

# Country Development Strategy Statement

## FY 1987

HEALTH SECTOR STRATEGY  
(SUPPLEMENT)



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BEST AVAILABLE

HEALTH SECTOR STRATEGY  
OFFICE OF HEALTH AND NUTRITION  
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## HEALTH SECTOR STRATEGY

### INTRODUCTION:

From the time of USAID's re-entry into India, a preliminary health and population sector strategy was developed to address the nation's important fertility and child mortality problems, which were also high GOI priorities. To gain more detailed information on the nature and extent of the health/fertility problems, to develop a fuller understanding of the capability and effectiveness of Indian institutions and resources devoted to this sector, and to help USAID identify priority problems and potential entrees for assistance, a population sector analysis and a health sector analysis were planned.

The population sector analysis was completed in 1982. In health, a series of studies, which constitute the components of the health sector analysis, were carried out between late 1981 and 1984. In that same period, USAID has accumulated experience and insights concerning the capability of Indian health care systems, and concerning the methods and constraints in implementing and managing projects associated with these systems.

The component studies of the health sector analysis and project experience provide a substantive basis on which the mission can (1) analyze, select and prioritize problems to address, (2) identify health system interventions which are feasible and have proven potential for producing results, and (3) realistically plan projects within the organizational constraints of both Indian institutions and USAID itself.

The health sector strategy paper therefore includes the following:

- A. An analysis of the Indian health situation - problems, causes and contributing factors;
- B. Analysis of GOI/State policies, programs, health and nutrition infrastructure and systems that are in place: assessment of their scope, capability and effectiveness;
- C. USAID's experience in current projects, and recognized constraints in implementation and management;
- D. Priority areas for further USAID involvement, both in the short term and longer-term future.

1. THE STATE OF INDIAN HEALTH: PROBLEMS, CAUSES AND CONTRIBUTING FACTORS:

The Health Sector Analysis has reinforced the recognition of the importance and more clearly articulated the nature of the inter-linked problems of high fertility and continuing high rates of infant and child mortality in India.

A. Major Health Problems:

The salient facts characterizing the health of the Indian population are:

1. The population of 730 million is growing at roughly 2% per year and will reach one billion by the year 2000. The crude birth rate, now about 30/1000 population, has been slowly declining. About 21 million children are born each year and there are over 100 million children under age 5.
2. The crude death rate is about 12 per 1000 population. Although children under age five comprise 14% of the population, almost half of all deaths are in this age group (or less than 3% in the same USA age group - see table 1). One third of all deaths are in the under one year age group, and of these, sixty percent occur in the first month of life. Infant mortality declined from 200 deaths per 1000 live births in 1911 to 129 in 1970, but the decline has been slow since then.

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Table 1 Comparative % of all deaths in the population for selected age groups, 1980 (Sources: 1, 2)

<u>Age Group</u>	<u>India</u>	<u>USA</u>
0-4 years	45%	2.8%
0-11 months	31%	2.3%
0-1 months	17%	1.6%
0-6 days	10%	1.3%

There are considerable variations in infant mortality between states, ranging from as high as 185 deaths/1000 births in rural Uttar Pradesh, to as low as 29/1000 in urban Kerala.

3. Urban/rural and sex differences in mortality remain pronounced. Child mortality for the age group 0-4 has changed little in the last decade, with rural levels remaining substantially higher than those in urban areas, and female rates continuing higher than males. Although infant mortality has slowly declined, the same urban/rural and sex differences persist. Figure 1 summarizes these differences.

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Figure 1 Childhood Mortality Differences (Source: 3)

a) Mortality in Children under age 5 (deaths/1000 children)

1970		1978	
Rural	Urban	Rural	Urban
51.8	32.3	54.1	30.7

  

Male	Female
44.7	52.1

b) Infant Mortality (deaths under age 1 per 1000 live births).

1970		1980	
Rural	Urban	Rural	Urban
136	90	124	65

  

1980	
Male	Female
120	131

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Sex differences continue to be apparent in other indicators. In India, there are 23 million more men than women. During this century, the sex ratio (number of women per 1000 men) has declined from 972 to 933. In some states, there are less than 900 women/1000 men. From infancy through the child-bearing years, females have a greater risk of death than males (Table 2).

