USAID SUPPORT to INDIA's

INTEGRATED CHILD DEVELOPMENT SERVICES

Innovative Approaches to Enhance Services

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PHOTO: JOHN CHUDY

COVER: MARTHA FIGUEROA

INTRODUCTION

Achieving nationwide coverage for any social welfare program in India -- especially in rural areas where resources are few and almost half the population lives in absolute poverty -- is a major undertaking. Putting just one development worker into each rural village, for example, means that more than half a million workers, operating in 16 major languages and dozens of lesser ones, must be found, trained, supported and supervised. Further, such efforts must cover 25 states and seven union territories, which are divided into districts and, in non-urban areas, into community development blocks, each with a population of 50,000 to 125,000 living in scattered villages. A number of these communities have inadequate roads, communications and other facilities.

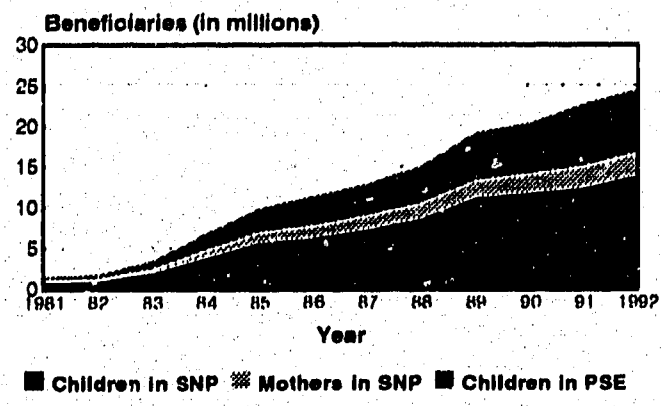
In this context, the Government of India's determination to bring essential social services to all of its young children is impressive, indeed. The task is enormous. Despite significant improvements in Indians' health and education in recent decades,[1] 135 of every thousand children still do not live to see their fifth birthday, and 91 do not even live out their first year. Malnutrition and preventable diseases like measles, tuberculosis and polio are common. About a third of all babies are born underweight, making them more vulnerable to illness and death. And among the poor in the countryside and urban slums, the status of children is often much worse than these figures suggest. Studies of poor communities in various parts

1 Between 1960 and 1986, for example, crude death rates fell from 21 per 1000 to 11, and life expectancy went up from 44 to 57.

of the country show well over half of children to be underweight for their age, for example, and most of these depict stunted growth -- an indication of long-term malnutrition. Women and girls continue to be deprived relative to men and boys.

Since 1975, the multifaceted Integrated Child Development Services (ICDS) program has been India's chief vehicle for improving the prospects for healthy physical, psychological and social growth in its children. From a base of 33 pilot projects in 1975, the program has expanded rapidly. As of March 1992, 2,696 ICDS projects in more than 250,000 poor villages and urban slums have been sanctioned--covering almost half of the country. The Government of India has assumed most of the responsibility for financing, while individual states have been responsible for providing food supplements. Additional assistance has come from UNICEF, CARE, the World Food Program, the World Bank, and the foreign aid agencies of Norway, Sweden and the United States, as well as from numerous non-governmental organizations. By the end of the Eighth Five-Year-Plan, in 1997, India hopes ICDS will be present in each of its 5,153 development blocks, reaching every needy child in the country under the age of six.

Coverage of ICDS Beneficiaries



SNP: Supplementary Nutrition Program
PSE: Pre-School Education
Ministry of Human Resource Development
Government of India, 1992

ICDS was not the first program to address the needs of India's children in their most vulnerable early years. Previous maternal and child health schemes, supplementary feeding programs, and basic education programs had varied success. ICDS, however, was the first to address children's needs holistically, in the belief that services for children are complementary and must operate together for any individual program to have an effective, durable impact.

PHOTO: ALFRED ZERFAS

More than 2.7 million mothers and 13.9 million children under the age of six have received health-and-nutrition-related services, and more than 8 million children attended ICDS pre-school activities, as of December 1991.

PHOTO: ALFRED ZERFAS

A VILLAGE-LEVEL FOCUS

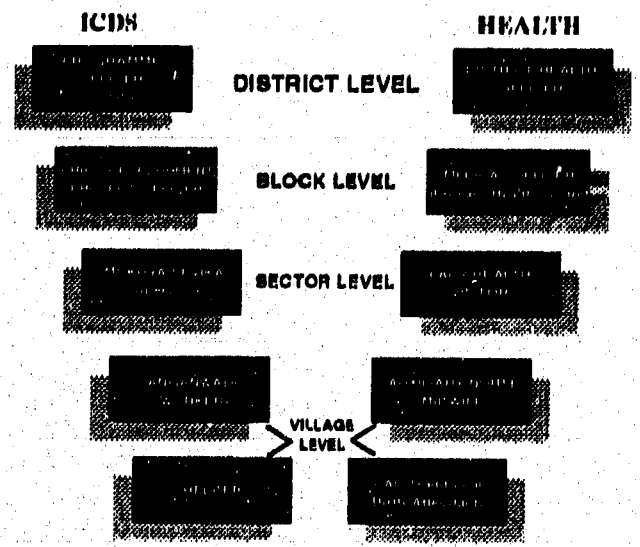
The heart of the ICDS system is a network of village *anganwadis*, which literally are "courtyard" child-care centers. Open four hours a day, these centers are a powerful mechanism for reaching mothers and their children. They offer pre-school education for 3-to-6-year-old children and special food supplements for needy pregnant and lactating mothers and young children. In addition, *anganwadis* are focal points for delivery of other village-level services such as immunization, growth monitoring, health referrals, women's literacy, and skills training for adolescent girls. Each center serves about 1,000 people in rural and urban areas, and 700 in less populated tribal areas.

The *anganwadi* centers are staffed by an *Anganwadi* Worker (AWW) -- usually a young village woman -- and a helper. While in general the AWW is supposed to have an 8th grade education, many, especially in tribal areas, have less or none at all. The AWW is expected to:

- motivate mothers to present themselves and their children at the centers for food and other services;
- monitor and promote children's growth and alert parents on what to do if growth falters;
- know who in the village is malnourished and in need of help;
- make follow-up home visits;
- teach mothers how to prevent and cope with common ailments such as diarrhea;

- help organize immunization campaigns under guidance from local public health personnel;
- distribute Vitamin A and iron/folic acid tablets;
- treat minor injuries and ailments, refer more serious cases to medical services; and
- keep thorough and accurate records.

ORGANIZATIONAL STRUCTURE



The AWWs are supported by a supervisory system that starts with the *Mukhya Sevika*, each of whom is responsible for monitoring 17-25 *anganwadis*. The block-level Child Development Project Officer (CDPO) and Assistant CDPO occupy the next rung of the organizational structure. They are responsible for securing local facilities, selecting workers, identifying beneficiaries, ensuring food supplies and a flow of health services, and reporting to a nodal ICDS agency in the state government (usually the Department of Social Welfare or Rural Development, but sometimes the Department of Health). At the Center, the Ministry of Human Resource Development exercises overall control through its Department of Women and Child Development.

A parallel hierarchy of workers exists on the health side, including Community Health Volunteers and *dais* (traditional birth attendants) at the village level; Auxiliary Nurse Midwives at health subcenters which serve five villages; Lady Health Visitors who function as supervisors; and Medical Officers at block-level primary health centers. Other functionaries, reporting to a variety of state or central ministries, might include social workers, organizers of community women's groups (*mahila mandals*) or heads of income-generating cooperatives. In addition, one or more private voluntary organizations may be active.

