

Integrated Interventions for Child Survival—A Case Study

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Abstract. Integrated interventions for child survival as carried out in community health project of SEWA-Rural, a voluntary organisation working in tribal area of Gujarat, were discussed. They were introduced in phased manner over a period of ten years. It throws considerable light on field problems and how they can be overcome. The interventions mainly related to development of local manpower, appropriate technology like delivery pack and pictorial cards, functional referral support and linkages with other agencies, particularly with government. The latter is quite unprecedented in which the state government handed over entire PHC to a voluntary organisation.

Utilisation of majority of Maternal & Child Health services has reached up to the target to be achieved by 2000 A.D. There is near-eradication of measles mortality, newborn tetanus and dramatic fall in the prevalence of vitamin A deficiency, complication of childhood tuberculosis and dehydration death.²⁷ The childhood & infant mortalities have reduced to less than half, but after an initial fall there was very little further improvement in perinatal and neonatal mortality. There is an immediate need to strengthen the existing facilities of neonatal and perinatal care at all level. Those who conduct most of the deliveries in rural area, i.e. TBA's and nurses at home and in health center required appropriate training to improve their skill and knowledge. There is a need to design safe, simple, cheap but efficient technology to diagnose and manage low birth weight babies and birth asphyxia at community level. (Indian J Pediatr 1994; 61 : 1-9)

Key words : Child survival; Interventions.

SEWA-Rural is a community based voluntary organisation established in October 1980 with an objective of overall community development of people of tribal, rural area of Bharuch district in Gujarat,^{1,1} where 60% of people consist of tribal and landless labourers, and 70% of female and 40% males are illiterates. The first step was an establishment of community based hospital, to fulfill the felt need of people, and build up necessary rapport, credibility and confidence in the local community. After

two years of hospital work, mobile unit was started to provide curative services at doorsteps. It had helped us to educate ourselves to identify the real health problems, factors responsible and to develop strategies to overcome these problems. Subsequently government of Gujarat handed over specific project population to SEWA-rural and since then none of government functionary is working in the project area. A participatory evaluation was conducted after 5 years of work, following which additional relaxation from government was given in project priorities, strategy & other matters and as a result further modifications in project were undertaken. Along with this field, operational research studies

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and training in community health were also started. As a part of community development, several other programmes like vocational training of youth, supplementary education for school children, women development, and some of economic activities like cottage industries were later initiated.²¹ In the beginning the health problems were not much different from elsewhere in rural area. There was high morbidity from infections like ARI, malaria, tuberculosis, skin infection, scabies, conjunctivitis, diarrhea etc. More than 75% of children were malnourished, 16% of them suffered from severe malnutrition, anaemia, vitamin a deficiency were quite common, and 20-25% of the childhood mortality was related to measles complications. We examined 1,116 school children of whom 58.6% had vitamin A deficiency.

As shown in Table 1, utilisation of various MCH services was quite poor, less than 15% of pregnant mothers and less than 1% of postnatal mothers had received necessary maternal care, and less than 10% of children were covered under D.P.T., polio and measles vaccination.

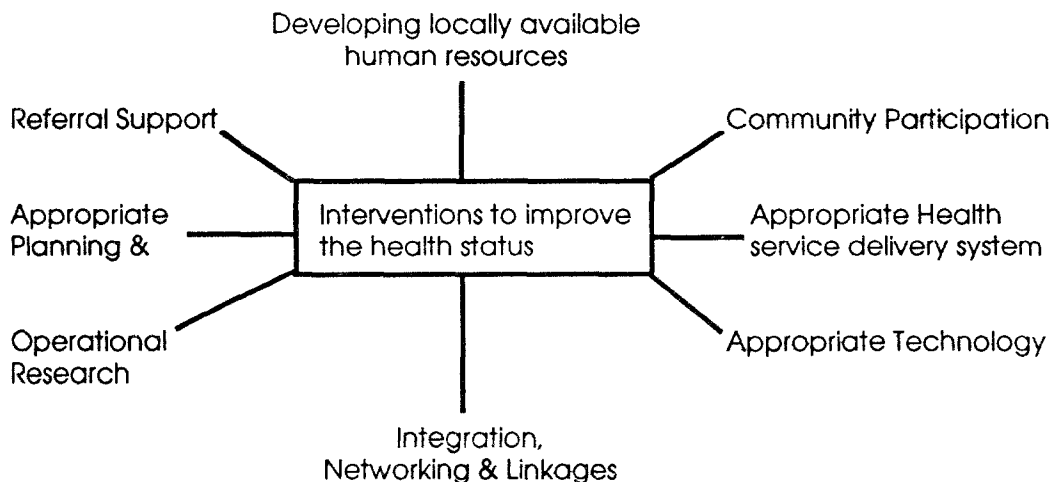
Method

The project area covered 38 villages having population of 38,675 which was taken up in a phased manner (1982, 84, 87).^{1,2} Similarly interventions were also introduced in a phased manner. As a result these interventions and results do not fulfil rigorous criteria of what one may expect in a formal research study. Also most of the data happen to be of inservice data with its accompanying limitations. As none of the

