

# **Health Care and Family Welfare Project, Tamil Nadu, India**

## **Report on Final Evaluation Volume I: Summary and Main Report**

**DANIDA**

**New Delhi & Copenhagen  
August 1986**

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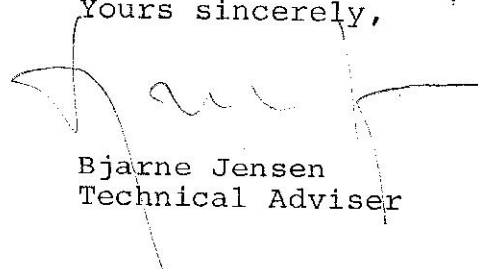
Dato 7 November 1986  
Date

Dear Mr Shekhar Singh,

Please find enclosed one copy of the Evaluation  
Report on the Health Care and Family Welfare  
Project, Tamil Nadu.

For easy reference a list of changes from the  
final draft to this printed copy is also  
enclosed.

Yours sincerely,



Bjarne Jensen  
Technical Adviser



Report on the final evaluation of the  
DANIDA-assisted Health Care and Family  
Welfare Project in Tamil Nadu.

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The following substantive changes have been made in the report as printed for distribution compared to the final draft. Where words have been added, they are underlined.

<u>Old page number</u>	<u>New page number</u>	<u>Text</u>
7	vii	2nd para in Major Recommendation 4 on drugs is new.
8	viii	The first two sentences in the 2nd para of Major Recommendation 6 on training now read:  "A reassessment of the basic training curricula for MPWs (F) and dais should be carried out. <u>MPW basic training should place greater emphasis on the practical aspects of their work....</u> "
9	x	Major Recommendation 8 on targets has been corrected to read as it does in Chapter VIII (page 197) in the final draft.
10	xi	The last para of Major Recommendation 10 on community participation now reads:  "The Department of Health and the Department of Social Welfare should liaise to find ways of strengthening links between their village-level workers, including joint training programmes, to <u>promote community participation and strengthen female to female links</u> ".
5	6	Footnote "c" to table 1 now reads:  "Includes 6 MAs, 6 ANMs, 15 MPWs(F) and 1 LHV. 30 HSC's were visited; one post was vacant, and one MPW was on medical leave, but her HSC's equipment was examined and <u>has been included in the analysis.</u> "
34 para 1, line 3	34 para 2, line 4	The words ".... it is to be presumed that water supply was then adequate...." in the final draft have been omitted in the printed version.

<u>Old page number</u>	<u>New page number</u>	<u>Text</u>
50	50	2nd recommendation now reads:  "It is also recommended that GOTN should take into consideration the fact that the HSC team is incomplete, when setting targets for the <u>health workers at this level.</u> "
59	61	3rd and 4th recommendations now read:  "In order to modify MPW training, it will be necessary to review the curriculum with respect to the type of practice and working environment. Consideration should be given to extending the valuable <u>practical training at RHTC's from 6 months to 1 year</u> with a corresponding reduction in the time spent in hospitals".
60	62	1st recommendation now reads:  "In view of the <u>problems faced in recruiting female supervisors for rural postings,</u> it is suggested that an additional strategy for recruitment and promotion be formulated."
68	72	4th recommendation now reads:  "There should be a parallel experiment with the integration <u>facilities for basic MPW training and inservice training at the RHTC level.</u> "  1st objective of the 5th recommendation now reads:  " - to rationalize and coordinate <u>the contents of basic and inservice curricula to make them appropriate to the multipurpose service requirements.</u> "
69	73	Last item concerning RHTCs now reads:  " - RHTC's should be adequately equipped with the <u>necessary teaching materials, including up-to-date reference material in Tamil;</u> a resource centre should be built up."

<u>Old page number</u>	<u>New page number</u>	<u>Text</u>
70	75	The diagram has been modified.
78 last para, 6th line	85 1st para, 6th line	The number "21" has been changed to "20"
96	104	<p>In table V.11, the heading "Length of Cold Chain for these HSCs at which Fully Immunized Children (FIC) were Identified" has been added.</p> <p>Footnote "a" has been added, and footnotes "a" and "b" in the final draft have become "b" and "c".</p>
100 1st para	108 last para	<p>The last sentence now reads:</p> <p><u>"The GO authorizing purchase of the equipment (whose quantities were estimated before the evaluation) should not be implemented until the above exercise has been carried out and the necessary quantities confirmed".</u></p>
121 Last para, 8th line	135 1st para, 8th line	<p>The beginning of the sentence starting in this line now reads:</p> <p><u>"The finding that the MOs make enough visits to cover three-quarters of the HSCs in the block per month, but only 64% of the surveyed...."</u></p>
123	137	<p>The last line in the 1st para of section 2.4 now reads:</p> <p><u>"...to remain at the PHC until 5 pm in case the DHC made a visit".</u></p>
125	139	<p>Last recommendation now reads:</p> <p><u>"The supervisory activities of the HA and the MO should be complementary; the HA should concentrate on routine checking and the MO should concentrate on strengthening community support for the HW(F) and promoting preventive measures".</u></p>
131	145	<p>Footnote "f" now reads:</p> <p><u>"Norm is 36 users per month (72 condoms per user per year)".</u></p>

<u>Old page number</u>	<u>New page number</u>	<u>Text</u>
141	157	1st recommendation in para 2.6.:  The last para. before the recommendation ("The HW(F)'s skills... at the PHC or hospital") is now part of the recommendation, and the first 3 lines of the recommendation ("As part of ....called out for problems") have been deleted.
145	161	1st line on the page now reads:  "90% have been sterilized, of which 22% (39,808/178,647) underwent their operation in the 3 months ending March 1985".  In 2nd para, 7th line, "intervention" has been substituted for "assistance".
148	165	In the 2nd recommendation, 3rd line, "also" has been inserted after "given to".
149 5th recom- mendation	166 5th recom- mendation	The first line now reads " <u>In cases of sterilization failures...</u> ".
166 2nd para	184 4th para	In the 5th line, "Directorate" has been substituted for "Department"..
167	185	3rd recommendation now starts "Once the community...".
169 4th line	188 7th line	"DDTs" have been corrected to DTTs".
173 1st line	191 last para, 8th line	"Economic" has been corrected to "socio-economic".
176	195	The 2nd para in the final draft has been omitted in the printed version.
177	197	In 6.4, a new sentence has been added at the end of the para:  "...this aspect of the CHV's role. In one state which did adopt the scheme, these village-level functionaries ranked second behind private clinics/doctors as the villagers' source of treatment, providing care for 25% of households surveyed (see <u>Evaluation of Health Care and Family Welfare Project, Madhya Pradesh, August 1986</u> )".



<u>Old page number</u>	<u>New page number</u>	<u>Text</u>
188 last para	208 1st para	In the 3rd line from the end, the word "social" has been deleted.
194-197	212-220	The section on targets has been re-written and expanded.
197-198 Last para	221 1st para	The para has been corrected to read: "Initially, the budget allocation for innovative schemes was Rs. 62.5 lakhs (4.3% of total project budget). Expenditure during the first three years of project activity (1981-1984) was 5% of the original budget allocation or this item. In POP III, the funds allocated for this item were reduced to Rs. 33.1 lakhs (1.8% of project budget), and up to FY 84/85 expenditure has been 25.5% of the POP III allocation. The gross expenditure up to March 1985 has been Rs. 8.5 lakhs".
202 1st para	226 5th para	The para now reads:  "During the first few years of the Project, the fund was clearly underspent and on this basis, POP III reduced the budget allocation for this component by 73%, to Rs. 26.9 laks. By March 1985, 40% of the revised allocation had been expended".
2nd para	6th para	In the first two lines the words ".... proposals which were .." have been substituted for "..... ideas were supposed to be .....".
4th para	227 2nd para	In the first three lines, the words ".... another pattern has crept in where ...." have been deleted, and the work "now" has been inserted after "the PO".
204	228	The recommendations on this page in the final draft have been omitted from the printed version, as they repeat Major Recommendation 10. A reference to this has been inserted in the printed version.

<u>Old page number</u>	<u>New page number</u>	<u>Text</u>
210 1st para	234 2nd para	<p>The para now reads:</p> <p><u>"Table XI.1 is constructed from the PO's monthly statements of expenditure. The budget distribution against each head as a percentage of the total budget in the Project Documents budget and POP III and accumulated expenditure is shown in Table XI.2. Table XI.3 shows how the budget for each head was actually spent in relation to its allocation in the Project Document budget and POP III. It also shows the percentage change for each budget head between the Project Document budget and POP III".</u></p>
2nd para	3rd para	<p>The following changes have been made in the para:</p> <ul style="list-style-type: none"> <li>- 8th line: "7%" instead of "8%"</li> <li>- 10th line: "11%" instead of "13%"</li> <li>- 11th line: "less than 2%" instead of "6%"</li> <li>- 12th line: "against an allocation of 4%" instead of "anticipated".</li> </ul>
3rd para	4th para	<p>In the 1st line "by nearly 60%" has been substituted for "one and a half time". The last sentence in the para in the final draft has been deleted and replaced with: "This is partly offset by increases in expenditure on other items".</p>
214	237	<p>The 2nd para, from the 3rd line onwards, now reads:</p> <p><u>"...Indeed it is hard to see how any of the parties involved could satisfy themselves about expenditure, as the sub-head breakdown was never presented".</u></p> <p>The rest of the para in the final draft has been deleted as it was factually incorrect.</p>
215	239	<p>The 2nd sentence in the first para has been changed to: "It is not clear why the annual sub-head report requested by DANIDA was not made".</p>

Copenhagen, 22 October 1986

Health Care and Family Welfare Project in Two Districts  
of Tamil Nadu, India

Report on Final Evaluation  
6 January to 10 March 1986

(in Two Volumes)  
Volume I: Summary and Main Report

DANIDA

New Delhi & Copenhagen  
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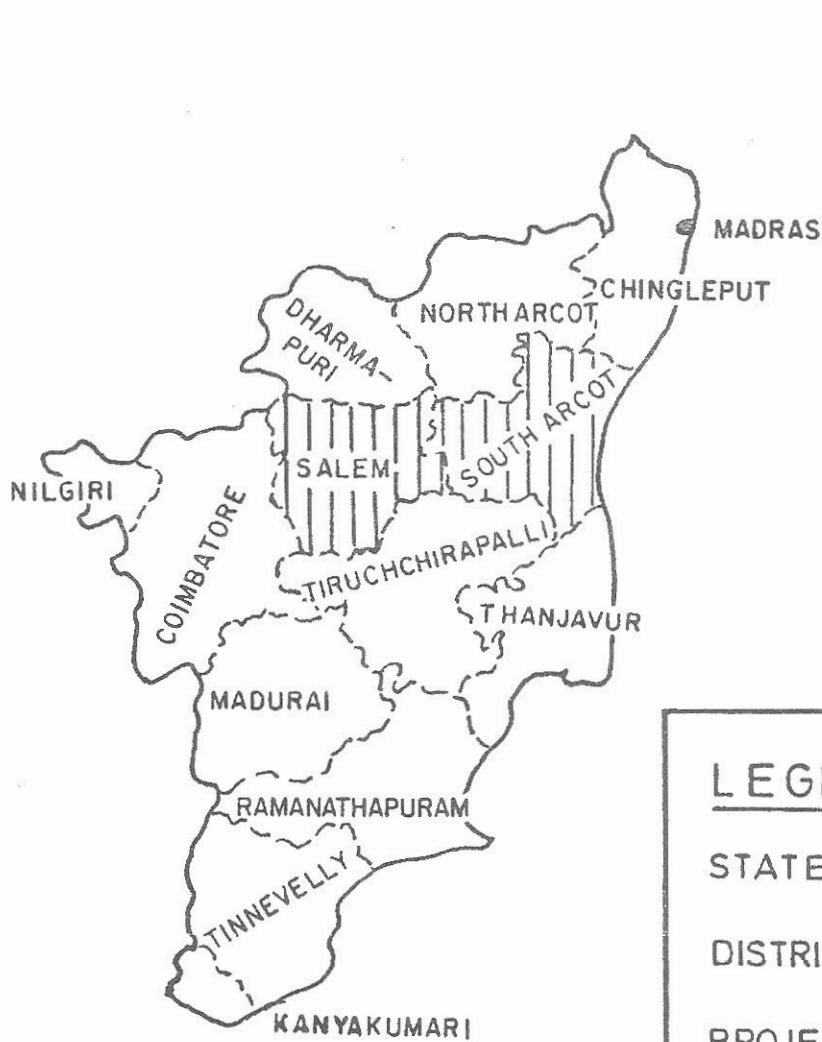
The evaluation team wishes to thank all the people who have helped to make this report possible.

The opinions expressed in this report are those of the evaluation team and do not necessarily represent the views of DANIDA.



# TAMIL NADU

SCALE - 1 Cm. = 60 Km.



## LEGEND

STATE BOUNDARY ———

DISTRICT BOUNDARY - - - -

PROJECT AREA



EVALUATION OF THE DANIDA-ASSISTED HEALTH CARE  
AND FAMILY WELFARE PROJECT.  
IN TAMIL NADU

JANUARY 1986 - MARCH 1986

S U M M A R Y

Since 1981 DANIDA has supported an area project on rural health in two districts of Tamil Nadu (TN) which had a low level of health service infrastructure.

The objectives of the Project are based on certain basic principles; these are the inter-sectoral approach, the systems approach (health service delivery, management, organisation, physical infrastructure, logistics and manpower), community participation and targeting health services at the socio-economically weaker sections of the community, scheduled castes/tribes, women and children.

The present evaluation was designed to highlight the components of project activity aimed at strengthening primary health care services. Therefore utilization of services was studied rather than the health status of the population because it is unrealistic to expect a measurable impact on health status during a five-year health project. However, the strengthening of health care delivery systems should show progress over such a period.

The design, framework and protocol for the evaluation was agreed upon by DANIDA and the Government of India and using a series of questionnaires, the utilization of health services by the community and the quality of services were assessed. The prime focus for these questionnaires was mothers with children between one and two years old in the household, and the female health worker (HW(F)) at the Health Sub Centre (HSC). Interviews were conducted by the team itself at village, HSC, Sector, Primary Health Centre (PHC) and district levels. In addition to the field work, the evaluation included a desk study of all relevant documents prepared during the project period, specific reports from the Project Organisation and the DANIDA Health Care Unit, indicators which could be used in a continuing monitoring system, and discussions with central and state health officials and with

state and district project officials. Finally, two studies were carried out for the evaluation: one on the detailed functioning of four HSCs, and the other on budgeting procedures and expenditure. Thus the team entered into its discussions with the PO provided with some knowledge about the Project Organisation and DHCU over the life of the Project, corroborated by its own observation of activities in the field.

In total 60 village profiles were obtained, 3,706 households were contacted and 420 household interviews were carried out. Also, village leaders in 60 villages, 48 trained dais (traditional birth attendants), 53 female health workers (HWs), 45 Supervisors, 45 Medical Officers in charge of PHCs (MO I/C), 6 District Health Officers (DHOs) and 2 Regional Assistant Directors (RADs) were interviewed.

One of the major objectives for the Project has been to develop the health service infrastructure in the project area. It is central to the concept exemplified in the GOI Model Plan that physical facilities, either rented or built, shall be available to the community. The provision was set at one HSC per 5,000 population and one per 3,000 population in tribal areas. For the Project this meant establishing 680 HSCs and of these, it was committed to building 523. In addition it was to construct 285 LHV Quarters for female supervisors at sector level (one per 4 HSCs).

From the outset the PO was eager to be able to forge ahead with the construction programme and to this end delegated the responsibility for construction and its supervision to the PWD. This department required significant increases in manpower to enable it to carry out the task and the necessary funds were provided by the Project.

A major contribution to the construction activity came from DANIDA which provided architects to design appropriate buildings using local materials which would suit the physical environment. By November 1985, 300 HSCs had been handed over and the remainder should be completed by the end of the project period. In addition by November 1985, 154 LHV Quarters had also been handed over, 221 HSCs and 36 PHCs had been renovated and 6 PHCs upgraded. Meanwhile the PO was able to focus its attention upon the development of the other components of the Project.

A major effort was made to ensure that female health workers were available for posting to the newly established HSCs; fortunately, there being adequate provision of basic training centres, this has not been a major problem. However, ensuring that the new health workers receive the sort of training that will enable them to be effective field workers has proved to be more difficult. The PO has had two main strategies; first it has concentrated upon the Rural Health Training Centres (RHTCs) to try to ensure that they provide the new multipurpose workers (MPWs) with suitable training. Secondly, it has set up its own District Training Teams (DTTs) located at the Health Unit District (HUD) to provide training within the HUD on a peripatetic basis. It is too soon to assess how successful this approach has been, since the DTTs did not complete their own training until April 1986.

The evaluation team found that with the building programme well in hand the PO had been able to turn its attention to other project activities, focusing upon the development of components which would help improve the quality and utilization of the health services.

In this regard it was one of the objectives of the evaluation to assess the level of utilization of certain aspects of health services. Unfortunately, it was not possible to make comparisons between the level of utilization at the beginning of the Project and now, because the baseline survey commissioned by the Monitoring and Evaluation Group (MEG), since disbanded, has not yet been completed and the available data have been presented in a way which makes it impossible to obtain a comparable indication of important aspects like immunization and antenatal coverage.

The Project does not have executive responsibilities for health services but it is charged with supporting and influencing the health services and as such, an improvement in utilization of services may be seen as an achievement of the Project. At present achievement is low; for example, coverage for fully immunized children (i.e. those who have had BCG, DPT3 and OPV3 by their first birthday) was only 5%. If BCG had been readily available, coverage would have risen to 28%. For maternal care, coverage was found to be 74%, that is, almost three-quarters of the mothers had received some antenatal care, and 63% had their deliveries attended by trained personnel (including dais). The HWs(F) made enough postnatal visits to see each mother twice. However, only 12% received antenatal and postnatal care, family planning services and any immunization for the surveyed child.



Thus some key indicators have been established by which the Project at a later date can measure the changes that occur in utilization and therefore assess the effect of its efforts on bringing about these changes.

The PO is well aware that introducing MPWs into rural communities poses significant problems. However, their strategies to minimize these problems have met with limited success. In 1982, Village Health Committees were set up but these were abandoned in 1983, to be followed by Village Health Councils, first set up in late 1985. The team found that only 3 villages out of the 60 surveyed had VHCs. The PO has also tried to establish links with various NGOs in the project area and in this has met with some success. A major constraint for the PO has been the fact that GOTN never adopted the Community Health Volunteer Scheme. Recognizing the need for a link with the community, the PO introduced an experimental nutrition scheme using local female Community Nutrition Workers; however, in its design it was not formally integrated with the health system. This scheme ran in two blocks for two years. Therefore there is no focus for health activities in the village, nor is there any link person between the villagers and the HW(F) other than the trained dai who could never have the same influence as a CHV. The PO has supported dai training and has on an experimental basis enhanced the payment to dais who report births, but this has not been developed as a means of building a bridge between the community and the health worker.

As the HSCs have been completed, they have been equipped and supplied by the Project. In addition the Project is providing additional drugs to all the HSCs in the project area. This supplement, worth Rs.2,721, is a major enhancement, more than doubling the basic provision to the centres. Although the Project included a Community Welfare Fund (CWF) that was intended to stimulate interest in the community by providing funds for community generated schemes related to health, its use has been misunderstood by the PO, and DANIDA was obliged to suspend payment for this item.

In the two districts health services already enjoy a higher level of utilization than they do in Madhya Pradesh. This is largely due to higher overall level of development. However, there are many inadequacies and imbalances in the health service delivery system and the amelioration of these must be a high priority for the Project. Some aspects of the Project have been a great success; a lot of buildings have been constructed, and the PO

meanwhile has developed an approach to retraining which it is hoped will provide the HW(F) with the skills she needs. Attempts at involving the community have been less successful and the health service is at present largely isolated from the community, with low levels of utilization in terms of integrated care.

The Districts are physically accessible and most HSCs are connected to their PHC and villages by tarmac roads. Nonetheless, a significant utilization of the health facilities remains elusive. The Project has been established for less than five years and in due course its activities should lead to greater use of the health services. However, there is already a great capacity to carry out tasks in TN and this has left the team divided in its perception of what DANIDA's future role should be.

Seven members of the team considered that DANIDA need no longer support the Project, whilst five members considered that with certain provisos DANIDA should continue with its support. The details of both points of view are set down in Chapter XIII.

This report addresses the main aspects of the Project in some detail. The major recommendations of the whole team follow this summary, and each chapter contains full and detailed findings, analysis, comment and recommendations. For convenience, all the recommendations are also listed in Appendix 20.

## MAJOR RECOMMENDATIONS

### 1. MCH SERVICES

The gross underutilization of the HSCs for integrated MCH activity should be addressed; a major effort should be made to establish these units as properly functioning MCH centres where regular, consistent and good quality services are available.

MCH activities should be delivered in an integrated manner, so that a mother who is identified for antenatal care is automatically visited postnatally and her newborn is then registered for child health services, including regular weighing which should take place along with an immunization programme. At

the same time the mother should be contacted for and provided with the knowledge of all methods of family planning, and supplied with temporary methods when they are requested. Less emphasis should be placed upon sterilization, as the present emphasis distorts the whole MCH programme.

## 2. THE ROLE OF THE FEMALE HEALTH WORKER

The role of the female health worker as the provider of MCH care should be strengthened. She should have a regular programme of outreach clinics within her area, held at suitable fixed locations. This will enable her to establish a viable focus for her services within the village. The location for these clinics must be equally accessible to all sections of the community.

The activities at the clinics should be:

- Antenatal care including issue of FST and TT vaccine
- Child health care including immunization, Vitamin A distribution and growth monitoring
- Health and nutrition education
- Basic curative services
- Family planning, emphasising pregnancy spacing.

The male worker should support her in her activities. A Medical Officer from the PHC should also visit her clinic regularly, mainly as a supportive measure.

## 3. IMMUNIZATION

The Project should pursue the development of immunization activities as an integrated component of maternal and child health services. The first step must be the preparation of a detailed operational plan, followed by a choice of supply strategy. After that, procurement of equipment, training and organisation of activities at all levels can proceed.

Procurement of the equipment described in the existing Government Orders should not proceed until the operational plan has been developed, and the necessary equipment has been identified for reconciling the UIP strategy and whatever strategy is selected for the entire project area. Procurement should be done on the basis of the revised list of equipment.

The strategy chosen for organizing immunization services and training for implementation must be designed to enable staff to handle vaccine correctly and to administer sterile immunizations.

Services should be offered on a regular basis. BCG should be included in the schedule of services provided, after health staff have been trained to administer it.

Specific strategies must be developed to enable health workers to register all newborns for child care services and to follow up that immunization and other services are obtained on schedule. The child register should be used as the health worker's basic record and the parents should be given a card on which growth, immunization, Vitamin A, etc. will be recorded.

#### 4. DRUGS

There are serious shortcomings in the present supply system and although some may be resolved by minor modifications of existing practice, what is needed is a major overhaul of the whole drug provision and supply system.

To ensure that the optimal mix of drugs is provided, proper note should be taken of morbidity; this may mean that the state level would have to carry out confirmatory community based studies.

Measures to improve the supply system should include an examination of the feasibility of establishing a HUD level store to hold the stocks sent by manufacturers, which could then be made available for the PHCs on a regular basis and in convenient quantities, e.g. quarterly. Such a store could receive stocks from whatever source and issue them to PHCs in a consolidated way, thus simplifying stock control at PHC level.

If it is found to be economically and administratively feasible to establish such stores, then HUD level will need strengthening with the provision of a store and designated storekeepers to maintain the stock.



The existing kits which are now being distributed should be rationalized so that they comprise discrete packages of drugs designed to last for a specified period which should not be longer than 3 months.

## 5. TRAINING

The Project Organisation should reexamine the approach it has taken so far in identifying candidates for dai training. Reasons for the Project's inability to recruit practising dais for training should be carefully investigated (e.g. by interviewing practising dais) and taken into consideration in formulating a more effective dai recruitment strategy. For example, this strategy might include holding training sessions nearer the dais' homes at the HSC or sector headquarters rather than the PHC; providing transportation and rearranging the timetable of training. The established criteria for selection and recruitment of traditional birth attendants for training, should be adhered to.

A reassessment of the basic training curricula for MPWs(F) and dais should be carried out. MPW basic training should place greater emphasis on the practical aspects of their work. Dai training should place greater emphasis on establishing aseptic delivery technique. In particular, dais must be properly trained in how to sterilize the instrument they use for cutting the cord, and how to handle a presterilized blade.

To improve the focus of basic training, and to increase the overall training potential at Rural Health Training Centre (RHTC) level for inservice training, the RHTCs and the District Training Teams (DTTs) should be functionally integrated, with mutually supportive roles.

Until the reorganisation described above takes place, it is recommended that the PO should focus and consolidate the activity of the DTTs. The PO should undertake initiatives designed to consolidate the multiplicity of training units under different directorates, all providing different types and grades of primary health care training, into one training wing under the control of the Directorate of Public Health and Preventive Medicine.

## 6. SUPERVISION

The Project Organisation should find ways to change supervision into a more constructive activity. In particular, the supportive role of supervision, i.e., to give encouragement and to promote positive attitudes among health workers, needs to be highlighted at all levels. Supervisors should increase their interactions with the community with a view to facilitating the work of the HW, rather than visit houses only to check up on health workers' activities. Supervisors should also be able to improve technical skills through on-the-job training during supervisory visits. The combination of these elements is essential for increasing both the quality of services and the level of performance.

The supervisory element of monthly and weekly meetings does not seem to justify the large number of these meetings held at the PHCs. It is therefore recommended that PHC meetings should take place only once a month. At these meetings, the health supervisors should give accounts of their own supervisory activities over the month and the MOs should report on their supervision of the block under their charge. If necessary the meetings could be staggered so that half the block's workers meet at one time.

The health supervisor should hold sector level meetings once a month (e.g. between PHC meetings), using the time for in-service training, work planning, and group discussions.

## 7. REPORTING SYSTEM

The PO should initiate an in-depth study of the whole reporting system from HSC level upwards, with the aim of simplifying procedures and reducing the number of reporting formats to one. This format should be easy to use and contain only necessary data that are relevant for planning and monitoring activity. In particular, the PO should suggest mechanisms for monitoring and feedback. This study should be completed within 6 months and should be presented to the relevant authorities (GOI, GOTN, DANIDA).

GOTN should immediately reduce the number of reporting intervals to one per month at HSC and PHC level.

The method of keeping stock records at PHC and HSC should be simplified so that, if possible, there is a single record at each level. Such a record should enable the source of specific drugs to be identified.

A method of keeping patient records at PHC should be developed so that an accurate record of morbidity can be maintained.

## 8. TARGETS

The system of target setting should be developed so that it includes targets for monitoring the quality and completeness of integrated primary health care activities at HSC level, instead of the single function quantitative targets used now. There is a need for monitoring the completeness of care to mothers, from pregnancy to postnatal follow-up, and for monitoring the range of child health services (including growth monitoring and immunizations). If targets themselves were integrated, then the family planning targets could be employed in a more constructive context (e.g. as a component of postnatal follow-up).

The targets should be designed to help staff direct their activities at the highest priority groups, and record-keeping formats should be designed to enable staff to track their own activities and modify them when necessary.

The present system, where many different workers have independent targets within the same population, should be discontinued, to eliminate competition and to open up opportunities for cooperation between these workers on the many health problems needing attention.

## 9. COMMUNITY BASED HEALTH WORKER

The scheme of having community based health workers to be a link between the community and the health care system should be speedily introduced in selected locations in the project area, especially in isolated or scattered communities. The health workers' responsibilities should be accordingly reoriented.

The Mobile Health Team scheme, which was considered a substitute programme to deliver basic care to the community, should be wound up.

## 10. COMMUNITY PARTICIPATION

The Project should establish a committee of people selected for their known ability and experience in mobilizing communities at the village levels, to advise the PO in planning for community involvement.

Tamil Nadu has a number of non-governmental agencies with experience in the area of health and community participation. The Project should draw upon this expertise in setting up such a committee.

This committee and the PO together should examine mechanisms which are already available within the Project (e.g. Orientation Training Camps, Village Health Committees, Community Welfare Fund and innovative schemes) for facilitating the process of community involvement with a view to working out an overall framework and rationale for the use of these mechanisms in programming for community mobilization.

The Project should initiate a training programme for health workers, covering the practicalities of working with communities. The development of such training may be entrusted to an experienced field-based organisation, and programmed to be implemented in a phased manner throughout the project area.

The Department of Health and the Department of Social Welfare should liaise to find ways of strengthening links between their village-level workers, including joint training programmes, to promote community participation and strengthen female to female links.

## 11. CONSTRUCTION

For the remainder of the project period the PO should use the services of a consultant engineer to liaise with the PWD (Highways) engineers and carry out *random checks* to help ensure that buildings are constructed according to the detail plans and that materials of suitable quality are used.

Water surveys should be done in advance of the finalisation of a site. Sites should only be accepted where it will be possible to provide an adequate water supply.

HSCs which are located in villages which have a drinking water problem could be provided with bore-wells, if this is practical and feasible, so that the water supply of the HSC also benefits the village.

Broken or non-functional handpumps at HSCs should be repaired or replaced, as required, on a priority basis and the PO should draw upon UNICEF experience in repair and maintenance of pumps.

## 12. ADMINISTRATIVE ORGANISATION

In any reorganisation of the Department of Health, G0TN should simplify and unify the administrative structure controlling the public health system.

The high priority given to primary health care in the Seventh Five Year Plan should be faithfully implemented. The implementation of these principles calls for primary health care to be made an attractive alternative for physicians. This could be done by establishing a competitive career structure for physicians (including salaries) to make them choose this work instead of being forced to do it. The structure should be so geared that new graduates are posted to taluk hospitals e.g. for 2 years to work in a team with practical experience, especially in the Out Patients' Department, before they are posted to PHCs, which provide a more challenging assignment.

The PO should also take initiatives in some of these areas, for example promoting management training, strengthening planning and implementation, and emphasizing supervision.

## 13. PROJECT MANAGEMENT

A detailed work plan for activities needs to be developed. This work plan should focus upon priority areas and those aspects neglected so far e.g. qualitative monitoring, EPI, community interactions and IEC software. Once this work plan has been prepared and approved by SPCC, quarterly progress reports should be submitted to SPCC members together with an updated plan for the next quarter.



For the remainder of the Project period, the PO should concentrate on:

- the functional aspects of properly integrated health care delivery, especially MCH including EPI;
- the performance of workers, including necessary retraining of various categories of staff, for example, female health workers, supervisors and MOs;
- improving supervision;
- developing logistics, especially supply systems, and the cold chain;
- proper planning, implementation, monitoring and follow up, especially of those items which are directly relevant to strengthening the role of the female health worker;
- developing ways of strengthening community involvement.

#### 14. BUDGET

The exercise to reconcile the two formats (TN and GOI area projects) for the budget should be completed as a matter of urgency. Once completed, the routine expenditure reporting should be in a format which is possible to compare with the GOI format.

Using the new (for Tamil Nadu) format, much greater care should be taken to prepare accurate and consistent forecasts.

Expenditure reports should be used as a management tool to help monitor the Project's activities, including analysis of selected key components on a routine basis.

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GLOSSARY OF ABBREVIATIONS

ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife, now designated as MPW(F) under the Multi-Purpose Health Workers' Scheme, also designated Health Worker (F)
AO	Administrative Officer
APC	Assistant Project Coordinator
BEE	Block Extension Educator
BHI	Basic Health Inspector
BHW	Basic Health Worker (male)
BPT	Block Project Team
BPIC	Block Project Implementation Committee; disbanded 1984
CC	Conventional Contraceptive, i.e. condoms (brand name Nirodh)
CHO	Child Health Officer
CPC	Central Project Committee (at union level)
CWF	Community Welfare Fund
DANIDA	Danish International Development Agency
DCAG	District Communication Action Group
DFMO	(DFWMCHO) District Family Welfare and Maternal and Child Health Officer
DFW	Director(ate) of Family Welfare
DGHS	Director General of Health Services
DHCU	DANIDA Health Care Unit, Delhi
DHO	District Health Officer (see DHFWO)

DIM	Director(ate) of Indian Medicine
DME	Director(ate) of Medical Education
DMO	District Medical Officer
DMS	Director(ate) of Medical Services
DPCC	District Project Coordination Committee
DPH	Director(ate) of Public Health and Preventive Medicines
DPHC	Director(ate) of Primary Health Centres
DPO	District Project Officer
DPT	District Project Team
DPT	Diphtheria, Pertussis, Tetanus
DTAG	District Training Action Groups
DTEO	District Training and Education Officer
DTO	District Tuberculosis Officer
DTT	District Training Team
EC	Empowered Committee
EIC	See IEC
EPI	Expanded Programme on Immunization
FP	Family Planning
FY	Fiscal Year; runs from 1 April to 31 March of the following year
GOI	Government of India
GOTN	Government of Tamil Nadu
HA(F)or(M)	Health Assistants (Female) or (Male) also known as as Health Supervisor (HS)

HFPTC	Health and Family Planning Training Centre
HI(FW)	Health Inspector (Family Welfare)
HI(G)	Health Inspector (General Side) i.e. not family planning
HSC	Health Sub Centre; see SHC
HUD	Health Unit District
HW(F) or(M)	Health Worker (Female) or (Male)
IAS	Indian Administrative Service
IEC	Information, Education and Communication
IUD	Intrauterine Device (Lippe's loop or Copper T)
LHV	Lady Health Visitor, now designated HA(F)
LTT	Laparoscopic Tubectomy (female sterilization)
MA	Maternity Assistant
MCH	Maternal and Child Health
MEG	Monitoring and Evaluation Group; disbanded 1985
MEIO	Mass Education and Information Officer Dy MEIO = his Deputy
MHT	Mobile Health Team, sometimes referred to as Mobile Medical Team (MMT)
MIES	Management Information and Evaluation System
MM	Mahalir Manrams (Women's Clubs)
MO I/C	Medical Officer Incharge of PHC
MPW(F) or (M)	Multi-Purpose Worker (Female) or (Male)
NIHFW	National Institute of Health and Family Welfare

xxx

NGO	Non-Governmental Organisation
OPD	Out Patient Department
OPV	Oral Polio Vaccine
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
PCAC	Project Construction Assistance Committee, disbanded in 1984
PD	Project Director
PHC	Primary Health Centre
PHN	Public Health Nurse
PNC	Postnatal Care
PO	Project Organisation
POP	Plan of Operation POPI = December 1982 POPII = September 1983 POPIII = August 1984
PU	Panchayat Union
PWD(B)	Public Works Department (Buildings)
PWD(H+R)	Public Works Department (Highways and Rural Works)
RAD	Regional Assistant Director
RHTC	Rural Health Training Centre
SHC	Subsidiary Health Centre; see HSC
SPCC	State Project Coordinating Committee
SDPO	Senior Deputy Project Officer
STD	Sexually Transmitted Diseases



STEO	Senior Training and Evaluation Officer
TAC	Training Advisory Committee
TBA	Traditional Birth Attendant
TN	Tamil Nadu
TOR	Terms of Reference
TT	Tetanus Toxoid
UNICEF	United Nations Children's Fund
VAO	Village Administrative Officer
VHC	Village Health Committee; see VWC
VWC	Village Welfare Committee; see VHC
VT	Vasectomy (male sterilization)
WHO	World Health Organisation



## INTRODUCTION

### 1. Project Area

Since November 1981, the DANIDA supported area project has been functioning in two districts of Tamil Nadu, covering 16% of the State's population of 48.4 million (1981 census). The area includes tracts of forest and hills to a height of over 1,200 metres; access within the hill areas is difficult. Most of the project area is in the plains, where the network of tarmac roads is well developed but during the monsoons, some health sub centres are cut off from the villages which they serve. However, these heavy seasonal rains do not always arrive and during the Project, the area has suffered from several years of severe drought. Availability of water for household use and irrigation is frequently cited as a problem by villagers. The area is predominantly agricultural with skilled trades such as weaving, and pockets of industry (lignite mines, sugar factories etc.). The Project Document states that the level of female literacy was low (14%), and infant mortality was 121 per 1,000 in South Arcot, and 156 per 1,000 in Salem. The scheduled castes comprise 22% of the population of the project area, whereas only 2% belong to the scheduled tribes (1981 census). The Project Document states that "the overall health and family welfare conditions (in the project area) do not vary from other areas of Tamil Nadu with a similar socio-economic and geographic situation."

### 2. Purpose of the Evaluation

The purpose of this evaluation has been to see how the components of the Project have been carried out and whether the results of this implementation are beginning to have an effect upon utilization of health services. The reason for this approach is that it is unrealistic to expect a five year health project to have had a measurable impact upon the health status of the population. Moreover, if any improvement in health status were measured, it would be difficult to ascribe such changes solely to the efforts of the Project. The absence of suitable baseline data means that it is not possible to compare utilization now with that at the beginning of the Project. However, by measuring the level of services now, and again at a future date, it will be possible to assess changes that have occurred in both utilization of services and activities of the health delivery system. If this approach is coupled with a monitoring system which tracks the performance of service delivery, then it will be possible to

identify the amount by which both the volume of services and their quality has increased. If both quality and quantity of services increase, an assumption can be made that ultimately the result will be improved health status. For this model to be successful, the task completed during the evaluation must be followed by the qualitative monitoring which will be described later. The alternative approach of assessing the project components simply in their own terms (e.g. numbers of buildings constructed compared with numbers to be constructed) was considered too restrictive, and ignored the purpose for which such components were included in the project design.

An assessment of the original design of the Project and its previous evaluation was not included in the evaluation team's terms of reference (see Appendix 1). It was expected that this evaluation would provide all interested parties with information and recommendations on operational aspects of the delivery of health services in the project area, and not be limited only to those activities under the direct control of the Project Organisation. Some of the recommendations are relevant to the whole of TN.

### 3. Design of the Evaluation

The design of the evaluation was developed for DANIDA by consultants and its framework was approved by GOI and DANIDA. The NIHFW representing GOI together with DANIDA contributed to the design of the questionnaires. Thus the evaluation team was able to carry out its task within a framework and using a protocol agreed to by GOI and DANIDA. The framework for the evaluation is included in Appendix 1. The design focuses upon the beneficiary of health services, in this case the mother and child. It uses a combination of questionnaires which would permit an assessment of various elements of the health service to be made from the point of view of the end user. From this starting point the evaluation then traced through the various levels of service delivery to see how the health system was supporting the delivery of services. This design includes indirect assessment of project components which strengthen health service delivery, such as community participation, IEC, and quality of training.

The information with which to carry out the evaluation was drawn from:

- A desk study of reported data, including the quarterly progress reports from the Project Organisation, project summaries specially prepared for the evaluation by the Project Organisation and DANIDA, the baseline survey documents, and reports on various components prepared over the project period by the Project Organisation and its consultants.
- Indicators calculated from service statistics and other sources which could be used in a continuing monitoring system. Some of these indicators were developed during the design of the evaluation, and the data were provided by DANIDA and the Project Organisation (see Appendix 1).
- Interviews at the village, HSC, sector, PHC and district levels conducted by the evaluation team itself. The protocol used enabled the experience of team members to supplement the proforma questions.
- Discussions with central and state health officials and with state and district project officials.

#### 4. Sample Design

Cluster sampling methodology was used to select a random sample of villages, the data from which would provide statistically reliable estimates of key indicators. (Appendix 2 describes the methodology in more detail.) The 1985 projected rural population of the two districts was 6.7 million. The published data on village populations were not suitable to use as a sampling frame because the places listed were Panchayat or revenue villages, each of which generally consists of 10-15 small villages or hamlets recognised by the community. The PO was asked to provide information on villages and their populations; this was done by the local health workers. The PO also supplied information on whether health sub-centres (HSCs) were designated as DANIDA or GOTTN locations; a facility was designated a DANIDA HSC if the Project had funded construction of a new building and/or if the HW(F)'s salary was paid by the Project

These data were used in Delhi to make a suitable sampling frame, which was stratified into two groups: villages served by a DANIDA HSC and those served by a non-DANIDA HSC. Out of the 1,380 HSCs in the project area, 657 were DANIDA HSCs. Thirty clusters were selected from each group (15 clusters from each district), and in each cluster, seven children between 1 and 2 years of age were the subjects. This sample is large enough to provide reliable information about coverage of immunization services, and according to WHO is adequate for investigating coverage of other aspects of maternal and child health services (see references in Appendix 2).

One-half of the 60 cluster villages selected also contained the HSC, whereas normally only one out of three villages could expect to have an HSC, so this evaluation might give slightly higher estimates of coverage of the entire population than might be the case, due to better access to services in the HSC village.

From the available information it was anticipated that not all villages would have a trained dai (traditional birth attendant), but that most HSCs had a female health worker in position. The fact that in some clusters, certain components of the health system were absent does not alter the precision of the estimates of coverage. Accurate and detailed information on deficiencies of such components is an important contribution of this evaluation; the variety of staffing patterns, services offered and levels of activity identified during interviews with the sample of staff surveyed, is documented in this report.

## 5. Field Interviews

In each cluster village, members of the evaluation team first conducted an interview with village leaders and, where available, some members of the Village Health Council, Panchayat, women's organisation (Mahalir Manram), youth clubs, Balwadi attendant to explain to them the purpose of the visit and find out, among other things, about the existence of health facilities, health personnel and community involvement. All the village dais who had received training and were available at the time of the visit were also interviewed. The team conducted household interviews with the mothers or guardians of seven children aged one to two years to determine the family's utilization of health and family planning services and the immunization and nutrition status of the child. A total of 420 interviews was carried out and the mothers were present in 89% of the households.



The Health Sub Centre (HSC) responsible for providing services to the cluster village was then visited and an interview completed with the female health worker - maternity assistant (MA), auxiliary nurse midwife (ANM) or multipurpose health worker (MPW).

The Health Supervisor responsible for supervising the HSC, the PHC Medical Officer and the district health officers of the six Health Unit Districts (HUD) were also interviewed to find out about the operational support provided to the HSCs and PHCs in the form of supervision, logistics, management, training and IEC (information, education and communication) with particular reference to maternal and child health (including immunization and family planning), basic curative services and nutrition. Discussions were also held with District Training Teams at HUD level, District Project Officers at district level, and Regional Assistant Directors. Table 1 summarizes the number of proforma interviews conducted at each level of the health system, by district.

#### 6. Analysis of Findings

Immediately after fieldwork, the evaluation team started analyzing the data it had collected. On the basis of the preliminary findings and background documents, further discussions were held with the Project Organisation, Government of Tamil Nadu and DANIDA. The major findings and recommendations which follow have been developed using all these inputs. Recommendations regarding specific points discussed in the findings are designed to strengthen, directly or indirectly, the role of the female worker, who is the point of first contact in the rural health service delivery system, the strengthening of which is this Project's principal objective.

TABLE 1

Summary of Interviews Conducted

	<u>Salem</u>	<u>S. Arcot</u>	<u>Total</u>
Village profile	30	30	60
Trained dais	29 <sup>a)</sup>	19	48
Households contacted <sup>b)</sup>	2,309	1,397	3,706
Household interviews	210	210	420
Health workers at HSCs	28 <sup>c)</sup>	25 <sup>d)</sup>	53
Health supervisors	26 <sup>e)</sup>	19 <sup>f)</sup>	45
Medical officers at PHCs	22	23	45
District health officers	3	3 <sup>g)</sup>	6 <sup>g)</sup>
Regional Assistant Directors	1	1	2

a) Includes 2 incomplete interviews.

b) Data were obtained by tallying all households contacted. The CBR is lower and the IMR higher in Salem than in South Arcot and therefore more households had to be contacted in Salem to find 7 index children per cluster.

c) Includes 6 MAs, 6 ANMs, 15 MPWs(F) and 1 LHV. 30 HSCs were visited; one post was vacant, and one MPW was on medical leave, but her HSCs equipment was examined and has been included in the analysis.

d) Includes 12 MAs, 2 ANMs and 11 MPW(F). 30 HSCs were visited but one MPW was on medical leave and four posts were vacant.

e) Supervision of two HSCs was done by one supervisor; only one interview has been included. Although 4 posts were vacant and one supervisor was on maternity leave, other supervisors had been assigned additional charge so only 3 of the scheduled supervisor interviews were not conducted.

- f) One health supervisor covered two of the HSCs surveyed and only one interview was conducted. Eleven posts were vacant but 5 of these had been covered by assigning other supervisors additional charge. One supervisor was posted but absent on training, one supervisor could not be contacted, and two HSCs appeared to function with no supervision. One of the supervisors interviewed was male.
- g) Includes one DHO who was interviewed twice because he had additional charge (i.e. two HUDs).

## I. THE PROJECT AND ITS ORGANISATION

### 1. Project Objectives

The Project Document, entitled Strengthening Health and Family Welfare in Two Districts in Tamil Nadu, sets the following objectives:

- Strengthening the health and family welfare service delivery system by integrating health and family welfare services;
- Improving the utilization of existing facilities;
- Increasing the health and family welfare infrastructure coverage through extension of the Sub-Health Centre system;
- Improving the referral system from village and Sub-Health Centre level through Primary Health Centre (PHC) and Taluk Hospital level to district hospital level;
- Improving the quality and coverage of services by:
  - a) strengthening the health and family welfare management
  - b) improving the professional skills of primary health care personnel, and
  - c) reorienting the health and family welfare staff towards community work and involvement;
- Creating demands within the community for health and family welfare services;
- Creating awareness in the community of its responsibility for its own health needs and for mobilizing local resources in solving health problems.

These objectives were to be pursued in accordance with GOI's Model Plan for creating facilities and providing services under the Area Programme.

## 2. Project Principles

For project planning and development of implementation strategies, certain basic principles had to be adhered to. These principles were the intersectoral approach, i.e. not limiting the scope of the Project to health services; the systems approach, including health service delivery, management, organisation, physical infrastructure, logistics and manpower; community involvement leading to mobilization of the village population; and targeting health services at vulnerable sections of the community, i.e. socio-economically weaker segments, women and children.

## 3. Project Agreement

The Project Agreement for the Health Care and Family Welfare Project (Area Project) Tamil Nadu incorporated these objectives and principles; it was signed between Government of India and Government of Denmark on 1 August 1981. This Agreement amongst other things stipulates that

- the Project will be directly executed by a Project Organisation at state and district levels in keeping with the Project principles of community participation, participatory approach to planning and the target group approach;
- implementation of the Project will be continuously reviewed and guided by committees established at block, district, state and union levels. Representatives of Government of India and DANIDA will be members of the committees at state and union level;
- a document called the Plan of Operation outlining the operational and financial framework for implementation of the Project provided for in the Project Document, will be agreed upon between the two Governments. This Plan of Operation was to be reviewed annually.

The Project Agreement is between the Government of India and the Government of Denmark, as according to the Constitution of India only GOI can enter into agreements with foreign governments. However, the GOTTN was involved throughout the planning period and it is the implementing agency for this Project.

The state government has constituted the PO as a special directorate in the state health department on par with the other directorates. It is one of nine directorates in the Tamil Nadu health system (see Appendix 3 for organisational structure). The PO at state and district levels has the responsibility to coordinate with the existing health system to implement the Project. The State Project Coordinating Committee is the forum for sanctioning and monitoring the Project. Various committees have been formed at the central, state, district, block and village levels.

Various components of the Project are the responsibility of various Directorates and Departments. An indicative list is given in Table I.1. This division of labour between 9 directorates in the Department of Health and 2 other departments creates a constant need for coordination and this can only be done through the Health Secretary. The only existing forum to which all these components are answerable for project matters is the SPCC, and this committee is too high-level and meets too infrequently to exercise effective day-to-day control.

The Project Organisation, being one of nine Directorates, also has little say in those areas of the Project that are being implemented by one of the other Directorates. Even the task of collecting reliable and up-to-date information for the purpose of monitoring and evaluation is often difficult. This inhibits the PO's ability to ensure that the Project is being implemented in accordance with the Project principles.

The inability of the PO to monitor the quality of construction for buildings being constructed as a part of the Project is a significant example of the problems that result from such multiplicity of control. The organograms and tables in Appendix 3 present the organisational structure and show how DANIDA and the PO relate to the various levels of Union and State Government.



Table I.1

Responsibilities for Selected Project Components

<u>Directorates/ Departments</u>	<u>Some main functions with reference to the Project</u>
1. State Drug Control	1. Supply of certain drugs
2. State Health Transport	1. Repair of vehicles
3. DANIDA Project (PO)	1. Inservice training (DTTs)
	2. Monitoring and Evaluation
	3. Innovative Schemes
	4. Supply of special drugs/equipment
	5. Planning
4. Primary Health Centres (DPHC)	1. Supply of drugs (PHCs)
	2. Mobile Health Teams (MHTs)
	3. Furniture, equipment and POL (PHCs/MHTs)
	4. Functioning of PHCs
	5. Posting of MOs to PHCs
5. Public Health and Preventive Medicine  (DPH and PM)	1. Supply of drugs (HSCs)
	2. Supply of vaccines (PHCs via RAD and DHO)
	3. Sanction of cycle loans (PHCs and HSCs)
	4. Supply of EPI equipment
	5. Functioning of HSCs
6. Medical Services (DMS)	6. Basic training of Dais and MPWs
	1. Leprosy programme
	2. TB programme
	3. Allocates MOs for posting to PHCs
	4. Referral Hospitals
7. Medical Education	1. Training of Doctors and PHNs
8. Family Welfare (DFW)	1. Supply of family welfare drugs/materials.
	2. Family welfare programmes
9. Indian Medicine	1. Siddha drug supply
10. District Collector	1. Monitoring family welfare targets
	2. Construction of buildings through PU
	3. Water supply and sanitation through PU
	4. Procurement of land for buildings
	5. Chairing District Project Coordination Committee
11. Public Works Department (PWD)	
Buildings wing	Phase I construction
Highways wing	Phase II and III constructions

#### 4. Establishment and Growth of the PO

Originally the PO was conceived as a rather modest organisation of 2 officers and 2 support staff at state level, and 12 officers including 4 for a construction cell and 13 support staff in each of the two districts (these numbers exclude peons, watchmen and drivers). The first Project Director (head of the PO) was appointed in February 1981. The PO found that the manpower provided for in the Project Document was insufficient to fulfill its responsibilities. By the time the Project Agreement was signed (August 1981) GOI had formulated the pattern of sanctionable posts for area projects as a whole. GOIN followed this pattern in expanding the provision for PO staff to 5 officers and 16 support staff at state level, and 8 officers and 17 support staff in each of the two district project offices (excluding drivers, peons and watchmen).

No construction cell was established within the PO, and all construction was handed over to the PWD. However, at divisional level the Project is funding a total of 43 posts in PWD (Buildings) which were sanctioned in February 1982, and 72 posts in PWD Highways and Rural Works (sanctioned in May 1984) including drivers, peons and watchmen whose numbers are not available separately.

By December 1985 the PO had 9 managerial/technical posts at state level, supported by 29 staff members and 15 managerial/technical posts at district level, supported by 29 staff members. They comprise six units: administration, accounts, health services and training, communications, monitoring and audit for construction expenditures.

The present Project Director and the two DPOs are drawn from the IAS Cadre, as per the Project Document. There have been several transfers - this is the third Director for the Project and the fourth DPO in South Arcot since February 1981. The second DPO in Salem has been transferred recently and at the time of this evaluation the post was vacant.

Construction and posting of health personnel has made slower progress in S. Arcot than in Salem; this may partly be due to frequent changes in the leadership of the South Arcot Project team.

The organisational structure of the PO was drawn up when health services were run from district level. Subsequently the responsibility for health services was devolved down to Health Unit Districts (HUD), of which there are three per district. The staffing pattern at the PO was not changed.

#### 5. Sanctioning Forum

A State Project Coordinating Committee (SPCC) is the special forum for sanctioning the implementation of various schemes under the Project. (For a list of members see Appendix 3, Table 3.4).

The SPCC scrutinizes the annual project implementation plans and the budget presented by the PO. The committee receives the PO's quarterly progress reports on project activities, and helps the PO to overcome difficulties in the implementation process. The committee meets at least twice a year. The minutes of SPCC meetings are circulated to the two District Collectors and District Project Officers, while copies of Government Orders are sent to the District Collectors, the DPOs, the Regional Assistant Directors and the District Health Officers.

At its first meeting, the SPCC decided to set up an Empowered Committee (for a list of members see Appendix 3, Table 3.4). On the basis of clearance given by the SPCC, this committee examines various proposals in detail and accords specific financial sanctions without further de novo examination and circulating procedures.

In the event of any changes made in the SPCC decisions, the Project Director circulates the proposed changes to GOI and DANIDA before issue of Government Orders.

#### 6. Monitoring and Evaluation

The Project Document specified that an independent professional monitoring and evaluation group should be established for organising and managing the entire evaluation system i.e. a baseline survey, a monitoring system and an evaluation system. The agreement refers to the Monitoring and Evaluation Group (MEG) established under the agreement on the Health Care and Family Welfare Project in Madhya Pradesh, and extends its tasks and functions to cover the Project in Tamil Nadu as well. The MEG started functioning in May 1980.

The Government of India introduced an area project quarterly reporting format in early 1982. The first quarterly report produced by the PO was for the quarter ending 30 September 1981. Regular reports have been received by DANIDA and Government of India. Efforts to improve the quality of reports and widen their scope have been made by the Project Organisation in the last quarter (September 1985). The MEG was to produce a monitoring system which integrated the quarterly reporting format with the rationalized management information and evaluation system (MIES), which was introduced by GOI in 1983.

A monitoring system and baseline data were to be provided to the PO early in the implementation. The MEG identified the National Tuberculosis Institute, Bangalore, and approved its framework and methodology for the baseline survey. This has not yet been completed. The monitoring system was not provided. The Mid-Term Evaluation was conducted by the MEG in 1984. The group was disbanded in March 1985.

