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CHILD SURVIVAL STRATEGIES
FOR PAKISTAN POST-1987

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INTRODUCTION

Child Survival is a term used to dramatize the plight of the children of the world. Child Survival activities are those existing elements of preventive health services that will, if applied appropriately, bring about dramatic change in the survival and development of children.

Tools exist--vaccines and oral rehydration salts are produced in Pakistan.

Knowledge exists--It is known that breastfeeding promotes healthy babies and proper nutrition that helps prevent deaths from infectious diseases.

Why then do almost a half million babies die in Pakistan before their first birthday?

Lack of resources or lack of concern cannot explain this in its entirety. Lack of focus is a more likely answer. The GOP has shown that it can focus and produce results in the Expanded Programme of Immunization. Can a more total focus on the health problems of children and mothers produce the desired reduction in morbidity and mortality?

The report that follows was developed during the period 5 May to 25 May, 1985. The main contacts were with personnel in the USAID Mission, and through meetings with Federal and Provincial health officials, visits to governmental health facilities at all levels, contacts with the medical schools, the Medical Association, and the Pharmaceutical Manufacturers' Association.

The report is organized along lines that are in keeping with the scope of work:

- o Health Status of Children
- o Health Structures and Programs that relate to children
- o Constraints to Improvement
- o USAID Policies
- o Strategies for Child Survival Activities

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I. EXECUTIVE SUMMARY

Child Survival must be an essential element for the overall development of Pakistan. The reported infant mortality rate of 119/1000 live births places the country in a very disadvantaged position. The Government of Pakistan has been able to mount a successful element of child survival, the Expanded Program of Immunization, and recognizes that the other major need for preventing infant death, oral rehydration therapy, is still far from perfect. This success and the recognition of need for improvement make the outlook for major expansion of these two child survival activities feasible in Pakistan.

The strategies outlined in the report build upon the success of the EPI and propose the establishment of a funding mechanism that will allow direct funding from a proposed newly constituted body that functions outside the official health structure, operates under guidelines established by a Presidential Task Force on Child Survival, but has membership from the Ministry of Health to assure that the policies do not interfere with other planned and necessary actions.

The strategies that build upon the success of the EPI are:

- 1) continuation of the EPI with a major emphasis on measles immunization between nine months and one year of age;
- 2) transformation of the existing oral rehydration salts program to a complete oral rehydration therapy program with heavy involvement of the private and traditional sectors (this would be eligible for funding both directly and through the mechanism described above); and
- 3) expansion of the existing surveillance activities of the EPI into an epidemiologic surveillance program for several outcome indicators necessary to plan, monitor and evaluate the Child Survival activities.

Other Child Survival activities that could be funded through the new funding mechanism that is suggested could be such activities as:

- 1) development of health management training for non-physicians;
- 2) restructuring of medical school curricula to place greater emphasis on pediatrics;
- 3) development of continuing education programs in child survival related areas, for the private sector, both physician and traditional healers; and
- 4) developmental programs in nutrition education and maternal health.

The health status of the children and mothers of Pakistan can be dramatically improved. Additional resources will be needed, but more importantly a willingness to change priorities and commit leadership are needed.

II. HEALTH STATUS OF CHILDREN IN PAKISTAN

Pakistan's infant mortality rate is reported to be at least 100 per thousand live births. The World Bank Development Report of 1985 reports:

	Infant Mortality Rate
Pakistan	119
Bangladesh	132
India	93
Sri Lanka	37

The two big preventable killers of children are measles and dehydration due to diarrhea. The Expanded Programme of Immunization against six childhood diseases has been the obviously successful program in the health sector. And yet this program has reached far less than 50% of the susceptible children with measles vaccine, and is even beginning to show a decline in coverage. In Punjab Province where coverage rates had reached 60% in 1984, they fell to under 40% in 1985, coinciding with the incorporation of health workers previously doing only immunization into the basic health services.

There are no morbidity or mortality figures for dehydration due to diarrheal diseases, but one has merely to walk throughout patient clinics to see the extent of the problem. One well-informed estimate is that 1/3 of all infant deaths are diarrhea related.

While all health professionals agree that malnutrition is a major contributor to childhood mortality in Pakistan there is little if any objective data. Since Pakistan has no growth monitoring program and no mechanism to evaluate nutritional status, there is no way to evaluate the extent of the problem. Since food supplies appear to be adequate, childhood malnutrition is likely due to lack of maternal understanding about the nutritional needs for herself and for her child.

There can be no single explanation for these high rates of morbidity and mortality. Pakistan does not suffer from a shortage of physicians:

	Population per Physician
Pakistan	3480
India	3690
Sri Lanka	7170

In actuality, there is a surplus of physicians when compared with available jobs. There is heavy unemployment in the medical profession. The World Bank estimates that the trained staff needed to meet planned requirements will show a 20% surplus of physicians over requirement by 1993 (a surplus of 11,700 physician). Contrasted to this is an anticipated 30% deficit of health technicians (4000). Even more serious are deficits of 37% and 42% of nurses and lady health visitors, respectively.

If relative shortages of physicians are not a primary deterrent to the improvement of the health status of children, what other factors can be identified? The two obvious factors are lack of economic support in the health sector and the generally low social status of women. The seriousness of this latter factor in the area of child survival is evidenced by the cultural mandate that only female health workers can communicate with the mothers and young women who are the key to Healthy Children. The long range solution of many of the health problems that must be addressed in Pakistan will only come about with the education and training of female health workers and mothers.

The problem of resources is best addressed by the following table:

Expenditures on Health
(percent of gross national product)

Pakistan (1980)	0.9
Pakistan (1984)	0.7
India (1978)	1.2
Sri Lanka (1979)	1.7
Bangladesh (1981)	1.0

These figures should speak for themselves.

