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Strengthening Outreach Sites through an Approach Combining Satellite Clinics with Extended Programme on Immunization (EPI)

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Executive Summary

The existing system of eight satellite clinics (SCs) per month per union did not improve the accessibility to and coverage of FP-MCH services by trained paramedics, namely Family Welfare Visitors (FWVs). Thus, there is a need for further interventions to achieve the desired result.

The objective of this intervention was to provide a wider range of FP-MCH services through the increase of number of SCs (20-24 per month per union), jointly held with EPI sessions. This has also increased the accessibility of longer-acting contraceptive methods, more specifically injectable method and improve antenatal care (ANC), postnatal care (PNC), and health education in the community.

Two unions each from Mirsarai and Abhoynagar thanas, have been selected for this intervention, with one additional FWV and one aya being posted at the H&FWC each intervention union. This facilitated the increased accessibility to the H&FWC, since now, at least one FWV remains available at the H&FWC during working hours. The intervention was started in January 1995, and its implementation was carried out by an intervention team, comprising senior Project staff and GoB counterparts. The evaluation was conducted during December 1996.

The impact of the intervention was assessed, based on regular information collected in two-monthly rounds through SRS, special surveys, and service statistics. Two in-depth surveys – one was conducted in second half of 1993 in the high-performing (Abhoynagar) and its comparison area (Bagherpara) and the other one was conducted in second half of 1994 in the low-performing (Mirsarai) and its comparison area (Satkania) – were used as the base-line database.

Findings indicate that knowledge of the married women of reproductive age (MWRA) about SCs increased from 20 per cent in late

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1994 to about 88 per cent in late 1996 in the low-performing intervention area. Knowledge about the SCs increased from 73 per cent in 1993 to 93 per cent in late 1996 in the high-performing area. Visits by the MWRA during the same period are found to have increased from five per cent to 39 per cent and 42 per cent to 63 per cent during the same period, respectively, in the low- and high-performing areas. Attendance at the clinics in the Abhoynagar intervention unions increased more than two times over the previous year and nearly three and a half times in the Mirsarai intervention unions. In comparing attendance at joint SC and EPI spots to separate SC and EPI spots, data from Mirsarai clearly indicated that attendance was significantly higher at the joint spots. One of the objective of increasing the number of SCs and combining them with the EPI spots was that it would increase accessibility to pregnant women. In the intervention unions, there was an improvement in the number of visits to SC+EPI by the pregnant women. About three and half times more pregnant women in Abhoynagar reportedly visited SCs than to the comparison area. In Mirsarai, the difference was seven times greater in the intervention area.

According to the BDHS study (1996-97) about 7 per cent of the mothers received antenatal care from nurses, midwives and FWVs. In Abhoynagar, antenatal care from FWVs alone was 32 per cent, while it was 14 per cent in Mirsarai reflecting a higher achievement than that of national picture.

Clients continue to associate the SC with health care for children, but also seek family planning and preventive MCH services there. At Mirsarai, where FWA contact with women at the doorstep is comparatively weak, increased SC combined with the EPI spots as a source of modern contraceptive methods is highly promising. SC+EPI as a source of modern contraceptives increased from about three per cent in February 1995 to 22 per cent in February 1997. Overall, injectable along with CPR shows higher trend in terms of increase in the intervention areas. However, injectable is a dominant method in the method-mix of intervention areas,

particularly in Mirsarai, the increase in family planning use has been mostly due to injectable contraceptives, since the beginning of the intervention. About 90 per cent of the contraceptive users of SCs are injectable acceptors. Among all the sources of injectable, SC alone accounts for more than the contribution of all others.

An analysis of cost-effectiveness indicates that the cost per birth averted and quality-adjusted life years (QALY) for all the services offered in the Mirsarai intervention union were more cost-effective than the same services provided at the comparison unions. At Abhoynagar, the cost per birth averted and QALY have lower for two of the three services - IUD and ANC services. It was not lower, however, for injectables.

Background

Satellite Clinics (SCs) were introduced in 1982 as the rotatory1 outreach sites to extend maternal and child health care and family planning (MCH-FP) services to community women, couples and their children. Since its inception, it has gone through many changes, i.e. broadening of the range of drugs and equipment, and provision of transport allowance and contingencies for the Family Welfare Visitors (FWVs). A FWV (a female paramedic) commutes from the Health and Family Welfare Centre (H&FWC) to attend each of those sites once a month. However, its use has remained low. For example, only 51 per cent and 30 per cent of the women in the MCH-FP Extension Project (Rural) areas (Abhoynagar and Sirajganj) and its comparison areas respectively knew about the SCs in 1992 (Sullivan *et al.*, 1993). Another study from providers survey suggests that 29 per cent of the FWVs organized half or less satellite clinics a month (Rashid *et al.*, 1992).

Effective functioning of the SCs is important for a sustainable MCH-FP programme in Bangladesh. Results of a study conducted by the Project showed that equal numbers of pregnant women attended H&FWC and SCs, despite the fact that the FWVs spent twice as many of their working days at the H&FWC and an Medical Assistant (MA) is posted there most of the time (Junker, 1994). The same study also showed that 27 per cent of the pregnant women received the initial service at the Thana Health Complex (THC) and H&FWC combined, compared to 66 per cent either at their homes, or SC2. The evidence, thus, indicates that women are not yet inclined to travel far, even if better facilities and services are available at the H&FWCs and THCs.

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1 Initially, SCs were supposed to move every six months from one spot to another spot. However, for more than two years, the sites have remained in same place.

2 Pregnant women receiving initial services at the THC were slightly more than two percent, while this figure was about 25 per cent at the FWC. On the other hand, the percentage of services received at the SC was slightly higher than 38 per cent and was about 28 per cent at home y the FWV.

However, services offered at the SCs disproportionately favour those related to Maternal and Child Heath (MCH), over family planning (Khuda *et al.*, 1993). Both MCH and Family Planning (FP) are, however, being used more by the family planning acceptors than non-acceptors at the SCs (Rahman and Hasan, 1994). The SC normally provides ante-natal care (ANC), post-natal care (PNC), child health (under 5) and family planning services, except sterilization and norplant.

Generally, an SC provides services to women and children of two villages. However, data from an SC exit survey conducted by the MCH-FP Extension Project (Rural) showed that more than 90 percent of the clients who attended SC were from the village where the SC was located (Hasan *et al.*, 1994). The same survey showed that the reliance of a client on another person to accompany her to an SC from a different village was more than twice, compared to that of a client when she traveled to a SC in her own village. This indicates that a non-SC village is largely underserved and that the SC could be more viable, if it were held more frequently and were closer to each woman's residence.