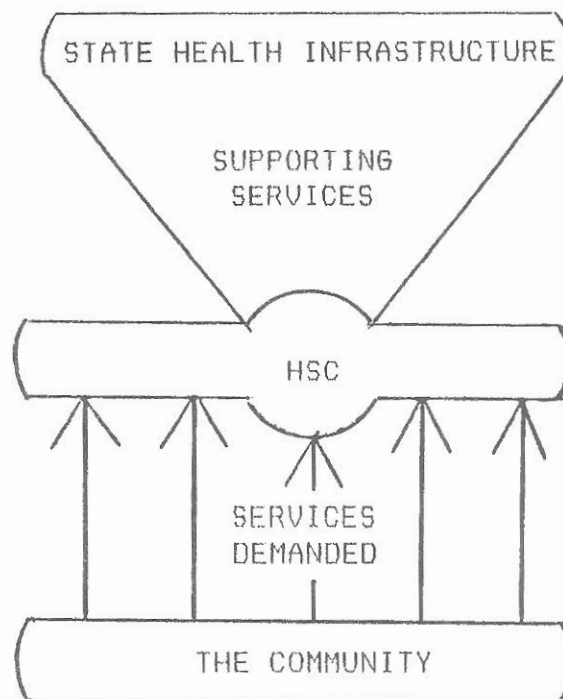
Because of the delay in carrying out the baseline survey, the PO carried out its own Benchmark Survey prior to start of project implementation. This survey was financed from the planning phase budget.

The Project Directorate has a Monitoring and Evaluation Officer with support staff. At district level, there is a Monitoring and Evaluation Officer with Investigators and Research Assistants. This staff has conducted several studies to assist in project implementation and has developed formats to follow project components. (See Appendix 21 for a list of studies.)

As per the Plan of Operation III the efforts of the monitoring and evaluation units in the PO are to be directed towards introduction of its output monitoring formats. The focus is also on strengthening the skills of the district level monitoring staff in planning for data collection and analysis, and its utilization.

## II. THE HSC, SERVICE FOCUS FOR COMMUNITY CARE

The HSC is located at the point where the formal system set up to deliver health care comes into contact with the community; although it is usually the nearest it is not the only entry point for the community. Both PHCs and hospitals have first line contact with the community; however, this is not their prime function as it is with the HSC. The HSC's position may be illustrated thus:



In the project area a rapid development of the physical infrastructure for health has taken place in the last five years; however, this has not been supported by a comprehensive operational plan, or detailed operational plans for specific components. There seems to be little understanding of the HSC as a constituent part of a whole system, a system which ought to provide the working framework to support the HSC. This framework should include:

- means of prioritising objectives and tasks
- ways of focusing upon those most in need
- methods of providing supplies
- methods of providing support and assistance
- methods of collecting data.

Many of these aspects have been developed, some of them inadequately as this report points out. The HSC is not just a building, it is an entity, an entity which needs workers, equipment, supplies, drugs and patients if it is to have any significance. Further, it is a base from which the HW(F) can function, bringing MCH care and basic curative services to the community.

At present what is lacking is this holistic approach to the HSC. Much has been done to build buildings, something has been done to provide them with drugs, supplies and equipment. Most of them have had a female health worker posted and yet few of them are well used by the community. In human terms the heart of the HSC is the female health worker; she is the person who must live at the centre, and it is she who must establish rapport with the community and its members for whom the services are available.

In addition to the female workers there are male workers; however, their role is presently circumscribed by court proceedings. So although they are often posted to work in the HSC catchment area, they function as single purpose workers, unlike their female counterparts who are expected to be able to offer all aspects of primary health care to the villages in their catchment areas.

From the view point of the community, the HSC can be seen as the place to which people go if they are sick, yet the preponderance of the activities at the HSC are associated with prevention rather than cure. Thus to the community this facility, staffed by an outsider with few drugs and no injections, may seem like a poor alternative to the existing options; of those who went to an institution when they were sick, only 6% said they went to the HSC as their first choice for care.

If the HSC is to be able to achieve its goal of serving the community with primary health care then there is a need for a radical change in the way those services are offered, not so much a change in any individual component but rather in the overall approach. For the services to be successful, it is more important for them all to function reasonably, than for one or two to function well at the expense of others.

This evaluation has examined the main functions of the HW(F), and it has measured some of them, such as immunization and maternal care. The evaluation team has studied, through field work and a commissioned in-depth study of 4 HSCs, the means by which the

system supports the HW(F) and has been made aware of the communities' perception of, and attitude towards, the HW(F). It has seen at first hand the environment in which the health worker is expected to function and the difficult conditions she has to contend with. This chapter seeks to address the problems faced by the HW(F) and to discuss possible ways in which her task can be made easier and her services more effective.

### 1. Community Contact

The HW(F) needs to have more effective contact with her community if she is to be successful. One of the root problems is that it is not her community. She is almost always an outsider, typically from an urban environment with little previous experience of rural life, posted by the system to work alone in a strange community for a number of years. Many HWs(F) tend to come from an urban background because few women with the necessary educational qualifications are to be found in villages. Given that this bias is unlikely to change in the foreseeable future, it is necessary to provide other means of strengthening the HW(F)'s role in the village. This would include:

- better training to provide her with communication skills to help her interact with the community
- building up the contact with the community to encourage the formation of Village Health Committees
- continued efforts to involve dais
- ensuring that supportive supervision is provided by the MO I/C and HA(F) so that they are seen by the community to actively support the HW(F)'s work.

The absence of any community based health worker means that the HW(F) has no village based counterpart with whom she can consult on specific aspects of the community's health.

Some efforts have been made to establish village based committees; however, these have been set up by the PO without the community having a desire for or seeing the merit of such committees. The PO's efforts need to be directed toward helping the HW(F) convince the people in her area that they need to



organise themselves and then giving help to establish the sort of committee that they feel is appropriate. Attempts to harness existing village organisations such as Mahalir Manrams to support the HW(F) have not been successful.

## 2. Focusing HW(F) Activities

The health worker is expected to carry out many tasks. Excluding those that take her away from her village, she is expected to visit every household in the catchment area once a month. This means she has to visit at least 50 households a day; in so doing she will be using time to visit many who have no need for her at that time and consequently she will not have enough time for those who do need her. She is also expected to run a clinic at the HSC in the afternoon and be available for deliveries and emergencies, at any time. Some tasks are allotted on a regular basis, such as running an immunization session once a month, and other tasks will be given to her periodically, like enumeration of eligible couples and newborn children. She also has to attend meetings at her PHC and may be temporarily drafted to work in camps or on campaigns. When it is remembered that each HSC has an average 5-6 villages with a population totaling 5,000, it can be seen that much is expected of the often young and inexperienced health worker.

In the absence of clear guidelines she operates in an ad hoc manner with no means of prioritising her work. To enable her to offer services effectively, it is proposed that she should be allowed to establish a schedule of static clinics located in each of her villages, at which she can offer all the services to those members of the community who need them. She will need community support to find the fixed location. She will need help from the MO I/C, BEE and HA(F) in encouraging the public to come to these clinics and a great deal of effort may be necessary to convince the members of a village that they should now walk, albeit only a short distance, for a service which previously came to their door. Nevertheless, she will still have to allocate some of her time to home visits (e.g. postnatal checkups).

From the HW(F)'s point of view she needs constantly to ensure that she really is reaching her priority groups, e.g. pregnant women, infants for immunization. This evaluation has shown how easy it is for the priority group to be missed. For example nearly a third (29%) of the children who were fully immunized were outside the priority group.

It is often possible in the environment in which she works for the health worker to be unaware of the number of newborn children in her area. Each year there is a concerted effort to enumerate eligible couples and their families, by visiting every household. This extensive task is normally done at the beginning of the financial year; from some spot inspections of the registers it appears to be very incomplete. For example, one HSC which had completed its enumeration for 1985-86 and had in fact repeated it for the UIP in October, appeared to have missed 38% of the expected number of children under 2 years. It is likely that some infants are simply not known about by the HW(F) until they are older.

If her activities are properly focused then her tasks are achievable. For example, she can expect to have about 150 pregnant women a year; if each has a total of 6 visits (3 antenatal and 3 postnatal) plus the delivery itself then she would have a total of about 1,000 maternity contacts; in practice, some women are delivered by dais and some go to hospitals or clinics. The HW(F) could expect about the same number of contacts for child health and immunization, and clearly some of these could occur in the same session. In terms of a monthly work load, this means seeing in total about 150 women and children per month or about 30 per village. If she visits each village once a week, then she would expect a clinic with about 30 women and children. To this should be added those who attend only for curative care; on the basis of present performance this would add perhaps another 10 patients to her clinic, although increased appreciation of the service would increase demand for curative services.

### 3. Service Support

There is a need to develop a more comprehensive approach to the way in which the health services support the health worker. The diagram at the beginning of this chapter shows how the whole health system focuses onto the health worker; in reality with many workers in a system such a diagram would be many faceted and overlapping.

In planning the support for health delivery it is necessary to optimise the way in which the various components interact and support each other; this means making detailed operational plans and work plans and keeping them up to date. The latter are prepared by the health workers at their monthly meetings.

However, the absence of operational plans has resulted in frequent abuses of workers' time. A prime example of this is found in the duties of the HA(F) who is frequently expected to travel to the PHC, collect vaccine, go to the HSC, help the HW(F) run her immunization session, and return to the PHC to put the unused vaccine back in the refrigerator before going back to her LHV quarters.

Such a wasteful procedure could be avoided. In developing an operational plan it would be possible to define how vaccine would be distributed more efficiently, for example by providing the HA(F) with a vaccine carrier with a cold life long enough to enable her to keep vaccine safely for two days. There are now many vaccine carriers available which have a longer cold life; some are efficient but bulky, others are smaller and designed specifically for ease of handling (see WHO/UNICEF Project Information Sheets).

#### 4. Summary

The basic physical components for a primary rural health service are now in place in the project area, yet one vital component is missing. It is the one which will meld the various constituent parts into an effective whole. It is multifaceted and complex and slow to manifest itself in terms of results. What is needed now is organisation, organisation of the way in which the services interact with the community, organisation of the ways in which the health worker's time is used and organisation of the way the health services support the health worker.

The PO as the executive authority for this Project should have been addressing the problems of planning, designing and developing techniques to enable the health services to be delivered more effectively. The PO's activities in this regard are discussed in Chapter XII.

Directorates responsible for health service activities in *the project area* should now concentrate upon some specific areas where significant shortcomings were found by the team. The specific areas include:

- Focusing HW(F) activity on the priority groups
- Community cooperation and interaction with the HW(F)
- Development of more appropriate work plans for health workers
- Continued development of operational plans such as the one recently prepared for EPI
- Provision of specific needs identified through those operational plans
- Investigation of mechanisms for coordinating the efforts of different Departments at village level.

The remainder of this report examines specific components of the health services in some detail.

### III. PHYSICAL INFRASTRUCTURE: BUILDINGS AND WATER SUPPLY

The original objective of assistance to improve physical infrastructure was to provide appropriate facilities (through construction and renovation) in order to strengthen the service points of the health care delivery system at PHC and HSC levels; to provide residential accommodation for health staff where necessary; and to provide training facilities and accommodation for trainees at district and regional level. This last objective was dropped following the first annual review in May 1983. The physical infrastructure component accounts for by far the largest share of Project resources.

#### 1. Targets

Table III.1 shows the targets for construction, renovation and water supply according to the original Project Document in 1980 and according to the POPIII document in 1984. The percentage share of the POPIII budget allocated to each sub-item is also shown.

Changes to targets are complex. To establish the original target figure the following exercise was carried out. The 5th Five Year Plan (1974-1979) norm for HSCs was 1 established HSC per 10,000 population. (An established HSC means either constructed or rented.) The 6th Five Year Plan (1980-1985) changed this norm to 1 per 5,000 population. During the project planning phase GOI proposed that the 1982 projected population figures should be used to calculate the number of HSCs to be established. At the time of the project negotiations the 5th Five Year Plan targets had not been met and the shortfall had been carried over into the 6th Five Year Plan. By the end of the 5th Plan 95% of the target was established, but only 40% had been constructed; the rest were either rented or notional. Thus when the Project began it was faced with establishing the shortfall from the 5th plan plus all those from the 6th.

The number of buildings to be constructed was calculated according to the 6th Plan norms plus the 5% shortfall from the 5th Plan. This was initially calculated to amount to 471 HSCs, and 254 LHV quarters. There have been considerable variations in these numbers and a full explanation is to be found in Appendix 5. The final agreed number was 523 HSCs and 285 LHV quarters. The list of Project construction activities is shown in Table III.1.



TABLE III.1

Target for Construction, Renovation and Water Supply  
and the Percentage Share of POPIII Budget

	<u>Project</u> <u>Document</u> <u>(October</u> <u>1980)</u>	<u>POPIII</u> <u>(Septem-</u> <u>ber</u> <u>1984)</u>	<u>% of</u> <u>POPIII</u> <u>Budget</u> <u>Allocated</u>
		a)	
HSCs	471	528	17.1%
LHV Quarters	254	285	2.3%
Renovated HSCs	211	229	0.7%
		b)	
Water Supply to HSCs	471	728	3.0%
		c)	
Water Supply to LHV Quarters	-	148	0.7%
Renovation of existing PHCs and HSCs	20	22	1.0%
		d)	
General side buildings at PHCs	24	16	0.5%
Residences for MOs at PHCs	37	36	0.7%
		f)	
Training Centres	6	-	
		f)	
Residences at Training Centres	18	-	
		e)	
Pediatric wards	2	2	
		e)	
Maternity wards	2	2	0.4%
		e)	
Operation theatres	2	4	

- a) Construction of 5 HSCs was not approved in the 7th SPCC meeting, (September 1985) so the figure is now 523.
- b) Handpumps at 447 HSCs and extension of pipelines at 281.
- c) 113 with extended pipe lines and 35 with handpumps.
- d) General side is all primary health care except family welfare.
- e) Located at Taluk Hospitals.
- f) In the First Annual Review, (May 1983) it was decided to rent accommodation.

The changes in POPIII are caused by changes in the demographic base used to calculate requirements.

As can be seen, the major component of this building schedule is the HSC and LHV quarters. These account for 78% of the construction budget.

## 2. Budget

Building construction and renovation together comprise the largest single item in the project budget, and its share of the total budget has almost doubled during the life of the Project.

TABLE III.2

<u>Year</u>	<u>Total budget</u> <u>1980</u>	<u>Construction</u> <u>and Renovation</u>	<u>Percent of</u> <u>Total</u>
	(Rs. 100,000)		
1980	1,440.0	384.5	27%
1984	1,875.8	840.3	45%

The reasons for this increase are complex, but include the following:

It was originally intended in the Project Document that a construction cell should be established in the PO which, following the project principles, would involve the communities themselves in the construction of appropriately designed and traditionally constructed buildings. GOTN rejected the idea of a construction cell and it could not even be agreed that the PO should have its own engineer/architect for liaison purposes. It was decided that the buildings should be constructed by PWD (Buildings). During the planning phase DANIDA consulted various organisations familiar with the type of construction envisaged (e.g. Alternative Science and Technology for Rural Areas, ASTRA in Bangalore) and concluded that the buildings would cost about Rs. 50,000. However, GOTN in preparing the Project Document used a lower figure of Rs. 35,000 which was based upon the World Bank figure, itself an estimate for a different type of HSC costed at Rs. 25,000.

The PWD prepared its detailed estimates and then calculated costs for HSCs at Rs. 60,000 and for LHV quarters at Rs. 30,000. There were variations between each Engineering Division.



Thus a combination of underestimating originally plus significant changes in the type of construction led to an increase in the cost of the buildings; to this has to be added the increased cost of building materials.

### 3. Location Planning and Site Selection

A great deal of attention was paid to planning the location of HSCs and sector headquarters (LHV quarters). With the project team, DANIDA developed a location planning methodology based on GOI guidelines. For HSCs, the criteria for choosing the villages in which to locate new buildings were:

- one sub-centre per 5,000 population,
- the maximum distance to be travelled to reach the sub-centre should not exceed 8 kilometres,
- should not generally be established in places where other health care facilities are available,
- should be selected such that they are spatially well distributed and no area of the block is neglected,
- specific attention should be paid to isolated areas and those that are seasonally cut off due to rains,
- specific attention and special care should be paid to tribal pockets.

LHV quarters are the sector headquarters for supervisory staff (HA(M) and HA(F)). The population of a sector is about 20,000 or four HSCs. An LHV quarters is always supposed to be attached to a HSC, from which the supervisors visit the other three HSCs in the sector. Criteria for selecting a location for an LHV quarters were:

- centrally located with respect to the cluster of 4 HSCs under its supervision,
- should be adequately connected with the other sub-centres in terms of transportation,
- should have space for future expansion.

After the location of a village in which to build a HSC had been decided, the site within that village had to be chosen using the criteria for site selection:

- accessible to the target groups
- within the village boundary ensuring easy access for women and children
- should be such that the waste disposal from the sub-centre does not cause health hazards and social tensions
- located in a healthy environment
- land to be procurable without legal problems.

The first criterion was subsequently modified by GOTN, who instructed the PO to site the buildings near to the socio-economically disadvantaged sections of a village.

This order of the GOTN does not seem to have been officially brought to the notice of the SPCC, as it should have been, and consequently no thought seems to have been given to its implications by the SPCC.

The last criterion specifying that only that land which was free from legal problems should be selected seems to have been interpreted as meaning that only government land should be selected and this often meant that land lying on the outskirts of the village, was chosen.

The PO did not, it appears, raise with the SPCC the problems in choosing appropriate sites. No effort as such could therefore be made by the SPCC to resolve these problems and prevent the construction of buildings on inappropriate sites.

Two evaluations (wrongly described as monitoring) were undertaken to assess the suitability of the sites selected. The first, conducted by the M.A.C. Institute of Community Health, Madras, in 1983 under the auspices of MEG, evaluated the location planning and site selection in 12 blocks of Phase I buildings. This study inspected the site and used the additional criterion that the HSC building should be located closer to the weaker sections; it also asked the community about the convenience of the site. The report of this evaluation concluded that overall siting was satisfactory.

However, the maps in this report suggest that at least 16 (37%) of the HSC buildings were outside the inhabited area. This discrepancy might at least partly be explained by the use of the additional criterion arising out of the GOTTN stress on placing HSCs near the scheduled castes "hamlets". DANIDA conducted another evaluation in 1985 where it evaluated, among other things, the siting of 58 HSCs and HSC/LHV quarters buildings. Of these 58, 54 were those which had not been seen by the earlier evaluation team. They found that 16 (30%) of these 54 were sited outside the inhabited area.

During the field work it was found that the health sub centres (HSC) buildings and health supervisors quarters constructed under the project were unsuitably sited in many cases. Among the major problems noticed were:

- siting outside the villages in isolated places
- siting near toddy shops or burial grounds
- siting in low lying, marshy and unhealthy areas.

The first two of these problems are reported to have serious implications for the security of the female health worker who is expected to live there. Siting problems are exacerbated by poor detailing of the buildings, for example shutters that can only be closed from outside the building (see Section 6).

Considering the investment involved, the construction of buildings on inappropriate sites is a very grave setback which is practically impossible to reverse. Additional efforts are now needed to counteract the effect of poor siting. For example, expenditure on security measures such as fence building and rearranging shutter closing.

Frank and open discussion on the security problems of the HWs(F) should be held at the PHC involving the health workers, their supervisors, MOs and other staff. The female health workers should be given encouragement and help to establish themselves in the community to which they have been assigned, and to obtain support from the community.

Physical barriers such as fencing around the compound and a grill over the open court-yard could also be provided. It should be ensured that all doors and windows are properly constructed so that they latch properly, i.e. from the inside.

If buildings are to be constructed in the future, a much stricter monitoring of site selection must be carried out, with much closer monitoring by DANIDA.

#### 4. The Design of the HSC and LHV Quarters

The HSC design was based upon the existing GOI model design and upon those HSCs already in use in Tamil Nadu. The architects at DHCU used these designs as a starting point; after field visits to existing HSCs and discussions with MPWs they developed a basic design which could be modified to suit local requirements.

Following the decision to appoint PWD (Buildings) to be responsible for the construction programme the design was modified to use a hollow block construction for the roofs of the Phase I buildings. This was subsequently changed to a sloping in situ concrete roof for Phases II and III. The designs of Phase I, II and III buildings are shown in Appendix 5.

#### 5. Construction Programme

The construction programme was divided into three phases. Work went ahead rapidly and achievements have been impressive. The completion of buildings is summarised in Table III.3.

TABLE III.3

Status of Buildings Constructed as of 30 November 1985

<u>Type of Building</u>	<u>No. sanc- tioned</u>	<u>No. com- plete</u>	<u>No. handed over</u>	<u>Percent of sanctioned handed over</u>
HSCs	523	404	300	57%
LHV quarters	285	234	154	54%
General side buildings (PHC)	16	9	6	38%
MO quarters (PHC)	36	34	33	92%
Operating theatres (Taluk Hospitals)	4	4	4	100%
Maternity wards (Taluk Hospitals)	2	0	0	0%
Paediatric wards (Taluk Hospitals)	2	1	0	0%
HSC renovation	227	221(97%)	n.a.	n.a.
PHC renovation	57	36(63%)	n.a.	n.a.

There is a significant difference between numbers constructed and numbers handed over. Nevertheless, as the average rate of completion has been about 14 HSCs and 10 LHV quarters a month, all buildings should be handed over by the end of the project period.

It is noteworthy that the Project expected to be able to complete construction in the first 3 years, as indicated by the large number of buildings (475) sanctioned in Phase II, representing 58% of the buildings to be constructed. All of these were expected to be built in one year, which would have required a completion rate triple that achieved. The presence of an engineer on the staff might have reduced this target to more manageable proportions. In fact it took until the end of 1985 for 300 buildings to be handed over.

## 5.1 Other Buildings

Attention has been focused upon HSC and LHV buildings because they represent 78% of the construction budget. However, other construction work has taken place as listed in Table III.3. It is expected that all these buildings will also be completed by the end of the project period.

## 6. Monitoring of Construction

In the first SPCC meeting, the DANIDA representatives pointed out that "it would be difficult to monitor progress on construction in the absence of some construction staff within the PO."

The PO and GOTN said such provision would be unnecessary and would be a duplication of skills already available in the PWD and so no technically qualified staff were appointed to the PO. This was despite the fact that construction amounts to 45% of the total budget. The proposal for technical manpower was again raised at the annual and mid-term reviews and again refused by the PO and GOTN. In the event, the PWD had to employ more staff paid for by the Project to enable them to carry out their monitoring and supervisory function, so it is not clear why there was such resistance to having technically qualified staff in the PO.

Many of the HSC buildings, supervisors' quarters, and PHC buildings visited by the team were poorly constructed; in some cases, water or electricity, or both, were unavailable. Poor quality of construction included low grade materials, unseasoned wood, windows and doors that would not shut, that did not have latches or had latches which could only be closed from outside the building, faulty water and electric connections and badly ventilated kitchens with no outlet for smoke. Although having an engineer within the PO would not guarantee that all these problems would be solved, it would have ensured that a technically qualified person was available to provide technical feedback and reports on the progress of construction without having to rely on PWD engineers whose first loyalty is to PWD.

After the DHCU report on the quality of completed buildings in May 1985, the PO recognised some of these problems and it is understood that a decision has been taken to withhold payment to contractors responsible for shoddy or incomplete work, where such withholding is possible. It is expected that full payment would only be released after the contractor has rectified the problems.

The number of sub-standard buildings for which such a withholding of funds may be possible is not known, but considering that some of the poorly constructed buildings were ready some time ago, and that the decision to withhold payment is a recent one, it seems reasonable to presume that this strategy will not cover all the buildings requiring attention. It is not clear why there was no proper monitoring of the buildings, and why they were taken over when they were obviously less than satisfactory. It is understood that the PO has now issued an order that buildings should not be taken over until they are completed and satisfactory in all respects.

For the remainder of the project period the PO should use the services of a consultant engineer to liaise with the PWD (Highways) engineers and carry out random checks to help ensure that buildings are constructed according to the detail plans and that materials of suitable quality are used.

Buildings should not be taken over unless they are complete in all respects and unless their quality of construction and fittings are all satisfactory. Personal responsibility for following this procedure must be fixed on the concerned officers.

#### 7. Rented Accommodation

In the whole project area, if the 6th plan planning norms were met, there was a need for 1,380 HSCs and this is acknowledged in POPIII. Of these, some already existed and 523 were to be built, leaving 762 which would have to be established in rented accommodation. This is set down in POPIII together with the procedure for renting accommodation, which is that the DHO should be responsible for selecting and renting suitable buildings. Out of all the HSCs in the sample, 14 (24%) were in rented buildings (9 were DANIDA and 5 were non-DANIDA); of these, half the HWs(F) had to arrange their own rent and pay it. Although some eventually got it reimbursed, some HW(F)s were paying rent which was not being reimbursed from the State. Three out of the 9 HWs(F) in the DANIDA rented buildings and 3 out of the 5 in other buildings complained about their landlord.



When problems arose with the landlord, they had little bargaining power since the amount allotted for rent - Rs. 80/- per month, whilst adequate for living accommodation is modest for the extra rooms needed for a HSC. When that particular HW(F) was posted elsewhere, the HSC which she had managed to establish in her home would cease to exist, since the lease was in her name, not that of the State. (This problem had not been anticipated in the design of the proforma questionnaires, so it was not possible to quantify exactly what proportion of HSCs in rented accommodation were at risk of becoming disestablished.) Some of the buildings seen by the team were far too small to serve adequately as HSCs, for example with only one room for clinic and living quarters for the HW(F). Whilst it is sensible to involve the HW(F) in the selection process for a rented HSC, to leave the onus on her to find and negotiate rents is unreasonable. The fact that 6 out of the 14 HWs(F) who were renting complained about their landlord shows that there is a problem with rented accommodation. (See Appendix 8 for a detailed description from the in depth HSC Study listed in Appendix 21.)

The MO I/C should report to the DHO on the details of rental and loan agreements for temporary HSC accommodation. The DHO and MO I/C should agree on how they will arrange for the lease of suitable accommodation.

The HW(F) should be encouraged to find suitable accommodation. She should be given help and support in this regard so that she is not left alone with the task of negotiating with the landlord.

The DHO should rent appropriate buildings on a minimum 3-year lease for locations where a HSC will not be constructed. Where construction is planned or in progress, the lease should be long enough to allow for a new building to be made ready for occupancy, to avoid disruption of HSC activities.

The State, the PO and DANIDA should consider the impression which a functioning HSC is intended to make upon the population, i.e. a clean, hygienic place where valuable services are provided. Either the rental agreement should include provision for an annual

interior whitewash, or if it proves impossible to negotiate this for Rs.80 per month, the maintenance budget should provide for this minimal maintenance. Priority should be given to HSC locations where no building is planned to be constructed.

#### 8. Water Supply to Health Facilities

The Model Plan for area projects (GOI: 1979) states that "the sub-centres site should also be provided with safe potable drinking water through a pump or well unless in its vicinity a water source already exists in the village." In keeping with the plan, the PO's Notes on the Project Activities for Evaluation 86 (December 1985) indicates that 632 HSCs/LHV quarters were to be provided with water, either through handpumps or extension of pipe lines. Of these, 482 (76%) have been provided with water supply. In addition, the Level 2 indicators show that 88 handpumps (18% of 482) were installed by 30 November 1985 of which 81 (92%) were working. Table III.4 shows the number and status of handpumps at new HSCs in the survey.

TABLE III.4

#### Handpumps at New HSCs

	<u>No.</u>	<u>Percent</u>
HSC with handpump working	3	20
HSC with handpump sometimes working	1	7
HSC with handpump, never working	2	13
HSC without handpump	9	60

Piped water connections had been installed in at least 8 newly constructed HSCs; in two cases these were out of order.

A study of 65 Phase I buildings carried out by DHCU found that only 33 handed over buildings (51%) had water supply. Throughout the project area and especially in Salem, water supply is a major problem. It is understood that the PO is undertaking a water survey with regard to the buildings where water is not available. When this survey is completed an appropriate source will be provided.

As set down in the Project Document on page 69: "One of the pieces of information required for location planning and site selection is availability of water". This is especially relevant in an area where water supply is known to be a problem and which suffers from recurrent drought. As location planning was still being carried out within the last 3 years, it is unclear why a survey is now necessary unless information on water supply was inadequately researched originally. The failure to provide water supply has resulted in 15 (28%) of the HWs(F) in the sample being ordered to live without adequate water, and in constructed buildings being left unoccupied because there is no water available. Recently an order was issued by the PO instructing workers to live in these buildings.

In the 5th SPCC meeting (September 1984), it was decided that provision of water supply to PHCs should be deferred until the provision to HSC/LHV quarters is completed.

Water surveys should be done in advance of the finalisation of a site. Sites should only be accepted where it will be possible to provide an adequate water supply.

HSCs which are located in villages which have a drinking water problem could be provided with bore-wells, if this is practically feasible, so that the water supply of the HSC also benefits the village.

Broken or non-functional handpumps at HSCs should be repaired or replaced, as required, on a priority basis and the PO should draw upon UNICEF experience in repair and maintenance of pumps.

## 9. Water Supply in Villages

Whilst recognising that water supply is a big problem for much of the project area the Project Document (1980) makes no further mention of water supply other than as a line item in the budget. This allocates Rs. 155 lakhs (10.8%) of the budget against the head "drinking water and sanitation". POPIII shows a sum of Rs. 124.87 lakhs for the same head; 56% of this is for the provision of water to HSC and LHV quarters. The remaining budget is for sanitation and no provision is made for village water supply.

The evaluation team gathered information on the drinking water supply of 60 villages from 2 sets of people: village leaders and mothers. Village leaders reported that domestic water came from several sources - public and private wells (seasonal and perennial), handpumps, taps, borewells, ponds and rivers. Sources of domestic water change with the seasons and most villages experienced difficulties during the dry season. Many villagers had to take water from various sources as shown in Table III.5.

TABLE III.5

Sources of Drinking Water in Village  
(N=60)

<u>Source</u> a)	<u>Number</u>	<u>Percent</u>
Tap	18	30%
Well	15	25%
Handpump	5	8%
River, pond	5	8%
Multiple sources of drinking water	17	28%

a) Often tap attached to overhead tank pumped from a well.

Although 18 villages reported that their drinking water came from taps, wells are the most numerous source of water. A total of 150 perennial and 344 seasonal wells was recorded; of these, 60 and 50 respectively were available to the public, the rest being private. Of the 110 public wells, 77 were available to the scheduled castes and tribes.

Taps are usually from a borewell in the village with distribution either via pipes to standpipes around the village or to a tank with taps at a central location.

Handpumps were used in 5 villages whilst another 5 relied upon rivers or ponds for their water supply. The remaining villages used a variety of sources.

The provision of safe drinking water is an important component for ensuring the health of a community. It is one that has been peripheral to this Project; however, it is such a problem in the area that greater attention should be paid to it.

The sources of household drinking water is shown in Table III.6.

TABLE III.6

Sources of Household Drinking Water  
(n=420)

<u>Source</u>	<u>Number</u>	<u>Percent</u>
Well	147	35%
Tap	141	34%
Handpump	91	22% <sup>a)</sup>
River/pond	40	10%

a) 15% of handpumps were out of order.

The source of water was also inspected to see if it was kept in a way which would help maintain its cleanliness. The criteria used for wells were paved, drained and covered and for taps and pumps, paved and drained. It was found that out of 368 wells, pumps and taps, 108 (29%) satisfied the criteria.

Funds should be made available for provision of hand-pumps and repairs to existing handpumps, and especially for finding ways of ensuring that pumps do get repaired. The fund could also be used to upgrade the surrounds of existing pumps, taps and wells.

#### 10. Sanitation and Garbage Disposal

Like water supply, environmental sanitation plays an influential role in the community's health. There is no mention in the Project Document of any activities planned under sanitation. In POPIII, activities mentioned under sanitation are:

- Provision of pit latrines, soak pits and smokeless chulas in selected villages
- Improvement of environmental sanitation around new health facilities
- Promotion of personal hygiene and sanitation as a part of school health
- Improving the knowledge and skills of health workers.

The PO has supported some activities funded from the CWF which would improve the general level of cleanliness: latrine enclosures in 2 villages, urinals for 100 schools, latrines and urinals for 50 schools and smokeless chulas. In the evaluation, information on sanitation and garbage disposal was obtained from households and village representatives. Of the 420 households surveyed, 43 had access to a latrine, of which 6 (14%) were private, 9 (21%) public, and the remaining 28 (65%) were public and unused.

Village representatives were well aware of the health problems associated with poor environmental sanitation. In 23 out of 49 villages with data, leaders mentioned diarrhoea, waterborne diseases and/or sanitation as a problem. They requested improvements to water and sanitation more frequently (19, 39%) than any other health related input to the community.



The cleanliness of the village streets was assessed during field visits; stagnant water was observed in nearly two-thirds (35) of them, usually due to inadequate drainage around handpumps or wells.

Piles of garbage, usually used for compost, were kept inside and outside the village in 33 communities and in half (29) garbage was thrown into the street. In 10 of the villages surveyed a specific person had been assigned to clean the streets although financial provision for such a person is usually only made for municipalities. Nearly half (24) the villages were perceived by this evaluation team to be dirty whilst only a little over 10% (8) were thought to be clean.

There has been latrine building activity in some schools, funded from CWF; however, the water and sanitation component of the budget is only half spent. It is recognised that this is a difficult aspect to influence; however, there are interventions that could be tried and experience from other areas that could be benefited from, for example, work by Gandhigram in Madurai, Research-cum-Action Project at Poonamallee and UNICEF.

A detailed Plan of Operation should be prepared to use the rest of the budget. This POP should take advantage of the existing work carried out by other agencies.

Investigations into more appropriate public latrines could be undertaken, possibly using models developed by UNICEF.

Motivation of the community to improve environmental sanitation and to use latrines should be a subject for an innovative scheme.



#### IV. MANPOWER AND TRAINING

The Project Document identified the manpower requirements for primary health services personnel needed in the project area, and presented a strategy for accomplishing the necessary in-service training. This chapter summarizes the manpower needed to meet GOI's norms for size of catchment area, and shows the Project's accomplishments in meeting manpower targets. Recruitment issues, such as the difficulty in identifying dais, are discussed in this section. Information collected during the evaluation from village, HSC, PHC and state levels on staff in position is also presented. The knowledge of health personnel at village and HSC level is discussed with reference to their job responsibilities. Finally, developments in training are examined in the light of these findings and with reference to interviews with District Training Teams (DTTs) and staff at state level training institutions.

##### 1. Manpower Requirements and Training Accomplishments

The types of staff at each level of the health system are shown in Appendix 3.5, with the size of their catchment area and type of facility. Descriptions of each type of functionary's tasks and responsibilities are also appended.

##### 1.1 Staff in Position

The data in Table IV.1, summarizing manpower targets, requirements and achievements, have been taken from the quarterly progress reports up to September 1985, the PO Notes for E86 (December 1985), and data subsequently supplied by the PO in February 1986. It turned out to be surprisingly complicated to establish the targets for dais and impossible to find out for most cadres the number of posts that were currently filled.

The demographic base used to calculate the number of personnel needed to cover 1,000 population at village level, 5,000 at HSC level and 20,000 per sector, changed when the 1981 census became available; the targets given in the Project Document, POPI and POPIII all differ. For dais, the criterion changed from 1 trained dai per village (as per GOI's Model Plan for area health projects) to 1 per 1,000 population. This resulted in the total

number required increasing from 3,230 (Project Document) to 8,674 (POPIII). Due to difficulties in identifying untrained dais, it was decided when POPIII was prepared that the Project's target for training dais would be determined by its progress in identifying candidates for training. Thus between September and November 1985, the target increased by 209 (see Table IV.1, Footnote b).

There are certain inconsistencies in data reported in the Quarterly Progress Reports and in the PO's Notes for E86; for example it is stated that 100% of target for posting male health workers and supervisors has been met, and at the same time that none have been appointed under the multipurpose scheme due to the stay order from the Madras High Court which stays the adoption of the multipurpose scheme for these cadres.

There appears to have been a notable improvement in the staffing position of female health workers and supervisors in the two months between September and November 1985; as reported in the Quarterly Progress Report and the PO Notes for E86 respectively, the number of vacancies fell by 37% (from 132 to 83) for HWs(F), and by 20% (from 87 to 70) for HAs(F).

The percentage of posts occupied is shown in Table IV.2. The data collected directly from 45 PHCs during the evaluation show that of the cadres listed, the most understaffed is the Block Extension Educator (BEE), with only 60% in position. There is also a severe shortage of HAs(F) at sector headquarters; only 71% of these positions are staffed, although 87% of HAs(F) at PHCs are in position. The quarterly progress reports make no special mention of these shortages.

The Project Document reiterated the usefulness of posting one female MO in each PHC to strengthen the female service delivery link. At that time (1980), 80% of sanctioned posts for lady doctors and 87% of male MO posts were filled. S. Arcot had a larger proportion of MO posts (M and F) vacant than Salem (22% compared with 9% respectively). The situation has hardly changed since then; at the 45 PHCs visited during the evaluation, 20% of MO posts were vacant in S. Arcot compared with 7% in Salem.

Vacancies in ancillary posts such as computer (statistician), pharmacist, etc. were reported to be causing serious problems at some PHCs as tasks had to be covered by other staff in position. Although specific data were not collected, the evaluation team became aware of the difficulties caused by staff having extra duty when examining stock records, medical stores and monthly statistics.

TABLE IV.1

Summary of the Status of Manpower Development up to November 1985  
 (From Quarterly Progress Reports and data supplied by the PO)

<u>Type of Functionary</u>	<u>Dais</u>	<u>HW(F)</u>	<u>HW(M)</u>	<u>HA(F)</u>	<u>HA(M)H</u>
				<u>HSC &amp; PHC</u>	
A. Total No. required in POPIII (1984)	a) 6,974 (8,674)	1,380	1,380	358	358
B. Trained/posted before November 1981	3,012	793	735	211	286
C. Target for Project	b) 3,294 (5,662)	587	645	147	72
D. Trained/Posted during Project (11/81 to 11/85)	3,150	587	c) 645	c) 147	c) 72
E. % of Project Target (D/C)	96% (56%)	100%	100%	100%	100%
F. Total trained/posted up to 11/85 (B+D)	6,162	1,380	1,380	358	358
G. No. of functionaries 11/85	?	1,297	?	288	?
H. Attrition up to 11/85 (F-G)	?	83	?	70	?
I. No. outstanding after attrition in November 1985 (A-G)	?	83	?	70	?

Footnotes to Table IV.1

? Data not reported.

a) In order to meet the criterion of 1 dai per 1,000 population, 8674 dais should be trained. However, the PO has been unable to identify enough untrained dais and in POPIII the target was reduced by 1,700 to 6,974.

b) The Project's target is determined by its progress in identifying untrained dais and changes over time. The target of 3,294 is cited in the PO's Notes for E86, but the Quarterly Progress Report for September 1985 gives the target as 3,085.

c) These data were not available in the Quarterly Progress Report for March or September 1985, nor in the PO's Notes for E86; data were supplied by the PO in February 1986.

d) Includes 289 HAs(F) at sector headquarters and 69 at PHCs.

TABLE IV.2

Posts Sanctioned and Posts Occupied, as Reported  
at PHCs during the Evaluation (February 1986) and as Reported  
by the PO (September 1985-February 1986)

Type_of_Funct- ionary	Data_from_45_PHCs			Data_from_the_PO		
	Sanct- ioned	Occu- pied	%	Sanct- ioned	Occu- pied	%
a)	c)	c)				e)
HW(F)	972	899	92%	1,380	1,297	94%
b)						
HW(M)	488	431	88%	1,380	?	?
HSC	199	142	71%	289		
HA(F)<					288	80%
PHC	71	62	87%	69		
HA(M)	128	114	89%			
	d)	d)		358	?	?
HI & BHI	206	169	82%			
					e)	
MO	147	127	86%	?	?	?
BEE	45	27	60%	n.a		
Lab. Asst.	46	45	98%	n.a		

? Data not reported.

n.a. Data not included in report format.

a) HW(F) includes MPWs(F), ANMs and MAs in PHCs and HSCs.

b) HW(M) includes basic health workers (M) and any male health workers described as MPW(M).

c) Information about the number of MAs sanctioned and in position is missing for 15 out of the 45 PHCs visited.

d) Information about the number of BHIs sanctioned and in position is missing for 1 PHC.

e) Quarterly Progress Report for September 1985 states that 20 MO posts are vacant (4 in Salem, 16 in S. Arcot) but no data are available from the PO stating how many posts are sanctioned or occupied.



## 1.2 Attrition of Dais

Respondents at the 45 PHCs surveyed usually had records of how many dais had been trained, but when asked how many were functioning, one-third (16/45) could not supply this information. At many of the remaining PHCs, there did not appear to be records of how many trained dais were still functioning. Nevertheless, at 7 PHCs, it was reported that all of the dais trained were still functioning, and 2 reported that more were functioning than had been trained. The remaining 20 PHCs reported attrition rates of up to 35% since 1981; out of the 29 PHCs with information:

9 (31%) reported more than 10% attrition, and of these, 6 (21%) reported more than 20% attrition.

Data from village representatives indicate that in the 38/60 cluster villages reporting trained dais, 8/38 (21%) had lost one or more of their trained dais through migration, sickness or death. In terms of numbers of dais, 13-14% of the 70 trained dais identified by villagers were no longer functioning. This figure is comparable to 13% attrition overall (168/1,334) calculated for the 20 PHCs reporting some losses of trained dais. However, if PHCs who reported no losses are included, the attrition rate becomes 8% (168/2,096). Attrition rates could not be calculated from the quarterly progress reports, which do not give data on how many dais are functioning.

## 1.3 Information on Dais

Other evidence from the evaluation suggests that the information provided at PHC level on the status of trained dais is not entirely reliable and up-to-date. Contact with the HW(F) or her supervisor is infrequent; although one-sixth of the 48 dais surveyed were full-time attendants (ayahs) to the HW(F), one-fourth (11) of the 43 dais supplying information said they never get a visit from the HW(F) or HA. More than one-third (17/45) do not liaise with the HW(F) at all, and more than half (26/44) never ask her for professional help. Neither payment of reporting fees nor replenishment of consumables was found to be providing occasion for contact with the PHC; only 3 dais had ever received payment of Rs.3 per reported delivery, and none of the dais had

ever received any supplies. Even records kept by the HW(F), who should have close contact with the dais for antenatal registration, were not accurate; the team found cases of dais listed as trained and working in cluster villages, yet when the team checked with the individual concerned, she would explain that she had been recruited but never actually completed more than a few days of the course. These dais did not have kits and neither they themselves nor the villagers described them as trained. The team also found at least two cases of trained dais who appeared to be unknown to the villagers but were identified by relevant health staff. They appeared to have been posted there as ayahs.

The availability of records about candidates trained and the absence of information about functioning trained dais may be partly due to the perception that the reporting of numbers trained is more important than whether they are functioning, and what support is necessary to keep them working.

The absence of accurate records showing how many dais are trained and functioning makes it virtually impossible to supply consumable items or make payments for deliveries in an orderly manner. It also makes it difficult to estimate how many trainees should be recruited to make up for attrition. Such ambiguities would be less prevalent if the system of regular monthly contact between HSC staff and dais were a routine part of the HW(F)'s schedule, as envisaged in the Project Document.

HSC staff should contact all trained dais on a regular basis, and should know the identity of all practising dais in their catchment area. The HW(F) should submit a list of dais to the PHC once per year, showing who is active, and whether they are trained or not. The list should be used for checking resupply of consumables (see recommendation in Chapter V, Section 2).

Annual updating should be done by supervisors if there is no HW(F) in position.

#### 1.4 Recruitment of Candidates for Dai Training

Recruitment of dais for training is the responsibility of the PHC; all dais working within the PHC catchment area are supposed to be enumerated, and according to the criteria for recruiting dais, only those who are practising midwifery in their villages should be selected for training.

The shortfall from the target of dais to be trained has been attributed mainly to recruitment difficulties, specially the Project's inability to identify candidates for training.

This led to the reduction in the Project's training targets from the level of:

5,662 (based on 1 trained dai per 1,000 population), to

3,962 in POPIII, to

3,085 in the Quarterly Progress Report for September 1985,

and an increase to

3,294 in the PO's Notes for E86 (December 1985).

The Project has fulfilled 96% of its most recent target, but only 56% of the population-based target has been met. This shortfall was reflected in data from village level interviews. Excluding one cluster with population over 10,000, the total population of the remaining 59 villages surveyed was 120,000 implying 120 trained dais needed: 69 were found, giving a figure of 58% coverage with trained dais. After taking attrition into account, coverage drops to 50%.

The team found that more than one-third (22) of the villages surveyed had no trained dai, and 15 villages - one-fourth of the sample - had no resident dai at all. In these cases, deliveries were attended by family members and a dai from a neighbouring community might be called in.



Sufficient attention does not appear to have been given to the geographic distribution of candidates when dais were recruited for training. In addition to the 7 villages with experienced dais but no trained dais, another 11 villages had a trained dai but needed more to meet the population-based norm; all of these 11 villages had eligible untrained dais. At the same time, there were 5 villages with more than 1 trained dai per 1,000 population (not counting villages smaller than 1,000 which appropriately had one trained dai).

In the 7 villages with dais but none trained, two reported that they had been approached about going for training but had not attended for various reasons, including the real inconvenience of travelling to the PHC. Six of these 7 villages had populations between 500 and 2,000; recruitment appears to have been more successful in larger communities. Six of the 7 were in the catchment area of a HSC established before the Project, staffed with a maternity assistant (5 of the 6 MAs were in position). Six of the 7 villages were in S. Arcot district. These findings suggest interventions that could be made in communities with dais eligible for training.

The difficulty faced by the Project in identifying candidates for dai training is evident in the evaluation data which show that 25% of villages visited had no resident dais. Almost half (7) of these villages had populations larger than 1,000. The Project took steps to alleviate this problem of having no female link between the community and the health system; in POPIII it was stated that an alternative programme to train 1,700 non-traditional birth attendants should be developed and placed before the SPCC. This was done and the scheme is currently awaiting GOI approval. In the meantime, various measures appear to have been adopted; in at least three instances, the evaluation team found that trained dais had been posted as ayahs to the HW(F) in communities which had no resident dai. A more frequent finding was that women with no previous experience as dais have been identified by the HW(F), given some practical experience by accompanying her in her work, and have then attended the dai training programme. At least 14 and possibly as many as 18 of the

48 dais surveyed (between 29% and 38%) had no delivery experience before training. About one-fourth of these had started doing deliveries, but 13/18 had conducted no deliveries at all within the last 3 months. These data are broadly comparable to those in an evaluation study on dais conducted in 1984 by the PO in South Arcot District, which found that one-fourth of the dais had 5 years or less experience. It has been suggested that inexperienced trainees were recruited to provide ayahs to accompany the HW(F) in the field; over half of the trained dais/ayahs interviewed (5/8) also had an active dai practice. Recruitment of these women may represent an effort to establish a female link for MCH activities in villages where it has proved impossible to recruit traditional birth attendants. It may also represent a response to pressure to meet training targets.

The PO should re-examine the approach it has taken so far in identifying candidates for dai training. Reasons for the Project's inability to recruit practising dais for training should be carefully investigated (e.g. by interviewing practising dais) and taken into consideration in formulating a more effective dai recruitment strategy. For example, this strategy might include holding training sessions nearer the dais' homes, at the HSC or sector HQ, rather than the PHC; providing transportation; and rearranging the timetable of training.

The established criteria for selection and recruitment of traditional birth attendants for training should be adhered to.

If it is impossible to meet training targets using these selection criteria, staff should be encouraged to report their difficulties rather than attempting to meet numerical targets with trainees for whom the curriculum is not designed, and who are unlikely to assume their intended role after training.

In recruiting candidates for dai training, greater attention should be paid to the geographical distribution of trainees. The Project should develop priority criteria within the specified training selection criteria, to be used by block level staff in directing recruitment and training effort towards the most underserved communities. For example, it is more important for small, isolated villages to have a trained dai than larger communities with alternative sources of care (see chapter VIII, Section 2). Therefore, each community with eligible candidates should have a trained dai before more trainees are selected from communities larger than 1,000 population.

### 1.5 Recruitment, Posting and Attrition of HWs(F)

Female health workers may be any of the following:

- maternity assistants (MAs) who were trained before 1979; most have acquired extensive midwifery experience in rural communities. The majority of MAs have attended retraining under the multipurpose worker scheme. This cadre was replaced by:
- auxiliary nurse midwives (ANMs) trained before 1981; nearly all ANMs have been retrained under the MPW scheme. Since 1981, this cadre has been replaced by:
- female multipurpose workers (MPW) who have been trained since 1981.
- Assistant MPWs who are tribal girls recruited to work in tribal areas and trained in a special programme.

The only categories of female staff now being trained are MPWs and Assistant MPWs. Candidates for MPW(F) training must be women who have completed Class X (high school). No previous experience is necessary and there is no requirement regarding place of residence. For Assistant MPWs the requirements are slightly different (see below).

The Project was responsible for posting the female staff needed to establish the additional HSCs needed when the HSC catchment area was reduced from 10,000 to 5,000. The existing HSCs were staffed by ANMs and MAs, many of whom were employed by the

Panchayat Union which also constructed the facilities in which they lived and worked. In 1982 the Panchayat Union employees were transferred to the Department of Health.

With the exception of the tribal hill areas, the Project appears to have had no difficulty in posting the number of MPWs(F) needed, and has met its target (see Table IV.1). Attrition has been about 6% according to data supplied by the PO. This is close to the vacancy rate calculated from data collected from the 45 PHCs surveyed (8%); the evaluation team found 10% of the sample of 60 HSCs were without female staff, with no apparent difference between previously established and newly established HSCs.

Difficulties in posting female health workers in tribal hill areas have been addressed by creating a special training programme at the Danish Mission Hospital at Thirukoilur. Tribal women are recruited for training with Class VIII (instead of Class X) and attend a 6 month course to improve their basic skills before attending the 18 month MPW training. After this, they return to work as Assistant MPWs in their area. So far 22 women have been trained and positioned in their areas, and a third batch is in progress.

#### 1.6 Posting of HWs(M)

Although the Project was not directly responsible for posting male health workers, the project design and the Model Plan for area projects assumed that the retraining of male unipurpose workers (from vertical programmes for malaria control, sanitation, family planning, immunization) and their incorporation into the multipurpose scheme (started in 1976) would proceed as planned, thus staffing each health sub-centre with a team: one MPW(F) and one MPW(M). However, the redesignation of unipurpose workers posed several administrative problems related to pay scales, seniority and status; the Association of Workers took the matter to court and it stayed the entire scheme. When the Project Document was written (1980), 830 unipurpose workers from the family planning and malaria control programmes had already been retrained as MPWs(M), but none has ever been appointed under the multipurpose worker scheme, and these cadres continue to work as unipurpose staff. The 645 additional posts needed to staff each HSC with a MPW(M) had been sanctioned before the Project Document was written; the PO reports that 100% of these posts have been filled (see Table IV.1), but apparently not with multipurpose staff.

Because of the stay order, none of the HSCs has a HW(M) posted to work there. During visits to HSCs, the evaluation team found that less than half (28/60) of the facilities definitely had a male worker based in the HSC catchment area; 22 of these were basic health workers (malaria control workers). Only 1 described himself as a MPW(M). Another 5 HWs(F) said that a male worker visited the area but was based elsewhere, usually at the PHC. Of the 53 HWs(F) interviewed, 27 reported that they did not have any male colleagues working with them in their catchment area (70% of these were in Salem). This finding underlines the absence of the male worker in the HSC team, even if a HW(M) has been posted to the area.

Development of this component of the multipurpose scheme appears to have come to a complete standstill until the administrative questions regarding the creation of the MPW(M) cadre are resolved. The absence of the MPW(M) puts the entire burden of providing integrated primary health care services upon the female worker. The effect of this on coverage of services is discussed in Chapter VIII, Section 6.

#### 1.7 Recruitment and Posting of HAs(F)

The vacancy rate of 29% for HA(F) posts at HSCs indicate that posting this cadre to sector headquarters is a problem, compared with vacancy rates for other cadres (see Table IV.2). It has been suggested that such posting to isolated HSCs is unpopular because candidates for this cadre are frequently from urban backgrounds and prefer to work in that environment.

It is recommended that the parties involved in the introduction of the multipurpose scheme should seek a speedy resolution of the issues before the courts.

It is also recommended that GOTN should take into consideration the fact that the HSC team is incomplete, when setting targets for health workers at this level.

## 1.8 Summary of Manpower

The placement of female health workers has proceeded well; difficulties in positioning staff in certain tribal areas were addressed by recruiting and training local women to be Assistant MPWs. The number of female supervisors in position at sector HQ has also improved substantially during the Project. However, placement of male health workers has been a major problem in manpower development, which is constrained by a court stay order upon the redesignation of male unipurpose workers as multipurpose workers.

## 2. Training, Knowledge and Practice

The evaluation fieldwork included questions which would enable an assessment to be made of specific aspects of the knowledge and practice of trained dais and HWs(F). Detailed tables are included in Appendix 9 and 7 respectively.

### 2.1 Dais

The curriculum for basic training of dais was developed by GOI, and is used nationwide. It is designed to be covered in 30 days of training, usually spread over two months. Trainees travel daily to the PHC or HSC, where they are trained by the HW(F), HA(F) or BEE under the guidance of the MO. To date, these staff have received no special orientation to prepare them for training dais, but POPIII includes provision of GOI's dai training guides and manuals for all HAs(F), PHCs and DTTs. Just over half of the PHCs surveyed (25/45) had these materials for trainers; 13 out of the 25 with training materials had done no dai training in the two years prior to the evaluation survey. Of the 16 PHCs who had been training dais, 4 had no training guides.

Basic training is under the control of the Directorate of Public Health and Preventive Medicine, even though it is conducted at PHCs (which are administered by the Department of Primary Health Centres) and paid for by the Project. However, the Project has no control over basic training of dais; its strategy has been to focus on systematic retraining (see below).

During training, dais are supposed to conduct at least two deliveries under the supervision of their trainers. After observing supervised deliveries, the Training Advisory Committee and the PO came to the conclusion that dai training as presently conducted does not effectively prepare the trainees for the tasks entrusted to them. (No formal evaluation is available on either the subjects covered during training or practical experience in conducting supervised deliveries.)

Immediately after training, the dais are supposed to receive a stipend of Rs.300, and a dai kit (see Appendix 10.11 for a list of contents). In the PO's S. Arcot dai study, 50% of dais surveyed said they had received their kits. In the evaluation fieldwork, 45 (94%) of 48 dais had received kits, but 22 had received them more than 3 months after training; this includes 4 dais out of 12 who had been trained in 1985.