A final major problem to be overcome is the lack of managerial abilities in the health arenas. This is addressed later.

III. HEALTH STRUCTURE OF PAKISTAN

Some of the difficulties in the delivery of health care in Pakistan can be traced to the structure of the health care system. The present structure has evolved from a series of 5 year health plans, the most recent being the sixth (1983-1987) plan.

The system is a pyramidal structure with the Federal Ministry of Health at the top, the four Provincial Health Departments next, the 69 District Medical Officers next, followed by the Tehsil, then the Rural Health Center (RHC), and finally a Basic Health Unit (BHU), which according to the most recent 5 year plan is to be established in every Union Council, the lowest level of government administration. While this would appear to be a logical system of administration, several operational components of this system make it cumbersome in dealing with the major health problems of Pakistan. To understand the reason for these problems, one needs to examine more closely the details of certain components of this structure, namely:

- o The relationship between the Federal and the various Provincial health departments;
- o The emphasis of curative over preventative services;

- o The organizational structure of the Federal and Provincial Ministries; and
- o The nature of the information which is available to decision makers to support their planning and management efforts.

A. FEDERAL - PROVINCIAL RELATIONSHIP

In Pakistan, the provision of health services is a decentralized function. It is the responsibility of the Provinces to plan and manage the hospitals, health centers and basic health units according to Provincial priorities and development plans. There is little delegation of responsibility to levels below the Province, and may reflect a legitimate concern over the lack of managerial skills at those levels. Provinces are, however, influenced by Federal plans and many Federal programs impact directly on the ability of the Provinces to manage their facilities. Thus, for example, the EPI program which has been managed as a Federal program through the National Institute of Health relies on Provincial facilities for the maintenance of the cold chain and the staffing of the program. The result of this melange of responsibilities is that lines of command and responsibility are often mixed.

A second issue in the relationship between Federal and Provincial Governments is the nature of the funding mechanism. Pakistan collects most of its revenues Federally while it disburses most of its social services Provincially. Accordingly, it must have a mechanism to transfer funds from the central government to the Provinces in an equitable fashion. The method that has developed is a provincial disbursement formula in which population is the heaviest weight. These Annual Development Plan (ADP) monies are then allocated by the Provinces as they see fit consistent with Federally approved plans. A second source of Provincial funds is called non-ADP or recurrent funding and goes to fund the recurrent activities being carried on by the Provinces.

This apparently rational system has one draw back. Because the ADP money is set by a rigid formula, any new money which comes into the system, as for example a targeted AID grant, is diluted throughout the entire ADP budget, with the result that Provinces have difficulty in adding new programs without reducing activities in other areas. As an example, a program which funded a training program in one Province would mean that Province would have less money for its other mandated activities. Accordingly, there is no incentive for Provinces to seek funding for new and innovative projects since it means less funding for their regular program; new funds are generally not additive but rather are simply substitutions for other regular funding. Exceptions have been made to this system on occasion, e.g., certain UNICEF grants are outside the ADP system.

B. CURATIVE VS. PREVENTIVE SERVICES

Pakistan's stated policy in the development of its health program is to balance the provision of curative and preventative services. However, like many countries with this policy, the balance has tipped heavily in favor of curative services. This emphasis on curative services is strongly reflected in the design and construction, and staffing patterns of hospitals, health centers and basic health units which predominately provide curative treatment. Because the construction of these facilities has proceeded at such a rapid pace, it has taken up such a significant portion of all new development funds. There are pressures to continue this into the future.

Because new facilities are staffed by a doctor in every basic health unit, 3 doctors in every health center and at least 5 in every hospital, the cost of maintaining this system prevents any significant funding for new preventive work. The staff at the facility provides services to the patients who come for treatment of illness. Unfortunately, even this curative function is not maximized since many patients do not initially come to the government facilities for treatment. Basic Health Units with a staff of 5 average 5-15 patients/day; Rural Health Centers with a staff of 16 average 40-50 patients/day. A recent survey by the Federal Bureau of Statistics (1985) indicated that only 18% of patients seek medical care in government facilities when they are ill. These underutilized facilities drain resources away from more cost-effective preventive services.

C. ORGANIZATIONAL STRUCTURE

Because of the nature of the health system, the management of health services for all but the largest hospitals is the responsibility of the District Health Officer (DHO) in each district. The DHO has limited authority to make decisions or take necessary actions. As a result, management at the district level is a stumbling block to the provision of adequate health services. DHO's are supposed to manage and ensure the proper functioning of all BHU's, RHC's, and Tehcil hospitals in the district, but have little authority over budget, staffing, siting of facilities, or types of programs which might be available in that district. Furthermore, the District Hospital is run by a medical superintendant (DMS) who has a higher grade than the DHO who reports directly to the Director of Health Services in each Province with the result that there is little coordination between the facilities in each district.

These organizational problems at the district level have their counterparts at the provincial level. Because the DHO has to refer all major decisions to the provincial level, the Director of Health Services for each province (DHS) is overwhelmed by the requirements of that job. Since each DHS has both DHO's and DMS's reporting to him, there are at least 22 line people reporting to the DHS, leaving little time for other than routine work. [In fact, the numbers are

Baluchistan - 22, Sind - 26, NWFP - 26, Punjab - 58.] In addition there is a large number of staff positions also reporting to the DHS with the result that the organizational structure is too flat to accommodate the size of the task at the level of the DHS.