Table 2 - Ratio of Female to Male Death Rates (Source: 4)

<u>Age Group</u>	<u>Rural</u>	<u>Urban</u>
0-4	1.12	1.05
5-9	1.28	1.20
10-14	1.05	1.18
15-19	1.32	1.50
20-24	1.48	1.33
25-29	1.55	1.27
30-34	1.14	1.14

4. Women's educational status, substantially lower than men's, has an important impact on infant mortality, as shown in Table 3

Table 3 - Literacy and Infant Mortality (MOHFW) (Source: 3)

(a) % Literate 1981

Male	Female
47	25

- (b) Mother's Educational Level and Infant Mortality Rate (IMR = deaths/1000 live births)

<u>Mother's Educational Level</u>	<u>Infant Mortality Rate</u>	
	<u>Rural</u>	<u>Urban</u>
Illiterate	132	81
Under 4 years of school	105	59
4 years school and above	64	49
Literate (irrespective of schooling)	90	53

5. National rates of malnutrition among Indian children as reported by the National Nutrition Monitoring Bureau have not declined over the past decade, and 74% of all children under five years are affected by moderate and severe malnutrition. However, substantial declines in malnutrition have been documented in areas with intensive nutrition programmes for mothers and children, such as the Integrated Child Development Services (ICDS) Scheme.

Although there have been major increases in wheat and rice production, per capita food grain availability has not improved since 1961 because of concomitant increases in

population and a decline in availability of other major food grains, especially pulses. Per capita food grain availability meets only 85% of nutritional requirements. Per capita availability of edible oils is drastically short of the nutritional requirements of India's population.

Table 4 - Nutritional Status and Risk of Death in Children age 1-4  
Sources: 5,6

Nutritional Status	% in each Category 1980	Relative Risk of Death in relation to normal children
Severe Malnutrition	4.7%	12.3
Moderate Malnutrition	32.6%	4.2
Mild Malnutrition	47.9%	2.0
Normal	14.8%	1.0

6. High fertility, in itself an obstacle to development, is also a major factor in sustained high mortality. Several studies in India and elsewhere have indicated that infant mortality rates are inversely related to the length of the birth interval, that is, the likelihood of a child surviving his first year of life is substantially greater if the interval since the previous birth increases, especially beyond 2 years. (Table 5).

Table 5 - Interval between births and Infant Mortality in Gujarat  
Source:7

<u>Birth Interval (Months)</u>	<u>Infant Mortality Rate</u>
Under 12	214
12 - 17	205
18 - 23	127
24 - 29	114
30 - 35	76
36 - 41	72
42 - 47	57
48 +	44
<u>For all intervals</u>	<u>106</u>

B. Causes and Contributing Factors

The Mission's Health Sector Analysis studies have provided a

detailed picture of the major causes and key contributing factors which predispose the child population to sickness and mortality. Analysis of available data and studies indicates that 50% - 60% of all child deaths are caused by a small number of causes and inter-related conditions. These are summarized in Table 6.

Table 6 -Top ten causes of Infant Mortality in Rural and Urban Areas of India - 1978 (Source: 8)

Rural Areas		Urban Areas	
Cause	Rate <sup>a</sup>	Cause	Rate <sup>a</sup>
Tetanus	2267	Diarrheal Disease	954
Diarrheal Disease	: 1343	Dysentary (408)	:
Dysentary (906)	:	Diarrhea (286)	:
Diarrhea (242)	:	Gastroenteritis (260)	!
Gastroenteritis(195):		Prematurity	849
Prematurity	1179	Tetanus	408
Pneumonia	1015	Infantile liver	338
Influenza	729	Influenza	309
Malaria	704	Congenital Malformations	281
Typhoid	573	Typhoid	250
Other disorders of the respiratory system	392	Malaria	180
<b>Total for 10 causes</b>	<b>8202</b>	<b>Total for 10 causes</b>	<b>3662</b>
<b>All causes</b>	<b>13,600</b>	<b>All causes</b>	<b>7000</b>
<b>10 causes as % of all deaths: 60%</b>		<b>10 causes as % of all deaths: 52%</b>	

<sup>a</sup>rate/100,000 population

1) Low birth weight: About 30% of all babies born in India (vs. 7% in the U.S.) weigh less than 2500 grams at birth, and this prematurity or immaturity is both a major cause of death in the newborn as well as a major contributing factor to deaths from other causes in the first year of life. Mortality in infants with birth weights below 2500 grams is two to three times higher than among normal birth weight infants, and six to seven times higher among children weighing less than 2000 grams at birth. Low birth weight contributes 10% - 25% of deaths of the newborn (neonatal deaths). Prematurity or immaturity is also an underlying cause of many neonatal deaths attributed to pneumonia, septicemia, diarrhea and other causes.

2) Neonatal Tetanus: Tetanus of the newborn, which normally kills infants in the first month of life, accounts for between 5% and 30% of infant deaths each year.