Although coordination of these many activities is consistently a problem, India's faith in an integrated approach appears to be vindicated. Where ICDS projects have been operating for more than three to five years, government studies show that infant mortality is lower than in comparable non-ICDS areas, birth rates are lower, nutritional status is better, and more

mothers receive health care before, during and after their pregnancies. Compared to non-ICDS children, pre-schoolers attending *anganwadis* evidence better language and motor skills, conceptual and readiness skills, and personal-social behavior. Because of such successes, the program has been described as India's gift to her children.

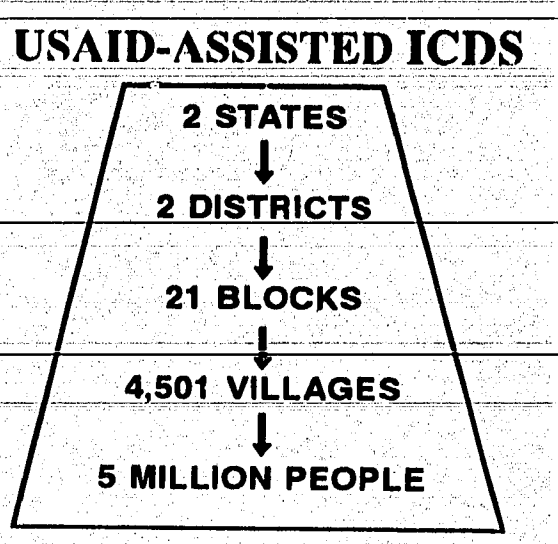
ICDS Services & Beneficiaries

Services	Beneficiaries				
	Children under 1 year	Children 1-3 years	Children 3-6 years	Pregnant/ Lactating Women	All Women 15-45 years
Health Check-Up	x	x	x	x	
Immunization	x	x	x	x	
Supplementary Nutrition	x	x	x	x	
Referral Services	x	x	x	x	
Non-Formal Pre-School Education			x		
Nutrition & Health Education					x

UNICEF/India

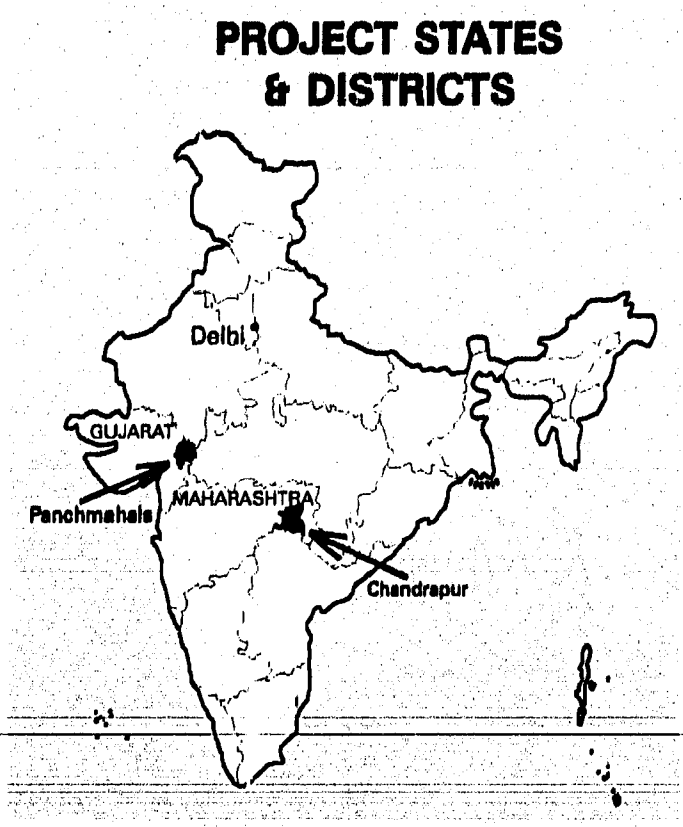
USAID-SUPPORTED INNOVATIONS

Despite its undoubted successes, rapid expansion of ICDS has occasionally threatened to overwhelm the government's ability to manage it effectively. By 1983, when ICDS had spread to about 900 blocks, it was evident that the program did not uniformly live up to expectations. Results varied from state to state and district to district, depending on the skills of the *Anganwadi* Workers and the quality of supervision. One serious problem was that the overworked and undertrained AWWs tended to focus their efforts on 3-to-6-year-olds, directing considerably less attention to the more vulnerable infants and toddlers and almost none to teaching mothers how to enhance their children's nutritional status. Most of the AWWs' time was taken up with pre-school education and record-keeping. Hard-pressed state governments were sometimes unable to supply the necessary food on a regular basis. Difficulties included a large training backlog, inconsistent state systems, and a lack of feedback to front-line workers. At all levels, there was too little cooperation between ICDS functionaries, who generally reported to socia. welfare agencies, and health care functionaries, who reported to state and central ministries of health.



To help address some of these problems, the Government of India and the U.S. Agency for International Development (USAID)

agreed in 1983 to test new approaches for strengthening ICDS services. The resulting eight-year, $24.5 million project[2] was a joint venture of the central government Ministry of Human Resource Development and USAID. In Gujarat, ICDS was implemented by the Health Department and in Maharashtra it was implemented by the Rural Development Department. It operated within regular ICDS guidelines, infrastructure and budget, but it featured innovations in three important areas: training, health and nutrition education, and management information. In addition, $18 million worth of food aid being provided through CARE was to be targeted more directly than before on younger children and mothers in need of supplementary nutrition.



For the Government of India, the USAID-supported ICDS project offered a chance to test new ideas which, if they proved successful and cost-effective, could be applied on a national basis. USAID was especially interested in reinforcing the health and nutrition aspects of the ICDS scheme, as part of its worldwide drive to promote infant and toddler survival. In particular, the ICDS project provided an opportunity to integrate nutrition -- education as well as supplementary feeding -- more fully with other child-survival activities than had been the case in most other projects A.I.D. was supporting around the world.

The USAID project began in 1983, though many elements took several more years to get off the ground. The project was sited in two remote, poverty-stricken tribal districts. One, Panchmahals District, was located in eastern Gujarat, an area that would soon be hit by a devastating four-year-long drought which led to almost total crop failure and widespread out-migration in search of jobs, food and water. The other, Chandrapur District, lay in difficult terrain near the eastern edge of Maharashtra; compared to Panchmahals, its inhabitants were somewhat better educated (70% of mothers were illiterate, for example, compared to nearly 93% in Panchmahals), had fewer children (5.1 v. 6.2 family members), and were better served by state anti-poverty schemes. All told, the USAID project ultimately covered some 4,501 villages in 21 rural and tribal blocks (see map), with a total population of about 5 million.

2 USAID contributed $15 million in loans and grants, plus an additional $2 million in 1984-85; the Government of India contributed $9.4 million.

The project's primary goal was to reduce infant mortality in these districts by 25 percent and mortality in toddlers one-to-three years old by 33 percent within six years by means of: (a) much more sharply focused targeting of pregnant and nursing women and malnourished children under three, and (b) much higher and more regular coverage of these groups with nutritional supplements (food and the micronutrients Vitamin A, iron and folic acid) as well as immunization, oral rehydration therapy for diarrhea, and other essential health services. The four-year subgoal was to reduce severe malnutrition in both districts by 50 percent and severe/moderate malnutrition by 35 percent. To carry out the program, USAID supported enhanced training for *Anganwadi* Workers and their supervisors, innovative nutrition and health education for mothers, and improvements in management information systems at various key points. In Panchmahals, USAID also underwrote a doubling of the number of *Mukhya Sevikas*, to see if closer field supervision would enhance the delivery of ICDS services.