D. INFORMATION SYSTEM

There is no effective information system available to the decision makers at the provincial and national level. With the exception of immunization coverage which has a separate vertical system information is not available on mortality, morbidity, age distribution of patients, types of services provided, or any outreach activities. There is information available on the number of government facilities and crude estimates of the use of health services. This paucity of information makes planning and management of health services difficult.

E. IMPLICATIONS FOR AID PROGRAMS

Given the functional problems of the government health system in Pakistan, it is understandable why child survival statistics are not better. It is unlikely that dramatic changes will occur unless alternative managerial approaches are found in the near future. This poses some special constraints on the design of a Child Survival Program if it is to have any impact at all on the target population.

- o Programs must have very specific targets and methodologies which should not, for the most part, depend totally on the functioning of the health infrastructure. This does not mean that programs should not be run through government facilities; rather that they must be designed in such a way that they will not lose effectiveness by being part of government services.
- o Program goals and objectives must not be overly ambitious. Many problems with the government infrastructure are not amenable to change within the time frame of this program. An accurate assessment of what can be achieved is needed before realistic goals for planning and evaluation of any Child Survival Program can be set.

IV. CONSTRAINTS

Despite the clearly recognized need for improvement in the health status of its population and repeated efforts to mobilize various components of the health structure to improve the situation, the results of these initiatives have, with the exception of the EPI, been disappointing. Few other inroads have been made in the reduction of preventable childhood diseases due to a number of constraints on the ability of donors and the GOP to improve Child Survival. These constraints are listed below.

A. LACK OF COMMITMENT TO THE CHILD SURVIVAL STRATEGIES

While the evidence is overwhelming that the high infant and childhood mortality rates in Pakistan are due to diarrhea and dehydration, acute respiratory infections, and vaccine preventable diseases, the prime emphasis of the government remains the expensive construction and operation of hospitals and curative services. Even the Basic Health Unit, the most peripheral health facility, is staffed by a doctor, medical technicians, and lab technician. Most of the illness seen at a BHU could be adequately treated by a paramedical worker, but because of the need to provide employment for physicians, MD's are used for these tasks. Furthermore, the low emphasis on outreach programs from health facilities and preventive rather than curative activities means that the impact of the health system on Child Survival is minimal.

B. LACK OF TECHNICAL LEADERSHIP

As with any endeavor, public or private, the success of a health program depends on its leadership. Unfortunately, in Pakistan, as in most developing countries, skilled technical leadership is a rare commodity. With only a handful of dedicated, technically competent health managers and with insufficient numbers of future leaders emerging, the prospects for improvement of public health programs are not encouraging. Until changes in the status and pay scales of preventive health physicians improves, this lack of technical leadership will remain a significant constraint to the improvement of Child Survival.

C. ISOLATION OF WOMEN

It is through women that reductions in infant and child mortality can be hastened. It is women who must seek antenatal and perinatal care, who must bring children for immunization and weighing, who must breastfeed their infants and give proper food, who must correctly use ORT. Women must be taught these things so they understand the reasons for these additional demands on their already overburdened lives. In Pakistan this education of women is especially difficult. Culture dictates that women stay at home. Women do not go to market, are not seen or spoken to by male health workers, are mainly illiterate, and do not seek employment as doctors, nurses, or any type of health worker except as traditional midwives. Under these conditions, it is exceedingly difficult to transfer knowledge to those who need it most: the mothers of the 1300 children who die every day in Pakistan.

V. USAID POLICY

USAID has designed a global strategy for Child Survival and designated certain countries as emphasis areas. Pakistan is one. It deserves emphasis with a published infant mortality rate of 119/1000

and a crude birth rate of 40/1000. The elements for priority in child survival programs as set forth by USAID are:

- 1) A strengthening of immunization and oral rehydration therapy programs;
- 2) Support as appropriate for other basic elements of child health activities, especially nutrition (breastfeeding and growth monitoring) and child spacing to allow healthier babies to develop;
- 3) Involvement of the private sector to the greatest possible extent in these activities; and
- 4) Operational research to develop further successful strategies for child survival.

USAID is desirous of reorienting its approach to assistance to the GOP. The policy is to develop a funding mechanism that is outcome rather than process oriented. It would pay on the basis of agreed upon goals (this is not meant to be construed that payment would be upon achievement of goals, but could be on the development of an agreed upon strategy to achieve a specified output). It would deemphasize "intrusion" into methods of doing business, placing USAID in a policy and outcome monitoring role, rather than in a process monitoring role (pay for the cake, not decide upon the recipe). It would minimize direct hire and consultant presence to monitor or operate programs, allowing the GOP to hire consultants if they so desired.

In developing this preliminary design of a Child Survival strategy, these elements have been kept in mind, as has the capacity of the GOP to absorb additional activities.

VI. STRATEGIES FOR CHILD SURVIVAL

In attempting to design a strategy for Child Survival the following approach to activities have been used:

- 1) Fundamental changes;
- 2) Basic skills development;
- 3) High impact programs; and
- 4) Innovative funding for new Child Survival activities.

A. FUNDAMENTAL CHANGES

1. LEADERSHIP

As mentioned earlier a major hinderance to the achievement of goals in child survival in Pakistan is the lack of focus. Not only does there appear to be only isolated enthusiasm in the MOH at this time, there is no person or unit with total responsibility and accountability for Child Survival activities. The closest identifiable unit is the NIH which is responsible for the EPI and ORT programs. Some form of leadership is essential if the USAID is going

to invest heavily in child survival in Pakistan. While committee leadership is not the best managerial technique, some form of collective leadership will probably be necessary.

