons as possible.

A second group of considerations in design of a program relates to the method utilized for distributing vaccine to recipients. For some areas, e.g., orthodox Muslim areas, it has proved necessary for vaccinators to proceed house-by-house to vaccinate women and small children confined to their residence because of religious practise. In other areas, assembly of recipients at convenient collecting points, e.g., health center, school or other, has proved effective and economical. Consideration must be given to the participation of those at health centers and hospitals. If they are to participate, they require refrigerated storage for vaccines, training and continuing supervision of their personnel and a plan which permits each to vaccinate a sufficient number during a day to utilize vaccines packaged in multiple-dose containers. Some such centers may be able to undertake continuing vaccination of those in nearby areas through regular visits to villages. Since in most health services, those assigned to health centers or hospitals do not now leave

their facility, a major reorientation in their responsibilities and plan of work may be required.

A third set of problems to be considered in design of a program relates to the techniques needed to motivate residents to seek or at least to accept vaccination. The character of promotional-educational programs will depend on sociocultural factors. Different approaches have proved effective in different areas and range from communication through village leaders, community health workers, schools, religious leaders, the media and others in a variety of different mixes. Where and when vaccination is provided is related to vaccine acceptance and must also be considered. If, for example, vaccination is offered only at distant locations, at times of day when many adults are in the field or at market or during certain religious periods, receptivity may be low however effective the educational-promotional program.

A fourth group of considerations relate to the design of assessment mechanisms and their use in management. As experience has shown, continuing and timely monitoring of progress in the program is essential to assure that vaccines are potent at the time of administration, that satisfactory numbers are being immunized and that the program is having the expected effect in reducing morbidity and mortality. Systems need to be devised to provide such data as the numbers vaccinated, the proportion of target populations which have actually been immunized and the numbers of cases and deaths occurring. Different types of data will be required depending on the antigens used. In the past, few reliable data of this sort have been routinely gathered by health programs and, even less frequently, used to identify weaknesses in the program which require modification. Considerable experience is needed in evolving such systems and these may be expected to differ from area to area depending on their sociopolitical structure.

Lastly, perhaps most important, is the organizational structure and management of the program. Leadership is required to provide technical guidance and training and to facilitate incorporation of practical

experience into operation; to assure timely receipt and distribution of vaccines and equipment; to identify and resolve problems; to provide encouragement to field staff; and to develop and sustain mechanisms for measurement of progress. The program organization may take many forms but to realize its full potential in building institutional capacity, it must be an integral part of the health structure and must utilize, to the fullest possible extent, health staff throughout the existing system. To do so requires that each program be appropriate and relevant to the national health structure which it serves and so will vary from country to country.

In brief, the development of an immunization program encompasses anything but a simple, straightforward set of actions which can be neatly prescribed by a development blueprint. Rather, it must address the full range of problems which are germane to the eventual development of a primary health care system embracing the panoply of activities described in the Alma-Ata Declaration. As such, it is an ideal vehicle for building the institutional capacity to do so.

Research in the Program

The development of immunization programs is clearly an experimental process involving questions which are susceptible to being addressed through social science research as well as research designed to produce new or better vaccines and better technologies to facilitate their distribution and application. How this research is conducted and how it relates to ongoing programs will be important.

Social scientists potentially have much to contribute but, as Korten (1980) has pointed out, social scientists have had little influence on the design or performance of typical rural development programs. Their past activities have commonly consisted of: (1) summative evaluations, documenting failure long after the time when corrective action might have been taken; (2) pilot projects, commonly located outside of the operating agency, which provide blueprints for application by others but

for which there is seldom the capacity to make them operational; and (3) baseline surveys, which provide data which are often irrelevant to planning or, if relevant, directed to agencies which don't have the capacity to use them. Most effective and needed are research activities conducted within the context of ongoing programs employing tools which facilitate the rapid collection of data which are directly relevant to action. In Korten's view, disciplined observation, guided interviews and informant panels are preferred over formal surveys; timeliness over rigor; informed interpretation over statistical analysis; and attention to process and intermediate outcomes as a basis for rapid adaptation in preference to detailed assessment of final outcomes. In brief, a reorientation in social science research is required.

