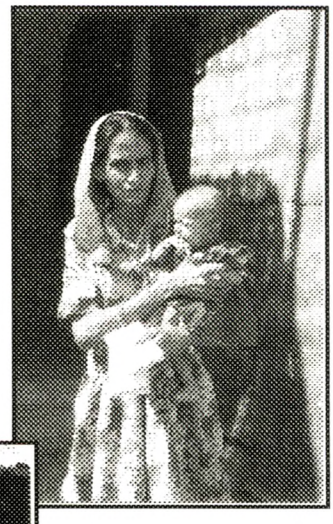

SUMMARY AND CONCLUSIONS

CHAPTER V

SUMMARY AND CONCLUSIONS

The lack of relevant and quality antenatal care is a major concern in developing countries like India. A significant proportion of Indian pregnant women do not attend ANC clinics, and the majority of those who seek care often do so only late in pregnancy, and on a few occasions, as revealed by the National Family Health Surveys (IIPS 2000, IIPS 1995). Despite the fact that the nutrition related components of ANC such as monitoring of weight gain during pregnancy, IFA supplementation, and nutrition education and counseling are critically important for favorable pregnancy outcomes, these receive relatively less attention in maternal care services. Why is there a neglect of nutrition linked ANC services especially as regards the quality of implementation? What is their place in the overall health system, especially in the urban systems? Can intervention strategies to improve these services be sustained and supported in the overall system?

To answer these and other research questions, this study employed the Health Systems Research Methodology to assess the implementation of nutrition related ANC services and improve their quality in the context of an urban health system. The major objective was :

To study the urban health system of the Vadodara Municipal Corporation with respect to the quality of implementation of nutrition services for pregnant women in the antenatal care program, and to facilitate qualitative improvements in these services using the Health Systems Research Methodology.

The study was carried out in Vadodara, Gujarat over a period of two years (1997-1998) in two purposively selected Health Posts A and B of the Vadodara Municipal Corporation. The functionaries of these two Health Posts comprised the sample to obtain the health service providers' perspective. Further, 153 pregnant women

enrolled from eight representative slums under these two Health Posts provided the beneficiary perspective.

The matrix given in Table 5.1 gives an overview of the subjects and methods.

Major Phases of the Study

The study chiefly consisted of three phases. In **Phase A**, a situational analysis was carried out in which all health functionaries of the Corporation participated in selected aspects of the formative research.

Phase B comprised the development and implementation of selected strategies to improve nutrition related ANC services in the broad framework of the VMC's Family Welfare Program.

Phase C consisted of an iterative pathway in the two selected Health Posts, alternating process evaluation and program improvement, and focused on the changes occurring in the health system as a response to the interventions.

In all these phases, the IDRC/WHO Health Systems Research framework adapted from Varkevisser et al (1991) was used.

The Beneficiaries

As regards the beneficiaries, 153 pregnant women were enrolled in the study at 20-24 weeks of gestation and data on their nutritional status (weight, height and hemoglobin levels) were collected. Data on obstetric history (n=70), frequency of consumption of iron and vitamin C rich foods (n=80), and health problems during pregnancy (n=80) were also collected on random sub-samples. Out of the 153 women, 50 were randomly selected and followed up till delivery. Data on weight gain and hemoglobin levels were obtained from these women at 32+ weeks of gestation and birth weights of their newborn were also recorded.

Table 5.1 : An Overview of the Methods Used in the Study (Phases A and C)				
Phases	**Method**	**Informants**	**Number**	**Information Sought**
Phase A : **Situational Analysis**	• Meetings with health officials • Key Informant Interviews	MO (H) FWMO LMOs	Several meetings and interviews were held over the study period	▪ Position of nutrition services in the ANC program of the VMC ▪ Priority given to these services ▪ Implementation of ANC services
	• Semi-structured Interviews	ANMs LHVs LMOs Pregnant women Family members Nursing tutor LMPs TBAs	25 7 7 40 40 1 4 2	▪ Perceptions regarding health problems during pregnancy, ANC and nutrition care services provided by the VMC ▪ Behaviors of PW regarding utilization of nutrition services, especially anemia control services ▪ Training imparted to ANMs with respect to antenatal care ▪ Perceptions regarding health problems during pregnancy; ANC services
	• Matrix Ranking/Scoring Exercise	ANMs	3 groups of 8-10 ANMs each	▪ Availability, utilization and benefits of ANC services to pregnant women
	• Food Frequency	Pregnant women	80	▪ Frequency of consumption of iron and vitamin C rich foods
	• Free Listing and Seasonality Diagramming	Pregnant and lactating women	3 groups of 8-10 women each	▪ A list of local foods which 'make the blood red and healthy' and finding seasonal availability and consumption of these food items
	• Focus Group Discussion	Pregnant women	2 groups of 8-10 women each	▪ Perceptions regarding pregnancy anemia