TABLE 1. Coverage of Services

	Baseline data* 1982-84	1987-88	1992-93	HFA Target 2000
Population	11,678	35,090	38,675	—
ANC services	15%	74%	77%	100%
Hospital delivery	8%	9%	26%	—
Delivery by trained person	< 25%	85%	88%	100%
Ref. of H.R.M.	0.4%	12%	65%	—
New born weight taken	9%	50%	88%	—
New born weight < 2.5 kg	—	46.13%	36%	—
Grade III & IV children	16%	4.6%	3%	—
<i>Vaccination Coverage</i>				
BCG	33%	93%	97%	85%
DPT	9%	76%	94%	85%
Polio	7%	79%	93%	85%
Measles	—	77%	95%	85%
Vitamin A coverage	19%	88%	86%	—

*Baseline survey and first year inservice data



government functionary were working in the area, the project had to undertake all the programmes activities carried out by government primary health centre.

The Community Health Project (C.H.P.) activities operates under four tier system at village level CHV's, AWW's & TBA's (1 per 700-1000 population) together form the first tier; the second tier consists of the multipurpose workers (1 per 3500-4500 population) who undertakes weekly visit to every village and gets support and guidance from supervisory staff (1 per 12,000 to 15,000). Mobile medical team, which consist of a doctor, compounder, health educator, use to visit each village every week. This mobile service was weaned off after six years. At the fourth tier comes a well equipped hospital providing most crucial referral support.^{1,3}

Interventions

In an attempt to improve the health status of mothers and children the interventions shown above were introduced over a

period of one decade.

Development of Local Resources

To make the implementation effective, committed and competent man power at all level is very important. The decision to strengthen locally available manpower, like TBA, CHV & AWW, was made in view of two reason. Firstly, there is disinclination among competent professionals for rural life and work, and most of them do not have knowledge and faith in primary health care approach. Secondly, there is an availability of local people who are committed, ready to learn, acceptable and accessible to the local community.³ In rural areas 80-90% deliveries and newborn care are being given by TBA's. Efforts were made to strengthen them by providing task related training to conduct home deliveries with all its do's and don'ts, and were equipped with appropriate technology like delivery pack,⁴ pictorial card etc. Similarly a new cadre of maternal and child care worker (MCH worker) were de-

veloped after proper selection from among CHW, AWW and providing them appropriate training, supportive supervision and monitoring they proved to be better workers (SEWA-Rural team, community based less qualified and trained rural health worker as an alternative to female health worker, an un-published paper). More importantly their dignity was preserved and their self confidence was raised by demonstrating that they can assume the responsibility of looking after their own common minor health problems. This has potentiality of leading to self reliance on a long run.

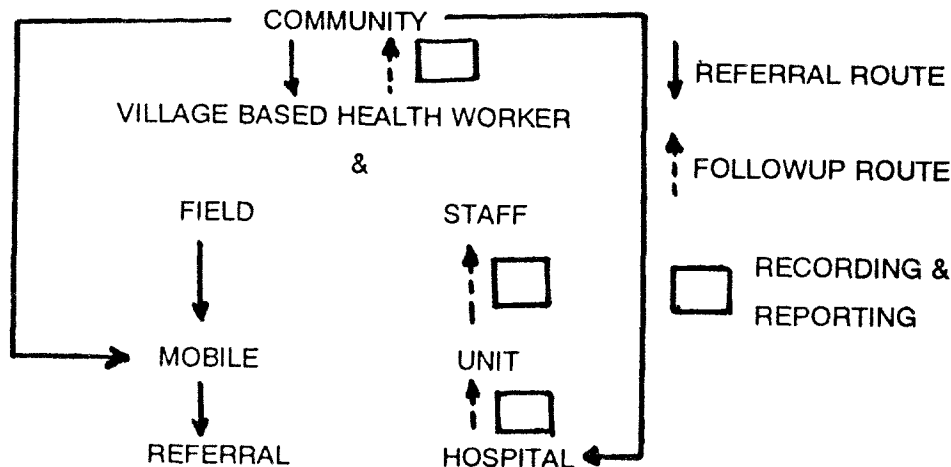
Appropriate Health Service Delivery System