On a global scale it has been recognized that the desirability of programs for child survival can and have led to competition and have engendered rivalries. The limited resources at the country levels for implementing programs can be strained by the generosity donor agencies and nations. This has led to the creation of a Task Force on Child Survival which has membership at the highest levels (Directors General) from the WHO, UNICEF, UNDP, World Bank and the Rockefeller Foundation. Donor countries participate in the meetings and a small secretariat is maintained through a contract from the Rockefeller Foundation.

If Child Survival is to be given substantive priority by the GOP, some mechanism must be developed to make certain that the activities are not just buried in the total health system with inadequate focus on the activities necessary to reach established goals. The existing system which is fiscally constrained by the rapid expansion of health facilities and staff and integration of programs will have significant difficulty focusing both fiscal and political support on Child Survival.

USAID might want to take the initiative in proposing a Task Force on Child Survival for Pakistan, and agree to fund the secretariat operation. Ideally, this should be a Presidential Task Force. Membership should be at a policy making level, and include non-governmental representation as well as Ministerial level members. Private industry and philanthropy should be represented. Their role would be to approve goals and plans, monitor accomplishments, assure the appropriate distribution of funds, and identify unmet needs. Just as the Global Task Force meetings are attended by governmental and non-governmental donor agencies, so should the National Task Force meetings be attended by international and governmental donors.

2. EPIDEMIOLOGIC SURVEILLANCE

The health status of children in Pakistan is undoubtedly poor. The term undoubtedly is used since there is a paucity of information from which to accurately describe the situation for the country as whole. There is no systematic recording of births or deaths or timely reporting of disease; hospital admissions are reported on an annual basis and are of dubious value; no ongoing sampling or sentinel procedures exist that could be used for estimates of morbidity or mortality. These points are emphasized not for the sake of statistical niceties or to demean the work of the GOP, but because a child survival strategy, to be properly designed, must take into account the patterns of disease and deaths.

Basic to the development of new initiatives is the knowledge of where one is at the present point in time. This is essential not just for the development of program but for the measurement of the outcome. One of the criticisms of health programs the world over is that the evaluation has been based on process, rather than actual change in health status, i.e., the number of people served rather than the amount of disease prevented.

The basic outcome desired in a child survival program is embodied in its title--survival. Yet in a country where the infant mortality rate is largely a guess, it becomes very difficult to document change in a manner that should satisfy those people who support and operate child survival activities.

The USAID policy guidance on child survival quite accurately refers to the twin engines that drive child survival: Immunization and Oral Rehydration. Vigorous implementation of these two activities can drastically alter child survival in a short period of time, and assessment methods that are not dependent upon decennial censuses or complex field surveys are needed for program evaluation.

Examples of outcome measurements that could be used follow:

a) One recently developed technique that should be considered is the method of rapid child survival assessment developed by Brass and McCrae at the Population Research Centre, London School of Hygiene. Women in developing countries have a live birth every two years. A sample of women who have recently delivered a live baby are asked the status (living or dead) of their previous live birth and the one preceding that. Simple subtraction of those previous live births now dead from the total live births will give the under 2 year mortality. This could be done by the EPI when mothers bring children for BCG at six months of age. This would not add to costs, and would be easily tabulated on an ongoing basis by the EPI. The method is described in more detail in the attachments.

b) There is little knowledge of infant feeding practices that may be precursors to malnutrition. Knowledge of whether mothers have started weaning foods or are supplementing breastfeeding with bottle milk could also be obtained at the time of BCG vaccination.

Hospital admissions for dehydration could be an index of effective use of ORT. The use of sentinel hospitals, rural health centers, or basic health units could be methods for rapid assessment.

This emphasizes the need for a simple surveillance system of a limited number of health indicators that can be easily collected with reliability. The EPI currently is the only program that has the semblance of a surveillance system, and consideration could be given to building upon this capability.

Indicators that could be collected and where they might be collected are:

<u>INDICATOR</u>	<u>PLACE OF COLLECTION</u>
% of mothers with 2 TT	At time of BCG vaccination
% of mothers delivered by trained birth attendant	ditto
% of mothers breastfeeding only at 6 months	ditto
% of infant with DPT3P3 at 6 months	ditto
Incidence of measles from OPD record	Sentinel hospital, RHC or BHU
Admissions for severe dehydration	ditto
% deliveries under 2500gm etc.	ditto

B. BASIC SKILLS

1. MANAGERIAL

As part of the scope of work the team has been asked to address the absorptive capacity of the GOP for additional, particularly new and different health programs. The key for absorption would be the managerial competence to direct and execute such programs. The base of providers is large (see section 2). The base of human need in the child survival area is immense. The technical talents for innovation in the governmental services are minimal, but they do exist in the academic and research centers. However, the managerial skills in the health field are practically non-existent. The EPI which has been successful has been directed by a retired General, and the program execution has been logically designed along the lines of a military campaign. The EPI is centered at the National Institute of Health, which while part of the MOH is separate from the day to day preoccupation with facility construction, staffing and operations that subsume MOH attention at the Federal level as well as at the provincial.

A basic managerial problem that is as accentuated in Pakistan as anywhere is the belief of the MOH that physicians can automatically be managers, and the twin belief that nonphysicians can not manage health programs.

If the GOP were to be willing to create a post of Assistant to the District Health Officer for Management and agree to a career ladder for such individuals, USAID should consider funding stipends for post baccalaureate study in health service administration after the GOP or some institution has successfully developed a curriculum. This approach would be in keeping with USAID's performance-based disbursement policy.

While creating such posts would appear to be an additional cost, there are hundreds of sanctioned but unfilled posts throughout the system. Part of this is attributable to the undesirability of the rural postings available, but undoubtedly a major deterrent for a career in the government is the reluctance of physicians to be overburdened by managerial tasks for which they have not been trained.