The USAID-supported projects in Chandrapur and Panchmahals came to a close in March 1992. Evaluations currently under way show that the project met most, though not all, of its original goals. Furthermore, innovations developed under the project appear to be making an important contribution to the way ICDS is administered throughout India. These innovations are described in the following sections. Some of them have already been incorporated on a wider basis by state and central ICDS organizations.

USAID-Assisted ICDS Project Goals

The project's primary goal was to reduce infant mortality in Panchmahals and Chandrapur districts by 25 percent and mortality in toddlers one-to-three-years-old by 33 percent within six years. The four-year subgoal was to reduce severe malnutrition in both districts by 50 percent and severe/moderate malnutrition by 35 percent.

Mobile In-Service (MIST) and Other Training

ICDS services converge on the *anganwadi* center. If the *Anganwadi* Worker does not have the knowledge and tools to work effectively, the program cannot succeed. Thus, the importance of good training for AWWs and the rest of the ICDS team cannot be overstated.

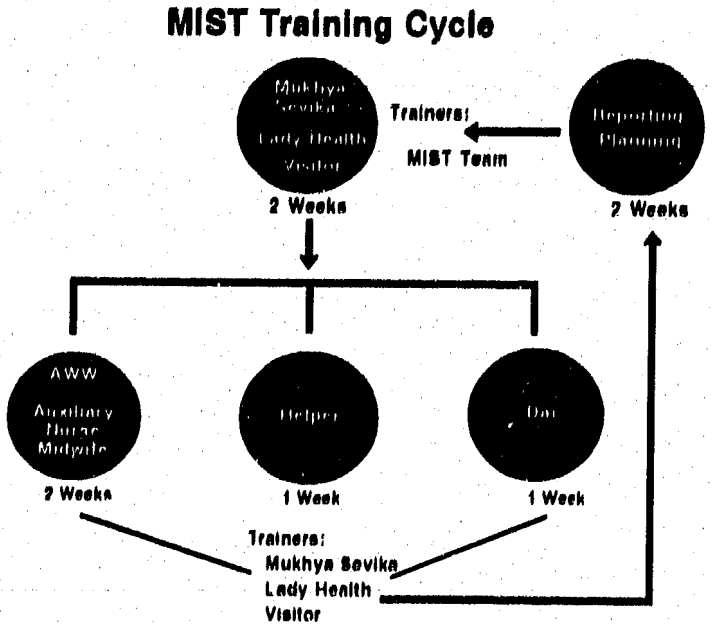
PHOTO: CRIME PREVENTION TRUST, GUJARAT

Anganwadi Workers learn correct weighing techniques from *Mukhya Sevikas*. Hands-on, participatory training in local communities facilitates learning.

All *Anganwadi* Workers receive three months' initial and subsequent refresher training at one of the nearly 300 government-approved training facilities around the country. About half of these are run by the Indian Council on Child Welfare (ICCW), while the rest are administered by local universities, private voluntary organizations, or state governments. Training is based on a curriculum developed by the apex training institution, the National Institute of Public Cooperation and Child Development (NIPCCD), but quality varies according to the facilities and staff of the individual institution. There are also more than 20 mid-level centers, as well as NIPCCD facilities for training block-level CDPOs. In addition, 102 centers at medical colleges throughout the country deliver orientation and refresher courses to district- and block-level health functionaries who deliver ICDS-related health services.

For the USAID-assisted districts, an entirely new approach to continuing education -- called Mobile In-Service Training, or MIST -- was developed to replace refresher courses and, especially, to emphasize training in health and nutrition. Three Indian non-governmental organizations implemented MIST: the Gujarat State Crime Prevention Trust, the Maharashtra-based Pravara Institute of Research and Education in Natural and Social Sciences, and the Center for Health Education, Training and Nutrition Awareness (CHETNA). The Institute of Youth Welfare, Nagpur, replicated MIST in an additional district in Maharashtra. The project also paid for the addition of state training coordinators and project officers at ICCW, and supported short-term training sessions abroad for senior ICDS personnel.

The MIST system featured several noteworthy innovations, which are applicable throughout India:



Training focused initially on supervisors, who in turn trained front-line workers. In the six-week MIST cycle, a team of trainers -- a nutritionist, a social worker or child development specialist, and a medical doctor[3] -- spends two weeks training field supervisors (*Mukhya Sevikas* and Lady Health Visitors). The supervisors then return to their circles, where they conduct two-week training sessions for *Anganwadi* Workers and Auxiliary Nurse Midwives, a week-long session for helpers, and another for Community Health Volunteers and *dais*. One member of the original team of trainers acts as a resource person. The MIST system trained some 20,000 people in Gujarat and Maharashtra, reaching virtually all key functionaries, in contrast to the all-India average of around 80 percent.

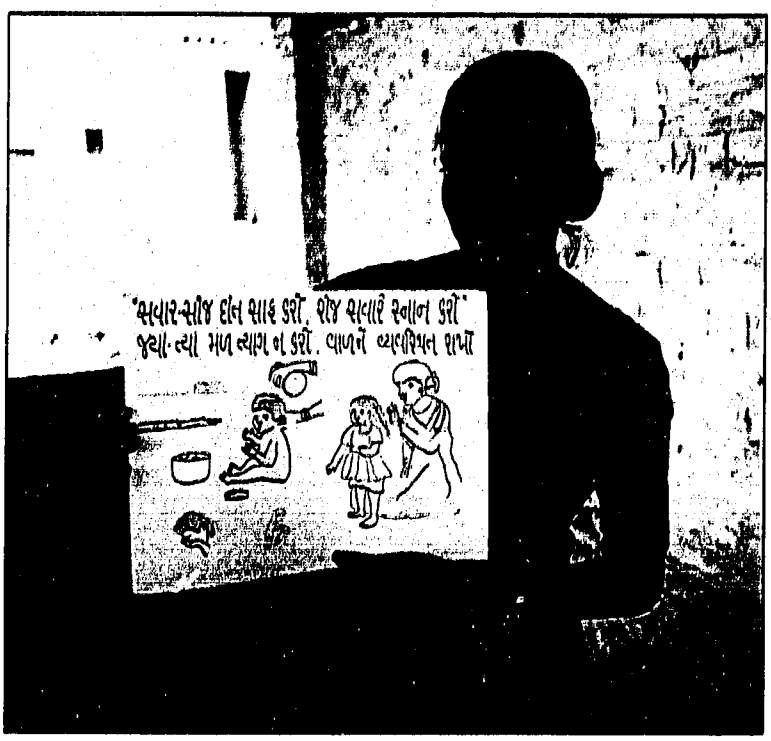
Training was conducted in the villages, rather than at a distant training center. The advantages of conducting training below the block level are many. Trainees were able to reach the centers without having to leave their families. The trainees, often tribals, did not have to adjust to the very different cultural setting of urban or semi-urban India. And trainees were able to practice their new skills in familiar settings and get immediate feedback from the community.