Objectives

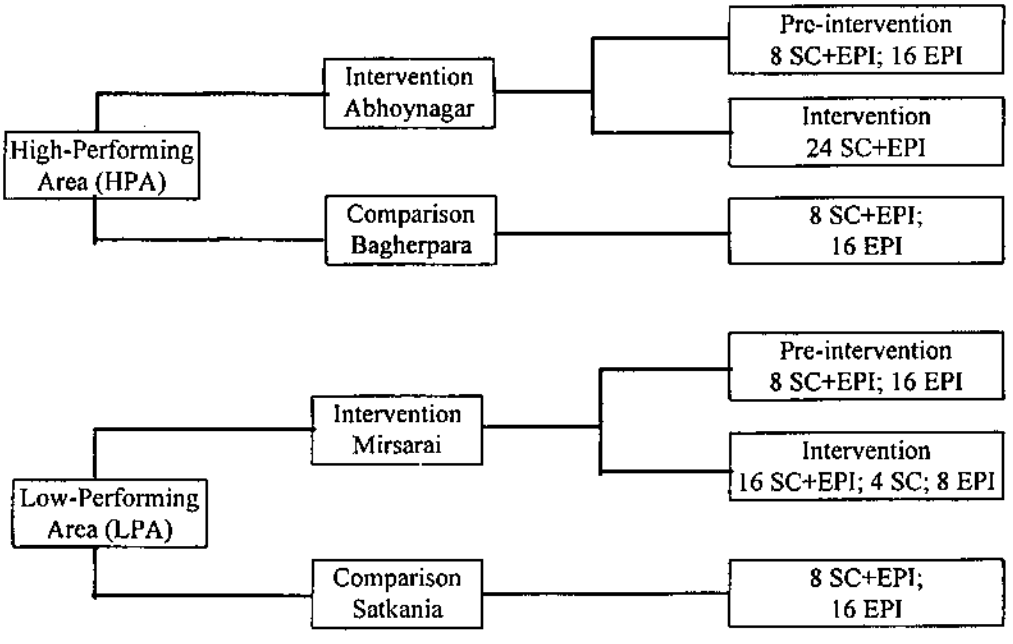
The overall objective of this intervention was to combine the SCs with Expanded Programme of Immunization (EPI) outreach sites with the purposes of: (a) making FP-MCH services, such as, ANC, family planning methods and immunization available to rural women and children; (b) improving method-mix by the increased use of clinical methods, viz. IUD and injectable; c) making better use of H&FWC, by ensuring that one FWV is always present at the H&FWC; and (d) investigating the cost-effectiveness of the intervention to assess its long-term sustainability.

Methodology

Research Design

The study is based on non-equivalent quasi-experimental design. Intervention and comparison unions have been selected from low- and high-performing areas respectively. Two unions, each from Mirsarai and Abhoynagar thanas, were selected. The intervention sites are Mithanala and Hinguli unions from Mirsarai thana, and Noapara and Rajghat unions from Abhoynagar thana. The comparison areas are Kanchana union of Satkania thana and Narikelbaria union of Bagherpara Thana. In addition, comparisons were also made with a normal union within the intervention thana.

Chart 1



The number of SCs was increased from eight SC sites per month per union to 24 sites, and all of them were combined with the EPI spots at Rajghat and Noapara unions of Abhoynagar thana. At Mithanala and Hinguli unions of Mirsarai thana, the number of SCs was increased to 20, but only 16 were combined with the EPI spots. As a result, three cells were constituted at Mirsarai: (i) combined SC+EPI; (ii) only SCs; and (iii) only EPI spots.

The FWV provides FP and MCH services from the SC sites. The Directorate of Family Planning provides the required number of SC kits. An additional FWV and an *aya*, required for this intervention, have been posted at each intervention union. There was a special interim mechanism by the Project to provide the FWVs and ayas with government-prescribed transport and contingency costs for additional SCs until the end of the Fourth Plan[3]. The transport allowances for these additional clinics were provided by the International Center for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) as an interim arrangement. The money was jointly drawn and disbursed by the MO-MCH and the Thana Family Planning Officer (TFPO). Disbursement of the transport and contingency allowance followed the existing government rule.

Both the eight existing clinics and the rest of the clinics were equally divided between the two FWVs. Thus, each of the two FWVs equally shared the transport allowances from the existing facilities and the new scheme. Since this intervention required the existing *aya* to attend the SCs on all working days, provision of an additional *aya* was needed at the H&FWC. The ICDDR,B provided the payment of an *aya* on a daily wage basis.

Although the objective was to combine all the SCs with the EPI sites, it became necessary to assess the feasibility of doing so, considering all the advantages and disadvantages. The following model was recommended in this regard[4].

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[3] This decision was made at bi-monthly meeting of the Project with the Director General, Family Planning and his colleagues held on October 17, 1994.

[4] The process of increasing number of SCs and combining them with EPI required a coordinated effort among Thana Family Planning Officer, Medical Officer (MCH) and Thana Health and Family Planning Officer in planning, designing and implementation stages of the intervention.

To combine the EPI spots with the SC, existing two-day per week service-delivery approach had to be changed and a new flexible model of four to six-day a week service -delivery approach was developed which took care of complicacies related to maintenance of cold chain and work routine of field workers and paramedics. Six days a week EPI and SC at Abhoynagar have been provided instead of two days by each previously. Four days per week at Mirsarai instead of two days of EPI and five days of SC instead of two days a week have been set up.

The FWVs alternately went to the SC, thus ensuring that there was always an FWV at the H&FWC. Increasing the number of days requires an additional cost for porters and vaccine carriers. As a consequence, 12 man-days of an additional porter were required in this intervention. This cost would be minimized when the entire thana is brought under such an intervention.

However, for the above model, the EPI spots were reviewed to assess their appropriateness as SCs. In cases where the EPI sites were not found appropriate for holding the SCs, attempts were made to shift the EPI spot to an area which was suitable for both EPI and SC. However, in some cases, the EPI spots could not be shifted due to fear of the health manager that the influential house-owner would not welcome such a change.

There are three wards in a union, and each ward has eight EPI spots. Under this strategy, there were four SCs in the ward where the H&FWC was located, and the other two wards had eight SCs each. It was assumed that within a quarter mile radius of the H&FWC there was no need for a SC, unless there is a natural barrier like river and/or hills.

Under this intervention at Mirsarai, only 16 SCs were combined with EPI, and hence, there was scope to compare SC+EPI sites and only SC sites in those intervention unions. Also, there was scope to compare increased SC site unions and the eight SC site unions.

There was no door-step service delivery of injectables in those two unions of Mirsarai thana to determine the difference in injectable performance between the extended outreach clinic and doorstep service-delivery approaches. As all the unions of Abhoynagar thana were covered by the door-step injectable programme, such comparison within the thana was not possible.

Monitoring Process

A supervisory checklist was designed by the ICDDR,B MCH-FP Extension Project (Rural), so that the SFWV and the MO-MCH are able to systematically monitor the services offered from each SC, both in terms of quantity and quality.

It is clear that this intervention would increase the costs associated with the salary of an FWV and an aya, as well as costs of transportation, drugs, and equipment. Therefore, the costs incurred under such an intervention were taken into account to assess the cost-effectiveness of the intervention, vis-a-vis the existing eight SCs and the existing CBD system.

An attempt was made to measure the following changes, before and after the intervention: (a) knowledge of community women regarding the locations of SCs; (b) use of the SCs; (c) use of MCH services, particularly ANC; (d) changes in EPI coverage, such as TT, DPT, and measles; (e) performance of the SCs with regard to family planning services; (f) change in method-mix; (g) H&FWC performance in ANC services; and (h) cost-effectiveness of extensive SC unions and its comparison areas.

The Project's ongoing surveillance data, as well as service statistics collected by the MIS unit, were used for measuring the performance of both the extensive and regular unions. In addition, special surveys were conducted at the community level to measure knowledge and attitudes of the community women about the type and quality of services received from the SCs. The surveys first conducted in one area in 1993 and in another area in 1994 (in both areas, before the intervention began) were source of base-line information. In December 1996, two years after the intervention had begun in all the intervention and comparison areas follow up surveys were conducted.