No less important is the need for a close relationship between those engaged in program operations and those in research programs intended to develop and improve vaccines and the technologies for their distribution and application. Opportunities, problems and obstacles identified by field staff can play an important role in defining research priorities. Although the value of basic research is acknowledged as essential, the most critical and frequently deficient bridge has been that between program staff and research scientist. A reorientation in this area is thus quite as important as in social science research.

Program Support

Most important to a program which is intended to build institutional capacity is the nature of donor support. Here, too, a change is called for (Israel, 1983 and Korten, 1980). Most development programs have consisted of detailed preplanned projects of definite but short duration. To paraphrase Korten: a demand for detailed preplanning and subsequent adherence to the detailed line item budgets and implementation schedules immediately preempts the learning process by imposing the demand that leadership of the incipient effort act as if it knew what it was doing before there was an opportunity for learning to occur.

Israel, after review of nearly 200 Bank projects, reaffirms the need to reconsider the nature of support provided to programs in the social sector. As he points out, programs "trying to reach and involve large numbers of people are more 'institution intensive' ..." and that "the institutions involved are the most difficult to improve." At the same time, he finds that in the social sector, institutional and managerial problems are the most pervasive and resources, the most scarce. He calls for long-term programs transcending individual projects and, in formulating these, a recognition that detailed preplanning such as has been employed in industrial and telecommunications projects, is not only unrealistic but counterproductive.

CONCLUSION

The Alma-Ata Declaration was important in redefining objectives in health program development. Not fully appreciated were the formidable difficulties inherent in reaching these objectives nor that the principal constraint in most countries lay in the fundamental generic problem of institutional and managerial capacity. A strategy which addresses this problem is critical. Most appropriate and cost-effective would be a program whose initial thrust is immunization, but whose ultimate objective is to embrace the range of preventive interventions envisaged in the Declaration. A flexibly evolving program, rather than a blueprint-type project, would best serve this end, its strength being appreciably greater if social science and other forms of research are integrally related to operations and to program goals.

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Chairman PATTERSON. Thank you, Dr. Henderson.

I want to express the pleasure of the subcommittee that you three gentlemen could be here only 2 days after coming back from Bellagio, and I hope your time clock is on schedule. We certainly appreciate your being here.

Dr Henderson, you noted that the smallpox eradication program you spent \$8 million a year. Were any of those resources from multilateral institutions, do you know?

Dr HENDERSON. Yes, they were. From the multilateral institutions, the largest contributor was the World Health Organization. UNICEF provided support in the production of vaccines, and so forth.

None of the money came from banks, and I think, frankly, we did not look to the banks as being a primary source because, indeed, as the programs progressed and one looked at the time-frame that one had to anticipate in obtaining bank loans and bank funds, one was looking 3, 4, 5 years ahead, and it just wasn't realistic within the time frame of an active program.

We did receive funds from many different countries and much from the United States. The second largest contributor was the Soviet Union. The third largest was Sweden.

Chairman PATTERSON. Is there a replicable model here? Can you take what you did do with regard to the smallpox immunization program and utilize that as a model for, say, malaria or other communicable disease?

And I would ask any member of the panel that question.

Dr HENDERSON. Well, I would say that I don't think—each disease has its own particular problems and particular interventions—I don't think one can take that program as a model.

I think there are a lot of lessons to be learned from it, and those, indeed, have been taken and are being applied in many of the programs today, particularly the expanded program on immunization, which in a period of 6 years has moved from a point of having perhaps 5 percent less than 5 percent of the children in the world vaccinated to a point now where it is around 30, 35 percent, which is a remarkable achievement in a comparatively short period of time and with a comparatively small amount of money.

But that is the easy 30 or 35 percent. The next 35 percent will be twice as difficult, and the others even more difficult. But it is doable. I think it is ultimately doable, and we saw this. I would say my most memorable experience was in Afghanistan, where we were working in areas which had never seen government officials at all and knew nothing about vaccination.

We were able to reach those people. We were able to gain their cooperation, and they were very interested and motivated despite really severe religious strictures.

