PD-ABC-966

ACTION MEMORANDUM FOR THE DIRECTOR

DATE: October 23, 1990

FROM: Edgar Necochea, HPN

THRU: Charles J. Mantione, Chief, HR

SUBJECT: USAID/Peru Child Survival Strategy

PROBLEM: The attached USAID/Peru Child Survival Strategy requires your approval.

DISCUSSION: The attached Strategy has been prepared and reviewed by staff of the Health, Population and Nutrition Division of the USAID Mission in Peru, as well as by Carol Dabbs of LAC/DR/HPN. When approved, the Strategy will be sent to A.I.D./W for their information.

RECOMMENDATION: That you approve the USAID/Peru Child Survival Strategy by signing below.

Approved: _____ Disapproved: _____

Date: October 27, 1990 Date: _____

TRANSMITTAL NOTE

USAID/PERU CHILD SURVIVAL STRATEGY

Though rich in many resources, Peru is losing its most precious resource--its infants and children--at an alarming and unacceptable rate. The high infant and child mortality rates were a major reason A.I.D. designated Peru as one of six Latin American and Caribbean countries whose Child Survival programs receive special emphasis.

The attached document describes USAID/Peru's overall strategy to enhance child survival in Peru. The thrust of the strategy is to help the Government of Peru in its efforts to reduce infant and child mortality, principally through the development of institutional capacity in both the public and private sectors to deliver the appropriate health services. In both the strategy design as well as the specific disease interventions, the strategy focuses on long-term, preventive health measures and short-term, curative interventions that are cost-effective, technologically appropriate and sustainable. The strategy includes all activities funded through bilateral sources, as well as those funded through AID's centrally-administered projects and implemented by cooperating agencies.

Child survival activities are an important and integrated component of USAID/Peru's overall development strategy for Peru; the children saved by these activities are literally the future of the country. In addition, child survival activities complement and contribute to objectives in population and sanitation projects. These activities involve numerous Peruvian PVOs and cooperating agencies, as well as GOP agencies and the commercial sector. The child survival program is national in scope and will benefit all Peruvians.

Comments are welcome.

USAID/PERU
CHILD SURVIVAL STRATEGY
October 1990

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EXECUTIVE SUMMARY

A.I.D. has designated Peru as one of six Latin American and Caribbean countries to receive special emphasis in Child Survival programs. Infants and children in Peru are suffering from many of the effects of socio-economic and political chaos, including high rates of illiteracy, poverty, hunger, illness and death. Terrorism and drug trafficking have compounded the problem. Overall, these factors have helped produce some of the highest infant and child mortality rates in South America. However, even these high indicators disguise great variations according to geography and education: the infant mortality rate (IMR), for example, is almost twice as high as Colombia's and almost four times higher than Chile's, and ranges from 34 per 1,000 live birth in Lima to 110 in the Sierra, and from 22 among women with post-high school education to 124 among women with no formal education. Similarly, children under age five account for 35% of all reported deaths in Peru, two-thirds of which occur before the age of one. Thus the crude death rate, though about 8 per thousand for the total population, is about 112 per thousand under the age of five. Many of these deaths among infants and children could be prevented using effective, low-cost interventions.

This strategy is USAID/Peru's five-year plan to help the country develop and sustain the institutional capacity in both public and private sectors to reduce infant and child mortality. It has been developed with the help of the Government of Peru (GOP) and other groups interested in child survival. The strategy focuses on long-term, preventive health measures as well as on short-term, curative interventions that are cost-effective, technologically appropriate and sustainable.

Several principles have guided the development of the strategy and will also serve as integral components of the Child Survival projects: institutional strengthening, increased private sector participation, targeted, data-based interventions, integrated health communications and education, and emphasis on gender considerations. Child survival programs will be developed and implemented both centrally and at more local levels in both private and public sector organizations, supporting the decentralized strategy of the GOP. Analysis of institutions and sectors will be used both to focus the strengthening of public institutions and to select interventions for high-risk groups and geographic areas. More private sector participation will also be promoted to better harness the dynamism inherent in this sector.

An integrated system of disease reporting for Peru will be implemented to provide accurate information for data-based program and policy decisions. This system will include the creation of a national body of trained epidemiologists and disease surveillance staff, a reliable epidemiologic disease surveillance system, the capacity to investigate disease outbreaks, necessary laboratory and other confirmatory facilities, and the integration of existing information and surveillance programs within the MOH. Key elements in this effort are the technical expertise provided by the Peruvian Field Epidemiology Training Program, laboratory strengthening activities, and disease and health information surveillance support from the Health Information System/Management Information System (HIS/MIS).

In addition, the strategy integrates health education with other components to ensure that interventions are sensitive to cultural and gender differences. Finally, successful implementation of the strategy will depend on continual coordination with government personnel as well as with others interested in child survival issues.

USAID/Peru's child survival strategy concentrates on the five primary causes of death in infants and children under five. The strategy recommends specific interventions in the area of acute respiratory infections, diarrheal diseases, vaccine-preventable diseases, malnutrition, and family planning and maternal health. These interventions, described below, coincide with existing Ministry of Health programs and together address the cause of over 70% of deaths in children. As mentioned previously, the strategy chooses relatively low-cost, quick-acting interventions with a high-impact, including both prevention and treatment activities.

Acute respiratory infections (ARI) are the leading cause of death in children under five and will receive priority attention from USAID. Intervention will include ARI prevention through measles and DPT immunization and improved nutrition, and the support of ARI treatment through home support measures and antibiotic therapy.

Another central focus of the strategy will be to strengthen institutional capacity to treat diarrhea effectively, including the use of ORT, common household liquids and continued feeding. Related activities are the promotion of better hygiene, increased access to water and sanitation facilities, sound infant and child nutritional practices and the production of an accessible and safe supply of locally-produced ORS.

Vaccine-preventable diseases are another significant cause of deaths among infants in Peru. Priorities in the area include increasing nationwide coverage levels for measles, tuberculosis, diphtheria, pertussis, tetanus and polio, as well as the use of hepatitis B vaccine in hyperendemic areas of the country.

Malnutrition is also a serious concern for child survival. Priorities in this area include improving the impact of USAID food programs and coordinating them with health, population and other development assistance efforts. Programs to promote breastfeeding and nutritious weaning foods will also receive priority attention.

Family planning and maternal health is a fifth component of the strategy designed to reduce both maternal and infant mortality. A central focus of efforts will be greater access to family planning services. Other important elements to reduce deaths due to poor peri-natal care, high parity and short spacing of births include more prenatal care, referral of high-risk births, promotion of breastfeeding and other maternal health activities.

LIST OF ABBREVIATIONS AND ACRONYMS

ADRA/OFASA	Adventist Development and Relief Agency (Obra Filantrópica y Asistencia Social Adventista)
AID/W	AID/Washington
ARI	Acute Respiratory Infection
BCG	Tuberculosis Immunization
CARE	Cooperative for American Relief Everywhere (Cooperativa Americana de Remesas al Exterior)
CRS/Caritas del Perú	Catholic Relief Services/CARITAS del Perú
CDC	Centers for Disease Control
CDSS	Country Development Strategy Statement
CORDES	Departmental Development Corporations (Corporaciones Departamentales de Desarrollo)
CS	Child Survival
DA	Development Assistance
DDC	Diarrheal Disease Control
DHS	Demographic and Health Surveys Project
DMD	Dietary Management of Diarrhea Project
DPT	Diphtheria, Pertussis and Tetanus Immunization
ENAF	National Nutrition and Fertility Survey, 1978 (Encuesta Nacional de Alimentacion y Fecundidad)
ENDES	1986 National Demographic and Family Health Survey (Encuesta Nacional Demográfica y de Salud Familiar)
ENNSA	1984 National Nutritional and Health Survey (Encuesta Nacional de Nutrición y Salud)
EPI	Expanded Program of Immunizations (El Programa Ampliado de Inmunización)
FFD	Food for Development
FETP	Field Epidemiological Training Program
FP	Family Planning
GOP	Government of Peru
GTZ	German Technical Assistance Agency
HEALTHCOM	Health Communications Project of the Academy for Educational Development
HIS	Health Information System
IBRD	The World Bank (International Bank for Reconstruction and Development)
IDB	InterAmerican Development Bank
IIN	Nutrition Research Institute (Instituto de Investigación Nutricional)
INP	National Planning Institute (Instituto Nacional de Planificación)
IPSS	Peruvian Institute of Social Security (Instituto Peruano de Seguridad Social)
JHU	Johns Hopkins University
JHPIEGO	Johns Hopkins University Project of International Education in Gynecology and Obstetrics
LBW	Low Birth Weight
LUSA	United Laboratories, South America (Laboratorios Unidos, América del Sur)

MCH	Maternal and Child Health
MOA	Ministry of Agriculture
MOE	Ministry of Education
MOH	Ministry of Health
NUTRICOM	Nutrition Communications Project of the Academy for Educational Development
NGO	Non-Governmental Organization
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
ORU	Oral Rehydration Units
PAHO (OPS)	Pan American Health Organization (Organización Panamericana de Salud)
PAIT	Temporary Work Program (Programa de Apoyo al Ingreso Temporal)
PCS	Population Communications Services, Project of the Johns Hopkins University
PHC	Primary Health Care
PL 480	U.S. Humanitarian Food Assistance Program
PRICOR	Primary Care Operations Research, Project of University Research Corp.
PRISMA	Projects in Informatics, Health, Medicine and Agriculture (Proyectos de Informática, Salud, Medicina y Agricultura)
PVO	Private Voluntary Organization
SENAPA	National Service for Potable Water and Sewage Systems (Servicio Nacional de Agua Potable)
SEPAS	Peruvian Evangelical Service for Social Action (Servicio Evangélico Peruano de Acción Social)
SIID	Seton Institute for International Development
SPF	Pathfinder Fund Private Sector Family Planning Project (Sector Privado Planificacion Familiar de Pathfinder)
TA	Technical Assistance
TB	Tuberculosis
TBA	Traditional Birth Attendant
UDES	Regional Health Department (Unidad Departamental de Salud)
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UPCH	Cayetano Heredia University of Peru (Universidad Peruana Cayetano Heredia)
USAID/Peru	AID Mission in Peru
VEA	Active Epidemiological Surveillance (Vigilancia Epidemiólogica Activa)
WHO	World Health Organization

I. INTRODUCTION

In 1986, A.I.D. designated Peru as one of six special emphasis countries in South and Central America because of its high rates of infant and child mortality. USAID/Peru's programs in Child Survival comprise a major portion of its health assistance to Peru; they focus on long-term preventive health measures, such as immunizations, and on short-term treatment interventions, such as antibiotic therapy for ARI. The specific child survival interventions designed for Peru address the most significant problems as determined by mortality and morbidity data: acute respiratory infections, diarrheal diseases, vaccine-preventable diseases, malnutrition and family planning.

II. OVERVIEW: CHILD SURVIVAL IN PERU

A. Country Setting

1. Socio-economic and Political Conditions

Peruvian families currently face socio-economic problems that make it hard to provide their children with adequate food, housing, education and health services. In addition, the groups and institutions trying to protect these children from disease must deal with the pressures of urban migration and rapid population growth, terrorism and drug trafficking. As a result these children, who will determine the future of the country, must live amid high levels of poverty, malnutrition and illiteracy that leave them more susceptible to the effects of disease.