In addition to completing the basic training of 3,230 dais (now 3,294), the Project Document stated that the Project would complete retraining of all existing trained dais (3,012 in November 1981) within the first half of the project period. The status of this activity could not be established from the quarterly progress reports or financial expenditure data. During the evaluation, it was found that only 3 of the 45 PHCs visited had held any refresher training for dais in the 2 years prior to this survey. One of the dais interviewed during the evaluation had had refresher training; she had been trained in 1981.

Retraining of dais was introduced as an innovative scheme in 4 blocks in 1985. One reason that the Project has been unable to carry out more retraining of dais may be that recruitment of candidates for basic training has proved a problem, so block level staff have been absorbed in this effort. Another more compelling explanation is that no proper operational plan has been developed for retraining dais throughout the project area.

The sample of 48 dais interviewed included:

- 14 who were definitely trained before the Project  
(November 81)

- 7 who were trained in 1981; they could not recall the  
exact date of training

- 27 who were definitely trained during the Project.



Of these 48 dais, between 14 and 18 were not traditional midwives (11 of them had been trained during the Project); 14 definitely had no previous midwifery experience, and 10 of these had not done any deliveries in the last 3 months. Another 4 probably had no previous midwifery experience; 3 of these had not done any deliveries in the last 3 months.

Out of the whole sample, 19 dais were scarcely active, having done no deliveries at all during the previous 3 months; 8 had not done a delivery for more than 6 months. Eight of the surveyed dais were also ayahs to the HW(F).

The evaluation fieldwork interview with trained dais included questions on how they prepared their instruments for delivery, how they tied the cord, looked after the baby and mother, and whether they gave advice on aspects of maternal and child care (see Appendix 9).

One of the major objectives of training practising dais is to spread the use of aseptic delivery techniques. The training curriculum focuses on how to prepare instruments before a delivery. Out of 42 dais providing information, 6 (14%) correctly described boiling their cord-cutting instrument (usually scissors) for long enough to sterilize it. The analysis was complicated by the variety of equipment available and in use. The various protocols described by the dais included washing the instrument, bringing the water to the boil then removing it from the heat, dipping the instrument into boiled water, etc. (see Table 9.1 in Appendix 9). The most popular method of preparation was to wash the instrument in boiled, hot or cold water (18 dais). One in seven did nothing (6 dais). Thus aseptic procedures were rarely followed.

Dai training is intended to encourage the birth attendant to wait until the cord has stopped pulsating before tying and cutting it. In fact many dais were already doing this because they waited until the placenta was delivered before tying the cord. In the evaluation sample,

17 dais said they waited until the placenta was out before doing anything to the cord

17 said they waited until pulsation stopped.

Thus, 34 of the 45 giving answers (76%) acted appropriately, even though the protocol they followed did not exactly match that envisaged in the curriculum. The cord was tied appropriately (according to the curriculum, i.e. after pulsation stops, with the appropriate number of ties 6-9 cm from the baby) by one-third of the sample (16 dais). Lowest compliance with curriculum protocols was in covering the cord with gauze; only 19 said they did so, but much of the gauze examined was not sterile, so leaving the cord uncovered was safer. More than half the 31 dais who had gauze in their kits did not use it for covering the cord. All four points related to tying the cord were mentioned by 8 dais, i.e. less than one-fifth of those interviewed.

The curriculum includes procedures for checking and cleaning the baby; 18 dais (two-thirds) described cleaning the mouth, eyes and nostrils but none had a regular supply of sterile cotton swabs, so the baby's eyes could not have been cleaned in the prescribed manner.

Regarding care of the mother, just under half (21) of the 46 dais said they checked that the mother was not bleeding excessively, and two-thirds (31) checked that the placenta was completely delivered. Most dais (36) washed the mother and gave her a clean dressing. Almost three-quarters (34) said they would give her a drink. One-third of the sample mentioned all four points regarding care of the mother, and attended to the mother appropriately.

One of the most important features of training traditional birth attendants is encouraging them to refer a case that is too complicated for them to handle successfully. This sometimes involves teaching dais to recognize complications soon enough for the woman to reach higher level care in time. Twenty dais had referred a patient at some time (12 within the last 6 months), and 13 had asked the HW(F) to help with a problem case. Altogether 28 dais (58%) had made these connections with outside sources of care, 20 of them (46%) within the last 6 months. Dais' comments (such as never having seen a case of excessive bleeding) suggested that the topics emphasized in the curriculum do not entirely coincide with the problems and complications experienced by these dais.

In order to motivate mothers to improve various health-related practices, dais are trained to give advice about breast feeding, weaning, immunization and family planning (see Appendix 9, Table 9.5). Although the substance of their advice was not

systematically assessed, there were enough comments from the dais to make it clear that a substantial proportion were giving advice contrary to that promoted during their training; for example, one-third of those advising on breastfeeding specifically mentioned that they advised mothers to start after 2-3 days, following locally accepted practice. A few dais stated that their accepted role ended with massaging the mother and did not include giving advice.

Table IV.4 summarizes these findings on knowledge and practices of trained dais.

TABLE IV.4

Summary of Knowledge and Practices of Trained Dais  
(n=47) a)

	b)	
	<u>To-</u> <u>tal</u>	<u>Per-</u> <u>cent</u>
<u>Preparation of instruments for</u> <u>delivery: (n=42)</u>		
Boils instruments for at least 20 minutes	6	14%
<u>Tying the cord: (n=45)</u>		
All 4 points mentioned (ignoring sterile gauze)	8	18%
<u>Treatment of baby: (n=44)</u>		
All 3 points mentioned (ignoring cotton swabs)	18	41%
<u>Treatment of mother: (n=46)</u>		
All 4 points mentioned	16	35%
<u>Referral of problem cases or help</u> <u>from HW(F) within last</u> <u>6 months: (n=47)</u>		
	22	47%
<u>Advice to mothers: (n=46)</u>		
All four topics mentioned	11	24%

a) Excludes 1 dai who answered none of these questions.

b) Calculated for sample size given at left.

The interpretation of the data on trained dais' knowledge is complicated by the fact that two-fifths (19/48) could not be described as actively practicing, and by constraints on their practices caused by absence of supplies. Judging from the low level of compliance with aseptic techniques, it would seem that the quality of dai training has been extremely variable. The messages and protocols featured in the curriculum have more chance of being practised if the dai has equipment, supplies and continuing back-up from a health worker, if the community will accept key elements of the trained dai role contained in the curriculum, and if the material covered during training is consistent with what she sees in her midwifery practice. This plethora of intervening influences upon the present 30-day training has led to the following recommendations.

A reassessment of the basic training curriculum for dais should be carried out. Dai training should place greater emphasis on establishing aseptic delivery technique. In particular, dais must be properly trained in how to sterilize the instrument they use for cutting the cord, and how to handle a presterilized blade.

The trainer's guide should be modified to include a methodology for identifying local midwifery practices, for adapting the training plans to local conditions, and especially for promoting established practices that are sound.

Staff responsible for training dais must be oriented to effective techniques for training non-literates. They must be trained how to build on the dais' existing sound midwifery practices, and how to use the modified trainer's guide effectively. Training must be practical; at each step the trainee must demonstrate her competence to perform the task.

Recommendations regarding use of the disposable delivery kit are made in Chapter V, Section 2.

The simplest possible guidelines (one page) should be prepared immediately for staff who presently co-ordinate with trained dais, covering training in the use of the contents of the disposable delivery kit. Monitoring and evaluation of the effectiveness of this in-service training should be used to develop trainers' techniques for dai's basic training.

## 2.2 HWs(F)

Although there are four types of HWs(F) working at HSC level in the project area, only two are now being trained: the MPW(F) and the Assistant MPW(F).

Candidates for MPW(F) training must be women who have completed Class X (High school); no previous experience is necessary and there is no requirement regarding place of residence. They receive 18 months of training at ANM schools which are residential facilities at district level; there are two of these establishments in the project area, at Cuddalore and Salem. The PO has judged their capacity to be adequate, and there is no shortage of MPWs(F) in the project area.

The MPW(F) curriculum prepared by GOI and the Nursing Council of India covers basic nursing skills, and is not specifically oriented towards rural primary health care. Training is conducted by sister tutors, public health tutors and sanitarians, and includes practical experience at the district hospital. GOI has a two-volume manual for female multipurpose health workers (1978) which is more oriented towards primary health care than the usual nursing curriculum. The manual is usually distributed after training.

As part of the expansion of the multipurpose worker scheme in 1976, plans were made to reorientate trainers and to modify the ANM basic training (24 months) so that it was 6 months shorter (18 months) and included 6 months on-the-job training at a PHC. This practical stage is spent at one of nine Rural Health Training Centres which are attached to PHCs in the project area.

Candidates recruited from tribal areas attend an amended training scheme lasting 24 months, from which they graduate as Assistant MPWs(F). This scheme was not evaluated by the team.

ANMs received their basic training at ANM schools, and were reoriented at PHCs by MOs trained for training under the multipurpose worker scheme. Training for MAs focused almost exclusively on midwifery, antenatal and postnatal care. Most of the staff in this cadre have attended a reorientation training course scheduled to last from 1 to 3 months.

Interviews with HWs(F) included structured questions designed to ascertain their current knowledge and practices regarding various functions specified in their job responsibilities. Appendix 7 contains detailed analysis of the evaluation field work data on HW(F)s' knowledge and practices, summarized below.

#### Antenatal Examination and Identifying High-Risk Pregnancies.

One-half of the 53 HWs(F) correctly described how to carry out the antenatal examination of a pregnant woman; ANMs fared better than MPWs or MAs. One-half have sufficient knowledge to be able to identify high-risk pregnancies; both ANMs and MPWs did better than MAs on this topic. One-third of the sample correctly described both at these components of antenatal care. (See Appendix 7, Table 7.1 and Table 7.4.)

Problems of Labour and Delivery. Compared with knowledge of general antenatal care, knowledge about delivery problems was considerably better (See Appendix 7, Table 7.2). Almost half the sample (45%) were found to be well informed and appropriately described how they would deal with five complications of pregnancy and labour (eclampsia, prolonged labour, haemorrhage, retained placenta, puerperal fever). Another 34% of the HWs(F) gave correct descriptions for four out of the five obstetrical complications.

Knowledge of puerperal fever was weakest: this condition was often interpreted as a straightforward fever and only 70% of HWs(F) said they would refer. In contrast, all but one HW said they would refer a case of eclampsia. Again, ANMs scored higher than MPWs and MAs (see Appendix 7, Table 7.4). Out of the whole sample, 3 (2 MPWs and 1 MA) described wrong or dangerous preliminary treatment.

Handling and Administration of Vaccines. Of the 53 HWs(F) surveyed, 2 (4%) were knowledgeable enough to maintain cold chain for DPT and OPV; 6 (11%) described how to give the correct dose in the correct manner with a fresh needle and syringe for each child, and 10 (19%) correctly described how to clean and sterilize their equipment. None of the 53 HWs(F) interviewed



TABLE IV.5

Knowledge of HW(F) regarding Antenatal Care and Immunization.  
by Type of Health Workers  
 (n=53)

	<u>MPW</u> (n=26)	<u>ANM</u> (n=9)	<u>MA</u> (n=18)	<u>Total</u> (n=53)	<u>%</u>
1. Satisfactory knowledge of how to do an antenatal exam	12	7	8	27	51%
2. Satisfactory knowledge of how to identify a high-risk pregnancy	15	6	5	26	49%
3. Both items 1 and 2 correct	9	6	2	17	32%
4. Would refer all five obstetrical complications	12	5	7	24	45%
5. Vaccine handling described correctly	2	0	0	2	4%
6. Administration of vaccine described correctly	3	3	0	6	11%
7. Sterilization of equipment described correctly	6	2	2	10	19%
8. Items 5, 6 and 7 correct	0	0	0	0	0%

From these findings several points emerge. The data on knowledge and practices taken in conjunction with the data on equipment and supplies underlines that consistent logistical support to health workers is essential if they are to practise and maintain the skills that they acquired during training. The fact that so many HWs(F) do not offer a particular service at all (e.g. regular immunization) makes it easier to understand their difficulty in answering some of the questions; however, it was not possible to decide whether lack of knowledge or lack of supplies prevented them from providing these services.



correctly described all 15 items concerning the proper handling of vaccine and the administration of safe and effective immunizations of DPT and OPV (see Appendix 7, Table 7.3). These statistics exclude the administration of BCG, since almost all of those interviewed said they never gave BCG and did not know about it.

Family Planning. Of the 53 HWs(F) interviewed, 3 (6%) said they knew how to insert IUDs, and 42 (79%) said they prescribed oral contraceptives, but only 6 had a check list of contraindications. (It should be noted that proficiency in these tasks was not assessed.)

Child Health and Nutrition. Two-fifths of the sample of HWs(F) (21/53) were running a child health clinic; 12 of these were at the Balwadi. Only 6 of the 21 HWs(F) included in their clinics the basic components of growth monitoring and nutrition advice, immunization and/or basic curative care and were considered to run the service satisfactorily. (So far, growth monitoring has not been included in the services they are expected to offer.) Lack of equipment (scales) and supplies (growth charts, vaccines, basic drugs) were cited by several HWs(F) as a constraint on services offered.

Summary of HWs(F) Knowledge. Although the HW(F)s' knowledge on specific points was frequently satisfactory, their grasp of all points necessary to provide an adequate service was disappointing. Due largely to serious deficiencies in knowledge regarding vaccine handling and use of sterile needles and syringes, not one HW(F) was interviewed who could describe the correct procedures for the various topics studied. Table IV.5 summarizes these findings, and gives an indication that ANMs performed better in this assessment than MPWs; the poorest performance was by the MAs.

Secondly, the midwifery experience of MPWs seemed to be less comprehensive than that of the ANMs, whose training and reorientation equipped them even better than the more experienced MAs to give satisfactory answers on knowledge and practices. Third, the impression left with the team was that although the MAs have extensive practical skills, some of them could benefit from updating of their skills. The reorientation and retraining programme's positive effects have been hindered by their dissatisfaction over a change in their designation, which many have not accepted; some prefer to continue as what they were originally trained to be; others are unwilling to take on the responsibilities of a multipurpose worker until they receive emoluments and benefits equivalent to those enjoyed by the MPW(F). Most continue to practice almost exclusively as maternity assistants. At least two MAs had been threatened with disciplinary action including suspension for refusing to carry out multipurpose tasks.

The basic training of the MPW(F) should be strengthened to make sure that she has a thorough and unerring grasp of basic concepts such as how long to boil equipment in order to sterilize it.

Training should be designed to prepare the MPW(F) for a solo rural primary care practice using a defined set of equipment and supplies. The emphasis should be on demonstrated competence.

In order to modify MPW training, it will be necessary to review the curriculum with respect to the type of practice and working environment. Consideration should be given to extending the valuable practical training at RHTCs from 6 months to 1 year, with a corresponding reduction in the time spent in hospitals.

The GOI manual for the MPW(F) should be reviewed for possible updating, modified if necessary, translated into Tamil and used during training.

### 2.3 HAs(F)

Female health supervisors are trained either by promotion from the HW(F) cadre, or by direct recruitment to the LHV School (in Madras). PHNs are hospital trained nurses, with an additional 10 months of training. With the present output of these training courses, and the unwillingness of candidates to take up posts in rural areas, it seems unlikely that the present 20% vacancy rate for HAs(F) at HSCs and PHCs (see Table IV.1) can be reduced substantially in the near future.

Training is conducted in facilities attached to urban hospitals, and the content of the courses for HAs and PHNs is not designed to prepare them for a rural posting in community oriented primary health care.

Data from the 45 PHCs surveyed show that half of all inservice training activities for PHC staff (48/96 sessions in the last 2 years) was directed at HAs, and that this training concentrates on particular topics, such as the multipurpose scheme (33% of 48), family welfare (23%), and IEC (19%).

In view of the problems faced in recruiting female supervisors for rural postings, it is suggested that an additional strategy for recruitment and promotion be formulated.

The curriculum for HA(F) training should be revised to make it more community and rurally oriented. The practical and supervisory training should be expanded and conducted at RHTCs instead of at urban based and hospital oriented LHV Schools.

Motivated and dedicated PHNs, qualified and wanting to work with the rural health training centres, must be encouraged by additional incentives. It may be desirable to shift the focus during the 10 months training to give it a rural focus.

### 3. Developments in Training

After reviewing the organisational framework within which training is conducted, and the Project's objectives, the basic training of MPW(F) and dais is discussed. Development of the Project's training activities are then described, particularly regarding the District Training Teams.

#### 3.1 Organisational Framework and Project Objectives

Four directorates have direct responsibility for various aspects of training; these are the directorates of Medical Services (DMS), Family Welfare (DFW), Public Health and Preventive Medicine (DPH and PM), and Medical Education (DME). Their current responsibilities for administration of training, faculty and selection of candidates are described and illustrated in Appendix 6. The Tamil Nadu Nurses and Midwives Council is the authority responsible for recognizing training schools and registering qualified graduates.

The Project's aims are to support the development of internal training capacities within the health and family welfare system, and at the same time to undertake a wide range of activities to support the delivery of primary health care services. These activities include augmenting inservice training capacity by establishing six District Training Centres (three per District) staffed with a District Training Team, training of trainers to increase internal training capacity, inservice training to improve technical skills of field staff, training in information, education and communication (IEC) especially regarding community mobilization, supporting basic training of dais, retraining existing trained dais, training school teachers in health education, holding annual workshops, and managerial and professional training for medical officers.

When the Project Document was prepared, it was decided that the State could not manage a training function of such size and complexity, and that an external agency would have to manage it for at least the first two years. The Project Document says: "It is hoped that the state will develop this capacity during the first years of Project implementation and will take over the entire management of the training function from the external agency. The process of take-over begins in the second year of Project implementation" (p. 64). The PO was unable to find such an agency; instead, seven training institutions were chosen and each was charged with developing a replicable training model in an experimental block (PHC catchment area).

Within the PO, overall responsibility for training lies at the state level with the Senior Training and Evaluation Officer. At district level, responsibility is with the Senior Deputy Project Officer. An intermediate technical post of District Training Coordinator has not been filled.

The Training Advisory Committee (TAC) at state level provides a formal link with the Health Directorates and training institutions. The TAC is reported to be an active advisory body. At district level, District Training Action Groups, first mentioned in POPIII, were established in 1985. The membership and functions of these bodies are described in Appendix 3.4.

### 3.2 MPW(F) Basic Training

The project area is well provided with training facilities: two MPW Schools, nine RHTCs and one Health and Family Welfare Training Centre. The problems related to basic training had been recognized before the Project began. However, the Project has no direct responsibility for basic training of MPWs, and its contributions have been limited to providing educational materials for MPW Schools, and bicycles for students at Rural Health Training Centres (RHTCs), which are annexes of PHCs where students spend 6 months of their 18 month course. The evaluation team visited two MPW Schools, two RHTCs, the directorates involved in this training, and the Nurses and Midwives Council.

Inspection and Recognition. The Nurses and Midwives Council's designated inspectors had reported deficiencies in one of the schools visited to the Registrar of the Council; however, these deficiencies have not been rectified, and the final inspection (to accord recognition) has never been conducted. The other school visited had not been inspected since it was originally recognized.

Curriculum. The curriculum itself and the way material is taught is oriented towards hospital nursing. The MPW manuals were prepared nearly a decade ago and some of the material needs updating. Minor adaptations have been made to include more relevant community health topics (such as growth monitoring and ORT) but the tutors interviewed explained that they can do no more than give a theoretical explanation of these topics.

Faculty. Staff at DPH and PM expressed the view that MPW basic training was inadequate because of insufficient and inadequate faculty. At both of the schools visited, there were vacancies in



all categories. At one, 120 students were being "managed" by one tutor, who was the only faculty member in position. The other school had two tutors. Neither had a principal or a PHN. In 1979 and again in 1982-83, the seating capacity of the schools was doubled without addition of staff. Hospital MOs are used as lecturers to make up for the lack of tutors. Unfortunately, they lecture in English while the students only understand Tamil.

Books and Materials. In both schools, the libraries were inadequate; they consisted largely of books in English and an assortment of IEC materials supplied by the Project. One school had a deluxe UNICEF pelvic delivery model, designed to allow students to develop an understanding of the birthing process through palpation, but they are not allowed to use the model. Rs.19,000 for Project purchase of anatomical models and other teaching materials was sanctioned in January 1985, but to date these materials have not been received at the schools.

Practical Experience in Hospitals. The students are not necessarily posted to the relevant departments (e.g. general OPD and paediatric OPD). In the delivery wards they are in competition with the nursing students and neither the hospitals nor the schools have resolved the problem of how to ensure that each trainee gains sufficient experience in conducting normal deliveries. Students' time is not well used as they are required to run errands, make beds, etc. and some subject matter that they were being taught on the wards was not only outdated practice but also contrary to the permitted practices taught at the Nursing School and the RHTCs.

Practical Experience at RHTCs. The students' only job-related experience is that given during the 6 months practical training at the RHTCs, when they are attached to HWs(F) at HSCs for five mornings per week. However, there is at present no guarantee that the HW(F) will provide a suitable role model in terms of skills and practices. Although the RHTCs bring the students closer to the community, these centres are still physician-oriented, and there is insufficient emphasis on how the qualified MPW will provide health services when she is no longer under the constant supervision of an MO. Basic teaching equipment and accommodation were in place at the RHTCs visited. Major problems were the lack of both library and recreational facilities.

There is no supervisory continuity or feedback between the students' training at the MPW School and their time at the RHTC; for example, the schools are not informed of the students' performance during their practical experience in the field.

Although the Nurses and Midwives Council has the authority to enforce the syllabus and maintain nursing standards (in both hospitals and schools), to confer recognition on training schools and to register qualified candidates, it has not been active in monitoring standards at MPW schools. For example, in schools where deficiencies were found that theoretically invalidated their legitimacy as teaching institutions, several batches of trainees were allowed to complete their training and were registered by the Council as fully qualified. The Council appears to show little interest in MPW Schools and cannot be expected to improve and maintain high professional standards without outside initiative.

The Directorate of Medical Education, which is responsible for posting Nursing Tutors to MPW Schools and for training PHNs, expressed helplessness to remedy faculty vacancies because qualified candidates refuse to accept posting in the rural towns where these schools are located. PHNs also prefer to stay in urban areas, forgoing salary increment and promotion to do so; this problem was partly due to selecting hospital staff nurses to train as PHNs. Thus there seemed to be no plans for positive action by the responsible directorate to remedy the severe shortages of teaching staff.

The results of MPW training cannot be easily or quickly remedied by inservice training, which is the Project's contribution to improving skills and performance (see Section 3.4. below).

### 3.3 Dai Basic Training

This training is under the control of the Directorate of Public Health and Preventive Medicine, and is conducted at PHCs following the curriculum prepared for the national trained dai scheme. Based on a review of the curriculum, analysis of interviews with trained dais in the project area and examination of their kits and consumable items, much of the curriculum appears to be poorly fitted to the way in which trained dais can practice. Section 2.1 contains recommendations regarding the strengthening of dai training.



### 3.4 Development of Project Training Activities

As no single agency could be found to manage the development of the Project's training function, it was decided that seven reputable training institutions would each be assigned a block in which they were to develop an inservice training model that would be suitable for the entire Project. The experimental training programme lasted almost one year, and led to recommendations for setting up mobile training teams, which although accepted, were not sanctioned until late in 1983; the first two District Training Centres (DTCs) were set up in mid-1984, and the remaining four were set up in early 1985. The inservice training for their staff was developed by the PO in cooperation with the Administrative Staff College of India at Hyderabad, the DHOs, faculty from Health and Family Planning Training Centres, and DHCU/DANIDA.

In POPIII, it was anticipated that it would take two years to complete the training of DTTs and to conduct the training of PHC staff, i.e. until September 1986. The DTT's training consists of five "Blocks", the fifth and last of which was due to be completed in April 1986. (Note that in this context, the term "Block" refers to a segment or module and should not be confused with administrative blocks.) Their courses at various training institutes have been interspersed with inservice practice training given by the DTTs themselves, with consultancy from the Administrative Staff College of India, Hyderabad. The practice training was phased and limited to three PHCs and their catchment areas, with a focus on the sector level (health supervisor's headquarters). The number of PHCs, Sectors and HSCs that have been covered under this strategy is shown in Table IV.6; five DTTs have covered two of the three blocks (PHCs) allocated to them during this initial period, and the sixth has covered one block.

The DTTs are the key component for strengthening inservice training under the Project. Their purpose is to develop the training skills of staff at block (PHC) level and to enable these Block Training Teams (BTTs) to continue inservice training without constant supervision. Management training of MOs I/C at PHCs and district level officers will not involve the DTTs directly (see Chapter XII, Section 8).

TABLE IV.6

Training Activities of the Six District Training Teams  
a)  
from Their Formation until February 1986

	b) <u>Total</u> <u>Number</u>	<u>Average</u> <u>Number</u> <u>per</u> <u>HUD</u>	<u>Total</u> <u>Number</u> <u>Trained</u>	<u>Average</u> <u>Number</u> <u>Trained</u> <u>per</u> <u>HUD</u>
PHCs	71	12	11	2
Sector HQs	310	52	42	7
HSCs	1,271	212	206	34
MOs	212	35	0	0
HA(M)	n.a.	n.a.	40	7
HA(F)	310	52	35	6
HW(M)	n.a.	n.a.	118	20
HW(F)	1,271	212	206	34

a) Two DTTs were formed in November 1984 and four in May 1985.

b) Note that data were supplied by the DTTs; no attempt has been made to reconcile the numbers of staff reported here with those reported in Table IV.1.

From interviews with the six DTTs, conducted during the evaluation, the following points emerged:

Staff. All trainers (MO, PHN, Senior Investigator) were in position at 4 DTTs but in 3, the PHN had joined recently (one joined 2 days before the team's visit). Most MOs and Senior Investigators have had previous experience of training or community work (but rarely both). The PHNs had typically been recruited to that cadre from the cadre of hospital staff nurse and only one had previous community experience; she and one other PHN had previous training experience.

Training of Staff. The DTTs' comments upon their own training included suggestions for more training in evaluation methods, programme planning, public relations skills (especially regarding formation of Village Welfare Committees) and group work. Given their limited previous experience, the training of trainers appears to have prepared them well for carrying out competency based training in the field. Two DTTs expressed complete satisfaction with their training.

Training Priorities. The DTTs did some needs assessment as part of their own training and identified priority training needs for HWs(F) (e.g. delivery experience). All six DTTs used a proforma questionnaire (designed around the priorities of the Project and the health service) for pre-evaluating the trainees and identifying training needs for each batch. Three DTTs specifically mentioned talking with the supervisors and the MO, and two also had discussions with the community. Priority topics were care during delivery (4 DTTs), community participation (4), use and sterilization of equipment (3), immunization technique (2), supervision skills (2); records, work planning, prevention of disease and family welfare were each mentioned once.

Training Plans. These show dates, locations and topics, and each DTT described a different process for clearance and review; various combinations of the TAC, DTAG, RAD, DPO, SrDyPO, DHO and/or the MO I/C may be involved.

Resource Faculties. Four out of six DTTs reported that their resource faculty was either not available or not used. PHC level staff (LHVs, BEEs (if in position) or MOs I/C) were mentioned by all DTTs.

Follow-up of Trainees. Only one DTT said they made regular follow-up visits to HSCs; the rest made occasional follow-up visits but these were not systematic.

TABLE IV.7

Inservice Training Conducted at 45 PHCs between  
January 1984 and February 1986

<u>Topic</u>	<u>Number of Sessions</u>	
	<u>For PHC staff</u>	<u>By PHC staff</u>
Information, Education and Communication	29	26
Multipurpose scheme	19	6
Family welfare	16	1
District Training Team	9	n.a.
Universal Immunization Programme	5	9
ORT	3	2
Dai training a)	n.a.	16
Other	15	0
Total	96	60

a) Includes tuberculosis control, records, malaria and general inservice training.

There was no co-ordination between the training priorities identified using the pretest questionnaires and IEC training, even when the same field staff were to be trained. This would appear to be a lost opportunity since IEC training was the topic most frequently reported by the 45 PHCs surveyed (see Table IV.7).

Problems reported by the DTTs included being assigned to tasks other than their primary responsibilities (e.g. collecting field data for an immunization coverage survey) which reduces the time

available for their training activities, and losing their mobility when their vehicles are seconded for other uses (sanctioned by the DPO). The DTTs expressed a need for regular contact with each other and with outside training institutions, and for more active support from the MOs I/C.

Although the DTTs are making steady progress towards their training targets, it is unrealistic to expect that the deficiencies in basic training can be rectified through limited exposure to inservice training. Moreover, the DTTs' own training capabilities are not yet fully established. With the current shortages of staff and diversions into non-training activities, it is unlikely that they will be able to meet the training needs of all the 10 to 12 PHCs in their respective HUDs within the next two to three years.

### 3.5 Summary

The problems afflicting the MPW Schools - serious staff shortages, and a curriculum which is not related to the functions of an MPW - can only be solved following a major reassessment and realignment of this basic training programme. A major barrier to making the necessary changes has been the separate lines of authority and control. The need for consolidation of training functions has been recognized within some of the directorates involved, and it is understood that reorganisation is being discussed. It is recognized that the PO is not responsible for undertaking basic training, but as an established directorate supporting rural primary health care, it has a responsibility to focus on and generate support for the changes needed to improve the quality and appropriateness of basic training for field staff.

The following recommendations are interrelated and while the focus is predominantly on the female health worker, the result of adopting the recommendations will affect the supervisory and medical cadres as well. The recommendations represent various steps that can be taken simultaneously; whilst most of these will take a long time to carry out, the recommendation on consolidation of DTTs can be implemented now.

The most promising entry point for improving MPW basic training is at the RHTCs. Consideration should be given to reversing the current time allocation between hospital- and community oriented practical training. Only one semester should be spent at the MPW School and two semesters at the RHTC, with a more guided and controlled field training programme.

RHTC faculty would require strengthening, by improving through inservice training the skill and knowledge of those HWs(F) already in position, to whom trainees are attached. Care must be taken to select only HWs(F) who have ability and interest. They should also be paid an incentive and designated as field instructors.

The Project Organisation should develop a revised curriculum with RHTCs for introduction on an experimental basis. This should be done with the agreement of the relevant authorities who approve curriculum changes.

There should be a parallel experiment with the integration of facilities for basic MPW training and inservice training at the RHTC level.

To improve the focus of basic training, and to increase the overall training potential at this level for inservice training, the RHTCs and the DTTs should be functionally integrated, with mutually supportive roles. The organisational linkage should have three objectives:

- to rationalize and coordinate the contents of basic and inservice curricula to make them appropriate to the multipurpose service requirements
- to increase the overall capacity for training through the pooling of human and other resources, and to upgrade the capabilities of the RHTC/PHC staff
- to functionally integrate the Project's DTTs into the existing rural health training infrastructure under the DPH.

Proposed Reorganisation/Functional Integration of RHTC and DTT

- The MO in the DTT should have the status of Assistant DHO
- Each HUD should have 2 RHTCs (this means creating 3 more RHTCs)
- Within each HUD, the 2 RHTCs should be under the MO of the DTT (Asst. DHO)
- Each RHTC should have the following staff:

two PHNs

Sr. Sanitarian (already in position)

Sr. Investigator (health educator).

At present the RHTCs have one PHN. In order for each RHTC to have two PHNs, it is suggested that the PHN at the DTT should be attached to the first RHTC and the PHN at HUD level to the second RHTC.

At present, there is no Sr. Investigator (health education) at the RHTC. The Sr. Investigator of the DTT should be attached to one RHTC, and another one appointed for the second RHTC.

- The RHTCs should be provided with a mini bus, where necessary.
- RHTCs should be adequately equipped with the necessary teaching materials, including up-to-date reference material in Tamil; a resource centre should be built up.

The PO should undertake initiatives designed to consolidate the multiplicity of training units under different directorates, all providing different types and grades of primary health care training, into one training wing under the control of DPH and PM.



Such an arrangement would pool all of the relevant training resources and activities, thereby facilitating qualitative and quantitative improvements. Specifically, this training wing should be responsible for:

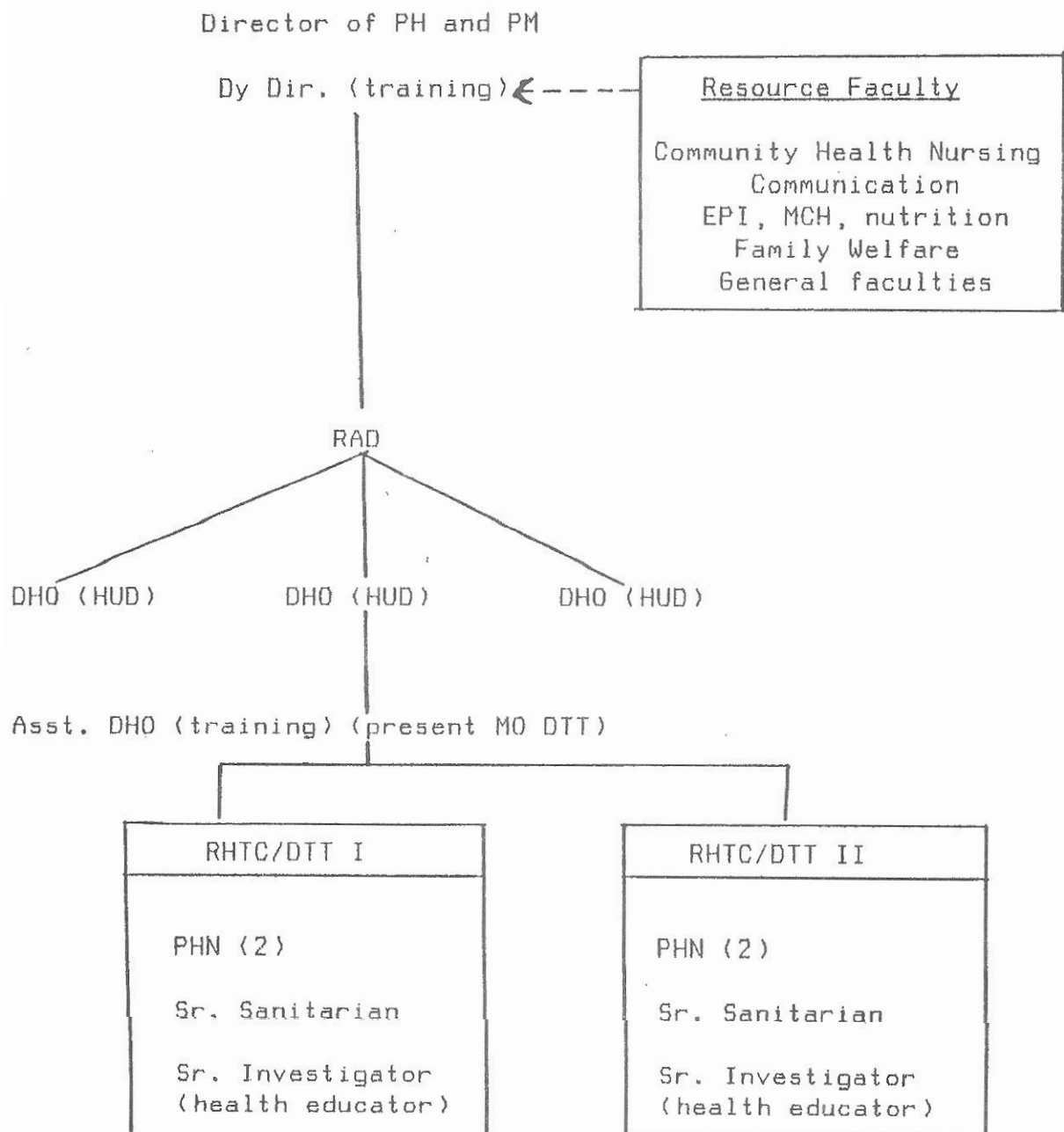
- placement and training of the integrated RHTC/DTT staff
- development of basic training curricula and in-service training programmes for various levels of staff
- functioning as a resource faculty for basic and inservice training of the integrated RHTCs/DTTs
- the ongoing evaluation of training programmes and conducting the common examinations for basic training
- liaising with the Nurses and Midwives Council.

Until the reorganisation described above takes place, it is recommended that the PO should focus and consolidate the activity of the DTTs.

- DTT efforts should be focused on the completion of the sector level inservice training
- DTTs should concentrate on performing their training tasks and should not be diverted with other assignments such as supportive liaison for innovative schemes, dai training and field surveys not directly related to training

It is premature to start considering expansion of the DTT concept into new districts. The DTTs are not at a uniform level of competence and have not yet proven their success in carrying out sufficient and effective sector-level inservice training in those areas where they currently function.

\*)

PROPOSED STRUCTURE OF DPH and PM TRAINING WING

\*) This reorganisation is with existing staff, except for one additional Senior Investigator.

## V. SUPPLIES AND LOGISTICS

This chapter describes the system for the supply of furniture, equipment, kits and registers to HSCs; drugs to PHCs, mobile health teams and HSCs; and vehicles. It has proved difficult to determine which standards should be used to assess the availability of equipment at various levels of the health system, because several lists seem to be in use.

In what follows, furniture and equipment covers non-consumables which stay at a health facility. The term "kit" refers to a portable bag containing some items of equipment which the health worker carries with her when working in the field.

Appendix 10 includes lists of equipment, furniture, kits and drugs for HSCs and dais.

### 1. Furniture and Equipment

#### 1.1 Health Sub Centres

Provision had been made in POPII to supply furniture and equipment to HSCs at the rate of Rs.2,900 for new centres and Rs.1,500 for old centres. In POPIII the provision for new centres was enhanced to Rs.3,200. However, no action seems to have been taken to take advantage of this enhanced allocation and till December 1985 the expenditure reported for equipping a new HSC was Rs.2,900.

There are differences in the equipment lists for HSCs in the two districts and also within each district (Appendix 10, Table 10.2). There have also been changes between POPII and POPIII. Although UNICEF has been providing equipment to most HSCs (see Appendix 10, Table 10.4), there has been little attempt to co-ordinate the various equipment lists. Consequently there is some duplication of equipment on these lists, for example kerosene stoves, basins and sterilizer drum. Because expenditure on equipment is subsumed in main head 3 of the budget, it is not possible to see how much expenditure there has been on equipment.

According to the PO's Notes for E86 all new and old sub-centres with one exception have been provided with the full complement of equipment and furniture, as per the approved lists. All HSCs in Salem and most in South Arcot have also, according to the PO, been provided with UNICEF kits.

Table V.1 shows the availability of some items that have been supplied by the PO. Because the equipment lists are different between each district, new and old centres and in the case of Salem, between the three phases of the construction programme, the number of centres in the sample that were to be supplied, varies from item to item. Although Salem included a stove in the list of equipment at new centres, it was not included for old centres; South Arcot did not include a stove at all. In Salem over a third of the old centres had no stove whilst in South Arcot almost half (44%) of the centres in the sample lacked this piece of equipment.

TABLE V.1

Availability of Selected PO Supplied Equipment

<u>Item</u>	<u>No. to be Supplied in Sample</u>	<u>No. of Centres with Item</u>	<u>Percent</u>
Bed/cot/couch	54	28	52
Sterilizer	15	9	60
Tallquist strips	40	33	83
Table and chair	27	25	93

The survey data show that in 54 HSCs where it was possible to collect data, no single item of equipment was present in all cases. Table V.2 summarizes the findings and it can be seen, for example, that only 50% of the centres have weighing scales for infants, 61% have working sterilizers, 15% have fuel for the stove used for sterilizing equipment and 89% have scissors.

If a comparison is made between the HSCs established prior to the project (old) and those established during the project (new), (Appendix 10, Table 10.5) it can be seen that there is little difference in the completeness of their equipment; indeed for some items (e.g., sterilizers, beds, tables and chairs) the old centres are considerably better supplied than the new.

TABLE U.2

a)

Furniture and Equipment found at 54 HSCs, February 1986

	<u>Items Present</u>		<u>Items in working condition</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
No. of HSCs	54		54	
Weighing scales (adult)	30	56%	26	51%
b)				
Weighing scales (infant)	27	50%	25	51%
Blood pressure apparatus	24	44%	23	43%
Tallquist Hb. chart	44	81%	44	81%
* Scissors	49	91%	48	89%
Stethoscope	21	39%	20	37%
* Fetoscope	21	39%	21	39%
c)				
* Sterilizer	34	63%	33	61%
* Forceps, sterilizer utility	43	80%	43	80%
* Stove (kerosene)	36	67%	33	61%
Tape Measure	45	83%	46	85%
Thermometer (Ø)	45	83%	44	81%
Thermometer (R)	41	76%	40	74%
IEC Materials	50	93%	n.a.	n.a.
Examination table	12	22%	n.a.	n.a.
Bed/cot	16	30%	n.a.	n.a.
Surgical gloves	3	6%	n.a.	n.a.
Table and chair	35	65%	n.a.	n.a.
d)				
* Fuel for stove	8	15%	n.a.	n.a.
Urine test strips	31	57%	n.a.	n.a.

a) Excludes 6 HSCs where equipment was not inventoried.

b) Includes 2 spring scales.

c) Includes steam sterilizers.

d) Includes 1 who gets Rs.50 for fuel purchase.

Some items of equipment which had been supplied were not being used, such as blood pressure apparatus and urine test strips. From the list in Table V.2, five items of equipment have been identified as being indispensable to the HW(F) if she is to be able to do her job. These are the asterisked (\*) items. In only 11 HSCs were all 5 items of basic equipment found in working order and of these, only one had fuel for the sterilizer stove. When the data were examined it was found that UNICEF has supplied many of the HSCs with large 30 litre steam sterilizers. In none of the HSCs were the steam sterilizers being used. Considering their size and capacity, they also appear inappropriate for the HSCs.

Many of the HSCs had only large and heavy infant weighing scales which, whilst suitable for use in the centre, would be difficult to carry from village to village if the HW(F) were to hold outreach child health clinics. In some HSCs the HW(F) had only a spirit lamp (supplied by UNICEF for flaming BCG needles) which they had been told to use for boiling and sterilizing syringes and needles. An experiment by one of the team members showed that even after 50 minutes a small pan of water would not come to the boil over the spirit lamp.

Though 50 (93%) of the HSCs had IEC material, it seemed hardly used, as was admitted by many of the HWs(F) and evidenced by the new and unmarked condition of the material itself. As patients came individually to the HSC, the HW(F) did not seem to have an opportunity to use the IEC materials in group education sessions. Also, some of the materials are in English. One of the sets provided, dealing with scabies, was obviously replicated without making the required modifications. It stated, in answer to a question about the cost of treatment, that the charges for the treatment depended on the economic status of the patient.

The list of essential equipment should be reviewed and used as the check list against which the equipment of each HSC is inventoried. The inventory should be conducted by the supervisor and should specify if damaged equipment can be repaired. This inventory should be conducted annually, preferably on a phased cycle to fit in with pressure of other work.

The items included in the list of equipment should be suitable for use by the HW(F), who should be trained in their use. Any HSC which does not have every single item on the list of essential equipment must be reported as "not equipped" to the PO by the MO.

Based on the inventory, estimates for replacing or mending damaged, unusable or missing equipment should be prepared by the PO for each HUD. Costs and estimated quantities should be submitted by the PO to enable provision to be made for making good deficiencies prior to completing the Project.

A review should be undertaken through the SPCC to establish the causes of the discrepancies between the reported level of equipping and that found by this evaluation.

## 2. Kits

As explained above, the term kit is used to refer to a portable bag containing equipment which the health worker carries to the field.

Under the Project, GOI was to supply kits to HWs(F) and dais. The quarterly progress reports show that the supply of kits from GOI has been chronically delayed. Finally, late in 1984 it was agreed between GOI and the PO that kits could be purchased locally.

The number of HWs(F) in post in 1985 is 1,297 as recorded in the PO's Notes for E86, of which 587 have been appointed by the PO; all of them have kits, but none have manuals. The quarterly reports show significant problems in supplying kits, especially in S. Arcot. It was not clear until September 1984 that HWs(F) got kits when they joined.

At the beginning of the Project, 97% of trained dais were functioning without kits; the quarterly reports show that this figure had been reduced to 2% by the end of FY 84/85. In the sample of 45 dais interviewed, 3 (7%) were without kits and 22 (49%) had received their kits more than 3 months after training. 28% have no means of cutting the cord, and 26% have neither cotton wool, gauze nor tape.



The dai kits contain five consumable items: cotton wool for swabbing the baby's eyes, gauze for dressing the cord, umbilical cord tape, dusting powder and antiseptic lotion. When asked about replenishment of these items, no dais had ever received any resupply. Out of the 43 dais' kits examined, only 9 (21%) had all the items starred in Table 10.11 in Appendix 10 and of these, 7 dais had not conducted any deliveries in the last 3 months. Ten of the dais had each conducted more than five deliveries in the last three months but none of them had all the starred items.

Appendix 9 gives further details on the effect of these shortages upon dais' practices (see also Chapter IV, Section 2.1).

As an innovative scheme in 4 blocks the PO made available disposable kits which were offered to pregnant women to be used by the dai (trained or otherwise) or whoever attended the delivery. 900 kits were issued, 636 were given to mothers and 516 (81%) used. This scheme has not been extended to any other areas. In the one cluster in the sample where the trained dai reported using DDKs, 7 out of the 8 mothers whom she had attended during the last three months had had these kits; the eighth mother was from outside the area served by the scheme. The dai herself had not been issued with any DDKs, so she had to use her old equipment for the eighth delivery.

There is a need to develop a means of regularly re-supplying dais with the consumable items from their kits.

The contents of the DDK should be reviewed with reference to experience from other projects, and modified if necessary. For example, the kit developed for the project area contains more items than similar kits used elsewhere.

The use of DDKs should be extended by distributing them to dais and HWs(F) as well as to pregnant women, so that if the dai attends a woman who has not got a DDK for any reason (e.g. she was never registered as an antenatal case, or the HW(F) was on leave, or she came from another area to deliver at her mother's house), the dai is equipped to conduct the delivery with sterile equipment and supplies. Consideration should also be given to extending the scheme to other places.

### 3. Registers, Records and Manuals

The DPH began supplying registers in December 1983; they are paid for from project funds.

During the evaluation the team found at least 33 different registers at HSCs though no HSC had more than 22; there are also four report forms (see Chapter VI, Section 2). No HSC had monthly report forms for extracting information from the registers. 51 (96%) had registers; however, many of these were handwritten registers or had one of the four surveyed ones missing. Of the 53 interviewed, 39 (74%) had all four registers which were checked (FP, ANC, Vit. A, immunization). The new HSCs built under the Project were better supplied; 82% had these four registers compared with 65% of the old HSCs.

The complete absence of a printed monthly/weekly report form leads to great inconsistency in reporting by HW(F); recommendations for improving the format and content of reporting forms are given in Chapter VI.

For dais, the manual prepared by GOI was modified to suit local conditions, translated into Tamil and distributed to 2,989 dais (95% of new dais). It is intended to distribute this manual throughout the State. However, the dais said that because it contains considerable amounts of text which they could not understand, the manual was of little use to them.

Every MPW(F) is supposed to receive the multipurpose worker's manual (two volumes) after training, and the sooner after training the better. Of the 53 HWs(F) interviewed, only 2 had this manual, and another 35 had Where There is No Doctor (Werner), translated into Tamil. However, 14 HWs(F) had received this book during the last three months. Most health workers said that they had not had the opportunity to go through their manual in detail, but had dipped into sections (e.g. antenatal care, sterilizations, first aid, management of minor ailments) for reference.

Monthly report forms should be supplied to all HSCs. Printed registers should be rationalized to a minimum essential number and the PO should ensure that each HSC has those printed registers.

The dai manual should not be distributed further until it is clear that it is understood and used by those dais who have it at present.

Chapter IV, Section 2.2 contains recommendations regarding review of the existing MPW Manual.

Manuals should be distributed, and used during training so that once graduates are posted to the field, they are already equipped with reference material that is familiar to them and consistent with their training.

#### 4. Drugs and Medical Supplies

##### 4.1 The Drug Supply System

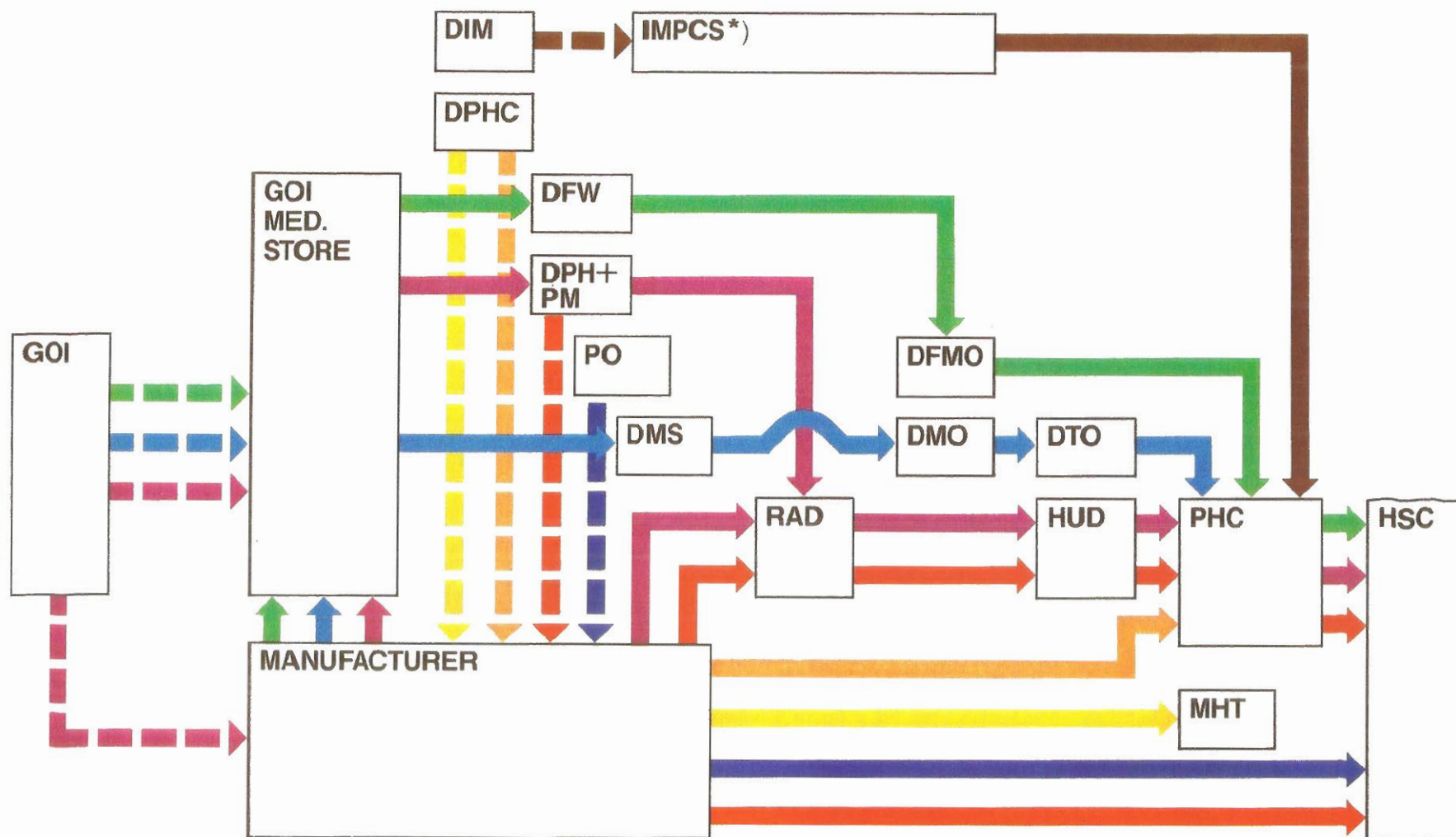
The evaluation was designed to track the availability of certain essential drugs from HUD, to PHC to HSC; these items are listed in Appendix 10, Table 10.8. The team examined stock registers at each level and took a physical inventory of 15 categories of drugs. These data, combined with the interviews with MOs, have been used to prepare this section. Vaccines are discussed in Section 5 of this Chapter.

Drug supply in TN is the responsibility of several directorates; in addition some drugs are provided through national programmes. Consequently it is a highly complex system which has evolved over a number of years. Up until now HSCs have been supplied through PHCs, which have thus been responsible for handling and storing HSC drugs and supplying them when required. The PHCs are usually supplied drugs direct from the manufacturer. However, there are exceptions to this pattern; for example, MCH drugs like FST are supplied to the HUD which then distributes them to PHCs. There are also occasions when drugs are supplied for special schemes and programmes, for example from the Panchayat Union.

Table V.3 is a flow chart showing how drugs are ordered by the directorates and sent by the manufacturers to the PHCs.



# Drug Supplies to PHC and HSC



⇐ Orders  
→ Supply

Yellow box: MHT Drugs  
Orange box: PHC Drugs

Red box: HSC Drugs and Kits  
Pink box: Vaccines and MCH Drugs and Supplies

Blue box: HSC Top-up Kits  
Dark blue box: Anti TB Drugs

Green box: F.P. Drugs  
Brown box: Siddha Drugs

\*) Indian Medical Practitioners Co-op. Society



At present the supply system is highly fragmented with each HSC being supplied under different budgets, according to its designation (DANIDA, Panchayat Union, Multipurpose). This has led to an imbalance in the system where different centres get different drugs in different quantities. At the PHC, drugs are designated according to numerous heads (20 were found during visits to PHCs; see Appendix 10.9); the main ones were General Side and Mobile Health Teams. It is planned to rationalize the system for HSC drugs by introducing kits which will be provided to each HSC as follows:

- Those established before 1981 will continue to be supplied under the present system, i.e. from G0TN, not in the form of kits.
- Those established after 1981 will receive kits from G0I.
- All those in the project area will get a supplementary kit from the Project.

The procedure for ordering drugs is as follows: each directorate responsible for drug supplies prepares an estimate of its drug needs and invites tenders at the beginning of the financial year. (To enable the directorates to make their estimates, the DHOs are expected to inform the directorates of the needs of their PHCs, together with supporting morbidity data. Unfortunately the data available are drawn from the outpatient register and so reflect those ailments for which treatment is available. It is understood that these shortcomings are recognized at the directorates where in practice, estimates are prepared on the basis of overall morbidity data.) The tenders are usually processed and awarded by August or September and the orders stipulate that drugs should be delivered within 3 months; in reality the manufacturers cannot meet the production schedule implied by such demand, and supplies are scattered through the year at the convenience of the manufacturer. The financial provision is as follows:

- PHC Rs.20,000 of which Rs.5,000 is designated as being available for local purchase.