Instruction was hands-on, participatory and skill-oriented. In sharp contrast to traditional classroom-centered, rote learning, MIST trainers used games, story-telling and group discussions to encourage participants to interact in informal ways and develop their own ideas of how best to reach community members. Role playing and skills demonstrations enabled trainees to learn by doing. Quality of supervision grew, as *Mukhya Sevikas* and other supervisors learned to work with community-level workers as partners and as community-level workers learned to express themselves more openly.

3 Experience suggests that it might be easier and cheaper, and no less effective, to substitute qualified nurses for the doctors, who are difficult to recruit and often intimidating to the trainees.

ICDS and health personnel learned together for the first time. An important dividend of the MIST program was a substantial increase in field-level coordination between ICDS and health staffs in both USAID-assisted districts. Even though ICDS is predicated on a holistic approach to child development, health workers have tended to go their own way, uncertain of the value of the ICDS program. By providing joint training, the MIST system has given supervisors and workers from both hierarchies a common body of understanding and a chance to work together and discuss mutual problems.

PHOTO: ALFRED ZERFAS



An AWW demonstrates a hand drawn training card during a session on child hygiene.

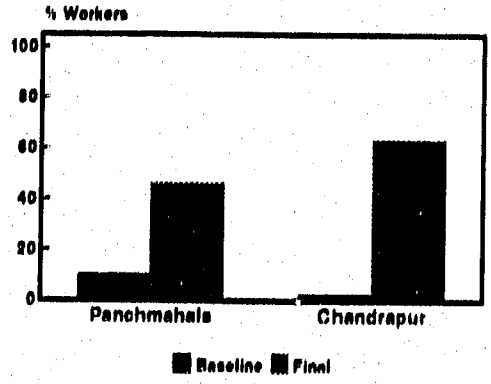
Village-level field workers were included. Prior to MIST, helpers were the forgotten element in the ICDS system. They received no formal training, and often did not know what role they were supposed to play beyond helping with food distribution. The MIST program provided helpers with intensive practical training in all aspects of *anganwadi* work. *Dais* and Community Health Volunteers were also made aware of the health and nutritional goals of ICDS and helped to encourage pregnant women and nursing mothers to come for supplemental feeding and follow-up care. More recently, at the suggestion of the Ministry of Human Resource Development, the system has begun to train adolescent girls (three to a village) to participate in pre-school activities and help prepare food. At the village level, MIST achieved greater community cooperation by arranging special orientation for some 8,000 leaders of *panchayats* and other village institutions.

MIST was cost-effective and readily replicable. In addition to its many other advantages, MIST appears to have been cost-effective. One analyst, using figures from Baroda, where MIST training was introduced recently, estimates that per capita training costs were only Rs. 377, as compared to Rs. 529 for a regular ICDS refresher course. Future costs per trainee will be minimized because: 1) the MIST system uses existing supervisors as the chief training instruments; 2) task-oriented syllabi and other training materials developed under the program are available for wider use; and 3) a cadre of experienced trainers exists.

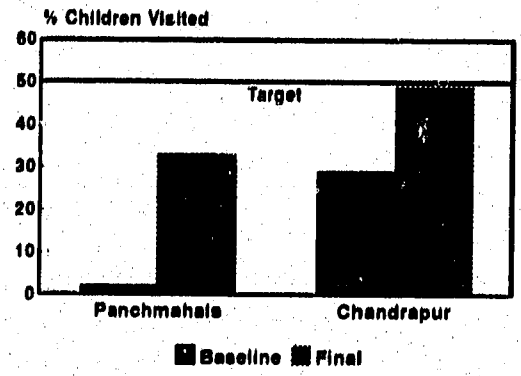
If picked up by the regular training infrastructure, the MIST prototype could be the beginning of a major revolution in the way ICDS operates at the village level. Visitors to Panchmahals and Chandrapur, as well as *Anganwadi* Workers themselves, often commented on the skill and self-confidence of village functionaries who have received MIST training. Follow-up surveys in those districts -- which were carried out by researchers from the Maharaja Sayaji Rao University (MSU), Baroda -- indicate marked improvement in growth monitoring activity, significantly more home visits to malnourished children by *Anganwadi* Workers, and better supervision by *Mukhya Sevikas*.

CHANGES in AWW EFFECTIVENESS

AWW Maintenance of Growth Charts

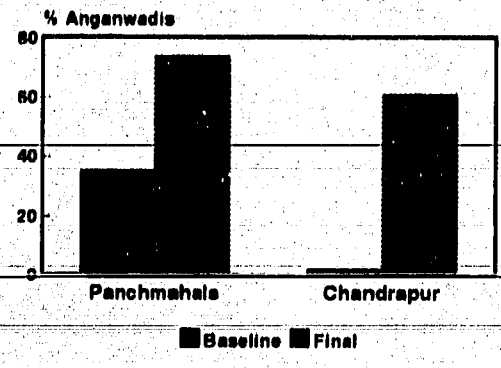


AWW Home Visits*



* Malnourished children 6-36 months, during past 3 months

Supervisor Visits to AWW*



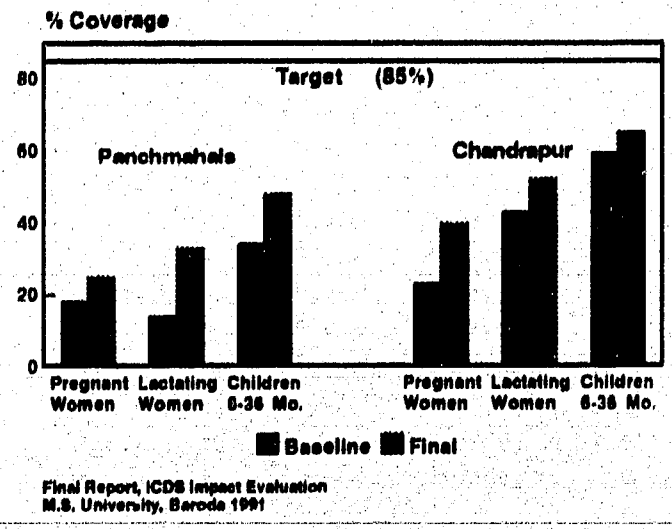
*Ten or more visits in the past year

Final Report, ICDS Impact Evaluation
M.S. University, Baroda, 1991

Targeted Nutritional Supplements

Food plays a critical part in the ICDS program, both to improve nutritional status directly and to attract women and children to the centers for other services. Each *anganwadi* center is supposed to give out enough food (distributed variously by state governments, the World Food Program and CARE) to supply 200-300 calories/day for normal or mildly malnourished children under six, double that for severely malnourished children, and 500 calories/day for pregnant women and nursing mothers. The goal is to bridge the calorie gap between the national average daily intake and that required, thus treating or preventing malnutrition in both women and children and achieving attendant health benefits.

Supplementary Feeding Coverage



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M.S. University, Baroda 1991

In Chandrapur and Panchmahals, an attempt was made to refocus the existing CARE feeding program to serve a higher proportion of infants and toddlers, as well as pregnant and nursing women. The program used Corn-Soy-Milk, oil and other nutrient-rich commodities along with locally produced sugar and spices. In Panchmahals, these were cooked into a kind of cereal; Chandrapur offered a ready-to-eat snack called *sukhada*, which was mixed and roasted in a new USAID-financed processing plant. MIST training emphasized the value of these and home-based foods reinforced by growth monitoring. In addition, the *Anganwadi* Workers were, for the first time, permitted to distribute Vitamin A and iron/folic acid tablets at the village level instead of having to refer people to health centers for them. These tablets make a marked difference in the incidence of night blindness and other signs of Vitamin A deficiency in children and anemia in pregnant and nursing women.