The country's population of 21 million people is young and growing fast. Approximately 40 percent of Peruvians are under 15 years of age. The national total fertility rate is 4.1 births per woman, while the growth rate of about 2.1 percent adds nearly 450,000 people to the population each year. This population depends on a relatively small number of economically-productive adults.

Urban migration has transformed Peru from an agricultural society into one that is primarily urban, and concentrated along the coast. Urban areas are growing twice as fast as rural areas, and now contain two of every three Peruvians. One-third of the total population is concentrated in the Lima and Callao metropolitan area. An increasingly large proportion of Lima's more than seven million residents lives in squatter settlements and slums known as "pueblos jovenes," inhabited primarily by young families and adolescents. Urban migration has put tremendous strain on urban services, particularly increasing the unmet demand for health services, while leaving the 4,000 campesino or rural communities even more depleted of human and economic resources, and relatively lacking in social or economic progress.

Peru is the fourth largest country in size in Latin America. Formidable geographic barriers--deserts, mountains and tropical jungles--restrict both the amount of arable land and access to rural areas. This geography has kept the large indigenous population relatively unassimilated. The geography, in combination with poor transportation, communications and logistical systems, also presents a major obstacle to the delivery of health, social and education services, particularly in the poor rural areas of the central and southern Sierra. In these areas, terrorist activities constitute an additional threat. Not surprisingly, regional development has

been grossly unequal, especially in the distribution of schools and public services such as potable water, sewage systems, health facilities and health personnel. Health status indices, especially for children, reflect these distribution patterns. Government and development agencies face the dilemma of concentrating their efforts in the urban areas where they can reach the largest number of people or promoting more costly and time-consuming rural development.

Institutional response to child survival issues has often been poor and hampered by economic and political instability. The economy has eroded steadily following controversial government fiscal and monetary policies. The resultant hyperinflation and declining per capita income have made effective action difficult in the private sector. The public sector suffers from bureaucratic inertia, political turbulence and the continual turnover of the few trained technical staff it has retained.

2. Infant and Child Mortality

Peru has some of the worst health indicators for child survival in Latin America. The available data indicates that 35% of all reported deaths in Peru involve children under age five--approximately 71% of these deaths are caused by five problems: acute respiratory infections, perinatal problems, intestinal infections, vaccine-preventable diseases, and malnutrition. Fully two-thirds of deaths under the age of five occur before the age of one. The infant mortality rate (IMR), although it has dropped from 97 deaths per 1,000 live births (1972-1977) to 76 per 1,000 (1981-1986), is still among the highest in Latin America. Infant mortality rates also vary greatly by socioeconomic status, educational level and geographic region; they range from 34 deaths per 1,000 live births in metropolitan Lima to 110 in the Sierra and from 22 among women with post-high school education to 124 among women with no formal education.

The principal causes of mortality in Peruvian children under 5 years of age are presented in Table 1. This table is based on reported mortality statistics from 1985 (the last year for which statistics are available), provided by the Technical Directorate for Informatics and Statistics through the Technical Directorate of Epidemiology, Epidemiologic Surveillance Division, Ministry of Health/Peru. The various causes of death are based on the specific International Classification of Diseases (ICD) Codes. However, all data must be qualified by the fact that Peru's health information and epidemiological surveillance system is grossly inadequate for the collection and analysis of accurate data; it uses misdiagnosed or unconfirmed causes of death and therefore produces wrong or underreported mortality and morbidity statistics. Consequently, reliable reporting of disease patterns is difficult to obtain.

TABLE 1

PERCENTAGE OF REPORTED DEATHS BY CAUSE
PERU: 1985

CAUSE	ALL AGES	UNDER 1	1 - 4	UNDER 5
ACUTE RESPIRATORY INFECTION	17.0	24.6	27.8	25.7
PERINATAL PROBLEMS	7.1	31.0	0.0	20.4
INTESTINAL INFECTIONS	6.3	11.7	15.6	13.1
VACCINE PREVENTABLE DISEASES	7.1	2.7	13.1	6.3
MALNUTRITION	2.9	4.1	8.0	5.5
INJURIES	6.8	.8	5.3	2.4
CARDIOVASCULAR DISEASE	14.0	1.8	0.6	1.3
CANCERS	9.4	0.1	0.7	0.3
OTHER CAUSES	29.3	23.1	29.0	25.1
TOTAL	100.0	100.0	100.0	100.0
Total Number of Deaths	89,897	20,502	10,715	31,217

Approximately 40% of infant deaths occur in the first month of life and 75% in the first six months. Infants are particularly susceptible to respiratory and gastrointestinal infections. Poor living conditions, lack of accessible potable water and sanitation services, and improper feeding practices often contribute to these infections, initiating a cycle of infection and malnutrition. Lack of access to health services further increases the risk of death for critically-ill infants.

Maternal health also plays a significant role in infant and child health, and is a critical problem in Peru, especially with respect to complications from pregnancy, childbirth and abortion. Prematurity, low birth weight and neonatal tetanus are believed to be significant factors in infant mortality, particularly in rural areas. Nationwide around 61% of mothers receive some type of prenatal care, including 81% of urban women but only 40% of rural women. While 80% of urban women have their birth attended by professional personnel, only 16% of rural women are attended by professional personnel. Finally, the low prevalence of family planning, particularly the use of modern contraceptives and child spacing, contribute to deficits in maternal, infant and child health.

The major causes of infant and young child mortality in Peru have each been asssigned ratings based on their relative mortality risk, and ranked in Table 2 in order of estimated importance. Appropriate interventions, their potential effectiveness, and an assessment of their short-and long-term feasibility under present and projected conditions in Peru are also listed. From among these interventions A.I.D. will chose those that best utilize the resources available in the public and private sector to control these diseases, especially the five primary causes of childhood mortality.

TABLE 2

MAJOR CHILD SURVIVAL RISK FACTORS, PERU

MAJOR RISK FACTORS	MORTALITY RISK	POSSIBLE HEALTH AND NUTRITION INTERVENTIONS	POTENTIAL EFFECTIVENESS	FEASIBILITY SHORT TERM	FEASIBILITY LONG TERM	RELATIVE COST
Acute Respiratory Infections (ARI)	High	Breastfeeding	High	High	High	Low
		Pre-natal Nutrition	High	Low	Moderate	High
		Avoid High-Risk Births	High	Moderate	High	Low
		Child Nutrition	High	Low	Moderate	High
		Diphtheria Immunization	High	High	High	Low
		Pertussis Immunization	High	High	High	Low
		Early and Timely Home Tx	Moderate	Low	Moderate	Moderate
		Professional Diagnosis and Treatment	High	High	High	Low
		Antibiotic Treatment by Para-professionals	Moderate	Low	Moderate	Moderate
		Reduction of Household Indoor Air Pollution	Moderate	Low	Low	Low
		Measles Immunization	High	High	High	Low
Diarrheal Diseases	High	Breastfeeding	High	High	High	Low
		ORT	High	Moderate	High	Low
		Weaning Practices	High	Moderate	High	Low
		Proper Feeding During and After Diarrheal Episodes	High	Moderate	High	Low
		Personal, Family and Food Hygiene	High	Low	Moderate	Low
		Child Nutrition	High	Low	Moderate	High
		Water and Sanitation	High	Low	Moderate	High
Vaccine-Preventable and Other Diseases						
A. EPI Diseases	High	Completion of Immunization Schedule	High	High	High	Low
B. Hepatitis	Low	Immunization in Endemic Areas	Moderate	Low	Moderate	High

TABLE 2

MAJOR CHILD SURVIVAL RISK FACTORS, PERU (CONTINUED)

MAJOR RISK FACTORS	MORTALITY RISK	POSSIBLE HEALTH AND NUTRITION INTERVENTIONS	POTENTIAL EFFECTIVENESS	FEASIBILITY SHORT TERM	FEASIBILITY LONG TERM	RELATIVE COST
Malnutrition	Moderate to High	Breastfeeding	High	High	High	Low
		Improved Weaning Practices	High	Moderate	High	Low
		Proper Management of Prevalent Infections and Parasites	Moderate	Low	Moderate	High
		ORT and Feeding During and After Diarrheal Episodes	High	Moderate	High	Low
		Timely Immunizations	High	High	High	Low
		Vitamin A, Iron, Folic Acid	Moderate	Low	Moderate	Moderate
		Family Planning	High	Moderate	High	Low
		Growth Monitoring	Moderate	Moderate	Moderate	Low
		Child Supplementary Feeding	Moderate	Moderate	Moderate	High
Perinatal Problems	High	Reduction of Pregnancies in Women over 35 years and High Parity	High	Moderate	High	Low
		Extend Birth Interval to Two Years or More	High	Moderate	High	Low
		Reduction of Early Pregnancies	High	Low	Moderate	Low
		Prenatal Care/Referral	High	Moderate	Moderate	High
		Iron/Folic Acid/Calcium Supplement.	Moderate	Moderate	High	Moderate
		Tetanus Immunization for Women of Reproductive Age	High	Moderate	High	Low
		Increased Food Consumption	High	Low	Moderate	High
		Training, Supervision and Follow-up of TBAs	Moderate	Low	Moderate	High
		Malaria Treatment	Moderate	Moderate	High	Moderate
		Neonatal Care for Children of Low Birthweight	Moderate	Low	Moderate	High

B. Availability and Utilization of Health Services

1. Government of Peru Policies and Programs

Most Peruvians are able to pay for little beyond the basic necessities. Thus the Ministry of Health (MOH) and the Peruvian Institute of Social Security (IPSS) are responsible for providing care to 86% of the Peruvian population, but actual coverage has been less. In fact an estimated 30% of the total population, or 6.6 million low-income individuals, have little or no access to modern medical services. Government health expenditures (about 6% of the total budget, amounting to $9 per capita) are small in comparison to those for education (19%) and defense (28%), and have declined relative to other government priorities even while the population has increased.

The MOH provides approximately 27% of all health sector expenditures, but regional inequities abound. Three-fourths of MOH money is spent on urban hospital services, leaving little for rural and preventive services.

Much of the primary health care the Ministry does provide is inadequate, the health centers and posts undersupplied and poorly maintained. Program planning, management, monitoring and evaluation are almost nonexistent. System continuity and morale have been destroyed by frequent strikes, changes in leadership, staff turnover, inadequate training, and weak supervision. Institutions have been further weakened by a rapid expansion of MOH facilities. Between 1975 and 1987, the number of MOH hospitals increased by 25%, while the number of MOH health centers almost doubled (from 347 to 689) and the number of MOH health posts almost tripled (from 994 to 2,738). Nevertheless, public confidence in the public health care system is extremely low, and full implementation of MOH policies and programs has been difficult.

The IPSS is mandated to provide health care to an estimated 2.5 million children of covered workers, which could potentially reduce pressure on MOH services in urban areas. IPSS expenditures constitute another 34% of total health care expenditures to cover roughly 18% of the population. Its coverage is also concentrated primarily in urban areas.

Government policies have tried to address regional inequities. In 1985, the Government's National Health and Development policy called for more equitable distribution of health resources, decentralization to the Department level, multi-sectoral collaboration, and greater community participation in all health-related activities. Additionally, the GOP Integral Health Sector Law in 1986 mandated the functional integration of MOH and IPSS health services, a move that was designed to expand maternal and child health (MCH) care in priority populations through the pooling and joint use of resources. However, this integration has since been stopped.