- 3) Birth injuries, asphyxia, and septicemia take a serious toll of the newborn, and persist because trained birth attendants are not present at the majority of rural deliveries.
- 4) Diarrheal disease, of several categories, and the dehydration it produces, accounts for 10% - 20% of child mortality.
- 5) Respiratory diseases account for between 10% and 25% of childhood deaths.
- 6) Immunizable diseases, including whooping cough, diphtheria, tetanus, polio, and measles. Of these, deaths from complications of measles are a major portion of all deaths from diarrheal and respiratory diseases.
- 7) Malaria Although malaria has greatly decreased in recent years, in some areas it still remains an important problem with some impact on child mortality.
- 8) Malnutrition, although not in itself a direct cause of death, is an underlying, inter-related condition in a major proportion of infant and child deaths. Malnutrition in mothers is a common factor related to low birth weight babies. Malnourished children are also more vulnerable to the major diseases and at greater risk of dying from them.
- 9) Short interval between births is an important contributing factor to child mortality as shown earlier in Table 5.
- 10) Early age of mother at first pregnancy: A large portion of Indian women marry before age 20, and a substantial number before age 16, despite Indian marriage laws prohibiting marriage before age 18. As a result, 15% of children are born to mothers under age 20, leading to an elevated incidence of low birth weight infants, and a higher risk of death.

In summary, the chief causes of neonatal (newborn) mortality are immaturity (low birth weight), diarrheal diseases, tetanus, and pneumonia. Beyond the first month and up to the first year, diarrheal diseases, respiratory disease and measles are the most important causes of death, further intensified if the child was of low birth weight. Between age 1 and 4, diarrheal disease, respiratory disease, measles and its sequelae are the major causes of death, complicated by malnutrition. It should be noted that although deaths may be attributed to a specific cause, many result from multiple factors, e.g. an infant born with low birth weight,

who is no longer breast fed and sustains frequent infectious diseases resulting in malnutrition finally succumbs to diarrhea.

There is considerable variation in mortality rates and causes among the states and especially between rural and urban areas. Nevertheless, it is clear from most available data that a small number of causes and contributing factors account for over half of the child mortality in India.

For some of these causes and contributing factors, there are specific, simple and low-cost technologies and interventions currently available which have a proven potential for reducing child mortality. For others, interventions are either more complex and costly, with a less well-demonstrated impact, or may not currently be developed. A brief review of available technology is a necessary first step in determining possible intervention strategies.

- 1) Neonatal tetanus: Two tetanus toxoid injections for pregnant women (or before pregnancy) virtually eliminate the risk of neonatal tetanus.
- 2) Immunizable diseases in children: DPT (diphtheria, pertussis = whooping cough, tetanus) effectively prevents these diseases if the three injection course is completed in the first 6 months of life. Oral polio vaccine (3 doses) completed before 6 months of age, and measles vaccine (one injection) given between 9 and 14 months, effectively prevent these diseases. Measles vaccination has the potential to reduce mortality from measles' common complications, diarrhea and respiratory infection.
- 3) Diarrhea: Dehydration resulting from diarrheal disease is a major cause of child mortality, and can be prevented with effective use of oral rehydration therapy (ORT)--both home-made solution and packaged oral rehydration salts (ORS).
- 4) Respiratory diseases: Respiratory diseases have a complex set of causal agents, some of which, such as pneumonia, are responsive to antibiotic treatment, others of which are not. Treatment interventions are not clear cut, and require more careful study. Measles vaccination is the simplest measure for reducing the incidence of respiratory complications.
- 5) Malaria: Malaria is easily treated with low-cost chloroquine and primaquine. Cerebral malaria (*P. falciparum*), the more fatal variety, requires more expensive, less available drugs. Case finding and diagnosis of malaria cases are more complex.
- 6) Birth Injury, Asphyxia, Septicemia: An improved set of interventions relating to pre-natal, delivery, and newborn care is required to address these problems, along with improved service coverage of mothers.

- 7) Malnutrition, both of mothers and children is the result of a complex interaction of biological and social factors. Multiple interventions are required, including growth monitoring, targeted supplementary feeding, nutrition education and preventive interventions such as immunization, and ORT, megadose vitamin A and iron and folic acid supplements. Interventions related to food production and supply and increasing family income are much more complex.
- 8) Low Birth Weight: The incidence of low birth weight babies is also a result of a complex set of factors, which are not currently well understood, but which include maternal infection, nutrition and work load. The effects of low birth weight can be moderated by careful identification of high risk mothers, better antenatal care, maternal food, iron and folic acid supplementation and close monitoring of low birth weight infants. Further research is required to identify the key factors in the pre-natal period associated with low birth weight and to test preventive interventions.
- 9) Short interval between births can be addressed by non-terminal contraceptive methods, and by strengthening motivation of couples to practice extended spacing of pregnancies.
- 10) Early age at marriage is very much linked to a complex set of social norms, and for which a complex set of interventions, political, administrative and social are required.