Phases	Method	Informants	Number	Information Sought
...contd. **Situational Analysis**	Structured questionnaire	Pregnant women	153	• Socioeconomic status
	Structured questionnaire	Pregnant women	70	• Obstetric history
	Standard method Standard method Standard method Cyanmethemoglobin method	Pregnant women	153	• Nutritional status assessment ▪ Height ▪ Weight ▪ BMI ▪ Hemoglobin
	Structured questionnaire	Pregnant women	80	• Health problems experienced
	Structured questionnaire	Pregnant women	50	• Delivery record and birth weights of the newborn
Phase C : Process Evaluation	• Follow up visits	* Health service providers at the Health Posts * Pregnant women in the slums	Once weekly throughout the study period	▪ Field level implementation of nutrition services as a part of ANC services in the urban health system as compared to other services, time spent on nutrition services, quality of care
	• Direct observations	* Health service providers on clinic days * Health service providers at the Health Posts	8 days 2 weeks	
	• Exit interviews	* Women visiting the Health Posts	148	▪ Utilization of antenatal care and MCH services by the women
Note : Phase B comprised the intervention phase				

METHODS USED IN THE STUDY

The qualitative and participatory methods used in the **formative research** included key informant interviews, semi-structured interviews, focus group discussions, matrix ranking/scoring exercises, food frequency, free listing and seasonality diagramming, and secondary data review. The qualitative methods used in the **process evaluation** were follow up visits, direct observations and exit interviews.

The quantitative methods used in the study included assessment of socioeconomic status, anthropometric measurements (weight and height) of the pregnant women, their hemoglobin levels estimated using the cyanmethemoglobin method, their obstetric history, health problems experienced by them and recording of their birth weight of their newborn.

The Rural Perspective

A comparative assessment was also carried out at a purposively selected rural Primary Health Center in the Vadodara district to gain information on the implementation of nutrition related antenatal care services in a rural health system. The methods used were semi-structured interviews, matrix ranking scoring exercise, direct observations, exit interviews and secondary data review.

HIGHLIGHTS OF THE RESULTS

Phase A : The Situational Analysis

The Health Service Provider Perspective

The **situational analysis** brought to light several lacunae or drawbacks in the health system. They included :

- lack of clarity regarding job functions for ANC at all hierarchial levels
- low priority accorded to ANC, especially the three nutrition services in the health system
- virtual absence of supervision and monitoring of the nutrition care services
- unplanned distribution and absence of compliance monitoring of IFA supplements, infrequent home visits by the health functionaries to the pregnant women's houses, and
- absence of IEC material on nutrition services in the VMC's health system.

Perceptions of the functionaries indicated low awareness of the seriousness of the problem of undernutrition and anemia among pregnant women. More importantly, marked differences in perceptions existed as regards reasons for non utilization of ANC services, especially IFA supplements, among the functionaries and pregnant women.

The Beneficiary Perspective

The 153 pregnant women who participated in the study belonged to low socioeconomic group with 60% of them with a per capita income (per month) ranging from Rs. 201-500. The average family size was 5 members. More than half of the women lived in semi-*pucca* houses. As regards educational status, 77% of the women were literate. A majority of the women (97%) were housewives. The women got married around the age of 18 years, and their average age was 23. Of these women, 41% were primiparous.

Anthropometric measurements : The average height of the women was 151.36 cm and the mean weight was 46.58 kg which was similar to that reported in other studies in Gujarat. Of these women, 39% had BMI values lower than 18.5, indicative of chronic energy deficiency.

Prevalence of anemia : As high as 88% women were anemic (Hemoglobin < 11 g/dl), with 11% of them suffering from severe anemia (Hemoglobin < 7 g/dl).

Health problems experienced : Of the sub-sample of 80 women, 41-66% reported that they suffered from health problems such as vomiting, nausea and giddiness. The frequency of these health problems decreased with an increase in the gestational age. Though the women did not take immediate treatment for these symptoms, they took prompt treatment for fever and malaria from nearby private clinics.

Perceptions of the women : As regards foods consumed during pregnancy, the women felt that their daily diet of *rotla, khichadi* and potato-onion vegetable made

their blood red and healthy, indicating that they were not adequately aware of iron and vitamin C rich foods. The women were only aware about those ANC services which were actually received by them. which were often at the nearby private clinics. Most of the family members were also supportive of the women in seeking antenatal care. As regards anemia, though they were not aware of the term *pandurog* (the Gujarati term for anemia), they did know it by symptoms such as *kamjori* (weakness) and *phikkash* (paleness).