The MOH's national policy for primary health care (PHC) since 1984 has increasingly emphasized key child survival interventions including immunizations, diarrheal disease control (DDC), family planning (FP), acute respiratory infections (ARI), and to some extent child nutrition. Child survival services are provided under centrally-designed, vertical PHC programs within both MOH and IPSS. The GOP's current policy (the Triannual Plan for Reduction of Infant Mortality) aims at a 15% reduction of the IMR

between 1988 and 1990. It includes ARI as its top priority, followed by DDC, immunizations, child nutrition and high-risk births. Priority departments have also been designated according to need and equity; they include Huancavelica, Apurimac, Cusco, Ayacucho, Puno, Amazonas, Cajamarca, Loreto, Ancash, and the marginal areas of Lima. Meanwhile, the MOH struggles to find the political commitment necessary to restructure the budget in favor of PHC, and to develop its own capacity to disperse a greater proportion of its budgeted funds for PHC.

On the operational level, child survival programs are expected to be integrated horizontally by UDES staff and to be supported by the Basic and Essential Medicines Program. The MOH has also put a high priority on collaborative research with other scientific and academic institutions, and on coordination with the educational sector to develop human resources. Norms and standards have been developed for these interventions, which are implemented under the MOH's MCH Program.

2. Private Sector Programs

The private health sector accounts for another one-third of total health sector expenditures. The majority of these private sector expenditures are for pharmaceuticals. Of the total amount spent on medical care, excluding pharmaceuticals, PVOs account for 4% of expenditures, the remaining modern private sector accounts for 10% of expenditures, and the traditional private sector (e.g. midwives, herbalists, etc.) accounts for another 4%.

Though it administers only 18% of the hospital beds, the private sector provides ambulatory services for between one-third and two-thirds of the urban population, and involves over half of all physicians and 72% of all pharmaceutical sales. The formal private sector plays a minimal role in primary health care, providing only limited preventive care to women and young children and reaching an estimated 11% of the population. Systematic child survival programs are confined to PVOs, private institutes, clinics and practitioners, and a limited number of cooperatives, unions or businesses that provide health care services.

Several hundred non-governmental MCH programs operate in Peru, including those run by private clinics, PVOs and religious groups. An 1986 inventory revealed 120 such organizations in the urban areas of Lima, Arequipa and Trujillo alone. Many of these contained child survival components, promoted oral rehydration therapy (ORT), offered services such as supplementary feeding and nutrition education, or supported the national immunization program with outreach, logistics, and communications activities. PVOs tend to concentrate their services in urban areas and often reach the lower middle class rather than the medically indigent in rural areas.

International donors, including USAID, also play a large role in supporting PHC activities at the community level. Since 1983, USAID has directly supported private sector health care delivery, training programs and research on developing programs and technology for CS interventions. Among the organizations USAID has supported are CARE, Puentes de Salud, Seton Institute for International Development, ADRA/OFASA, CARITAS, IIN, PRISMA, UPCH, APROPO, ATLF, AMIDEP, FENDECAP, Profamilia, INPPARES, and

APROSAMI. Private institutions have also conducted research and helped develop Peruvian research capacity on CS issues, most of it funded by USAID/Peru and AID/W. Among those private research institutions with whom grant agreements have been assigned over the last five years are Nutrition Research Institute (IIN), the Cayetano Heredia University (UPCH), PRISM and PRISMA. These institutions conducted research in the areas of infant mortality and reproductive risk factors, diarrheal disease treatment, and the control of diarrhea through nutrition and dietary management.

C. Donor Activities

In the public sector, foreign assistance accounts for approximately one-third of the MOH's total commitment to primary health care. Between 1980 and 1985, the World Bank, USAID and the Federal Republic of Germany's Technical Assistance Agency provided about $40 million in loans and grants for health care in Peru. Most of the assistance has been used to support PHC, with particular emphasis on maternal health and child survival activities.

The World Bank (IBRD)

In 1983 the World Bank authorized a $33.5 million loan to increase the availability of PHC services for the 3.5 million Peruvians living in four coastal and jungle UDES (regional health departments). The IBRD financed supplies and medicine for newly-constructed peripheral health facilities, and for training a cadre of visiting nurses from the health posts. The GOP was to provide all local currency construction costs and the salaries of the additional health workers. Implementation was delayed, however, and only $3 million had been spent when the government changed in 1985. The project was redesigned in 1985-1986, concentrating the project on the northern and southern Sierra. The use of cheaper and more appropriate materials in the construction of the health posts meant a larger population could be covered.

Funds have not been disbursed since 1985, however, and have been suspended indefinately since May, 1987. The IBRD contribution totaled $4.5 million. But with $19 million in GOP counterpart funds (as of 1988) the construction of 11 new health centers and 139 posts is being completed. The current project covers the departments of Apurimac, Cusco, Hunacavelica, Puno, Ancash, Junin, Cajamarca, La Libertad and Lima.

German Technical Assistance Agency (GTZ)

The Federal Republic of Germany continues to provide financial support for PHC and nutrition through its development agency, GTZ. GTZ financial support through 1983 was $3.5 million, with another $3.5 million in 1984-85. Until 1987 GTZ also provided support, along with USAID and PAHO, to the MOH's management information system. It continues to support PHC activities for 1988-1989 in the Departments of Cuzco, Apurimac ($3.5 million), and in La Libertad ($5 million).

Inter-American Development Bank (IDB)

Through its Integrated Regional Development Programs, the IDB disbursed approximately $11.2 million in loans prior to 1988 for the training of health workers and the construction of health facilities in three jungle

sites. Another $31.3 million loan funded the construction of urban water and sanitation systems through SENAPA (National Service for Potable Water and Sewerage Systems) in 1988. The GOP is studying a new proposed IDB loan for $34.045 million, with a GOP contribution of $41.611 million, to rehabilitate 15 hospitals in 14 UDES. This is a major reduction from the earlier proposals to rehabilite 31 hospitals in 19 regions. Given Peru's current record on loan repayment, it is likely that current funding levels may change.

United Nations Fund for Population Activities (UNFPA)

During the 1988-91 period the UNFPA continues to implement a MCH/FP grant that will provide services to three million women and children under five and that includes training, FP supplies, education and communication. Smaller sub-projects include improvement of the registration of vital records by the National Institute of Statistics (INE); community-based distribution of oral rehydration salts (ORS) and FP supplies in peri-urban slums of Iquitos; and a natural FP method project in five townships of Lima. UNFPA's regular funding of $2.4 million has been augmented by $1.35 million in multi- bilateral contributions to be extended through 1991. Another project under consideration would be directed at adolescent health services.

United Nations Children's Fund (UNICEF)

UNICEF's five-year plan emphasizes CS interventions to be managed by a number of public and private sector organizations, including the National Planning Institute (INP), MOH, Ministry of Education (MOE), and Departmental Development Corporations (CORDES). Under the program, priority rural areas will receive: technical assistance to train community workers, especially women's groups, in participatory programming; financing to support the production of training materials on low-cost techniques for CS and the role of women; and equipment and supplies for women's groups. In urban areas, UNICEF will work through Programa de Apoyo al Ingreso Temporal (PAIT), the GOP public works organization, multi-family and child feeding centers, the Vaso de Leche program in Lima, Clubes de Madres, other women's groups, and agencies providing loans to the informal sector. UNICEF financing increased substantially over 1986-87. The $5.375 million in regular funds budgeted for 1987-92 will support self-help projects by women's community groups among the poorest populations, and will be augmented by $1.2 million in additional funds.

Government of Italy

The Government of Italy, the largest bilateral donor after USAID, is funding a $5 million multisectoral, community-based nutrition project (PROCAN) for 1987-1991 in the Departments of Puno, Moquegua and Tacna. The project is jointly implemented by UNICEF and PAHO through the MOH. The GOP also recently approved a $5-7 million sanitation project for 1988-90 for the emergency zone, including Ayacucho, Cusco, Apurimac and Huancavelica. In addition, the Government of Italy will provide over a three year period (1990-1992) a $2 million grant for cancer treatment medicines, a $6 million loan for essential medicines and an $8 million loan for hospital equipment. Furthermore, the Government of Italy is constructing three rural hospitals in the Department of Piura.

Other Bilateral Assistance

The Government of the Netherlands is providing $300,000 in support to buy equipment for health posts.

The Government of Belgium is providing $80,000 in assistance for primary health care in the Department of Piura.

The Swedish Aid and Technical Cooperation Agency is providing support to the MOH Immunization Program through the purchase of refrigerators valued at $400,000.

Pan American Health Organization (PAHO)

PAHO provides technical assistance to several of the Special Programs of the MOH which are related to CS: immunizations, DDC, FP, and feeding and nutrition. They provide the same to MOH programs in human resource development, information systems, statistics, telecommunications, active epidemiological surveillance, and environmental health. PAHO provides the MOH with approximately $3.5 million annually in the form of technical advisory staff and limited program support, including operations management and supplies. In addition, it has committed $580,000 over the next five years for the MOH's EPI National Plan of Action, in collaboration with USAID, UNICEF and Rotary International.

Rotary International

Rotary International will provide $800,000 to support the MOH's EPI National Plan of Action in collaboration with USAID, PAHO and UNICEF.

USAID/Peru

In addition to private sector activities in research and service delivery, USAID/Peru has been a major donor to the MOH and IPSS in projects related to child survival. The five-year Child Survival Action Project (1988-1992) includes a $19 million grant and $25 million in counterpart funding through PL480-generated funds and GOP funds. This project supports five existing maternal-child health programs in the MOH: diarrheal disease control, acute respiratory infection control, immunizations, family planning and nutrition. In addition, it helps strengthen decentralized support systems, including training, supervision, health communications, active epidemiological surveillance and the development of a health/management information system.

III. USAID/PERU'S STRATEGY FOR CHILD SURVIVAL, 1990-1995

The purpose of the Child Survival Strategy is to guide the Mission in determining those activities needed to help develop and sustain an in-country capacity to deliver health services that will reduce infant and child mortality. The strategy focuses on the five primary areas of childhood mortality, and it directs available resources to the prevention and control of these diseases. Concurrently, the Mission's strategy seeks to strengthen support systems in the MOH designed to improve the delivery of

child survival services. These support systems include development of a health/management information system and development of an active epidemiological surveillance program. Elements of the strategy will be integrated into current MOH and IPSS programs, while innovative private sector activities will also be used to deliver services efficiently and cost-effectively.

The strategy will help guide and redirect current projects in the health sector by heeding evaluations and lessons learned, by integrating findings from epidemiologic needs analyses and other research. In addition, USAID seeks to maintain a pragmatic, flexible approach, that will make program implementation as smooth and problem-free as possible.

A. Mortality Reduction Programs

USAID/Peru will support intervention in those areas that account for over 70% of the deaths in children: acute respiratory diseases, diarrheal diseases, vaccine-preventable diseases, malnutrition, and problems associated with short birth intervals and other high risk pregnancies. MOH and IPSS programs already include some efforts in these areas. The strategy emphasizes interventions that will have a relatively rapid, marked effect on child mortality over others requiring more time and financial investment. These interventions are delineated below.