Experience with food distribution in the USAID-assisted districts has been mixed. Rations are now provided to all pregnant women, rather than only to those in the third trimester; along with the accompanying rise in health services at the *anganwadi* centers, this should lead to improved nutritional status and minimize the number of underweight babies. The supplementary food helped counter the debilitating effects of the long drought in

Panchmahals, and it was doubtless a factor in the reductions observed in the incidence of severe and moderate malnutrition in both districts. Anemia and Vitamin A deficiency have also been greatly reduced.

However, considerably fewer women participated than had been expected, despite the use of *dals* to encourage attendance at the centers. Village women in India often work in the fields during the day, and they tend to perceive *anganwadi* centers as places for their preschoolers rather than sources of services for themselves or their infants. Although participation of the under-three age group improved significantly, the USAID/CARE goals for feeding 85 percent of malnourished infants and toddlers were not met. The reasons for this shortfall are not entirely clear. It appears that many mothers and *Anganwadi* Workers still do not perceive CARE food as suitable weaning foods; although such foods are full of nutrients, they can be too dry and bulky for very young children. There is some indication, as well, that beneficiaries in Chandrapur grew tired of eating the ready-to-eat *sukhada* every day, although workers appreciated the time saved in preparation.

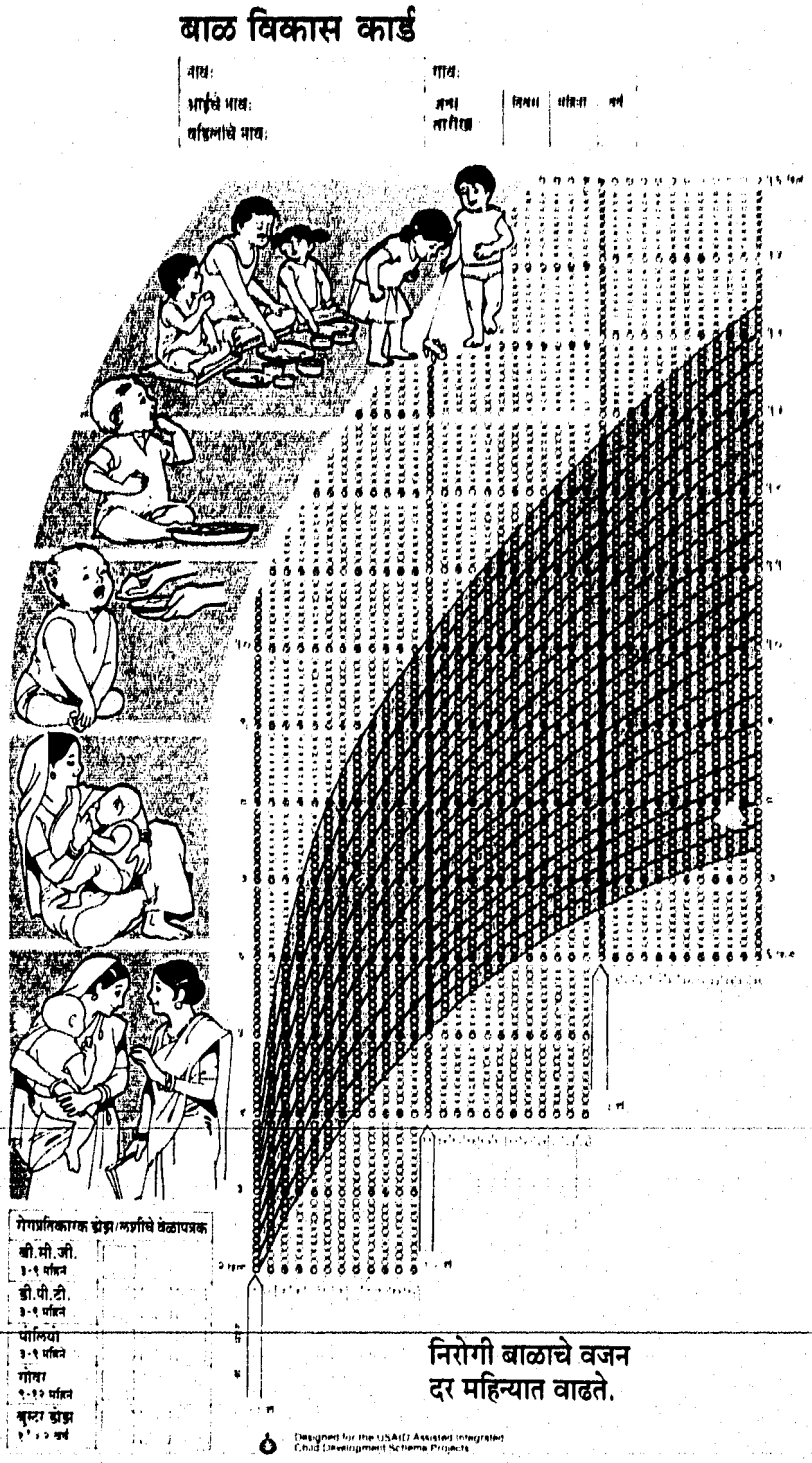
PHOTO: JOHN CHUDY

The Impact Evaluation Study examined children for signs of Vitamin A deficiency. Presence of deficiency signs declined by 92 percent in Chandrapur and by 25 percent in Panchmahals.

Relating Nutrition to Birth Weight

A study based on data collected in Panchmahals and Chandrapur suggests that newborns weigh almost a quarter of a kilogram more on average when their mothers receive a dietary supplement, and that their risk of low birth weight is one-third that of babies whose mothers received no supplements. The effect seems to be greater when women get both food and iron supplements, and when supplementation covers both the second and third trimesters, not just the third. These findings led to a Government of India decision to extend ICDS supplementary feeding to women as soon as pregnancy is established.

USAID is currently sponsoring further research to see if the incidence of low birth weight in Chandrapur and Panchmahals is actually falling as a result of prenatal dietary supplementation, and whether this will lead to lasting improvements in the nutritional status of young children. The results of these studies are not yet available.



The Bubble Growth Chart uses bubbles designed to improve plotting of weight/age, and growth paths to ease interpretation of child's weight. Mothers kept the charts as a graphic reminder of their children's progress.

Health and Nutrition Education

An innovative health and nutrition education package was included in the ICDS project to support its nutritional goals. The idea was to identify malnutrition problems rooted in nutritionally inappropriate feeding and health practices and then to use social marketing techniques to effect long-term, sustainable changes in the way mothers feed their young children.

A.I.D. has long been a leader in the application of social marketing techniques to health, population and nutrition programming in developing countries. Such techniques entail extensive audience research to determine what existing beliefs are and what messages will be most effective in reaching different audiences and changing inappropriate behavior. Based on this research, multiple channels -- including posters, radio messages, instruction booklets, and one-on-one discussion -- are developed for conveying those messages.

For the ICDS project, USAID consultants worked with a private-sector Indian market research firm to study local feeding and health-related practices and identify resistance points in regard to nutrition behaviors. Researchers were able to pinpoint a number of common practices that needed changing. They found, for example, that while mothers usually breastfed their children for a long time, they often delayed the

introduction of solid foods longer than they should, in the belief that babies could not or should not eat such food. Pregnant women often ate less rather than more, in the belief that extra food would produce larger babies and result in more difficult deliveries. Thus, materials and messages had to be developed to convince mothers to eat more during pregnancy and give their babies special weaning foods starting at four-to-six months of age.