Findings

Knowledge and Ever-Visits

At Abhoynagar, a high-performing area in terms of contact by the field workers, the contraceptive prevalence rate (CPR), immunization coverage, and knowledge about the SCs were high before the current intervention began. In 1993, knowledge of the married women of reproductive age (MWRA) about the SC[5] was 73 and 63 percent, respectively, for the intervention and comparison areas. In December 1996, knowledge was found to be universal in the intervention area, while the comparison area showed a slight improvement over the three year period. According to the 1994 indepth survey at Mirsarai, only one-fifth of the rural women knew about the SCs in the intervention area. By December 1996, awareness about the SCs in the intervention and comparison areas increased by about 4.5 times and two-fold respectively.

The MWRAs were also asked about knowledge about the SCs by the type of services, such as immunization, family planning and general medicine. A marked increase of knowledge in the intervention period was visible in both the high- and low-performing areas. Knowledge about immunization was more than 90 per cent in Abhoynagar while it was universal in Mirsarai. More than four-fifth in both Abhoynagar and Mirsarai knew about the availability of family planning and health services.

Evervisits by the eligible women to the SCs show a 20-percentage point increase in the high- performing intervention area to over 42 per cent during 1993. In the comparison area, 20 per cent of the women had ever visited a SC in 1996, compared to about 29 per cent in 1993.[6] Table 1 shows that ever visits by the MWRAs increased by about eight times by the end of 1996 from only 5.3 per cent in 1994 in the low-performing area. Only a marginal increase of 5 per cent point in 1996 from 11 per cent in 1994 was visible in the comparison area.

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[5] Married women of reproductive age were asked whether they know about the location of any place wherefrom health-related services are provided.

[6] The inconsistencies of evervisit in the comparison area could be possible because of interviews by a different panel as well as sample size.

Table 1: Awareness and ever visits to SCs by eligible women in high- and low- performing areas

Area	Year[7]	Knowledge[8] (% responded yes about SCs)	Ever-Visit (% responded yes to SCs)
	1993		
	Intervention (n = 3159)	73.5	42.1
Abhoynagar (high-performing)	Comparison (n = 1808)	63.0	28.6
	1996		
	Intervention (n = 2040)	92.8	62.7
	Comparison (n = 629)	66.5	20.0
	1994		
	Intervention (n = 886)	20.0	5.3
Mirsarai (low-performing)	Comparison (n = 755)	32.6	11.1
	1996		
	Intervention (n = 840)	88.3	39.4
	Comparison (n = 711)	61.5	16.2

Monthly Attendance at Satellite Clinics

A comparative average monthly attendance at the SCs is shown in Fig. 1. The average monthly attendance for 1994 and 1996 is portrayed from the service statistics.[9] The average monthly attendance has doubled at

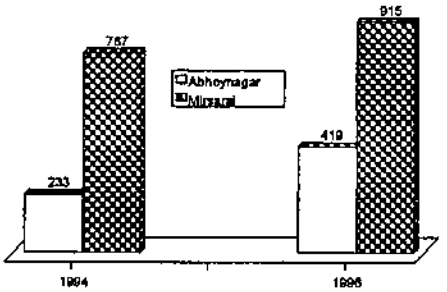


Fig 1: Average monthly attendance at and Mirsarai during 1994-

[7] Different panel of samples was used for base-line and follow-up interview sets.

[8] The SRS sample women were asked about their knowledge about the SC sites.

[9] The intervention began in November 1994 at Mirsarai and in January 1995 at Abhoynagar. As a result, the 1994 monthly average portrays pre-intervention picture and 1996 portrays monthly attendance during the second year of the intervention.

Abhoynagar and increased by almost three-and-a-half times at Mirsarai.

Average Attendance Per Session for SC+EPI, Only SC, and Only EPI

As mentioned earlier, there was a three-cell intervention at Mirsarai to examine the difference between attendance at combined SC+EPI, only SC, and only EPI spots. The average number of attendees per session in these three types of spots was 60, 35 and 17 respectively in July-December 1996, while during 1994 (pre-intervention period) the average attendance per session was 31 and 14 for SC10 and only EPI spots. Combining SC with the EPI spots is beneficial in terms of attendance (Fig.2).

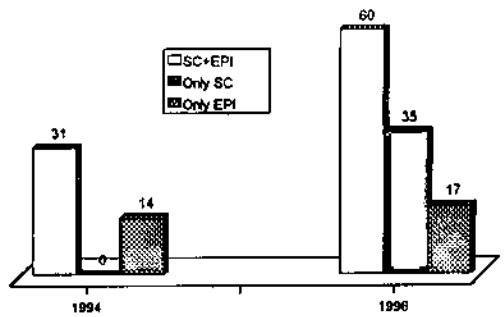


Fig 2: Comparison of client attendance per session in the intervention among joint SC+EPI , only SC, and only EPI spots at Mirsarai

Attendance by Pregnant Women at the SC

One of the objectives of increasing the number of SCs and combining them with the EPI spots was that it would be more accessible to pregnant women. In the intervention unions, there was an improvement in the number of visits to SC by pregnant women. A special survey conducted in December 1996 (Fig.3) showed that about three and half times more pregnant

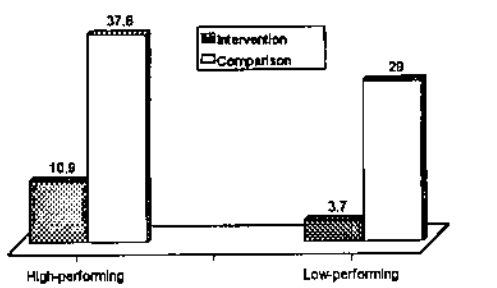
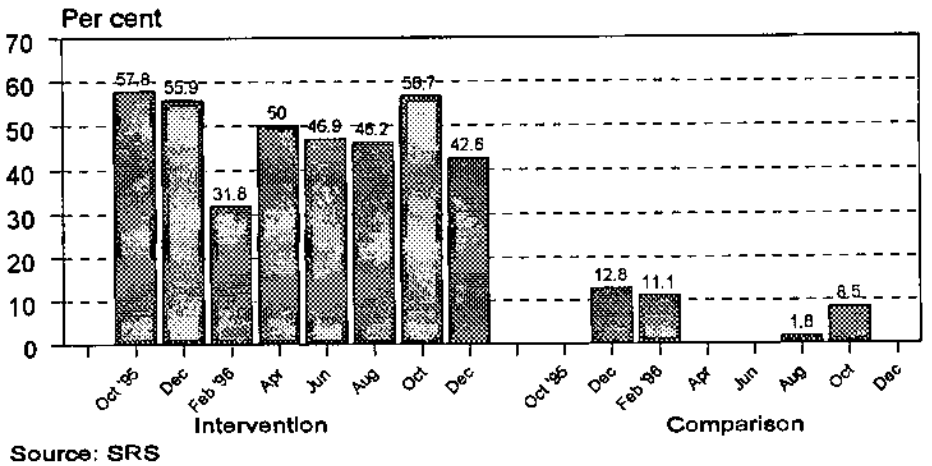


Fig 3: Percentage of pregnant women who visited SC during pregnancy

[10] Includes both SC+EPI and only SC spots.

women in the high-performing intervention area reportedly visited SCs than in the comparison area.