It is clear from this analysis that the major elements of the preponderant child mortality are diarrheal disease and immunizable diseases -- especially measles and tetanus -- whose impact is interlinked and intensified by poor nutritional status and frequent, closely spaced child-bearing. The majority of this mortality is rural. There are also proven technologies immediately available to deal with these problems: oral rehydration, improved immunization, particularly tetanus toxoid and measles, and expansion and strengthening of family planning spacing methods. The reasons for focus on these interventions in the strategy are: (1) they represent available proven technologies, (2) the focus is on problems clearly of major epidemiological importance; (3) they can be carried on a high-coverage basis, and they are of most benefit to the underserved women and children, the poor and other relatively disadvantaged groups; and (4) they can be delivered through the existing health system at a cost which can be absorbed and sustained by the Indian authorities.

Figure 2 - Rural Public Health/Family Planning/Nutrition Infrastructure

<u>Geographic Unit (No.)</u>	<u>Population To Be Served</u>	<u>Type of Facility/Provider (No.)</u>	<u>% of Geographic Units Served</u>
Village (576,000)	1000	1 Community Health Guide (CHG) (230,000 trained)	40%
		1 Trained birth attendant (Dai) (425,000 trained)	74%
		<u>Anganwadi Nutrition Centre (120,000)</u>	<u>15%</u>
		1 Anganwadi worker (female)	
5-6 Village Units (125,000)	5000 (3000 in hilly or tribal areas)	Health Sub-Center (59,511) 1 Female Health Worker (FHW) 1 Male Health Worker (MHW)	40%
Sub-Block Units 15,000	30,000 (Previously 100,000)	Primary Health Center (5,955)  1 or more MD's 1 Male Health Assistant 1 Female Health Assistant Other Paramedical Staff 10 Inpatient beds	33%
Block (5011)	100,000	<u>Upgraded Primary Health Center (est.450)</u>  2 or more MD's, specialists Health Assistants Paramedical Staff 30 Inpatient bed	9%

11. INDIAN HEALTH AND NUTRITION INFRASTRUCTURE AND SERVICES:  
COVERAGE & EFFECTIVENESS

A. Infrastructure and Services

Although health is designated a state subject, the GOI has initiated programs and heavily financed the states' health infrastructure development and maintenance costs. The current GOI/state infrastructure and approaches to health service delivery are the cumulative result of programmatic and structural changes which have evolved since independence.

Figure 2 illustrates various components of the government rural health infrastructure. The Primary Health Centre (PHC) is the key level, headed by a doctor (medical officer) who is responsible for a PHC staff of 40-50, a network of 12-20 sub-centers, 100 or more village-based Community Health Guides (CHGs), and 100 or more Trained Dais who typically serve a population of 100,000. In some areas, some PHCs have been upgraded with the addition of beds, medical staff and diagnostic facilities to become small rural hospitals.

The PHC Medical Officer is responsible for a broad range of curative, preventive and promotive care, as well as for many training, administrative and supervisory tasks. He is in short, the leader of a large, multi-skilled team - the key facilitator in a widespread network of paramedical and village-based volunteer workers.

The unit that carries the greatest responsibility for direct service delivery is the sub-center, currently serving a population of about 5000 to 10,000, and staffed by one female health worker and one male health worker. The female health worker, traditionally called the "ANM" (Auxiliary Nurse Midwife), is by far the most important worker in the service delivery network, as she is responsible for most of the key fertility and mortality related services: family planning, immunization, pre-natal, post-natal and delivery care, as well as for support of the village-based trained dais and CHGs.

At the village level, one community health volunteer is trained to serve 1000 people. These volunteers are not government employees, but receive a small honorarium for work in minor curative care, ORT and for motivating families concerning family planning and immunizations. In addition, one dai (Trained Birth Attendant) is selected in each village for training to improve care related to pregnancy and delivery, and to promote family planning.

Rural health services fall predominantly in the domain of the central and state Ministries of Health and Family Welfare. However, at the village level, an ancilliary network of child nutrition/health centers has been established in about 20% of the nation's blocks through the Ministry of Social Welfare's Integrated Child Development Services Scheme (ICDS). The main service facility is the anganwadi child nutrition center, staffed by an anganwadi nutrition worker, providing food supplementation, preschool education, and preventive health services (especially immunizations), growth monitoring, and nutrition education to children 0-6 years of age and their mothers. The health services in ICDS are provided by the health workers and infrastructure described above.

The government-supported rural health infrastructure is by no means the only system operating in rural areas. However, its potential impact is broad, because the public infrastructure is generally the only, or the predominant provider of the key preventive services, such as immunizations, family planning, and oral rehydration, so crucial to fertility and child mortality reduction. About 75% to 80% of these preventive services are provided through the government service system.