But I think there is a possibility of reaching people throughout the world if you have got some money, some motivation, and some organization.

Chairman PATTERSON. Thank you.

Dr JOSEPH. If I may, Mr Chairman.

I think Dr. Henderson is a bit too modest. What the smallpox program really did, what the eradication of smallpox really did, was to change our concept of the "art of the possible." The small

pox eradication set our sights at a global horizon, saying that it was possible to take on a worldwide problem and deal with it.

The reasons the smallpox program was successful, in my view, were three, which are the same in this expanded immunization program we are now talking about.

A, a set of appropriate technologies was developed. Some were relatively simple, such as a change in the shape of the needle. Some were more complex.

B, there was developed a positive international climate to do this thing. That was very difficult and at some times very fragile. But it was developed and held.

And, C, the program was characterized from start to finish by superb management and organization.

Those three things are comparable, as I say, and the resources that are really necessary in the EPI program, just as they were in smallpox, are relatively modest. UNICEF is now putting in about \$24 million a year, which accounts for the large bulk of external assistance in purchase of vaccine and supplies. That is a relatively modest sum.

One aspect of that that might be of interest in the discussion about the MDB's in the Latin American region, there is an interesting phenomenon where a revolving fund has been set up. Countries who have difficulty, because of budgetary stringencies or timing of budgets, can get vaccine purchased through the revolving fund, and then at a later time replenish the hemisphere-wide revolving fund. There might be some aspects such as those where the large international lending institutions could play a role.

Chairman PATTERSON Thank you.

The Treasury representative who was here testified—and I think all you gentlemen were here—and we asked him a question that I will also ask this panel.

What should our U.S. Treasury be doing to better direct health efforts of the MDB's? Anyone want to take a crack at that?

Dr. JOSEPH, did you want to comment on that?

Dr. JOSEPH. Well, I will give the others time to think by speaking first, which is a great failure that I have. [Laughter.]

Obviously, I think the point that was being driven at by Congressman Levin is the primary one. If one doesn't know where one is, one can't very well decide where one wants to go. And though the word "coordination" is obviously an overused word, some way of looking at how resources are allocated, and, in particular, as I said at the beginning of my comments, the relationships between large-scale capital investment and social sector projects I would say is No. 1.

No. 2, a special pleading, I would think it would be entirely appropriate to look at what would really be only modest redirections and reallocations of the funds that are now spent through the MDB's.

In response to something you said earlier in the hearing Mr. Chairman, I believe that in this current 4-year period the annual expenditures on health, population and nutrition of the World Bank are between \$200 and \$300 million a year. That excludes the water expenditures.

Well, that is the same order of magnitude as UNICEF's total annual budget, and it wouldn't take too much redirection either in terms of additionality or looking at some of these high payoff areas within those sectors to make a very large difference for agencies—and, again, I am not speaking particularly for or about UNICEF—agencies to have a much greater impact.

Chairman PATTERSON. Dr. Henderson?

Dr. HENDERSON. Yes, very briefly.

I think the point is that right now there are very small amounts of money being put into the health, population, and nutrition area, and I think, as was noted by Mr. Conrow, the banks have really not been involved in this area until very recently.

I think Mr. McNamara played an important role in fostering this interest, but the involvement has been recent. It has not been extensive. I think it has been more difficult for banks to identify these as appropriate loans to make in terms of the economic sector and their returns.

That is understandable. I think one has to take a longer term view, and I think the encouragement is needed.

But I would say the second part, and that I referred to earlier, that I think is important would be to encourage them to look at mechanisms by which they might be able to make funding available in a simpler manner to deal with the loans in a manageable sense, because I think this is one of the impediments which they themselves now identify as one of their big problems.

Chairman PATTERSON. Mr. Lowry.

Mr. LOWRY. Thank you, Mr. Chairman.

How are the health programs delivered—within Afghanistan, for example? Was the Government of Afghanistan working in coordination with you, or does UNICEF itself go in, or the World Health Organization?

In other words, practically, how are the health programs like the vaccination program, delivered, to the population?