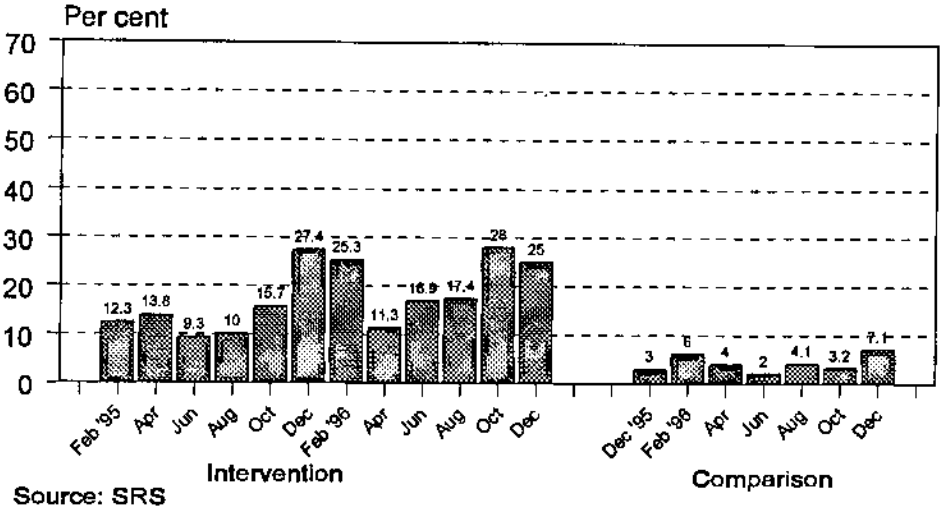
In the low-performing area, the difference was eight times greater in the intervention area. The regular longitudinal Sample Registration System (SRS) which collects similar information in a two-monthly round shows an average of 48.5 percent of the pregnant women of the high-performing intervention area visiting the SC per round during eight two-monthly rounds, beginning October 1995. It depicts an average of 4.3 per cent of pregnant women's visiting the SCs during the same period in a comparison thana. If we further compare the intervention area's result with an area belonging to the thana where the intervention is located, this figure would be 10.5 per cent. The low-performing intervention area shows, on an average, 18.6 attendance (by pregnant women) during 10 two-monthly rounds (June 1995-December 1996), while 2.9 per cent of the SC visitors were pregnant women per round in the comparison area at Mirsarai thana. The comparison area within the intervention thana shows about half the attendance (1.2 %) of the comparison area out of Mirsarai thana. Figure 4 and 5 show the percentage of pregnant women's visit to SCs during 1995-1996 by round. Poor mobility during the rainy season is visible during the



Source: SRS

Fig. 4: Visit to SCs by pregnant women of high-performing areas,1995-1996

June-August period. Clients' attendance in February and December was low in the high-performing area due to FWV's training and leave respectively.



Source: SRS

Fig. 5: Visit to SCs by pregnant women of low-performing areas, 1995-1996

Antenatal Care of Pregnant Women

A pregnant woman might have visited the SC for ANC, child care, or for her personal health needs. ANC of a pregnant woman is often a neglected area. Considering the mobility of women, the SC was viewed as one of the primary sources of the first level ANC services. Use of health facilities for ANC by the pregnant women is shown in Table 2.

In the high-performing intervention area, almost one of the three pregnant women visited the SCs for ANC, and in the low-performing intervention area, one-tenth of the pregnant women visited the SCs for ANC.

According to the BDHS study (1996-97), about 7 per cent of the mothers received ANC from nurse, midwife, and FWV. At Abhoynagar, antenatal care from FWV alone (combining SC and HFWC) was 32 per cent, while at Mirsarai it was 14 per cent reflecting a higher achievement than that of national picture.

One of the 10 visited the THC for the same purpose. However, the THC of Abhoynagar Thana is located in one of the intervention areas. All of the clients who attended the THC belonged to that area, which means

that 15.2 per cent of the pregnant women of the union visited the THC or district hospitals. However, more than half the pregnant women did not receive any ANC. In the comparison area, only 4 per cent of the pregnant women visited the SCs for ANC, a similar percentage of the pregnant women received ANC from the H&FWC, and only 7 per cent of the pregnant women received ANC services from the THC or higher-level service centres. More than three-quarters of the pregnant women in this area did not receive ANC services.

In the low-performing intervention area, one-tenth of the pregnant women visited the SCs for ANC, and a similar proportion of pregnant women visited the THC for ANC. One of the intervention unions in the low-performing areas was relatively closer to the THC. In the comparison area, only one percent of the pregnant women visited the SCs for ANC, and only five per cent visited the THC.

Table 2: Percentage of pregnant women received antenatal care from different sources

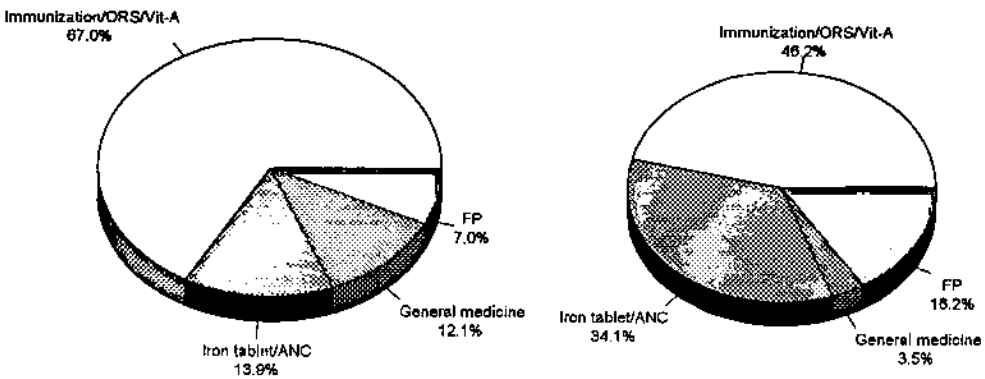
Area	THC (a)	H&FWC	SC (b)	Private qualified physicians	Others	No ANC	Total
High-performing:							
Intervention (n = 01)	9.9	1.0	30.7	3.0(c)	-	55.4	100
Comparison (n = 46)	6.6	4.3	4.4	4.3	4.3	76.1	100
Low-performing:							
Intervention (N = 138)	10.9	3.6	10.2	1.4	0.7	73.2	100
Comparison (N = 81)	5.0	2.5	1.2	4.9	1.2	85.2	100

(a) include a district hospital; (b)include shops/pharmacies.

(b) Chisquare test shows SC is significant in 12.60*** in the high-performing area and 6.35* in the low-performing area.

(c) Pregnant women who attended private qualified doctors belonged to the union where the THC is located.