Besides government services, there is a large network of village and town-based private practitioners, who are no doubt utilized with much greater frequency, and who have much greater credibility in the eyes of the rural population. However, the greatest proportion of services provided by these private practitioners are medical care for the ill, which ultimately has little impact on mortality.

Private Voluntary Organizations (PVO's) have a broad network throughout India, their services are generally considered of higher quality, demonstrating a caring attitude and commitment to the disadvantaged. Many have developed innovative approaches, and focus on family planning and preventive services, often spearheaded by curative care. Their reach is, however, limited.

There are also about 120,000 practitioners of allopathic (western scientific) medicine in the private sector, although most are urban and semi-urban based. Another 600,000 private practitioners follow indigenous systems of medicine (ayurvedic, unani, homeopathy, neuropathy, and siddha), mostly practicing in rural areas. Some are formally trained in institutions and are registered by the government. Others, trained in an apprenticeship arrangement, are not registered, and may practice only part-time for minimal fees. The GOI has supported training in these systems of medicine to institutionalize the training and maintain minimum standards.

It is estimated that in small towns and rural areas the government-sponsored system provides, at best, 30% of non-hospital services; 20% are provided by the organized voluntary sector, and 60% to 70% by private practitioners and the voluntary sector.

#### B. Coverage and Effectiveness

The goals and policy of the GOI, reemphasized in the current and forthcoming Five Year Plans, are to decrease fertility to a birth rate of 20, and to reduce infant mortality below 60 by 2000. These goals are to be achieved through a greatly expanded health infrastructure, delivering key family planning and mother and child health services. Because GOI goals and policy generally focus on the high priority problems of fertility and child mortality, and because the GOI/State Health Infrastructure is the only large scale delivery network which provides the key fertility and mortality reducing interventions, USAID has chosen to support the strengthening of this system and improvement of services in a number of states.

The Integrated Rural Health and Population Project (IRHP) has supported infrastructure expansion, manpower development, and service improvement in selected districts of five states. The more recent Integrated Child Development Service (ICDS) Project seeks to expand and improve the government's ICDS scheme through growth monitoring, targeted food supplementation, better training and supervision of nutrition workers, intensive nutrition education and establishment of a management information system. The project also has a special research component which will independently investigate the ante-natal factors leading to low-birth weight and test interventions to increase birth weight. USAID also is financing a Private Voluntary Organizations for Health (PVOH) Project to channel resources to PVOs which have demonstrated an interest and capability in addressing the key problems of child mortality and fertility.

The GOI has clearly recognized the problems of health and fertility which impede national development, and has clearly stated goals and policies designed to bring about the desired changes. The heavy investment in health and nutrition infrastructure, particularly in the rural areas, has resulted in a huge expansion of facilities and manpower, generating a massive potential for serving the population with effective interventions. There has clearly been a substantial impact on fertility and child mortality since independence. However,

after completing the health sector analysis, and after accumulating several years of experience in close contact with the health and nutrition service delivery systems and their administrative superstructures, a number of gaps still remain, in conceptual approaches, operational methodologies, and service facilities and manpower requirements. Identification of these gaps is the second major step towards developing a health strategy. The gaps can be categorized in several ways:

1. Inadequate access of the population to the health service infrastructure. Despite the extremely large budget outlays on health infrastructure development, doubling, tripling, or quadrupling in each succeeding five-year plan, substantially less than half the rural population has easy access to Government-run facilities which offer services related to fertility and child mortality reduction. The most acute gap is at the subcenter level, where less than half of the geographical units have a subcenter established (figure 4). Of those subcenters that have been established, most of them are in sub-standard, rented quarters, with no living accommodations for staff. Less than one third of the areas have a completed clinic-cum-living quarters. At the sub-center level, the shortage of female health workers, the most important persons in mother and child service delivery, along with the female health assistants who are responsible for FHW support and supervision, are most acute. This is not surprising, because nurses and midwives are accorded low status and pay, and as young, unmarried women living in unfamiliar villages, they feel insecure and threatened, particularly when no permanent work place or living quarters is available.

Despite an extensive infrastructure and trained manpower cadres, the coverage of the key population groups--mothers and children--with the priority interventions available is limited. Less than 20 percent of all children complete the full set of required immunizations in their first year of life, and less than 50 percent of mothers receive tetanus toxoid immunization during pregnancy. In addition, almost none of the rural population has access to measles vaccine, an important intervention not currently part of the government's health services. ORT has just recently been added, with varying emphasis in different states, and coverage appears to be limited to less than 10 percent of families with children. Family planning spacing methods are used by less than 5 percent of the population. These are clear indications of the limited reach of the rural infrastructure with priority interventions.