Dr. HENDERSON. Well, I would say, to go back to that which I know best—and I have followed the expanded program on immunization since its inception—that fundamentally it is a government which is providing the vaccine.

In our smallpox programs we were dealing, by and large, with one or two advisers at a country level to help in planning the program, to look at possible innovative solutions to coordinate resources that were needed with us, to help in all of the aspects of the training. It was a government program given by government health services.

Now, in many areas there were voluntary organizations that came forward and worked very well, and we worked with many different ones. But it is a different situation in each country. Each country has its own particular values and social structure, constraints, and so forth.

I think the thing that was impressive, however, was that in the health sector—and I think it is probably true and one can say this in all social sectors—there is in the health sector a large, large number of people, a fairly large manpower pool engaged in ostensibly delivering health services with a very low productivity. And I

don't think it is a matter of the people being lazy or disinterested so much as it is organization and management.

Many of them really do not have supplies distributed to them on a regular basis by which they can do anything. Many of them never see a supervisor from any other level who is going to sit down and say, where are your problems, what do you do?

And I think that what is apparent is that it is with some support, some help in organization and management, that one can realize a very great increase in productivity of health workers, that they can do a very great deal.

Now, one can say what can we contribute from the United States? Our health system isn't so good either. We are not all that well organized.

But in fact, it is quite a different set of problems, and I think it was my experience that Americans in this situation were very helpful and that there is a pragmatism and a motivation on the part of particularly many of the young health workers that have made an enormous contribution.

Mr. Lowry. If there was some way that the dollar levels necessary could be achieved, how much of an obstacle are the other problems beyond that?

I think, myself at least, as a legislator, that is always the hardest thing to follow. We can always understand that we are talking about \$200 or \$300 million does something, but it is always harder to follow through what happens with that \$200 or \$300 million. You know, how does the needle get in the arm?

If something changed around this place and we got some priorities straight and an adequate amount of money would come forward from this Nation, given the leadership we should give in the world, how much of the problem would that in itself take care of—just an appropriation and I didn't hear a figure, incidentally. Is that \$300 million?

How much of the problem does that take care of?

Dr. Henderson. Well, I think one is looking at—depending on what components we are taking, but let us say we are looking at oral rehydration. It is a very appropriate technology. We are looking at the immunization, and we are looking at the population, because I think that is terribly important.

And in terms of how much should be available, I think it is a figure we are dealing with less than \$1 billion. We are looking at 500 million. We are looking at

Mr. Lowry. Is that per year?

Dr. Henderson. Per year.

Mr. Lowry. Per year.

Dr. Henderson. Now, how much of an obstacle—once given the money, can you do it?

Mr. Lowry. Right.

Dr. Henderson. I think there has been a feeling that it is impossible to do this, given the problems in the various governments and international agencies.

I guess I am more of an optimist, having lived through an 11-year period with smallpox and it got done. In the course of this there were a lot of agencies who had to adapt administrative procedures. There was a lot that was not—there was friction at times.

There were disagreements. But there was an ability to sit down and sort out the problems.

I think what is very exciting is that we have had the Bellagio meeting this last week, and the agencies concerned quite clearly are ready to join together, and I think the territorial boundaries are less of a problem.

I think there is an interest on the part of the countries that were not there as much as 5 years ago. I think, most important in my view, are people to lead this and I think one of the most outstanding people that I have ever had the privilege of working with is Bill Fooge, who has agreed to devote his time to it, and I can say that there are probably 100 others, that if he sent the call out the best people would join in this because I think the time is ripe. There is an excitement about this, and I think it could be done.

Dr. JOSEPH. If I may add to that.

In this whole area of child survival, taking it a bit broader than the immunization, adequate and additional financial resources are a necessary but by no means a sufficient response to the problem.

Political will, all the way from the highest national level right down to the individual community, family, and mother—if I can use "political will" in its broadest sense is absolutely necessary and is increasing.

Organizational/managerial skills are absolutely necessary. They are available. They need to be mobilized.

Ways to communicate with families and with communities are things that we are learning more and more about, including all the techniques of social mobilization and communication.