Health Care Services Offered at the Satellite Clinic



Source: SRS

Fig. 6: Service received at SCs in December 1996

Clients continue to associate the combined SC and EPI spots with health care for children, but also seek family planning and MCH services there. Sixty-seven per cent of the services provided at the SCs in December 1996 in the intervention area of the low-performing thana were for immunizations, vitamin A distribution, and ORS. About 14 per cent were to have received some sort of ANC. Only seven per cent attended for SCs family planning services. In the high-performing thana, nearly half of the clients who visited SC received immunization, Vitamin A and OR Services, while slightly more than one-third received ANC. Sixteen per cent received family planning services (Fig.6). A large number of women who went for family planning services were also treated for health problems, i.e. on an average, per two-monthly round, 70 and 52 per cent of the clients in the intervention areas in the low-performing and high-performing thanas respectively, received health services during the 12-monthly round period. It appears that combined services have tap missed opportunities since women come with the intention of taking more than one service, and this has increased the prospect of a higher use of the combined facilities.

TT Coverage of Eligible Women

The use of SCs to obtain the second dose of immunization/vaccination in both the high- and the low-performing intervention areas compared with their comparison areas did not show any significant difference, since the TT coverage is part of the national EPI programme. Even if pregnant women's TT coverage is compared, which is often an extra dose during pregnancy, Chi-square test does not indicate a significant difference between the intervention and comparison areas due to the fact that the immunization programme is an EPI-spot programme. It is apparent that women would likely to come for EPI whether there is satellite clinic or not, and the role of SCs would be to motivate women to seek services for reproductive health and family planning.

Joint SC+EPI Sessions

Holding joint SC+EPI sessions regularly facilitates accessibility of MCH-FP services to clients. The number of sessions held per month during a six-month average period is shown in Table 3. The low-performing area shows that of the 16 SCs planned for per month, only 9-11 SCs were held jointly with the EPI spots. Except for the last six-month period, more than 90 per cent of the sessions in the high-performing intervention area were held jointly.

Table 3: Number and percent of SCs held in 1995-1996

Period	Mirsarai								Abhoynagar	
	SC+EPI (16)		Only SC (4)		Only EPI (8)		Total		SC+EPI (24)	
	No.	%	No.	%	No.	%	N	%	No.	%
Jan'95 - Jun'95	9	56	7	175	6	75	22	92	22	92
Jul'95 - Dec'97	11	69	7	175	9	113	27	112	23	96
Jan'96 - Jun'96	8	50	8	200	8	100	24	100	22	92
Jul'96 - Dec'96	11	69	6	150	9	113	26	108	14	58

Source : MIS Form 3 and EPI Tally Sheet

Absence of FWV or a porter is a reason for not holding joint sessions. Most SCs in the low-performing area could not be held jointly since the porters were not available to maintain the cold chain. Also, since the demand of the porters for more transportation money was not met, they became irregular in carrying vaccines in time. The performance of SCs was also disrupted due to FWV training, leave, and less availability during the rainy season. Supervision of thana managers was one of the key factors in regularizing the attendance of providers at SCs, amount of time spent by the provider at the clinic, and the quality of services and care. A checklist was provided to help Senior FWVs in monitoring the performance at SCs; however, in both the high- and low-performing intervention areas, the supervisory roles of the SFWVs have been disappointing, both in terms of visiting FWV at the SC and monitoring the quality of care issues.

Satellite Clinic as a Source of Family Planning Services

In the intervention area of the low-performing thana, SC has been seen as a potential place to receive family planning methods. SC as a source of family planning methods increased from 3.2 percent in February 1995 to 20.2 percent in December 1996. Consequently, H&FWC and FWA as source of family planning methods declined considerably (Fig.7).

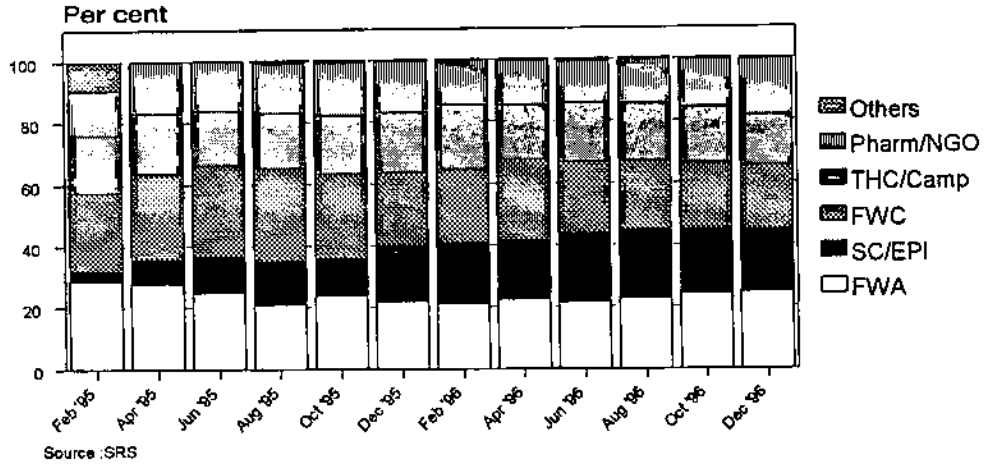


Fig. 7: Sources of modern contraceptives in the SC+EPI intervention area of a low-performing thana

In the comparison area, SC as a source of family planning methods has played a very insignificant role (Fig.8).

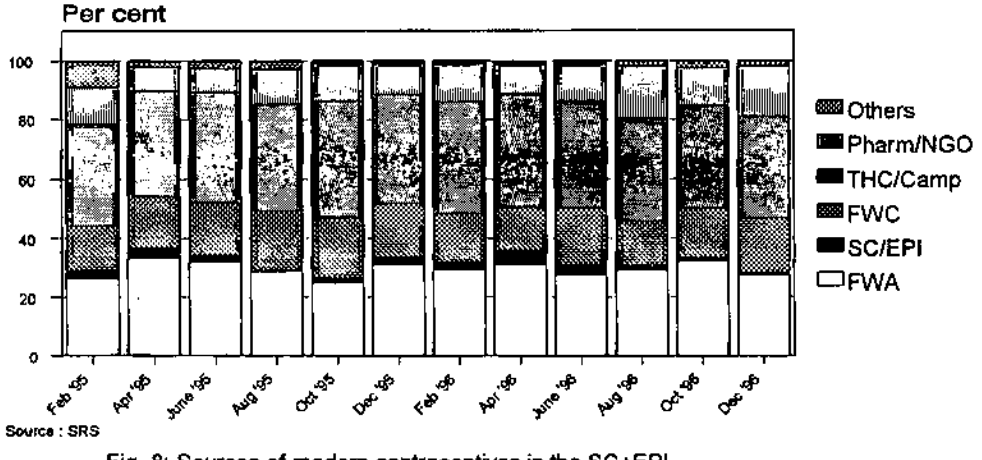
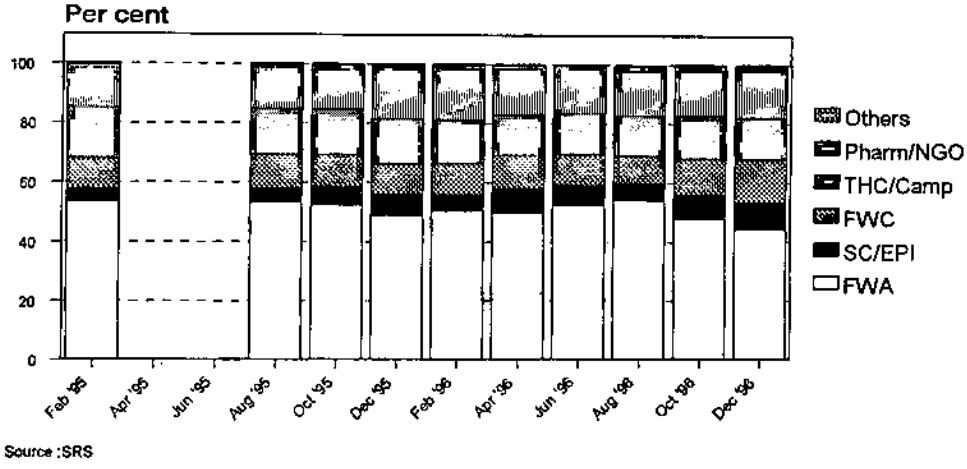