The Project had originally proposed to supply Rs.10,000 extra for drugs; this was subsequently reduced to Rs.5,000 in September 1984, but has yet to be implemented.

- MHT PHCs with MHTs receive an additional Rs.20,000 to cover the drugs to be used by the MHTs.



HSC The allocation is Rs.2,000 per HSC. A proposal for funding drug kits for MPWs was presented to GOI before POPIII, which refers to diverting funds (from the allocation of Rs.2,190,000 for additional PHC drugs) into providing "MPW (Kits)." Rs.3,000 per HSC was suggested, and after a drug study in 1985, the SPCC was presented with a proposal to supply each HSC with an additional Rs.2,721 worth of drugs, which was approved.

Thus the total sum available for drugs in the block is 60-80 paise per head, depending upon whether or not the PHC has a MHT.

Even after the rationalization has taken place there will still be numerous suppliers and supplying authorities. Whilst it is hoped that the two kits that are being introduced will improve supply, they will not solve all the problems of the drug supply system (see Section 4).

#### 4.2 Supply Intervals for Drugs

Data were analyzed for 29 PHCs at which complete information could be compiled, to find the frequency of supply of the PHC's own drugs. There is considerable variation in supply intervals depending upon the particular drug. For example, Antihelminths and Laxatives both have an average supply interval of more than a year; only one of the 29 PHCs received either of these items in the last month. On the other hand Antianaemics and Analgesics both have an average supply interval of 2 months and almost half (45%) of the 29 PHCs had received these items in the last month. Taking the supply interval for each of the 15 items checked in PHCs' stock records, the average supply interval was 6 months and 59% had received two or more items within the last month. From this it would appear that January is the month when most resupplying takes place, with another supply approximately 6 months earlier.

The HWs(F) reported that they normally collected their drugs whenever the items they needed were available; 85% said that supply was irregular and many added that it was often unreliable. Table V.4 shows for 2 PHCs the number of consignments that they received for the PHC itself, the number allocated for HSCs, and the number of trips involved to collect the consignments during the first eleven months of FY 1985/86.

Table V.4 shows that under the present system, the PHC has to make a large number of journeys to collect drugs. The introduction of kits for HSCs will reduce the number of collections if all HSC kits are supplied once a quarter. It also shows how the supplies are scattered through the year with the number of consignments varying between 1 and 17 per month for one PHC, and the peak months differing between August and October/November. As 62% of the MOs questioned said their supply of drugs was irregular, this example may be taken to be representative.

TABLE V.4

Drug Consignments to Two PHCs in 1985 and 1986

	<u>FIRST PHC</u>				<u>SECOND PHC</u>			
<u>1985/86</u> <u>Month</u>	<u>No. of</u> <u>Consignments</u>			<u>Total</u> <u>No. of</u> <u>Journeys</u>	<u>No. of</u> <u>Consignments</u>			<u>Total</u> <u>No. of</u> <u>Journeys</u>
	<u>PHC</u>	<u>HSC</u>	<u>Total</u>		<u>PHC</u>	<u>HSC</u>	<u>Total</u>	
April	3	5	8	5	2	4	6	3
May	1	5	6	4	0	2	2	1
June	0	0	0	0	2	4	6	1
July	4	6	10	2	2	0	2	1
August	14	3	17	5	6	1	7	4
September	4	1	5	3	4	1	5	3
October	2	3	5	4	6	2	8	4
November	9	5	14	6	2	6	8	4
December	0	1	1	1	0	3	3	2
January	2	5	7	6	1	3	4	4
February	?	?	?	0	0	1	1	1
Total	39	34	73	36	25	27	52	28

### 4.3 Collection of Drugs

PHCs are usually responsible for the collection of their drug supplies. It can be seen from Table V.4 that these two PHCs made 36 and 28 journeys respectively to collect their drugs. Table V.5 shows where the drugs were collected from:

TABLE V.5

#### Drug Collection Points for Two PHCs

<u>Location</u>	<u>Distance (round trip) in Kms</u>	
	<u>First PHC</u>	<u>Second PHC</u>
District Headquarters	120	124
HUD Headquarters	40	64
Nearest Railway Station	30	30
Nearest Road Transport Depot	20	30

The figures in Table V.5 do not include trips made between one PHC and another to exchange drugs. Such exchanges do take place as a means of balancing any surpluses that may occur.

### 4.4 Stock Control for Drugs

Appendix 10, Table 10.10 shows 15 categories of drugs, the availability of which was checked by physical inventory and by examination of stock records.

The stock level at HSCs at the time of the evaluation is shown in Table V.6. In 51 HSCs where data were available, it was found that there was no consistency from HSC to HSC; the only categories that were present in all HSCs were Sulphonamides, Analgesics, Vitamin A and Antianaemics. Overall, 32% of the items at the 51 HSCs were out of stock, with 73% of the HSCs having at least 3 (20%) of the items out of stock. For those items that were currently out of stock, stockout times varied; some like Sulphonamides, Laxatives and Antifungals had been out of stock for 10 to 11 months; while others (e.g. Analgesics) were only out of stock for 2 months. Of items that were out of stock, 98% had been absent for more than a month; this endorses the HW(F)s' statement that they are resupplied irregularly.

TABLE V.6

Stockouts of Selected Categories of Drugs at HSCs

a)

<u>Category</u>	<u>No. of HSCs with Data</u>	<u>No. of HSCs Currently Out of Stock</u>	<u>Percent</u>	<u>Average No. of Months Out of Stock</u>
Anthelmintics	48	23	48%	9
Antifungals	47	15	32%	10
Sulphonamides	51	9	18%	11
Antacids	35	25	71%	8
Antispasmodics	28	12	43%	9
Laxatives	47	8	17%	10
Antihistamines	47	19	40%	4
* Antianaemics	50	4	8%	6
Analgesics	51	8	16%	2
Vitamins	50	14	28%	8
Eye drops	47	12	26%	3
* Antimalarials	32	8	25%	3
* Oral Pills	39	15	38%	9
* Condoms	28	20	71%	4

a) Number of HSCs with data varies between items because the questionnaire required only 6 out of the 15 items to be physically counted; only those items for which there were verified data are included.

From Table V.6 it can be seen that some items are frequently out of stock. The asterisked (\*) items are supplied by PHCs to the HSCs as a part of centrally sponsored programmes.

When the PHC registers showing supply to HSCs were checked, it was found that of the 194 items out of stock at the 51 HSCs, 119 (61%) were in stock at the PHC under heads which were designated for use at HSCs (i.e. not exclusively for PHC use), and could have been supplied to the HSCs. Although the HW(F) does receive drug supplies at the weekly/monthly meetings at PHCs, she does not regularly receive the full complement of drugs prescribed for HSCs.

At the PHCs it was found that at the time of the last supply, 53% of the 15 categories were out of stock; on the day of the team's visit the number had fallen to 33%. It is possible that in some cases stock was actually available at the PHC, being registered in one of the special registers (e.g. NMEP) which were not always checked. Indeed one of the difficulties in maintaining stock control at PHCs is the multiplicity of registers. At any given PHC, at least a dozen are typically in use, and an apparent stockout in the main registers can disguise the presence of stock actually on the shelves in the store. For example, at one PHC where the main registers for supply to HSCs showed zero stock of Paracetamol, the PHC had a total of 44,150 tablets registered under four other heads. Appendix 10, Table 10.10 shows the stock position at four PHCs where all registers were checked.

The improvement in the current stock situation should be seen in the light of the fact that 59% of the PHCs had received at least 2 (13%) of the 15 items in the last month and some had received 5 of these items. The number of stockouts for selected categories of drugs are shown in Table V.7. It can be seen that some items are frequently out of stock.

#### 4.5 Drug Kits

The new system for HSCs is to provide a drug kit containing most of the items required. However, as it now stands the proposal has some major shortcomings.

Allocation. Not all HSCs will receive kits. About half (those established before 1981) will continue with the existing system for the basic supply, and will receive kits only for top-up. This will inevitably lead to imbalances between HSCs.

### Stockouts of Selected Categories of Drugs at PHCs

<u>Category</u>	<u>No. of PHCs with Data</u>	<u>No. of PHCs Currently Out of Stock</u>	<u>Percent</u>	<u>Average No. of Months Out of Stock</u>
Anthelmintics	27	11	42%	5
Antifungals	28	7	25%	4
Antiamoebics	29	11	38%	4
Antacids	27	14	52%	5
Laxatives	29	4	14%	11
Antihistamines	27	4	15%	7
Analgesics	27	3	11%	4
b) Antianaemics	26	6	23%	<1
Eye drops	28	5	18%	4
b) Oral Contra- ceptives	26	15	58%	2
b) Condoms	37	20	54%	3

a) Number of PHCs with data varies between items because the questionnaire required only 6 out of the 15 items to be physically counted; only those items for which there were verified data are included.

b) Includes stock held for HSCs.

Composition. It seems that the kits are to be assembled in such a way that some items will only be included in some kits. For example if the annual allocation for an item is 500 tablets and the unit size is 500 tablets, then this item will only be included in one kit per year. This defeats the object of having a kit, which is supposed to help the HW(F) by enabling her to see exactly what she has available for the period covered by the kit, which in this case is presumably 3 months.

#### 4.6 Supply of Drug Kits to HSCs via PHCs

Although it is planned to provide kits to HSCs, it is anticipated that some supplies will still come via the PHC. These include family planning supplies provided through the FW programme, and FST supplied via the MCH programme. An examination of 35 PHCs and the 38 sampled HSCs served by them (remaining HSC data not adequate for analysis), reveals that 22 (63%) of the PHCs have been supplied with FST since January 1986 and in this period of 2 months, they have received a total of 1,486,000 tablets. However, 13 (40%) were out of stock, suggesting that many of them pass the stock directly to the HSCs, particularly as these PHCs only had FST in stock for an average period of 2 weeks.

At HSC level, the team found that 6 out of 38 (16%) had no FST in stock; the average stockout time to date was 1.7 months, despite the fact that four of them could have got supplies from their PHCs. A further 9 had less than one month's stock in hand. At the other extreme, 6 HSCs had sufficient stock to last more than 6 months at their present rate of use. Overall, the average was 3.25 months of stock at the HSCs. For those PHCs which had not been supplied in 1986, the average length of time to the previous supply date was five months. Thus it could be expected that on average the HSCs will be out of stock for nearly 2 months. Based on current stock levels and assuming the same supply interval, it is estimated that within a period of 5 months at least another 11 PHCs will be out of stock and therefore unable to resupply these HSCs without stock which by then will have risen to 17. Combined with the 6 HSCs currently out of stock and 9 with less than one month's supply, this gives a total of 32 HSCs (84%) out of stock, of which at least 28 will not be able to get a resupply from the PHC. In summary, 6 (16%) HSCs were provided with sufficient stock to last through 2 supply cycles at PHC, whereas 84% will be without stock with little prospect of resupply.

#### 4.7 Local Purchase of Drugs

There is an allocation of Rs.5,000 for PHCs and Rs.100 for HSCs to enable them to buy drugs locally to make up for shortages. However, the mechanisms for using this money are so cumbersome that little of it is used. For example, there is a limit of Rs.200 on any one order and the PHC is expected to obtain 3 tenders for each order unless it goes to a Cooperative Store. The tendering process discourages suppliers from bidding on such small amounts and Cooperative Stores are often 60-70 km away. Consequently, much of the money is unused.



At the HSCs the availability of the allocation is simply unknown to the HWs(F) and therefore unused.

#### 4.8 Drugs for Mobile Health Teams

The provision of Rs.20,000 made for the MHT is a valuable source of supplementary drugs for the PHC. However, PHCs are not permitted to use these drugs for supplying HSCs, even on a temporary basis.

#### 4.9 Project Activities in Support of Drug Supply

The major contribution by the Project has been to fund the drug supply to all the Project established HSCs. It is also funding the top-up kits to all HSCs.

The Project has also conducted two studies on drugs, one by the PO on utilization of drugs at HSCs in Salem district, and the other by DANIDA on the drugs management system for HSCs. This latter report proposed the introduction of the kits and stressed the need for strengthening the management system.

There are serious shortcomings in the present supply system and although some may be resolved by minor modifications of existing practice, what is needed is a major overhaul of the whole drug supply system.

This should include an examination of the feasibility of establishing a HUD level store to hold the stocks sent by manufacturers, which could then be made available for the PHCs on a regular basis and in convenient quantities, e.g. quarterly. Such a store could receive stocks from whatever source and issue them to PHCs in a consolidated way, thus simplifying stock control at PHC level.

If it is found to be economically and administratively feasible to establish such stores, then HUD level will need strengthening with the provision of a store and designated storekeepers to maintain the stock.

All HSCs in the project area should be provided with the basic kit as well as the top-up kit and the existing system of supply to HSCs should be discontinued.

The existing kits which are now being distributed should be rationalized so that they comprise discrete packages of drugs designed to last for a specified period which should not be longer than 3 months.

The two kits supplied should be rationalized so that they are complementary.

PHCs should be enabled to supply the HSCs with emergency top-up of drugs, possibly using the Rs.100 local purchase allocation.

If the establishment of HUD stores is not deemed feasible, then the supply system to the PHCs must be rationalized to consolidate the consignments into a limited number of deliveries, so that PHCs do not have to make more than six collections per year.

The packaging of drugs needs revising, to include the labelling of all drugs in Tamil, using generic names and specifying dosage.

At HSC, the HW(F) should be provided with a chart that shows the following, for each drug in her kit:

- Its use
- Dosage
- Precautions to be taken in prescribing
- Adverse effects
- Its use in pregnancy and lactation
- Actions to be taken for overdosing
- Storage conditions
- Date of expiry.

An example of such information is to be found in the WHO Model List of Essential Drugs PHA/CHW/86.1 (1986). See also Chapter VIII, Section 6 on basic curative services.

Those drugs which are banned (e.g. Analgin) should be removed from the drug list and replaced with other more suitable drugs.

For recommendations on stock registers, see Chapter VI, Section 5.

#### 4.10 Medical Supplies

The availability of six items (see Table V.8) was checked at the PHCs and HSCs surveyed. Of the 43 PHCs for which information was available, only 3 had all six items in stock. Some PHCs said they were not supposed to stock some of these items. The items most usually mentioned in this regard were Chemistrips/reagents (10 times) and gauze (4 times). The percentage of PHCs with each item out of stock varied considerably, from 7% for needles to 45% for bandages. Similarly the duration of stockout varies from an average of 4 months for gauze, to 12 months for needles (at three PHCs).

Although the absence of an operational plan for EPI makes it difficult to be precise about the numbers of needles and syringes required, it is possible to give an indicative figure for the block as a whole. For EPI alone there is a need for about 900 needles per year and 400 syringes; in addition the PHC would need needles and syringes for other injections. On this basis 18 (43%) of the PHCs had sufficient needles and 9 (21%) had sufficient syringes for EPI. Those with sufficient quantities are mostly the ones supplied through UIP. At the other extreme, 9 PHCs had insufficient syringes and needles to meet even their own needs.

TABLE V.8

<u>Stockouts of Medical Supplies at PHC</u>				
<u>Item</u>	<u>a)</u>		<u>Percent</u>	<u>Duration in months</u>
	<u>No. of PHCs with Data</u>	<u>No. Currently Out of Stock</u>		
Chemistrips/ reagent	35	6	17%	9
Gauze	38	17	45%	4
Antiseptic	43	9	21%	7
Needles	40	3	7%	12
Syringes	42	5	12%	9
Bandages	38	17	45%	7

a) Number of PHCs with data varies because some facilities reported that they were not meant to have supplies of this type. These PHCs have been excluded from the denominator.

Of the 47 HSCs for which information was available, only one HSC had all six items present. Almost half of the HSCs (21) said they were not supposed to have certain items, the ones most frequently cited being bandages and gauze (14 times) and syringes and needles (5 times). The level of stockout varied from 3 (7%) for needles to 19 (79%) for bandages. Table V.9 shows the stockouts for the six items at the HSCs surveyed.

TABLE V.9

Stockout of Medical Supplies at HSCs

<u>Item</u>	<u>No. of HSCs with Data</u>	a)		<u>Percent</u>	<u>No. of Supplying PHCs with Stock</u>
		<u>No. Currently Out of Stock</u>			
Chemistrips/ reagent	43	11	29%	1	
Gauze	45	16	52%	7	
Antiseptic	47	15	32%	8	
Needles	46	3	7%	2	
Syringes	47	6	14%	5	
Bandages	38	19	79%	11	

a) Number of HSCs with data varies because some facilities reported that they were not meant to have supplies of this type. These HSCs have been excluded from the denominator.

In total 70 items were out of stock; when the supplying PHC was checked it was found that in 33 cases the stocked-out items were available at the supplying PHC.

The availability of syringes and needles was also examined; in all HSCs the provision was totally inadequate. There are on average fewer than 2 syringes per HSC; half the HSCs had one syringe and only one had more than 4 syringes. Four HSCs had sufficient needles (i.e. 36 or more).



There were not sufficient data on duration of stockouts to give overall average figures, but where data were available they showed that periods of 8-12 months are not uncommon for stockouts of particular items.

The number of syringes and needles is inadequate; once the strategy for EPI has been established, provision should be made to supply sufficient needles and syringes to enable a separate needle and syringe to be used for each injection. This is likely to mean 20 syringes per HSC or 400 per PHC, plus 4 dozen needles per HSC or 900 needles per PHC, assuming each needle lasts for 20 injections. A similar number of needles will need to be resupplied each year.

The mechanisms for distributing medical supplies should be examined to find ways of ensuring that the basic requirements are available, especially for gauze and bandages. Steps should be taken to ensure that PHCs provide HSCs with their requirements, when supplies are available at PHC.

The possibility of including basic supplies in the drug kit should be assessed.

## 5. Vaccines and Cold Chain

### 5.1 Vaccine Supply

The Government of Tamil Nadu prepares an estimate of the quantities of vaccines needed for the State, and submits the estimate to GOI who consolidates estimates for the whole country. GOI then instructs manufacturers on how much vaccine to produce. The manufacturers prepare their distribution schedule and dispatch vaccines. OPV vaccine is supplied from Bombay by the Haffkine Bio Pharma (HBP) via the King Institute in Guindy, which acts as a central distribution point for the State. Measles vaccine is supplied by the Government Medical Stores (GMS) in Bombay via the King Institute or PIIC. BCG is supplied by the BCG

Institute also based in Guindy. All other vaccines are supplied by Pasteur Institute of India at Coonoor (PIIC). Vaccines from the PIIC are sent direct to the RAD at Salem and Cuddalore under the responsibility of PIIC. BCG is dispatched under the responsibility of the Institute to the district TB Centre. OPV and measles vaccine are dispatched under the responsibility of the State Department of Health to the RAD.

At present, there is not sufficient manufacturing capacity to allow for the establishment of reserves either at the point of production or at state storage facilities. The result is that when there are production problems, shortages of vaccines occur in the field. Some vaccines are imported to supplement national production: BCG from Japan, OPV from Italy or Yugoslavia. National production of OPV is expected to begin in FY 86/87 with complete indigenisation within 5 years. Measles vaccine is imported from France and Belgium because there is no national production yet. The first consignment was sent to the King Institute in May 1986 and to PIIC in July 1986.

When the change-over to indigenous OPV is made, the dose will also be changed from the existing 0.5 ml to 2 drops.

Diluent is only included in supplies of measles vaccine and Japanese BCG. The BCG manufactured at Guindy is supplied without diluent, so when this vaccine is reconstituted, the health worker uses ordinary saline solution which is usually in a 500 ml bottle, supplied from a different source.

Up to 1986 there has been no operational plan for EPI and consequently no comprehensive distribution plan. Supplies of vaccine are received in an ad hoc way according to schedules originally prepared by GOI and the manufacturers.

In practice, only 20 of the 45 PHCs surveyed reported getting all the vaccines they requested from HUD level; half (24) issued their stock on a first-in, first-out basis, but 31 (69%) held their stocks for longer than one month. 18 of the 45 PHCs were out of stock of at least 1 vaccine (OPV, DPT, TT). BCG is only used by district teams and is not held at PHC, and measles vaccine was being distributed for the first time.

PHCs use a variety of schedules for supplying HSCs, some monthly, some weekly, some "as needed" and some (in Salem) through the UIP campaign. 20 out of 52 HSCs reported receiving DPT/OPV at least monthly; however, only 9 of these were confirmed by the supplying PHC.

In summary, the supply indicators (all requested vaccine was received, stock dispatched on a first-in, first-out basis, stock held no longer than one month, supplies dispatched to HSCs monthly) were all judged satisfactory in only 11% (5) of the PHCs visited. The net effect on cold chain may be seen in Table V.11.

The equipment found at PHCs and HSCs for carrying vaccines in the field varied considerably. There are a variety of different cold boxes and vaccine carriers. A few of these are high quality, long life boxes (cold life 10 days at 43 degrees C) whilst others are inexpensive short life containers with a cold life of only a few hours. In the absence of a defined supply strategy it is difficult to comment upon the suitability of this equipment. For example, there seems little need for a box with a long cold life when facilities are quite close together. On the other hand, the usefulness of a carrier that only lasts a few hours must be very limited. It appears that over the years this equipment has been supplied from various sources. The PO has supplied a total of 1,380 thermocole boxes, which have a cold life of a few hours, without a clear idea of the requirements they were supposed to meet.

The plan of operation prepared after this evaluation (which has received technical comments from both DHCU and DANIDA in Copenhagen) addressed the question of supply strategies and it is to be hoped that this document will be used for planning and carrying out immunization activities in the future.

## 5.2 Vaccine Storage

The evaluation assessed storage conditions at RAD, HUD and PHC using the following norms:

o                    o

Temperature of refrigerator should be between +4 C and +8 C

o

At HUD level, OPV should be stored at - 20 C

Vaccines should be within expiry dates

Temperature charts and stock records should be complete and up-to-date

DPT, OPV and TT should be in stock.



Throughout the supply system in the project area and its immediate supply sources, storage of vaccine is a problem. OPV and measles vaccine are stored at the King Institute, which has long suffered from inadequate storage facilities and it is clear from the WHO/SEARO cold chain monitors in use since 1983, that cold chain for OPV is being broken while it is stored there. The PO, recognizing this problem, has agreed to provide an additional cold room, upgrade the existing cold rooms and most important, increase the capacity of the standby generators.

BCG is supplied to the TB Centres as a part of a separate vertical programme and is not included in the activities of PHCs and HSCs. An assessment of the supply, storage, and use of this vaccine has not been included in this evaluation. DPT, TT and DT supplied from PIIC are received directly into the project area via the RADs at Salem and Cuddalore. Neither RAD has adequate storage facilities for vaccines. For example, during a visit to the Salem RAD in early February over 100,000 doses of DPT were found stacked in a room at an ambient temperature of 26 degrees C because there was no space in the refrigerator to store it. A similar situation was reported by the WHO/SEARO EPI Technical Officer a month later.

Storage conditions at the HUD level are not satisfying the above criteria at any of the six HUDs visited. In only one HUD was all vaccine being kept at safe temperatures at the time of the visit, but there was no record of refrigerator and freezer temperatures. In half the HUDs, DPT and TT were being kept at ambient temperatures (24/29 degrees C) and in only two out of the six HUDs was OPV being stored at the correct temperature. Stock records were up-to-date and all vaccines were within the expiry date, although OPV was found at RAD level within four weeks of expiry date. Given the length of the cold chain it will be difficult for this to reach the point of use before expiry.

Table V.10 shows the availability of Cold Chain equipment.

TABLE V.10

Cold Chain Equipment at PHC  
(n=45)

<u>Item</u>	<u>No. PHCs</u>	<u>Percent</u>	<u>Remarks</u>
Freezers	10	22	Only 2 (4%) working.
Refrigerators	40	89	34 (76%) working.
Thermometers	27	60	
Cold boxes	29	64	
Vaccine carriers	42	93	
Frozen ice packs	15	33	

At PHC level, a quarter of the facilities did not have a functioning refrigerator, and only 4% had a working freezer. In at least 9 of the PHCs in Salem there were ice lined refrigerators (ILR) supplied recently by UNICEF. These units may be used as a refrigerator or a freezer but not both at the same time. As they were the only source of cold storage this meant that if vaccines were to be kept safely, ice packs could not be frozen. In one PHC which had decided to use its ILR as a freezer, all the TT (3,000 doses) had been spoilt by being frozen.

In less than half (40%) of the PHCs was vaccine being kept at the correct temperature on the day the team visited, and although 60% had a thermometer, less than half (44%) kept temperature records.

Electricity supply is unreliable throughout the project area, a fact that the PO has recognised. It has proposed the provision of standby generators. However, these will need maintenance and fuel and a designated person to turn them on in the event of power failure. Ideally the problem should be solved by providing PHCs with the refrigerators that have been developed to cope with poor

electricity; unfortunately these are not available in India, and none of those that are available has an adequate cold life. An alternative is to ensure that all PHCs have plenty of frozen icepacks at all times so that in the event of power failure, vaccine can be transferred to cold boxes with icepacks to keep it safe.

Almost all (96%) had stock records; although 60% had all vaccines in stock, 13% had vaccine (mostly OPV) that had passed its expiry date.

Not one of the 45 PHCs visited was storing vaccine satisfactorily and in 6 (13%) there must be doubt about the potency of some of the vaccine being used and distributed. In these 6 PHCs, DPT/TT vaccine had not been refrigerated since leaving the manufacturer. In another 3 PHCs, these vaccines had not been refrigerated before reaching the PHC and in a further 14 PHCs there had been at least one break in the cold chain; thus in over half (23) of the PHCs there have been significant breaks in the cold chain from manufacturer to PHC.

Below PHC level there are no refrigerators and HSCs rely upon vaccine carriers to store vaccines before and during use. As mentioned earlier, these carriers vary enormously in quality and length of cold life. For those 38 HSCs which were holding routine immunization sessions, the survey found that more than half (20) were keeping vaccine longer than one day.

Overall the cold chain is poor: of the 38 cold chains traced, 2 had had no refrigeration at any stage, 5 had no refrigeration at one or two points and HSCs were keeping vaccine too long. Thus in almost one-fifth (18%) of the HSCs giving routine immunization, the vaccine being used had had either minimal or no cold storage.

At the HSC, vaccine is usually (87%) kept in the carrier during the immunization session. However, the poor quality of the carriers together with the lack of ice or frozen ice packs is reflected in the fact that although 46 were keeping their vaccines in the carrier, only 29 of them were below +8 degrees C. In any case by the time the vaccine reaches the immunization session it may already be spoilt, due to careless treatment at higher levels and the length of time it takes to distribute it.

Tables V.11 and Appendix 10, Tables 10.6 and 10.7 show the state of the present cold chain for those HSCs serving villages in which the survey found fully immunized children. The cold chain for both DPT and OPV has been tracked.

The quality of the cold chain is modest; for DPT the average length of the cold chain in South Arcot is upto 207 days from HUD to point of use, of which upto 56% (116 days) are at ambient temperature. In Salem the average length of cold chain from RAD to point of use is less, being upto 64 days of which upto 28% (18 days) are at ambient temperature. For OPV the pattern is similar. In South Arcot the average time from RAD to point of use is up to 147 days, whereas in Salem it is up to 127 days.

The major failure in cold chain for DPT (Appendix 10, Table 10.6) is occurring at RAD and HUD levels; this coupled with the extended duration of the cold chain gives reason to doubt the potency of some of the vaccines being used. Two cold chains have been excluded from the above figures because there were no data at the PHC. When considering these tables, (Appendix 10, Tables 10.6 and Table 10.7), it should be remembered that they do not include the time taken from the manufacturer to the RAD nor the storage conditions for that journey. PIIC ship their DPT vaccine without refrigeration. Between 21 July 1983 and 18 August 1984 47% of the HBP shipments of OPV from Bombay to the King Institute recorded breaks in the cold chain (WHO/SEARO Cold Chain Monitor Study, Tables 1 and 3, 12 May 1986). In addition, the same study showed that shipments were stored at the King Institute on average 32 days. Thus periods for OPV cold chain in Table V.11 should be increased by 32 days.

In addition to these cold chains illustrated in Table V.11, it must be remarked that only 18 (40%) of the PHCs in the sample were storing vaccine at a safe temperature. Thus in addition to the failure at RAD and HUD, significant failures are occurring at PHC also.

TABLE V.11

a)

Length of Cold Chain for those HSCs at which  
Fully Immunized Children (FIC) were Identified

No. of FIC	Max Length of DPT Cold Chain in days	Percent of Time		Max Length of OPV Cold Chain in days	Percent of Time	
		at Ambient	above +8°C		at Ambient	above +8°C
	b)			b)		
3	247	70	100	154	?	70
	b)			b)		
1	271	0	90	109	?	1
	b)			b)		
1	154	80	100	133	?	46
	b)			b)		
1	150	50	100	118	?	38
	b)			b)		
1	135	60	60	154	?	0
2	61	30	30	127	?	0
3	67	30	30	127	?	0
4	64	30	30	127	?	0
	b)			a)		
1	295	60	100	238	?	50
	b)			a)		
1	262	70	100	120	?	0
	c)			c)		
2	89	100	100	86	16	16
	c)			c)		
1	85	100	100	82	12	12

- a) Table shows current cold chain, not cold chain at time of immunization. It assumes regular immunization programme as campaign approach has only recently been introduced in Salem alone. Method of calculation is shown in Appendix 10, Notes to Table 10.13).
- b) Measured from the HUD as stock data not available for RAD.
- c) Excludes time at PHC because no data at PHC.
- ? Data not available.

The WHO/SEARO technical advisor for EPI prepared a detailed trip report following his visit to TN in February and March this year. This report has extensive recommendations and this evaluation endorses the recommendations which are relevant to supply and storage:

"Oral polio vaccine should be stored at  $-20^{\circ}\text{C}$  at the state level and, if possible, at regional and district levels as well, to ensure a full four months' shelf life at  $+4^{\circ}\text{C}$  when released to lower levels. The date of release of the vaccine from storage at  $-20^{\circ}\text{C}$  should be stamped on the carton or box when leaving the central or regional store. This stamped date may then be referred to as the "date of issue" for purposes of determining the expiry date when stored at  $+4^{\circ}\text{C}$ ."

"The present system of supplying vaccine by a quota system, from the manufacturer to the state to the periphery, should be discontinued. Instead, a system of indenting for vaccines at each supply period should be instituted whereby consignees only receive the amounts of vaccines they request. While the estimates prepared at the central level at the start of the fiscal year should be followed as closely as possible, they should only serve as a guide rather than as fixed despatch schedules."

"To ensure that different levels of the distribution system never run out of vaccine, a 25 percent reserve stock should be maintained at all levels. This may entail the provision of additional equipment at some locations. There should never be a nil balance of any vaccine at any level at any time where cold chain facilities are available."

"A recording thermometer should be installed in the cold room at the King Institute, Madras, where the EPI vaccines are stored. The present system of manually recording temperatures once a day on work days only by the staff responsible for running the cold room is not advisable. A recording thermometer would provide documentation that the vaccines and other biologicals stored in the cold room are continuously kept at the proper temperatures."

"DPT vaccine should be shipped in insulated containers or refrigerated vans under proper cold chain. The present policy of shipping DPT in plain cardboard cartons from the manufacturer leads to misunderstanding of staff and breaks in the cold chain and ensuing failure of vaccine potency."

### 5.3 Project Organisation Activities in Support of Immunization (EPI)

From an early date the PO recognised the need for activities in support of EPI and, in the case of Salem District, prepared a detailed operational document. Unfortunately, although this document was submitted to DANIDA who gave technical comments, it was never developed into a project-wide POP. This may be due to the fact that GOI did not approve the appointment of the consultant identified by the PO in late 1983. It seems that from this point EPI activities were in abeyance and although there was an attempt to modify the Madhya Pradesh operational plans in late 1985, no attempt was made to develop a POP until March 1986. Indeed until the visit of the team the existence of the earlier plans seems to have been forgotten. The POP has been prepared since this evaluation, as mentioned earlier.

One activity that the PO did undertake was to list and order considerable quantities of equipment although, as there was no POP, it is unclear on what basis this equipment was chosen and quantified. (For details of the PO equipment list, UNICEF equipment list for Salem and indicative list prepared by the evaluation team see Appendix 10, Tables 10.12-10.15.)

The absence of the POP has been a severe limitation on this component of the Project. In discussions held between the Joint Director responsible for EPI and the team, the contents of the POP were outlined.

The plan must describe the elements of the immunization activities in sufficient detail to assess the many feasible strategies which might be adopted. Until the practical details are clearly specified on paper, it is impossible to know, for example, whether 80-100 2 cc syringes per PHC would be needed (in this strategy, each HSC is supplied twice monthly with vaccine and equipment



from the PHC, where needles and syringes are sterilized) or whether 800 2 cc syringes per PHC would be more appropriate (in this strategy, each HSC has its own set of needles and syringes and is responsible for sterilizing them). Similarly until it is decided whether the PHC will deliver the vaccine to the HSC, or whether the health worker or HA(F) will collect the vaccine, the number of vaccine carriers cannot be specified.

Regardless of the operational details of alternative strategies, it is essential that the plan satisfies the following needs:

- The RAD and HUD must have equipment capable of freezing ice packs and vaccine and of refrigerating vaccine.
- The PHC must have equipment capable of freezing enough icepacks to accompany each consignment of vaccine sent/collected for use at HSC level.
- The PHC must have equipment capable of storing vaccines between +4 and +8 degrees C for one month.
- HSCs must have a vaccine carrier that has an adequate cold life (in most cases 2 days).
- The health worker must be supplied with sufficient 24-gauge needles and 2 cc syringes to enable her to administer a sterile injection to every child - that means using a fresh syringe and a fresh needle for every injection of DPT and measles vaccine administered.
- If the operational plan gives the health worker the responsibility for sterilizing her equipment, she must be supplied with a suitable stove, sterilizing instrument, and fuel, and must be thoroughly trained in correct sterilization procedures.

Note that the equipment supplied to PHCs by UNICEF under UIP fails to meet the first two criteria; one ice-lined refrigerator cannot perform both of these functions.

On the basis of the advantages and disadvantages of each feasible strategy described in the operational plan, the Project's strategy for implementing immunization activities must be chosen. This process will provide the opportunity to reconcile the approach adopted for UIP in Salem with the approach favoured by the Project, which is to provide immunization services on a regular (e.g. monthly) basis.

The travel time for delivering or collecting vaccines should be assessed when selecting the strategy.

The detailing of the POP should be completed as a matter of priority. The strategy for supplying vaccines from State level to PHC should be designed to incorporate a 3-month buffer stock at RAD level, and capacity for holding one month's stock at HUD level for the PHCs. The advantage of eliminating one round of loading and unloading vaccine by supplying PHCs directly from the RAD (as proposed in the recent synopsis of EPI plans prepared prior to the evaluation) is greatly outweighed by the disadvantages of more complex procedures for indenting for supplies, extra travel between each PHC and the RAD, and reduction of the HUD's control over monitoring and feedback on doses issued/doses administered. The existing system, by which PHCs collect stocks from the HUD when they attend the monthly meeting, appears to work smoothly, and should be continued and strengthened with provision of appropriate equipment.

After choosing a strategy, equipment to implement that strategy should be obtained, taking into account existing equipment, and some equipment already in place should be reallocated to more appropriate uses. Specifically, ice-lined refrigerators (ILR) supplied to PHCs should be reallocated to RAD/HUD level. The GO authorizing purchase of the equipment (whose quantities were estimated before the evaluation) should not be implemented until the above exercise has been carried out and the necessary quantities confirmed.

#### 5.4 Refrigeration Equipment Maintenance

Of the 45 PHCs visited, 25% did not have a working refrigerator. This is a problem which has been recognised by the PO and also by UNICEF. UNICEF have had workshops to train refrigerator mechanics and there are proposals to assign mechanics to each District. The problems of maintenance need to be examined in detail; for example, is it better for the mechanic to go to the equipment or for equipment to be brought to a central workshop? One point is clear; the time taken to notify the existing repair facilities is too long, as is the time taken to carry out repairs.

The system for reporting breakdowns needs to be improved.

The proposed equipping of repair technicians should be included in the next purchase of equipment, once their function has been determined.

The alternative of using local repair facilities should also be examined.

#### 6. PHC Transport

Each PHC is supposed to have one vehicle for its general work, one vehicle for family welfare and where there is a Mobile Health Team (MHT), one vehicle for the MHT. (For functioning of MHTs see Chapter VIII, Section 6.4.2.)

In 45 PHCs it was found that 1 (2%) had no vehicle, 14 (31%) had one, 25 (56%) had two and 5 (11%) had three. The total number of vehicles in these PHCs was 79, out of which 64 (81%) were in working order.

As 5 of the 39 PHCs with MHTs had only two vehicles, a total of 20 (44%) of the 45 PHCs surveyed had less than their allocated number of vehicles.

In addition the FW vehicles were often, and for long periods, seconded to the BDO, and this further reduced the number of vehicles available at the PHC. Taking this into account it was

found that 87% of the PHCs in the sample had at least one full-time vehicle; however, 68% of the total number of vehicles were over 10 years old. It was also noted that many of these vehicles needed frequent repair and were mostly unreliable and often off the road (see Appendix 10, Table 10.16).

It is not clear whether there is a vehicle replacement policy for the PHCs but from the current state of the vehicle fleet, if there is one it does not appear to be functioning.

The lack of reliable working vehicles significantly inhibits proper supervision of the sub-centres and limits the activities of MHTs. It also makes it difficult to maintain proper and regular supply of vaccines and drugs. It might be mentioned here that at the inception of the Project the vehicle position at PHCs was reported to be satisfactory and as such no special provision was made for vehicles at PHCs in the Project Document. However, the team's current findings do not seem to suggest that the vehicle position is satisfactory.

Each PHC should have at least one functioning vehicle which is available to them full-time and which should not be seconded for any purpose.

A vehicle replacement policy should be implemented where vehicles which have become unsuitable for field use or which are older than 15 years should be replaced by new ones. Replacement vehicles should have diesel engines.

## 7. Maintenance of Vehicles

Maintenance of vehicles is a responsibility of the State government which has a network of vehicle repair workshops and mobile repair teams. The Project has not been involved in either the provision nor the repair of vehicles and this evaluation has not assessed this aspect of the health services.

## 8. Petrol, Oil and Lubricant (POL)

PHCs are allocated fuel at different rates for different categories of vehicles.

General vehicle - petrol		105 litres per month		
	- diesel	70 -	-	-
MHT	vehicle	100 -	-	-
FW	vehicle	100 -	-	-

Additional fuel allocation is given to undertake special programmes like flood relief or drought relief. The FW vehicles are often deputed for special duties and on such occasions extra fuel is also provided.

If a vehicle is off the road for any reasons, the quota for that vehicle cannot be transferred to any other vehicle. Similarly, unutilised fuel quota from one month cannot be transferred to another month.

A problem that was mentioned at a large number of PHCs the team visited was the inadequacy of the fuel quota. The data with the evaluation team tend to confirm this for PHCs which do not have a MHT and, therefore, are not entitled to the additional fuel that goes with it. A survey of 13 PHCs without MHTs reveals that they consume 146% of their fuel allocation; presumably the extra 46% is obtained from other sources like flood relief, epidemic work, etc. (see Appendix 10, Table 10.17).

In PHCs with MHTs, however, the situation was somewhat different. A survey of 16 of such PHCs revealed that, on an average, they were using only 78% of their fuel allocation (88% for the 6 PHCs with only 1 vehicle and 68% for the 10 PHCs with two or more vehicles). This is partly explainable by the fact that most MHTs are not functioning at anywhere near their required level of activity. (For details see Appendix 10, Table 10.17 and Chapter VIII, Section 6.4.2.)

The proposal to centralize drug supply at HUD level would save one-fourth to one-third of the fuel currently consumed by PHC vehicles.

The fuel allocation for the general side vehicles should be increased by at least 50% for all PHCs. This could be achieved by reducing the fuel allocation to MHTs by 20 litres and reallocating this to PHCs which do not have MHTs, so that those PHCs can have as much fuel as the PHCs with MHTs.

PHCs should be allowed to transfer at least 25% of their fuel allocation from one month to another, subject to the limit of the financial year, in order to adequately meet the unequal demands made during different months of the year.

PHCs should be allowed to transfer at least 50% of the fuel allocation of an "off road" vehicle to an "on road" vehicle, for the period the former is "off road".

## 9. Transport for Health Functionaries

### 9.1 Travel Allowances (TA)

Those who are required to tour regularly in the month within their jurisdiction (e.g. HAs) are given a "Fixed TA" every month and a minimum number of days of tour is prescribed. Monthly tour diaries have to be submitted and if the number of hours toured is less than the stipulated number, a proportionate cut in TA is made.

If they tour outside their jurisdiction (e.g. to District Health Office) they are allowed "Regular TA" which includes a daily allowance, transport fares and incidental charges (e.g. portage) and the fixed TA is proportionately cut for the number of days/portion of a day.

These rules apply only for tours beyond 8 km of their "station". (i.e. LHV centre, HSC, PHC). The following summarises the answers given by health functionaries to the question: what is the interval between handing in your TA bill and getting reimbursed?

Of the 45 entitled to receive transportation allowance only 20 (44%) received their money within 6 months. 6 (13%) had not submitted any bills, but 20 (44%) who should get transportation money either got it with great delay, never received any or had given up.

TABLE V.12  
Interval Between Health Functionary Handing in TA Bill  
and Receiving Reimbursement  
 (n=52)

0 - 3 months	15
4 - 6 -	5
> 6 -	13
	a)
Given up	6
Never received	2
Never submitted	6
Unaware of system	1
Not entitled	7

a) 3 mentioned that > 6 months had passed and therefore they had given up; the other 3 had just given up.

The present procedure for reimbursement of TA should be overhauled so that health workers at block level receive full reimbursement of outstanding TA bills within one month of submitting these. This could be achieved by paying advances out of imprest funds placed at block level on the basis of the monthly tour plans.

## 9.2 Cycle Loans

The Project made provision in POPIII of Rs.500,000 for a revolving fund to help health workers purchase bicycles. Each loan was to be limited to Rs. 600. The procedures for obtaining these loans in the Tamil Nadu Department of Health are complex, as they have to be approved by the Director of Public Health. The health worker having made the application for a loan, it is



forwarded by MO I/C to the DHO and so to the DPH. The PO managed to get the procedure decentralised to DHOs. However, the rules in TN preclude such loans being made to "temporary staff". This problem has yet to be solved and so no cycle loans have yet been made. The provision at the rate of Rs. 500 allows for about 830 cycle loans. No provision has been made for motor cycle loans.

The PO should take steps to expedite the relaxation of the restrictions preventing the provision of cycle loans.

Considerations could also be given providing some motor cycle loans for HAs(F) at Rs.10,000.

## VI. REGISTERS, RECORDS AND REPORTS

This chapter covers record-keeping and reporting of health service activity from village level to district. Service statistics which are reported to the State, to the PO and to GOI are also discussed. Other items reported to the PO and GOI (e.g. construction, distribution of kits, etc.) are discussed in the relevant chapters. The attached diagram in Table VI.1 attempts to summarize the structure of the health service delivery reporting system as encountered by the evaluation team.

This diagram may not correspond to what the primary health care reporting system is in theory. However, the lack of uniformity of registers available, records kept, reports submitted and filing systems, both for HSCs within a block and for blocks within a HUD, made it impossible to establish from information supplied by HSC and PHC staff what the details of the system are supposed to look like. Since health statistics for the project area are compiled from the reports actually submitted by health staff, this chapter comments mainly on what was observed to happen in practice, rather than on the theoretical information system.

### 1. Village Level: Dai Records and Reporting

In the project area, all dais are supposed to report the outcome of deliveries which they have attended (live birth or still birth) to the HW(F). For each birth reported, the dai should receive Rs 3. (Under the national trained dai scheme, the payments are Rs 1 for registering and Rs 2 for reporting their deliveries.) The PO has introduced a larger fee (Rs 5) as part of the innovative scheme for retraining dais, introduced in four blocks.

The interviews with trained dais included specific questions about reporting deliveries, and fees they had received from the government. Table VI.2 shows data for 46 dais. The majority of dais who had attended any deliveries within the last 3 months (18/22) said they reported all their deliveries. (Two-fifths of the sample had not attended any deliveries in the last 3 months.) Of the 40 dais who had ever conducted a delivery, 11 (28%) had not reported it, but the remaining 29 did report their deliveries, either immediately (24) or within a month (5).

TABLE VI.1

The Reporting System for Primary Health Care Services, as Encountered in the Project Area

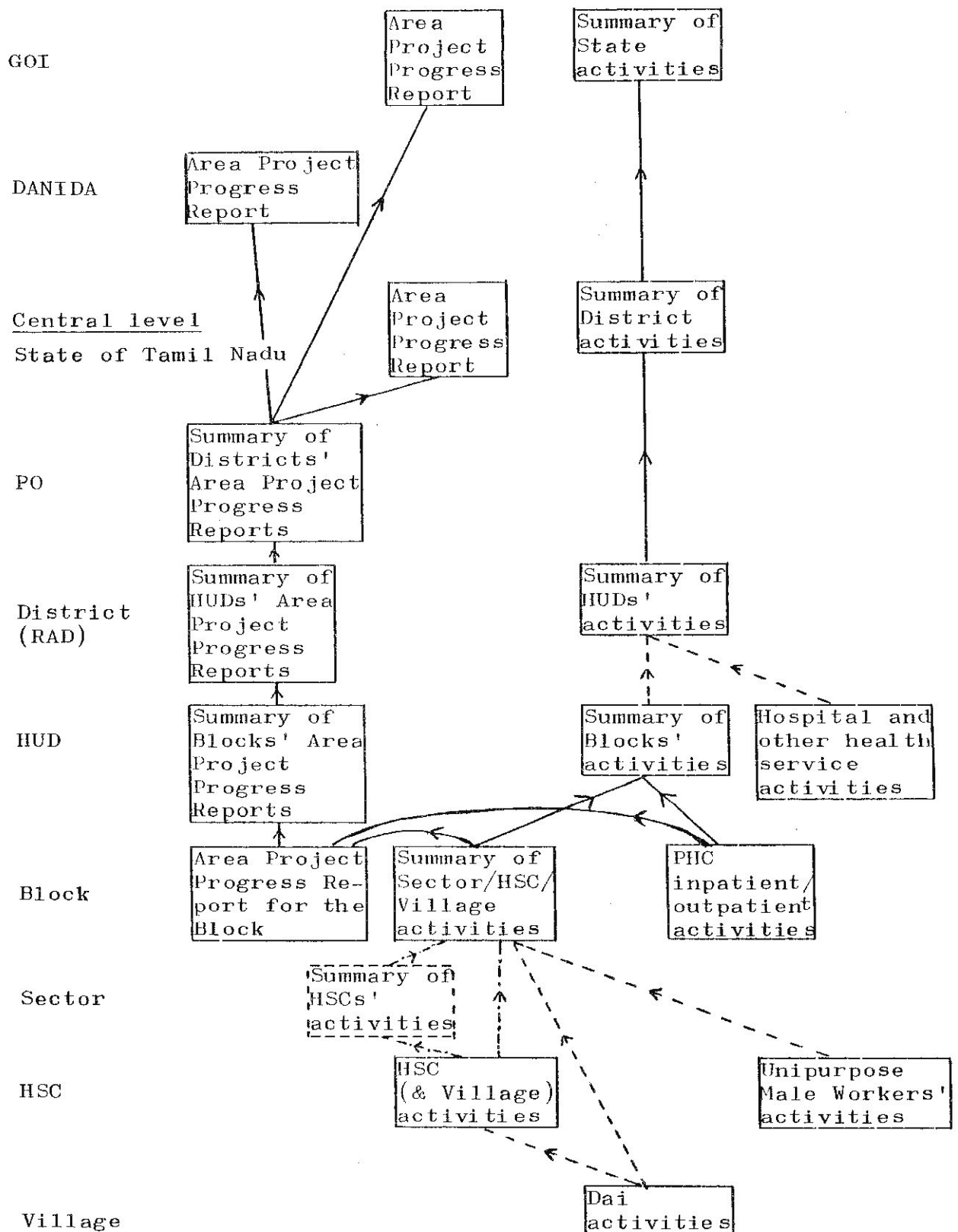


TABLE VI.2

Frequency of Births Reported and Fees Received by Trained Dais

a)

(Number of Dais supplying data = 46)

	<u>Number</u>	<u>Percent</u>
For deliveries during the last three months: n=46		
Dais reported no deliveries (b)	24	52%
some deliveries	4	9%
all deliveries	18	39%
	c)	
For the most recent delivery she attended: n=40		
Dai had not reported to HW/HA d)	11	28%
Dai reported the delivery to HW/HA	29	72%
immediately	24	60%
within a month	5	12%
Dai informs village official about all deliveries n=40 (c)	16	40%
	c)	
Reporting fee: n=40		
never received	37	92%
sometimes received	3	8%
always received	0	-
Report was made during the last three months: n=22		
Reporting fee received	2	9%
No fee had been received	20	91%

a) Excludes 2 incomplete interviews.

b) These 24 dais include 19 (41%) who had not attended any deliveries in the last three months, and 5 who had attended deliveries but had not reported any of them.

c) Excludes 6 dais who had not attended a delivery. Includes 13 dais who attended their last delivery more than 3 months ago.

d) Includes 3 deliveries reported to HA(F), 2 to the HW(M), and 1 to BEE. The remaining 23 were reported to HW(F).

Of the 22 dais who had recently reported a delivery, 20 (91%) continued to report births despite not getting their fee. Altogether 92% of the 40 functioning dais interviewed said they had never ever received a fee; many said that the cost of

transport involved in going to the PHC to collect the fee outweighed the benefit they would gain. Of the 2 dais who had received a payment within the last three months, one had received Rs 39 for 8 deliveries, and the other, who had reported 7 deliveries, had been reimbursed Rs 5. Both these dais were in experimental blocks where the dai retraining scheme had been introduced. In the sample of dais surveyed, there was no evidence that the standard reporting fee of Rs 3 had ever been paid, even though the objective of this payment scheme is to increase the reporting of births and to encourage dais to identify antenatal patients.

The data generated by the dai payment scheme can never be used to calculate indicators such as percentage of deliveries attended by a trained dai, since the health system does not receive data on the necessary denominator (i.e. total number of births). If all trained dais reported all their deliveries, this system could at best supply data on the number of deliveries per trained dai per month.

Payment of dais should be explicitly linked to reporting of antenatal cases, in accordance with the national trained dai scheme, to promote early detection of high-risk pregnancies.

The protocols and procedures for payment of dais should be revised immediately to one schedule of rates for the whole project area. This schedule should be consistent with the scheme in use in the State, at a level of payment which can be honoured for all trained dais in the project area. The schedule should be widely publicized so that everyone involved knows what the payments should be, and so that the dais receive in full the amount that they are due.

Payment of dais should be made by the HW(F) so that the dai does not have to incur travel expenses to collect her fee. Experience from the innovative scheme should be reviewed, and if necessary modifications made in that scheme's operating procedures. Experience from other areas should also be taken into consideration. Payment by the HW(F) should then be introduced throughout the project area.

Very few of the 48 dais interviewed seemed to be using the pictorial records developed by GOI. Their demonstration of how they used these forms was interesting but did not correspond to the instructions. It appears overly ambitious to attempt to implement a reporting system using printed forms for use by trained dais in the project area.

Reporting of dai activity should be through the HW(F) at the HSC or if there is no HW in position, through the sector supervisor (HA).

See Chapter V, Section 3 for a recommendation on the supply of the pictorial dai manual.

The official system for reporting births and deaths is through the police via the Karnam or the Village Administrative Officer. Of the 40 dais who had attended a delivery within the last three months, 40% said that they informed the relevant village official about all deliveries. Reporting through the health system was better established than reporting through the official system.

All personnel who have contact with families before, during or after a delivery should encourage the families to register their newborns with the designated local official.

## 2. HSC Level

The HW(F) is required to record births and deaths in a special register; to register antenatal cases and infants; to keep records of ANC/PNC care and child care services; to prepare the eligible couples register and to keep it up-to-date (in the multipurpose scheme this task is shared with the HW(M)); to submit monthly reports to her supervisor; and keep maps and charts of her catchment area.

During the survey of HSCs, the evaluation team found 33 different types of registers, and the largest number found at any one HSC was 22 (see Table VI.3).

TABLE VI.3

List of Registers and Forms found at HSCs

<u>Registers</u>	<u>Forms</u>
1. Patient Register	1. Family Enumeration
2. Immunization	2. TNGO Nutrition Vouchers
3. Antenatal	3. Referral Slip
4. Eligible Couples (Tamil)	4. Malaria
5. Eligible Couples (English)	
6. Drug Stock	
7. Child Care Register	
8. Diary	
9. Village Data	
10. Referral	
11. Enumeration	
12. Visitors' Book	
13. Death	
14. Motivation	
15. Follow up	
16. UIP	
17. Disposable Delivery Kit	
18. Outpatient	
19. Birth	
20. Drugs (National Malaria Eradication Programme)	
21. Stock (Drugs)	
22. Stock (Equipment)	
23. Malaria Slides	
24. Doctor's Outpatient	
25. Malaria Action Plan	
26. Minor Ailments	
27. FST/MCH Issue	
28. TT/FST Outreach	
29. Diarrhoea and Treatment	
30. IEC Training	
31. Oral Pills	
32. Nutrition	
33. VHC Meeting.	

Four types of printed forms were found (see Table VI.3), and 43% of the HSCs surveyed had one or more of these (20% in South Arcot, 64% in Salem). However, none of the 53 HSCs had been issued with printed weekly/monthly report forms, and the hand-drawn formats used were found to vary considerably, even for HSCs in the same block.



The majority of the 53 HWs(F) interviewed (96%) had registers and 74% had all four of the selected registers which were checked during the interview:

Family Planning:

Eligible Couples Register	45	(85%)
MCH: Folic Acid	50	(94%)
Child Health: Vitamin A	45	(85%)
DPT	49	(93%)

All four registers complete  
and up-to-date (i.e. last  
entry was not more  
than 2 months ago): 2 (4%)

The 26 DANIDA HSCs were better equipped with registers; 85% had all four of these registers compared with 63% of the 27 non-DANIDA HSCs. The assessment of whether these registers were complete and up-to-date was complicated by the fact that three of the four registers are not used in day-to-day work: registration of eligible couples (annually), distribution of Vitamin A (every 6 months), and immunization (on a campaign basis in some areas).