The Dean of the new Islamic University has said that the University intends to develop a course in health management. This may be an appropriate institution to be involved since it could have the secondary benefit of developing greater cooperation in the two sectors of Islamic life and health.

2. NON-GOVERNMENTAL HEALTH WORKERS

The Federal Bureau of Statistics has published the results of a National Health Survey which indicates that the Governmental health services provide a minority of the health services to the people of Pakistan. The survey ascertained the amount of illness in the population in the preceding month (10% reported being ill), and where they received service for that illness:

Government facility	18%
Private hospital	21%
Private office	29%
Traditional	32%

If there is to be a major improvement in the child health situation in Pakistan, it is obvious that the governmental institutions can not be expected to do it alone. There are some things that only the government can do: anti-malarial spraying. But the private practitioner can treat malaria if he suspects the diagnosis, and knows how to treat it properly. Some immunizations will have to be continued through the government for some time because of the needs for proper refrigeration, but oral rehydration can be prescribed and administered by the private physician.

Are there policy barriers that could be overcome that would involve the private sector in a quality manner?

a) The Pakistan medical system does not place emphasis upon pediatrics as a speciality. The major examinations that are necessary for graduation are in Medicine and Surgery so the specialty areas most important to child survival--Pediatrics and

Obstetrics are not regarded as important by the student. USAID support to establish fellowships in pediatrics could be made contingent upon the medical school developing sufficient curriculum time during the academic years, so that all physicians would have an adequate basis in the skills necessary for Child Survival.

b) Once a physician is licensed there is no requirement for continuing education. Relicensure in many areas is dependant upon attendance in continuing education courses. National medical societies promote such a program and give certificates for the completion of such. If such a requirement could be introduced into Pakistan, courses in those elements of child survival that should be addressed by the private physician could be given.

Both of these policies will be difficult to bring about and there undoubtedly would be severe opposition from the private sector. There are indirect ways, however, that USAID might be able to influence such. A requirement for any type of institutional grant or support to a medical school could be dependant upon offering sufficient hours of training in pediatrics. Any USAID supported training out of country could be made dependant upon the individual having maintained a certain level of continuing education.

C. HIGH IMPACT PROGRAMS

1. EXPANDED PROGRAMME OF IMMUNIZATION - A NATIONAL ACTIVITY

The EPI of Pakistan has achieved international notice for its accomplishments. Based in the National Institutes of Health, outside the formal health delivery structure of the MOH, headed by an excellent physician/manager, and given major support by the Ministries of Finance, Planning and Development and Health it has made major strides since 1983 in immunizing the children of Pakistan.

It has followed the accepted WHO model of operation of a vertical, independent program, with heavy emphasis placed upon training, supervision and assessment. It is the one health activity in Pakistan that has meaningful goals expressed in health outcomes and where reliable data are available for evaluation. While being a decentralized program it has been organized along the political divisions of the country with each province setting its own targets. However, the National program has assigned to each province a program manager responsible to the National Director.

The following highlights accomplishments, and deficiencies in coverage that were taken from the last annual report (it should be noted that the report is complete through the end of calendar 1985 and that the NIH has current monthly figures for each province!).

IMMUNIZATION COVERAGE BY PROVINCE - CHILDREN 12-23 MOS.

Province	1981	1984	1985
Punjab	3.3%	88.8%	79.5%
Sind	1.7	27.0	38.6
Baluchistan	0.9	7.9	8.1
NWFP	6.2	49.1	79.7
AJK	NA	56.8	69.1
Pakistan	3.1	64.0	65.7

While these figures appear to represent major accomplishment, which they do, there are weaknesses in them. These figures are for children over the age of one, while measles vaccine should be given prior to age one for greatest impact. The National EPI leadership has recognized this and also looks at coverage under one year of age:

Province	1981	1984	1985
Punjab	2.4%	50.2%	28.9%
Sind	1.8	13.0	16.9
Baluchistan	0.9	3.7	3.5
NWFP	3.8	18.9	26.9
AJK	NA	33.0	22.4
Pakistan	2.3	34.5	23.2

The lower levels of complete coverage are almost entirely attributable to non-vaccination for measles, the greatest killer. The other disturbing aspect of the figures is the significant fall off in coverage in the Punjab, which had previously been the leader in the country. This is mainly attributable to the conversion of the vertical program for EPI into an integrated health service. No longer is the vaccination team responsible to the EPI, but to the basic health unit. While this on the surface may seem to be a logical management function, the weakness of supervision at the basic health service level is detracting from the effectiveness of the EPI. If this trend continues in Punjab, reconsideration of the decision to integrate the EPI into Basic Health Services should be seriously questioned. To sacrifice the gains made to date, when so much needs to be done, for the sake of an administrative principle could doom the ultimate success of this key element in child survival.

There is an attempt underway to make certain that vaccines are available and used in all government health facilities. This is commendable and will add additional opportunities to immunize children; the more opportunities the better. However, without supervision of these facilities and the active support of the physicians assigned to them, the effort will be nonproductive.

Essential to the success of the EPI is the cold chain. Personnel in the rural areas understand this and records were maintained. In the non-governmental hospitals in the municipalities however, there were no thermometers in the refrigerators, so there can be no assurance that vaccine potency is acceptable.

This latter area, cold chain, will be the greatest deterrent for incorporation of immunization into the private sector. The cost of providing refrigeration to all medical practitioners would be astronomical, and in any case no quality control could be assured. An attempt by the EPI program to recruit private physicians into the program and even provide free vaccines was resisted by the medical profession due to the government's insistence on minimal quality control on vaccine potency, i.e., inspection of refrigeration. The primary responsibility for immunization must remain with the government's EPI.