Fig. 8: Sources of modern contraceptives in the SC+EPI comparison area of a low-performing thana

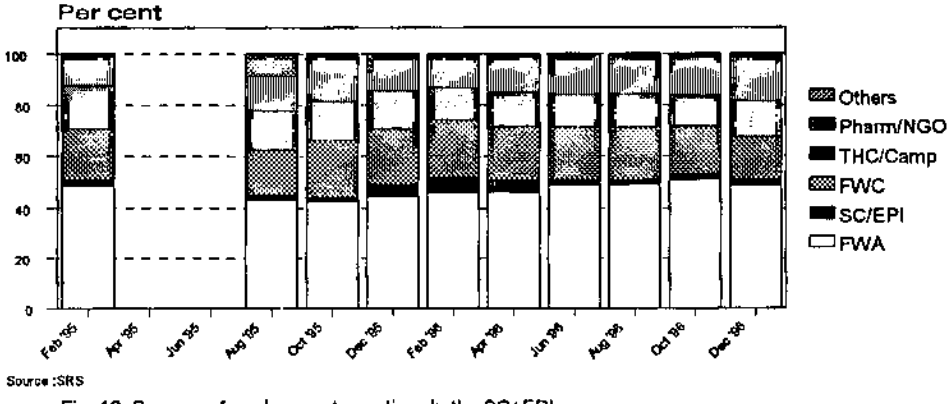
In the intervention area of the high-performing thana, the relative share of SC as a source of family planning methods doubled from February 1995 to December 1996 (Fig.9 and 10). The FWA's role as a dispenser of family



Source :SRS

Fig. 9: Sources of modern contraceptives in the SC+EPI intervention area of a high-performing thana

planning methods decreased accordingly during the same period.



Source :SRS

Fig. 10: Sources of modern contraceptives in the SC+EPI comparison area of a high-performing thana

However, the sharp increase of SC as a source of family planning methods from August 1996 to October-December 1996 could also be attributed to the pricing intervention which begun in August 1996 in the area. It could

also be noted that the H&FWC as a source of family planning supplies has also increased during October-December 1996. The pricing intervention is designed to recover costs of family planning methods (condom, oral pills, and injectables) in a staggered fashion, starting with prices highest at the doorstep and decreasing at SCs, H&FWC and THC. However, SC as a source of family planning methods appears to have increased sharply in the areas where performance is low, and doorstep service is weak.

Method-Mix at Satellite Clinic

Injectable is a dominant method in the method-mix of the intervention areas. It appears that in the intervention area of the low-performing thana, the increase in family planning use has been mostly due to injectable contraceptives, since the beginning of the intervention. About 90 per cent of the contraceptive users of the SCs are injectable acceptors. The SC injectable users have increased from two per cent in February 1995 to about 14 per cent in December 1996 (Fig.11). However, oral pill also shows an increase from SC. As oral pill is used for managing side-effect of

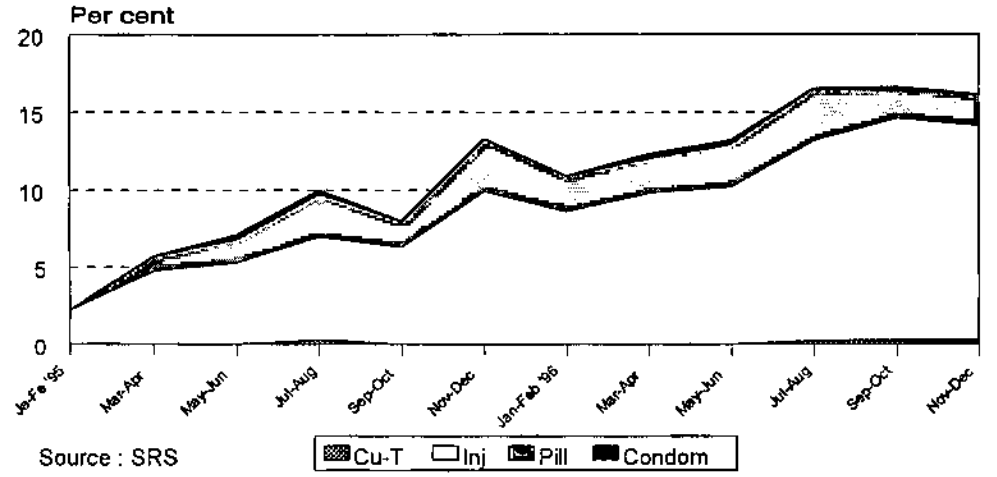


Fig. 11: Method-specific trend at SCs in the low-performing intervention area

the injectable clients, the increase could be attributed due to its, besides distribution to new oral pill clients.

Injectables are not a dominant part of the method-mix in the comparison areas. No significant change is visible in the growth of injectable use increase during May 1995 - December 1996, never exceeding three per cent of the users' level (Fig.12). Rather, IUD performance shows very slight but consistent increase from May-June 1995 to November-December 1996.

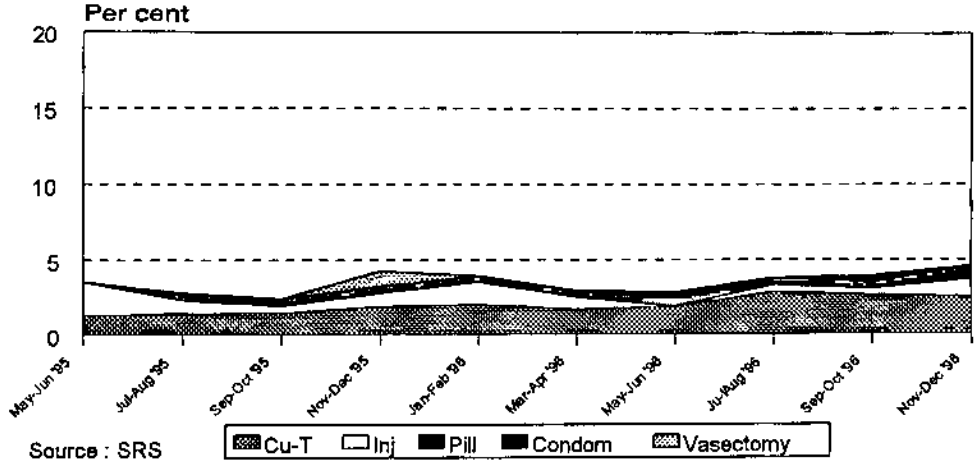


Fig. 12: Method-specific trend at SCsin the low-performing comparison area

Injectable was a part of doorstep-service delivery in the high-performing thana until August 1995. However, in contrast to the comparison area, injectable performance in the SC intervention area reflects sustained growth (Fig. 13 and 14).