2. The government has placed high priority on family planning communications to motivate acceptors in the national family planning program, but these have been until recently centered on posters, radio messages and other traditional media with little background market research. Although this environment is changing under the Family Planning/Social Marketing Project, little thought has been given to marketing the concept of the healthy, well-nourished, immunized child and the importance of birth spacing to the health of the child and mother, nor have commercial professional marketing groups participated in marketing programs for such specific immunizations and ORT to any great extent. There has thus been inadequate emphasis on demand creation, and a client-centered service orientation has been lacking.

C. Epidemiology and Monitoring Systems

1. Ability of government decision makers to clearly recognize the importance of key mortality programs, and to monitor changes related to intervention programs is greatly hampered by a weak epidemiological monitoring and investigating system. Moreover, the management information system which monitors service coverage and worker performance is over-balanced in favor of family planning achievements, and is oriented towards arbitrary numbers of service activities rather than coverage of the key mother and child high risk groups. This epidemiological data gap is demonstrated graphically in the lack of recognition by senior government decision makers until very recently, that measles is a problem in India.
2. Presently, only two institutions, the All-India Institute of Public Health and Hygiene and the National Institute of Communicable Disease, provide training in epidemiology for mid- and senior level physicians. The duration of training varies up to one year, but only trains physicians who have been working in the field for an extended period. There is also virtually no training in clinical epidemiology available in India. A greatly expanded capability for training in field and clinical epidemiology is required to staff national, state and district level epidemiological research and monitoring units which are planned by the GOI and states.
3. The GOI has commissioned numerous evaluations, studies and pilot activities designed to assess the efficacy and appropriateness of current programs and infrastructure operations, and to seek improvements and potential alternative approaches. However, there are many

significant areas that have not been carefully studied, resulting in a deficit of factual information on which decision could be based. For example, no in-depth assessment of the village-based, primary health care volunteer network, and its role or performance has been done. No effort to study alternative health financing mechanisms has been made. In addition, results of many useful studies and/or valuable experiences of small, private or voluntary projects have not been widely disseminated to GOI and state decision makers.

This problem is complicated by the lack of sufficient experienced staff in the GOI and most state health directorates to design and implement relevant studies or operations research to produce a more objective information base for decision making.

USAID, both within its current projects, and as part of the Health Sector Analysis (HSA), has supported studies and operations analysis which have rigorously investigated a wide range of topics, and whose results have been disseminated and used by both central and state governments, and other private organizations and donors. The IKHP Project-supported training and communications needs assessments, along with the HSA studies of child mortality, nursing and medical education are a few examples of perceptive studies which have gained wide notice.

4. Training - Training for the key health workers in the rural infrastructure--doctors the health team leaders--manager, and female health workers, the key service delivery agent--is not congruent with the goals of the health infrastructure and its specific service needs. Doctors are trained in large teaching hospitals, have minimal contact with community health programs, and generally regard the public health component of their training as something to be tolerated, not embraced seriously. Training is highly clinically oriented, and, on assignment to a rural primary health center, the new graduate is poorly equipped to understand and prioritize, much less manage a complex set of programs and a large medical and paramedical staff. Trained as he is predominantly in clinical medicine, the rural medical officer tends to focus on patient care, and neglect, or leave to others, the community intervention programs that would make a difference.

Even more critical is the orientation of training for female health workers, whose community-based nursing and midwifery skills are the key to mortality and fertility

reduction. Though they are village based, and must spend a fair proportion of their lives in a village subcenter, they are trained predominantly in district hospitals, their trainers frequently tend to have little rural community experience, and their training focuses on clinical, hospital-based subjects, with minimal preparation in the community. Because of the educational requirements for entrance into training schools, trainees tend to be predominantly urban, with minimal experience or interest in the rural areas where they will have to spend much of their career. As a consequence, on completing training and assignment to a village subcenter, the female health worker is often at a loss where to begin, how to prioritize services, and how to reach out into the community.

Finally, the primary health center is mandated to provide basic training to large numbers of community health volunteers and trained dais, as well as to provide in-service training for subcenter workers and the village-based volunteers. This is the major means of updating first-line service worker skills, prioritizing and supporting key intervention programs. However, physicians and other para-medical staff who must shoulder the responsibility for this training frequently have inadequate knowledge and experience to develop either appropriate content for training materials, training methodologies and programs.

Similar inadequacies are found in the ICDS training, which often leaves anganwadi workers and their supervisors with a lack of the basic skills they need to reduce young child malnutrition and mortality.