The layout of these registers was designed primarily for listing family information with less attention to how the HW could use them when providing services; the HW(F)s clearly had difficulty in finding the right page for specific families to whom they had provided a service (recorded elsewhere), and did not use the large printed registers for recording such information. By contrast, 74% of antenatal care registers, which are used several times a week, were found to be complete and up-to-date.

The HW(F) is supposed to fill in a daily activity register which contains 182 columns (e.g. 29 about immunization, 58 about ANC, deliveries and post-partum sterilization, etc.). In practice this register is filled in at the end of the day/week, by summarizing information from the HW's working notes recorded in the field. Once a week she is supposed to prepare a report on 12 items specified by DPH. Her monthly report is a consolidation compiled from the many registers and records which she maintains. The weekly/monthly reports are given to the supervisor, who copies them and makes a consolidation for the sector and then gives the figures to the MO. However, there are variations in this pattern;

sometimes the HA(F) consolidates the HSC-level data (especially for the MAs who reported that their clerical skills were not equal to the requirements of the record-keeping system), and sometimes the HSC data are consolidated at PHC level, or assembled by male supervisors.

The time spent by the HW(F) on these tasks was estimated from information collected during the HSC interviews; on average she spends 14% of her working week (50-60 hours) on record-keeping, and a substantial part of the PHC weekly meeting (which absorbs 13% of her time) on preparing her reports.

Despite the time spent on records and reporting, the information available at HSC level was generally found to be incomplete and inaccessible. For example, in 27 HSCs where the HW had data on births registered and the number of first postnatal visits, one-fourth of the records showed twice as many (or more) first PNC visits than births registered; since the HWs were unable to explain these discrepancies, it was impossible to find out whether births were not being registered or whether PNC visits were being recorded incorrectly. It was clear that such internal cross-checks were not done at all, despite the fact that "checking registers" is the activity most frequently described by both HAs and MOs (73% and 93% respectively). Validation of reported figures is done by these supervisors making home visits to spot-check on cases recorded in the registers (FP, ANC and immunization).

Neither the HWs(F) nor the supervisors seem to have a clear understanding of how the records and registers should be used to plan and track the delivery of services. For example, births reported to the HW should automatically be registered for child health services but this procedure is not standard practice, and before the immunization campaign (UIP) started, it was deemed necessary for the HW to complete a separate, time-consuming enumeration to register all infants. The evaluation team studied one HSC in Salem, where the HW described the task of enumeration, which began by copying the FP Register into the Enumeration Register; 20 days were allocated to cover 1,000 families (working 6 am - 9 am and 4 pm - 6 pm) house to house, updating the information. The Unprotected Register (in 3 volumes because three HWs had done the enumeration) was brought to the immunization session and checked by the team, who counted 98 children under 2 years old. This would give a birth rate of under 10/1,000 in the

HSC catchment area of 5,000. There should have been approximately 260 under-2s registered, given the official birth rate for Salem of 26/1,000. Ten volumes of unupdated enumeration data (1985) were also brought to the session. None of the 13 registers was used for recording doses administered nor for checking the names and immunization history of children who attended; details of name, parents, age, and previous doses given were taken from the mother each time, and recorded on a piece of paper in a way that was not consistent from entry to entry. No immunization card was being used.

As mentioned above, the layouts of the various registers involved (births, eligible couples, child health) are not designed for cross-referencing, and the independent record-keeping systems do not facilitate integration of services.

An impressive array of charts and graphs summarizing a wide range of information was seen in most HSCs (and PHCs), but these statistics were not described as being used for training health workers, nor are the current formats easy to use for this purpose.

Most of the reports and charts seem to be used for comparing achievements with targets, and feedback from higher levels is generally confined to pressing for better achievements.

### 3. Block Level

At the PHC, the weekly/monthly reports from HSCs/sectors are consolidated for the whole block. From the PHC, monthly reports are delivered to the HUD where they are consolidated and forwarded to the District and from there to state level, which thus receives the results of five consolidations.

In South Arcot district, two reporting cycles were in use at some PHCs: vital statistics were recorded on a calendar year basis and cumulated (year-to-date) from 1 January, whereas statistics for the area projects' quarterly reporting format were recorded for the financial year, and cumulated from 1 April. In addition, the reporting date for the calendar year data was designated as the penultimate Saturday of each month, so that in any year, 8 months would have four weeks' data and 4 months would have five weeks' data, thus making comparisons of monthly data between

years subject to an unidentified variance of 25%. The reason given at HUD level for this practice was to report the monthly data in good time so that estimates of medical supplies, etc. could be formulated promptly.

#### 4. Activities of the PO

In DHCU's Report to the evaluation team, it is stated that the PO is reviewing its own reporting formats to rectify duplication and overlap with the formats utilized by the system. (The PO itself has made no comments on these issues.) There have also been some studies of the record-keeping system which have not been put to use.

The PO should initiate an in-depth study (drawing upon work already done) of the whole reporting system from HSC level upwards with the aim of simplifying procedures and reducing the number of reporting formats to one. This format should be easy to use and contain only necessary data that are relevant for planning and monitoring activity. As part of this study the PO should suggest mechanisms for monitoring and feed back. In particular, operational plans should be developed for training staff in the use of their own data for planning their work and tracking their own activities. Supervisors should be shown how to use the records and reports for feedback, thus changing the emphasis from checking achievement of targets to constructive monitoring and supervision.

This study should be completed within 6 months and should be presented to the SPCC for consideration.

GOTN should immediately reduce the number of reporting intervals to one per month at HSC and PHC level, and the same period (preferably calendar month) should be reported upon throughout the State.

Printed monthly report form and registers should be supplied to all HSCs. All such materials should be printed in Tamil.

A recommendation addressing the need for an MCH Card, to be kept by the parents, is made in Chapter VIII, Section 5 (Child Health).

## 5. Stock Records

It was found that stock registers for drugs were maintained separately for different heads at most PHCs (and many HSCs). Some of the heads found at PHCs are shown below (for more detail see Appendix 10.9).

- General
- Mobile Health Team
- DANIDA
- Panchayat Union HSC
- MCH
- Flood Relief
- Drought Relief
- Surgical Appliances
- Tribal Development
- Intensive Pilot Project for School Health
- Siddha
- Family Welfare
- Multipurpose Scheme
- TB Control
- Malaria Eradication (NMEP)
- Accidents and Emergencies
- UNICEF
- Solids
- Liquids
- Injections

In addition, at many PHCs there were sub-stock registers for some of the heads (e.g. General Side and Mobile Health Team). To add to the confusion, some stocks can be transferred to others. These transfer possibilities, however, differ from PHC to PHC.

Such a multiplicity of registers not only increases the administrative load, but also makes it nearly impossible to monitor the availability of drugs and to verify the stocks in hand. Despite the fact that pharmacists manage to maintain all these registers, the evaluation team found that significant quantities of drugs were sometimes not mentioned; for example, 26,000 tablets of paracetamol were found in the NMEP stock but had not been mentioned until the team raised the issue during its inventory.

Separate stock registers should be maintained only where the concerned drugs are to be supplied to different categories of recipients and where the transfer of drugs from one category to another is prohibited.

It is understood that drugs supplied to the PHC normally have only two categories of recipients, i.e., the HSC and the out-patient department of the PHC itself. Therefore in most PHCs, two registers should suffice: one for drugs allocated to the HSCs, and one for drugs for the PHC's own use. Even where mobile health teams are located, it is understood that as their drugs can also be utilised at the PHC, no separate register needs to be maintained for them.

In order to be able to identify the different sources of supply for the audit, the details of the source should be entered into the register in the relevant drug page, as and when the supply is received. Where there are numerous active sources of supply, an index might be provided at the beginning, listing the type of drugs received from each source.

The practice of entering vaccine stock in the register at the end of the day (after the vaccine has actually been issued to the field) and of recording the exact number of doses administered as being the quantity issued, should cease. Vaccine should be entered in the stock register at the time of issue in doses by whole units. For example, DPT which is available in 10 dose vials should only be entered in multiples of 10 doses. Returned vaccine (killed antigens only) should not be restocked but marked and kept separate from unissued stock, for use at the next session.

Sub-stock registers should ordinarily not be used for transferring large quantities of drugs, as is sometimes done. Only that quantity of drugs that is physically taken out of the store and kept at another location should be transferred to the sub-stock register.

At the HSCs there seems to be no reason for maintaining more than one stock register, especially as the team's findings suggest that the HW is grossly overburdened with paperwork. Therefore only one stock register for drugs should be maintained at the HSC, and the practice of maintaining sub-stock registers at HSCs should be abolished.

A uniform system for recording drug supply and issue should be followed at all the PHCs and HSCs; this system should be designed keeping the above points in mind. The PO could take up the task of briefing the PHC personnel in general, and the pharmacists in particular, on the new procedure, and facilitate the transfer from one system to another.



## VII. SUPERVISION

This chapter covers supervision of health service delivery up to the level of the PHC. Chapter XII addresses the issue of supervision of MOs in charge at PHCs, within the context of management of the health system.

### 1. Supervision at Village Level

#### 1.1 Trained Dais

The trained dai is supposed to be the link between families in her village and the health delivery system. After training (by the HW(F) or HA(F), at HSC or block level), dais are expected to coordinate with the HWs(F) in their work.

Many dais have years of experience behind them, and attend considerably more deliveries every month than the average HW(F). Neither the HW(F) nor the HA(F) receive special training to prepare them to train non-literate, experienced traditional birth attendants. The survey data indicate that the majority of trained dais are not functioning in close coordination with the formal health system. One-sixth of the sample of dais interviewed (8/46) worked as an ayah to the HW(F) and saw her daily, and two-thirds of the remaining 38 dais had been visited by the HW(F) within the last month. However,

- 47% of these 38 dais said they did not collaborate with the HW(F);
- 59% (of 44 dais) said they never asked the HW for help.

Contact with the HW(F) or PHC through the supply system is non-existent, since none of the dais had ever received replenishment of their supplies.

Reporting of pregnancies and deliveries provides a reason for frequent contact with the HW(F), and 76% of 29 trained dais who had attended any deliveries during the last 3 months had reported them; however, the financial incentive for doing so failed to materialize for 93% (all but 2) of those who submitted reports.

An innovative scheme to enhance the incentive payment to the dai has been introduced in four blocks; however, the opportunity to use this scheme as a mechanism for encouraging collaboration between the dai and the health worker was missed, as the dais receive the same fee for reporting a delivery, regardless of whether or not they register the antenatal case.

There were few exceptions to this picture of differences in skills and experience and lack of benefit through the supply of consumables and payments. From discussions of what she did, and based on the contents and condition of her delivery kit, the average trained dai is not conducting aseptic deliveries. Since her activities are largely unsupervised, it is unclear precisely what her practices are.

The Project should develop specific, simple guidelines for health workers on how they can most effectively coordinate with and support dais.

The dais' links to the health delivery system should be strengthened by adequate and regular resupply of consumables (e.g. the DDK) and by payment in full of fees due to them.

Detailed recommendations on these points are given in Chapter VI, Section 1 and Chapter V, Section 2 respectively.

## 2. HSCs

Supervisory visits to HSCs are made by the HA(F) based at the sector headquarters (LHV Quarters), MOs from the block headquarters (PHC) and occasionally others such as the PHN from HUD level. During the evaluation, interviews with health workers, supervisors and MOs covered various aspects of supervision.

### 2.1 Data from the HW(F)

The HW(F) was asked when the last supervisory visit (by the HA or MO) had been made; the answers of 50 HWs are shown in Table VII.1.

TABLE VII.1

Time since the last Supervisory Visit, Reported by  
Female Health Workers

a)

(n=50)

Time since last visit by:

	<u>HA</u>	<u>MO</u>	<u>Either</u>
Last month	84%	64%	90%
Month before last	2%	4%	2%
Three or more months ago	10%	22%	8%
More than a year ago, or do not know	4%	10%	-

- 
- a) Of the 60 HSCs surveyed, 5 had no HW(F) posted and 2 HWs were on leave at the time of the evaluation. Of the 53 HWs interviewed, 2 HWs were on leave during the previous month (so they could not have been supervised), and 1 HSC was staffed by a HA(F) who took up her post two days before the interview.
- 

The regularity and frequency of supervisory visits has been achieved despite a large proportion of HA(F) posts being vacant; in the sample of sector headquarters for the 60 HSCs in the sample, 20 posts (33%) were not staffed (17 vacant, 3 staff absent for medical leave or training). Supervisory staff shortages have been overcome mainly by assigning additional charge (extra HSCs) to staff in position (only 3 of the 53 HSCs with HWs(F) in position had no HA either temporary or permanent), and also by targeting MO visits at HSCs without a supervisor. Only 58% were visited in the same period by both the HA(F) and the MO.

The HW(F) was asked what the supervisor (HA) did during the last supervisory visit. Each HW(F)'s supervisor was asked the same question; the two sets of answers are shown in Table VII.2, with topics ranked in descending order of frequency according to the HW(F).

TABLE VII.2

Supervisor's Activities during a Supervisory Visit to the  
HSC, as Reported by HW(F) and HA(F)

	<u>HW(F)</u> (n=52)	<u>HA(F)</u> (n=45)
Check registers	65%	73%
Participate in ANC exams and clinics	42%	62%
Participate in home visits	27%	62%
Community health education, school health, balwadi visits	23%	24%
Participate in immunization sessions	21%	49%
Check medicines and equipment, inspect HSC for cleanliness	17%	38%
Explanation and discussion	14%	16%
Participate in family planning work	6%	18%

The overall ranking of the frequency with which HWs(F) and their supervisors mentioned various activities is remarkably similar, with supervisors naturally mentioning more activities overall. Half of the HWs(F) named two activities, one-fifth named a single activity during the supervisor's visit. The activity most often described was checking records and registers.

Although HWs and HAs said that the supervisor participated in various activities, and discussed and explained things, there appeared to be a complete absence of technical, on-the-job supervision. Instead of the HA demonstrating techniques and watching the HW practising them under supervision, the HA's participation seems to be designed to help get the work done; this is especially the case regarding immunization sessions at an HSC staffed by an MA, since several of this cadre do not administer immunizations, and the service is not offered unless the HA is present.

## 2.2 Data from the HA(F)

A total of 45 interviews were conducted; these included 8 interviews with HAs supervising the sampled HSC as additional charge, since the supervisory post in the designated sector was not filled (vacant or staff on leave). Three posted supervisors were on leave and were not interviewed; three HAs deputed to cover HSCs with no posted supervisor were not interviewed. Two of the interviewed HAs each covered two of the HSCs surveyed. Altogether, data from supervisors were collected for 47 of the 53 HSCs surveyed.

The shortage of supervisory personnel which has led to assigning additional charge to HAs is more serious in South Arcot, where only 57% of posts are filled compared with 89% in Salem. The extra workload caused by the shortage of staff is reflected in the finding that on average, each HA supervises 6 HSCs in South Arcot (range of 3 to 11), compared with 4 in Salem (range of 3 to 7).

There is no difference in the proportion of posted staff between DANIDA and non-DANIDA HSCs (70% and 73% respectively), but more DANIDA HSCs are covered by supervisors on deputation (20% compared with 7% non-DANIDA), which may reflect differential effort expended upon Project-supported HSCs.

In describing what they did when they visited the HW(F), the HAs mentioned the quantitative aspects of supervision more frequently than the guiding and supportive aspects. Three-fourths said they checked the registers (see Table VII.2). Home visiting was frequently done to spot-check that the HW(F)'s records were accurate. Participation in other aspects of the HW's work (ANC, immunization, family planning) was frequently described and for several HAs, the purpose of the visit does not appear to be strictly supervisory, but helping the HW(F) get her work done by performing tasks as a team. One-fourth of the HAs said they went into the villages with the HW to do health education, school health, or visit the Balwadi, and one in six said they discussed things and explained them to the HW. Only 2 HAs said they had a check list to follow during a supervisory visit; two-thirds described 3-4 activities, and 11 said they had copies of comments made to the HW.

All but one of the HAs had a schedule for their visits, and 89% had visited all of the (staffed) HSCs under their charge within the past month.

To assess the HA(F)'s knowledge of the HSCs under her charge, she was asked if she knew or had information about six items; the percentage of HAs who knew about each item is shown in Table VII.3.

TABLE VII.3

Percentage of Health Supervisors who had Information  
on Six Basic Indicators  
(n=45)

<u>Indicators</u>	<u>Percent</u>
Number of DPT doses given by the HWs	76%
Number of DPT doses issued to the HWs	62%
Number of antenatal cases registered by HWs	82%
Number of births attended by dais	87%
Number of patients treated by HWs	60%
Number of patients referred by HWs	71%
All of the above	36%
None of the above	4%

Despite the emphasis given to checking records and preparing reports, one-fifth (18%) of the HAs had not received monthly reports from all of their HWs(F) last month. The evaluation team found that data included in the monthly reports were frequently not accessible at the HSC on the day of the visit (see Table VIII.2 in Chapter VIII). Only one-third of HAs had information on all six basic indicators in Table VII.3; their knowledge was highest for deliveries attended by dais and lowest for patients treated. A small minority (2/45) did not have information about any of these six items.

When asked about their problems at work, the most frequently mentioned problem was accommodation, followed by transport and family planning targets (see Table VII.4). One-fourth said that

vaccine handling and shortages of equipment and drugs were a problem; these shortages hinder the supervisors' capacity to improve HW skills through on-the-job training. Vaccine handling was a problem for several HAs who were required to pick up vaccine daily from the PHC and deliver it to the HSC, without proper equipment (e.g. frozen ice packs); this task absorbed substantial amounts of time. None of the HAs who said the workload was a problem had extra HSCs to cover as additional charge. However, the HAs in South Arcot mentioned twice as many problems as those in Salem, where one-fourth of the HAs interviewed did not mention any problems at all. This difference may reflect the greater shortage of supervisory personnel in South Arcot District.

TABLE VII.4

Percentage of Health Supervisors and Health Workers who Mentioned Problems at Work a)

<u>Type of Problem</u>	<u>HA(F)</u>	<u>HW(F)</u>
	<u>Percent</u> (n=45)	<u>Percent</u> (n=53)
Accommodation including water and rent allowance	40%	58%
Dealing with the community	-	34%
Salary and allowances, including Travel Allowance	-	32%
Transport	33%	25%
Family Planning Targets	29%	23%
Equipment, (Drugs, Vaccine Handling for HAs)	24%	11%
Workload (including records and reports)	13%	13%
Other	18%	6%



### 2.3 Data from the Interviews at PHCs

In two-thirds of the PHCs surveyed (29/45), the doctors had a schedule for supervisory visits. The average number of visits was 15 per month (for 39 PHCs with data) for November and December 1985. This average level of activity would permit each of the 20 HSCs in the block to be visited by a MO twice in 3 months, but in practice one-third of the HSCs surveyed received no visit at all from an MO in the 2 months preceding the evaluation team's visit (see Table VII.1). The finding that the MOs make enough visits to cover three-quarters of the HSCs in the block per month, but only 64% of the surveyed HSCs reported an MO visit, may be partly explained by the fact that MOs visit HSCs which are closer to the PHC more frequently than those which are further away (see Table VII.5). This may be due to shortages of vehicles and fuel. Despite the higher occupancy rate of MO posts in Salem than in South Arcot, there was not much difference in the proportion of health workers visited (65% in Salem, 60% in South Arcot).

TABLE VII.5

a)

Whether MO Visited the HW(F) Last Month, by Travel Time  
 b)  
from HSC to PHC (n=50)

<u>Travel time</u> <u>in minutes</u>	<u>n</u>	<u>Number of</u> <u>HSCs Visited</u>	<u>Percentage</u>
10-30	17	12	71%
31-60	17	11	65%
> 60	16	9	56%
Total	50	32	64%

a) Travel time for HW(F), e.g. by foot, cycle or public transport.

b) Of the 53 HWs(F) interviewed, excludes 2 HWs(F) who were on leave during the previous month, and 1 HA(F) posted to a HSC who took up her post two days before the interview.

MOs reported their activities during supervisory visits as shown in Table VII.6. As with the HAs, the bulk of the MOs' supervisory activity is concerned with the quantitative aspects of the HW(F)s' performance: checking registers and stocks, and spot-checking by home visits to registered antenatal cases. Another frequent activity for MOs is seeing patients, and many supervisory visits were combined with Mobile Health Team work.

TABLE VII.6

a)

Activities during MOs' Supervisory Visits to HSCs (n=44)

<u>Activity</u>	<u>Number</u>	<u>Percent</u>
Check registers	41	93%
Check medicines and equipment, inspect maintenance of HSC	35	80%
See patients, participate in or hold clinics	25	57%
Spot-check worker's activities by home visit	17	39%
Guidance and correction	11	25%
Watch HW's performance	6	14%
Check school health/Balwadi/ noon meal schemes	6	14%
Discuss health problems, HW(F) performance with villagers	4	9%

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a) Information not available from 1 PHC.

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On the other hand, watching the HW's performance, giving her guidance, and having discussions with villagers about health problems and HW performance were mentioned with much less frequency; no MOs mentioned all three activities.

These findings are to some extent in accordance with the "Check list for the Inspection of HSCs" which stresses the numerical aspects of workers' performance (targets or achievements, registers, records, stocks, etc.). Nine MOs had a check list, and 4 had copies of comments they had made during supervisory visits.

The pattern of supervision reported by MOs is similar to that reported by HAs; however, MOs placed greater emphasis on the components which involved checking and inspection, and the guiding and supportive aspects of supervision were mentioned less frequently.

#### 2.4 PHC Weekly/Monthly Meetings and Supervision

All 45 PHCs surveyed held weekly meetings with health workers and supervisors. Once a month salaries were paid. In some cases no meeting was actually held although health workers came to the PHC. In 29% of the PHCs it was reported that there were no group discussions. Most of the time was spent in individuals transferring data from registers to reports which were discussed first with the health supervisor and then with the MO. Although 13% of their working time is spent on meetings and 14% on records and report preparation, the time at weekly meetings is not always productively spent; even if official business was concluded by noon, some field staff reported that they were under instructions to remain at the PHC until 5 pm in case the DHO made a visit.

Almost all health workers reported that they filed reports, held discussions and received salary at the PHC meetings. However, one-fifth (4% DANIDA, 38% non-DANIDA) reported that they did not receive medicines. They were able to get advice (73%) and technical help (64%); in many instances this help was given to staff individually, rather than in a group. The majority of HWs (90%) were able to explain their problems, and 46% had their problems resolved. (See Table VII.4 for problems mentioned by HWs(F) during the HSC interview.)

#### 2.5 Summary

Despite continuing shortages of HAs(F), 90% of HSCs receive regular supervision. This has been achieved by deputing extra charge to HAs(F) in position and scheduling MOs to visit HSCs which do not have a HA(F) in position at the sector headquarters.

A considerable amount of supervisory activity takes place, but the quantitative element of supervision predominates, while support and guidance are rare features. This is also true at higher levels in the health system (see Chapter XII).

The Project Organisation should find ways of changing supervision into a more creative and constructive activity. In particular, the supportive role of supervision, i.e., to give encouragement and to promote positive attitudes among health workers, needs to be highlighted at all levels. Supervisors should increase their interactions with the community with a view to facilitating the work of the HW(F). This approach should replace the current house-to-house spot-check of health workers' activities. Supervisors should also be able to improve technical skills through on-the-job training during supervisory visits. The combination of these elements is essential for increasing both the quality of services and the level of performance.

Supervisors should be trained in how to use records and reports for feedback, thus changing the emphasis from checking achievement of targets to constructive monitoring and supervision. (See recommendation in Chapter VI, Section 4.)

The supervisory element of monthly and weekly meetings does not seem to justify the large number of these meetings held at the PHCs. It is therefore recommended that PHC meetings should take place only once a month. At these meetings, the health supervisors should give accounts of their own supervisory activities over the month and the MOs should report on their supervision of the block under their charge. Time spent on preparing records should be reduced by simplifying the reporting format (see Chapter VI, Section 4).

The monthly PHC meetings should include continuing education on specific topics (e.g. management of diarrhoea, procedures for aseptic injection technique) and guidance of workers. The health supervisor could hold sector level meetings once a month (e.g. between PHC meetings), using the time for inservice training, work planning, and group discussions. The time saved by reducing the number of meetings could be spent by MOs and HAs(F) in making field visits to HWs(F).

The supervisory activities of the HA and the MO should be complementary; the HA should concentrate on routine checking and the MO should concentrate on strengthening community support for the HW(F) and promoting preventive measures.

## VIII. SERVICES

The Project Document (1980) reflects concern with underutilization of health care services, especially for maternal and child care. The Project's major inputs, i.e., improving physical infrastructure and increasing manpower, were designed to remove some of the constraints to coverage. If more staff were trained, equipped and in position, it is assumed that more services will be delivered and ultimately, health status will improve. This outcome is the overall aim of the Project.

The introduction to this report outlined some of the pitfalls of attributing changes in health status to the intervention, and explained that this evaluation was designed to use indicators of health service activity to measure, and later to monitor, performance in the project area. Indicators both of quantity and of quality were needed, since ineffective or unsafe activity could have a detrimental effect on health status. These indicators have been examined from two perspectives; that of the provider of services, and that of the target population in its broadest sense, i.e. all the inhabitants of the catchment area.

It is recognized that although the PO is one of the nine directorates in the Department of Health, GOIN, responsibility for the primary health care service delivery system rests with three other directorates within the Department (see Chapter I and Appendix 3). However, information on the provision and utilization of services provides a means of assessing the impact that the Project has had on strengthening health services.

This chapter presents data on services provided, concentrating on the HSC as the most basic unit in the health system. Data from several sources are compared and assessed for their usefulness as monitoring tools. For each type of service, utilization and coverage, as measured by information obtained from the intended end user, are then discussed.

The most recent data on services provided come from interviews conducted with HWs(F) by the evaluation team in February 1986. Most recent data on utilization and coverage come from the household survey conducted during the same period by the same team; the subjects were 420 women with a child aged 12-23 months, distributed across 60 randomly selected villages (7 interviews per village). Within each village, households were selected according to the WHO methodology for evaluating immunization coverage (see Appendix 2). Comparisons between these data and those from other sources are given in Appendix 15.

## 1. Antenatal Care (ANC)

### 1.1. Providers

Identification of pregnant women in the project area is the responsibility of the trained dai and the HW(F), who registers pregnancies reported to her in the MCH Register (one page per woman). Under the national trained dai scheme, the trained dai is entitled to receive a fee of Rs.2 for attending and reporting a delivery, and an extra rupee if she had previously registered the pregnant woman with the HW(F) for antenatal care. However, the Project has not linked antenatal registration to attending or reporting births and pays Rs.3 per delivery conducted and reported by a trained dai; under these rules, there does not seem to be any incentive to encourage dais to identify new pregnancies (see Chapter VI, Section 1 for a discussion of the dai reporting scheme). The dai is supposed to motivate pregnant women to use antenatal services, and refer abnormal pregnancies to the HW(F), who is responsible for providing all ANC services.

### 1.2. Protocol for Antenatal Care

The HW(F) should see each pregnant woman three times for ANC. At two of these visits, the woman should receive a tetanus toxoid injection and one month's supply of iron and folic acid tablets. The HW(F) should take an obstetric history, examine the woman (including fundal height, presentation and foetal heart sound), and refer abnormal cases to her supervisor or to the PHC. Each antenatal visit should be recorded in the MCH Register. Her job description also includes testing the woman's urine for albumin and sugar, and estimating her haemoglobin level.

Antenatal services may be provided at the HSC, or during home visits.

### 1.3. Antenatal Services Provided

Estimates of the percentage of women receiving antenatal care, calculated from various sources, are shown in Appendix 15, Table 15.1. Some sources do not specify whether second and



subsequent visits were included, and the estimates based on service statistics vary considerably. The best indicator of the percentage of eligible women covered is provided by the Quarterly Progress Report for March 1985, which gives the number of antenatal cases registered. About 91% of cases would appear to have been registered. (Annual data were not given and the calculation made here ignores seasonal variations in service activity.)

Level 2 indicators (see Appendix 1.5), which are both calculated from a comparable data base, suggest that coverage has increased to at least 2 antenatal visits per pregnant woman during the project period (see Table VIII.1). However, this was largely due to the increased number of HW(F) posts filled; the volume of antenatal services per worker fell over the same period (see the last two columns of Table VIII.1).

Survey data from the HWs(F) suggest that on average, they do 22 antenatal check-ups (first and subsequent visits), 9 TT1 and 8 TT2 per month (see Table VIII.2). These data indicate that the HW is covering three-fourths of the eligible women with TT1. However, one-tenth of the sample of HWs(F) gave no TT1 and one-fourth gave no TT2 during this period. An inventory of drugs at the HSC showed that although the average stock level of FST (iron/folic acid) was sufficient for 3 months (60 tablets per pregnant woman and 40 tablets after delivery), 44% of the HWs(F) had less than one month's supply in stock (see Chapter V, Section 4).

Information from the mothers (referring to when they were pregnant with the index child) shows that there was a considerable amount of activity distributing iron pills and giving tetanus toxoid injections; of the 420 women surveyed,

312 (74%) received at least one antenatal service (an examination, iron and folic acid, TT injection)

249 (59%) were examined; 101 at home,  
83 at government institutions and  
65 privately

247 (59%) received iron; 201 said they took all the pills

252 (60%) received TT; 45 said they had one dose,  
60 said they had two doses,  
147 said they had three or more doses.

143  
TABLE VIII.1

Maternal and Child Health Services in the Project Area  
Calculated from Level 2 Indicators. Prepared by the  
Project Organisation for the 1985 Evaluation

				a)	b)	
<u>No. of Districts Reporting</u>	<u>Percent of Women Receiving Services</u>		<u>Abso- lute change FY 81/2 84/5</u>	<u>Services per HW(F) per year</u>		
	<u>FY 81/82</u>	<u>FY 84/85</u>		<u>FY</u>	<u>FY</u>	
				<u>81/2</u>	<u>84/5</u>	
				<u>n=793</u>	<u>n=1,297</u>	
Antenatal visits	2	176%	216%	+ 99,078	401 322	
Institutional deliveries	1	n.a.	2%	n.a.	n.a. 3	
Home delivery attended by a female HW	c 1	17%	27%	+ 13,255	c 52 c,e 43	
Postnatal visits	2	94%	152%	+122,740	215 226	
Mothers IT:						
First dose	2	39%	76%	+ 75,681	88 112	
Second dose	2	32%	59%	+ 54,835	74 87	

- a) The denominator (number of pregnant women) is 180,409 for 1981 and 192,792 for 1985. These figures are calculated using the 1981 population data and annual growth rates cited in the PO's Notes for E86, and a CBR of 29/1,000 (see Appendix 4). The calculation assumes that visits are evenly distributed among the target group and thus maximizes the estimate of coverage.
- b) The number of HWs(F) is those in position at HSCs and PHCs. This has made the denominator bigger. It is not known whether the work of PHC-based HWs(F) is included in the data; if it is not included, the estimate of services per HW(F) is smaller than if PHC staff's work were included.
- c) South Arcot only; Salem data did not separate institutional and domiciliary deliveries, so were omitted. Number of HWs(F) in South Arcot was 358 in 1981, and 735 in 1985.
- d) Data not available for 1981-82, so increase between FY 81/82 and FY 84/85 was not calculated.
- e) Combining institutional and domiciliary deliveries, the number of deliveries attended in both districts of the project area in 1985 was 46 per HW(F).

TABLE VIII.2

a)

Services Provided by 52 HWs(F) during the Month  
before Evaluation Field Work

b)

<u>Type of Service</u>	<u>Data</u> <u>not</u> <u>avail-</u> <u>able</u>	<u>No.</u> <u>with</u> <u>zero</u> <u>activity</u>	<u>No.</u> <u>reporting</u> <u>activity</u> <u>(%)</u>	<u>Monthly Activity</u>	
				<u>Per</u> <u>Active</u> <u>HW(F)</u>	<u>As</u> <u>Per</u> <u>Norms</u>
Antenatal visits	2	1	49 (94%)	22	36
TT1 doses	2	6	44 (85%)	9	12
TT2 doses	2	14	36 (69%)	8	12
Deliveries	2	14	36 (69%)	3	6
Postnatal visits	7	2	43 (83%)	28	36
Immunizations					
DPT1 < 5 months	8	24	20 (38%)	8	12
DPT3 < 1 year	15	28	9 (17%)	15	12
Family Planning:					
Male sterilization acceptors	2	47	3 ( 6%)	1	3 OR
Female sterilization acceptors	2	23	27 (52%)	2	3 OR
Oral contraceptives (new acceptors)	3	39	10 (19%)	3	39 OR
IUDs inserted	4	35	13 (25%)	2	9 OR
Condoms (new acceptors)	7	38	7 (13%)	8	36 f)

a) Includes 27 MPWs, 8 ANMs and 17 MAs. Excludes data from one MA working at a mini-PHC, and one ANM who was on leave during the previous month. The 27 MPWs include one partial interview.

b) The average level of monthly activity reported by the HW(F) during interviews in February 1986 is calculated only for those HWs who said they had provided that particular service. Thus by leaving out all the HWs who reported zero activity the previous month, these estimates indicate what

an active health worker is currently providing. The overall estimates of service activity in the project area are of course lower. Norms are calculated using a CBR of 29/1,000, a catchment area of 5,000, and schedules of services and targets described in the text.

- c) Two had run out of supplies.
- d) Three had run out of supplies.
- e) Norm refers to cycles distributed, not new acceptors.
- f) Norm is 36 users per month (72 condoms per user per year).

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Of the 312 women reporting any antenatal care, less than half (135) were examined by a health worker, even though the level of activity reported by three-quarters of the HWs(F) is sufficient to cover every single pregnant woman in the catchment area with an antenatal visit. The difference between coverage measured from household data and estimates of potential coverage based on the HW(F)'s reported level of activity is partly explained by her making more than one visit to a subset of the target group of pregnant mothers, for example to give a second dose of TT.

Of the 135 mothers examined by a health worker, three-quarters (101) reported that the HW or HA had done the AN examination during a home visit. It would seem that the health worker sees most of her antenatal patients during outreach work conducted on a house-to-house basis. This means that in order to deliver antenatal services, she is carrying TT, needles, syringes, and iron and folic acid tablets house-to-house.

Factors contributing to low utilization of the services offered by the HW(F) include the reliance upon house-to-house visits, which are currently necessary if health workers are to reach their targets; but clients will not bother to go to an ANC clinic if they can get the service delivered in their houses. Low utilization of the HSC may also be due to the perceived quality of the service offered by the HW(F) and the expressed preference for private services (see Section 6.3.1).

A substantial number of mothers (116/420) went further afield for antenatal services; 5% of the mothers surveyed had been examined at the PHC, 6% had been to a government hospital and 15% to a private facility. These services were often sought following advice to go for an antenatal check-up; 96 (23% of sample) said they were advised to go and of these, 20 said that they refused

to go. Another 70 mothers reported going for a check-up on their own initiative. Most mothers (58) said they had gone, or been told to go, to the government hospital (general, taluk or district); private practitioners were the referral point in another 40 cases, followed by PHC (21) and HSC (17). For the minority of mothers who refused to go, fear of the health facility was the reason most often given (9/20 cases).

When asked if they had been given iron/folic acid tablets, several mothers said that they had been given tablets (yellow, white, red) but did not know what they were. Almost two-thirds (64%) of the 247 mothers given pills received less than 2 months' supply; 31% of them received less than 1 month's supply.

A few women said they had been given an injection during their pregnancy, but did not know what it was. A small number (4% of sample) said they were offered TT but refused it, mostly because they were frightened (10/15). The majority of women reporting any doses of tetanus toxoid said they received 3 doses or more (58% of 252); both government and private providers were following this practice (only 37 women received any TT doses from private sources). Until recently, the 60TN protocol for antenatal care specified that a pregnant woman should receive 3 doses of tetanus toxoid and the antenatal care delivered during the period in which the mother was pregnant with the index child appears to have been following this schedule. The 60TN protocol has now been changed to 2 doses. However, several HWs said that they followed the 3-dose schedule. Since the HW(F)'s official reporting formats do not provide space for TT3, it is a mystery where these doses are reported by her and where they eventually show up in the statistics. The Quarterly Progress Report for March 1985 shows TT3 as zero for South Arcot; this item is not included for Salem. The same source shows that 74% of the number of women registered as antenatal cases received TT1, and 67% received TT2.

Table VIII.3 summarizes coverage for various combinations of the components of antenatal care. In the sample of 420 women surveyed, 326 (78%) were contacted for ANC; the remaining 94 (22%) were not offered any antenatal service. Of the 326, 14 (3%) refused what they were offered (iron tablets or an injection). The remaining 312 women (74%) had received one or more ANC services, yet only 166 of them, or 40% of the sample, received iron and at least one dose of TT and were examined. Thus in almost half of the antenatal contacts during which services were provided (147/312), one or more components of the ANC protocol is being left out. Counting only those who received at least one

month's supply of iron, the number of women receiving these three services falls to 120 (29% of sample). The HW(F) appears to provide a more complete service than the women received from other sources, in spite of her shortages of iron/folic acid; 69% of the women she examined also received both iron and TT. By comparison, 66% of women examined by private practitioners, 62% of women examined at government hospitals and 61% of those examined at PHCs received both iron and TT.

TABLE VIII.3

a)

Percentage of Women Receiving Specific Antenatal Services  
(n=420)

		<u>One or more doses of TT:</u>				<u>Total</u>
		<u>No iron or TT</u>	<u>Iron given</u>	<u>No iron</u>	<u>Iron given</u>	
All antenatal services received	b)	6%	9%	10%	50%	74%
Not examined during antenatal contact	c)	-	2%	2%	11%	15%
Was examined during antenatal contact	d)	6%	7%	8%	40%	59%
Examination was:						
- at home		2%	4%	2%	16%	24%
- at government facility		2%	3%	2%	13%	20%
- at private facility		1%	*	4%	10%	15%

\*) Less than 1 percent.

a) Data pertain to 1984.

b) This is the sum of the next two lines.

c) There are no cases in this category since the table shows percentages of women who did receive one or more antenatal services.

d) Sum of percentages does not tally due to rounding.

The household survey data on antenatal coverage were also analyzed according to socio-economic status (see Appendix 2.2 for a description of the methodology). Table VIII.4 shows that for every component of antenatal care, mothers in the better off households consistently reported receiving more services than the less advantaged members of the community.

TABLE VIII.4

Percentage of Mothers Receiving Antenatal Services,  
by Socio-Economic Status

	a)			
	<u>High</u> (n=52)	<u>Medium</u> (n=170)	<u>Low</u> (n=196)	<u>Total</u> (n=420)
Antenatal examination	71%	64%	52%	59%
Advised to go to a health facility during her pregnancy	29%	26%	18%	23%
Went to a health facility on her own initiative	23%	20%	12%	17%
Offered TT immunization	85%	71%	55%	65%
Given iron/folic acid	69%	63%	53%	59%
Received an examination, TT and iron	56%	41%	34%	40%

a) Total is for the entire sample, but there were 2 cases where socio-economic status was not recorded.

The HW(F)'s job description includes weighing pregnant women, testing their urine for albumin and sugar, and estimating haemoglobin level. Half of the HSCs visited had adult scales in working condition, 57% had urine test strips and four-fifths had Tallquist Hb. chart. One-fourth of the HSCs had all three items (9 in Salem; 4 in South Arcot). (Details of the inventory of HSC equipment are discussed in Chapter V, Section 1; see also Appendix 10, Table 10.5.) There is no space provided in the MCH



Register (designed for the Management Information and Evaluation System) for recording weight unless the HW utilizes the remarks column for this purpose. No antenatal cards, retained by the mother, were in use.

The distribution of iron and tetanus toxoid are assessed using 60I/60TN targets, achievement of which is sometimes reported in the quarterly progress reports. However, this information has not been presented in a comparable format (e.g. sometimes only one district) and the time periods referred to are unclear (e.g. is the target for the quarter or for the year?). Cumulative achievement (year-to-date) was not shown. These targets are determined not only by the size of the eligible population, but also by supply considerations and other parameters, so achievement of targets cannot readily be translated into coverage indicators. For example, the project area's annual target for "TT2 + Booster" given in the Quarterly Progress Report for September 1985 is 28% higher than the number of pregnant women estimated from the PO's figures (see Appendix 4). The information that 22% of the "TT2 + Booster" target has been met thus needs to be translated into coverage of the target group, i.e. pregnant women. (See Section 8 below for a discussion of the use of targets.)

The Project has recently begun to review the existing protocols for antenatal care, e.g. regarding the schedule of visits and the HW's responsibilities during each visit.

It is recognized that final determinations regarding job descriptions and lists of equipment and drugs are beyond the role of the Project. However, it is recommended that the ANC protocols which the HW(F) is expected to follow be further clarified with respect to both the components of antenatal care, and the supplies, records, equipment and skills needed to provide effective services. The ANC activities which a male HW can perform should be included in this exercise.

In particular, the practice of giving three or more doses of tetanus toxoid during one pregnancy should be discontinued immediately. Two doses should be given during the first pregnancy, and only one dose should be given to women who were immunized during their previous pregnancy, providing that the HW can establish that the woman has received TT before.

Innovative approaches to encourage the dais' assistance in identifying and registering antenatal cases should be pursued, drawing on the experience available from other projects. The development of these approaches should pay particular attention to identifying underserved members of the community, and to providing the full range of antenatal care. If payment to dais is offered, then proper mechanisms for making prompt payment in full must be established and implemented (see Chapter VI).

Steps should be taken by the Project and the State to establish regular ANC services at a fixed point in each of the villages in the HSC catchment area. Particular attention should be given to reasons for good or poor attendance at the clinics, so that steps may be taken to improve utilization.

HWs' skills in taking an obstetric and medical history, examining a pregnant woman, identifying high-risk pregnancies, and giving sound advice on diet, hygiene, etc. should be strengthened throughout the project area using on-the-job practical training (e.g. at the sector headquarters) reinforced by an aide-memoire or check list of the protocols which the HW should follow in providing ANC in a holistic approach. These skills do not depend on expensive equipment or supplies.

Supplies of iron and folic acid and of tetanus toxoid should be made available to HSCs regularly and in quantities sufficient to enable the HW to provide the established schedule of treatment to all pregnant women.

Given that the length of the cold chain may be long and that it may be broken on a number of occasions before the vaccine reaches the HSC (see Appendix 10, Tables 10.6 and 10.7), tetanus toxoid should not be kept at HSCs without any protection; arrangements should be made to enable the HW(F) to collect TT weekly so that she can use it for 2-3 days from a vaccine carrier.

## 2. Deliveries

### 2.1. Providers

The majority of deliveries in the project area are expected to take place at home, attended by dais, who are usually resident in the village. One of the Project's main activities has been support of the dai training programme, which is designed to prepare and equip experienced dais to conduct normal deliveries using aseptic techniques, and to identify and refer complicated cases from the village to the HW(F) at the HSC, or on to the PHC.

The HW(F) and the HA(F) are taught midwifery in their basic training. The HW(F)'s role in deliveries is specified as the supervision of dais, and assisting them whenever the dais ask for help; referral of difficult labours and abnormal newborns to the PHC; attending about half the deliveries in their catchment area. This norm implies about 5 deliveries per month. However, the size of the village in which the HSC is located varies considerably (see Appendix 12, Profile of Villages Surveyed), and the number of deliveries that the HW might in practice be called to attend varies between 1 and 6 per month, depending on travel time between her HSC and the communities in her catchment area.

Referred cases can be treated appropriately at the PHC if the necessary facilities are available. If the case is too complex it is sometimes referred to the Taluk or District Hospital, depending on accessibility.

### 2.2. The Delivery Programme

Given the physical and social environment, travel time and the health resources available, the programme recognizes that the majority of deliveries will take place at home, and is designed to increase the number of safe and aseptic deliveries, with referral of complications. The State intends that the HSC building should be used for deliveries. However, inventories at HSCs conducted by the evaluation team showed that the necessary equipment was only available in one-fifth of the HSCs surveyed, and only 1 of the 11 equipped HSCs also had fuel for the stove (see Chapter V, Section 1). The HW(F) should have identified abnormal cases during antenatal care, and referred them to the appropriate facility; but if a normal case develops into one which she cannot handle, the woman has to be referred to the PHC

or hospital. This is a problem since suitable transport is typically not available, which makes it extremely difficult to transfer an emergency case safely.

### 2.3. Services Provided

Data on where deliveries take place vary considerably, depending on their source (see Appendix 15, Table 15.2). Service statistics report that between 91% and 98% of deliveries take place at home, whereas data collected during household surveys indicate that a larger proportion of deliveries take place in health facilities (18% in the Benchmark Survey; 39% in the evaluation's household survey). This may be partly accounted for by under-reporting in the service statistics of deliveries which take place in hospitals or private facilities; for example, the format used by the PO for the quarterly progress reports only includes deliveries attended by HWs(F) and dais, and deliveries at PHCs.

In the evaluation survey mothers were asked who conducted the delivery of the index child (between Pongal 1984 and Pongal 1985), and where the delivery took place. Table VIII.5 shows that three-fifths of the deliveries (258/420) were at home and 62% of these (161/258) were attended by dais. However, in less than half of these cases (71/161) the mother said that the dai was trained. Out of all home deliveries, 39% (101/258) were attended by trained personnel (dais, HWs or HAs).

Of the 162 deliveries in health facilities, the majority (59%) were in government facilities, but only 5 deliveries were at the HSC. Private institutions were used by 16% of the 420 mothers surveyed.

Altogether, 263 deliveries (63% of sample) were attended by trained personnel (including dais) and almost half (46%) of the deliveries were attended by medical personnel, whether government or private.

The percentage of deliveries attended by health workers and other personnel, reported from several sources, is shown in Appendix 15, Table 15.3. For the catchment areas surveyed during the evaluation, 15% of the estimated number of deliveries were attended by the HW(F), based on her records for the previous month. This figure is similar to that in the Quarterly Progress Report for March 1985 (11%), but twice as high as the data collected from mothers, who reported 7% of deliveries attended by the HW(F) (see Table VIII.5).

One-fifth of the mothers (21%) reported some difficulty with their delivery, most frequently prolonged labour (47/87).

TABLE VIII.5

Evaluation Survey Data on Who Conducted the Delivery,  
by Place of Delivery

<u>Person</u>	<u>Home</u>	<u>Government</u>	<u>Total</u>	<u>Percent</u>
	a)		a)	
Relative, neighbour, no-one	67	-	67	16%
Untrained dai	79	-	79	19%
Dai, do not know if trained or not	11	-	11	3%
Trained dai	71	-	71	17%
HW(F)	20	9	29	7%
Other health professional in government service	10	86	96	23%
Health professsional in private institution	-	-	67	16%
Total	258	95	420	100%

a) In two cases the mother delivered alone. In 3 cases a neighbour attended the delivery.

#### 2.4. The Dai's Role in the Delivery

Over one-third (38%) of all deliveries were attended by dais, and fewer than half of these (44% of 161) were conducted by trained dais. This is comparable to data in the Quarterly Progress Report for March 1985 which indicate that in 51% of deliveries attended by dais and others (not medical personnel), the dai was trained. These findings suggest that there is a pool of active, untrained dais who could be recruited for training (see Chapter IV, Section 1.4).

Interviews with the sample of 47 trained dais showed that their practices regarding care of the mother and baby were generally sound, but aseptic delivery techniques were used by only 13% of those interviewed. This meant that in 17% of deliveries conducted by the sample of trained dais, the cord was cut with a sterile instrument. This represents about 5% of the 228 home deliveries conducted by dais and untrained relatives.

About two-fifths of all home deliveries (100/258) were attended by trained dais or health workers; there was no consistent difference between the three socio-economic groups, with medium status having the highest proportion of home deliveries (46%) attended by trained staff.

The combination of very low compliance with sterile procedures and the complete failure to replenish consumable supplies (see Chapter V, Section 2) means that most trained dais are not practising the aseptic delivery techniques promoted in the curriculum. The Project's failure to identify and train about half the practising dais means that the dai's role in registering pregnant women with the HW(F) is not fulfilled; since families in the lower socio-economic group are less likely to seek antenatal care on their own initiative (12% compared with 23% for the better off families), and more frequently reported receiving no antenatal services at all (see Table VIII.6), they were less likely to have had a high-risk pregnancy identified, monitored and referred for appropriate care. In these families, the delivery took place at home twice as frequently as in the highest socio-economic group (71% and 35% respectively). This cumulative risk could be effectively reduced by including dais more actively in identifying all women who are eligible for antenatal care.

TABLE VIII.6

Percentage of Mothers Who Did Not Receive Antenatal Care  
and Who Delivered at Home, by Socio-Economic Status

	a)			
	<u>High</u> (n=52)	<u>Medium</u> (n=170)	<u>Low</u> (n=196)	<u>Total</u> (n=420)
No antenatal care at all	8%	17%	31%	22%
Mother delivered at home	35%	59%	71%	61%

a) Total is for the entire sample, but there were two cases where socio-economic status was not recorded

The dais' role in maternal care needs to be strengthened. This can be done through the following interventions (described more fully in the referenced chapters):

- identifying practising dais who currently provide natal care (see Chapter IV, Section 1.4)
- training them in aseptic delivery techniques (see Chapter IV, Section 2.1)
- supplying them regularly with appropriate items (see Chapter V, Section 2)
- following up their activities with frequent contact and regular payment of delivery fees (see Chapter VII, Section 1).

The role she has traditionally filled - during and immediately after delivery - needs to be expanded, so that she can become a stronger link between the community and maternal and child care service providers. Innovative approaches to building community understanding and acceptance of such an expanded role need to be developed, drawing on the experience of other projects.

## 2.5. The Family's Role in the Delivery

Table VIII.5 shows that in 16% of the deliveries surveyed, a relative attended the delivery. One-fourth of the villages surveyed had no resident dais, trained or untrained, and families who wanted a dai sent word to a neighbouring village when her services were needed. In a few cases (9/161) she arrived after the baby had been born. The following recommendation seeks to strengthen links between the HW, the dai and the family who would be given tangible, appropriate and safe assistance from the health system, irrespective of where the delivery takes place.

Where family members attend the woman during labour and delivery, a strategy for ensuring good management of labour and aseptic deliveries needs to be developed. For



example, the HW(F) should advise the pregnant woman and her relatives about the preparations they should make (e.g. wash and sun-dry cloths, purchase a new razor blade, proper hand washing, etc.).

This strategy should be developed in conjunction with the experimental programme in which the HW(F) gives the pregnant woman a disposable delivery kit for the family or dai to use.

Based on field trials and experience from other areas, an evaluation of this programme should be designed and carried out, including an assessment of the contents of the kit and the development of guidelines for HWs(F), to explain the use of the kit to families and to dais. The HW(F)'s guidelines should be no more than one page, should take into account that most mothers and dais are not literate, and for dais should take account of the difference between the DDK items and those which they were originally trained to use.

After the evaluation, the programme should be modified if necessary and extended to cover the whole project area.

## 2.6. HW(F) Performance

Of the 53 HWs(F) interviewed, more than one-fourth reported that they had not attended any delivery in the last month. Those who had attended a delivery did an average of 3 per month (see Table VIII.2).

Of those interviewed, 47 (89%) reported that they were called out for problem deliveries. The HWs were asked how they would recognize and handle five selected complications of pregnancy and delivery; their descriptions of how to handle individual complications was generally good (e.g. 98% answered correctly for eclampsia, 94% for prolonged labour, 91% for retained placenta, 83% for post partum haemorrhage and 70% for puerperal fever). However, fewer than half (45%) were judged capable of handling all five of these complications appropriately (see Appendix 7, Table 7.2). The equipment supplied to HSCs is not sufficient to enable the health worker to conduct deliveries in optimal conditions; only one-fifth of the HSCs surveyed had all 5 items of basic equipment (see starred items in Chapter V, Table V.2),

and only 1 of these HSCs also had fuel so that the scissors could be sterilized. Nor are the necessary supplies always available; half of the HSCs were stocked out of gauze and one-third were out of antiseptic lotion (see Chapter V, Table V.9).

The HW(F)'s skills in identifying high-risk cases during pregnancy should be strengthened, and her rapport with the community improved so that high-risk cases will follow advice to deliver at the PHC or hospital.

The HW(F) should be properly equipped and regularly supplied with appropriate drugs to enable her to carry out deliveries. Where her knowledge is deficient, she should be retrained to recognize complicated cases and refer appropriately.

Residential accommodation (simple room, relatives to provide bedding, food etc.) should be provided at the facility where high-risk cases are delivered, so that these women can travel to the facility before their labour begins, and stay there until they have delivered.

The function of the HSC should be reassessed with respect to its capacity to handle deliveries and the drugs and equipment needed to enable the HW to conduct deliveries there. Chapter V contains recommendation on equipment (Section 1) and on drugs and medical supplies (Section 4).

### 3. Postnatal Care

#### 3.1. Providers and Protocol for Postnatal Care

The trained dai is supposed to check mother and baby for any complications or infections, and refer such cases to the HW(F). The dai may also massage and bathe the mother during the first week after birth. The HW(F) is responsible for making three postnatal visits (once during the first week, once during the second week and the third visit after six weeks) to check on the mother and baby, to advise about care and feeding of the newborn, and to issue iron and folic acid.

### 3.2. Postnatal Services

Estimates of coverage for postnatal care are shown for several sources of data, in Appendix 15, Table 15.4. The Level 2 indicators show that according to service statistics, the level of postnatal visiting activity has increased from less than 1 visit per woman in FY 81/82, to 1.5 visits in FY 84/85. Data collected during interviews at HSCs show that the average level of postnatal activity per HW(F) is sufficient for her to visit the entire target group in her catchment area at least twice, assuming that all visits are equally distributed between all postnatal women. Of the 45 HWs(F) with data, only 2 reported that they had made no postnatal visits during the previous month. The remaining 43 HWs(F) made on average 28 postnatal visits per month, which is more than the number of antenatal visits (see Table VIII.2). Coverage of postnatal services in the catchment area of 52 HSCs surveyed (including 7 with no staff at the time of the survey and excluding 8 with staff but no data) was just under 2 visits per postnatal woman.