1. Acute Respiratory Infections (ARI)

(a) The Problem

Acute respiratory infections (ARI) are a leading cause of death and sickness in children under the age of five in Peru. Thirty percent of all deaths under age five are due to ARI, 50% of which occur in children less than one year of age. Acute respiratory infections can be caused by numerous bacterial and viral disease agents, with bacterial pneumonias the most serious of these. Significant risk factors for child mortality from acute respiratory infections include young age, low birth weight and poor nutritional status. ARI is also the chief cause of morbidity from birth through age four. Around 80% of all visits to health facilities are associated with ARI. Factors such as early weaning and the gradual loss of passive immunity can multiply the impact of severe infections. These respiratory infections can also adversely affect a child's nutritional status, and can serve to decrease a child's resistance to diarrheal disease.

(b) Constraints

ARI interventions in child survival programs are primarily treatment oriented given the difficulty of preventing exposure to the air-borne pathogens responsible for ARI. Selective and timely antibiotic treatment is the most effective means for reducing the mortality associated with ARI.

WHO has published norms, which the MOH has adopted, concerning the proper case management of ARI. Nevertheless, many physicians and other health workers are unfamiliar with these norms and either withhold antibiotic treatment when it is needed or inappropriately prescribe

antibiotics for mild symptoms of ARI. Self medication at pharmacies for ARI symptoms is another constraint that can result in the wrong antibiotic being selected and can also contribute to antibiotic resistance where antibiotics are overused or not taken as directed.

Another constraint in Peru is the weak logistics network that exists, with delays in procuring needed supplies and equipment. Community education efforts are hindered by insufficient communications support. Finally, the program as a whole is not well integrated with other child survival interventions.

(c) Current Programs and Support

The National ARI Program, designated by the MOH as its highest priority, has progressed rapidly in implementing activities. The program follows WHO/PAHO Guidelines, which try to update existing treatments in clinics and at home rather than trying to introduce new technology. The ARI program financing to date has included contributions from the GOP, UNICEF and PAHO.

The program includes training, equipment and supplies and community education components. The primary activities of the program include in-country training of MOH personnel in the early detection and treatment of moderate to severe cases of ARI, along with follow-up supervision financed by the MOH with UNICEF support. The program has trained approximately 50% of the pediatricians and general practitioners in 60 hospitals.

Additionally, 80% of nursing personnel and auxiliary personnel have received orientation and training in the ARI program through courses at the departmental level and in Lima. A large proportion of the Lima/Callao doctors and nurses still need training. Fifty percent of the health centers and posts have received a supervisory visit within two months of the training. Supervision and evaluation should be carried out according to the national supervision plan and the ARI program norms.

The current program also provides for both logistical and program support, including the purchase of antibiotic supplies to be distributed and controlled through normal MOH channels. All regional health departments (UDES) have received the ARI Program norms and guidelines and a sizeable consignment of antibiotics, syringes and needles. USAID supports the procurement of equipment, including sterilizers, stethoscopes, ophthalmoscopes and oxygen tents, medical supplies such as needles and syringes, and related laboratory supplies. In addition, an issue of "Ninos," the Child Survival Journal for Health Professionals, addressing ARI and including modern WHO and MOH management practices (sponsored by A.I.D. through PRISMA), was distributed and positively received.

Epidemiological surveillance of ARIs is expected to be coordinated with and carried out by the MOH Epidemiological Surveillance Unit (VEA). Community participation in the early recognition and treatment of serious cases has been promoted via education through mass media and community channels. Five educational posters have been developed and 5,000 copies of each distributed to health facilities nationwide. Eight UDES have received

a video cassette on ARI treatment. Radio and TV spots on ARI risks, symptoms and treatment were aired in 1988. On the community level, about 15 Mothers Clubs in six departments have been trained using a UNICEF flipchart. The MOH will continue to finance local costs associated with community education but may require additional support from a donor agency.

(d) Specific USAID/Peru Objectives

- Mortality due to ARI in children under five will be reduced by 50% between 1990-1995.

- 100% of cases of ARI that are seen in public sector facilities will be classified and treated according to MOH norms.

(e) USAID/Peru Strategy

USAID/Peru strategy calls for the continuation of current programs in some areas, and also the start of certain new initiatives. The Mission supports continued vaccination against selected viral and bacterial ARIs (especially measles, pertussis and diphtheria). USAID/Peru will continue to strengthen the MOH capacity for monitoring and evaluating ARI by making sure ARI is included in the reporting in the VEA and HIS systems. It will also keep supporting, with training and supplies, the early diagnosis and treatment of ARI by health professionals. In the private sector, the Mission recognizes the large role already being played by pharmacies in the sale of antibiotics for ARI. This ready source of treatment can be made more effective by training pharmacists in the proper use of antibiotics for ARI.

New initiatives under this strategy include efforts to:

* Extend support for training in ARI case-management to para-professional health and community workers and pharmacists.

* Encourage PVO participation in and compliance with norms of the National ARI Program.

* Carry out additional community education about the signs of early respiratory distress, e.g. rapid breathing, retraction, wheezing; and promote the use of home respiratory support measures, e.g. fluid replacement, antipyretics, etc.

* Improve the use of laboratory and surveillance data to determine important ARI agents, their patterns of transmission, the antibiotic sensitivities of bacterial agents, the existence of influenza and measles outbreaks, as well as important host and environmental factors.

* Support biomedical and operational research to develop cost-effective prevention and early treatment strategies for ARI.

2. Diarrheal Diseases

(a) The Problem

Diarrheal diseases account for 12% of all reported infant deaths in Peru, and are a major cause of death in children under five. Acute diarrhea can quickly cause dehydration in infants which can lead to death if not corrected through oral or intravenous rehydration therapy. One-third of children under five are reported to have had an episode of diarrhea in the past two weeks; children under three have an estimated 5 to 11 diarrheal episodes per year.

Diarrhea can cause transitory malabsorption and raise metabolic needs and thus contribute to malnutrition, which in turn can influence the duration and severity of the diarrhea and susceptibility to other infections. This cycle of infection and worsening nutritional status often retards physical and mental development, and can lead to a higher risk of death. Like ARIs, diarrheal diseases can by caused by numerous agents which should be investigated and confirmed through epidemiology and laboratory research when possible.

Lack of access to potable water, inadequate sanitation, and poor hygiene and food preparation are major factors contributing to the incidence of diarrheal disease. In urban areas of Peru, 78% of households have access to a potable water source and 59% have access to sewage disposal. In rural areas, only 24% of households have access to potable water, and a scant 18% have, at a minimum, access to a latrine.

(b) Constraints

The two principal elements of a diarrheal disease control program should be prevention of exposure to diarrhea-causing pathogens and appropriate oral rehydration and feeding for cases of diarrhea. Prevention of exposure to diarrhea-causing pathogens normally requires investments to be made in the construction of wells and latrines or other facilities for excreta disposal. Without safe and adequate amounts of water and facilities for the safe disposal of human waste, diarrheal episodes will be a continuing occurrence, causing malnutrition and death, particularly in small children.

Constraints to adequately addressing diarrheal diseases in Peru include the limited funds available to the government for infrastructure development that could include the construction of wells and latrines. A major constraint to appropriate diarrheal case management is the resistance on the part of the medical and health community to accept new diarrhea management practices, including ORT. Many continue to use anti-diarrheals and antibiotics inappropriately. Promotion and communications support for ORS use remains inadequate, and credibility has not yet been re-established from the negative publicity surrounding the tragic death of four Peruvian infants in a Lima hospital following treatment with faulty ORS imported from the U.S. Public confidence in ORS was severely eroded at that time. In 1986 the ENDES survey revealed that although 61% of mothers of children under five nationwide knew about Salvadora, less than 4% used it.

Use of ORT home solutions, soups and other liquids is often only local or regional, and tends to stem from local promotion by PVOs or other local groups. Nationwide statistics on home solutions are not even available.

The DDC program in general suffers from weak support systems, particularly with respect to the HIS, supervision, logistics, health education and communications. Finally, it has proven difficult to teach mothers how to make home solutions, given geographical and cultural differences and the myriad of traditional recipes.

(c) Current Programs and Support

Late in 1986, the MOH designed the five-year National Plan for the Prevention and Control of Diarrheal Diseases (DDC), which seeks to reduce diarrhea mortality and morbidity in children under five. DDC includes programs to train health professionals and workers in the management of diarrhea; it also encourages community participation in breastfeeding programs, the construction of latrines and hygiene improvement. DDC also promotes home treatments for children's diarrhea--including the provision of liquids, soups and home-made or prepackaged ORS, the use of proper weaning foods, and longer periods of breastfeeding.

DDC training programs have received much donor support. USAID/Peru support has focused since 1986 on training physicians and on the establishment of hospital-based rehydration units. The MOH, UNICEF and PAHO support in-country training and supervision at all levels of the DDC program, as well as training community volunteer health workers and caretakers of infants and young children in appropriate diarrhea management.

Both community and facility-based oral rehydration units (ORUs) have been set up across the country under USAID/Peru, UNICEF and PAHO guidance. With support from USAID/Peru, the MOH is establishing eleven hospital-based Regional Training Centers for DDC, and 110 ORUs are being developed at UDES facilities to act as training and research centers.

The promotion of ORS therapy has been more problematic. Pre-packaged ORS, called "Salvadora," were first manufactured and promoted in Peru in 1981 under the direction of the Minister of Health. At the time the medical community and pharmaceutical industry, who were not convinced of ORT's effectiveness in children, strongly resisted their use and the program collapsed in 1982 with the next change in the Minister of Health.

From 1983-1987 PAHO, UNICEF and A.I.D. imported ORS packets for the MOH's DDC program. A fraction of these was marketed under a new name, "Salva-Oral." However, the accidental deaths of the 4 infants ended the new initiative. USAID/Peru then sought Project SUPPORT technical assistance to identify potential local producers and to improve production and quality control of a local ORS product.

Laboratorios Unidos S.A. (LUSA) remains the only GOP-registered producer of WHO-formulated oral rehydration salts. Using Project SUPPORT funds, LUSA has procured additional equipment, including new mixing, filling and packaging machines, to increase production capacity and improve quality control. LUSA is able to meet the MOH demands for approximately 70,000 ORS sachets per month and began supplying the quantities required by IPSS in 1988 (though the company is now facing serious financial constraints). The MOH provides training and logistics necessary to buy and distribute locally-produced ORS, and it will absorb these recurrent costs for the treatment of diarrheal disease. Other ORS is also distributed and sold through the private sector, via pharmacies nationwide.

Using Project SUPPORT funds provided by PRISMA, LUSA has been able to rename its product "Nueva Salvadora", design a new package with pictorial instructions, and promote its greater use as well as awareness of its affordability and effectiveness among health professionals. A professional journal on managing diarrheal disease, published in Spanish and distributed to health professionals throughout the country, also helped ORS therapy gain greater acceptance. UNICEF continues to manage the development of mass media and educational materials for ORT in Peru. USAID will coordinate the integrated communications activities of the Child Survival Action Project with UNICEF and provide complementary support for TA and equipment. In a related communications project, Johns Hopkins University and IIN have worked with the MOH in the northern sierra department of Ancash to promote a new weaning food as a feeding intervention for children with diarrhea.

Research on diarrheal disease continues in Peru, building on the database and expertise in applied research amassed over the past 10 years. Currently, all research proposals are evaluated by the MOH DDC Program Director, who assesses them for applicability to the program. USAID/Peru continues to finance technical assistance needed to support the epedemiological surveillance and HIS components of the DDC program. AID/W projects complement this Mission-funded research and include the Dietary Management of Diarrhea (DMD) Project, which surveyed feeding practices for children with diarrhea in rural sierra communities and developed recipes for children of weaning age. The Applied Diarrheal Disease Research Project is another AID/W project which is supporting: (a) the development of a soup-based ORS which could lead to more success and acceptance of home-based treatments; (b) observations of physician practices in treating diarrhea in children; (c) studies of chronic diarrhea in Lima's pueblos jovenes; (d) analysis of data from the training of physicians and nurses; and (e) analysis of data relating diarrhea in children to fecal contamination by chickens. Under an AID/SCI Grant to UCPH, scientific research is being conducted on traditional remedies for diarrhea.