While the EPI has focused mainly on the immunization of children, the immunization of women with Tetanus Toxoid to prevent neonatal tetanus may have a significant impact on infant mortality. Although tetanus immunization of women in the child bearing age is carried out, coverage rates are low and unacceptably high levels of neonatal tetanus continue. One senior provincial health official feared that any further public action, such as mass campaigns, would be construed as attempts at birth control, and would therefore be unacceptable. This is an area that should be investigated.

Another recommendation is for a massive one day measles immunization program. While this is not part of the post-1987 Child Survival strategy, it should be given urgent attention at the present time. Measles vaccination is lagging, due to the late introduction into the system. Even in the best areas coverage is too low, and the trends are not encouraging. A campaign which would utilize the excellent managerial structure that exists to administer the vaccine, coupled with an intensive media campaign, utilizing political, religious and medical leadership could wipe out the backlog in one day. This is ambitious, but would serve not only to increase measles coverage, but to be a motivating force for health workers and the government to launch into the more complicated yet essential ORT program that follows.

Post-1987 will be a crucial period for the concept of the EPI. The global program will be ten years old, there still will be unimmunized children, and those who remember the eradication of small pox may wonder why the same has not occurred with measles and polio. Politicians who have supported the program will lose interest and budgetary support will become even more difficult.

If the above holds true for Pakistan where the job is less than 50% complete, the great danger could be the dismantling of the National EPI program and allowing the Basic Health Services to provide immunization to users of their services. With only about 20% of the population using GOP facilities, the impact on immunization levels could be catastrophic. Add to this the complicating factor

that the Director of the EPI is 64 and there is no replacement in sight, the difficulties increase.

As mentioned above, EPI is not amenable for incorporation into the private sector for technical reasons (refrigeration and the quality control monitoring of such refrigerators in use).

What are the technical alternatives?

- a) Maintain the present vertical program, functioning from the NIH, responsible for management of the program including procurement, logistics, training, supervision, program evaluation and vaccination.
- b) Encourage widespread availability of vaccine in all government operated health facilities and maintain a National EPI to establish the epidemiologic surveillance program described in an earlier strategy, manage procurement, logistics, etc., but only provide vaccination when it becomes obvious that the other resources are not immunizing adequate levels of children. In this option the epidemiologic surveillance could be expanded to include indicators of other Child Survival outcomes (dehydration, IMR, nutritional status, etc.). This option would call for the institutional strengthening of the NIH, perhaps making it a central focus for all preventable disease programs (it currently is responsible for the ORT and has a nutrition cell). If this were done, prime attention should be paid to the development of much strengthened public and community health education programs.
- c) A third option would be to allow the National EPI program to be folded into the Basic Health Services and have periodic mass campaigns to attempt to maintain some level of immunization in the childhood population. This option would be reactive rather than proactive and would have to accept excess mortality and morbidity.

The second option offers the greatest hope of long term protection of children and USAID should promote this concept.

2. ORT

While good epidemiological information on the prevalence and mortality associated with diarrheal disease is not available, what data there are indicate that diarrheal disease is the single largest cause of death in the childhood population with estimates of 30-40% diarrheal associated mortality in the under 2 age group. Thus, there is strong justification for a concerted effort to reduce the diarrheal associated mortality through the use of Oral Rehydration Therapy. While ORT has been a component of the Accelerated Health Program of the GOP administered through the National Institute of Health (NIH), it would appear that the proper use of ORT is widely accepted. There remains, therefore, a lot of work to be done before

the ORT program will make significant inroads in the high Infant Mortality Rate in Pakistan.

The Diarrheal Control Program in Pakistan began in 1982 with a national 3-year plan administered by NIH. This plan included production of ORS by the NIH, distribution through government outlets, training of health workers in both the use and promotion of ORT and some media publicity through radio, television and newspapers. A second plan was begun in 1985 and has been augmented by the Accelerated Health Program which began in 1983 and continues through the present. While this program has been very effective in the production and distribution of ORS to all government health facilities, its impact on the attitudes and practices of both health workers and mothers has been much less dramatic. Indeed, it would appear that most ORS which is used is obtained through commercial outlets with little attention paid to training mothers in the correct use. As a result, while a significant number of mothers have at least tried ORS, few know how to use it correctly.

There are a number of reasons why the success of the CDD program has been limited:

- a) Lack of program manager. There is no one in Pakistan with the responsibility of making sure that the ORT program is a success and of making key decisions about the way ORT is to be used, distributed, and promoted. Until a full time program manager is named there is little hope that the problems cited above will be resolved.
- b) Lack of clear case management strategy. There is considerable confusion in Pakistan about the way ORS is to be used. Staff in the BSU's and RHC's do not know whether to teach mothers to use home-mix, whether mothers should be given packets of ORS to take home for future use, and whether they should promote the purchase of ORS through commercial outlets. The prevailing opinion seems to be that mothers must bring their children to the health facility for treatment with ORS. In addition, it is not clear that a concerted effort to use ORS at health facilities has taken place. Many children still receive parenteral fluids unnecessarily.
- c) Lack of strategy to promote "effective use." There is little information available to either health workers or mothers about how to use ORS correctly. Packets are available in 3 different sizes (1 l., 500 ml., 250 ml.) and do not contain complete instructions about mixing and use. There is little effort to teach mothers when to use ORS and how much to give, and even government officials are divided on these questions. Accordingly, few mothers appear to be using ORS correctly.
- d) Lack of effort to incorporate better feeding practices into the ORT program. While an ORT program must emphasize the importance of feeding and nutrition to the child with diarrheal disease, little emphasis has been given to this aspect of the

program, with the result that some policy makers and health staff alike see ORS packets alone as the answer to the diarrheal disease problem.