Face-to-face communication with mothers during monthly growth monitoring sessions was to be the main channel for delivering these messages, to be reinforced through radio and other media. In many parts of the world, monthly growth monitoring -- i.e., tracking of a child's growth, usually through weighing -- has proved a successful technique, not only for identifying and treating incipient malnutrition at an early stage but also for dramatizing the concept of healthy growth in children by means of a simple chart illustrating the range of growth considered normal. Sometimes, mothers need only this information to make sure their children get the extra food that will keep them growing adequately. Ideally, however, growth monitoring is an integral part of nutrition education and other elements of basic health care.

Counseling cards used by AWWs illustrate methods for improving maternal and child nutrition. This card, one of a series of 16, provides tips on maternal diet during breastfeeding.

Educational materials pre-tested and produced could be used in conjunction with growth monitoring to teach mothers how to better feed their children. The most successful of these materials was a set of 16 counseling cards depicting pregnant/lactating women and children of different ages and nutrition status. The front of each card included messages and reminders for mothers, while the back contained more detailed instructions to be conveyed personally by the *Anganwadi* Worker.

The original intention was for the AWW to use the appropriate card to counsel mothers during monthly weighing sessions. In practice, however, *Anganwadi* Workers were too preoccupied with the logistics of weighing numerous youngsters and recording the results to give any one mother much individual attention. Furthermore, most children were brought in

by older sisters rather than mothers. But observers report that the *Anganwadi* Workers in the project area have found other uses for the cards which accomplish their educational purpose. Thus, the AWWs use the cards during home visits, when they have the mother's undivided attention, and during group education sessions, when the cards serve as effective teaching tools.

Other products of the health and nutrition education component of the USAID-assisted project included:

PHOTO: JOHN CHUDY

Food plays critical role in the ICDS program. *Sukhada*, a ready-to-eat food consumed at *anganwadi* centers, is prepared at the Chandrapur processing plant.

- attractive, informative Pregnant Women Action Cards and Bubble Growth Charts to be kept at home to remind mothers of health messages;
- radio spots and a number of full-length programs broadcast by All-India Radio to listening groups organized by the AWWs;
- five one-minute films produced through the ICDS directorate in Gujarati, Marathi and Hindi, to be shown in cinema halls to enlist the support of husbands; these films were later converted to video and shown on roving vans in remote areas, interspersed with excerpts from popular films;
- an educational booklet to solicit support for the ICDS program from village leaders.

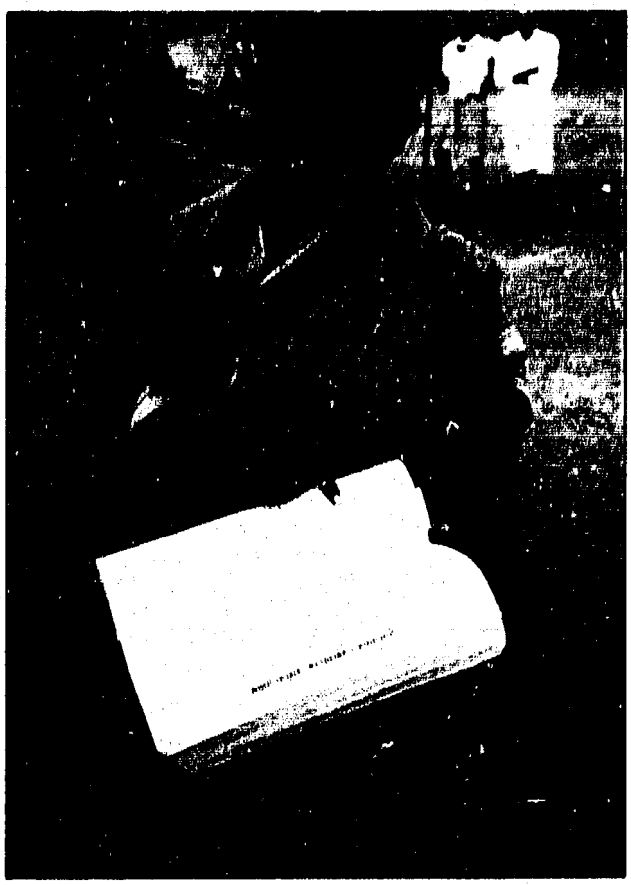
These products have had varied receptions. The bubble charts and pregnant women's action cards have fallen out of use, since *Anganwadi* Workers were never re-supplied after training. They are both attractive and informative, however, and might one day be revived. Moreover, some of these materials, as well as the counseling cards, were used in MIST training, and helped improve the AWWs' knowledge and skills.

The mass-media aspects of the nutrition education effort -- the radio messages aired in 1989-90 and the video shows circulated in 1990-91 -- were less successful than had been hoped, in part because few people in tribal areas have access to mass media. The video vans proved to have great drawing power, but the nutrition messages contained in the films were often better suited to urban audiences than to tribal villagers.

Furthermore, although more mothers attended nutrition and health education sessions, and some heard the radio messages or saw the videos, little change in actual practice had been registered by 1990-1. The impact evaluation surveys by MSU researchers showed that more mothers had heard of oral rehydration therapy (ORT) by the end of the project, but the numbers of women actually using it to manage children's diarrhea did not rise appreciably, and mothers did not introduce solid foods at an earlier stage. Behavioral change, quite obviously, is not easy to achieve.

Since the up-front research and production costs of a mass-media campaign approach are high, and no government-linked social-marketing infrastructure has been integrated into the ICDS system, the future of this component of the USAID project remains uncertain. Nonetheless, the project's aim of raising the visibility of nutrition messages in the ICDS program appears to have been achieved, at least in part.

PHOTO: ALFRED ZERFAS



Anganwadi Workers collect and record data that comprise the Progress Reporting System (PRS).

Management Information Systems

An important contribution to the ICDS program was made by the USAID and Indian consultants who designed computer software to enhance the management of information. The system they devised not only permitted more efficient monitoring and timely decision-making at upper-management levels; it also provided for feedback to block-level workers, which should ultimately result in the provision of better services at the village level.

The ICDS program has always had a strong information gathering system. In most states, each *Anganwadi* Worker was expected to keep up to 15 separate registers detailing various parts of her services and to forward lengthy progress reports every month to higher levels in the ICDS system. Report design varied from state to state, but most were many pages long and required the collection of large amounts of data, much of it repetitious and/or difficult to determine reliably. They were aggregated at the block level before being sent on to state and central offices and were rarely shared with other institutions.

The USAID-supported project made an effort to assist the government by developing a computerized information system for ICDS and training technicians to operate it. Four interrelated activities were involved: basic hard- and software for generating monthly progress reports at central and state levels; steps to improve the quality of the basic data entering the system; incorporation of appropriate health information into the ICDS system; and development of feedback mechanisms useful to decision-makers at central, state and district levels. Senior ICDS officials controlled the design and development of the system, which enhanced their sense of "ownership" and understanding of how to use computer technology for decision-making.

The heart of the management information system is the monthly, computerized Progress Reporting System, the software for which has been progressively refined by the Department

of WCD. USAID assisted in the present version, 4.1, which is in use at central government level and at the state level in Gujarat and Maharashtra. Its features are those of any good information system:

It is standardized and easy to use. Data input is much easier, since the number of required basic reports from *Anganwadi* Workers has been reduced from 15 to seven and standardized across blocks. This has helped to improve the completeness and accuracy of reporting.