From 1980-89 USAID also supported the construction of rural water systems and latrines in 1,200 rural sierra and jungle communities, linking the provision of potable water systems with health education to introduce new behaviors for proper water and latrine use. The $16 million project was implemented by the MOH's Directorate of Basic Rural Sanitation in rural communities of less than 1,000 inhabitants throughout Peru. Final evaluation of this project has since recommended a follow-on project.

The DDC program is maturing with good technical leadership. The 1986 ORS crisis resulted in strategic rethinking and careful reformulation of norms. At each level of implementation some problems still exist, but they depend more on the politics and administrative context faced by individual managers. USAID's strategy currently focuses on improving program implementation.

(d) Specific USAID/Peru Objectives

- Mortality and morbidity caused by diarrheal diseases in children under 5 will be reduced by 50% between 1990-1995.

- Rural water supply and sanitation coverage will increase to 30% and 25%, respectively, by 1995.

- 8 teaching oral rehydration units will be established by 1992.

- 80% of diarrheal episodes in children under age 5 will be treated with ORS or home available fluids by 1995.

- In 80% of diarrheal episodes in children under 5, food intake will remain constant or increase compared to pre-diarrheal levels.

(e) USAID/Peru Strategy

The strategy calls for USAID/Peru to continue to support training of health professionals and workers in the public and private sectors in proper diarrhea management. This includes the ongoing establishment of Regional Training Centers at major hospitals, and of oral rehydration units (ORUs) at health centers, health posts and in communities. Second, USAID/Peru will take steps to ensure the continued accessibility of safe and reliable, locally-produced ORS. The private sector can, and should, play a major role in both producing and marketing ORS. USAID/Peru intends to support the training of pharmacists so as to utilize their potential in this regard.

Another component of the strategy is to strengthen measles immunization services given the link between measles and diarrhea. Finally, the Mission will continue to support applied research on the identification and promotion of locally-available foods for the dietary management of diarrhea, and on breastfeeding and weaning.

High priority activities not addressed by current programs include efforts to:

* Train physicians, pharmacists and other health workers in ORT and the nutritional management of diarrhea.

* Educate health personnel and communities in personal, family and food hygiene.

* Stimulate demand for ORT through promotion and education, using an integrated and culturally-appropriate media approach as well as traditional health education.

* Study patient acceptability of ORS under field conditions to determine reasons for lack of compliance.

* Improve DDC/ORT monitoring and evaluation capabilities and the DDC information system.

* Disseminate information to more communities and households about breastfeeding, ORT and nutritional management of diarrhea.

* Extend access to safe water and sanitation in rural areas and priority regions.

* Identify major etiologies and transmission patterns of diarrhea along with host and environmental factors.

3. Vaccine-Preventable Diseases

(a) The Problem

Diseases preventable by vaccine constitute the third leading cause of childhood deaths in Peru (13.1% in 1985). The number of reported deaths does not fully reflect the extent of the problem, however, since these diseases--especially pertussis and measles--are frequently misdiagnosed and in addition may contribute to death from other causes, in particular ARI and diarrhea. In terms of its effect on child survival, measles is the most important of these diseases. Neonatal tetanus is another important, though often unreported, cause of infant mortality. One must also recognize that even non-fatal cases of vaccine-preventable illness will likely worsen a child's nutritional status.

Tuberculosis is another preventable disease that affects many children. While BCG is not a completely effective vaccine, it remains an important and inexpensive means of prevention. A.I.D. will also consider supporting the treatment of children and adults with tuberculosis, even though it is relatively expensive, due to its importance in preventing further spread of the disease.

Yet another important vaccine-preventable disease is hepatitis B. Studies in jungle areas have shown that levels of hepatitis B infection among adult populations exceed 80-90%, while levels of hepatitis delta are also high. These alarming figures include indigenous populations as well as people who have migrated to the area. A recent study found that about 81% of children were infected with hepatitis B by the time they reached five years of age, and at least 19% of them had been infected with hepatitis delta.

Immunization coverage for polio, measles, DPT and BCG has vastly improved since 1984, but coverage of children under one year of age or under five years and living in a rural area, remains quite inadequate (see table 3, below, for specifies.

(b) Constraints

Constraints on a successful EPI program include resource constraints, problems of implementation, and policy constraints. The former include the weak cold chain and the lack of MOH resources needed to absorb its recurrent local costs, such as kerosene. Further, the underdeveloped state of epidemiology and health information systems in Peru, already discussed in detail, makes effective immunization programs difficult.

Implementation of the EPI program is hampered by the fact that immunization services simply are not available at many health centers/posts and in many areas. Moreover, there are many missed opportunities for immunizing children and women of fertile age at facilities which do immunize.

Finally, ill-advised policies can impede adequate vaccination. Until recently, relatively little attention was paid to immunization against neonatal tetanus. Second, the MOH policy on use of disposable syringes significantly raises the cost and logistical problems of immunizing large numbers of people.

TABLE 3

IMMUNIZATION COVERAGE TRENDS

Percentage of Children 0 to 12 months of age*

	1989	1988	1987	1986	1985	1984
BCG	62	67	60	52	63	64
DPT 3	58	60	42	47	49	28
POLIO 3	60	62	47	46	48	28
MEASLES	52	50	35	38	52	35
Tetanus Toxoid-2 (for pregnant women)	9	8				

Sources: MOH (Direccion Tecnica de Informacion); PAHO

(c) Current Programs and Support

The MOH/IPSS Expanded Program of Immunizations (EPI) is a vertical program administered by staff at the central level of the MOH. The $19 million program, finalized in January 1987, includes contributions from the GOP, PAHO, UNICEF, Rotary International and USAID. In collaboration with its donors, the MOH has developed a five-year donor assistance plan for EPI that calls for universal immunization coverage for children under one by 1991.

From 1984-1989, a series of national vaccination campaigns was fairly successful in improving immunization coverage. Table 3 shows the improved coverage among children under the age of one. In absolute terms, however, measles coverage is still far too low at 52 percent. (One must also keep in mind that these national statistics hide major urban-rural differences.)

Likewise, coverage rates for second doses of tetanus toxoid among pregnant women have remained very low (9 percent). To increase protection against neonatal tetanus, the MOH is working with USAID, UNICEF and PAHO staff to redesign the national strategy for tetanus toxoid immunization; this will include targeting all women of fertile age for immunization (rather than only pregnant women), and taking advantage of all encounters with the health care system (including the immunization campaigns) to immunize eligible women.

While carrying out vaccination campaigns over the last five years, the MOH has tried to institutionalize immunization services. In 1987, about half of the immunizations administered nationally were provided at health establishments, mostly in Lima and other urban areas, either through well-baby clinics or mini-campaigns organized by communities. Apart from

these avenues of administration, immunizations have also been carried out in mobile brigades. These brigades are often used to immunize the far-flung rural population that lacks access to health establishments.

There has long been concern about the existing cold chain in Peru and in 1988, USAID, UNICEF and PAHO agreed to finance the cold chain needs of the Ministry of Health and IPSS. Consequently USAID has arranged to purchase, install and maintain cold chain equipment, including kerosene, electric, gas and solar refrigerators and freezers and spare parts for health establishments throughout the country. Initial USAID-financed cold chain equipment arrived in late 1989 with the remainder due to be delivered in 1991. USAID (as the sole supplier) is also purchasing around 6 million disposable syringes and needles for the EPI program each year.

Other donor assistance includes helping the MOH finance in-service training and supervision for the EPI program, including USAID support for short-term training outside of Peru. In terms of communications for EPI, PAHO and UNICEF are using a variety of mass media communications to promote public awareness and demand for vaccination services. In addition, UNICEF helps fund MOH local costs related to education and promotion. To the extent that successful vaccination depends on accurate data collection and disease surveillance, USAID/Peru support of the epidemiological surveillance system and HIS/MIS also aids the EPI program.

(d) Specific USAID/Peru Objectives

- 80% of children under one will be completely immunized annually, beginning in 1991.

- 50% of women of 15-49 who give birth will receive two doses of tetanus vaccine before or during their pregnancy, by 1995.

- No new confirmed cases of wild polio virus will appear during the period 1991-1995.

- The incidence of vaccine-preventable diseases will be reduced by 50% between 1990-1995.

(e) USAID/Peru Strategy

Current programs that fit within USAID/Peru strategy, and that will carry high priority include efforts to:

* Notify epidemiological program staff at local and regional level of all cases so that outbreak control can begin.

* Increase nationwide vaccine coverage levels for measles, tuberculosis, diphteria, pertussis, tetanus and polio, focusing resources on the under-one age group.

* Participate in MOH strategy development to select alternative approaches for improving coverage in isolated, underserved or problem areas.

* Support the MOH in institutionalizing immunization of children and women of fertile age at all contact points of the public sector health system.

* Strengthen the MOH's EPI cold chain and logistics system with suitable and cost-effective equipment to ensure that adequate supplies of potent vaccines are available in accordance with a long-range MOH strategy.

High priority activities not addressed by current programs include initiatives to:

* Encourage greater participation by the private sector in immunization services, particularly by providing logistical support to the MOH and by promoting immunizations through communication efforts.

* Initiate childhood vaccination with hepatitis B vaccine in hyperendemic areas.

* Explore with the MOH the benefits/risks of using re-usable needles and syringes with adequate sterilization procedures versus using disposable needles and syringes with their greater recurrent costs and supply problems.

4. Malnutrition

(a) The Problem

Malnutrition continues to be a severe problem in Peru, as shown by the 1984 ENNSA study. More than one-third of all children under six surveyed were defined as chronically malnourished (more than two standard deviations below the mean normal height for age). In the rural sierra, the proportion was 63% of children under six, while in Lima it was 15%. The prevalence of overall malnutrition, defined as below two standard deviations of the mean weight for age, was found to be 38%.

Several factors can contribute to malnourishment in Peru. Poor breastfeeding practices, such as the absence of exclusive breastfeeding for the first 4-6 months, can predispose an infant to infection and malnutrition. Similarly, supplementary feeding and weaning are often begun too late and weaning practices often do not include nutritious foods. Many medical and nursing personnel continue to provide inappropriate advice to mothers regarding breastfeeding. Likewise, hospital practices often have deleterious effects on breastfeeding through restrictive policies regarding rooming-in and early mother-infact contact.

With respect to food availability, the current economic crisis has raised prices of previously subsidized food staples and intensified shortages, putting additional strain on nutritional patterns. Young children, for instance, are more likely to be fed only twice daily, following the adult pattern. While malnutrition itself is important, it is also a significant risk factor for other causes of morbidity and mortality. Children suffering from malnutrition have reduced immunological defenses, so they have greater susceptibility to infectious diseases such

as measles and tuberculosis, and their illnesses can be more severe and last longer than would otherwise be the case. Thus a continuous cycle of diarrhea or other infectious disease may in turn add to the malnourishment. Measles or each episode of diarrhea may also further retard normal growth. Moreover, many infants in Peru already have low birth weight (LBW) from risk factors such as maternal malnutrition and inadequately spaced pregnancies.