Behaviors of pregnant women related to procurement and consumption of IFA supplements : It was found that multiple sources of procurement of IFA supplements were accessible to the women. The ICDS *Anganwadi* workers and local medical practitioners were given preference as regards procurement compared to the government nurses. Compliance was determined, in part, by a woman's ability to remember to take one tablet daily, every day (she was often forgetful) and her motivation to continue with supplementation for 100 days which was perceived as a lengthy duration. These behaviors are presented in the form of Ethnographic Decision Models in the Results and Discussion chapter.

Comparison of the implementation of ANC Services in Urban and Rural Vadodara

Nutrition related ANC services were more systematically implemented in the rural system than in the urban system. In contrast with the urban clients, the rural pregnant women were aware of the availability of ANC services at the PHC and visited the MCH clinics for seeking antenatal care.

The rural functionaries, though burdened with several vertical programs and campaigns like their urban counterparts, made a sincere effort to follow their basic job functions. It was found that the job functions of the rural health functionaries were more clearly defined as regards ANC, monitoring and supervision and record keeping. The rural functionaries also had IEC material on ANC services and anemia control but could not use them for counseling due to time constraints which were also

faced by the urban functionaries. The basic training received by both the groups was found to be similar.

The rural functionaries made more home visits which was reflected in a sizeable number of pregnant women attending the weekly MCH clinics for antenatal care.

Phase B : The Intervention in the Urban Health System

Keeping in view the urban government health system in Vadodara, specific strategies were implemented to facilitate qualitative improvements in the implementation of ANC services by the health functionaries themselves, taking into account all their overall job responsibilities, and the lacunae observed in the system in the situational analysis.

The specific intervention strategies implemented were :

- formulation and dissemination of specific job functions to be followed by the functionaries
- training to increase awareness and to highlight the importance of nutrition related ANC services
- changes in supervisors' workload to enable better supervision
- simple modification of ANC and Home Visits registers to include data on distribution and consumption of IFA tablets by pregnant women, and
- production of IEC material and training of the health functionaries for improved counseling skills.

Phase C : Response of the Health System to the Interventions

A process evaluation was carried out to gauge the response of the health system to the interventions implemented. The methods used for process evaluation were follow up visits at the two Health Posts and to the pregnant women's houses, direct observations at the Health Posts and exit interviews with the women visiting the weekly MCH clinics.

The follow up visits at the Health Posts revealed that the ANMs and LHVs complained of having to fill up various records and registers and the pressure for achieving their family planning targets.

Direct observations revealed that many of the health functionaries (ANMs, LHVs and LMOs) spent less than 50% of their time in productive work related to their job functions and also spent more time on office related work (like completing registers) rather than on direct service delivery in the field. One reason for this could be the several vertical campaigns which took up around six months in the year under observation. The training imparted to the health functionaries (as part of the intervention strategy) to improve the quality of implementation of ANC services, especially the nutrition services, was not implemented at the field level.

Further, the weekly MCH clinics conducted at the Health Posts were primarily identified as immunization centers, mainly for child immunization. Hence, only a negligible number of women came to the clinic for antenatal checkup and those who did, came mainly for taking the anti-tetanus toxoid injection. In their records, the health functionaries only mentioned that IFA tablets were given to a particular pregnant or lactating woman, but did not specify the number of packets/tablets given to the women nor did they adequately monitor compliance. Though the IEC material was made available to the health workers, it was seldom used for counseling pregnant women; the reason given by the functionaries being time constraint. Despite the change in the workload of the supervisors, the supervision of nutrition services remained cursory.

Table 5.2 summarizes the response of the health system to the interventions for improving the nutrition care services in the Corporation's ANC program, taking into account the indicators of quality of care. A scoring system was developed, based on the observations and data collected during and after the implementation of the intervention. This scoring system reflected the relative improvement in the indicators of quality of care after the intervention period. The maximum score given was 10 (most satisfactory) whereas the minimum score given was 1 (most unsatisfactory). It is recognized that this is a subjective quantification and the scores are meant to only indicate relative change, if any.

Table 5.2 : An Overview of the Response of the Health System to the Interventions for Improving Nutrition Services in ANC

Indicator	Score Assigned* (Before Intervention)	Score Assigned* (After Intervention)
Health service provider level		
• Nutrition related antenatal care services		
★ Availability of services	9	9
★ Accessibility of services	10	10
★ Utilization of services by clients	5	5
• Adequacy of training received by the HSPs	6	9
• Clarity of job functions of the HSPs especially regarding antenatal care	5	9
• Availability of infrastructural facilities		
★ Laboratory facility for checking of blood hemoglobin levels	1	1
• Adequacy of supplies and equipment		
★ IFA tablets	5	8
★ Weighing scales	10	10
• Availability of IEC material	1	8
• Implementation : Priority given to nutrition services	4	6

* The response of the system was judged using a 10 point scale. The maximum score given was 10 and the minimum score given was 1.