It is well known that inspite of having well conceived and well meaning programmes like ICDS, PHC schemes, the country has not achieved the desired results because of ineffective implementation. We at SEWA-Rural tried to develop a system which is appropriate to the social context and situation, for instance curative services, Health Education (H.E.), vaccination and maternal services were provided in the beginning at their doorsteps at most acceptable place, at the convenient time, e.g. early morning and late evening, at a affordable cost/free of charge, through mobile dispensary van. To develop rapport and confidence, the services were provided on a regular and continuous basis. Mobile van/dispensary went to each village at a pre-determined day of week and place regularly.²² Good health traditions and beliefs like hanging neem twig or lemon at the entrance of house where child is afflicted by infectious diseases like measles or chicken pox are

encouraged. This tradition ensured the desired isolation and rest. At the same time harmful tradition like not taking any medicine even when post measles complication arises, was discouraged & the importance of medical treatment at such time was explained by appropriate H.E. programme like role plays. H.E. programmes preceded most of our field service programme.

Appropriate Planning and Management

In general it is observed that planning is often done "to down" without understanding the real problem and local situation. In early eighties it was observed that mortality related to measles complication was high, and as a result measles vaccination was introduced. This was done when the government had not introduced measles vaccination in its programmes. Similarly, it had been our endeavor to follow 'at risk' approach to utilize the limited resources in better use. More inputs were given to identify, treat and closely monitor the high risk children and mothers.⁵² Performance related incentives were given to grass root level health workers. Different categories of decision were taken by various level of workers. The organisation's values²³ were inculcated through regular and open discussion in group meeting. Several participating meetings were held at central, subcentre and village level with different workers involved in the programme, jointly or separately depending upon the issues to be discussed. These joint meetings besides breaking the social and cultural barriers, helped in team building and also served the other important purposes to improve implementation, e.g. problem solving, joint decision making, sharing of



information, work scheduling, motivating, building mutual trust and respect, collecting the complete and correct data of vital events, and improving communication and co-ordination.^{5,1}

Lot of importance was given to S & M. No matter how good a system in child care we may develop it has to work on day to day basis. For this supervision, guidance and support was provided at field level and central level by various measures like check list proforma, individual contact, monitoring reports and records, cross supervision by workers themselves & community monitoring of workers by group meetings with beneficiaries. Simple health information and monitoring system^{1,4} was developed over a time to generate useful, complete and quality data which facilitate monitoring of performance and which would be dependable, for future action plan.

REFERRAL SUPPORT

One of the important constraints of primary health care is the delay in receiving the adequate referral care during life threatening emergencies. Community's

decision of not utilizing the hospital services has resulted from their past frequent bad experiences they have encountered with the existing hospital services. There are incidences when the poor illiterate family from distant villages, at times mortgaging their only source of livelihood, come to the hospital as a last hope of survival for their beloved one. When they realize that doctors are not available and encounter callous and inefficient staff, and inhuman hostile atmosphere at hospital they no more trust the referral services. Efforts were made in the project to provide timely and adequate support at various level by different functionaries at an affordable cost.

The present referral system which has been evolved over a period of 10 years has three levels.^{2,4} (See above Figure on this page).

Apart from taking care of the community's felt health needs, the systematic referral and follow up of discharged patients at different levels have raised community's confidence, and increased their involvement in other programmes. Many times the discharged patients and their relatives

TABLE 2. Curative Services

	1982-84	1985-86	1987-88	1989-90	1990-91	1992-93	Total
<i>Village Level Services</i>							
Village functionary	5187	7478	29,076	11,932	8095	6797	68,568
Health workers	–	4527	29,420	22,316	18,200	18,567	73,030
Mobile unit	7014	7204	2900	4726	–	–	21,844
<i>Hospital Services</i>							
OPD	1970	4971	5588	15,735	17,530	17,220	63,014
Indoor	234	548	687	1067	1230	1123	4889

become the change-agents in a village. As envisaged, most of the mortality and morbidity are declining gradually. The constant cross monitoring of hospital and P.H.C. staff, as well as the social auditing done by the community itself have improved the services substantially. Mothers and children have been particularly benefitted by this system since more familiar people such as TBAs or other village level workers are involved in caring for them at various levels. As shown in Table 2, accessibility and utilisation of hospital services have markedly increased.