(b) Constraints

Malnutrition can be attacked on many fronts and requires efforts from many different government sectors. Most child survival programs focus on breastfeeding and weaning practices since they are areas that have a tremendous impact on childhood nutritional status and since they can be impacted upon with low-cost interventions, e.g. education. The constraints to changing both mothers' and professional health workers' attitudes and behaviors that are counterproductive to optimal infant nutrition include a lack of resources for training and social communication.

Growth monitoring and supplemental feeding programs can be another effective component to a child survival nutrition strategy. A major constraint here lies in the difficulty of food logistics management. The complex logistics of food distribution often delays food transport from central to regional levels. In addition, the monitoring and amount of information available about the flow of food in feeding programs has been inadequate; neither has there been enforced criteria for entry into or exit from feeding programs. Also there has been little coordination among donor feeding programs, as well as a lack of integration between nutrition and MCH programs. Finally, food distribution programs often carry strong political pressures.

Another constraint to more effective growth monitoring programs is inattention on the part of health workers to what the real message of growth monitoring is. There is no intrinsic value to the information given to a mother concerning her infants' anthropometric measurements. Rather it is the accompanying nutritional and health advice given to mothers in these encounters that proves their value. Unfortunately too many growth monitoring programs fail to train their health workers adequately for this educational task.

(c) Current Programs and Support

To date, no nutrition activities have been carried out by the MOH with USAID support other than growth monitoring and food supplementation activities. With USAID encouragement, the MOH recently developed a three-year nutrition plan that included proposed activities in breastfeeding promotion, the dietary management of diarrhea, and the promotion of nutritious weaning foods. These activities will probably be carried out jointly by the MOH and NGOs with USAID support.

A large part of U.S. and other foreign assistance to Peru is donated food, channeled through a complex set of organizations, including PVOs, the Ministries of Agriculture (MOA) and Health (MOH), and regional and local entities, many with their own distribution mechanisms. These programs are insufficiently counter-funded by the MOH, and limited by inadequate management and frequent turnover in personnel.

USAID's principal program is Food for Development (FFD), which channels PL480 Title II foods through decentralized MOA counterparts and PVOs. New targeting strategies have recently been implemented that try to reach the neediest pregnant or lactating women and children under six, thus complementing other MOH CS activities. The Mission is supporting PRISMA in the design and implementation of a national nutritional surveillance system. PRISMA is working closely with the MOH and the regional governments to develop a surveillance system which will respond to the planning needs of the region and, in turn, provide information necessary for the planning and management needs of the USAID-supported Feeding and Nutrition Program for High Risk Families (PANFAR). While nutritional surveillance in Peru has been characterized by large, national studies (ENCA, ENNSA), by many collections of growth monitoring data, and by surveys of school age children, these collections of data have not been initiated in response to specific planning or evaluation needs and have not been used for planning. The nutritional surveillance model currently being developed and implemented under the PRISMA PANFAR program focuses specifically on the use of the data collected and the integration of the system into the planning process. Other PVO MCH programs are also receiving Title II foods through a variety of mechanisms, including community feeding centers, soup kitchens, and the distribution of dry rations to families to improve the nutritional status of women of child-bearing age and young children.

Since 1984, USAID/Peru has also used child survival funds to help PVOs, including CARITAS, CARE, ADRA/OFASA and SEPAS, to enhance the nutritional impact of their feeding programs. Complementary CS funds have been channeled to PVOs to undertake activities within their MCH programs in growth monitoring, ORT, immunization, promotion of breast-feeding, better hygiene and appropriate nutritional practices.

USAID and other donor support to the Nutrition Research Institute (IIN) has enabled them to provide assistance to PVOs since 1985. This has included training in nutrition and CS interventions for nutritionists managing the PVO feeding programs; the provision of teaching materials and portable weighing scales for growth monitoring and nutrition education; and regional TA to personnel organizing and implementing feeding programs with CS interventions. IIN has also worked extensively, with both USAID and AID/W support, to develop and promote local foods that are particularly well-suited for the dietary management of diarrhea. This subproject has been carried out both in the department of Ancash and in Lima <u>pueblos jovenes</u>. In addition, IIN is carrying out two nutritional surveys in different regions of Peru. One survey will measure the extent of malnutrition among children under 6 and obtain data on household expenditures for food and intrafamiliar consumption of specific foods. The other survey will determine the prevalence of serum vitamin A levels in children.

(d) <u>Specific USAID/Peru Objectives</u>

- 60% of infants will be exclusively breastfed through 4 months of age and continously breastfed through 12 months of age by 1995.

- 50% of USAID food aid distributed through the MOH and PVO outlets will be distributed on the basis of nutritional risk status, by 1995.

- The prevalence of malnutrition in children 12-23 months (below two S.D. of the mean weight for age) will be reduced from 13 percent in 1984 to 9 percent by 1995.

(e) USAID/Peru Strategy

Many current programs, both in the public and private sectors, address the aforementioned constraints to better nutrition, and these will be continued. USAID/Peru continues to help improve the management of food-aid programs. It will continue to encourage the use of growth monitoring, and the periodic evaluation of nutritional status in select populations to improve MCH high-risk targeting and the evaluation of feeding programs. USAID/Peru will continue to strengthen the coordination between MOH/MOA's decentralized agencies and the PVOs, while within the Mission complementary development activities are being integrated into food projects, such as raising small animals, family and community gardens and seed banks. Finally, the previously-mentioned support for research on dietary management of diarrhea, and on breastfeeding and weaning will have spillover benefits for nutrition programs as well.

High priority activities not addressed by current programs include the following initiatives in food-aid, nutrition, and breastfeeding to:

* Support training and communications efforts that promote better nutrition, both in the home and throughout health delivery system, as well as home-based nutritional rehabilitation.

* Conclude local studies to determine the need for administration of supplementary micronutrients including iron, folic acid, iodine and vitamin A.

* Train public sector personnel in breastfeeding management and promotion, and the timely introduction of nutritious weaning foods.

* Encourage greater MOH effort to change hospital practices that inhibit optimal breastfeeding practices.

5. Family Planning and Maternal Health

(a) The Problem

Maternal/child health programs and family planning are inexorably linked because each can have a profound effect on the health of both infants and of women in fertile ages. Maternal mortality in Peru, one of the highest in Latin America, is due largely to eclampsia, hemorrhage, infection (frequently related to illicit abortions), and to other preventable and treatable conditions, including tuberculosis. Though the majority of urban women receive prenatal care and deliver their children in hospitals, health personnel are often inadequately trained to deal with high-risk pregnancies and complicated deliveries. In rural areas, the majority of women giving birth receive no pre-natal care and are attended at birth by non-professional providers, and are consequently at high risk for both maternal and neonatal mortality.

Poor maternal health and high-risk births account for many perinatal diseases and deaths. The World Fertility Survey (1977-1979) has documented

the relationship between the age and parity of the mother, birth-spacing and infant mortality. The woman who has had three or more births, or who gives birth in her teens or over age 35, presents an important risk factor for either maternal or infant mortality. Limited data exists on the effects of multiple risk factors. Spacing of pregnancies affects child survival even more strongly than age or parity. Children born before an interval of less than 24 months are at high risk for death.

Although the links between maternal age and parity and infant and maternal mortality are not specifically established for Peru, one can deduce such a relationship from available data. In Peru, approximately 26% of women of reproductive age are over 30 years old and have more than four children. In other countries, such women tend to have poorly-spaced pregnancies, which are often associated with LBW infants. Furthermore, it known that the IMR in Peru for births coming less than 24 months after the previous birth is around 121 deaths per 1000, while the equivalent rate for births at least 48 months apart is about 38 per 1000.

Findings from Peru's PRISMA Mortality Risk Study underscore the importance of birth spacing, and confirm the importance of the use of family planning to reduce infant mortality risk. Risk factors from reproductive behavior are exacerbated by mothers' poor health and nutrition during pregnancy and by the lack of effective medical care during prenatal, birth and postpartum periods. For example, pregnant women who are underweight or who have vitamin, mineral or iodine deficiencies and/or anemia are at higher risk for adverse outcomes, and their infants are less likely to survive.

Though access to public sector family planning services has increased steadily since 1981, the demand for family planning is still not being met. The 1986 ENDES found that while 77% of women of fertile age in union wanted no more children, only 23% were using modern FP methods. The lack of access to reliable long-term methods for such women is a significant problem. The successful implementation of FP activities is impeded by the lack of trained health personnel, an irregular supply of commodities, an inappropriate mix of FP methods, and clinic hours that do not meet client needs. Although private sector organizations are also providing family planning services that complement those of the public sector, they rarely reach beyond the large urban communities.

(b) Constraints

Family planning and maternal health programs should ideally enable men and women to choose, through education and effective contraception, the number and spacing of their children, as well as to avoid sexually transmitted diseases. These programs should also strive to make pregnancies and childbirth as risk free as possible and contribute to healthy births. The constraints in Peru to having effective family planning and maternal health services are numerous. They include a lack of trained personnel, both professional and para-professional, and a lack of trained traditional birth attendants (TBAs). In rural areas TBAs or other family members deliver the majority of births and their lack of training is an important determinant in maternal and neonatal mortality.

Another constraint is the lack of any coordinated referral network for high risk births. Many low risk births take place in high technology

facilities while most high risk births occur in health establishments without adequate personnel or equipment, or even worse, outside of an institutional setting attended by untrained midwives.

Resistance by the church to many modern methods of contraception and cultural biases are another source of constraints to effective family planning programs that reduce demand. Finally the area logistics is another constraint to family planning programs. The continuing difficulty of ensuring an adequate supply of contraceptives throughout public sector delivery points compromises their effectiveness. For a fuller discussion of constraints please refer to the Mission's Population Strategy.

(c) Current Programs and Support

The MOH began to deliver FP services in 1981 with support from the USAID Integrated Health and Family Planning Project and a UNFPA Maternal-Child Health Project. In 1983, the MOH integrated FP services with the Maternal-Child Health (MCH) Program under a newly established office for MCH and Population. The new integrated approach included norms for tetanus toxoid immuization (TT) for pregnant women, for prenatal vitamin and mineral supplements, and for maternal education that included the promotion of postpartum FP services in hospitals.

A.I.D. augmented its earlier support with the ongoing 1983 JHPIEGO/MOH project, financed by AID/W, which targets high reproductive risk women in order to reduce maternal mortality and which sought to demonstrate the health benefits of FP to the medical community. An earlier operations research study in the Department of Ica verified the effect of FP interventions on risk factors. The project continues to train physicians in reproductive risk methodology and contraceptive technology, and to set up gynecological units to offer FP services at hospitals and health centers.

Under President Alan Garcia the FP Program became a national priority in 1986, and the government stated the new demographic objective of reducing the fertility rate from 4.1 children per woman in 1986 to 2.5 by the year 2000. However, the rationale for both the FP program and this demographic mandate remained couched in health terms -- i.e., the reduction of maternal and infant mortality and morbidity rates. This continued emphasis was needed to sustain the child survival initiative within broader political and population concerns.

Much family planning work in the public sector is carried out with donor assistance. The MOH and IPSS are developing printed material, such as posters, flipcharts, and pamphlets, with USAID/Peru material and technical assistance. They are supporting in-country training related to family planning service delivery, including administration, as well as long-term population and MCH studies, with the help of UNFPA, USAID/Peru and other donors.