All but one of the HWs(F) surveyed said they covered the topics of diet and breastfeeding when giving mothers postnatal advice (see Appendix 7, Table 7.5). Three-quarters of the trained dais said they advised the mother about breastfeeding, but one-third of these appeared to be giving incorrect advice (see Appendix 9, Section 6). Effective care during this period of greatest risk for the newborn is essential if health services are to have any effect upon child survival. (The death rate for newborns from 0-7 days old in rural Tamil Nadu has been estimated at 48/1,000 live births; see An Analysis of Children in India, UNICEF, 1984.) However, the impressive level of postnatal visiting activity is not consistently connected with tangible services which ought to be provided to the same family during the next few months of the infant's life; coverage for family planning and child health services is discussed in Sections 4 and 5 below.

In order to improve the quality of care to the mother and her newborn child during postnatal visits, a simple check list should be established, as part of the MCH programme. During a visit, mother and child should be checked, the child weighed and its development monitored, and advice on breast feeding and diet given. The parents should be informed about when and where the child should be immunized, and about the different methods of contraception

available. A recommendation concerning a parent-held growth chart, which should be issued during a postnatal visit, is given in Section 5 below.

#### 4. Family Planning

##### 4.1. Providers in the FP Programme

Dais, HWs(F), HWs(M), HIs(FW), HAs, BHIs, HIs(G) and BEEs are responsible for motivating couples to accept a method of temporary or permanent contraception. All of these functionaries can distribute condoms according to GOI guidelines. In addition, the HW(F) distributes oral contraceptives. The HA(F) provides pills and inserts IUDs. Within the project area, Salem has been designated an "IUD" district. In addition, condoms are available through commercial outlets.

Sterilizations (vasectomies for men, laparoscopic tubectomies (LTT) for women) are offered at periodic camps, at sector and block level; the operations are performed by a mobile team of specialists from the district hospital. Classical tubectomy, requiring an overnight stay, is also available at PHCs with operating theatres. This operation can be done at any time if trained staff are resident at the PHC; otherwise it is offered periodically by staff from higher level facilities. Medical termination of pregnancy can also be performed at the PHC if trained staff are available.

Although the provision of services is through the Department of Health and Family Welfare, two aspects of the family planning programme are also within the purview of the Revenue Department. First, the District Collector can review targets and increase them; at one PHC, the evaluation team was informed that the Collector had doubled the annual target in January, leaving three months in which to find the number of cases which the State expected staff to find over the whole year. Second, the Revenue Department and the Department of Social Welfare allocate targets for finding cases to their village level personnel - the Village Administrative Officer and school teacher, and the Balwadi (preschool) attendant respectively. These cadres are not trained or equipped to offer the full range of family planning counselling and services, and their targets are restricted to motivating people to accept sterilization.

Various incentives, usually financial but sometimes in kind, are offered both to case finders/motivators and to acceptors, if the latter get sterilized. GOIN pays Rs.50 to the motivator of a sterilized case. In one instance, it was reported that the BDO was paying his staff an additional Rs.100 per case; in another, women interviewed during the household survey reported that the BDO had offered them interest-free loans to buy land if they got sterilized. GOI gives a financial prize to the State with the best performance in family planning.

#### 4.2. Coverage of Family Planning Services

The Quarterly Progress Report for March 1985 gives data on the percentage of HWs(F) maintaining registers of eligible couples (but not how many were up-to-date), and on the absolute numbers of sterilizations, IUD insertions, condoms distributed and monthly cycles of oral contraceptives distributed. These data show that since the Project began, all family planning services have increased substantially. The Project Document and the Baseline Survey report that 2.8% (1979) and 1.7% (1983) respectively of eligible couples were using effective methods of contraception.

Data presented in the Quarterly Progress Report for March 1985 indicate that eligible couples (i.e. couples in which the wife is of childbearing age) comprise about 19% of total population, and that the percentage of eligible couples using an effective method of contraception is 16% "so far" (period referred to is not specified). The following summarizes that report's data on the number of eligible couples using an effective method of family planning in the project area "so far:"

Total population:	6,648,000 (calculated from data supplied by the PO; see Appendix 4)
Number of eligible couples:	1,269,618 (19% of total population)
Of which, protected so far:	199,180 (16% of eligible couples)

- 90% have been sterilized, of which 22% (39,808/178,467) underwent their operation in the 3 months ending March 1985
- 5% are using condoms
- 4% are using an IUD (Lippes loop or Copper T)
- 1% are using oral contraceptives.

In the evaluation survey, 24% of 415 couples reported using a method of birth control:

- 90 (21%) of the mothers had been sterilized
- 3 were using IUDs
- 1 was using oral contraceptives
- 1 husband had a vasectomy
- 1 was using condoms
- 4 couples were using other methods (rhythm, abstinence).

Over the whole sample, 53% of 416 couples said that they had been contacted about family planning. However, in 84% of those 221 contacts the women said that the discussion was only about sterilization. Of the 100 current users, 25 said that no-one had contacted them about family planning. This may imply that a substantial proportion of users are motivated to practice family planning without the intervention of the health worker or other motivators. In 2 out of the 60 villages in the sample, all seven households surveyed had been contacted about family planning; in one village, none of the seven households had been contacted.

The overwhelming reason given during the household survey for not using family planning was that the couple wanted more children (43% of 315 non-users), and 9% were currently pregnant. Other reasons were that they were scared for the woman to be sterilized (9%), that she was too weak or ill to have the operation (5%), and that she would get sterilized later (8%). Six women (2%) said they were still breastfeeding so no method was necessary. Three (1%) said they wanted pills but there was no supply. Almost one-tenth of the non-users (29/315) said that they did not know of any method of family planning.

When contact by a HW was analyzed by number of deliveries, it became clear that families are not routinely contacted during the postnatal period about spacing pregnancies; only 22% of couples who had had one baby had been contacted, compared with 50% of couples with two deliveries, and 70% of those with three or four deliveries. However, 25% of 53 couples with 5 to 12 deliveries reported that no-one had contacted them about family planning.

When data on family planning contacts and current users were analyzed by socio-economic status, there was not much difference between the three groups in terms of users (see Table VIII.7). However, a larger proportion of the lowest socio-economic group had been contacted about family planning (57%) and the contact was more frequently reported to be exclusively about getting sterilized, with no other method mentioned. Finally, a larger proportion of this group (26%) had been sterilized than any other group.

TABLE VIII.7

Percentage of Couples Contacted for Family Planning, and  
Current Users, by Socio-Economic Group

	High (n=51)	Medium	Low	Total a)
Contacted about family planning	43%	b) 51%	b) 57%	b) 53%
Contacted about sterilization only	33%	b) 43%	b) 49%	b) 44%
Using a method of family planning	27%	c) 21%	c) 26%	c) 24%
Sterilized	18%	c) 19%	c) 26%	c) 22%

a) Total is for the entire sample, but there were 2 cases where socio-economic status was not recorded.

b) n=416, i.e. excludes 4 cases with missing data. For high group, n=51 (1 missing); medium n=169 (1 missing); low n=194 (2 missing)

c) n=415, i.e. excludes 5 cases with missing data. For high group, n=51 (1 missing); for medium, n=167 (3 missing); for low, n=195 (1 missing).

#### 4.3. Services Provided

Contrary to GOI's guidelines for dais, the quarterly progress reports state that dais are not allowed to distribute condoms. In



the evaluation survey, dais were asked if they motivated women to use a family planning method; almost half (45%) said they did. Several HWs said that the dai is helpful in identifying possible FP acceptors for her.

The HW(F) in the project area has a target of 3 sterilizations (male or female) per month; in place of this target she can persuade 9 women to have IUDs inserted. When the HWs(F) were questioned about distributing oral contraceptives, the majority (42 out of 53) said they could prescribe pills, but only 6 had a check list to remind them of contra-indications.

Half of the HW(F) surveyed reported female acceptors for sterilization, and one-fourth reported one or more IUD acceptors during the previous month (See Table VIII.2). One-fifth of the HWs (10 out of 49 reporting) distributed oral contraceptives to new acceptors, and only one-tenth of the sample distributed condoms; 7 said they never did so. Three HWs(F) reported vasectomy acceptors. Data on family planning follow-up were reported in an inconsistent manner (for example, the number reported is sometimes total family planning cases, sometimes follow-up of sterilization cases); less than half (24) of the 52 HWs who could furnish data on last month's activities reported any follow-up of family planning cases. Four HWs reported that they had run out of supplies (pills and/or condoms) the previous month, and therefore saw no new or continuing acceptors.

When HWs were questioned about whether more people asked them for contraceptives than they could supply (due to shortage of stock), many answered that there was no demand for pills or IUDs. In fact 38% of the HSCs surveyed (and 58% of the PHCs) were stocked out of oral contraceptives at the time of the evaluation fieldwork; condoms were out of stock at 71% of HSCs and 54% of PHCs (see Chapter V, Tables V.6 and V.7). Under these circumstances it is not feasible for the HW(F) to advise couples to use temporary spacing methods when she has no supplies (or worse, in the case of oral contraceptives, irregular and inadequate supplies). Consequently, methods of spacing pregnancies are not usually offered; 84% of those who said they had been contacted about family planning reported that the only method they were told about was sterilization, and 15% of non-users said that they did not want to be sterilized or were too weak to have the operation. Only 1% of non-users said they wanted contraceptive pills but could not get them due to absence of stock.

The lower priority placed upon temporary spacing methods is also reflected in the finding that only 1% of surveyed couples were using a temporary method (IUD, pills, condoms) whereas 22% had been sterilized. Since a substantial proportion of HWs(F) have no pills or condoms, they do not contact all eligible couples, but concentrate their efforts on couples who are judged ready to consider limiting the size of their family permanently; only one-fifth of mothers with one delivery and half of those with two had been contacted for family planning. The virtual absence of spacing methods in the schedule of family planning services offered in the project area means that there is a concomitant loss of benefits to both the mother and her children.

The health workers commented that women who want to limit the size of their families are more interested in sterilization. The women may see this as a solution which entails fewer unpleasant side-effects than those associated with the pill or IUD; whatever method they use must not interfere with their work, and sterilization is more popular than extended use of the pill or the IUD. However, incidents of serious and sometimes fatal results of sterilizations have also been reported (see Appendix 15.10) and diminish the credibility of this method of family planning also.

The assignment of targets to individual workers who are under the administrative and supervisory control of separate government departments, yet working in the same village, inevitably leads to competition for cases. Even within the health service, there is competition between the HW(F) and her supervisor (who works in the same catchment area), and some staff at the PHC. For example, the HI(G) and the BEE who have no specific catchment area are expected to fulfill personal targets even though their formal job responsibilities do not expose them to a continuing relationship with patients which should include the full range of primary health services.

The urgency to register family planning cases, and sterilization cases in particular, has created an atmosphere of harassment and fear of reprisals from superiors. Instead of receiving constructive support from the health system, the HW(F) may have disciplinary action taken against her, and be threatened with suspension if she fails to meet her family planning targets. Threat of suspension or transfer was also reported by male workers and MOs at PHCs, and hangs over health personnel all the way up to the DHO. The seriousness of such threats and reprisals has led some HWs(F) to take extra steps to recruit women to

accept sterilization, which sometimes result in their being out of pocket. For example the HW(F) usually accompanies the woman to the camp or hospital, making sure that her welfare is attended to, and that the case is registered in her name; after the operation she brings her back. Other examples of larger financial commitments have been found (see Appendix 15.10).

One of the most unfortunate results of health workers vying for cases with other workers in the village (e.g. the Balwadi attendant) is that cooperation between them is discouraged. If such cooperation were promoted, it would make many of the health worker's tasks much easier and could contribute greatly to the advancement of the programme.

Another unfortunate effect of the pressure to recruit acceptors is that some parents are antagonized or frightened, and become less willing to use other preventive health services. When the occasional operation goes wrong, the entire community knows, and their antagonism devastates any rapport the HW(F) had established (see Appendix 15.10). So although family planning is an essential component of primary health care, the emphasis placed on it has skewed the Project away from its central objective of strengthening integrated health services.

A reorientation of family planning activities should be worked out, whereby a comprehensive programme, including temporary and permanent methods of contraception, will be offered by trained staff with proper equipment and sufficient supplies to run the service with the requisite degree of continuity and follow-up. These activities should be integrated with other primary health care services.

Given the problems with contra-indications and side effects for oral contraceptives and the IUD, consideration should be given to also promoting the use of barrier methods of contraception to a far greater extent. In particular, barrier methods for use by women should be considered.

All eligible couples should be given information about temporary and permanent methods of contraception. Motivational effort should be directed towards demographi-

cally significant groups. If the couple wants more children, they should be encouraged to space the next pregnancy.

Proper records of sterilization clients should be kept at block level; these records should be used to follow up all cases.

In cases of sterilization failures, the health worker or person who motivated the case should not be left to explain the failure without support from the staff directly involved in the operation and post-operative care.

Sterilized couples and their children should be treated as a special target group for improved MCH coverage, with special emphasis on a sterilization follow-up programme including a child health component.

## 5. Child Health

### 5.1. Providers in the Child Health Programme

The elements of the programme include nutrition (breastfeeding and weaning, supplements of Vitamin A and iron, identification of malnourished children under 5), and immunization against tuberculosis, diphtheria, tetanus, pertussis and polio. (The child health programme also includes school-age children but coverage of this target group was not evaluated.) The dai's role is limited to advice on infant feeding and motivating parents to have their child immunized. In the Model Plan for area health projects, the community health guide should identify malnourished or anaemic children, assist with giving Vitamin A, and work in conjunction with the MPW to prepare for and run immunization sessions, but in Tamil Nadu the community health guide scheme has not been adopted. The HW(F) and HA administer immunizations, assisted by the male vaccinator if one is in position.

## 5.2. Child Health Status

*Two indicators of child health status were used: the proportion of live births who died, and nutritional status measured by arm circumference and feeding practices. The infant mortality rate in the project area was 136/1,000 live births in 1981, and mortality among children 12-59 months was 48/1,000. The household sample surveyed during the evaluation was not suitable for calculating these indicators, since all of the mothers had a surviving child aged 12-23 months. However, information from their maternity histories indicates that 94 mothers (22% of sample) had had one (or more) live born child who later died; 14% of the live births recorded (152/1,110) had died. (This proportion is consistent with the rates of infant and young child mortality in the project area.)*

The mother was asked when she first breastfed the index child (i.e. how long after the delivery), and whether she expressed any milk. Two-fifths said they did not express any milk or only a few drops, and 30% started feeding within 48 hours. Based on what each mother said, during the interview the team made an assessment of whether the baby had been fed in such a manner that it benefited both from early establishment of suckling and from colostrum; one-fourth of those surveyed appeared to have been (see Table VIII.8).

In addition to delayed breastfeeding, two harmful practices regarding care of the newborn were found to be followed in the project area. Castor oil is fed to babies in the belief that their bodies need to be cleansed of impurities. Sugar water is given during the first 2-3 days until the "clean" breastmilk comes through.

The great majority of children (91% of 420) were breastfed for at least 9 months, and 46% were still being breastfed at 12-23 months old. Two-thirds were first fed something in addition to breastmilk (animal milk, rice, ragi porridge, weaning foods, etc.) before 8 months of age.

Many of the traditional weaning foods mentioned (ragi porridge, pongal, upma, etc.) were appropriate and nutritionally balanced. Many mothers said that the first food they gave their babies was "family diet".

TABLE VIII.8

Newborn Feeding Practices, by Place of Delivery  
(Percent of column total shown in brackets)

	<u>Home</u>	<u>Government</u>	<u>Private</u>	<u>Total</u>
Baby was first fed (n=231):				
within 24 hours	21 (10%)	20 (27%)	17 (35%)	58 ( 17%)
between 25-48 hours	25 (12%)	12 (16%)	8 (17%)	45 ( 13%)
more than 48 hours after delivery	165 (78%)	43 (57%)	23 (48%)	231 ( 69%)
Amount of fluid   a) expressed (n=235):				
none or only a few drops	71 (46%)	28 (62%)	14 (38%)	115 (49%)
some	46 (30%)	8 (18%)	10 (27%)	64 (27%)
a lot or all	36 (24%)	9 (20%)	11 (30%)	56 (24%)
Baby benefited from colostrum and early breastfeeding (n=410) b)	46 (18%)	34 (36%)	24 (38%)	104 ( 25%)

a) Excludes 47 mothers who expressed some colostrum, but how much was not recorded.

b) Information from the mother indicated that fluid was not expressed and breastfeeding started soon enough for baby to obtain full benefit from colostrum.

Nutrition status, assessed using upper arm circumference, was found to be adequate (more than 13.5 cm) in 62% of the 413 children measured; 30% were undernourished (12.5-13.5 cm) and 9% were in need of immediate intervention (arm circumference less

than 12.5 cm). These data are shown by caste in Table VIII.9, by socio-economic group in Table VIII.10 and by sex in Table VIII.11.

TABLE VIII.9

Nutrition Status of Index Children Assessed Using Arm  
a)  
Circumference, by Caste (n=413)

	b) <u>Scheduled Castes</u> <u>and Tribes</u>		<u>Other</u> <u>Castes</u>		<u>Total</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Less than 12.5 cm	14	11%	22	8%	36	9%
12.5 cm - 13.5 cm	35	27%	88	31%	123	30%
More than 13.5 cm	82	63%	172	61%	254	62%
Total	131	101%	282	100%	413	101%

a) Seven children (4 scheduled castes or tribes, and 3 other castes) could not be measured.

b) Includes 2 Muslims.

c) Percentages do not sum to 100% due to rounding.

The percentage of children in need of immediate attention is twice as high in the low socio-economic group as in the high group (11% compared with 6% respectively). Three-quarters of the high group were adequately nourished compared with just over half the low group (75% and 55% respectively). Arm circumference data analyzed by sex show that a larger proportion of girls is severely undernourished (11% compared with 7%). The proportion of well-nourished girls (52% of 189) is smaller than the proportion of well-nourished children in the scheduled castes and tribes sub-group of the sample (63% of 131), or in the lowest socio-economic group (55% of 194). Of the 420 children aged 12-23 months in the household survey, 46% were girls, which indicates an alarming difference between the sexes in child survival rates. The difference in nutrition status between the sexes may be partly due to a preference for sons, which reveals itself in differential care.



Comparable data on nutrition status (i.e. using arm circumference) from other sources were not available. Data for the State of Tamil Nadu show only 19% of children in the normal range of weight for age, with 49% mildly malnourished, 27% moderately malnourished and 5% suffering from severe malnutrition (UNICEF, 1984). Data from the Tamil Nadu Integrated Nutrition Project (TINP), which is implemented in six districts with relatively poor nutrition status, show that 13% of children aged 6-36 months were classified as severely malnourished (i.e. less than 70% of normal weight-for-age) in February 1983. After four years of growth monitoring, identifying severely malnourished children, health and nutrition education, and supplemental feeding until their growth rate was normal, the proportion classified as severely malnourished had been reduced to 8% (data for Madurai District with a target group of 130,096 children aged 6-36 months). The proportion of severely malnourished children appears to be roughly comparable with that found in the project area using a different method of assessment.

TABLE VIII.10

Nutrition Status of Index Children Assessed Using Arm  
a)  
Circumference, by Socio-Economic Status (n=413)

	High	Medium	Low	Total	b)
Less than 12.5 cm	3 ( 6%)	12 ( 7%)	21 (11%)	36 ( 9%)	
12.5 cm - 13.5 cm	10 (20%)	47 (28%)	66 (34%)	123 (30%)	
More than 13.5 cm	38 (75%)	107 (64%)	107 (55%)	254 (62%)	
Total	51 c) (101%)	166 c) ( 99%)	194 (100%)	413 c) (101%)	

a) Seven children could not be measured: 1 from high, 4 from medium and 2 from low.

b) Includes 2 cases for which socio-economic status was not recorded.

c) Percentages do not sum to 100% due to rounding.

TABLE VIII.11

Nutrition Status of Index Children Assessed Using Arm

a)

Circumference, by Sex (n=413)

	<u>Boys</u>		<u>Girls</u>		<u>Total</u>	
	Number	Percent	Number	Percent	Number	Percent
Less than 12.5 cm	16	7%	20	11%	36	9%
12.5 cm - 13.5 cm	53	24%	70	37%	123	30%
More than 13.5 cm	155	69%	99	52%	254	62%
Total	224	100%	189	100%	413	101% <sup>b)</sup>

a) Seven children (3 boys and 4 girls) could not be measured.

b) Percentages do not sum to 100% due to rounding.

5.3. Service Activity Related to Nutrition

In the sample of 420 children, 123 (29%) had been weighed; 73 (17%) were weighed at birth, and the same percentage (72/420) had been weighed subsequently. Only 22 children (5%) had been weighed both at birth and subsequently; thus follow-up of the baby's growth rate in relation to birth weight is rarely done. Growth charts for monitoring weight gain were reported for 6% of the children surveyed (26/416). Although 15 HWs(F) (28% of 53) said they weighed children or measured their arm circumference at the Balwadi or child health clinic, only 3 (6%) reported using a growth chart (i.e. the same as the percentage of surveyed children with a growth chart). Only 9 of the 15 HWs(F) who measured weight or arm circumference also offered nutritional advice, and another 6 gave advice at the Balwadi or clinic without measuring nutritional status. Thus 15 HWs (28%) described giving nutritional advice in a clinic setting. Half of the HSCs surveyed had scales for weighing small children (see Table V.2).

All but one of the 53 HWs(F) interviewed said that they advised mothers about breastfeeding and colostrum, and about the introduction of weaning foods. Table VIII.8 shows that the surveyed children who were born in health facilities (private or

government) were breastfed sooner than those born at home, but women who delivered in private facilities reported more frequently that they expressed some milk. Staff in government facilities gave more appropriate advice on this topic.

The surveyed children should have received at least 2 doses of Vitamin A, and a third dose if they had reached 18 months of age. However, only 6% (25/419) of mothers reported that the index child had received any doses (13 did not know). One factor which may contribute to such poor coverage is the practice of distributing Vitamin A once every 6 months, instead of routinely every month, at an established child health clinic, to all children who have just become eligible for their next dose (starting at 6 months of age, at 6-monthly intervals until 5 1/2 years of age). The low coverage also underlines the need to have complete registration of newborns so that the target group can be properly followed up.

In 18 (34%) of the HSCs, Vitamin A was in stock. The average stock level was 228 doses (excluding one HSC holding 843 doses). Another 4 (8%) had no Vitamin A, and in the remaining 31 (50%) it was not clear if stock was available.

The absence of a mechanism for distributing Vitamin A efficiently also restricts performance; only 9 HWs ran a child health clinic, and another 12 participated in activities at the Balwadi. These included distribution of Vitamin A, growth monitoring and treatment of minor ailments. However, the Balwadi is formally only open to children aged 2 to 4, and although it can provide valuable services for this age group, it does not include children in the critical weaning period.

In 1982, the Project designed and implemented a community nutrition project which was implemented in two blocks until June 1984. Appendix 13.2 contains a description of this scheme.

As part of the review of essential equipment needed at the HSC, lightweight portable scales should be considered. The scales should be of the spring balance type that can be hung up at the location chosen for outreach clinics in villages in the HSC catchment area. The scales should have a clock-face dial with a needle showing weight to the nearest 100 gm, up to 20 kg. The child sits in a cloth harness and the weight can be read accurately, even if the

child is upset and crying. This type of scale is far easier to use than the balance-arm design, and can be carried and used at child health clinics at fixed locations in the villages surrounding the HSC. It is more versatile than the infant scale as it can be used for older children.

The growth and development of pre-school children should be monitored from birth and recorded on a growth chart retained by the mother. Doses of Vitamin A and immunizations should also be recorded on the chart (see recommendations following Section 5.7).

#### 5.4. Immunization Coverage

A total of 60 villages were surveyed, and in each cluster, 7 index children aged 12 to 23 months were identified, using the methodology developed by WHO for EPI coverage surveys. (See Appendix 2 for a description of the methodology.) The period Pongal 1984 to Pongal 1985 (14 January 1984 to 13 January 1985) was used as a probe for identifying children who had passed their first birthday but had not yet reached their second birthday; it was thought unlikely that families would be able to provide exact birthdates. The immunization status of the 420 children surveyed was ascertained using the standard EPI format modified to suit local conditions; specifically, coverage for measles immunization was not estimated since this vaccine, although included in the GOI schedule of immunizations, had not yet been introduced in the field. With respect to coverage for BCG, DPT and OPV, the results of this survey are comparable to other surveys conducted using the WHO methodology. In addition, the index child's mother was asked if she had received tetanus toxoid when she was pregnant.

During fieldwork, the evaluation team visited a total of 3,706 households in order to find 420 index children. The average number of households per cluster was 61, with a range of 20 to 163.

In the sample of 420 mothers, 60% had received at least one dose of TT; 49% had received two or more doses (see Section 1.3). A child who had received one dose of BCG, three doses of DPT and three doses of OPV was classified as fully immunized. A child that had received at least one dose of any vaccine but not all seven was classified as partially immunized. Appendix 15, Table 15.5 gives details of immunization coverage by antigen and dose.

Of the 420 children surveyed, 6% were fully immunized and another 69% were partially immunized (22% of the sample had DPT3 and OPV3 but no BCG). Thus 25% of index children had received no immunization services. However, of the 24 fully immunized children who had received BCG and three doses of both DPT and OPV, 4 had completed the schedule after their first birthday. Thus coverage is reduced to 5%. Doses administered after one year of age have been included in the data analysis which follows.

The drop-out rate between DPT1 and DPT3 was 52%, and for OPV it was 54% (see Table 15.6 in Appendix 15).

Analysis on a village by village basis indicates that services had reached all but 2 of the 60 clusters surveyed (one in an isolated hill area); in these villages, none of the seven index children had received any doses at all. Of the remaining 58 clusters, 46 had at least one child with three doses of both DPT and OPV; but of these 46 clusters, 28 also had one or more children with no doses at all, indicating that utilization of services within the village is not uniform. In 19 clusters, all of the index children had received at least one dose of any antigen; in other words there were 41 clusters where at least one child had no immunization at all.

Coverage was similar between the two districts surveyed, even though Salem had been designated as a UIP district, and the third round of this campaign had been completed in many of the clusters surveyed. Data by district are given in Table VIII.12.

TABLE VIII.12

Immunization Coverage in the Project Area,  
by District (420 Children)

		<u>No. of</u> <u>children</u>	<u>Fully</u> <u>Immunized</u>	<u>Partially</u> <u>Immunized</u>	<u>No Immu-</u> <u>nization</u>
Salem	(30 clusters)	210	4%	75%	25%
S. Arcot	(30 clusters)	210	7%	67%	26%
Total	(60 clusters)	420	6%	69%	25%

Of the 289 partially immunized children, 94 had three doses of DPT and OPV, lacking only one dose of BCG for full immunization. If BCG had been given, the overall coverage would have been 28%, which is almost five times higher. Integration of BCG with other immunizations seems, from the small sample with BCG, to be better in Salem, where 15 out of 17 children with BCG had received all other immunizations. In South Arcot twice as many children (32) had BCG but only 9 of these had received three doses of DPT and OPV.

A total of 49 BCG doses were reported by the mothers; these children were checked for scars and 41 were found, giving a scar failure rate of 16%. The scar failure rate in Salem was 24% (4/17) compared with 13% (4/32) in South Arcot (see Table 15.7 in Appendix 15).

TABLE VIII.13

Place of Delivery by whether Index Child had Ever Received BCG, and Scar Failure Rate

	<u>No. of Births</u>	<u>No. with BCG</u>	<u>Per-cent of births</u>	<u>Scar failures</u>	<u>Scar failure rate</u>
PHCs, government hospitals	90	14	16%	2	14%
a)					
Home and HSC	263	30	11%	6	20%
Private facility	67	5	7%	0	0%
Total	420	49	12%	8	16%

a) Babies born at home or at the HSC received BCG at some later date. The 5 births at HSCs have been included with home deliveries since it is not anticipated that BCG could be stocked at HSC level. None of these 5 children had subsequently received BCG.

Almost two-thirds of BCG doses were administered during outreach or campaigns in the villages. Analysis of BCG doses according to place of delivery gave little indication that this vaccine is

routinely given to all eligible children (i.e. newborns). Table VIII.13 shows that if it had been possible to give BCG to all of the 90 babies born in PHCs and government hospitals then and there, the coverage for BCG would have been 30% (125/420) instead of the actual level of 12% (49/420). The data also indicate that this strategy would have resulted in a lower scar failure rate.

Out of the 313 mothers reporting that the index child had received one or more immunizations, only 23 said they had a card which showed immunizations. This made it impossible to cross-check the information on doses. However, in many cases the mothers knew the schedule of immunization (e.g. third, fourth, fifth month; or third, fifth, seventh month) and could recall their children's age in months when each dose had been given.

Mothers' explanations of why the index child had incomplete or no immunization, fell into two main categories: lack of services, and lack of information (see Table VIII.14). For 289 children with some doses, the most frequent reasons given were related to lack of services; for 107 children with no immunization, parents being unaware of the need was the explanation given most frequently. (For details see Appendix 15, Table 15.8.) The most frequently mentioned reason for incomplete immunization (89/396) was that BCG was not offered; the child had been given three doses of DPT and OPV and the mother was not aware that anything else was needed, or was not in the village when the BCG team visited. (The remaining 5 of the 94 cases who had received DPT3 and OPV3 gave other reasons for not getting BCG.)

The quantity of BCG distributed from Guindy to the two districts in 1985-86 was 120,300 doses in South Arcot and 98,000 doses in Salem. This is sufficient to immunize 75% and 100% of all newborns in the districts respectively.

The HW(F) was most frequently reported as the source of information about immunization (39%) and other health staff informed a further 26% of mothers. Posters, newspapers and radio together were only cited by 3% of mothers as the source of immunization information, indicating the overwhelming importance of direct personal communication. However, this aspect of health education appears to have been carried out inadequately, since one-fourth of the mothers who gave reasons for incomplete immunization said that they did not know that immunization was needed, how many doses were needed, when the child could be immunized or where to go for this service.



TABLE VIII.14

Reasons Why the Index Child Was Not (Fully) Immunized  
(Number = 396)

	a) Percent
<b>Lack of services:</b>	<b>42%</b>
- Immunization was not offered - outreach team never visited or did not return for second/third dose	
- Vaccine not available	
- BCG not offered	
- First/second dose had been administered within the previous month, i.e. not previously available	
<b>Lack of information:</b>	<b>23%</b>
- Unaware of the need for any immunization	
- Unaware of the need for second or third dose	
- Incorrect information about eligible age	
- Time or place of immunization unknown	
<b>Inconvenient or inaccessible services:</b>	<b>10%</b>
- Time or place of immunization session was inconvenient (mother was away from the village working when the outreach team visited)	
- Campaign team had left by the time mother reached the place	
<b>Illness of child:</b>	<b>8%</b>
- Child sick so not taken to session	
- Health staff refused to immunize child	
<b>Insufficient motivation, negative attitudes:</b>	<b>7%</b>
- Postponed until another time	
- No trust in government services	
- Do not believe in immunization	
<b>Fear of immunization or its side effects:</b>	<b>6%</b>
<b>Other:</b>	<b>3%</b>
- Financial constraints	
- Does not know why; no information	

a) Total does not equal 100% due to rounding.

Coverage analyzed by socio-economic status shows that children from better off families are more likely to have received three doses of DPT/OPV and BCG. Children from poor families are more likely to have received no immunizations at all (see Table VIII.15).

TABLE VIII.15

Immunization Coverage by Socio-Economic Status

	a)			
	High (n=52)	Medium (n=170)	Low (n=196)	Total (n=420)
Child had BCG, DPT 3 and OPV 3	12%	4%	6%	6%
Child had not received any immunization	13%	22%	31%	25%

a) Total is for the entire sample, but there were 2 cases where socio-economic status was not recorded.

The surveyed mothers were asked where they had taken the child to get each dose of vaccine. Over the whole project area, almost equal numbers of doses were obtained from the HW(F) on outreach from the HSC, during campaigns (UIP and special efforts organised locally), from government facilities and from private providers (see Table VIII.16). The place of vaccination varied between the two districts, with more campaign activity in Salem (37% of 637 doses) and more outreach work in South Arcot (30% of 642 doses). During fieldwork it was noted that "outreach" does not necessarily mean outreach clinics, but rather the HW(F) moving around the village, and setting up her equipment several times at different spots where groups of eligible children are collected. The difference between this method of working and local "campaigns" was difficult to establish from the mothers' information, but was determined by asking if the service was offered regularly (e.g. every 1 or 2 months); if so it was counted as outreach.

TABLE VIII.16Place of Vaccination for the Project Area, by District  
(1,279 doses)

	<u>Number</u> <u>of doses</u> a)	<u>Outreach</u> <u>work</u>	<u>Campaign</u>	b) <u>Government</u> <u>Health</u> <u>Facility</u>	<u>Private</u>
Salem	637	16%	37%	21%	25%
South Arcot	642	30%	15%	28%	26%
Total	1,279	23%	26%	25%	25%

a) In 6 cases (3 in Salem and 3 in South Arcot) the respondent did not know precisely where the doses had been given.

b) Includes 13 doses given during a privately organised campaign in South Arcot.

Out of 1,279 doses recorded during the survey, 290 were obtained from private practitioners, and 49 from services organised by voluntary agencies (36 through regular outreach and 13 by campaign). Private sources provided all three doses of both DPT and OPV for 30% of the 142 children with DPT3 and OPV3.

All of the children surveyed were over one year old, but in several cases (22/396) the reason given for not completing immunization was that the campaign only started recently and the child was not due to have its next dose until the campaign team's next visit. This led to an analysis of the number of doses that were given to children over 1 year of age, by source of service. Data on age when dose was received were available for 211 of the 313 children who had received at least one dose of (any) vaccine; of these 211, 102 (48%) were given one or more immunizations after their first birthday. This practice was most frequently found for doses administered during campaigns:

Almost half (45%) of 228 doses given to children over 1 were administered during campaigns.

Almost one-third (31%) of 332 doses administered during campaigns were given to children over 1. (The denominator (332) includes cases where age when immunized was not known.)

Although campaign activity was responsible for one-fourth of the doses recorded, a substantial amount of this effort was not directed at the target group (under-1s).

### 5.5. Immunization Services

In November 1985, the Universal Immunization Programme (UIP) was launched by GOI with assistance from UNICEF in Salem district. The UIP follows a strategy of using teams of health staff supplied with equipment and vaccine from the PHC. The second and third rounds of the UIP campaign were in progress during the evaluation fieldwork, affording the opportunity to observe campaign activity. In South Arcot, immunization continues to be offered largely on an outreach basis, with health workers receiving their supply of vaccines from health supervisors.

#### 5.5.1 Availability of Immunization

The household survey data indicate that about half of the immunization services are provided in the village, either during regular outreach work (23%) or through periodic campaigns (26%).

The survey of 60 HSCs showed that of the 53 HSCs with staff present,

29 HWs(F) offered immunizations at least once a month;

11 did so 4-5 times a month

3 did so every 2-3 weeks

15 did so once a month

13 HWs(F) offered services irregularly or occasionally

4 of these (MAs) were dependent upon the HA's presence because they did not administer immunizations

11 HWs(F) were currently offering immunizations through the UIP campaign; information on their pre-campaign schedule of services was not collected.

In other words, almost one-third of the 42 HWs(F) giving information about non-UIP services said that they did not provide a regular, frequent immunization service. Including the UIP campaign activity, two-thirds of the surveyed HWs had actually run an immunization session within the last month.

Data on the number of children attending the last session were available for 50 HWs (see Table VIII.17). The average number of children seen (38 per session) was sufficient for full coverage, which would require that the HW saw about 36 children every month (in a catchment area of 5,000 and CBR of 29/1,000 she should be seeing about 12 infants for first dose, 12 for second dose and 12 for third dose). However, there was a great range in the level of activity per session; two-fifths of the HSCs only saw about half the number of children they ought to be seeing. In 12 HSCs the most recent immunization service was offered more than 2 months ago and the average size of session was considerably smaller than those held more recently. The campaign sessions, which had all been held within the last month, saw on average only 3 more children than the regular sessions.

#### 5.5.2 Coverage Estimated from HSC Records

These data show that the HWs(F) who provide a regular and frequent service are functioning at a level more than adequate to achieve 100% coverage. Data on age of children immunized, collected from the HWs' records, show that in the month before the evaluation, one-third of the HWs (18/52) had not immunized any children under 5 months, nor had they given the third dose to any children under 1 year. These data help explain the discrepancy between the high level of activity and the low level of coverage found during the household survey; according to the HWs' own records, they are failing to direct their immunization activities at the target group (under-1s).

It is noteworthy that for 15 out of 52 HWs(F), it was impossible to discover, from their records, how many children under 1 had received DPT3 and OPV3. Of the 37 HWs able to provide this information, 28 saw none of their monthly target of 12 eligibles (see Table VIII.2). The level of activity achieved by 9 active HWs (15 DPT3 doses to under-1s) was more than adequate to achieve full coverage of the eligible age-group in their catchment areas; however, when the average level of activity for these 37 HSCs is calculated, it works out at 4 under-1s receiving DPT3 per month. This figure implies a coverage rate of 33% for HSCs with staff

and data. Adjusting for the sampled HSCs without active staff (7/60) gives an average of 3 under-1s receiving DPT3 per month, i.e. coverage of 25%. The household data on percent of children with DPT3 and OPV3 fell within this range.

TABLE VIII.17

Number of Children Attending the Last Immunization Session

a)

(Data from 52 HWs)

Last session was within the previous month:	35 (67%)
more than a month ago	17 (33%)
b)	
Average number of children seen (n=50)	38 per session
during campaign session (n=10):	41
during regular session (n=40):	38
Average number of children seen; last session was:	
within the last 2 months (n=38)	42 per session
more than 2 months ago (n=12)	29
Number of children seen was within the range:	
0-10	8 (16%)
11-20	12 (24%)
21-40	11 (22%)
41-60	9 (18%)
61-80	7 (14%)
81+	3 (6%)

a) Excludes 1 HW who could not provide this information.

b) Excludes 2 HWs who could not supply this information.

### 5.5.3 Immunization Equipment

Inventories of equipment showed that none of the 53 HSCs had sufficient needles and syringes for the HW to give sterile injections of DPT at an immunization session with 20 children

(see Chapter V, Section 4.10). Five HWs(F) said that this equipment was brought from the PHC for campaign sessions. None of the HWs had enough needles and syringes to boil them in batches of 20; 7 out of 53 HWs had 20 or more usable needles, but none of these had more than 2 usable syringes. At half of the HSCs surveyed, there was only one syringe and another 11 had no syringe at all. Nine of these 11 HSCs were not involved in the campaign; it is possible that the HA(F) brought syringes with her, but she receives no formal indent of equipment. Only those PHCs which were involved in the campaign were supplying drums of autoclaved syringes and needles.

#### 5.5.4 Operational Procedures

The physical constraints upon correct sterilization procedures are reflected in the HWs' knowledge and practices regarding administration of vaccine and sterilization of equipment (see Appendix 7, Table 7.3). Only 25% of the 53 HWs interviewed said they would use a fresh syringe for each child, and half (53%) would use a fresh needle. Only 40% would boil for at least 20 minutes (see Chapter V for data on shortages of fuel and stoves).

Appendix 15.12 includes two examples of how syringes and needles are actually "sterilized"; both were recorded during the detailed study of HSCs carried out for the evaluation and show how inadequate sterilization procedures are. Given the established link between unsterile syringes/needles and hepatitis B, and the recent attention given to AIDS in India, the inadequacy of sterilization is serious.

Certain practices which are not constrained by equipment shortages were found to be widespread; for example, given the short cold life of the vaccine flasks in use, the potency of the vaccine will be compromised by keeping it at the HSC for more than one day. By the same token, unused OPV should be discarded and not returned to the PHC. By contrast, more than 80% of the HWs(F) correctly described the site of injection and volume of dose and how to handle vaccine during the session. The fact that correct practices were followed by some HWs suggests a degree of ambiguity in both operating procedures and instructions from superior levels. Interviews with health supervisors and PHC staff revealed an uneven awareness of sound practices regarding maintenance of cold chain.



Immunization cards (single function records) had been prepared for use during the campaign. However, they were evidently not in use, since only 5% of surveyed mothers said they had a card.

The way in which immunization services are organised absorbs a substantial amount of travel time for the health supervisor who brings the vaccine from the PHC, or for the HW(F) if she collects it. Transport was mentioned as a problem by one-third of HAs, who had been present at almost three-fourths of the most recent immunization sessions reported by the HWs(F). Carrying vaccine and having nowhere to store it was specifically mentioned as a problem by one-tenth of the HAs surveyed.

The current practice of administering BCG by periodic team visits is clearly not working, as shown by the finding that coverage would have increased five-fold if this immunization were offered with DPT and OPV. During the campaign, it was not standard practice for the BCG vaccinator to be present at the session.

#### 5.5.5 Summary of Immunization Services

Half of the HWs interviewed (24/50) showed that they were in fact seeing enough children every month to fully immunize their catchment area. However, many of the children immunized were not in the priority age group. Registration of newborns as eligibles is not routine practice, and later attempts to enumerate the target group appear to be time consuming and seriously incomplete (see Chapter VI, Section 2). Although most HWs(F) are well-trained in the administration of vaccine, maintenance of cold chain and sterilization of needles and syringes are inadequate. Finally the organisation of services, by which BCG is administered through a separate vertical programme, has been shown to limit coverage considerably.

#### 5.6. Project Activity Related to Immunization

The PO began to develop a strategy for immunization activities in the summer of 1983, when a framework was sent to DANIDA for comment. Following a workshop in November 1983, a detailed plan of operation was prepared for Salem District in the spring of 1984 and submitted to the Directorate of Public Health and Preventive Medicine for comment. One year later, detailed comments were received and forwarded to DANIDA. In August 1985, members of the PO were invited to Delhi to prepare a list of EPI

equipment; this list was based on a modified version of the synopsis of the EPI plan of operation prepared for the Madhya Pradesh Area Project. There is no supporting documentation which describes the operational plan of which this list of equipment is a part.

Discussions with the PO and DANIDA made it clear that the operational strategy had not been developed in detail, though the list of equipment had already been approved by SPCC, and that the PO had not started to reconcile the different equipment needs implied by the two modes of operation currently taking place within the project area (UIP in Salem and regular outreach in S. Arcot). However, since the evaluation, a detailed plan of operation has been prepared by the PO and forwarded to DANIDA for comment. (For further discussion of strategy choices and concomitant equipment needs, see Chapter V, Section 5.)

#### 5.7. Recommendations regarding Child Health Services

This report has given more attention to EPI than to some other equally important components of maternal and child care, partly because it is technically more straightforward to assess, and hence permits a relatively unambiguous evaluation of the current status of coverage, activity and quality of services. The following recommendations are designed to improve child health services in general.

An integrated child health component should be established within the MCH programme. During antenatal and postnatal contacts, mothers should be informed about health services for the baby, including when and where child health services are offered.

Therefore, child health services should be offered on a regular basis at the HSC in the main village, and at a fixed location, arranged by the VHC or with other village leaders, with support from block level, in villages served by the HSC.

Once the community has been made aware of the benefits of preventive services, its aid should be sought in encouraging mothers to attend clinics, to bring their children, and to use the services available. The HW(F)

will need support from staff at block level in promoting preventive services and trying to increase community awareness and participation.

Child health services should include monitoring of growth and development from birth. Consideration should be given to adopting the new WHO schedule of immunization beginning at 6 weeks; meanwhile, immunization should start at 3 months, and management of common ailments (especially for diarrhoea, eye infections, scabies and respiratory infections) should be included. In this way, desired curative care is linked to preventive services which the community may not initially perceive as important.

A record of the child's date of birth, growth, immunizations and Vitamin A should be kept by the parents on a growth chart, given to them during an antenatal visit. The growth chart should cover the child up to age 5, and a plastic envelope should be provided.

The parents should not be given a separate immunization card; instead, the growth chart should include space for recording dates of immunization, by dose; for example:

BCG			
DPT			
OPV			
Measles			

As an innovative scheme, a combined antenatal card and growth chart could be introduced on which the mother's antenatal care, information about the delivery, birth weight and subsequent growth and development of the child (including preventive services) are recorded.

In order to provide what is promised, the HW must be adequately trained, properly equipped, and regularly supplied with sufficient quantities of drugs, vaccine and growth charts.

Specific strategies must be developed to enable health workers to register all newborns for child care services

and to follow up that services are obtained on schedule. The child register should be used as the health worker's basic record.

The Project should pursue the development of immunization activities as an integrated component of maternal and child health services. The first step - the preparation of a detailed operational plan - must be followed by a choice of strategies. After that, procurement of equipment, training and organisation of activities at all levels can proceed in accordance with the strategies adopted.

(For recommendations on strategies and equipment, see Chapter V, Section E.)

The strategies chosen for organising immunization services and training for implementation must be designed to enable staff to maintain cold chain, to handle vaccine correctly and to administer immunizations with sterile equipment.

Sterilization of equipment needs to be improved as a matter of urgency. This could be achieved by sterilizing needles and syringes at the PHC and dispatching them to the HSC in sterilizing drums. It could also be achieved by training staff (see below) and equipping them adequately. Consideration could also be given to using, on a trial basis, the new single dose syringes (recently developed and field-tested through WHO) which are sterilized in a steam sterilizer specially designed to hold syringes, needles and forceps; this equipment is comparable in cost to glass syringes, and has the advantage of enabling health staff to follow the same protocol of one syringe and one needle for each injection, for all antigens (i.e. BCG needles would no longer need to be flamed and sharpened).

Services should be offered on a regular basis. BCG should be included in the schedule of services provided, after health staff have been trained to administer it, and offered from birth, especially following institutional deliveries.

Until HWs(F) are trained how to administer BCG, the BCG vaccinator should routinely coordinate his visits with those of other health staff offering immunizations.

The Manual for Health Workers, produced by UNICEF and printed in Tamil for the UIP campaign, should be distributed to all health workers, supervisors and MOs in the project area, for reference and for use during in-service training.

This training should address the areas of inadequate knowledge identified by the DTTs and through this evaluation, i.e. how to clean, sterilize and reassemble needles and syringes, and how to maintain cold chain.

## 6. Basic Curative Services

### 6.1. Providers of Basic Curative Services

The GOI Ministry of Health's Model Plan for area projects is built on the assumption that multipurpose workers and village level functionaries will be in position. Guidelines and job responsibilities for those personnel state that the community health volunteer (CHV) and MPW (M and F) are to give treatment for minor ailments (for the CHV, 13 items are listed including fever, diarrhoea, vomiting, sore eyes, boils and abscesses, and scabies). They should give first aid, and refer any cases beyond their competence. The CHV and MPW(M) should also make thick and thin blood smears of all fever cases and treat presumptively for malaria; all positive cases are supposed to be referred to the HA(M) for radical treatment.

### 6.2. Curative Services Programme

In the Model Plan, the basic structure of curative services is that minor ailments should be treated locally and cases that are beyond the competence of functionaries at that level should be referred on to the next appropriate facility: from CHV to HSC, PHC or District Hospital. The CHV is to be provided with a range of drugs for basic curative care at village level, and the MPW (M and F) should have essential curative drugs at the HSC. In addition, there are various vertical programmes which supply health workers independently of the MCH programme, e.g. malaria control, tuberculosis control, leprosy control, etc. (see Table V.3 in Chapter V).

In Tamil Nadu this structure lacks two essential components: the Community Health Volunteer and the male Multipurpose Worker, both of whom have extensive responsibility for providing curative services in the area project model. The State decided in 1978 not to implement the community health volunteers scheme, but to address the need for curative services at village level with mobile health teams (MHTs) which were introduced in 1977-78. The Project Document states that in Tamil Nadu

"Mobile Medical Teams .... have been introduced in lieu of the Community Health Volunteers Scheme adopted in many other states."

The MHT operates from the PHC and includes a staff of one additional MO and two pharmacists; this team uses an additional vehicle plus a monthly fuel allocation of 100 litres, and drugs worth Rs. 20,000 per year. Currently 249 out of 384 PHCs statewide have MHTs attached to them. Each MHT has a target of 4,000 patients per month.

The absence of the MPW(M) is due to a stay order from the Madras High Court following legal action brought by the Association of Workers who wanted GOTS to resolve discrepancies in pay scales and seniority status between the existing unipurpose health worker programmes and the proposed multipurpose scheme. Until this dispute is settled by the State and the stay order is vacated, all existing male workers (basic level and supervisory staff) are legally entitled to continue working as unipurpose workers and they are not providing any curative services beyond those sanctioned by their particular vertical programmes.

### 6.3. Utilization of Basic Curative Services

The household survey collected information on three aspects of curative services: where the family went for treatment if someone were sick, what treatment (if any) was used when the index child had diarrhoea, and what treatment had been obtained if there had been a case of malaria.

#### 6.3.1 Preferred Source of Treatment

Table VIII.18 shows where families usually went for treatment or where they went the last time they were sick. Out of 420 households, 354 (87%) reported that women, men and children

TABLE VIII.18

Utilization of Health Services by Households  
(n=420)

	<u>Same Pattern</u> <u>for Whole Family</u> (n=364)		<u>Different Pattern</u> (n=56)		
	a)		<u>Women</u>	<u>Men</u>	<u>Children</u>
	<u>First</u> <u>Choice</u>	<u>Second</u> <u>Choice</u>			
Private allopathic practitioners	53%	16%	29%	45%	41%
Government hospital	19%	13%	16%	16%	18%
PHC	10%	2%	11%	2%	5%
HSC	6%	*	11%	4%	5%
Home remedies	4%	*	16%	11%	14%
Nowhere	3%	-	16%	18%	5%
Ayurved, homeopath	2%	*	2%	-	2%
Faith healer	-	-	-	-	7%
Other	2%	-	-	2%	-
Not applicable (never been sick)	1%	-	-	4%	2%
Total	100%	a) n.a.	b) 101%	b) 102%	b) 99%

\* Less than 1%.

a) Only 117 families gave a second choice for source of care. Percentage is calculated for denominator of 364.

b) Sum is not 100% due to rounding of percentages.



followed the same pattern of utilization; their first and second choice for source of care are shown. The remaining 56 households reported a varying pattern for women, men and children; for these cases, the first source of treatment is shown in Table VIII.18. For both groups, a private clinic or doctor was unequivocally the first choice of treatment, followed by government facilities, which were used by about one-third of households surveyed. Of the government facilities, hospitals were used in preference to PHCs, which in turn were reportedly used more frequently than HSCs, in spite of travel to the larger facilities taking longer and being more expensive.

One-third of the families with the same pattern of care mentioned a second choice; private providers were the most frequently mentioned second choice followed by government hospitals. The ranking of second choice, in order of preference, was the same as that for first choice.

For the 56 families with different utilization by age and sex, this pattern was generally the same except that women reported far less frequently that they would go to a private doctor or clinic, and they were as likely to use the HSC as the PHC. These two findings suggest less willingness to spend time and money on more distant sources of care when women are sick. This group of families also reported more frequently that they would use home remedies, and that the women and men would do nothing at all if they were sick.

There was more likely to be a difference in utilization of services by age and sex in families of higher socio-economic status; 21% of the high status group reported different patterns of utilization for women, men and children, compared with 15% of the medium status group and 10% of the low status group. These families are left out of Table VIII.19 which shows utilization of health services (first choice) for families with the same pattern of care for all household members, by socio-economic status. As expected, higher status families more frequently report going to the private doctor or clinic first; even so, almost half (45%) of the lowest status group reported using private allopathic providers as their first choice. Conversely, with decreasing socio-economic status, families are more likely to use government services; this variation is most noticeable with regard to government hospitals which were reportedly used by 7%, 17% and 23% of the high, medium and low groups respectively.

TABLE VIII.19

Utilization of Health Services by Households with Same  
Pattern for Whole Family, according to Socio-Economic Status

	a)			
	<u>High</u> (n=41)	<u>Medium</u> (n=145)	<u>Low</u> (n=176)	<u>Total</u> (n=364)
Private allopathic practitioners	68%	58%	45%	53%
Government providers	24%	32%	40%	35%
Indigenous healers	2%	4%	1%	2%
Home remedies	5%	1%	6%	4%
Other	-	2%	3%	2%
Nowhere	-	3%	3%	3%
Not applicable (never been sick)	-	-	1%	1%
	b)		b)	
Total	99%	100%	99%	100%

a) Total is for all 364 families with the same pattern of services for women, men and children, but there were 2 cases where socio-economic status was not recorded.

b) Sum is not 100% due to rounding of percentages.

Utilization of ayurveds, homeopaths, faith healers and other non-allopathic providers was lower than use of home remedies or doing nothing at all. For these sources of treatment there were no discernable differences according to socio-economic status.

None of the households surveyed mentioned the mobile health team (MHT) as the family's source of treatment. This may be explained partly by the fact that the MHT cannot visit every village frequently enough for people to identify the MHT as an alternative source of care. Another possible explanation is that

since the MHT typically holds its clinic at the HSC, the 6% of families who use the HSC for curative care may also receive services from the MHT there.

Households where family members did not go to government institutions were asked the reason for not using these services.

TABLE VIII.20

Reasons for not Using Government Health Services, by  
Socio-Economic Status

1 or 2 reasons given by 271 households, where government services were mentioned as either second choice or not at all.

	a)			
	High (n=39)	Medium (n=120)	Low (n=110)	Total (n=271)
Government health worker is unsatisfactory	44%	43%	50%	45%
Long waiting time	21%	19%	16%	18%
Government medicine does not work	21%	18%	15%	17%
Government facility is too far away, travel costs too much	3%	14%	12%	12%
Medicine costs money	5%	3%	5%	4%
No medicine is available	3%	5%	4%	4%
Always shut; inconvenient hours	5%	3%	-	2%
Other	23%	18%	23%	21%

a) Total includes 2 families whose socio-economic status was not recorded.

TABLE VIII.20 shows their reasons for going to the government facility as their second choice or for not going there at all, according to socio-economic status. The majority of all three groups did

not use government services because they found the government health workers unsatisfactory; complaints included poor care, arrogance and rudeness. This reason was given most frequently by the lowest socio-economic group, who also use government services more than the higher status groups. Long waiting time before receiving treatment, and a belief that government medicine does not work were each cited by almost one-fifth of families, and more often by higher status groups, who also said more frequently that the clinic hours were inconvenient. The lower status groups cited the cost of travel as a constraint to using government services. There was no difference between the socio-economic groups in the frequency of reporting non-availability of medicine or the cost of medicine at government facilities; overall, only 4% mentioned being charged for medicines as a reason for not using government services. Among those giving other reasons (n=57), about one-third said that they were used to, preferred or felt safer with private providers, and another third had not tried government services. In summary, the reasons given for not using government services were mainly to do with the attitude of the staff.