Development of Appropriate Technology

Having good knowledge about the culture, customs, language and practices of the community, efforts were made to design an appropriate technology in the area of training, record keeping and health education which was relevant and acceptable to the women, their families and the community, which would convey critical messages and information.⁶ Following are some of the examples,

1. Pictorial maternal and child health card helps to get important messages effectively

across to mothers who may be illiterate. In addition, it was useful to train the village level worker who also may be illiterate or semiliterate. The participation of mothers and other women for child survival increased remarkably by using such pictorial cards.

2. Delivery pack. A compact, inexpensive, presterilised delivery pack with a long shelf life and simple to be used by illiterate TBA to conduct home delivery aseptically. This type of technology was an excellent example of taking science to the door step of the rural people. It provided much needed scientific touch to the traditional art of medicine and symbolized the importance of cleanliness and scientific technique for intranatal & newborn care.⁴

3. Pictorial manual for record keeping and guidance of Dais. Besides providing data on vital events of the village and monitoring their performance, this manual helped the TBA to review and refresh their knowledge.

4. Health education and training material. Posters, slides, booklets, video movie⁷ etc. were translated as well as developed in collaboration with other voluntary organisations. This material is easily understood

and utilized by the community workers and proved a useful educational tool.

COMMUNITY PARTICIPATION

This is very critical to achieve in community health in general and child survival in particular, as preventive health is low in peoples priority. Lack of information, knowledge and poor quality of available services add to the problem.

Information and health promotional messages to women and men about the different issues, like risk of mother and new born during pregnancy, and labour and how to prevent them were given through appropriate health education programme. Simulation of recent unfortunate event like maternal or perinatal death in a village was created by performing a role play or puppet show, e.g. a highrisk child/pregnant women not availing medical and referral care and succumbing to death or giving birth to a stillborn baby or a low birth weight baby. Due to the recent memory of the event, people identified easily

with the event during the role play, and as a result the message became very effective. In spite of this involvement of mother and other members of community in enhancing service utilization. Marginal success to involve community on the programme has been achieved.⁸ It is hoped that better participation will be achieved in health by integrating it with recently started need-based income-generating programmes.

Integration and Linkages

The problems of poor maternal and child health status is a complex one. It cannot be solved in an isolated manner. It requires integrated approach and networking, and linkage of multiple sectors and services.⁹ Efforts were made to establish some of linkages and integration, so that limited available resources are put to use in much more beneficial and effective manner. Some of the linkages were as follows:

Voluntary organisations <-> Academic institution

Voluntary organisations <-> Government system

Service <-> Training <-> Research

TABLE 3. Impact on Health Status

	1982-84 Baseline	1987-88	1989-90	1992-93	HFA Target 2000
Total population	11,578	35,090	44,330	38,675	—
Live birth	214	857	1065	964	—
Still born babies	10	22	25	18	—
1st week death	17	37	44	38	—
New born death	27	44	64	58	—
Birth rate	20	25	29	24.9	21
Perinatal mortality rate	125	69	65.3	58	30-35
New born mortality rate	125	62	61.4	60	—
Infant mortality rate	172	92	81.6	75.7	< 60
Preschool mortality rate	12.8	5.8	5.9	4.6	10

One of the constraint in providing primary health care is non-availability of competent, technical and professional people. The organisation got recognised for field training of nurses, interns and field placement of post graduate students of social work, rural studies, etc. etc. This arrangement served the dual purpose. It provided orientation, exposure and opportunity to study the real situation and to generate new insight to the students,^{5,2} besides providing technical input to the organization. Collaboration with the government helped to learn the constraints, limitation and strength of either side besides conserving the resources, avoiding confusion in the community and confrontation among the workers. In an unprecedented arrangement, the government of Gujarat handed over one P.H.C. to S.R. with cent percent grant and freedom for innovative strategies and action plans. Though some questions and tensions in this collaborations so far, remain unresolved,^{2,5} other linkages are :

Preventive <-> Curative Services
 Health <-> Nutrition <-> Family Planning
 Maternal <-> Child Care
 P.H.C. <-> Hospital Services

The integration of curative and preventive aspects as also between various programmes were achieved to a remarkable extent. Preventive aspect received considerable impetus even though patient of family were visiting hospital for curative services. Similarly as and when needed beneficiary could receive curative service like treatment of minor ailments and referral, along with vaccination, antenatal care, health education, family planning counselling at door step in village itself during mobile visit.²² This helped the family as

many services are available in village and all at a time saving their time and wages. It helped health provider also as the services could be given in short time and transportation cost could be minimised.