With respect to supplies, the MOH is working on the logistics of managing, warehousing and distributing contraceptive commodities. USAID is funding the purchase of FP commodities such as IUDs, oral contraceptives and condoms, as well as equipment for voluntary surgical contraception, IUD insertion kits, audiovisual equipment for the demonstration and teaching centers, laboratory equipment for cancer detection, and equipment required

for the development of communications materials. UNFPA and possibly other donors will provide other contraceptives for the program, such as injectables and vaginal spermicides.

USAID/Peru's recently issued Population Strategy supports GOP and A.I.D. objectives in both population and child survival, through programs designed to respond to the unmet need for family planning products and services and to prevent high-risk births. The 1986 ENDES and other surveys firmly established that Peruvians lack the access to a means of satisfying their own contraceptive needs, particularly those Peruvians who do not want any more children. Since the latter group includes many older women and women of high parity, the USAID/Peru Population Strategy simultaneously addresses two major groups at risk for infant and maternal mortality. The strategy also seeks to increase the general availability of services and methods for those wishing to space births, consistent with and supporting the strong mandate of the Peru Child Survival Strategy for better birth spacing.

USAID/Peru is pursuing these goals by helping improve the MOH and IPSS capacity at all levels to deliver more targeted FP services with a more suitable contraceptive method mix. Specific activities in the public sector include improving the logistics of the system, providing more and better personnel training, providing supplies and equipment, carrying out public education and information campaigns, promoting decision-linked operations research financed through either AID/W or regionally-funded projects, and the development of a management information system.

USAID is also working with the private sector to provide FP services, conduct operations research and training, and develop IE&C activities. In 1986, USAID initiated a large Private Sector FP Project (SPF) to strengthen and increase the capacity of FP service organizations to reach more clients. The new Private Voluntary Family Planning Services Expansion Project begun in 1989 continues this work.

Under an AID/W financed project with John Snow International, a comprehensive FP logistics system has already been designed and implemented by private agencies, IPSS and the MOH. Under the AID/W financed Family Planning Management Development Project with Management Sciences for Health, management training will begin and will include IPSS and MOH FP coordinators.

(d) Specific Objectives

- The contraceptive prevalence (of modern methods) among women in union of fertile age will be increased to 35% by 1995.

- The total fertility rate will be reduced to 3.0 by 1995.

- The maternal mortality rate will be reduced to 22 per 10,000 live births by 1995.

(e) USAID/Peru Strategy

Among current programs, USAID/Peru will continue to promote family planning, and its importance to an overall child survival strategy, as well as to help strengthen institutional and human capacity to provide family

planning services. In particular, USAID/Peru's programs will continue advertising the health benefits of FP within the medical community, specifically focusing on reproductive and child survival risk concepts. The training of family planning medical and paramedical personnel will move forward, as will efforts to strengthen the public and private sectors' institutional capability. Family planning service delivery in the private sector will continue to receive high priority through two USAID projects, the Private Voluntary Family Planning Service Delivery Project and the Commercial Family Planning Project. Finally, USAID/Peru will emphasize concern for prenatal and maternal health care issues -- especially among high-risk groups -- in family planning programs.

New USAID/Peru initiatives will build on these activities in training, institution-building, and coordination with other maternal health and child survival programs, including efforts to:

* Support training and supervision of TBAs.

* Establish FP demonstration and teaching centers within each UDES.

* Increase mothers' and infants' access to adequate prenatal, delivery and postnatal care.

* Support development of a referral system for high risk pregnancies.

* Emphasize breastfeeding, family planning, and maternal health activities to avoid perinatal mortality.

* Educate mothers and health care professionals on need for increased food consumption during pregnancy and lactation.

* Promote exclusive breastfeeding for at least four months after birth and family planning methods compatible with breastfeeding.

* Equip decentralized laboratories to provide cervical cancer detection services.

B. Strengthening Support Systems for Child Survival Services

Of fundamental importance to USAID's strategy for reducing infant and child mortality is the strengthening of support systems for child survival services. For this reason the Mission intends under its Child Survival Project to provide substantial support to the MOH in the development of a health/management information system (HIS/MIS) and to develop an active epidemiological surveillance (VEA) program in the MOH. The development of both the HIS/MIS and VEA is seen by the Mission as having vital importance in terms of monitoring nationwide the incidence of diseases that impact on child mortality and using that information to guide specific disease control strategies.

1. Health/Management Information System (HIS/MIS)

To date, no national automated health information system exists to provide information on disease patterns as well as for program planning, management, evaluation, and targetting. Currently, health service

providers are asked to manually complete over 150 different information forms each year which are tabulated and analyzed at the MOH central level. As a result of this manual system, the central MOH has been unable to provide timely, accurate or useful reports to the UDES or the health centers and vice versa. An automated health information system (HIS) at all 28 UDES and the central MOH is expected to correct this situation and allow for the timely reporting of relevant health information.

Consistent with the goal of strengthening support systems for child survival services, the Mission's child survival strategy calls for the improvement of the MOH management information system (MIS). Since early 1986, the MOH has been involved in developing an automated administrative MIS for personnel/payroll and financial management/accounting and logistics. This effort has produced MIS software currently developed or under development by the MOH for the personnel/payroll, financial management and logistics systems with these three systems ready or near ready for implementation at the central and Departamental levels. Currently, however, only the MOH central level and three UDES are utilizing automated systems for data processing in these areas. USAID will support the updating/revision as necessary of existing MIS software and protocols, in close consultation and collaboration with MOH staff involved in these areas to date, and the expansion of automated data processing (ADP) systems for personnel and financial management and logistics to all 28 UDES and the training of both MOH central and UDES personnel in the use of the ADP hardware and software programs.

2. Active Epidemiological Surveillance (VEA)

Peru currently has an extremely underdeveloped epidemiological surveillance system, including vital statistics, laboratory and disease surveillance systems. Data is often underreported or misreported, particularly with respect to the specific causes of some categories of infant and child diseases. The lack of accurate baseline data makes the scientific design of sound, cost-effective and sustainable projects very difficult.

Currently, there are three parallel surveillance systems within the MOH: Information and Statistics, Active Epidemiologic Surveillance (VEA), and special disease control surveillance systems within various programs. These groups have been unable to coordinate their activities. A national surveillance system must be integrated into the governmental structure responsible for that surveillance. The proposed HIS/MIS system will be responsible for integrating existing MOH surveillance systems into one cohesive system, and for making data available to whoever needs it. Improvement in laboratory training and equipment will also ensure accurate diagnosis of the causes of disease affecting child survival.

USAID intends under its Child Survival Project to provide support to the MOH in the development of an Active Epidemiological Surveillance (VEA) system. The VEA program will be a principal user of the improved health reporting resulting from development of the HIS and interpret this information to allow program planners to understand the patterns of diseases that cause high mortality and morbidity and to structure programs to prevent or treat them.

The VEA program to be supported by USAID includes three components: field epidemiology training, the installation of a national computerized epidemiological surveillance system and the strengthening of the national laboratory system. Together these components will improve Peru's disease reporting system, and will ensure the implementation of more effective and timely disease control measures.

C. Guiding Principles

The development of the Child Survival Strategy has been guided by a number of principles that direct health services to the most needy Peruvians in the most appropriate and cost-effective way. These principles include the following:

1. Institutional Strengthening

USAID/Peru's Child Survival Strategy focuses both short-term and long-term efforts on the development of human resources, and institutional capability needed to sustain projects in both public and private sectors after donor assistance ends. USAID sees the strengthening of public and private sector institutions as vital to ensure the expansion and sustainability of child survival services beyond the planned five-year strategy period.

The selection of specific activities will depend on their having a reasonable chance of success given existing programs and resources. Activities will be integrated and coordinated with GOP and MOH/IPSS activities, complementing rather than duplicating existing efforts. Regular institutional and sectoral analyses will ensure the most appropriate and cost-efficient interventions are undertaken.

Specifically, USAID/Peru intends under its Child Survival Project to strengthen decentralized support systems for child survival services in the MOH. These support systems will include active epidemiological surveillance (VEA) and a health/management information system (HIS/MIS), as described in the next section.

In IPSS, which has only recently extended coverage to the dependents of enrolled workers, USAID/Peru will encourage a more rapid change in orientation to primary health care and child survival. Under the Child Survival Project, the Mission will provide support for training, technical assistance and commodities for IPSS. IPSS staff require training in the delivery of child survival interventions, and IPSS facilities need CS equipment and supplies to offer CS services. To maximize the impact of CS services delivery at the departmental and peripheral levels, the Child Survival Project encourages close collaboration between the MOH and IPSS at all levels of the health system through periodic coordination meetings. This collaboration will ensure that MOH and IPSS programs are complementary and will promote the sharing of knowledge and experience as well.

USAID/Peru's Child Survival Strategy focuses on human resource development and the strengthening of support systems for child survival services. A major constraint in all maternal and child health programs is the lack of strong professional leadership and interest in PHC activities. Despite some increased interest in the field of of diarrheal management due

to its recent emphasis in continuing professional education, much remains to be done. Previous USAID/Peru projects, which concentrated on community-level workers including TBAs and Promotors, had limited impact; among other things, these paramedical personnel lacked sufficient supervision. As a result, USAID/Peru will continue with a multidisciplinary approach that emphasizes the training of physicians, nursing and paramedical personnel. Training of auxiliary health workers--nurses, professional midwives and social workers---should benefit from their inclusion under the Andean Peace Scholarship Program. Decentralization of health services and GOP financing of recurrent costs are two additional elements of the strategy. The project will support the decentralization policy of the GOP by making regional health authorities at the peripheral levels of the health system, where the majority of project inputs will be delivered, responsible for implemenation.

2. Increased Private Sector Participation

Private sector groups working in health and family planning, in both the non-profit and commercial entities, have often demonstrated a flexibility and resourcefulness lacking in the public sector. In order to harness this asset for the Peruvian health sector, USAID/Peru strategy promotes greater private sector participation and public/private sector collaboration. Successful examples include the MOH collaborations with Cayetano Heredia University, IIN, PRISM, PRISMA and SPF, where private sector entities have worked to strengthen service delivery through the public sector in the areas of family planning, diarrheal disease control and nutrition.

In addition to providing TA and training to the public sector, the private sector, both for-profit and non-profit, will be encouraged to take a larger role in providing child survival services. Possible interventions that the private sector could perform have been mentioned above under each specific element of the strategy where appropriate. The services provided by private health institutions will be analysed and policies reviewed to ensure that they are integrated with and complement MOH/GOP activities wherever possible.

Another advantage of working with private sector institutions is that the burden of subsidized services by the MOH for persons who can afford to pay can be partially removed. Expanding service delivery in the private sector, especially for curative care for which people are most willing to pay, can help reduce demand on the MOH and allow it to improve preventive services and curative services targetted to the most needy.

3. Integrated Health Communications and Education

Peru's cultural diversity and the wide range of health behaviors to be promoted requires a coordinated health communications strategy. The strategy will strengthen the existing capacity to produce and distribute appropriate material through a decentralized system. Messages will be produced collaboratively with UNICEF, using locally available materials. For effective health promotion, the messages must be tailored to the target audience and delivered using the appropriate media. For example, television will be used primarily for targeted groups in Lima. AID/W centrally-funded projects, including PCS, NUTRITIONCOM and HEALTHCOM, will provide TA to help design and coordinate communications support for all child survival interventions.