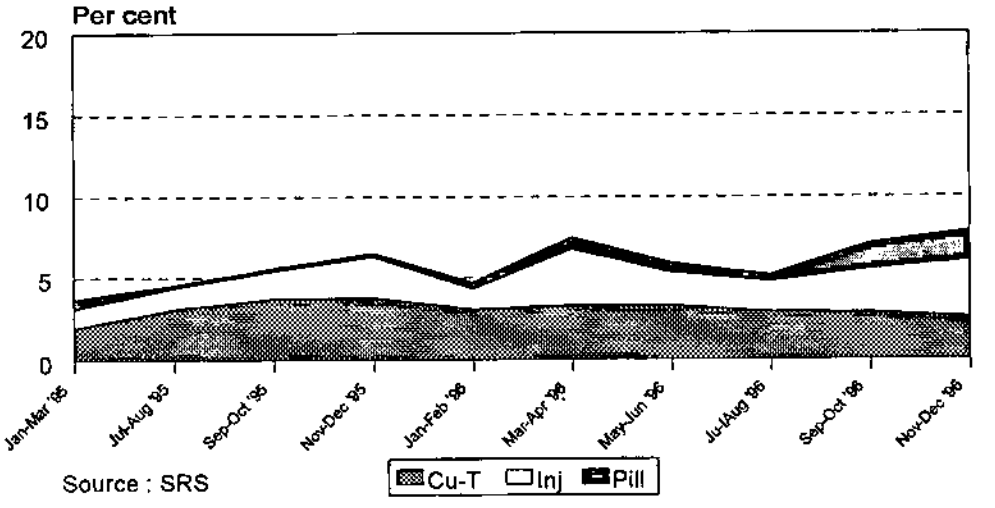


Fig. 13: Method-specific trend at SCs in the high-performing intervention area

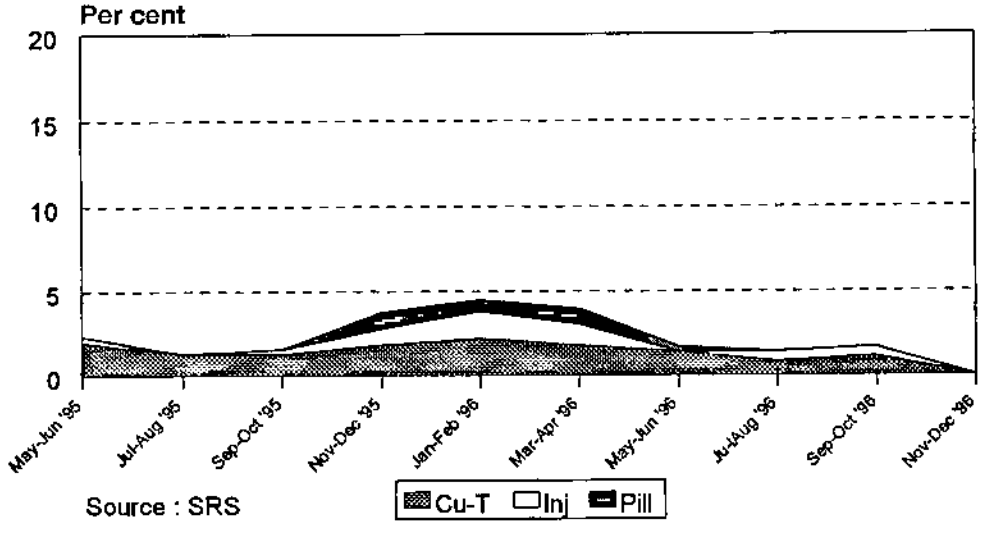
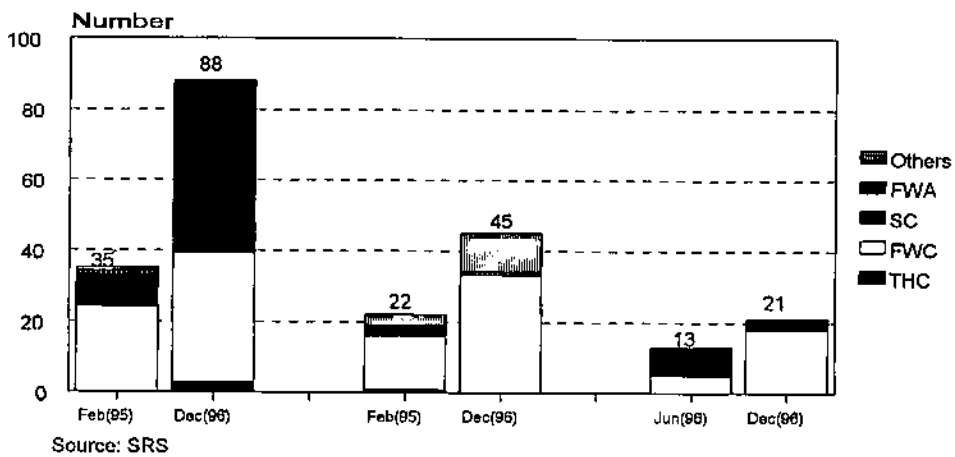


Fig. 14: Method-specific trend at SCs in the high-performing comparison area

In the low-performing thana, particularly in the intervention unions, however, FWAs were not trained to provide injectables. At the beginning of the SC intervention (two months later) in the treatment area of the low-performing thana, nearly a quarter of the injectable users obtained their contraceptives from the SC. By the end of 1996, this proportion increased to 56 per cent, while the demographic and health survey 1996-97 shows that only 9.8 per cent of the injectable users are from SCs. At the same time, use of injectables increased by more than two-and-a-half times (Fig.15). In the comparison areas, the percentage of injectables obtained from SCs, either within or outside of the intervention thana, does not show any improvement.



Source: SRS

Fig 15: Source of injectable methods in the low-performing area

IUD insertion in the SCs of the low-performing intervention thana was not encouraging. It was observed that IUD insertion at the joint SC and EPI spots is constrained by the unsuitability of the location in terms of privacy, absence of bed, disposition of used cotton, and resistance of programme managers to promotion of the method.

Overall, CPR as well as injectables (Fig. 16) showed higher trends in terms of increase in the intervention areas. The overall performance at the SCs indicates that if the doorstep service is discontinued, there is a tremendous potential of SCs to attract more women for family planning services provided they are held in close proximity with EPI and regularly,

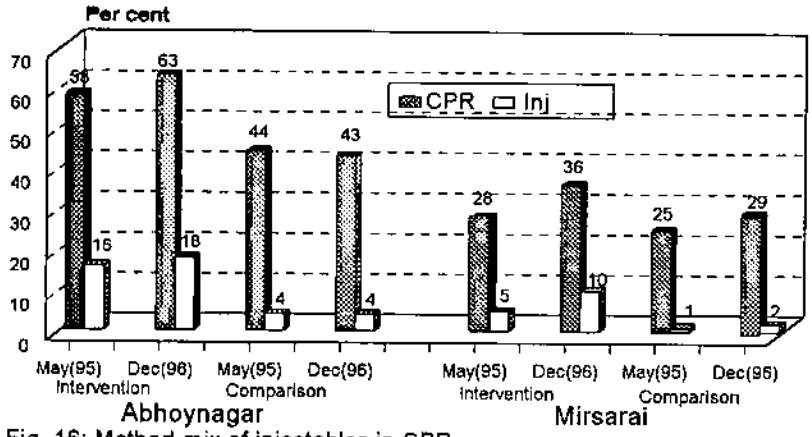


Fig. 16: Method-mix of injectables in CPR

Visit to H&FWC

Visits to the H&FWC by clients in the comparison areas of high- and low-performing thanas appear to have increased slightly in the intervention areas. This would be apparent if similar services to eligible women and their children are provided to the increased number of SCs. In the future, the H&FWC may have a wider role in providing first-aid emergency obstetric care and integrated management of childhood illness, considering its potential in terms of physical infrastructure and human resources, although a few additional beds and continuous presence of manpower in the campus would be needed. However, these wider roles of the H&FWC need to be tested before specific recommendations for policy change can be made.