Operation Research

The field operation research study were started with the help of the interested post-graduate students.⁴ As a result critical issues and problems related to M.C.H. could be studied in detail, factors responsible for present status ascertained and alternative and appropriate interventions tried to achieve the better results. It provided an opportunity to review and analyse literature and data, and a possible answer to strike a balance between the desirable, the critical and feasible. In addition it provided the otherwise missing professional and intellectual satisfaction to doctors and widen the operational horizon of the workers.

Impact

All these interventions have made significant impact on the health situation over the years as shown in Table 1, 2, & 3.

Utilization of majority of M.C.H. services has reached to the target to be achieved by 2000 A.D. Vaccination is one of the best established area of our work in child health. It has evolved from heavy time and intensive door to door campaign to a low key centralised programme having practically no backlog left uncovered. There is near-eradications of measles mortality, newborn tetanus and dramatic fall in the prevalence of vitamin A deficiency, complication of childhood tuberculosis and dehydration death.²⁷

Proportion of severe malnutrition in children has dropped from 16% to 3% by

nutritional supplements, regular growth monitoring, checkups by doctors, intensive health and nutrition education.²⁸ Weighing of newborn baby during 1st week has increased from 9% to 86%. There is marginal fall of incidence of L.B.W. babies from 46% to 36%. Delivery conducted at hospital has increased from 8% to 26% and referral rate of high risk mother from 0.4% to 65%.

As shown in Table 2, 68,568 patients were treated by village level workers and 73,030 by health worker at village level. Service of mobile dispensary have been weaned off gradually as utilisation of hospital services has been started improving, i.e. from 1970 patients a year to 17,220, an almost nine fold increase in ten years of period.

As shown in Table 3, the childhood & infant mortalities have reduced to less than half, but after an initial fall there was very little further improvement in perinatal and neonatal mortality.

First week neonatal deaths are accountable for 65 - 70% newborn death and 65-70% of infant death because of newborn deaths. There is a fall in incidence of sepsis in newborn death, but the number of babies dying because of neonatal asphyxia has apparently increased probably as a result of improved data collection and reporting, 40-50% of newborn deaths are because of L.B.W., 30-35% of perinatal deaths are still born, because of factors attributable to maternal health and services utilised/available during pregnancy, labour and early puerperium, (un published in-service data). There is an immediate need to strengthen the existing facilities of neonatal and perinatal care at all level. Those who conduct most of the deliveries in rural area, i.e. TBA's and nurses at home and in

health center required appropriate training to improve their skill and knowledge. There is a need to design safe, simple, cheap but efficient technology to diagnose and manage low birth weight babies and birth asphyxia at community level.

REFERENCES

1. SEWA-Rural Team. Jhagadia peoples health in people's hands. A model for Panchayati Raj, Bombay FRCH 1993 1.1 Page-209, 1.2 pp-210-211, 1.3 pp-214-215, 1.4 pp-223.
2. Khanna R, Mehta NR, Bhatt A. Voluntary effort in community health (Review of the Community Health Project of SEWA-Rural) 1991. 2.1 pp-7, 2.2 pp-178-179, 2.3 pp-20-26, 2.4 pp-179-180, 2.5 pp-136-139, 2.6 pp-107-110, 2.7 pp-190-192, 2.8 pp-102-103.
3. Desai L, Desai A. Harmony at the village level. *World Health Forum*, April 1988, pp-12-13.
4. Mehta R. Feasibility study of use of presterilised delivery pack by TBAs 1988. Dept. of P.S.M., Medical College, Surat.
5. Anubhav Series 11-Experiences in community health programme, Ford Foundation, New Delhi - 1988, 5.1 P-20-22, 5.2 P-23-24.
6. Desai L. Background paper-Health in one World International symposium, The World Health Organisation and Sasakava Memorial Foundation 1989; 43-44.
7. Jhagadia SR, and Drist-Kali Kem Mari-Video film 1993.
8. Murthy LSN, Kumn K, Nagendra Nath. Management of community participation in ICDS, Technical Bulletin NIPCCD, New Delhi 1993; 61-78.
9. Shah PM. (Guest lecture), Integrated Interventions in Maternal & Child Health Care, And the role of Pediatrician at the XXVII National Conference of Indian Academy of Pediatrics, Bangalore, India 1990; pp-4-8.