To make an analogy to some of the discussions we have had in former years on the population side, what this is about is about the creation of demand as well as the availability of supplies.

In the case of saving the lives of children, demand is perhaps a little easier to stimulate, comes a little more naturally to people's consciousness, but it is the same business. You have to work on both ends at the same time.

We estimate that the immunization costs are somewhere in the range of \$5 per child, for a fully immunized child, with the vaccine itself being only 50 to 70 cents of that \$5, and as to the other methods, such as oral rehydration, we are talking probably about 50 cents per child per year.

So multiply those kinds of numbers by the number of the 80 million children born each year in the developing world that you think you can reach by sustained political will, by community mobilization, by effective communication, you still come up with numbers that are not awfully large.

Mr. Lowmy. In the conference, Bellagio Conference, you just returned from, how much of a will did you find as far as this idea of a slight diversion of dollars from large-scale capital projects? I mean, in reality, was that something that seemed like people would be interested in, or is that a pipedream?

Dr. JOSEPH I would say somewhere in between the two. It certainly was an object of discussion. As I said, both in terms of the countries themselves as well as the donor agencies. I don't think anyone was doing any specific calculating or program planning based on that discussion, but I don't think it is a pipedream either

In particular, I think Mr. Clausen of the Bank was attracted to the idea of possible reallocations both within MDB and recipient country budgets.

Mr. Lowry. As you know, the constituency for capital projects is always much stronger. The simple fact of the matter is concrete and things like that you make money selling. We could go off on to some abstract analogies as to why we were able to defeat nerve gas because you don't have 2,000 contractors writing in because it only cost \$50 million to make nerve gas. But compare that, for instance, to the MX, and you have a lot more contractors involved in saving the MX.

Anyway, my point, Mr. Chairman —

Chairman PATTERSON. Yes, I knew you were getting to that. [Laughter.]

Mr. Lowry. Well, but I mean I think there is an awful lot of reality to that when you get to where the letters come from and why they come.

I hope we are looking at what I think is certainly part of this, has got to be part of this, is an additional authorization, ways to get dollars.

You said in the smallpox program the United States was a leading contributor, right? Now, those were actually dollars to the program, right?

Dr. HENDERSON. Yes, sir.

Mr. Lowry. What was the feeling of the rest of the world about the United States as a result of that? How small amount of money was it?

Dr. HENDERSON. Well, to put it—the United States provided about \$26 million.

Mr. Lowry. \$26 million?

Dr. HENDERSON. Yes out of an overall \$120 million international contributions. Those are substantial contributions.

I think there was no question there was warm, positive support. There were many epidemiologists from the Centers for Disease Control who participated. There was no question but there was a very positive support for the United States effort in this regard.

Just to go back to the figure, it is \$300 million per year the United States continues to save every year.

Mr. Lowry. Right, as the result of eradication of smallpox.

Thank you.

Chairman PATTERSON. The gentleman from Michigan, Mr. Levin.

Mr. LEVIN. Mr. Chairman, my guess is that you want to get on with the next panel. We may have a rollcall.

So let me ask just the briefest of questions, and maybe you can give a brief answer, and we will skip it.

But why do you think the multilateral banks have had relatively weak programs in, say, the health field?

The population field, I think there may be some more evident reasons, though one might not agree with them. But why in the health field?

Dr. HENDERSON. I am not sure I can serve to read the minds of the banks on this. But it is clear, I think, as you know, that they have only recently gotten in the field at all, in population, health, and nutrition.

I think to an economist—and I can understand this I think it is probably harder to understand the return for dollar invested because you have healthier children or you have healthier adults. It is much more intangible. It is less measurable. It is less quantifiable, and I think there is a nervousness about the program for that reason. That is one of the reasons.

The second piece being that of many of these programs not requiring large expenditures unless you are going to build hospitals or build large numbers of capital—invest in large capital projects, and this is really not what is needed.

So that I think it is the size of the project and this being an accustomed area to invest in and difficult to quantify in terms of return.

Mr. LEVIN. Developing rural health delivery systems is expensive, right?

Dr. HENDERSON. Right.