5. Management - A lack of leadership, managerial skills and a public health orientation by the primary health center doctors who are the key program initiators has an impact throughout the network of subcenters down to the village level. Without an adequate information base--nor a recognition of its utility, without an interlinking supervisory/support mechanism between each tier of service providers (including ICDS), and without a clear orientation towards providing maximum coverage with key program interventions to the highest risk groups, the system operates more like a series of independently functioning units, with an unbalanced focus on clinical care and sterilization.

In summary, the anticipated rural health infrastructure is steadily expanding but still covers less than 50% of the rural areas. However, its potential is chronically undermined by shortages of key service and managerial workers, who are often not adequately

trained, equipped or housed to work effectively in village communities; nor able to manage large-scale priority programs. The government health delivery infrastructure is the only large scale provider of key interventions such as immunization, family planning, and oral rehydration, but the reach of the services to the most vulnerable population groups is still quite limited. Other key interventions, such as measles and an effective ORT program, are still lacking in the service program. Inadequate epidemiological and management information systems make it extremely difficult to prioritize problems and plan service interventions, and to monitor results, both in terms of program performance and impact on key fertility and mortality problems. Failure to coordinate services of the separate health and nutrition infrastructures has achievement of the full potential of either. The government has not adequately recognised the tremendous potential of private-sector marketing technology which could be utilized to create demand and to promote health and nutrition concepts and priority intervention programs.

### III. HEALTH GOALS/STRATEGY

#### A. Mission Goals

The mission health goals are a significant reduction in fertility and child mortality within two or three Indian states.

The means to achieve this goal, or the subgoals that the mission will pursue are:

1. Establishment of proven, high-impact intervention programs to address selected, key fertility and mortality problems;
2. Development of an effective epidemiological intelligence/monitoring system and bio-medical support institutions to permit health priority-setting and clear evaluation of program impact;
3. Creation of a client-centered health service orientation which incorporates a careful analysis of client needs, beliefs and behavior in creating and meeting demand.

Another goal on which the mission must continually focus is improvement in the basic conditions of Indian women's life which presently foster the high fertility and child mortality and impede efforts to reduce them. Although often beyond the scope of specific health actions, the mission will in its program planning seek to build in components to empower women: to strengthen her self-image and position in the family and community, her understanding of the causes and effects of her position which influence her own and her children's health status, and to enhance her knowledge and access to

the care and resources which can improve these conditions. At the same time, mission efforts will continue to strengthen the status and role of female services workers and community volunteers who primarily serve women and children, and who can reinforce awareness of the needs for and methods of change.

B. OPERATIONAL STRATEGY:

Sharing the GOI's fertility and mortality reduction goals, USAID will seek to assist the GOI in States and Indian private institutions and groups in developing, expanding and improving the quality of service programs which include high impact interventions such as ORT, measles, tetanus toxoid and other child immunizations, family planning spacing methods, and nutritional improvements, which have the highest potential to contribute to the reduction of the infant mortality rate to 60 and child mortality (age 1-4) to 10 by the year 2000. This strategy will focus not only on the small number of interventions which address the mortality problems of greatest epidemiological and social importance, but will also embrace support for strengthening key facilitating systems, without which, the selected intervention programs will have limited reach and impact.

USAID has established solid relationships and technical/managerial understanding, and has provided major support for completing the government's planned rural health and nutrition infrastructure in its current 5 project states. In the future, USAID plans to continue working in only two, or at most three, of these states, as managing five state projects--in reality five separate projects--does not permit adequate, in-depth attention to the spectrum of technical and managerial needs with current USAID staffing. All of the current five states have not demonstrated uniform interest and capability, and the mission will therefore work with those who have demonstrated implementing skills.

USAID's strategy will emphasize:

1. With the reduction in the number of states, there will be an expansion of a small number of key intervention programs beyond the current two or three pilot districts to state-wide, mass scale implementation serving a population of nearly 100 million. In the present IRHP project districts, oral rehydration and measles vaccine programs are already being introduced as innovative activities. Within the one or two year project extension now contemplated, programs for oral rehydration, measles

vaccination, and expanded spacing family planning will be phased into a state-wide scale. A major vehicle for effective planning, implementation and evaluation of the state-wide programs will be mission support for private sector marketing technology to create and expand demand for these intervention programs, and resident technical assistance. Another supportive mechanism will be to have USAID staff resident at the state level for monitoring, management and program facilitating.