e) Lack of village based distribution and training system. The ORT program focuses on the distribution of ORS packets to the BHU level. However, these BHU's are vastly underutilized so in general children with diarrhea never reach the health facility. For an ORT program to be successful, some well informed and trained village-based outlet must be available to mothers of children with diarrheal disease. Some efforts are now underway to include the village Dai's or midwives into the ORT training program and these efforts should be expanded. The inclusion of multiple village based outlets and sources of advice, both public and private is required.

f) Lack of support by private practitioners. The private doctors (both qualified and unqualified) represent a very significant outlet for the distribution of health services in Pakistan, particularly in urban areas. However, these practitioners, supported by drug manufacturing representatives and local pharmacists promote the use of a myriad of commercially available antidiarrheals, many of which contain antibiotics, anti-spasmodics, and other ingredients inappropriate for pediatric use. Because these proprietary drugs are very profitable for doctors, pharmacies, and drug companies alike, the use of ORT is not promoted.

Given the scope of the problems of the ORT program, it is remarkable that ORS use has expanded as much as it has. It does appear that the availability of ORS in health facilities and in many commercial outlets is good, and that at least some mothers in most villages have heard of, and even tried, ORS. This, however, does not mean it has been used appropriately.

Because of the very significant institutional problems in the ORT program as it now stands, it is recommended that USAID adopt a very targeted support to the ORT component of the Child Survival Program. Rather than supporting the current program with its various weak points, a number of very specific interventions should be planned which support but do not totally rely on the government infrastructure for success. In addition, USAID might wish to work with the GOP for selected policy decisions linked to ORT which are necessary for a successful government program. These policy changes might, for example, be linked to other cash disbursements through a "performance-based disbursement" program. Specific recommendations for the ORT component of the Child Survival Program include:

a) Policy changes including the appointment of a program manager, decisions on the case management and distribution strategy, increased use of the private sector for production and distribution of ORS and the use of village-based distribution outlets.

b) Promote high level political and religious interest and leadership in ORT that matches that shown for immunization.

c) Support of a wide network of non-government health workers including the private physicians, the Hakims, or traditional healers, the Pirs, and other religious leaders, the trained Allopaths situated in the villages, and the Dai's or traditional birth attendants. This could be done through a variety of mechanisms including the introduction of ORT into the curriculum of training for these various health workers, and retraining programs sponsored through the Hakim's Association, the Pakistan Medical Association, the Dai training program, and government institutions. Another mechanism available to promote the use of ORS through these workers is the introduction of specific incentives for them to use ORS. This might include support of the sale of ORS packets by these practitioners, or support for the distribution of certificates and attractive widely recognized plaques for posting outside of their houses coupled with an advertising campaign to use the providers who have been trained and now use ORT.

d) After the aforementioned training, support of a broadly based publicity and social marketing campaign for the promotion of ORT use. This might include technical assistance to the government in the design of promotional material and selection of media for marketing, production and distribution of films, pamphlets, and other materials promoting ORT through existing commercial facilities, market surveys such as the one currently underway for the targeting of user groups, and the supply of balloons, t-shirts, toys, etc. which display a logo of the ORT program.

e) Support of brightly colored plastic 1 litre containers imprinted with the ORT logo and graphic mixing instructions. These containers could be widely distributed to rural areas either through subsidized sales, or promotional campaigns which give free containers to any mother who can demonstrate how and when to use ORT. While it is anticipated that these containers will be used for many things other than ORS, they will serve as a reminder to mothers to use ORT when a child has diarrhea.

f) Support of the pharmaceutical industry's promotion of ORS. This is the 25th anniversary of the Pakistan Pharmaceutical Association and the president is planning a public relations campaign to improve the image of the industry. He was quite receptive to the idea that ORS should be promoted as the first line of treatment before the use of other drugs using both promotional literature and manufacturers' representatives to provide the message. This strategy of using the pharmaceutical industry despite reservations about the use of proprietary preparations offers one of the few mechanisms for promoting ORS to the urban population who rely heavily on recommendations by pharmacist for choice of treatment.

g) Support of Provincial plans to promote and distribute ORS. Since ORS will be promoted through the health infrastructure, it is important that all health facilities are giving the same message to the population as the media. Accordingly, support of the Provincial Health Ministries through the mechanism described in the next section to develop messages plans and implementation procedures for the ORT program will help to promote consistency among the various sectors involved in the ORT program.

D. INNOVATIVE FUNDING

USAID is desirous of reorienting its approach to assistance to the GOP. The policy is to develop a funding mechanism that is outcome oriented, not process oriented. It would pay on the basis of achievable and mutually agreed upon goals. It would deemphasize "intrusion" into methods of doing business, placing USAID in a policy establishing and policy monitoring role, rather than in a process monitoring role. It would minimize direct hire and consultant presence to monitor or operate programs, allowing the GOP to hire consultants if they so desired.

In the area of child survival outcomes are less easy to define than in some areas, and isolating the reasons for change is even more difficult. If the elements of child survival are compared with the actions necessary to improve outcomes, this becomes apparent. Those activities that require a direct action by a provider of service can easily be quantified, goals and targets set and progress monitored. Immunizations are an example of this. Control of diarrheal disease, improved outcomes of pregnancy, improved maternal and infant nutrition are much more dependant upon motivating the family to take the initiative after receiving information. Since there are multiple sources of information and direction for these areas, not only is there need for family education, but broad based education of health care providers is essential, before the family is motivated to ask for something that the provider does not understand or believe in.

Past development programs have established certain realities that have to be dealt with.