4. Emphasis on Gender Considerations

The Child Survival Strategy will emphasize the collection and analysis of information based on gender needed to make decisions on program design, development and implementation that are sure to integrate men and women where appropriate. In many cases, such as family planning, it is the men who need to be educated and encouraged to participate in child survival programs as users. Women, on the other hand, tend to be excluded from roles as professional health care providers and administrators.

USAID/Peru's child survival strategy will lend support to the active development of women as health professionals providing child survival services. Women professionals will be recruited for both research and technical assistance to invite their perspective and experience. The promotion of women for management and other professional positions will also be encouraged. In addition, gender considerations will play an important role in the selection of candidates for A.I.D.-funded training activities, both in-country and overseas.

As part of the strategy, gender will also play a role in decisions about promotional strategies, delivery systems and eligibility criteria. Targeted IEC promotions will be based on gender-specific attitudes and behaviors. Educational and training activities will reflect the possible constraints to participation by women, such as access to child care or transportation. USAID/Peru will also try to strengthen grassroots women's organization, such as Mothers Clubs through the help of PVOs and other NGOs. Likewise men's organizations will be targetted where appropriate so as to increase the participation of men in child survival programs.

D. Measurement and Evaluation of Progress

Many ongoing activities in the Child Survival Action Project will yield good health information, while at the same time institutionalizing long-term sources of data. With major investments in HIS/MIS, epidemiological surveillance, nutritional monitoring and laboratory diagnosis and confirmation, reliable data will become available. Reported cases of disease may increase dramatically as these new information systems are implemented, and training and supervision increase. Experience dictates that health indicators in these situations often temporarily decline, hiding actual gains in health status. For example, the incidence of diarrheal disease or vaccine-preventable disease might suddenly rise, due to better reporting of the cases remaining.

Nevertheless, three previous national surveys (ENNSA, ENDES, and ENCOV) will provide accurate baseline data with which to measure future progress. In fact, USAID/Peru has taken preliminary steps to begin a follow-up DHS II survey in 1991--one that will include health as well as demographic survey expertise. This survey will be the principal measure of the impact of the Child Survival Project over time, including both Tier II and Tier III indicators. DHS II will document changes and patterns in IMR, contraceptive prevalence rate, breastfeeding, child spacing, high-risk births, diarrhea prevalence, ORT use, child nutritional status, and TT coverage.

Other tier II indicators, covering the effectiveness and coverage of USAID-supported programs, will be measured through special evaluations in 1990 and 1992, at the mid-point and endpoint of the CSAP respectively. These

evaluations will include a sample of UDES and will measure the quality and coverage of child survival services offered at the health center/post and polyclinic level.

In addition, USAID/Peru will seek to improve the accuracy and completeness of MOH programatic data through the HIS/MIS and epidemiologic surveillance (VEA) components of the CSAP. Together with the work being done by PRISMA and IIN in nutritional surveillance, the HIS/MIS and VEA will furnish information on the incidence of diarrhea, ARI, vaccine-preventable illnesses and malnutrition, as well as more routine information on project inputs and outputs. The improved reporting of health data within the MOH will make it easier to monitor program coverage and the incidence of diseases relevant to child survival issues, and to better target MOH and private sector actions in child survival.

E. USAID/Peru Staffing and Funding Levels

Child Survival activities contained in this strategy will be managed, monitored and evaluated by the USAID/Peru Health, Population and Nutrition Division. This section includes one Division Chief, one Health Specialist, one Population Specialist, three Project Coordinators, an Administrative Assistant and four secretaries.

A.I.D./W centrally-funded projects have played and will continue to play an important role in supporting Project implementation. HEALTHCOM or the Population Communications Services Project might provide technical assistance for the health communications activities. Project SUPPORT has provided technical assistance and a loan to LUSA Laboratories to purchase equipment to expand local ORS production. Priority operations research to support this project will receive funding primarily from AID/W centrally-funded projects such as HEALTHCOM, PRICOR, INOPAL II, REACH and Applied Diarrheal Disease Research (ADDR) and other regionally-funded projects. A variety of AID/W centrally-funded projects are also available to provide support to strengthen FP services delivery.

Table 4 details USAID/Peru's funding of CS activities through health, nutrition, family planning and other projects. All health accounts in the table have split-funding figures that represent the actual portions of the budget reserved for CS activities.

SUMMARY OF USAID/PERU PLANNED AND EXPENDITURES
IN CHILD SURVIVAL (Amounts in $000.00)

PROJECTS CHILD SURVIVAL HEALTH/POPULATION/ NUTRITION/WATER	PROJECT NUMBER	SOURCE OF FUNDING	LOP AMOUNT CS %	YEARS OF ACTUAL SUPPORT FY 1988	FY 1989	FY 1990	FY 1991
Identification of High Risk Families for Child Mortality in Peru (PRISMA/JHU)	527-0311	USAID	980 / 100	X	X	X	
MOH-National Program for the Control of Diarrheal Diseases (PAHEF)	527-0000	USAID	60 / 100	X			
Nutrition Assessment (IIN)	527-0000	USAID	223 / 100			X	X
Vitamin A Survey (IIN)	527-0000	USAID	86 / 100			X	X
Use of Bioelectrical Impedance to Measure Malnutrition and Dehydration (IIN/UPHC)	936-5542 6.344	AID/W PSTC	50 / 100	X			
Rapid Epidemiologic Assessment (IIN)	REA-PE-84-17	AID/W SCI BOSTID	185 / 100	X			
Development and Field Testing of Soup-Based Oral Rehydration Solution in Lima, Peru (IIN/UPCH)	936-5928 No. 02	AID/W S&T ADDR	163 / 100	X	X		
Epidemiology of Prolonged Diarrhea in Lima, Peru (IIN/UPCH)	936-5928 No. 01	AID/W S&T ADDR	89 / 100	X			
Areas that Use Community Based Microcomputers (IHT/UPCH)							
Cono Sur Systems Analysis (PRISM/PRISMA/MOH)	936-5920	AID/W S&T PRICOR II	405 / 50	X	X		
Dietary Management of Diarrhea	931-1010	AID/W S&T DMD	3,000 / 100	X			
Studies in the Transmission of Cryptosporidium: A Pathogen Associated with Both Malnutrition and Infant Mortality	936-5542 7.234	AID/W PSTC	150 / 100	X	X	X	

TABLE 4

SUMMARY OF USAID/PERU PLANNED AND PAST EXPENDITURES IN CHILD SURVIVAL (Amounts in $000.00)

PROJECTS CHILD SURVIVAL HEALTH/POPULATION/ NUTRITION/WATER	PROJECT NUMBER	SOURCE OF FUNDING	LOP AMOUNT / CS %	YEARS OF ACTUAL SUPPORT FY 1988	FY 1989	FY 1990	FY 1991
Rural Water Systems and Environmental Sanitation (MOH)	527-0221	USAID	11,000 / 5	X	X		
Integrated Health and Family Planning (MOH)	527-0230	USAID	8,800 / 80	X			
Child Survival Action Project (MOH & IPSS)	527-0285	USAID	19,000 / 100	X	X	X	X
Central Selva Resource Management	527-0240	USAID	16,800 / 1	X	X		
Integrated Health and Family Planning (APROPO)	527-0230	USAID	4,100 / 80	X	X	X	
Community Health Program (CARE)	527-0296	USAID	77 / 100	X			
Seton Institute for International Development (SIID/Puentes de Salud)	527-0294	USAID	960 / 100	X	X		
Training Physicians and Nurses in the Management of Diarrheal Diseases (UPCH)	527-0309	USAID	161 / 100	X	X		
Private Sector Nutrition/Child Survival (IIN)	527-0308	USAID	914 / 100	X	X	X	X

TABLE 4

SUMMARY OF USAID/PERU PLANNED AND EXPENDITURES IN CHILD SURVIVAL (Amounts in $000.00)

PROJECTS CHILD SURVIVAL HEALTH/POPULATION/ NUTRITION/WATER	PROJECT NUMBER	SOURCE OF FUNDING	LOP AMOUNT CS %	YEARS OF ACTUAL SUPPORT FY 1988	FY 1989	FY 1990	FY 1991
"Niños"-Child Survival Journal (PRISMA)	527-0316	USAID	213 100	X	X	X	
Physicians' Practices Related to the Treatment of Childhood Diarrhea in Two Areas of Peru (IIN)	936-5928 No. 04	AID/W S&T ADDR	12 100	X	X		
Analysis of Data from ORT TRNG	936-5928 No. 023	AID/W S&T ADDR	9 100	X	X		
Contamination of Children By Chickens	936-5928 No. 024	AID/W S&T ADDR	14 100	X	X		
Andean Peace Scholarship Program	527-0313	USAID	6,300 10	X	X	X	X
Expanded Feeding Program (ADRA/OFASA)	527-0247	USAID	1,445 12	X			
Feeding Program (CARITAS)	527-0248	USAID	650 19	X	X	X	X
Basic Infrastructure and Health Care in Pueblos Jovenes (CARE)	527-0261	USAID	975 13	X			
Local Production/Promotion of ORS (PRISMA)	936-5953	AID/W S&T SUPPORT	11 100	X	X	X	X
PRISMA Integrated Feeding and Maternal and Child Health Program	527-0323	USAID	750 100	X	X	X	X
CARITAS Food Relief, Nutrition and Development Project	527-0329	USAID	1,353 49	X	X	X	X
ADRA/OFASA Nutrition and Food for Work Project	527-0328	USAID	1,253 44	X	X	X	X
CARE Food Assisted Integrated Development Project	527-0330	USAID	728 45	X	X	X	X

TABLE 4

SUMMARY OF USAID/PERU PLANNED AND EXPENDITURES IN CHILD SURVIVAL (Amounts in $000.00)

PROJECTS CHILD SURVIVAL HEALTH/POPULATION/ NUTRITION/WATER	PROJECT NUMBER	SOURCE OF FUNDING	LOP AMOUNT CS %	YEARS OF ACTUAL SUPPORT FY 1988	FY 1989	FY 1990	FY 1991
APROSAMI-MCH/Family Planning	527-0269	USAID Coop.Ag./ Pathfinder	600 / 10	X	X	X	X
PROFAMILIA/Lima-MCH/& Family Planning	527-0269 932-0955	USAID Coop. FPIA	700 / 15	X	X	X	X
Usefulness of Traditional Peruvian Remedies for Diarrhea and Parasites	936-5542 6.345	AID/W/SCI PSTC	150 / 100	X	X		
Cysticercosis: New opportunities for targetting, Detection and treatment using ELISA technique	936-5542 7.208	AID/W SCI/PSTC	150 / 60	X	X	X	
Characterization of Active Principals, Mechanism of Action and Possible Mutagenic Activity of Wound Healing Plants	936-5542 8.068	USAID PSTC	146 / 30		X	X	X
Cellular Immunity in Patients with Leishmaniasis in Peru	936-5542 8.312	USAID PSTC	150 / 30		X	X	X
Role of Nutritional Status in the Early Loss of Passive Immunity and Response to Measles Vaccination	936-5542 9.271	AID/W SCI	150 / 100		X	X	X
Piglet Model to Study Campylobacter Pylori Gastritis: Association of Infection with Hypochlorhydria and Immune Response and the Extent to which it Predisposes to Diarrheal Disease.	936-5542 8.154	AID/W SCI	150 / 100		X	X	X