



Vadodara, India: Health Systems Research for Anemia Control and Pregnancy

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Project Period: January 1997-August 1998

I. Background:

In the urban slums of Vadodara, India low compliance with iron folic acid (IFA) tablet supplementation by pregnant women is in part due to shortcomings in the delivery system and ineffective promotion strategies. In 1990 only 25% of pregnant and lactating women from the slums had received a full course of iron supplements and 33% had not received supplements at all (Nutrition Research and Training Centre 1990). The IFA tablet delivery system of the anemia control programs in the Vadodara Corporation was found to be unsatisfactory: the system was lacking in structure and had no designated days for tablet distribution, no tracking system in place to record the number of tablets distributed or consumed, and client follow-up and counseling were inadequate.

In Vadodara, the iron supplementation delivery system is managed through the Family Centres and Health Posts of the Vadodara Municipal Corporation (VMC). Each of the nine health posts covers a population of approximately 50,000, and is staffed by one Lady Medical Officer (LMO), one Female Supervisor (FHS), four Female Health Workers (FHWs), one vaccinator, an accountant clerk, and one assistant. The Anemia Control Program (ACP) implemented through the health posts and home visits is similar to India's national program, with 100mg elemental iron + 0.5mg folic acid tablets given daily to pregnant and lactating women for 100 days.

II. Study Objectives:

The major objective was to improve the implementation of antenatal care (ANC) services, with special emphasis on anemia control, in two Health Posts of the Vadodara Municipal Corporation serving lower socioeconomic urban areas with a population of approximately one million. The following is a list of specific objectives:

1. To conduct a situational analysis of the Anemia Control Program for urban, poor pregnant women.

did not put the advice into practice. Health workers noted the main reasons behind non-consumption of iron tablets to be the lack of awareness regarding the benefits of tablet consumption, side effects, unpleasant taste, and refusal of the woman's elder family members allowing the woman to consume the tablets. It was suggested that the family members of the women should be taken into confidence to gain their cooperation.

2. *Pregnant Women*

- Pregnant women residing in the areas of the health posts were enrolled in the study if they were 20-24 weeks of gestation (n=153). They were classified, based on their hemoglobin levels, into normal (Hb \geq 11 g/dL), mildly anemic (Hb = 10-11 g/dL), moderately anemic (Hb = 7-9 g/dL), and severely anemic (Hb < 7 g/dL). The anemia prevalence was 88% in the group with 11% of women having severe anemia.
- When asked to free-list foodstuffs they thought would strengthen their blood, the women showed lack of awareness regarding specific foods rich in iron and vitamin C. Food intake data suggest that in view of the availability of iron and vitamin C rich foods, as well as few food taboos during pregnancy, it is likely that a well implemented nutrition and health education program would help encourage women to improve their diets.
- The majority of the women were registered in health facilities and their family members were aware of it. The awareness of services such as weight monitoring, receiving iron tablets, vaccination against tetanus toxoid, and physical checkups was found to be higher (43-65%) compared with services such as receiving nutrition health education (NHE), including dietary advice (2-3%).
- All ANC services were perceived to be useful by the women and their family members; however, half of them could not elaborate on the reason. The awareness of the purpose of NHE was low in the pregnant women and even lower in their family members. This may be due to the fact that NHE is infrequently administered during ANC visits. More than 80% of the family members could not respond regarding NHE.
- Regarding the importance of iron supplementation to increase appetite, awareness was higher in the pregnant women (60%) than their family members (35%). Pregnant women were aware of the benefits of iron supplementation.
- Less than half of the women and family members gave suggestions regarding the improvements of ANC services listed below:
 1. Transportation available to and from the health post to the slum area for antenatal check-up and to take the women to government hospitals at the time of delivery
 2. Home visits by the doctors in the community
 3. NHE to be given during the home visits by the FHWs and the doctors
 4. Other medicines for common illnesses such as fever or cold should be provided at the health posts

been filled out by another FHW. The registers only mentioned that iron tablets were given to a particular pregnant of lactating women, but did not specify the number of packets/tablets given. Anemia counseling efforts with pregnant women on the part of the FHWs were infrequent.

- Direct observation revealed that most women went to MCH clinics for immunization of their children, and only a negligible number of women went for antenatal checkups. Of those who came for antenatal checkups, the primary reason for their visit was to obtain the tetanus toxoid vaccination. The main reason women did not visit the clinic for antenatal checkups was because they were not aware that the services were available at the health post.
- During monthly meetings at the Family Welfare Bureau, there was little discussion regarding ANC and anemia ACP. However, it was noted that the Family Welfare Officer emphasized the need to improve monitoring efforts.

Phase IV - From Program Implementation and Evaluation to Advocacy: The Next Step
Advocacy efforts were initiated in the State Government to understand the government's viewpoint regarding the importance of anemia control for reproductive and child health (RCH). The researchers invited the Government of Gujarat (GOG) Health Department official and UNICEF (Gujarat) to assist them in making a video entitled Anemia Control in Pregnancy. Their detailed comments were incorporated into the script for the video. The officials were also invited to appear in the video to impart actionable messages to health workers and supervisors at all levels on behalf of the government; while maintaining the overall goal of improved field level implementation and improved quality of care of the ACP. The video was shown at a dissemination workshop where results of the health systems research study were shared with government and NGO personnel, as well as staff of academic departments of M.S. University of Baroda.

V. Key Conclusions Regarding Lessons Learned:

- Diagnosing problems in a nutrition program is easier in a government system than correcting it and bringing about long-term, comprehensive improvements.
- Several parallel efforts, often funded by different donor agencies, combat the same problems without convergence and coordination, resulting in inefficient use of financial, material, and human resources. For example, in the Government of Gujarat, anemia control is an important component in the Reproductive and Child Health Program, the Safe Motherhood Program, ICDS, and the Micronutrient Initiative. Advocacy efforts should focus on the need for coordination mechanisms to ensure effective use of resources available for nutritional improvements in target groups.
- Nutrition researchers might make a greater contribution by working in partnership with program implementers for a sufficiently long period, with the required flexibility, using a holistic health system approach and understanding the intricacies of its functions.