It highlights priority activities. The new system asks for much more information on health and nutrition, with an age and sex breakdown that reminds *Anganwadi* Workers of the importance of reaching women and under-threes. Furthermore, by consistently using the same indicators in the same formats, all ICDS workers are receiving the same messages concerning the relative importance of the services they are meant to provide.

It checks the accuracy of field data. One of the first computer runs that analysts make is a consistency check on data submitted from the field. The software automatically compares one month's entry with past months, and with other service centers, and flags unusual or unexpected entries. When inconsistencies or probable errors are identified, supervisors are asked to double check and revise the information if necessary.

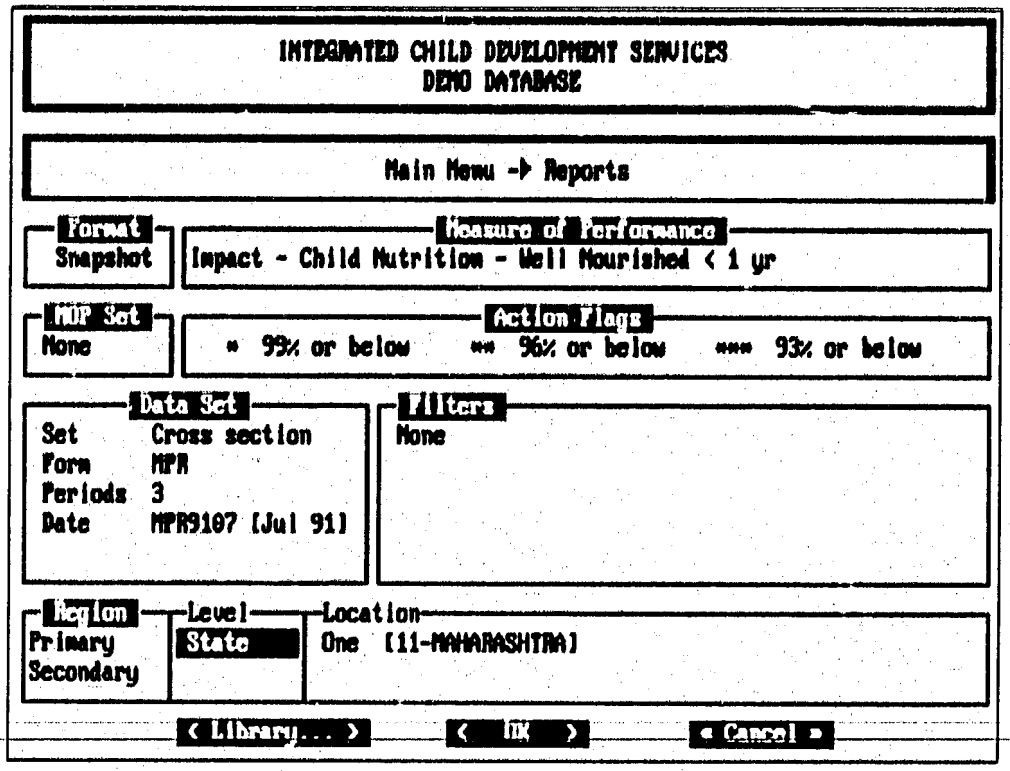
It is a useful management tool. With the touch of a button, information specialists can provide managers with summary tables and charts (line, bar, pie, etc.) of specified measures of performance, measurements of performance against program targets, lists of all projects that fall above or below a specified level of performance, lists of states, districts or projects sorted in rank order based on specific performance criteria, and, for some states, maps exhibiting

PHOTO: CAROL BAUME

Consolidated PRS information is processed and analyzed at the state level by MIS coordinators.

performance by state-, district- and project-level geographic regions. Thus, managers can see at a glance if one center or group of centers is out of line with others and requires special attention. They can readily assess progress toward pre-set targets, and patterns of high performance can be investigated to see that successful approaches are applied elsewhere.

It produces timely feedback. Once field data are sorted and analyzed, the Progress Reporting System allows for automatic feedback. This includes a special menu-driven Letter Editor that enables managers to produce feedback tailored to individual officials, detailing action to be taken. In Maharashtra and Gujarat, feedback reaches the district level. Turnaround time for reports is down to about two months, and will fall further when more states acquire the system.

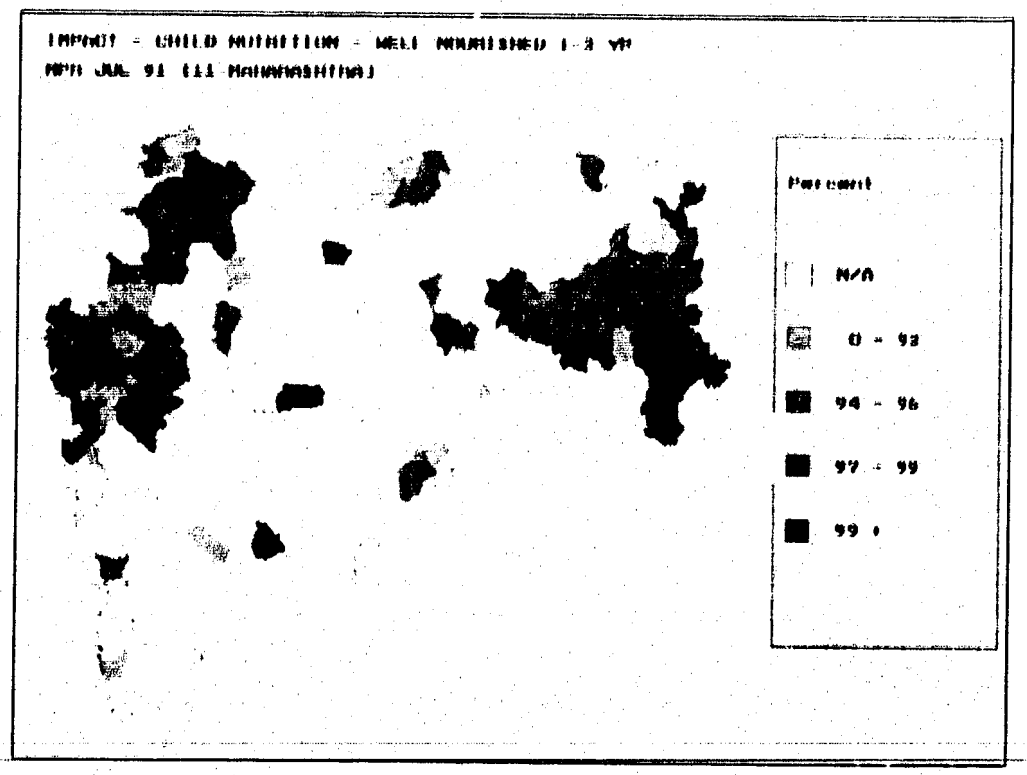


The computer screen above shows a menu-driven, user-friendly database from the PRS system. The PRS system produces summary tables, charts, and maps from ICDS data.

The Government of India has now authorized extension of the Progress Reporting System to 11 states and union territories -- Tamil Nadu, Rajasthan, West Bengal, Arunachal Pradesh, Bihar, Uttar Pradesh, Kerala, Pondicherry, and Delhi UT, in addition to Maharashtra and Gujarat -- and training and technical support are being arranged. Thus, the initial investment in setting up a management information system appears to be paying dividends many times over. Indeed, feedback to the community and *anganwadi* level may ultimately be most logical and useful of all. The Government of India is installing computers at the district level to monitor development programs, including ICDS. The PRS pilots could be installed at this level.