- o The GOP has devoted large portions of its health budget to capital construction, which in turn makes continuing demands for staff and maintenance.
- o The policy of the government has been to encourage medical education to the point where the country is an exporter of physicians.
- o There is licensure of physicians, but no relicensure (a deterrent to incorporating continuing education into medical care).

- o The medical examination for graduation requires proficiency in only medicine and surgery, not pediatrics and obstetrics, the areas most concerned with child survival.
- o Pakistan has not adopted the WHO essential drug list, and multiple drugs are on sale and in demand. The populace equate health care with the dispensing of drugs.

Because of the decentralized nature of the health system in Pakistan, the provinces are the implementing arm of almost any government health program including the proposed Child Survival Program. Accordingly, the greatest impact on the government health infrastructure can be made by working directly through the provincial systems as illustrated by the following examples:

- o The Provincial Directors of Health Services (DHS) are much closer to the programs being implemented than their Federal counterparts, and accordingly may have a much better understanding of what the weakest elements of the system are and what changes will be most effective.
- o Since the provincial DHS will be the implementers of many of the programs being supported, their cooperation will be required. Including the provincial staff in the initial planning and decision making process will promote their enthusiasm for any Child Survival initiatives which are undertaken, particularly since the recognition of provincial authority by donor agencies is somewhat novel but very much appreciated by the provincial bureaucracy.
- o By working directly through the provincial authorities, the significant dilution of funding levels as they pass through the Federal bureaucracy is avoided and the AID funded Child Survival Program will go a lot further in the range of activities which it will support. One province estimated that for every dollar put through the federal system, only 25 cents actually goes to the provinces.

How can external assistance begin to bring about the fundamental changes that will be necessary for long term improvement in child survival without developing additional vertical programs of the EPI and malaria model? How can this be done and support the overall AID policies enumerated above?

More importantly, is it possible to use the traditional funding mechanism of grants/loans to the Federal government to allow for the development of new and innovative programs in the Provinces and medical institutions? Can a pass-through mechanism be developed that will not involve USAID in direct funding of multiple projects that are necessary to find the best ways of improving child survival? Most important, can such a mechanism be developed without weakening the established MOH role?

As such a mechanism, USAID should explore the development of a national (in contrast to Federal government) program that would make grants to Provinces and medical institutions outside of the ADP budget. A model that could be considered would be the establishment of a central review and approval body, made up of representatives from the Federal government, the various provinces, medical schools and donor agencies that would consider proposals made to it from the Provinces, medical schools, associations or voluntary organizations, for programs that would improve an element of child survival. USAID could make a planning grant to establish such a secretariat and then provide more major funding on the basis of this body's developing the terms and conditions for the award of grants, establishing goals and objectives for the grants, and a manual of operations that will clearly spell out that the grants are to be considered on their merit and potential for improving child survival. Once this is done major funding could be provided to the granting body, which would then assume the responsibility for the monitoring of the projects.

Examples of the areas that might be funded through this mechanism follow:

1. HEALTH EDUCATION

Health programs will only be successful when the target population understands why the program is being promoted. This is particularly true for ORT, nutrition, and FP programs where parents' beliefs and behaviors must change to have any significant impact on child survival. Local efforts to promote the various components of child survival could be supported. This would have the advantage of more region-appropriate messages, and would develop skills and the feeling of accomplishment at the provincial level, in contrast to reliance on the Federal efforts. A second aspect of this is that if done locally, there will be more involvement by key decision makers in the provincial planning, finance, and education divisions to understand the rationale for the Child Survival Program and support it through a commitment of funding and policy changes. Support could be given for designing messages in selected media, and funding support for production through locally available outlets such as advertising firms, film makers, and printers. Support and technical assistance for design and production of primary school readers which incorporate messages and stories about components of the Child Survival Program would assist in a longer range problem--educating women about their own health.

2. TRAINING OF HEALTH PERSONNEL

The basic training of the health personnel for rural health work has not been adequate to prepare them for the work which is required of them. This is especially true for physician education which is oriented toward the care of urban populations. Improvement of the basic training and the retraining of those who are already working in the field is essential to improving the rural health services.

Grants could be made to institutions or provincial governments to develop retraining programs to more nearly meet the needs of the rural areas.

3. PROMOTION OF CHILD SURVIVAL ACTIVITIES

The Child Survival Program must be afforded a much higher profile in the provinces to promote enthusiasm and cooperation of the health staff. Grants could be made for the promotion of child survival activities through the sponsoring of conferences and workshops for the health staff who are often working under difficult conditions and are not at present enthusiastic about preventive interventions for child survival.

4. MANAGEMENT IMPROVEMENTS

Essential to implementing programs is basic information. Frequently health authorities are reluctant to undertake needed management information systems for fear that this will commit them to development of large scale computer activities. They forget that frequently minor modification in basic records will provide useful information in areas where they now have none. Technical assistance provided by local consulting firms could be paid for by grants for the reform of the record system by improvements in design of forms and registers, processing procedures, and funding of forms production. Interest in the use of microcomputers at the DHS level was expressed, which should be pursued to evaluate whether appropriate at this point in time.

VII. SUMMARY

The health status of the children and mothers of Pakistan can be dramatically improved. Additional resources will be needed, but more importantly a willingness to change priorities and commit leadership are needed. If the GOP is willing to innovate, as indicated by the statements of the Minister of Planning and Development, the opportunities for a major effort in Child Survival are great because of the need, but difficult because although many of the basic resources of staff and facilities are in place, leadership, training and motivation are the elements that are needed. Staff and facilities can be developed with financing; the other elements take commitment of ideas and political leadership, which cannot be bought.