Indicator	Score Assigned* (Before Intervention)	Score Assigned* (After Intervention)
• Coverage of nutrition services		
★ Health Post/Center based	5	5
★ Through home visits	3	3
• Provision of services by the HSPs		
★ *Health Post/Center based*		
▪ Weight recorded and weight gain conveyed to the woman	6	8
▪ IFA tablets given in each visit	8	9
▪ Clinical signs for presence of anemia assessed	1	1
▪ IEC material used for counseling	1	3
▪ Counseling/advice regarding ANC, anemia, IFA and diet modification given to woman	6	7
▪ Time spent with the client	5	6
★ *Through home visits*		
▪ Minimum 3 home visits made; one in each trimester	5	7
▪ IFA tablets given	5	7
▪ Compliance checked/monitored	4	5
▪ IEC material used for counseling	1	2
▪ Advice given	6	7
▪ Time spent with the client	5	6
• Record keeping and MIS : Accuracy, completeness	5	7
• Adequate supervision and monitoring of nutrition care services in ANC		
★ LHV level	4	4
★ MO level	4	5
★ Corporation Level (Health officials)	5	8

The indicators of availability, accessibility and utilization did not show any improvement. However, the adequacy of in-service training improved so did the clarity in job functions due to the intervention. There was no laboratory facility available at the Health Posts for hemoglobin estimation throughout the study period. The supplies of IFA tablets improved but did not reach the intended beneficiaries. The weighing scales, though available, were not carried to the women's houses during home visits. Overall, the coverage of nutrition services for pregnant women remained the same both through the Heath Posts and through home visits. Certain services such as recording of weights of pregnant women, distribution of IFA supplements, and counseling regarding nutrition services marginally improved. The record keeping improved in the initial period after training and improvement in MIS, but was not sustained. Supervision improved only at the higher authority level. The supervision at the grassroots level remained the same.

Poor quality of care leads to negligible impact : In view of the lack of support of the health system to improve the quality of implementation of nutrition related ANC services, it was not surprising that out of the 50 women who were followed up till delivery, 56% had gained less than 5 kg weight in the pregnancy, and none had completed the full course of 100 IFA tablets. This was reflected in 20% of the babies born with weight less than 2.5 kg.

CONCLUSIONS AND UNIQUE CONTRIBUTIONS OF THIS RESEARCH

- The fact that nutrition care in pregnancy is neglected and receives low priority in implementation is well known. By employing the Health Systems Research Methodology and qualitative research tools, this study has highlighted the reasons for 'why low priority' and has clearly shown that reasons for poor quality lie within the health system; in the way it functions. Further, **frequently changing priorities contribute to poor implementation and poor impact of most health or nutrition programs.**

- Government policies, program guidelines and resources have primarily been oriented to cater to the rural health system. Problems of urban health systems are only recently receiving attention. **This study has brought to light the constraints and challenges unique to deprived urban areas and urban government programs.** Nutrition services to pregnant women in urban health programs do not have the problems of access as they do with regard to poor quality, ad hoc implementation and poor community rapport.

- Examples of the application of the Health Systems Research Methodology for **nutrition program improvements** are scarce. This study has highlighted that a nutrition program cannot be viewed in isolation in the health system in which it functions.

- Further, intervention research to improve the quality of nutrition services needs to be integrated into the mainstream health programs; thus **maternal nutrition care during pregnancy can be strengthened only to the extent that the health system supports it in an ongoing manner.**

- Qualitative and participatory research tools have been reported to be useful in initial formative research. **From this study it is evident that, in addition, these research tools are equally useful in process evaluation of intervention strategies.** Further, data of this study has given an example as regards integration

of quantitative and qualitative research tools in the field of nutrition, which is scarce in reported literature.

- Another important finding of this study is the fact that the 'concept of integration of services' exists primarily in policy documents; at grassroots level, the vertical approach to program implementation dominates, as clearly evident from the data of various vertical programs, which were observed during the study period. This has implications for quality of care of nutrition services - **should nutrition care also become another vertical program, or, become an integral and important part of the current Reproductive and Child Health program?**

RECOMMENDATIONS FOR FUTURE RESEARCH

- The Health Systems Research Methodology should be applied to understand and improve other nutrition services in urban and rural health programs, particularly, in the current Reproductive and Child Health program, such as protein energy malnutrition and micronutrient deficiencies in preschool children and women.

- Research linking innovative interventions to advocacy is needed to ensure acceptance of innovative nutrition program strategies in ongoing programs, from the highest State Government level to the grassroots level.

In the short run, it may appear that improving the quality of implementation of nutrition services in the ANC program for pregnant women entails increased costs in terms of time and resources. But in the ultimate analysis, the cost of such improvements is modest compared to the high cost of maternal morbidity and mortality, and poor child growth and development.