In a separate effort, USAID information specialists worked with NIPCCD to devise a system for evaluating and eventually accrediting ICDS training institutions. The exercise, completed

in 1991, was the first attempt to assess and monitor the training imparted to *Mukhya Sevikas* and *Anganwadi* Workers according to a consistent standard. Thus, NIPCCD was able to categorize the more than 300 training centers on the basis of performance, staffing, infrastructure and facilities. The software allowed for scoring and weighting each variable to arrive at a composite rating for each individual training center. As yet, this information has not been brought up to date, and little use has been made of it to show how training institutions need to improve. But NIPCCD, in collaboration with the Government of India, appears poised to extend the process.



The computer screen above shows a map of nutritional status in Maharashtra state.

PHOTO: JOHN CHUDY

ACCOMPLISHMENTS

Impacts on Nutrition and Mortality

Chandrapur and Panchmahals districts have undoubtedly benefitted from the USAID-assisted ICDS project. Health and nutrition status has improved; infant and toddler mortality rates are lower. The goal of a 33 percent reduction in toddler mortality was met in both districts, and the 25 percent reduction of infant mortality achieved in Chandrapur (though not in Panchmahals). Severe malnutrition fell by 25 percent in Panchmahals, even in the face of drought, and by 53 percent in Chandrapur. Vitamin A deficiency and anemia have been greatly reduced. Mothers have benefitted from better pre- and post-natal care, and more of them are participating in other ICDS activities. Greater knowledge and enthusiasm among *Anganwadi* Workers at the village level, increased supervision by *Mukhya Sevikas*, and closer coordination with the health system are all evident. Many of these benefits are likely to remain long after the end of USAID assistance to the project.

Not all of the improvements can be attributed solely to the ICDS project, of course. The period of the USAID project coincided, for example, not only with devastating drought (even Chandrapur was affected) but also with expansion of the government Employment Guarantee Scheme in drought-afflicted districts. The day-labor provided under this scheme to both men and women led to a rise in average household income, particularly in Chandrapur, providing families with more money to buy food and other basic necessities. Furthermore, ongoing

government health and education programs benefitted all the districts in the area, including Chandrapur and Panchmahals, and Panchmahals had benefitted from earlier USAID assistance (through the Integrated Rural Health Project) as well as a CARE program to promote the use of ORT. Thus, the extent to which changes in the two districts can be attributed specifically to USAID-supported innovations in ICDS is hard to isolate, though there is no doubt that they made a positive contribution.

Nutritional Status: Weight-for-Age*
Children 0-36 months

	Baseline (%)	Final (%)	% Change
Panchmahals	(N=2111)	(N=2061)	
Moderate/Severe (Grades 2,3,4)	46	40	-13
Severe (Grades 3,4)	16	12	-25
Chandrapur	(N=2066)	(N=1984)	
Moderate/Severe (Grades 2,3,4)	50	34	-32
Severe (Grades 3,4)	17	8	-53

* Indian Academy of Pediatrics Classification
Final Report, ICDS Impact Evaluation
M.S. University , Baroda, 1991

Infant and Toddler Mortality Rates

	Baseline	Final	% Change
Panchmahals			
IMR	69 (N=1099)	63 (N=957)	-9
TMR	17 (N=2123)	11 (N=2330)	-35
Chandrapur			
IMR	82 (N=855)	61 (N=822)	-27
TMR	16 (N=1665)	10 (N=1539)	-38

IMR=Deaths per 1000 live births; TMR= Deaths per 1000 children 12-36 months
Final Report, ICDS Impact Evaluation
M.S. University, Baroda, 1991

Spread of Innovations

India is now poised for another major expansion of ICDS. By 1997, the program will cover most of the entire country. In this context, elements of the USAID-supported effort in Gujarat and Maharashtra are likely to prove useful on a broader basis. Indeed, several are already being applied. Thus:

- The management information system is being extended to 11 states, the quality of field data has improved, and central government institutions are enthusiastic about its usefulness as a management tool.
- The apex training institution, NIPCCD, expects to use software developed under the project for evaluating and accrediting training institutions throughout India.
- NIPCCD has incorporated some of the health and nutrition materials developed for the project into its standard training syllabi and has rewritten its syllabi to make them more task-oriented, with better sequencing of sessions and greater emphasis on field practice.
- Growth-monitoring training modules and instruction manuals developed by NIPCCD under the USAID project have been distributed nationally, as has a brochure on the use of Salter and Bar scales.
- Both the Gujarat and Maharashtra state governments have extended MIST training to additional blocks. The Government of India is looking at the MIST experience with interest, and World Bank representatives have recommended its use in two states where Bank financing is involved -- Andhra Pradesh and Orissa.
- Training for community leaders as well as adolescent girls, begun on a pilot basis in Chandrapur and Panchmahals, appears likely to become a permanent feature of the regular ICDS program.
- The government has expressed interest in adapting the set of counseling cards developed for the project and putting them to wider use in the ICDS program.
- The government of Maharashtra has assumed the operating and maintenance costs of the new food processing plant in Chandrapur and is using its capacity to supply food to additional districts.
- Vitamin A and iron/folic acid tablets are now distributed at *anganwadi* centers as well as more distant health centers, greatly enhancing their impact on the health of women and children.

PHOTO: CRIME PREVENTION TRUST, GUJARAT

- On the basis of USAID-financed research findings showing that pregnant women benefit from early supplementary feeding, all-India guidelines for ICDS now recommend supplementary feeding for women as soon as pregnancy is confirmed, rather than just during the third trimester.

Other elements of the USAID-supported project in Chandrapur and Panchmahals could easily be applied more broadly, particularly since many of the up-front costs (such as development of training materials and computer software) already have been paid for. Better coordination with health services is an important and easily replicable innovation. It will be up to the Government of India to decide whether, where and how these innovations can be absorbed into the regular ICDS budget and procedures.

Wider Significance

The ICDS project is significant as well for A.I.D. and health and nutrition development programming generally. It may be the largest nutrition-centered project in A.I.D.'s worldwide portfolio, and is surely one of the most carefully monitored and evaluated. The results appear to show that integration of nutrition concerns with other child-survival interventions can produce important improvements in the health and nutritional status of women and children, and that these improvements are sustainable over time. They confirm the value of a multi-purpose, village-based institution like the *anganwadi* center for delivering health and nutrition services. And they highlight the value of international assistance for introducing effective innovations at key points in a large and complex system. These lessons are applicable to similar efforts elsewhere in the world.

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USAID-Assisted ICDS Impact Evaluation Graphs and Charts

The graphs and charts showing changes in Panchmahals and Chandrapur from baseline to final evaluation are based on impact studies carried out by Maharaja Sayajirao (M.S.) University, Baroda, as part of the USAID support to ICDS. Baseline studies were carried out in 1984-85 with follow-up studies in 1985-87, 1987-88 and 1989-90. Ninety-three *anganwadis* (51 in Panchmahals and 42 in Chandrapur) were sampled. The entire population (about 29,000 in each of the two areas) was surveyed. The studies documented:

- changes in coverage of ICDS components;
- impact of services on the health and nutrition status of pregnant women and children under 6 years of age; and
- nutrition and health knowledge of mothers and *anganwadi* workers.

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