2. By moving to state-wide implementation of select programs, economies of scale will also enter, particularly in development of marketing and media strategies to create demand and produce behavioral change. However, USAID will continue its intensive involvement in selected districts of project states, where large-scale trials of various innovative or accelerated interventions and delivery system improvements are ongoing. Capitalizing on the more complete infrastructure resulting from construction and manpower development within IRHP districts, innovative activities will continue to focus on the limited introduction of pilot community-based training for female health workers and improvement of their status; improvement of management information systems, (including introduction of computerization), improved management and supervision, and expanded coverage of mothers and children with comprehensive mortality-reducing interventions.
3. In ICDS project districts, expansion and improvement of training, food supplementation, growth monitoring and nutrition education, and management information systems coupled with intensified efforts at improving immunization and oral rehydration, will continue.
4. The PVOH project, although involved in some current project states, is not limited to them. This project will continue support for private sector projects on a relatively small scale, reinforcing innovative approaches to key mortality/fertility reduction services, the results of which can strengthen the larger scale government efforts.
5. The ultimate goal of the intensive IRHP, ICDS and PVOH trial area activities is to develop approaches and strategies which could lead to pragmatic program implementation approaches amenable to state-wide expansion. The intensive district area programs will be used for development of methods and materials for field testing and revision prior to wide-spread dissemination and use in state-wide intervention programs.

6. In the long term, the Mission will support further investigation and development of promising biomedical technologies of relevance to priority morbidity and mortality problems. Most immediately, this could include technical assistance and support for private sector production of measles vaccine or other commodities, such as ORS, in India; development and field testing of new vaccines, support for strengthening of the epidemiological training and monitoring system and its laboratory base, and support for epidemiological studies to monitor morbidity and mortality. Research on determinants of low birth weight is planned, and possible preventive interventions may be tested.
  
7. Success of these operational strategies will rely heavily on several key resources/mechanisms:
  - (a) Effective use of demand-creating marketing technology and media strategies for state-wide intervention programs;
  - (b) Improvement in delivery system training and support (management) capability;
  - (c) Effective epidemiology and management information systems;
  - (d) The key element in implementing this strategy will be the expected presence of resident technical assistance. Such a presence is beginning with the ICDS project; with the extension of the IRHP Project and expansion to state-wide implementation, a resident technical consultant group is similarly contemplated;
  - (e) For large-scale testing of innovative service mechanisms, and especially in testing of bio-medical technology and/ or in basic research, collaboration between American and Indian investigators and institutions is a pre-requisite. Such collaboration has already begun in the ICDS project between the National Institutes of Health, Centers for Disease Control, and two U.S. universities and various Indian research institutions, both public and private.

In summary, it should be emphasized that the multiple thrusts of the health strategy, and its programmatic components, are all channelled towards reducing the major causes of child mortality in India. The strategy is thus an inter-linked set of critical components which reinforce each other in an integrated attack on these problems. The strategy is graphically summarized in Figure 3.

Figure 3 USAID HEALTH STRATEGY SUMMARY

PROBLEM FOCUS:	IRHP--STATE WIDE IMPLEMENTATION	ICDS AND IRHP DISTRICTS - INNOVATIVE APPROACHES	BIOMEDICAL TECHNOLOGY SUPPORT
<u>Causes of Child Mortality</u>	Selected Mass Interventions	Large Field Trials	<u>Further Investigation</u>
Diarrhoea	ORT	Dietary Management, ORT	Vaccine Trials
Acute Dehydration			Epidemiology Training/Service
Chronic Diarrhoea			Laboratory-based Etiology
Pneumonia	DPT, Measles vaccine	Pencillin/Sulfa Treatment	Vaccine production
Whooping Cough		DPT vaccine	New Vaccines
Measles		Measles vaccine	Epidemiology training services
			Etiology laboratory based
Perinatal causes	Spacing Family Planning	Delivery Packet(sterile blade,tie);Improved tetanus toxoid coverage; risk-based antenatal care	Etiology, Epidemiological Risk
Low Birth Weight		Food supplements	Etiology, Infection,
		Maternal nutrition Education	Treatment (ICDS)
		risk-based antenatal care	
Malnutrition	Spacing Family Planning	Growth monitoring	Infection - Protein/Energy
		Food vitamin, mineral	Malnutrition intersection
		supplements, Nutrition	
		education	
Key Facilitating Resources/ Mechanisms	Support Nurse Midwife	Nurse midwife,AWW training	Epidemiologists
	Commercial Marketing	MD Nurse supervision	Rapid Lab Treatment
	Technology	Epidemiological Evaluation	New Rapid Diagnosis
	Integrated Support	Computer Analysis	Computer - STAT Package
	Measles/cold chain	Resident Technical Assistance	Malaria Data System
	Support	Collaboration with Indian investigators/institutions	Resident Technical Assistance
	Computer Management	Housing worker	Collaboration with Indian
	Information System		Investigators /institutions
	Resident Technical Assistance		
	State level USAID		
	Monitoring staff		

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