Cost-effectiveness of the Satellite Clinic Intervention

As part of the evaluation of the SC intervention, the cost-effectiveness of the service delivery in one of the intervention unions in each of the two field sites (Rajghat union of Abhoynagar thana and Mithanala union of Mirsarai thana) was compared with its comparison union. The methodology of this analysis is detailed elsewhere (Levin *et al.*, 1997). The data were collected in August 1996 at the two intervention sites. In

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addition, comparison data were also collected from two unions: Durgapur union of Mirsarai thana and Rohita union of Monirampur thana.

The methods of data collection used in this study included randomized intermittent instantaneous observation of service providers, abstracting of logbooks, and compilation of cost data on commodities, supplies, and other costs. A randomized intermittent instantaneous observation technique is one in which observations of worker activity are made at specified intervals, i.e. at each five minutes. The advantages of this technique are that observations are statistically independent, and data collection is usually more accurate than that of continuous observation (Reinke, 1988).

A procedure to calculate the costs, the cost centres, or outputs around which costs are associated was designated. The cost centres included: oral pill, condom, injectable, IUD, and ANC. The family planning cost centres were further desegregated between new and continuing users. Although data were also collected on curative care for women and children, since information was not available on diagnosis and drug distribution, these were not costed.

Effectiveness of family planning services was measured by the number of births averted, an indicator of the impact of a program on fertility. To obtain the number of births averted, the number of services per day was multiplied by the number of days that the service provider worked, on an average, during the month[11] Since the prevalence method could not be used for calculating births averted[12], the number of births averted was estimated from the number of couple-years of protection (CYPs) divided by the mean birth interval for each union, according to the method used by Cakir *et al.*, (1996). The standard conversion rates for CYPs for Bangladesh were used, and the rates are given in the Appendix. Effectiveness for ANC services was measured in the quality-adjusted life years added (QALY). If the assumption is made that 10 per cent of the

[11] It was assumed that the service providers distribute two cycles of pills and two dozen condoms during each visit.

[12] The age-specific fertility rates were not available for the comparison unions.

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pregnant women will develop anaemia or high blood pressure, then ANC will reduce their morbidity during and after pregnancy. Using the table of health state utilities shown in Drummond *et. al.*, the number of QALYs gained by preventing (or treating at an early stage) anaemia and hypertension is 0.09.[13] Using information on the calculation of costs and effectiveness, the cost per birth averted and QALY of the services delivered at the SC were calculated (Table 4). The results indicate that the cost per birth averted and QALY for all of the services offered at the Mirsarai intervention union were more cost-effective than services provided in the comparison unions. At Abhoynagar, the cost per birth averted was lower for two of the three services - IUD and ANC services.

Table 4. Cost per birth averted or additional quality of life year gained

Activity	Mirsarai thana		Abhoynagar thana	
	SC Intervention Union	Comparison Union	SC Intervention Union	Comparison Union
Pill	394.4	605.5	NA*	NA*
Injectable	433.9	513.4	421.7	418.2
IUD	NA*	NA*	154.3	196.7
ANC service	726.7	3569.4	686.1	2870.0

*Insufficient data were available to calculate the cost per birth averted.

The cost per service at the H&FWC was also compared for the intervention and comparison unions, since the FWV's time spent in this venue was increased, and is shown in Table 5. The service delivery at this ability was cost-effective for all four services for the Mirsarai union. However, for the Abhoynagar union, the costs per birth averted were about the same as hose in the comparison union, while the cost per QALY was slightly lower.

[13] The assumption was made that the health state utility for a pregnant or postnatal woman with anaemia or hypertension would be 0.82, and the pregnancy-induced illness would have lasted six months.

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Table 5: Cost per birth averted or quality-adjusted year of life gained at the H&FWC

Activity	Mirsarai thana		Abhoynagar Thana	
	SC Intervention Union	Comparison Union	SC Intervention Union	Comparison Union
Pill continuing user	448.2	489.4	288.3	287.2
Injectable	533.4	618.2	501.9	475.4
IUD	70.8	91.4	94.0	90.3
ANC service	2954.8	3012.9	1155.5	1204.2

In summary, the results of the cost-effectiveness analysis indicate that the service delivery at the SCs in the intervention unions was found to be more cost-effective for all services in the lower-performing thana, Mirsarai, and for two of the three services - IUD and ANC services - in the higher-performing thana, Abhoynagar. It is likely that this is associated with higher demand for services at the SC, when accessibility and/or frequency was improved. This implies that the provision of a wider range of services improves the overall cost-effectiveness.

The services at the H&FWC were more cost-effective in the intervention union than in the comparison union of Mirsarai thana, but cost about the same per birth averted and QALY as that of the comparison union in Abhoynagar. However, since the intervention in Abhoynagar was found to be more cost-effective at the SC and as cost-effective at the H&FWC as existing service delivery, it can still be considered to be more cost-effective.[14]

The findings of the cost-effectiveness analysis thus indicate that increasing the frequency of SCs to 20 or 24 is more cost-effective than maintaining the current frequency of eight clinics.

[14] Combining SC with the EPI spots was replicated in the national programme in October 1995, but increasing the frequency ofSCs from eight to 20 to 24 has not.

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Conclusion

Increasing the number of SCs and combining them with the EPI spots, has a marked impact on women's knowledge about the SCs. With the increased knowledge the volume of women's attendance to the site also increases. Accessibility is particularly important for pregnant women's visits to SCs, as was visible from the intervention. The intervention shows that the joining of SC and EPI sites has helped tap missed opportunities (each for the other). Moreover, a large percentage of women sought both health and family planning services. Increased joint SC+EPI sites have shown that these are potential community -based distribution points for family planning commodities, especially where the doorstep service is rather weak. However, while administration of injectable contraceptives from the joint SC+EPI sites showed a promising result, IUD insertion did not. There is little possibility of improving IUD performance from SC, if the sites are not carefully selected and provision for privacy and an IUD insertion table or bed are not made. SCs could be used as a referral centre, motivating prospective IUD clients to use the H&FWC facilities for these services.

Increased joint SC+EPI proves to be cost-effective. If scaled-up, cost of the increased joint SC+EPI would be further reduced, since the porter's cost for EPI would be much less than the current intervention cost.

Access and quality are two crucial factors in improving the performance of joint SC+EPI. Regular monitoring, both at the field and thana levels, may help in regularizing providers' attendance, address field problems, and on-the-job training, to improve the quality of care. The Senior FWV's role, especially her capacity as a supervisor, has to be examined very carefully. With the inability of the supervisor, accessibility and quality will suffer.

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