#### 6.3.2 Treatment for Diarrhoea

To assess knowledge and practices about a common illness and health education for its management, each mother was asked what action she took when her child had diarrhoea; the results are shown in Table VIII.21. It was encouraging to find that almost four-fifths of the mothers said that they would continue breast-feeding; very few mothers (3%) said they would stop feeding. Two-fifths would take the child to the clinic immediately, and slightly fewer would wait 2-3 days before taking it for treatment. One-third of the mothers would treat the child with home remedies, and one-fourth would take it to an ayurved, homeopath or faith healer. The mother would usually combine two or more actions, for example visit the clinic as well as home remedies and/or non-allopathic care (28%), while continuing to breastfeed. Oral rehydration treatment was mentioned by only 6% of mothers and was usually combined with other treatments. Only one mother described both checking for dehydration and using ORS. A few mothers (3%) said they would do nothing special, and 5% said their child had never had diarrhoea and they did not know what they would do.

TABLE VIII.21

Mother's Response when Child has Diarrhoea  
(n=420)

	<u>Number</u>	<u>Percent</u> <sup>a)</sup>
Does not stop breastfeeding	329	78%
Goes to the clinic immediately	180	43%
Goes to the clinic after 2-3 days	161	38%
Home remedies	135	32%
Ayurved, homeopath or faith healer	95	23%
Prepares ORS	25	6%
Stops breastfeeding	14	3%
Does nothing special	11	3%
Does not know; no experience of diarrhoea	20	5%

a) All reported actions were recorded, so percentages add up to more than 100%.

The high level of positive action suggests that diarrhoea is recognized as a problem; the wide variety in the types and combinations of treatments and the infrequent use of ORS suggests that the HW(F) has had little impact on the community in teaching mothers how to test for dehydration and in advocating ORT. The data also show that if the HW(F) carries out this aspect of her work, she is able to influence mothers' knowledge and reported practices; of the 25 mothers who mentioned ORS, half came from 3 villages where the HWs had been so effective that 4 out of the 7 mothers surveyed said they would use ORS.

For promoting child health, the widespread continuation of breast feeding provides a positive indigenous practice on which to build awareness of ORT. However, the data suggest that promotion of ORT is limited, apart from the three villages cited above. The impression gained was that most HWs(F) are not adequately prepared for promoting the use of ORT effectively.

In Table VIII.18, for the 56 families where utilization of health services was different for adults and children, visits to the ayurved, the homeopath and the faith healer for childrens' illnesses adds up to 9%; for diarrhoea in young children (Table VIII.21), visits to these indigenous healers is 23%. This difference can be attributed to the fact that diarrhoea in young children is not equated to the diarrhoea of later years. It is believed to be the result of "dosham", which can be translated as "evil eye". Accordingly, treatment uses such methods as ward off the "evil eye". "Dosham" is not generally believed to be amenable to allopathic treatment.

This is an important point to keep in mind when designing material for communication with mothers regarding the causes and treatment of diarrhoea.

### 6.3.3 Treatment for Malaria

The protocol for fever cases is to take a blood slide and treat presumptively with 600 mg chloroquine. Active surveillance is done by the malaria worker and passive surveillance by the HW(F).

To assess contact with the health service and follow-up for a specific health problem, mothers were asked if anyone in the household had had malaria or suspected malaria during the last year. Of the 420 households surveyed, 15% said there had been such a case during the past year; in 70% of cases (46/65) a blood slide had been taken. Of the 46 families reporting a blood test, two-thirds (31) did not know the result of the test, and 22% of the households from which a slide was tested ((10/46) said that the test was positive. Fewer than half of those who reported a blood test were also given medicine (20/46).

### 6.4. Provision of Basic Curative Services

Among families who use the government health programme, the hospital is most frequently reported as the preferred source of care, followed by the PHC. The HSC is geographically the most accessible facility; the average distance from the surveyed village to the HSC was 1.5 km, compared with 12.5 km from village to PHC. However, as a source of care the HSC ranks a poor third, barely ahead of home remedies or doing nothing (see Table VIII.18). The Mobile Health Team, which was introduced by GOTTN in lieu of the Community Health Volunteers Scheme, was not reported

as a source of curative services and does not appear to be filling this aspect of the CHV's role. In one state which did adopt the scheme, these village level functionaries ranked second behind private clinics/doctors as the villagers' source of treatment, providing care for 25% of households surveyed (see Evaluation of the Health Care and Family Welfare Project, Madhya Pradesh, August 1986).

#### 6.4.1 The HW(F)

The HW(F) was reported to be the principal source of treatment by only 6% of households. This low level of utilization is reflected in the HW(F)'s records which show that although the average number of curative patients during the previous month was 98 cases, this was due to the fact that 5 HWs(F) reported seeing more than 200 cases; the most frequently reported number of curative patients was between 2-3 per day (see Table VIII.22).

TABLE VIII.22

Number of Patients Treated Last Month by the HW(F)  
(Data taken from her records)

<u>Number of patients last month</u>	a) <u>MPWs &amp; ANMs</u> n=24	b) <u>MAAs</u> n=13	<u>Total</u> n=37	c) <u>Percent</u>
1- 20	1	1	2	5%
21- 40	5	-	5	14%
41- 60	3	6	9	24%
61- 80	4	-	4	11%
81-100	4	1	5	14%
101-120	3	1	4	11%
121-180	1	2	3	8%
>180	3	2	5	14%
Total	24	13	37	100%

a) Data not available for 1 ANM on leave during previous month and 11 MPWs/ANMs with incomplete records.

b) Data excluded for 1 MA working at a mini-PHC and 4 MAAs with incomplete records.

c) Percentages do not add up to 100% due to rounding



When asked about six common ailments, many HWs had not treated any cases during the last supply period (i.e. since she received her last resupply of drugs), which varies between 1 and 3 months (see Table VIII.23).

TABLE VIII.23

Percentage of HWs(F) Reporting that Zero Cases were Seen during Last Supply Period, for Six Common Ailments

	a)	
	n	<u>% Reporting</u> <u>Zero Cases</u>
Fever	45	9%
Malaria	45	73%
Diarrhoea	45	13%
Scabies	45	38%
Worms	44	57%
Acute respiratory infections	35	34%

a) Denominator varies because in some cases it was not possible to extract the required information from HW's record.

Three-fourths of the HWs surveyed reported no cases of malaria during the last supply period, but this was partly because they took no blood smears and so diagnostic tests were not done. The HW(F) is trained to make blood smears but two-fifths of the HWs(F) who reported fever cases (13/33) did not submit any smears for analysis at the PHC. (Five HWs(F), all non-DANIDA, mentioned that they never took blood smears.) In one-fourth (25%) of the HSCs surveyed there was no antimalarial drug in stock (see Chapter V, Table V.6); the HW(F) said it was supplied to the malaria worker (male) but not to her.

A comparison was made between the number of cases treated and the drugs available during the last supply period. This analysis is constrained by the fact that the number of cases treated is not independent of drugs in stock. Bearing this constraint in mind, the analysis showed that drug availability and cases treated matched in 62% of the 50 surveyed HSCs with information; 32% had adequate drugs for the six common ailments to be treated. Three-fourths of the HSCs had drugs in stock for treating at least four of the six ailments listed in Table VIII.23.

There was no discernable difference between DANIDA and non-DANIDA HSCs in this analysis, and although MAs at non-DANIDA HSCs complained about not getting "DANIDA drugs", on average the MAs reported slightly more curative patients than MPWs and ANMs (103 per month compared with 96). The supply interval and the amount of drugs in stock are described in Chapter V, Section 4.

#### 6.4.2 Mobile Health Teams

Of the 45 PHCs surveyed during the evaluation, 31 (69%) had MHTs, compared with 65% statewide. PHCs with these mobile curative units are supposed to be allocated an additional medical officer and two pharmacists, to have a vehicle specially assigned to them, and an allocation of 100 litres of fuel per month and drugs worth Rs. 20,000 per year. Most of the surveyed PHCs had an additional (third) MO, but only one-tenth (3/31) had vehicles specially designated for MHT use. However, all these 31 PHCs were receiving the extra fuel and drugs.

GOTN introduced the MHT scheme in lieu of the Community Health Volunteers Scheme; the MHT is supposed to coordinate or liaise with the Village Health Council or Village Welfare Committee when it visits rural communities in the PHC's catchment area. However, only 7 of the 60 villages surveyed (12%) had a VHC or VWC. Information collected during the evaluation showed that in some cases, the MHT only visited villages with a HSC.

The size of the MHT's target population (rural communities) varies, as some blocks include large towns with government health facilities; such towns are excluded from the MHT's purview. However, all MHTs have a target of 4,000 patients per month. From a subsample of 16 MHTs, the average number of trips made per month was 10, with a range from 4 to 24, and on average, 47 patients were seen per trip (see Table VIII.24). Detailed information from 12 MHTs revealed that the average number of patients treated was 427 per month, with a range from 77 to 960.

These findings are consistent with those of a study done by the Evaluation and Applied Research Department of Madras; their "Report on Functioning of Mobile Health Teams - A Quick Evaluation" (October 1984) states that the number of patients treated by MHTs in their sample averaged at 539 patients per month and that the "Village Welfare Committee, supposed to liaise between the ailing persons and the MHT was a non-existence."

TABLE VIII.24

Summary of Information on Mobile Health Teams

-	Number of PHCs in TN with a MHT	249/384 65% of PHCs
-	Number of surveyed PHCs with a MHT	31/45 69% of PHCs
-	Average number of trips per month (n=16)	10 trips
	Range: Minimum 4 trips	
	Maximum 24 trips	
	a)	
-	Average number of patients per trip (n=12)	47 patients
	Range: Minimum 11 patients	
	Maximum 80 patients	
	a)	
-	Average number of patients per month (n=12)	427 patients
	Range: Minimum 77 patients	
	Maximum 960 patients	
	b)	
-	Average number of kilometers per month (n=9)	334 kilometers
	Range: Minimum -17 kilometers	
	Maximum 803 kilometers	
	c)	
-	Average percentage of fuel allocation used (n=9)	60% of fuel
	Range: Minimum -3% of fuel allocated	
	Maximum 146%	

- a) In nine cases, an exact count of patients seen was not available; patients seen was calculated for 3 MHTs with data and the average was 10 patients seen per hour. This level of activity was multiplied by hours spent by each team seeing patients.
- b) Estimated by calculating the mileage logged for PHC vehicles in excess over the km possible with their normal fuel allocation.
- c) Estimated by calculating the fuel needed from the MHT fuel allocation to travel the km calculated in (b).

From the evaluation team's data it has been calculated that if a MHT is to meet its target of 4,000 patients a month, the MO would have to see patients for 16.6 hours each day for 6 days a week. This calculation is based on the actual patient load of 10

patients an hour, documented for 3 MHTs with data; this rate includes all time spent at the place where the clinic is held (e.g. time waiting for patients, treating patients, etc.). Adding the travelling time required to visit enough villages to reach this number of patients, the MHT would have to work 20 hours per day, 6 days a week, which is clearly impossible. Assuming that the MHT sees an average of 15 patients per village visit (as indicated by data from the field), visits three villages a day, and thereby treats about 45 patients a day, working 6 days a week the MHT could at best cover about 1,000 patients a month. The average distance between the PHC and the villages in its catchment area for the villages surveyed during the evaluation is about 20 km, so in the process the MHT would be travelling 50-60 km per day and thus spending about 220 litres of petrol or 170 litres of diesel, which is more than twice the POL allocation. Considering the costs involved, this becomes an extremely expensive way of providing basic curative services to the rural community.

It should be noted that through the MHTs, the PHCs get extra drugs and fuel, both of which are sorely needed.

### 6.5 Project Activities Regarding Basic Curative Care

The Project has introduced a number of innovative schemes and initiatives for improving basic curative services (see Appendix 13). The epidemic intelligence system, by which the HW(F) sent a preprinted postcard to HUD level whenever she found a case of one of the diseases listed, enabled the DHO and MOs to take immediate action on the case. The scheme has been formally discontinued but the team found that in February 1986, HWs were still sending in the postcards.

The PO introduced a multidrug regimen therapy for leprosy designed to shorten duration of treatment, increase the rate of conversion from positive to negative, and reduce the development of new cases. After the pilot phase, DANIDA agreed to fund expansion to the whole of Salem District under a separate project.

A scheme to improve the referral system between HSC and PHC was tried out in 1982-1983; it included the use of referral slips that the HW(F) could give to the patient who then gave them to the MO at the PHC. This scheme has been deemed to be replicable elsewhere.

Various schemes have been implemented in the tribal hill areas. These include the Innadu Health Care Project, a facility based scheme at one health centre; and the Kolli Hills STD (sexually transmitted diseases) Scheme, visited by the evaluation team and reported on in Appendix 13.2.

#### 6.6 Summary of Basic Curative Services

Families were more likely to go straight to the government hospital or the PHC than to use the HSC in case of sickness. In the absence of the male multipurpose worker and community health volunteer, the full responsibility for the government health services curative programme at village and HSC level falls upon the HW(F). Reasons for low utilization of the HSC and wide variations in the level of HW(F) curative activity include lack of drugs supplied through vertical programmes (notably malaria control), irregular and inadequate supply of essential drugs, and pressure of other work which is given higher priority.

In response to the perceived need for curative care, the HW(F)'s role in the community should be strengthened by improving her basic curative skills and her knowledge of proper management of common ailments.

In particular, her knowledge of when and how to use the drugs issued to her should be strengthened. As part of this effort, fact sheets on each drug, giving the generic and brand name, indications, dosage and contra-indications should be prepared in Tamil and distributed to all HWs(F).

Drug supply to HSCs should be streamlined and should be on a regular basis, so that the HW(F) knows when to expect her supplies.

(For detailed recommendations on these aspects of drug supply, see Chapter V, Section 4.9.)

Antimalarial drugs should be included in the list of items supplied, so that the HW(F) can provide treatment expeditiously without having to contact the malaria worker.

The HW(F) should be supported in her curative services by regular supervisory visits from the MO. These visits should be used for consultation on problem cases, and for the MO to observe the HW(F)'s performance and give on-the-job training.

The referral system between HSC and PHC, and follow-up of patients, needs to be strengthened, by developing both the means by which the PHC can recognize and respond promptly to patients referred from the HW(F), and the mechanism for follow-up by the HW(F). In particular, the HW(F) should be informed of the MO's diagnosis, treatment and what follow-up is needed; this could be done using the referral slip system introduced as an innovative scheme.

The MHT scheme, as a separate programme, should be wound up, but the extra fuel and drug allocation now available to MHTs should be made available (50% of the present fuel allocation and 100% of the present drug allocation) to all the PHCs. (This recommendation does not preclude the use of mobile services to reach remote areas.)

The scheme of having community based health workers should be speedily introduced in selected locations in the project area, especially those which are isolated or scattered communities. An operational plan should be prepared, outlining how the HW(F) and the community based health worker are to coordinate and liaise; the health workers' responsibilities should be accordingly re-oriented.

#### 7. Utilization of Services Analyzed by Sex, Caste and Socio-Economic Status

The Project Agreement incorporates the project principle of using the target group approach to strengthen the health service delivery system so that it can "meet the demands of the most needy and vulnerable population groups, such as socio-economically weaker groups, women and children, making sure that they get the opportunity to avail themselves of the services rendered at community level as well as at institutional levels" (Project Document, p.3). The Planning Teams' fieldwork had "clearly demonstrated that the socially weaker sections of the rural population are also the most needy with regard to improved health and family welfare. Hence, the target groups in the

Project Area are those who are badly in need of improved social and environmental conditions. The target group approach is being introduced in order to direct the attention of the health workers to those who are most in need of preventive, promotive and curative health and family welfare services including rehabilitation" (p. 34).

The preceding sections of this chapter have reported findings from the household survey data on health status indicators and utilization of services by sex and socio-economic status. (The socio-economic status of each index child's family was categorized by the teams during the interview in the household; see Appendix 2.2 for the methodology.) This section draws on these findings, and summarizes utilization by caste and sex.

### 7.1. Utilization by Socio-Economic Status

Like the Planning Teams, the survey found indications of greater need among the lowest socio-economic group. For example, although there was no difference in the average number of deliveries per woman between the high and low groups, a larger proportion of poorer families had had a child who died (see Table VIII.25).

TABLE VIII.25

#### Selected Indicators of Health Status by Socio-Economic Group

	High (n=52)	Medium (n=170)	Low (n=196)	Total (n=420)
Average number of deliveries per woman	2.67	2.79	2.68	2.73
Percentage of women with a child/children who died	15%	22%	24%	22%
Average number of children who died per woman	0.27	0.41	0.35	0.36
Arm circumference less than 13.5 cm	25%	36%	45%	38%

a) Total is for the entire sample, but there were two cases where socio-economic status was not recorded.

b) Refers to live births who later died.

c) Excludes 7 children who could not be measured; see Footnote (a) to Table VIII.10.



The average number of live births who had later died (per mother) was also higher for the lower status families. Nutrition status (assessed using upper-arm circumference) was also worse, with nearly twice as many children from poorer families moderately to severely undernourished as in the highest socio-economic group.

Although private providers were most frequently mentioned as the source of care by all three groups, poorer families said they used private doctors/clinics less than the better off families. The lowest socio-economic group was also more dependent upon government health services (see Table VIII.19), and women in this group were less likely to go for antenatal care on their own initiative (12% did so compared with 20% in the medium group and 23% in the high group). Poorer families consistently reported lower coverage for antenatal care and child health services (see Table VIII.26). For example, the proportion of women offered iron/folic acid during their pregnancy was smaller for the lower socio-economic groups, and those who got iron received less. Again, reasons for not getting the child (fully) immunized showed a consistent pattern whereby families in the lower status groups more frequently reported that they had not been told about services and had not been offered accessible services. (It is noteworthy that insufficient motivation was found less frequently among the lowest status group; for details see Appendix 15, Table 15.9.)

Yet the health worker has targeted some of her other advisory and motivational work (e.g. for family planning and advice about infant feeding) more at the lower status groups. These families reported a FP contact with the HW more frequently; moreover that contact was more likely to have been exclusively about sterilization. The same proportion of the high and low socio-economic groups were using a method of family planning but a larger proportion of the low socio-economic group had been sterilized.

## 7.2. Utilization by Caste

The percentage of surveyed children in scheduled tribes, scheduled castes and other castes was 5%, 27% and 68% (including 2 Muslims), respectively. This was comparable to the proportions of scheduled tribes and castes found in the project area as a whole (3% and 25% of rural population respectively). There was considerable collinearity between caste and socio-economic group for scheduled castes and tribes; for other castes, 33% of 285 were in the low socio-economic group (see Appendix 2.2).

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TABLE VIII.26

Indicators of Contact with Health Services (all sources), by  
Socio-Economic Group

	a)			
	<u>High</u> (n=52)	<u>Medium</u> (n=170)	<u>Low</u> (n=196)	<u>Total</u> (n=420)
Antenatal exam	71%	64%	52%	59%
Advised to go to an institution	29%	26%	18%	23%
Was offered TT	85%	71%	55%	65%
Was given iron/folic acid	69%	63%	53%	59%
Of these, was given 2 months' supply (or more)	b)			
	48%	37%	28%	36%
Had antenatal exam, TT and iron	56%	41%	34%	40%
No antenatal care at all	8%	17%	31%	22%
Child was fully immunized	12%	4%	6%	6%
Child had no doses	13%	22%	31%	25%
Not fully immunized because:	c)			
Lack of information	13%	21%	28%	23%
Services not offered	15%	13%	21%	17%
Inconvenient services	4%	6%	14%	10%
Insufficient motivation	11%	9%	5%	7%
Child had Vitamin A drops	4%	8%	5%	6%
Advice from HW about infant feeding	4%	6%	13%	9%
Contacted about FP	d)			
	43%	51%	57%	53%
FP contact was only about sterilization	d)			
	33%	43%	49%	44%
Using a method of FP	e)			
	27%	21%	27%	24%
Sterilized	e)			
	18%	19%	26%	22%

Footnotes for Table VIII.26

- a) Total is for the entire sample, but there were two cases where socio-economic status was not recorded.  
 b) n=246 women who were given iron, accepted it and knew how much they were given. For High, n=33; Medium n=108 and Low n=105.  
 c) n=396. For High, n=46; Medium n=163; Low n=185.  
 d) n=416. For High, n=51; Medium n=169; Low n=194.  
 e) n=415. For High, n=51; Medium n=167; Low n=195.

Analysis of both health status and utilization of services according to caste generally showed less difference between scheduled castes and other castes than was found with socio-economic status as the independent variable. Table VIII.27 shows selected indicators of health status by caste.

TABLE VIII.27

Selected Indicators of Health Status by Caste

	<u>Sche-</u> <u>duled</u> <u>Tribes</u> (n=22)	<u>Sche-</u> <u>duled</u> <u>Castes</u> (n=113)	<u>Other a)</u> <u>Castes</u> (n=285)	<u>Total</u> (n=420)
Average number of deliveries per woman	2.73	2.51	2.81	2.73
Percentage of women with b) a child/children who died	23%	27%	20%	22%
Average number of b) children who died, per woman	0.32	0.36	0.36	0.36
Arm circumference c) less than 13.5 cm	52%	36%	39%	38%

- a) Includes 2 Muslims.  
 b) Refers to live births who later died.  
 c) Excludes 7 children who could not be measured; see Footnote (a) to Table VIII.9.

A large proportion of scheduled tribes (2 of the 60 clusters surveyed) live in isolated, separate communities (notably in the hill areas), and in the plains, scheduled castes often lived in colonies as much as a kilometre away from the "main village", which was sometimes smaller. Recognizing the effect that access has upon utilization of services, POPI had stipulated that the site chosen for the HSC building "should be accessible to the socio-economically disadvantaged sections, especially scheduled castes and tribes," and GOIN issued a government order that the building should be physically located in or close to these communities. Table VIII.28 shows contact with health services, by caste. Access appears to have a significant effect upon utilization, since coverage for scheduled tribes was lowest for all indicators except family planning contact.

### 7.3. Utilization by Sex

Of the 420 children surveyed, 227 were boys and 193 girls; this gives a sex ratio of 850 females per 1,000 males. This is considerably lower than that given for all ages in the Project Document (963/1,000 for Salem and 969/1,000 for South Arcot), and indicates an alarming difference between the sexes in child survival rates. This may be partly due to differential care arising from a preference for sons.

Sex of index child analyzed by birth order showed more females than males for surviving first-borns, but an increasing imbalance in the ratio of females to males for children born second, third and fourth; for index children who were the fourth delivery, this ratio was 514:1,000 (n=56). However, for higher birth orders (range of 5 to 12), more index children were girls (1,160:1,000 for 54 index children). Although the samples are small, these findings suggest that in smaller families (2 to 4), daughters' survival rate is substantially worse than that of sons.

The survey data on nutrition status (see Table VIII.11) support the hypothesis about differential care, but utilization data do not. Information on feeding practices is mixed (see Table VIII.29). Daughters were first breastfed sooner, and there was no difference in the number of months daughters and sons were breastfed. More daughters were first given something in addition to breastmilk before 8 months of age, but they were more frequently given animal milk and ragi or rice products as their first food whereas sons were more frequently given a mixed diet or special weaning foods.

TABLE VIII.28

Indicators of Contact with Health Services, by Caste

	<u>Sche- duled Tribes (n=22)</u>	<u>Sche- duled Castes (n=113)</u>	<u>Other a) Castes (n=285)</u>	<u>Total (n=420)</u>
Antenatal exam	23%	56%	64%	59%
Advised to go to an institution	18%	27%	22%	23%
Was offered TT	27%	61%	70%	65%
Was given iron/folic acid	14%	56%	60%	59%
Had antenatal exam, TT and iron	9%	36%	43%	40%
No antenatal care at all	68%	26%	18%	22%
Child was fully immunized	0%	4%	7%	6%
Child had no doses	55%	23%	24%	25%
Child had Vitamin A drops	5%	6%	6%	6%
Advice from HW about infant feeding	5%	18%	6%	9%
b) Contacted about FP	55%	58%	51%	53%
FP contact was only b) about sterilization	55%	53%	41%	44%
c) Using a method of FP	14%	29%	23%	24%
c) Sterilized	14%	28%	20%	22%

a) Includes 2 Muslims.

b) n=416. Missing data for 1 scheduled caste and 3 other castes.

c) n=415. Missing data for 2 scheduled castes and 3 other castes.

Table VIII.29 shows that parents do not appear to be consistently discriminating against daughters as far as child health services are concerned; for example, although a larger proportion of girls had no immunization, the difference is slight, and the proportion of girls with full coverage is virtually the same as that for boys. For distribution of Vitamin A, the difference in favour of sons is also slight. A larger proportion of girls was weighed at birth, (and subsequently), but this practice is determined by place of delivery and health providers' practices rather than parents' behaviour.

It is recognized that cultural preference for sons will only change as a result of changes in social values which cannot be brought about by the health system alone. Yet given the evidence of a distorted sex ratio for infants and worse nutritional status of girls, special attention to care for daughters is warranted.

Differences in health status indicate that the lower socio-economic groups should continue to be targeted for priority attention. Since certain aspects of health education and motivation are better covered than others, it is important that an integrated approach should be developed and followed for health education and IEC.

The HW(F) is responsible for providing coverage of MCH services to all eligibles in her catchment area. However, since the better off families more frequently use private providers, the lower socio-economic groups should continue to remain the HW(F)'s priority.

Proper registration of all pregnant women and births will provide a working data base which the HW can use to track that eligibles have received the scheduled services, whether from her or from other sources.

All infant deaths should be properly recorded, showing sex, age (in days for neonatal deaths) and cause.

In developing health education initiatives and materials, a special effort should be made to emphasize care for boys and girls equally.

TABLE VIII.29

Selected Indicators of Health Status and Utilization  
of Services, by Sex

	<u>Boys</u> (n=227)	<u>Girls</u> (n=193)	<u>Total</u> (n=420)
First breastfed a)			
within 24 hours	15%	21%	17%
Breastfed for more			
than 9 months	91%	91%	91%
Supplementary diet			
introduced before 9 months	59%	73%	63%
b)			
First supplement was:			
Mixed diet,			
special weaning food	70%	65%	68%
Animal milk, ragi, idli	28%	33%	31%
Arm circumference c)			
less than 13.5 cm	31%	48%	38%
No immunization	27%	24%	25%
Full immunization			
(BCG, DPT3, OPV3) d)	6%	5%	6%
Weighed at birth	15%	20%	17%
Weighed subsequently	18%	18%	17%
Received Vitamin A	7%	5%	6%

a) Information available for 179 boys and 155 girls.

b) Information available for 226 boys and 187 girls.

c) Seven children (3 boys and 4 girls) could not be measured; denominators have been adjusted (see Table VIII.11).

d) Includes children receiving one or more doses over age 1.



## 8. Targets

Overall targets are defined at national level by GOI and distributed to the States, which then distribute them to subordinate levels. On occasion, staff at these levels increase targets in an effort to improve achievement. During the evaluation it was found that the way in which targets are formulated and used is counter-productive to the main objective of this Project, which is to strengthen primary health care services.

### 8.1 Formulation of Targets

#### 8.1.1 Targets in relation to the eligible population

There are specified formulae for setting targets for various activities, but in practice the final targets which field staff are given often bear little direct relation to the size of the relevant groups of eligibles. The examples in Table VIII.30 pertain to Salem District; data were not provided for South Arcot.

The descriptions of the targets given in the Quarterly Progress Report (first column of Table VIII.30) are sometimes ambiguous. For example, the tetanus toxoid target should be for each pregnant woman to have TT2 or a booster dose, but the target is "TT2 + Booster." The inclusion of booster dose in the target for DPT3 makes it impossible to interpret achievement, since these doses ought to be given to children in different age-groups. The same problem arises with the "DT2 + Booster" target. If there is a need to know how many booster doses have been given, these should be targeted and recorded separately from DPT3 and DT2, in order to avoid ambiguity.

The wide age-range for childrens' immunization targets also makes interpretation difficult; from Table VIII.30, it can be seen that the target for DT2 covers three-quarters of the eligibles (children 3-5 years). A child should only receive DT2 or DT booster once when in this age-group, and the target is more than double the estimated number of 3-years-olds. Similarly, the target for DPT3 covers less than two-thirds of the under-2s, although if it were more appropriately formulated to be directed at under-1s (the age-group at greater risk in terms of mortality), its present level would be more than adequate to cover the 74,000 newborns in Salem per year, and both supplies of vaccine and health workers' efforts could be more effectively focused upon the highest priority group.

Table VIII.30

Selected Targets for Salem District, from the  
Quarterly Progress Report for March 1985

Targets as cited in Quarterly Report	Target 1984	Target 1985	Change 1984-5	Eligible Population 1985	Target as % of 1986 Eligibles
TT2 + Booster Antenatal	76,594	78,954	+ 3%	a) 74,000	107%
DPT3 + Booster 0 - 2 years	61,695	88,167	+43%	b) c) 139,000 204,000	63% 43%
DT2 + Booster 3 - 5 years	98,547	139,713	+42%	d) 188,000	74%
Vitamin A, 1 - 5 yrs	251,587	289,393	+15%	e) 634,000	46%
Family Planning (all methods)	67,700	88,800	+31%	f) 587,190	15%

a) Based on a population of 2,554,905 (see Appendix 4) and a CBR of 29/1,000.

b) Calculated for children 0-23 months using the same assumptions as footnote (a), infant mortality of 120/1,000 and young child mortality (12-59 months) of 50/1,000.

c) Calculated for children 0-35 months; see footnote (b).

d) Calculated for children aged 36-71 months; see footnote (b).

e) Calculated for children aged 12-71 months (2 doses per child per year), using young child mortality rate of 50/1,000.

f) This figure does not include eligible couples who have already been sterilized, or users of IUDs inserted before 1985.

Table VIII.30 also illustrates the curious phenomenon of the level of a target exceeding the number of eligibles (calculated from data supplied by the PO). It might be expected that pursuit

of 100% achievement of the TT2 + Booster target would encourage health workers to give too much TT; 58% of the 252 surveyed mothers who had received any doses of TT reported that they had had 3 or more doses.

When targets are formulated in terms of doses, cycles of pills, condoms, etc. to be distributed, their interpretation in terms of coverage becomes exceedingly complicated.

#### 8.1.2 Targets constrained by supplies

If antenatal care were integrated with child health services, every newborn would be targeted as his or her mother had been. Yet the percentage of the eligible population targeted for various MCH services varies between over 100% for TT2 and 46% for Vitamin A. In practice, the level at which targets are set may be constrained by the availability of vaccine, Vitamin A, etc; such constraints will inhibit the extent to which targets can be rationalized and integrated.

#### 8.1.3 Targets set by policy priorities

The hypothesis that targets are constrained by supplies does not explain the year-to-year changes in targets for specific methods of contraception; for example, there was a policy decision to make Salem an IUD District, and consequently the annual target increased by 127% between 1984 and 1985 (from 11,900 to 27,000). There would also appear to have been a formal decision to reduce the availability of oral contraceptives; the target changed by 87% between 1984 and 1985, i.e. from 6,700 to 1,100. This substantial reduction in the target has made its impact at field level, with only 1 of the 415 couples surveyed using oral contraceptives, and 38% of HSCs and 58% of PHCs stocked out of these supplies at the time of the team's visit (see Table V.6 and Table V.7 respectively).

The policy emphasis upon certain methods of contraception is evident both from the relative distribution of targets between the four methods, and from the "sterilization equivalents" (see Table VIII.31). This policy has led to a virtual absence of pregnancy spacing (see Section 4 above).

Even though the level of targets may be calculated according to specified criteria and in accordance with policy priorities, they are sometimes changed between state level and block level. The evaluation team was told that the Salem District Collector had

Table VIII.31

Sterilization Equivalents and their Implications for  
Salem District in 1985

	<u>Sterili- zation Equivalents</u>	<u>1985 Target</u>	<u>% Distri- bution</u>	<u>Additional Work if this method were substituted for sterilization</u>
Sterilization (M & F)	1	40,500	45%	-
IUD	3 cases	27,000	30%	+ 121,500 cases
	a)			or
Condoms	12 users	20,200	23%	+ 486,000 users
				or
Oral contra- ceptives	13 cycles	1,100	1%	+ 526,500 cycles

a) or 72 condoms per user per year.

doubled the annual sterilization target during the last quarter of the fiscal year; since fulfilment of this target is taken very seriously, this arbitrary act had the effect of seriously disrupting other health service activity. In another instance, 15 targets for MCH activities in the block had all been calculated using a CBR of 35/1,000, with considerable inconsistencies between targets; for example,

- the difference between the target for DPT3/OPV3 and DT2 implied a death rate of 239/1,000 among under-5s;
- the target for postnatal visits implied that 24% of newly delivered mothers would not be visited;
- the target for Vitamin A would cover only 40% of eligible children, whereas immunization targets would cover 100%.

#### 8.1.4 Targets formulated unrealistically

One example of an unrealistically high target is that for Mobile Health Teams; in order to meet the target of 4,000 patients per month, it has been calculated that the MO would have to see patients for 16.6 hours per day, 6 days per week. Adding in travelling time, each Mobile Health Team would have to work a total of 180 hours per week (see Section 6.4.2 above).

For HWs(F), an analysis needs to be carried out of how they are expected to spend their time according to norms set by the State and their job responsibilities (see Table VIII.2 and Appendix 3.6). Time spent on travel, meetings and record-keeping should be included. This analysis should be compared with the amount of time implied by each of the targets HWs are required to meet, and conflicting claims upon their time could then be resolved at the appropriate level.

#### 8.1.5 Targets formulated without a qualitative component

The absence of consistency between some numerical targets and the unrealistic levels of others reflect a quantitative approach lacking any component which emphasizes quality. Health staff are urged to meet their quotas, and they appear to work extremely hard towards this end, but the result is rather disappointing in terms of coverage with coordinated, integrated services. For example, the Quarterly Report for March 1985 shows that Salem health workers registered 27,274 antenatal cases, that is 147% of the estimated 18,523 new pregnancies per quarter; however, they only covered 60% of this eligible group with TT1 (the protocol is to give TT1 to all pregnant women). Such discrepancies should not arise if services were efficiently delivered according to a holistic, integrated approach.

Another example is that the "sterilization equivalent" for oral contraceptives is to distribute 13 cycles of pills, with no mention of continuing users (which is mentioned for condoms); if the HSC runs out of oral contraceptives and all the hard-won acceptors get pregnant, there is nothing in the reporting system to highlight such a fundamental failure within the family planning programme.

## 8.2 Reporting of Achievement

In order to compare monthly or quarterly service activity with annual targets, the two figures have to refer to the same time-frame; this is not done in quarterly reports from Tamil Nadu. For example, the report for March 1985 states that in Salem, 15% of the target for TT2 + Booster was met; the target should be translated into a quarterly figure (divided by 4), and cumulative performance for the whole year should also be reported to remove the effect of seasonal fluctuations.

Since information on the size of eligible population (from which the targets may originally have been calculated) is generally not reported (the exception is the number of couples eligible for family planning), the interpretation of achievement in terms of coverage of the eligible groups involves many subsidiary calculations.

## 8.3 Use of Targets

The emphasis placed upon achievement of targets is generally expressed in terms of meeting quotas; planning of related work and assessment of the quality of services were rarely found. For example, although immunization targets are calculated from the birth rate, and the schedule starts at 3 months of age, the targets are couched in terms of children under 1 (or 0-2 years), and health workers seem to think that they are targeting their activities appropriately if they start the schedule before the child's first birthday. Data collected during the interviews at HSCs show that when HWs(F) were asked how many children under 5 months old had received DPT1 the previous month, 15% had no records which gave such information, and 46% had not seen any children in this high priority group. (The remaining 38% had on average immunized two-thirds of the children under 5 months - see Table VIII.2.) Availability of information on under-1s receiving DPT3 was even worse, with 29% unable to provide information (a result of recording age when registered, rather than date of birth), and 54% reporting zero. Although the average level of HW(F) activity is more than adequate to cover 100% of under-1s, this activity is not being effectively targeted at the highest priority group.

Other examples of ineffective use of targets and established norms were found in the HW(F)'s records; postnatal cases registered dramatically exceeded the number of births registered in one-fourth of the HSCs with data, and registration of

eligibles for UIP appeared to be missing the under-1s (see Section 5.4 above, and Chapter VI Section 2).

The emphasis given to checking records, which was the most frequently mentioned supervisory activity by both HAs(F) (73%) and MOs (93%) could produce a far more constructive outcome if supervisors stressed the connection between all services provided to a family, and if the HWs(F) were encouraged, in their work planning, to provide integrated services. For example, all antenatal cases should receive IT and be followed up after delivery; all newborns should be registered and immunized as soon as they reach the eligible age. Some reporting formats would need to be revised to make it easier for health staff in the field to use targets for tracking the continuity and quality of services.

#### 8.4 Effects of Targets

##### 8.4.1 Rewards and punishments

For family planning targets, a system of rewards for achievement and punishment for failure has become established. The sterilization target is the only one which carries a financial payment to the health worker for each case motivated. Failure to meet this target was most frequently mentioned as a reason for disciplinary action at all levels. The team was told that some MOs, absent from the PHC, had taken leave during the season of greatest pressure to fulfill sterilization quotas (the last quarter of the fiscal year), to avoid threatened disciplinary action against them. Thus the threat of such disciplinary action had the effect of completely disrupting all the block medical team's work.

HWs(F) generally have less chance of avoiding disciplinary action. They spent 22% of their time directly on family planning work, more than on any other component of their job responsibilities. Most of this activity is to motivate eligible couples to accept sterilization, and temporary methods are either not offered (84% of 219 contacts about family planning were exclusively about sterilization) or not available due to supply shortages (see Section 8.1.3 above). The programme emphasis upon sterilization has led to a virtual absence of pregnancy spacing (except by breast-feeding); only 1% of 415 couples surveyed were using a temporary method of family planning.



It is well appreciated that limitation of family size is a national priority. However, the way in which the family welfare programme is implemented within the health service has created an atmosphere of harassment for the health staff; when asked about their problems at work, 27% of HWs(F), 29% of supervisors and 27% of MOs complained about the amount of time spent on, and priority given to, family planning targets. These problems may entail personal financial costs and public abuse (see Appendix 15.10), deferral of promotion, and threat of transfer away from their families. Moreover, the competition for sterilization cases with staff from other Departments (for examples, Revenue and Social Welfare) inhibits cooperation between these personnel in the field (see Section 4.3 above). The study of HSCs conducted for this evaluation concluded its analysis of the impact of the target oriented family planning programme as follows:

"Unless this atmosphere of distrust, competition and fear is dispelled, it is unrealistic to expect health workers, however efficient and sincere, to function properly."

#### 8.4.2 Quantity supercedes quality

The absence of a qualitative component in the formulation of targets is discussed in Section 8.1.5 above. The effect of the emphasis upon quantity rather than quality was found in the way the dai training programme has been implemented in the project area. The target for this programme is to recruit and train one traditional midwife per 1,000 population, or one per village in smaller communities. The criteria for selecting dais for training clearly specify that candidates should have an established midwifery practice before they begin the course, and the curriculum is premised on the assumption that trainees are experienced in delivering babies. Although the household data indicate that a pool of untrained, experienced, practising dais exists (one-fifth of 420 deliveries were by untrained dais), the Project has had difficulty in identifying and recruiting dais for training, and proposed an alternative programme for training women with no previous delivery experience. The proposal has not been approved, but recruitment of trainees who were not dais seems to have gone ahead; one-third of the dais interviewed had no experience at all before training. Ad hoc substitution of non-traditional dais, without the necessary adjustments in the dai scheme (feasible role, curriculum, supervision, etc.) has apparently resulted in the fulfilment of targets but little else; three-quarters of the trained, non-traditional dais had not conducted any deliveries within the last 3 months, and out of the

whole sample, one-eighth had never attended a delivery without the HW(F)'s supervision. One explanation of why the Project would disregard the pragmatic criterion that candidates for training should be experienced dais is that the pressure to train the targeted number of dais is greater than the perceived benefit of the dai scheme's objective of upgrading the skills of an established birth attendant.

#### 8.4.3 Single function approach

During this evaluation, the view was expressed that targets were necessary to make health workers do their job. The data from field visits show that on the whole, HWs(F) are working extremely hard; they are providing enough services to cover two-thirds of antenatal cases, half the deliveries, three-quarters of postnatal cases, and all under-1s with immunization. However, they are not being very effective, partly because of inadequacies of basic knowledge and skills, and partly because they have been orientated towards meeting a limited range of single function quotas, by which their work is planned and their performance assessed. This fragmented pattern of service delivery has resulted in very low coverage for integrated MCH services. If targets were linked for field staff, so that their pattern of work became integrated, their efficiency and their effectiveness would be dramatically improved. For example, if the health service were perceived to be contributing to child survival, health workers would be more likely to find more willing acceptors of family planning methods.

Major Recommendation 8 addresses the issue of targets.

### 9. Project Initiatives to Improve Health Service Delivery

Throughout this chapter, mention has been made of various innovative schemes designed to improve the delivery of health services. Evaluation of individual innovative schemes was not carried out in the field but the Project's activity in this area was reviewed during the desk study prior to the field work (see Appendix 13 for a summary of innovative schemes). However, during the evaluation, the team visited the Kolli Hills area where the scheme designed to interrupt the transmission of sexually transmitted diseases (STD) has been implemented, and one of the blocks where the community nutrition project had been implemented. Observations on these schemes are included in Appendix 13.2 and Appendix 13.3 respectively.

Initially, the budget allocation for innovative schemes was Rs.62.5 lakhs (4.3% of total project budget). Expenditure during the first three years of project activity (1981-1984) was 5% of the original budget allocation for this item. In POPIII, the funds allocated for this item were reduced to Rs 33.1 lakhs (1.8% of Project budget) and up to FY 84/85 expenditure has been 25.5% of the POPIII allocation. The gross expenditure up to March 1985 has been Rs.8.45 lakhs.

There has been considerable activity with innovative schemes; the PO has introduced at least 10. Each has been taken up with enthusiasm, completed and often evaluated. However, it is often unclear how a scheme can be extended to the rest of the project area, or replicated elsewhere, or indeed if the State has any interest in replicating it. Thus each scheme is seen as an entity with a beginning, middle and ending, after which it is shelved. Most of the reports on completed schemes have not been discussed in the SPCG.

Much more realistic and well defined objectives should be set for innovative schemes. Time should be taken to ensure that development of all relevant aspects takes place and that the outcome can be beneficial and replicable.

If outside assistance is sought, that assistance should be vetted to ensure that it will provide the sort of assistance that is necessary. This is a specific example of a role that could be played by DANIDA/DHCU.

#### 10. Summary

The Project does not have executive responsibility for health services, but it is charged with supporting and influencing their delivery. At present, a large proportion of the target groups come into contact with the services for which they are eligible; 74% of the surveyed mothers had received some antenatal care, 63% had their deliveries attended by trained personnel (including dais), 75% of the index children had received one or more immunizations, and 59% of couples surveyed were either using a method of family planning or had been contacted about it. The HWs(F) were making enough postnatal visits to see each mother twice. However, the quality of some services (notably dais' cord-

cutting practices and HWs' sterilization of equipment used for giving injections) left much room for improvement. The HWs' pattern of working does not reflect an integrated holistic approach to MCH and family planning services. Instead of routinely providing all relevant services to a pregnant woman, one or more components are left out, so that only just over half of those who reported receiving some antenatal care received all three components: TT and iron and an examination. When coverage with four selected components of MCH - one or more doses of TT, any nutritional care for the child (weighing or weaning advice or Vitamin A), one or more immunizations, and family planning services (contact or use) - are added in, coverage with integrated MCH services falls to 12% of the households surveyed.

## IX. COMMUNITY PARTICIPATION

Community participation is one of the main project principles; however, the agreed framework for this evaluation was not considered a suitable vehicle for assessing community participation in great depth. To do justice to this component, a different protocol is needed, conducted over a longer period of time. It is also recognized that community participation is difficult to define in terms of specific activities and that in its fullest sense it is difficult to achieve.

In the project document, primary health care in India is described as "a practical approach in making essential care universally accessible to individuals and families in the community in an acceptable and affordable manner and with their full participation. Decentralization and self-reliance are the cornerstones of this approach. The goals of primary health care are attained by social means such as acceptance of increasingly greater responsibility for health by communities and individuals and their active participation in attaining it". The role of the PO in supporting activities for community participation is a crucial part of the Project and the PO has several tools at its disposal for initiating activities in this area. Project components which support this approach to health care include the promotion of village level organisations, the community welfare fund, and use of information, education and communication strategies.

Some of the mechanisms for supporting community mobilization are discussed below.

### 1. Village Welfare Committees (VWC)

These committees were conceived of as having an important role to play in generating community involvement. They were set up in the first year blocks, not as an outcome of community initiative but through a Government Order issued by the Health and Family Welfare Department in 1982.

In addition to health personnel (female health worker, trained dai), these committees were supposed to have village representatives of whom at least two had to be women. Of the 3 VWCs identified in the evaluation's sample of 60 villages, none had any women members. The average membership was about 26 per committee. The VWCs are virtually defunct, a fact which the PO recognized;

POPII, drafted in 1983, states "It has been found that these committees (in their present composition and in the formal process of their formation) could not function effectively".

## 2. Village-Based Organisations

POPII proposed that "the PO will also explore alternate forms, such as strengthening and utilizing existing active groups such as Mahalir Manrams, Youth Clubs, etc. While this is being attempted care will be taken to ensure that in such groups the target groups are represented.... These groups will aim at carrying out the following functions with the overall objective of ensuring community participation and community involvement:

- To educate the community about the Project and related components like Health, Nutrition, Sanitation, etc.
- To maintain sanitation and hygiene in the village.
- To look into the health hazards of the village.
- To assist in increasing the awareness of the programmes of the Government and in particular the DANIDA Project.
- To support and coordinate with the Project staff and other health staff in carrying out their functions effectively for location planning, site selection, construction, health delivery services.
- To assist the trained Dai in her work, and the official participants of these Groups/Manrams.
- To identify the schemes for Community Welfare Fund, and
- To monitor the progress of implementation of various activities under the Project".

Discussions with village people and observations in the field by the evaluation team members provide a basis for the team to note that there was very little in the way of community participation in health issues in any of the villages visited.

In the 60 villages surveyed during the evaluation, 27 said they had a village based organisation such as VWCs, Mahalir Manrams, Village Health Councils, Youth Clubs, etc. Four of the

organisations mentioned were moribund and the rest (except for two voluntary agencies) were ineffective. Many of the organisations had been started by different categories of government servants, e.g. the Collector, the MO, the Mukhya Sevika (Development Social Worker) or by the Panchayat Union. None seem to have taken root in the community.

In recognition of the fact that revitalization of these existing organisations (excepting VHCs which are of very recent origin) had not been particularly successful, the PO is making another attempt to mobilize community organisations.

### 3. Village Health Councils (VHC)

The Village Health Council is a second generation, more informal version of the Village Welfare Committee. These councils are now being formed at the rate of two per block. The process began during the IEC training held in November/December 1985, which was attended by all PHC staff. Although there has been some decentralization and the responsibility of forming the VHCs has been placed upon the BEE, they are little different from the Village Welfare Committees as their formation is not initiated by the community.

The GOIN has not accepted the VHC scheme. This lack of a trained community health worker chosen from, and by, the community, means that one of the potentially important instruments for community mobilization is missing.

Whilst there have been some problems with the VHC programme, there are many cases where their presence has been shown to be beneficial in establishing some of the necessary links in a functioning primary health care system and in playing a part in the mobilization of communities around health issues.

### 4. Women and Community Participation

A great potential exists in the project area in TN for establishing a good support network amongst women, as the Chief Minister's Noon Day Meal Scheme now has a feeding centre in every village with a building, a Balwadi teacher and her assistants who prepare the food. This programme, run by the Department of Social Welfare, offers a nutritious lunch to every child under five who comes to the Centre and, in addition, provides nursery school



facilities. The Balwadi teachers are, therefore, well placed to be in contact with a number of families in the village including families living in the poorer parts of the village.

At present the link between the health service and the Balwadi is through the PHC doctor, who is supposed to visit the centre once a month, while contact between the HW(F) and the Balwadi is not formalised.

Another potential for building up the female links for health care are the women who were members of the defunct Mahalir Manrams (women's organisations), who could now be more purposefully motivated to support and monitor, on behalf of the community, the activities of the Balwadi and the HSC.

#### 5. Community Welfare Fund

This fund was designed as one of the key components of the Project for facilitating community activity for health in villages. This component of the Project has clearly been misunderstood by the PO and the funds were being inappropriately spent until the fund was frozen by DANIDA in 1985.

During the first few years of the Project, the fund was clearly underspent and on the basis of this, POPIII reduced the budget allocation for this component by 73%, to Rs. 26.9 lakhs. By March 1985, 40% of the revised allocation had been expended.

The procedure for the use of this fund has been that proposals which were generated at the grass root level in the villages were to be channelled up through the MO to the DPCC, where the Collector (as Chairman) would sanction the proposals. In practice it has been the Collector or DPO who has asked various non-governmental organisations to submit proposals; after some minimal moulding to fit the fund's guidelines, they have then been sanctioned. Some schemes were also sanctioned without any attempt at reformulation at all, for example the Gangavalli Wood Carving Unit in Salem.

The funding of the Gangavalli Wood Carving Unit in Salem (Rs. 24,600/-) was explained to the evaluation team when it visited the unit during the evaluation. This group of wood carvers knew that the District Collector was interested in wood carving and they approached him as the person who had access to funds. They were told that the DANIDA Project had money for

community activities and that he would channel their proposal towards the CWF. The wood carving unit project financed 30 male wood carvers to start up a business which is now doing well with outlets organised to the Emporium in Delhi. The scheme has nothing to do with health or women and children.

While initiatives like Gangavalli are clearly an example of misunderstanding of the aim of the CWF, the PO now appears to be concentrating the funds on NGOs like Auroville, Punjab Association and St. Joseph's Industrial School. Failing to find any community initiatives within the project area, the use of NGOs appears to have many advantages; very often a training programme, like the knitting scheme in Auroville, does involve young people from a number of different villages in South Arcot, thus spreading the effects of the training to a wider population, but they are not generated from within the community.

The failure to use the CWF in accordance with the Project guidelines has now resulted in a review of the mechanisms of initiating and sanctioning this money. The new guidelines for the CWF, and the employment of two consultants to facilitate the preparation of proposals for CWF activities, are both very recent developments and it was not possible during the evaluation to judge whether they will bring about the changes that are necessary to make the fund function according to the criteria set down for it (see Appendix 14).

#### 6. Orientation Training Camps (OTCs)

These are one-day camps held in villages for educating the community about MCH. So far, this forum has been used largely for promoting awareness about family planning and immunization. With a broadening of objectives and a change in methodology, the OTCs could become an effective vehicle for mobilizing communities.

#### 7. IEC

This component of the Project was specifically designed to create awareness, especially among the poorer sections of the community, so as to enable them to gain access to better health.

The approach clearly stressed interpersonal communication. There has been a great deal of activity under this head, but the bulk of it has been in the area of mass communications. However, in more recent times, the setting up of DTTs and the subsequent attempts at training in interpersonal communication (the IEC training for BEEs and via them to PHC staff) appear to be in keeping with originally declared intentions.

#### 8. Non-Governmental Organisations

In the project area, there are a number of non-governmental organisations, some of which have been drawn into the Project. A notable example is "ACODE LAND", a NGO in South Arcot which has been instrumental in mobilizing people to form their own health advisory committees. ACODE LAND has trained about 24 women from the villages in which it works to act as Village Health Workers.

Another example relates to immunization coverage. In two of the 60 clusters surveyed, the Lions Club and the Thanjavur Multi-purpose Social Service Society had been organising immunization services in cooperation with the nearest PHC. Coverage in these villages was substantially better than average, and the agencies' techniques for encouraging uptake of services could be useful to the Project. Rotary has also been involved in various aspects of health care delivery.

There is great scope in the Project to draw upon the creativity and motivation of some NGOs, which have a residential base in the community, in effective deployment of the CWF and in initiating effective and appropriate innovative schemes. These organisations, properly identified, can also play an effective role as a link between the Project and the community.

#### 9. Project Organisation

The conceptualization of community participation was not clearly articulated in the Project Document nor operationalized in the POPs. As a result, the Project has been unable to develop suitable strategies. The exception is the contact that the PO has made with functioning NGOs. In the one instance where clear guidelines were laid down i.e. for use of the CWF, they were misunderstood and the funds were inappropriately spent.

Major Recommendation 10 addresses the need to promote community participation.

## X. INFORMATION, EDUCATION AND COMMUNICATION

IEC activities in the Project were to be directed toward helping the neediest sections of the rural population gain access to better health.

The objectives of the component as stated in the Project Document are:

- To make information, education and communication an integral part of the entire health and family welfare service delivery process
- To provide health and family welfare education as a community based extension effort
- To use educational activities as a tool for mobilizing the community to participate in health and family welfare promoting activities.

### 1. Approach

The Project Document emphasized that all health staff have a communication role, that the IEC strategy should focus on inter-personal communication, and that the activities should be community-based. It focused heavily on training trainers to train all health staff in educational methods and community mobilization skills.

Further, IEC communication training was originally subsumed under management training. Educational materials, audio-visual aids and equipment were given a clearly subsidiary role in support of the community education and mobilization activities.

### 2. Manpower for IEC Activities

The first Plan of Operation identified the need for a state level Communication Officer. However, the post was filled only in mid-1983. Support staff to assist this officer was sanctioned as per POPIII, which also recognised the need for a district level programme officer. The District Training Officer was redesignated as the District Communication Officer, and given training in communications. (See Appendix 3 for project IEC staff.) In 1985,

recognising the need to decentralize decision-making and to strengthen coordination with existing media staff, District Communication Action Groups were established in each of the districts.

At the health services level, implementation of IEC activities is the responsibility of the MEIOs and the Deputy MEIOs at the district level and the BEEs at block level. In PHCs where no BEEs are located, Senior Sanitary Inspectors fill that role. BEEs are responsible for planning and carrying out IEC activities for the Block, for motivating health staff to carry out the work plan, and for participating in the training of dais.

The data show that BEEs were in fact the category of staff least likely to be in position at PHCs; 60% of the 45 PHCs had a BEE, while for all other categories of staff between 75-98% were in post.

### 3. Activities

In spite of the intended Project focus on interpersonal communication involving all health staff in IEC activities at the community level, in the first few years of the Project, the PO continued to implement this component using a mass media approach, coupled with centralized production and distribution of materials.