Mr. LEVIN. A lot of the health programs need systems on the ground. Those aren't cheap either.

Dr. HENDERSON. They are not inexpensive, Mr. Levin, but I think many of the costs there are borne by the country, so that, indeed, what is needed in addition for international inputs to this tend to be quite small compared to the overall costs of the project.

If one looks to smallpox, our estimate is that the countries themselves actually bore two-thirds of the cost of the program. One-third came from international investment, and I think in looking at the immunization program, we are looking at figures which may be in that general range globally, differing by different countries depending on resources.

Dr. JOSEPH. I think it is simpler than that. I really do think it is just a difference in development perspectives. It is a difference between "hard sectors" and "soft sectors", a difference between financiers and economists and social sector people.

And I think Mr. Conrow's answers were quite honest. Just as much as most of the people in our business don't often think very directly about the major financing implications of capital intensive projects, people on the other side of the table don't often think, naturally and reflexively, of our side of the table.

Mr. LEVIN. I think maybe the best answer to Mr. Torres' question might be to spend a couple of days in the countryside of El Salvador and to see the dramatically poor health delivery system that they have there, and it is not mainly as a result of the war, though it is affected by it, and then ask what are the consequences for the attitudes of people in the countryside toward the Government.

I was there just for a couple of days, but it didn't take very long to find out how much less a stake people felt in who won or who lost when most of them really had no direct access to a health system.

Well, thank you, Mr. Chairman. Maybe it is time to get on with the other panel.

Chairman PATTERSON. Well, we certainly do want to thank this panel for being here. We may have some questions from members who were not able to be here. If we could submit those to you, we would appreciate your answering them.

Mr LEVIN. Excellent, yes.

Chairman PATTERSON. It is just fantastic. I can't help but note that in the nearly 2 hours since we have started the hearing as Mr. Brennan stated, every 2 seconds a child dies needlessly somewhere in the world. That means nearly 3,500 to 3,600 children have died during the time since we started the hearing.

I think that illustrates the point that we need to get on with solutions to the problem.

Thank you very much, gentlemen. We appreciate it.

Dr JOSEPH. Thank you, Mr. Chairman.

Dr HENDERSON. Thank you, Mr Chairman.

Chairman PATTERSON. Our next panel, and the last panel for today, Dr Robert Wasserstrom and Dr. Robert Lawrence.

Dr. Wasserstrom is a senior associate and project director of the World Resources Institute. He has done extensive work on the subject of agricultural production and malaria resurgence and has some specific suggestions about how the multilateral development banks can work with international health organizations to minimize unintended adverse effects of development projects.

Dr Lawrence, our final witness, is director of the Division of Primary Care at Harvard University. He worked for 2 years in El Salvador and has other extensive experience in less developed countries around the world.

Dr. Lawrence is speaking, in part, on what I consider to be a crucial aspect of health development and of any other development, the protection of human rights of people in developing countries.

Dr. Wasserstrom, if you would proceed, please?

STATEMENT OF DR. ROBERT WASSERSTROM, SENIOR ASSOCIATE AND PROJECT DIRECTOR, WORLD RESOURCES INSTITUTE

Dr. WASSERSTROM. Thank you.

Mr Chairman, my name is Robert Wasserstrom. As you mentioned, I am a senior associate at the World Resources Institute, a research center here in Washington, which specializes in policy issues concerning the environment, population, health and natural resources and their relationship to sustainable economic development.

Before joining WRI I served on the faculty of Columbia University in both the School of Public Health and the School of International Affairs. I appreciate this opportunity to offer my views to the committee and I will try to keep them brief.

By way of introduction, I would like to say that the three multilateral banks with which I am familiar—the World Bank, Asian Development Bank and Inter American Development Bank have made a substantial contribution to improving the health of ordinary people in developing nations.

What the banks have not done particularly well, however, is to understand or mitigate the consequences of their own approach to development. Of primary significance I would like to emphasize two major problems that have arisen as the unwanted byproducts of the so-called Green Revolution: long term chronic exposure to pesticides and the renewed transmission of malaria in many developing countries.