During the first two years of implementation, IEC efforts focused on the community nutrition project carried out in the two pilot blocks, primarily using a mass media approach.

A review of the 1984 overall IEC plan suggests that this plan too has little to do with the stated objectives. It gives materials production and equipment the key determining role in the "strategy" and lacks a coherent plan of educational strategies.

It appears that of late, activities may be focusing more on the community and the health staff training needs. In mid-1985, as a result of workshops, detailed district and block level IEC action plans have been developed. They focus on establishing Village Welfare Councils, strengthening Village Orientation Training Camps, organising sector level meetings, training health staff and mass media campaigns.

POPIII states that the following activities would be carried out as part of IEC training:

- Training for strengthening interpersonal and mass communication skills of MEIOs, DCOs, BEEs
- Training of MEIOs, DCOs, BEEs as trainers for Health Supervisors, MPWs and Dais
- Workshops at district level and HUD level to be conducted to review communication inputs and to identify the deficiencies as well as to plan for upgrading of skills of health staff
- Training of primary/secondary school teachers and dais in health communication.

The training of trainers has apparently been quite successful in that the training process resulted in the block implementation plans and in the identification of both training needs and of available resources. The BEEs being not yet confident to carry out training by themselves, obtained assistance from the DTTs for their training of health staff. An operational linkage between interrelated training activities has thus been established, though it appears to be informal at this point.

Data from the evaluation field work show that IEC training has been carried out for staff at 29 of the 45 PHCs surveyed. In turn, BEEs and MOs in 26 of the 45 PHCs had carried out IEC training for health workers.

#### 4. IEC Materials

The field visits showed that the PO had been successful in acquiring and distributing IEC materials to PHC and HSC level: 50 out of 53 HSCs had IEC materials. However, there is no indication that any of the acquired materials have been field-tested and evaluated for relevance, level of understandability and community/audience response (see Chapter V, Section 1.1). The same applies to project produced materials.

A matter of some concern is that examination of the equipment and materials by the team indicated that they were largely unused, partly because the intended users have not been trained in their use, operation, maintenance and repair.

## 5. Budget

The IEC budget is comprised mostly of equipment, materials production and hardware. Expenditure figures show that there was a nearly 5-fold increase in expenditure between 1984-1985 and the preceding years (from Rs. 3.02 lakhs to Rs. 14.3 lakhs). The details of this expenditure are not yet available.

The recent shift away from mass media and towards interpersonal communication should be supported with further training of PHC staff in developing local IEC plans and materials.

The PO should continue to support the use of traditional methods of entertainment and communication. It should contact other projects which are using participatory communication methods, to learn from their experience.

The PO should develop protocols for using the materials that have been purchased (e.g. films, slide shows) to encourage dialogue and discussions among participants, with a view to feedback and follow-up.

The IEC activities of the PO should be closely coordinated with training priorities and community participation activities (see Chapter IX).

IEC inputs should be specifically linked to priority areas of health service activity in which skills are seriously deficient, and should be developed using the results of the DTTs' field assessment of health staff's current technical and communication skills.



## XI. BUDGET

The general principles governing the provision of finance, methods of budget formulation and allocation, expenditure approval, payment, accounting and audit are set down in Appendix 19. This chapter is in two parts; first it shows project expenditure in terms of actual expenditure (Table XI.1), percentage distribution of expenditure between budget heads (Table XI.2) and expenditure by budget head over the project period (Table XI.3). Secondly it examines the way in which the budget has been used as a managerial tool to monitor the progress of the Project and suggests ways in which the budgetary data could be more usefully reported for managerial and monitoring purposes. Where elements of expenditure pertain to the findings in this report, they are highlighted.

### 1. Method of Reporting Expenditure

The budget was originally formulated under 13 heads in the Project Document. At the beginning of the Project, GOI issued its own reporting format for Area Projects; this consisted of 19 heads, each of which had a number of sub-heads. DANIDA also issued its requirements for reporting, which stipulated that the expenditure would be reported once a quarter by main heads and once a year by sub-heads, in the GOI Area Project budget format. The expenditure would be certified by the Project Director within 3 months of the end of the financial year. However, GOTT did not adopt the GOI Area Projects' format. It continued to operate the head it had opened for the Project during the planning phase, and added six more heads into which GOI's 19 heads and the Project Document's 13 heads are subsumed. For instance, it has only one head (SN) for additional manpower for health services, whereas in the GOI format additional manpower appears separately under six different main heads, four of which are relevant to the TN project. Within each of the seven main heads used in the TN Area Project, there are a number of sub-heads. These sub-heads are not each exclusive to one executive agency nor are they the same as in the GOI format. Because of this complexity, at the time of POPIII a table was drawn up to reconcile the 19 Area Project heads with the seven used in TN (see Appendix 17). This notwithstanding, it is not possible to extract the data to compile the budget according to sub-heads because some items can only be traced by going back to voucher slips.

Over an extended period DANIDA, both in SPCC and directly, has been asking, indeed offering to pay, for the accounts to be

revised so that it is possible to track items in the 19 head format. It was not until this evaluation was scheduled that the PO agreed to undertake this task. The team was told that the exercise was in hand and would take a month or two. Because of the absence of sub-head items it has not been possible to look at the budget for the TN Project in the detail that was possible in Madhya Pradesh.

Table XI.1 is constructed from the PO's monthly statements expenditure. The budget distribution against each head as a percentage of the total budget in the Project Document and POP III, and accumulated expenditure is shown in Table XI.2. Table XI.3 shows how the budget for each head was actually spent in relation to its allocation in the Project Document budget and POP III. It also shows the percentage change for each budget head between the Project Document budget and POP III.

From Tables XI.1 and XI.2 it can be seen that in the first two years of the Project there was a major expenditure under the construction head, which accounts for 68% of all project expenditure. By comparison, the first year allocation for construction in the Project Document amounts to 20% of the annual budget. It may also be seen that other activities progressed much more slowly; for example, the CWF accounted for only 0.5% of expenditure compared with an original allocation of 7%. Drinking water and sanitation accounted for less than 1% compared with an original figure of 11%. The establishment of the PO at state and district level accounted for 10% of expenditure compared with less than 2% allocated in the original budget. Nutrition expenditure was 5% as against an allocation of 4% in the budget.

Between FY 82/83 and FY 83/84 expenditure went up by nearly 60% and again a similar pattern emerges; in FY 83/84, construction accounted for 65% of the expenditure, CWF for 0.1% and water and sanitation for 7%. In FY 84/85 the annual expenditure fell due to expenditure on construction falling by a third (Rs. 87 lakhs) from the level of the previous year. This is partly offset by increases in expenditure on other items.

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TABLE XI.1

Actual Expenditure - Tamil Nadu  
(In Rs. 100,000)

<u>GOI</u> <u>Area</u> <u>Projects</u> <u>Main</u> <u>Heads</u>	Accu- mula- ted expen- diture <u>31.3.1983</u>	FY <u>83/84</u>	FY <u>84/85</u>	Accu- mula- ted expen- diture <u>31.3.1985</u>
2. Training of dais	1.29	2.21	10.90	14.40
3. Addl. HSC	16.61	24.46	19.85	60.92
4. MPW(M)	7.79	33.51	54.59	95.89
5. LHVs				
6. HA(M)				
7. PHC level				
8. Upgraded PHCs	18.38	10.69	8.37	37.44
11. District level				
12. State level	7.71	6.66	7.58	21.95
13. Construc- tion Wing	5.55	9.57	7.60	22.72
14. Monitoring & Evaluation	1.25	2.45	0.68	4.38
15. IEC	0.80	2.22	14.30	17.32
16. Training	5.54	4.08	12.20	21.82
18. Construction	172.25	260.93	173.66	606.84
19.1 Innovative Activities	0.98	2.15	5.32	8.45
19.2 Nutrition	13.45	14.26	3.45	31.16
19.3 Drinking water and sanitation	0.69	29.35	54.80	84.84
19.4 CWF	1.33	0.59	8.86	10.78
19.5 EPI	-	-	-	-
Total	253.62	403.13	382.16	1,038.91

Source: Statements of Expenditures from the Project Organisation.  
Items 9 (urban centres) and 10 (Maternity homes) are not  
included in this Area Project.

1) The allocation of expenditure on items 3-8, 11&12 differs  
from the expenditure statements as presented in POPIII.

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TABLE XI.2

Percentage Distribution of Budgets and Expenditure -  
Tamil Nadu

<u>GOI</u> <u>Area</u> <u>Projects</u> <u>Main</u> <u>Heads</u>	Percentage distribu- tion of bud- get from Proj. Doc.(a)	% ex- pendi- ture up to 31.3. 1983	% ex- pendi- ture in FY 83/84	Percen- tage dis- tribu- tion of budget POPIII	% ex- pendi- ture in FY 84/85	Accu- mula- ted expend. up to 31.3.85
2. Trg. of dais	2	<1	<1	3	3	1
3. Addl. HSCs	9	7	6	15	5	6
4. MPW(M)	5			*		
5. LHVs	3			3		
6. HA(M)	-	3	8	*	14	9
7. PHC level	5			3		
8. Upgraded PHC	3			1		
11. District level	1	7	3	3	2	4
12. State level	*	3	2	2	2	2
13. Constr.wing	1	2	2	2	2	2
14. Monitor./Eval.	2	*	<1	2	*	*
15. IEC	3	*	<1	2	4	2
16. Training	11	2	1	4	3	2
18. Construction	27	68	65	45	45	58
19.1 Innovative Activities	4	*	<1	2	1	<1
19.2 Nutrition	4	5	4	3	<1	3
19.3 Water/Sanit.	11	*	7	8	14	8
19.4 CWF	7	<1	*	1	2	1
19.5 EPI	-	-	-	3	-	-
	b			b		
Total	100	100	100	100	100	100

Source: Statements of Expenditure from the Project Organisation; POPIII  
- No expenditure/allocation.

a) The Project Document budget was reallocated into GOI's  
19 heads and sub-heads.

\* ) Less than 0.5%.

b) Sum does not equal 100% due to rounding.

Finally Table XI.3 shows how each main head expenditure has progressed through the life of the Project. This includes the rebudgeting which occurred in POPIII where some items changed very dramatically both in percentage terms and in absolute terms (e.g. State and District level management, additional HSCs and construction). When looking at the total percentage expenditure some items stand out. For example, with 70% of the Project time expended (1.4.85), the construction is 72% spent and heads 4-8 are 78% spent; conversely many other items have spent a third and one (EPI) has spent nothing. These are all very crude indications because they assume that expenditure should follow the original proportions set down in the budget and progress relative to each other at the same rate. Neither of these assumptions is automatically desirable. However, it does serve to highlight those components where there is little likelihood of the budget being used before the end of the Project. As long as expenditure is only reported by main heads there is little more comment that can be made.

## 2. The Budget as a Managerial Tool

Little use has been made of the budget as a managerial tool either by the PO or by DANIDA. Indeed it is hard to see how any of the parties involved could satisfy themselves about expenditure, as the sub-head breakdown was never presented.

This evaluation tried to collect the data that were necessary to enable sub-head expenditure to be recorded. This proved to be impossible in the time available.

An example from Madhya Pradesh of the way sub-head expenditure can be recorded and used is enclosed to illustrate the method (Table XI.4).

From a managerial point of view what is interesting is to see changes in the pattern of expenditure as well as absolute amounts. Thus a sudden decline in an item is just as interesting to a manager as a sudden increase. Finally the manager may wish to know the level of expenditure in relation to major components of the Project such as drugs, manpower, kits, etc. In the present format, expenditure under these items appears in several different main head items. It is therefore impossible to track them without the sub-head expenditure. Table XI.5 shows an example of such a reconciliation from Madhya Pradesh in which it is possible to track the item in question, e.g. drugs.

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TABLE XI.3

Expenditure by Budget Head over the Project Period  
(in Rs. 100,000)

<u>GOI</u> <u>Area</u> <u>Projects</u> <u>Main</u> <u>Heads</u>	Budget allo- ca- tion accor- ding to Proj. Doc.	Ex- pen- di- ture upto 31.3. 1984	% of Proj. Doc. allo- ca- tion spent	% change in Proj. Doc. to POPIII reach POPIII allo- ca- tion	POPIII allo- ca- tion 1.4. 1984	Ex- pen- di- ture upto 31.3. 1985	% of POPIII allo- ca- tion spent
2. Trg. of dals	30.8	3.5	11%	+52%	46.9	14.4	31%
3. Addl. HSCs	133.9	41.1	31%	+107%	276.7	60.9	22%
4. MPW(M)	65.8			-93%	4.4		
5. LHUs	42.8			+24%	53.1		
6. HA(M)	-	41.3	19%		1.0	95.9	78%
7. PHC level	71.1			-32%	48.0		
8. Upgraded PHCs	39.9			-58%	16.9		
11. Distr. level	20.2	29.1	144%	+210%	62.6	37.4	60%
12. State level	7.0	14.4	206%	+450%	38.5	22.0	57%
13. Constr. Wing	19.0	15.1	79%	+85%	35.1	22.7	65%
14. Mon. & Eval.	34.0	3.7	11%	-16%	28.5	4.4	15%
15. IEC	48.9	3.0	6%	-33%	32.7	17.3	53%
16. Training	163.4	9.6	6%	-59%	66.2	21.8	33%
18. Construction	384.5	433.2	113%	+119%	840.3	606.8	72%
19.1 Innov. Act.	62.5	3.1	5%	-47%	33.1	8.5	26%
19.2 Nutrition	60.0	27.7	46%	0%	60.0	31.2	52%
19.3 Wat. & san	155.0	30.0	19%	0%	154.9	84.8	55%
19.4 CWF	100.0	1.9	2%	-73%	26.9	10.8	40%
19.5 EPI	-	-	-		50.0	-	0%
1)							
Total	1,440.0	656.8	46%	+30%	1,875.8	1,038.9	55%

Source: Statements of Expenditure from the Project Organisation; POPIII

1) The actual total is 1,438.8; the difference occurs because of the difficulty in reallocation from Project Document format.

The way the budget has been handled in this Project has meant that it has been of little managerial use. It is not clear why the annual sub-head report requested by DANIDA was not made. The reluctance of the PO to provide the detailed sub-head expenditure despite repeated requests from DANIDA must be considered one of the major short-comings of the PO's project management.

The exercise now started, to reconcile expenditure with sub-heads, should be completed as a matter of urgency. The reconciliation should be provided to the members of SPCC.

The reporting of sub-head items should become a routine monthly exercise for the District, and the information should be compiled by the PO in such a way that the data are usable, e.g. Tables XI.4 and XI.5.

The quarterly progress reports to DANIDA should include these financial reports together with explanations of any anomalies.

DANIDA should analyse these reports and use the information to satisfy itself that disbursements are justified.

Full budgetary data presented in accordance with Tables XI.1-5 should be prepared once a year for the external annual review.



Example

TABLE XI.4

Budget Expenditure on Sub-Heads - Madhya Pradesh  
(in Rs.100,000; indicative expenditure, not from audited accounts)

Area Project Budget Sub- Heads	Item Description	POPI Budget		POPIII Budget	
		Allo- cation for Project 1981 - 1986	Ex- pen- di- ture 1981- 1984	Allo- cation for Project 1981 - 1986	Ex- pen- di- ture 1981- 1985
1.	<u>Community Health Volunteer/ Village Health Guide Scheme</u>				
1. 1	Training stipend amount	29.4	41.5	51.5	47.6
1. 2	Kits for guides	7.4	6.9	11.8	17.0
1. 3	Manuals for guides		b	0.8	b
1. 4	IEC materials	1.0	b	2.5	b
1. 5	Training material at PHC level and contingency expenditure	1.5	1.3	2.9	1.9
1. 6	Honorarium VHGs (trained after 1 April 1981)	94.2	25.5	122.3	52.2
1. 7	Refill of medicine, VHGs	94.2	26.0	122.8	42.7
1. 8	Additional medicines	c	1.5	11.9	5.4
1. 9	Appointment of Third Medical Officer at new PHCs taken up after 1 April 1981	27.0	8.9	35.0	14.5
	d)				
1.10	Other expenditure	c	0.5	0.5	2.6
	e)				
Sub total		254.6	112.1	362.0	183.9

Source: Expenditure Statements, POPI and POPIII.

- a) No expenditure.
- b) Expenditure not reported for sub-head.
- c) No budget provision.
- d) This sub-head does not exist in the POP budgets. It probably covers expenditure which has not yet been distributed against budget sub-heads. Where applicable it is shown as part of POPIII because it is included in the main head expenditure reported in POPIII.
- e) Sub total does not equal sum of sub-heads due to rounding of the latter.

## Example

TABLE XI.5

Budget Expenditure Allocated on Selected Functions - Madhya Pradesh  
(in Rs.100,000)

Area Project Budget Sub- Heads	Item Description	POPI Budget Allo- cation for Project 1981 - 1986	Ex- pen- di- ture 1981- 1984	POPIII Budget Allo- cation for Project 1981 - 1986	Ex- pen- di- ture 1981- 1985
1.	<u>Mangpower</u>				
1. 9	Appointment of Third Medical Officer at new PHCs taken up after 1 April 1981	27.0	8.9	35.0	14.5
3.2	Salary TA/DA for MPW(F)	127.5	9.6	54.3	35.9
3.3	Salary for part time attendants	12.8	0.2	2.9	0.5
5.2	Salary, TA/DA	50.6	0.5	52.9	1.9
8.2	Staff salaries TA/DA	44.5	2.5	37.5	6.2
11. 1	Staff salaries TA/DA	38.9	14.8	37.0	25.3
12. 1	Staff salaries TA/DA	15.4	OK	19.2	OK
13. 1	Salaries TA/DA	17.3	17.9	50.9	31.5
14. 8	Consultancy charges		OK	3.0	OK
14. 9	Others (baseline survey consultants etc.)		OK	7.0	OK
	d)				
16.1. 3	Staff salaries	c	8.5	8.5	14.2
16.9. 3	Consultancy, management training	34.0	b	8.5	b
16.9. 6	DTC staff salary	c	c	24.5	b

## XII. MANAGEMENT AND MONITORING

### 1. Planning Phase and Start of Project Activities

This Chapter describes some aspects of the planning phase which affected the subsequent development of the Project and the PO. The role of the SPCC and its members is discussed with particular reference to the need for monitoring project activity. Recommendations are made for monitoring by the community, the PO, DANIDA and an external group.

The Tamil Nadu Area Project, like the one in Madhya Pradesh, had a planning phase with a separate budget, during which full-time District Project Teams (each consisting of a District Project Officer, a PHN and a statistician from the Health Department, and a social scientist appointed by DANIDA) worked with part-time consultants in collecting information, consulting block staff and the community and developing plans for each district. The planning phase used a participative approach, in the belief that persons who had contributed to, and been involved in, drawing up plans would be more committed to seeing them implemented than people appointed only after the Agreement had been signed. The planning teams focused their activities upon the pilot blocks (one per District), but collected information for the whole District. District plans were produced by the Salem and S. Arcot teams. However, these were not accepted by the State, which set up a team at state level to prepare the Project Document. This document bears a close resemblance to the MP Project Document, which had by then been cleared by GOI. However, there are certain gaps and errors in the information contained. For example, there is no description of water and sanitation interventions in the Project Document, and the vital statistics quoted in that document are internally inconsistent (see Appendix 4).

The Project Document specified that the Project Director and District Project Officers should be from the IAS cadre. After the Document was completed, the Project Director was appointed, and two IAS officers replaced the two DPOs who had been involved in the planning phase. Instead of retaining these staff within the district health system, making it possible to draw upon the experience they had accumulated, they were transferred out of the project area.

Because of the close contact between DANIDA and its consultants and the District Planning Teams during the planning phase, DANIDA

expected that this level of interaction would continue into the implementation phase, as there was a large element of planning in this phase as well.

The planning phase culminated in the signing of the Project Agreement on 1 August 1981.

This Agreement states the following objectives:

- Improvement of the efficiency and utilization of the existing health and family welfare system especially in relation to the services needed by the weaker sections of the rural population.
- Strengthening of the health and family welfare infrastructure coverage through extension of the Primary Health Centre and Sub Health Centre services.
- Encouragement of and stepping up community self-help activities especially among the weaker sections of the rural population in the context of health and family welfare.
- Intersectoral coordination of development activities at village level to achieve the above mentioned objectives.

The implementation of project activities was to be based on detailed Annual District Plans which should be in accordance with the principles and strategies described in the Project Document. These were: the target group approach, the participative approach and community involvement, the multisectoral approach, decentralization and flexibility.

For the implementation of the Project an organisation was to be set up under a Project Director. Within 3 months of signing the Agreement, a Plan of Operation for implementation of the Project was to be agreed upon.

## 2. Plans of Operation

The final draft of the first Plan of Operation is dated December 1982; project implementation started well before the POP was finalized.

POPI describes the organisational framework for the Project in terms of committees that were to be set up under the Project, and

the various cells to be established within the Project Directorate and at the District Project Offices, along with their functions.

It contains no description of the phasing of the Project nor the overall activity plan. In its description of activities it mentions:

- an experimental training programme in 7 First Year Blocks, where 7 leading training institutions "will carry out the experimental exercises with regard to curricula, content, coverage, methodology and communication aids ... (and) also impart orientation training to the beneficiaries under the Project." (POPI, p. 21)
- nutrition and sanitation programmes in the two Pilot Blocks, and a communications programme that focused on supporting the nutrition programme
- a tribal health care programme in Innadu in the Kalrayan Hills, as an innovative scheme. (The Kalrayan Hills are geographically within the project area but were not included in the Project because at the time of project planning they had not yet been divided into community development blocks.)

A detailed methodology for carrying out location planning and site selection was appended; construction of buildings was to be handed over to the PWD, or where they were unable to do this work, the overall responsibility was given to the District Collector for implementation through the Panchayat Union.

POPI states that "guidelines indicating the methodology for carrying out the planning process will be evolved for the preparation of Annual District Plans for the subsequent years" (p. 15). It also states that in the first year all proposals for use of the Community Welfare Fund (CWF) would have to go up to the SPCC for clearance, and detailed procedures for decentralizing this fund were to be included in the second POP.

POPI contains no budget estimates. It states that "the Project Director is the budget controlling authority for the Project funds and he will monitor the funds allocation and expenditures of different implementing departments" (p. 16).

POPI is a brief document and does not set priorities, contain any specific objectives or operational targets for the time period

that it covers. With the exception of the location planning and site selection methodology, it contains no description of the methodology or implementation strategy for any component.

POPII, covering 1983-84, describes various units within the PO and the responsibilities of the heads of each unit. It also describes Project Committees at central, state, district, block and village level, along with their responsibilities. It contains:

- the procedures to be followed in implementing the components of innovative schemes, CWF, construction and logistics,
- monthly monitoring formats to be filled in by the PWD, DPH and PM, DPHC, DMS and the DPOs, on physical and financial achievements,
- budget estimates under the Area Project budget main heads, and construction targets for the year,
- an appendix on planning, including planning steps for project activities,
- procedures for use of DANIDA's consultancy budget.

POPIII (1984-86) was developed as an outcome of a mid-term review. It describes the organisational framework for implementing and monitoring the Project. It stresses the need to develop an approach to implementation based on 1) strengthening training and communication, 2) strengthening logistics support for health and family welfare service delivery, 3) strengthening the organisation for implementation and 4) focused planning for implementation of services, starting with MCH.

POPIII describes the objectives, targets, organisation and "activities-action plans" for each component for 1984-86 and, for the first time, budget estimates for each sub-head are presented in the GOI Area Project format. It also contains a statement showing "project components, corresponding head of account in the state budget and the departments by which these components are implemented" (see Appendix 17). It should be noted that no attempt is made to work out a one-to-one correspondence between sub-heads in the GOI format and those in the state government format.

### 3. The Project Organisation: Development and Function

To enable it to carry out its functions in implementing the Project the PO was provided with three offices, one in Madras serving the whole Project and liaising with the other Directorates in the Department of Health and one at each District Headquarters to look after activities in their respective Districts.

Originally these establishments were very modest. The Project Document envisaged, at state level, a Project Director, one professional and 5 support staff; each district was to have a Project Officer, 7 professional, 14 support staff and a construction cell consisting of 15 persons. This level of staffing steadily increased throughout the life of the Project to a point where the current level of staffing is as follows:

State Level      1 Project Director  
                    8 Professional Staff  
                    21 Administrative Staff  
                    19 Support Staff

District Level      1 Project Officer  
                    8 Professional Staff  
                    13 Administrative Staff  
                    17 Support Staff

District Training      3 Professional Staff  
Team (1 per HUD)      1 Administrative Staff  
                                    4 Support Staff

Public Works      (paid for by Project but not  
Department      under Project control)  
                    52 Professional Staff  
                    25 Administrative/Drafting Staff  
                    38 Support Staff.

After the establishment of the Project the two districts were each divided into three Health Unit Districts (HUDs), each under the responsibility of a District Health Officer (DHO), upon whom executive responsibility for the public health services in the HUD (population approximately 1 million) was devolved. There does not appear to have been any proposal to decentralise the District Project Organisation's establishment to HUD level nor to reassess the mix of officers to see if a different configuration might be more suitable. The one exception to this has been the DTTs, which



have been established in each HUD to strengthen training. Despite a sizable number of staff the PO has not succeeded in discharging many of its responsibilities, such as ensuring that procedures and criteria developed for certain components/activities were understood and followed (e.g. for CWF, site selection, innovative schemes, annual district planning workshops). In its Notes for E86, the PO's response to a specific question on district planning workshops makes no mention of the guidelines it had developed for this activity nor shows any evidence of them having been followed.

The structure, configuration and composition of the PO need to be examined to see if they are optimal for the tasks to be undertaken.

Immediate steps should be taken to rectify deficiencies in the formulation of the budget (see Chapter XI).

A detailed work plan for activities needs to be developed. This work plan should focus upon priority areas and those aspects neglected so far e.g. qualitative monitoring, EPI, community interactions and IEC software. Once this work plan has been prepared and approved by SPCC, Quarterly Progress Reports should be submitted to SPCC members together with an updated plan for the next quarter.

#### 4. State Project Coordinating Committee (SPCC)

The SPCC is responsible for approving project plan proposals and budget and for reviewing the progress of implementation. From the minutes of SPCC meetings it appears that the SPCC has not always acted in accordance with the Project Document. It has at times

- approved proposals which should not have been approved (e.g. EPI equipment purchase without a Plan of Operation)
- turned down proposals which should have been approved (e.g. water supply to all HSCs which needed it, instead of limiting it only to new HSCs)

- not monitored crucial aspects of certain components (e.g. selection of sites for HSC/LHV buildings).
- failed to resolve inconsistencies between the GOI's Model Plan for Area Projects and the GON's stances (e.g. conflicting criteria for siting HSCs, the use of incompatible budget heads).

SPCC members need to ensure that they do not approve proposals that are not in keeping with project objectives and principles.

To make this possible, they should be provided with all relevant background papers for SPCC meetings at least 2 weeks in advance.

SPCC members should monitor more rigorously all aspects of the Project as a team and also those aspects of the Project that they are particularly interested in.

Members should ensure that they are fully briefed on any aspects of health services under their responsibility which may be relevant to the Project and that these are made known to the PO and other members at the meetings (e.g. simultaneous development of HW drug kits by the PO and GOI).

Once a proposal has been approved in principle by the SPCC, it should be mandatory on the PO to circulate, within 6 weeks, a work plan on how it will execute the proposal. Any comments from SPCC members on the work plan should be sent to the PO within 2 weeks.

SPCC minutes should contain reports on action taken on all decisions taken at the previous meeting.

##### 5. Role of Government of India

In 1979 GOI presented its Model Plan for the development of particular districts in the country which were considered to be less developed.

The Model Plan lays down the norms for infrastructure development and also emphasizes various other aspects of health services which need to be developed, such as management, training, IEC, intersectoral coordination, community participation and the need for trying out alternative approaches in these areas. Thus the Model Plan became the cornerstone for the development of individual Area Projects. Each Project was expected to evolve its own innovative approach to strengthen health service delivery systems. However, at the same time GOI has maintained its national targets particularly for family planning and, more recently, for immunization. The FP targets have been pursued with ever increasing vigor over the life of this Project, to a point where the health workers feel harassed. This happens to such an extent that other work suffers.

If Area Projects are to be given a chance to try out radical and innovative ideas for delivering health services in these difficult areas, then there needs to be a more relaxed interpretation of the nationally set targets. For example, where a project can demonstrate that it is pursuing FP within a integrated MCH context, alternative ways of setting integrated targets could be attempted, giving attention to the other aspects of MCH.

GOI should encourage the innovative aspect of the Area Project by relaxing the level of single target achievement for Area Projects.

Radical approaches for other health service aspects could also be encouraged, for example community based methods of finance.

## 6. Role of the Government of Tamil Nadu

The Department of Health in Tamil Nadu is highly complex, as illustrated in Chapter I of this report. The multiplicity of directorates has led to duplication of activities (e.g. training), and tenuous and indirect lines of authority. For example, the MOs at the PHCs do not belong to the same Directorate as the DHO, who is their immediate superior. Although the DHOs have some authority over the MOs, the final control for the MOs

lies with the DPHC, while for the DHO the controlling officer is the DPH and PM. Further, MOs are allocated to the DPHC by the DMS and posted by the DPHC to the PHCs, where they mostly serve between one and three years. At the end of their posting at PHCs they can move on to other Directorates with no future commitments to the public health system. The MOs have little incentive to develop their managerial skills and understanding in relation to the public health system, nor to have any commitment to public health and preventive medicine.

At the HUDs and PHCs, the multiplicity of control results in the need to produce multiple reports for the various Directorates, further overburdening the meagre administrative resources at both levels. It also results in a plethora of instructions which cannot always be satisfactorily reconciled, for example, the redefining of family planning targets by the Collector, mentioned in Chapter VIII, Section 8.

It is understood that the structure of the Department of Health is going to be reviewed.

This review should be undertaken as soon as possible and the lines of authority rationalized, to enable the suggestions set down for management at PHC to be implemented.

#### 7. Role of DANIDA

Together with GOI, DANIDA is the major source of finance for the Project. However, DANIDA's role differs from that of the other two members of SPCC in that it has no executive or policy making functions. As a result of this, and because it wished to support the Area Projects in a consultative and collaborative way rather than just providing funds, it has adopted a role developed during the planning phase which seeks to meld financial provision with technical collaboration. This is not to say that as an agency it felt that it could provide superior technical assistance, but rather that it could be the vehicle through which the Project could obtain additional technical resources promptly upon PO request. For example, the specific budget that DANIDA has for consultancy to the Project, which is additional to the Project

budget, could be used for such technical support. It was always clearly understood that executive responsibility lay with the PO and that just as it was not the Project Director's job to run the health services, it was not DANIDA's job to run the PO.

In pursuing its technical collaboration role, DANIDA appears to have underemphasized its role in monitoring adherence to Project principles and strategies.

DANIDA should define the role it wishes to fill vis-a-vis the Project, and in discussion with the PO and other members of SPCC, agree on what it can offer to the Project. Once that is done, DHCU/DANIDA in Delhi should be organised to fulfil that role, which should be translated into a work plan with defined responsibilities and modus operandi.

DANIDA needs to ensure that it obtains sufficient data, especially financial, to satisfy itself that the Project is proceeding according to plan.

#### 8. Management at the Primary Health Centre

The PHC MO I/C is in charge of patient care (treatment and preventive services), and is responsible for drugs, stores, equipment and other physical facilities. This individual is also responsible for supervision and control of the performance and activities of all paramedical and support staff in the block (about 70 staff), and manages this rather large concern with the ultimate aim of ensuring the health of approximately 100,000 people.

Not infrequently this enormous task is entrusted to fairly inexperienced physicians with the usual clinical background from medical schools, which is largely hospital based. While Preventive and Social Medicine is part of the curriculum, this subject is considered less attractive among medical students and is pursued less energetically than curative hospital based medicine. Training in managerial and supervisory skills is virtually absent. In addition, coming from an urban background and trained in an urban environment, he is not used to the hard realities of rural life. It is mandatory for him to serve in a

rural set-up on joining government service; while this helps in filling posts, the young doctor starts his career working completely on his own and in isolation, when he would have benefited tremendously by working under the guidance of a senior colleague for a few years.

His personal problems such as difficulties of schooling for his children, absence of the basic amenities he is used to in his urban environment, lack of recreation, sports, etc. seem to overwhelm him. He has no academic interaction with his peers and seniors. Added to this is his lack of confidence in the management of the health service, because of inadequate or no training for this work, and his discomfiture in being the leader of a team about which he knows virtually nothing. Where there are clear guidelines, he acts quickly and efficiently, for example during the containment of suspected cholera in a village. But unfortunately such guidelines are not available for other aspects of health care. And yet, health care has to be taken to the community, and the medical officer is the key person who not only has to provide medical care, but also supervise his whole health team and play a major role in community involvement.

The MOs posted at PHCs may have a collective patient load of about 100 patients each day. It was observed in a sub-sample of 9 PHCs that the MOs' diagnostic and curative work left much to be desired, since a consultation took as little as 30 seconds; not all patients were clinically examined, and those that were, received a very superficial examination. Treatment tended to be symptomatic and patient follow-up was unsystematic. Injections were overprescribed to satisfy client preference and in the observed sub-sample the most popular injectables were B-complex, B-12 and Oxytetracyclin. Health education or even simple explanations to patients rarely occurred.

The team did not find that MO I/Os' administrative responsibilities were very heavy, despite the fact that many identified these among their major problems.

Over half (53%) of the 45 MOs interviewed mentioned administration among their major problems. Comments ranged from "There is too heavy an administrative load", to more specific constraints such as "Too much recording and reporting", inability to decentralise responsibility because of unqualified staff below the MO, a lack of administrative staff, the MO's own lack of knowledge of administration and initial unfamiliarity with PHC

management. All these problems were perceived as resulting in inadequate time for the MO to do field work, including planning and implementation of public health activities, or even to discharge his clinical duties at the PHC.

During discussions with the PO and DANIDA, the team was informed that two management modules ("Modules on Health Management Training of Medical Officers - Primary Health Care" published by NIIHW, New Delhi, which describe many of the fundamental problems of primary health care delivery) have been fieldtested in South Arcot and Salem, and that the PO is now promoting the adoption at state level of a management training programme for all MOs in PHCs.

The OTT activities are also concerned with better supervision; this has been documented recently with regard to their activities on training of trainers. Thus, on a small scale, activities to reinforce supervision have been started through in-service training.

GOI has adopted the principles of "Health for All by the Year 2,000" as laid down in the Alma Ata declaration. This objective implies among other things that top priority should be given to primary health services, with hospital facilities considered as supporting elements.

The high priority given to primary health care in the Seventh Five Year Plan should be faithfully implemented. The implementation of these principles calls for primary health care to be made an attractive alternative for physicians. This could be done by:

- establishing a competitive career structure for physicians (including salaries) to make them choose this work instead of being forced to do it. The structure should be so geared that new graduates are posted to taluk hospitals e.g. for 2 years to work in a team with practical experience, especially in the OPD before they are posted to PHCs, which provide a more challenging assignment.
- making the MO I/C administratively responsible for the PHC within a cadre of public health/community medicine physicians, assisted by junior MOs



- promoting the management training of (especially) MOs I/C as already designed
- strengthening the planning and implementation of public health activities in PHCs
- emphasizing the supervisory role of MOs I/C vis-a-vis lower level staff
- delegating responsibilities where ever possible.

The PO should also take initiatives in some of these areas (e.g. promoting management training, strengthening planning and implementation, emphasizing supervision), and in other areas such as supplying PHCs with suitable reference materials which are readily available (e.g. mid-level management modules and Weekly Epidemiological Record from WHO, Dialogue on Diarrhoea, Salubritas, etc), which focus on public and primary health care.

## 9. Monitoring

Measuring the effect of delivered health services on the health status of the population served is a complex activity. To be able to undertake such a task, the managers of a health service must be able to satisfy themselves on the following points:

- the health status of the community has been defined in specific terms e.g. morbidity and mortality
- the quality of the service is known
- the utilization of the service is known.

The first two points are difficult to measure and consequently it is frequently the case that only the third is addressed.

In the Project Document it was specified that there should be an attempt to measure the activities of the Project in terms of their effect upon the community; to this end, the Monitoring and Evaluation Group (MEG) commissioned a baseline survey. This survey is not yet completed, for reasons which are not clear to the evaluation team. Those components which have been completed are often of limited practical use. Services are reported in

terms of frequency distribution of PHCs according to activity rates per 1,000 population e.g. antenatal activity rate is an average of 2.3 per PHC.

Prior to the baseline survey, the PO itself carried out a benchmark survey in 1981 (published in 1983). This survey attempted to measure health status, as well as associated aspects such as the economic status, knowledge and health related practices of the community.

In a Project lasting 5 years it is not possible to measure changes in health status and ascribe any changes that might be identified to the efforts of the Project. Consequently when the MEG was wound up and the methodology for this evaluation was established, a different approach was adopted.

This approach was based upon the following assumptions:

If health services are available and accessible to the population, if these services are of a known and defined quality and if the population uses them, then ultimately the level of health for the population using these services will improve.

For example, if immunization is available and accessible to infants, if the health workers administer these immunizations using potent vaccine and the correct techniques, and if the mothers bring their infants to be immunized, then those infants will be protected from the diseases for which they were immunized.

To be sure that all of this happens requires rigorous, consistent and comprehensive management of the health services.

The evaluation methodology was designed to build a viable model which would not only be used for the external evaluation, but also include components which could help managers to monitor the quality and utilization of the services.

In India there is no shortage of reported data. Indeed there is so much reported data that it often becomes very tedious for the health worker to compile it and for the managers at block, district and state levels to use it. Consequently there is little feedback and what little there is comes months after the event.

The evaluation methodology sought to identify key pieces of data which if compared with each other would give an indication to the

manager of the quality of offered services or of uptake of those services.

Some of these indicators (Level 1) were project specific, others (Level 2) measured aspects of the health services and some (Level 3) were to be used to measure impact of specific interventions (see Appendix 1, Framework for the Evaluation; Terms of Reference for the PO).

An example of each indicator will serve to clarify the point.  
(/ means "compared with")

Level 1 (1985):

Number of dais trained/Number of dais trained and  
provided with kits and manuals

Number of handpumps installed/Number of handpumps  
working

Level 2 (1981 and 1985):

Maternal Care:

Number of women receiving TT/Number of pregnant women  
Antenatal care/Number of pregnant women  
Domiciliary or  
institutional delivery/Number of pregnant women  
Postnatal care/Number of pregnant women

Immunization:

No. of doses of vaccines supplied/Doses administered

Malaria:

Blood smears taken/Fever cases  
Positive cases/Blood smears taken  
Treated cases/Positive cases

Level 3 (1986 and measured over time):

Neonatal mortality from tetanus:

1986 coverage of TT in pregnant women/Incidence of NNT  
measured by survey  
(to be repeated at  
a later date).

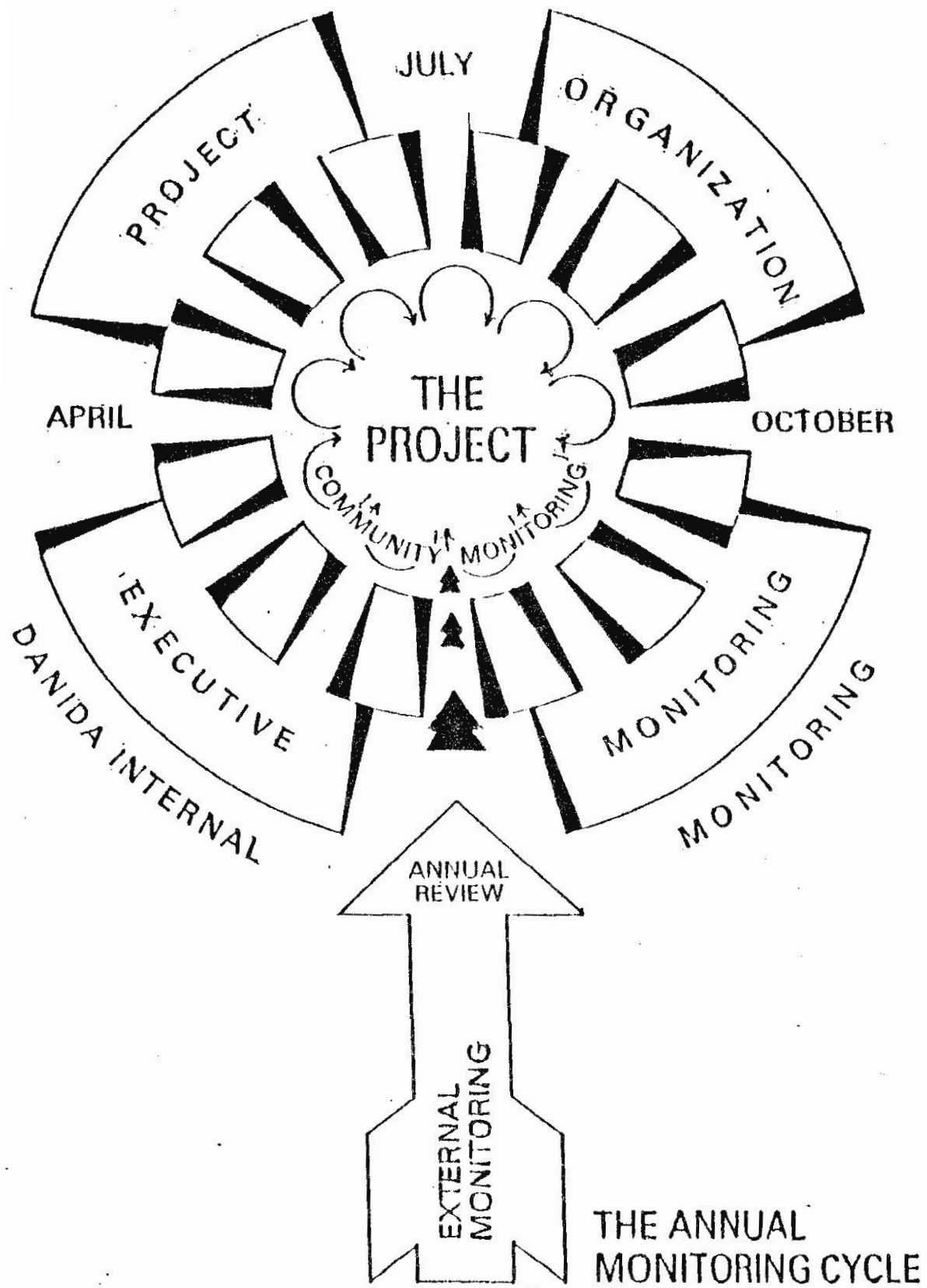
The hypothesis for these indicators is that if key data are collected regularly, analysed consistently and responded to

rapidly then the quality of reporting should improve. Examples of their use are shown in Appendix 18.

The monitoring for this Project involves some additional components to those already discussed. These components include the monitoring carried out by the members of SPCC so that they may be informed about the activities of the Project, and external monitoring of which this evaluation is a part. This evaluation was seen as the beginning of a monitoring process. It was seen as taking a "cross section" through the Project at a particular moment; this was to be followed by the routine executive monitoring by the PO using the same base (the indicators) over a period of time. Each quarter the members of SPCC would have the opportunity to review internally the routine executive monitoring; once a year an external group (with continuity of membership) would review both executive and internal monitoring and focus on any particular aspects of the Project which they felt appropriate. Finally, at a later date, to be defined, the external evaluation would be repeated using the same approach and questionnaire so that development of the monitored activities could be reviewed and their effect upon the delivery of health services measured.

The way in which the various aspects of monitoring interact is illustrated in the diagram on the following page which shows the annual cycle repeated over the life of the Project.

From the diagram it can be seen that there is a fourth type of monitoring: that is, monitoring by the community. Development of community monitoring would provide a means for members of the community, the health worker and her supervisors to meet for discussion, feedback, and identification of problems and objectives regarding ways to improve health. Such monitoring would reduce the punitive element of feedback and supervision, encourage health staff and users of services to work together, and contribute to building a mutually supportive atmosphere. It would also afford both health staff and members of the community greater authority to carry their requests and complaints to higher levels if they were unable to remove an impediment to better performance. This type of monitoring would encourage the best performance from the health service; it will only occur where the level of involvement, interaction and response in the community is high. Unfortunately, the most frequent manifestation of community monitoring now found in the project area is the high level of private facility utilization; while solving the problem for some members of the community, this type of reaction has no impact on improving the inadequacies of the public system.



The monitoring system described, needs to be developed and introduced to the various managerial and monitoring components. Other indicators could be included.

Vigorous efforts need to be made to consult the community to obtain their interest and cooperation in monitoring their health services.

The following need to be undertaken if impact in some specific fields is to be assessed at a later date:

- EPI coverage (completed in this evaluation)
- Neonatal deaths
- NNT deaths        } Using GOI/WHO protocol
- Polio lameness } in same areas as EPI survey

In developing any new Agreement, DANIDA and GOI should ensure that there is an evaluation and monitoring component which can encompass the functions and objectives described above.

The present evaluation methodology and questionnaires should be used in any future evaluation of the Project so that the progress made since this evaluation can be measured.

### XIII. FUTURE DIRECTIONS: DANIDA SUPPORT TO THE PROJECT

The evaluation team has found that the Project has made considerable progress in expanding physical infrastructure and establishing additional health sub-centres in a short period of time. The remainder of the Project's stated objective entails a complementary strengthening of the less tangible components of the primary health care delivery system. It is recognised that these components require time and continuous effort to implement successfully.

This report represents the findings and recommendations of the whole team. However, concerning the future involvement of DANIDA, the team arrived at two differing points of view and these are explained below.

#### 1. Majority Decision

Seven members of the team decided that the Project appeared to be unlikely to develop the components necessary for strengthening health services, and that further time and resources would not enable the Project to implement these components any differently from the way they have been implemented to date. This group felt that it is more appropriate for the Government of Tamil Nadu to undertake the development of these components when they are perceived to have a higher priority than they enjoy at present.

The recommendation that DANIDA's support to the Project should end is based upon three main considerations.

1. The ability of the Government of Tamil Nadu, of which the PO is a part, to pursue those activities in which it has an expressed interest.

The administrative infrastructure in TN is well developed and this has been demonstrated by the ability of the administration to construct a large number of buildings in a short period of time. It is further demonstrated by the ability to carry out certain aspects of the health and family welfare programme to a higher level of achievement than that asked for by the GOI. A further example of organisational ability is to be found in the way the government handles emergencies such as floods and drought as well as disease outbreaks like cholera.



All this convinced the majority that GOTTN is well able to undertake tasks which it sees as having high priority and that the PO, which is a directorate of the health department, has a very clear indication from GOTTN which components of the programme it should put most effort into. In this situation, the question that needed to be answered was whether DANIDA, as the one member of SPCC who was additional to the existing state and national infrastructure, could bring about a realignment of priorities to pursue objectives which hitherto had not been emphasised. The conclusion of the majority was that GOTTN and the PO were resistant to such redirection, that they could if they wished redirect themselves and would not respond to the external influence of DANIDA. Indeed on presentation of the findings the team was told by senior officials of GOTTN including the PO that any recommendation by the team to preclude further construction would inhibit the plans that they had for the additional construction of MO's quarters. This was said after extensive and detailed explanation by the team of why further construction should not be a priority.

The PO has not expended its energy on the construction component, the whole of which including its supervision was delegated to the PWD; thus the PO had ample capacity to carry out the other components of the Project. By contrast, all those members of the team who carried out the evaluation in Madhya Pradesh found that there, more attention has been paid to other aspects, for example monitoring of construction, IEC and appropriate use of the Community Contingency Fund; all these components were worked out better than in Tamil Nadu. Thus the majority concluded that the absence of a concentrated effort to develop the organisational, operational and managerial components of the Project was not due to inability but rather to other components being given higher priority. Judging by the degree of success DANIDA has had to date in influencing the perceived priorities of the PO, the majority felt that this difference in emphasis and ranking of priorities would not be modified by further inputs from DANIDA.

In this regard the majority do not see the duration of the Project as being central to the argument for DANIDA's continued involvement. Whilst it is true that the period is short to realize the impact of new infrastructure, it is not too short to demonstrate a determination to approach implementation of the Project in a holistic manner, addressing all the components in a defined and structured way. This the PO has failed to do.

2. Accountability to the Project supporters by the PO has been weak.

The two major financial contributors to this Project have been DANIDA and GOI. It is recognized that GOTN will have to take over the additional costs that will occur as a result of expanding the infrastructure. However, DANIDA has made the major financial contribution to the Project and there was little evidence that attention has been paid by the PO to DANIDA's interests in relation to the Project. As has been pointed out in Chapter XII, it was an underlying assumption in this Project that the participatory approach begun during the planning phase would continue and that DANIDA would continue to bring fresh resources, technical as well as financial, into the Project. Whilst the provision of additional expertise was not a condition of the Project, it was anticipated that the PO might in the course of implementation wish to draw upon additional skills. As is shown in Chapter XII, the PO has not only failed to complete its obligations to the Project but has also not used technical resources which were available to help it meet those obligations.

The meeting reports from SPCC meetings frequently reflect a peremptory atmosphere at these meetings, at which the procedures adopted had the effect of conveying the minimum of detail to the non-GOTN members of SPCC, thus allowing GOTN and the PO to continue with the activities in which they were most interested. It was not expected that all parties to the Project should have the same ambitions. However, the ambitions of each member should be given due recognition and consideration and through the forum of SPCC should have been melded with those of the other members to produce the "highest common multiple" of the group. Too frequently the outcomes of SPCC meetings indicate that what emerged was at best "the lowest common denominator" and at worst, exclusion of discussion of any detail. In this respect the four year delay in adopting accounting procedures which followed the framework for area projects, laid down by GOI, must be seen as a significant impediment to accountability. The majority do not understand why there was such reluctance to adopt the stipulated accounting format, which would have made financial monitoring possible.

3. It is recognized that GOI does set a high priority on the limitation of family size. However, the single component emphasis which has dominated the delivery of health services in the project area is not the most appropriate way of achieving this goal in the long run.

The effect of the single component emphasis is most starkly seen in the determined pursuit of the LTT target; the target is higher than that set by GOI and the need to achieve it has set worker against worker, vying with each other for acceptors within the same catchment area. It is recognized that the last three months of the financial year is the period of major emphasis for the achievement of annually set targets. However, the single-minded vigor with which LTT targets are pursued in the project area is detrimental to the development of health services as a whole. The HUs(F) reported spending nearly a quarter of their time on family planning alone; in reality this means motivating women to accept sterilization as their method of family planning. However, the team consider that the high emphasis placed upon LTT by GON is skewing the health services away from the principle of integration of care; this will lead to poorer health services and in the long run reduce peoples' willingness to adopt temporary family planning methods early in the marriage. The team has made recommendations on how the family planning programme could be improved and how targets could be used more constructively.

In an atmosphere where such a strong emphasis is placed upon one component, it behoves the PO to try to moderate this emphasis so that the project principles have some chance of success. The PO, whose present Director was herself the Collector in South Arcot, is well aware of the pressures that can be exerted at district level. The Collector of one District observed to the team that the services of the Project had made a major contribution to his District achieving its LTT target. The majority of the team consider that it is the responsibility of the PO to take steps to ameliorate such pressures, but they could not find any evidence that such steps had been taken.

It is for these three main reasons that the majority of the team believe that the prevailing atmosphere and the demonstrated priorities are not compatible with further DANIDA involvement. DANIDA has provided the major financial contribution to this Project; what now needs to be done requires little in the way of funds and much in the way of effort. It has been seen that phenomenal effort can be made by the PO and GON in areas that are of high priority to them. Sadly the majority conclude that the development of effectively functioning, integrated rural health services do not yet come into this category.

### 1.1 Majority Recommendation

DANIDA support to the Project should not continue after 31 March 1987. DANIDA should ensure that its withdrawal is so phased that it enables GOTN to make the necessary financial and administrative arrangements for the transition.

### 2. Minority Decision

Five members of the team considered that DANIDA support to the Project should be continued for a period of five years, with a review of project activities two years from the date of renewal. Henceforth, the Project should focus on consolidating its activities in consonance with the detailed recommendations given in this report. For effective follow-up action, it is suggested that a process of participatory monitoring and evaluation be initiated at the earliest.

While fully endorsing the detailed recommendations given in earlier sections of this report, the minority group's reasons for differing with the majority view on the question of DANIDA's future support to the Project are given below.

1. Although no baseline studies are available for comparison, there is ample evidence that the health delivery system in the Project Area has improved since the inception of the Project.

Their knowledge and experience of other areas convinced the minority that much of this progress would not have taken place had the Project not been there.

For example, it is no mean achievement to construct so many HSC buildings and LHV quarters in so short a time. In view of rapidly-rising building costs - exceeding the 10% provided for in the budget - the Project Organisation's pursuance of this activity is understandable. Although some software components of the Project have not kept pace with the construction programme, it is quite clear that the building programme has not been at the cost of developing software.

Furthermore, under Indian rural conditions it is almost imperative to provide a female health worker a suitable place to live and work if she is to discharge her heavy responsibilities with ease and assuredness. Although some HSC buildings may not be sited in a manner accessible to all, their siting has by and large adhered to the POPI guideline and GOTN Directive that they should be accessible to underprivileged groups.

Another remarkable achievement of the Project which must be applauded is the posting of HWs(F) to almost all HSCs. The difficulties of finding personnel to serve in rural areas are well known and health programmes are often paralysed by a shortage of female workers in particular.

The formation and training of District Training Teams, and experimentation with the Disposable Delivery Kits (DDKs) are other useful additions to the health system.

2. These achievements are all the more significant in the light of the many constraints under which the Project and the Project Organisation have functioned.

At the best of times it is not easy to implement programmes such as this through the Government machinery. The Project Organisation, a government directorate created specifically for the purposes of the Project, has had the difficult task of coordinating activities managed by at least 4 or 5 of the 8 other previously-existing State Health Directorates. It would appear that the SPCC, which included representatives of the GOI, the GOTN and DANIDA, did not provide the PO the kind of support and guidance envisioned by the Project Document. Furthermore, the Monitoring and Evaluation Group (MEG) which was supposed to systematically assess the Project and make suggestions for improvement on a continuing basis, does not seem to have performed this role, and in fact was wound up, thus depriving the Project of a potentially valuable source of feedback.

Despite these constraints, the Project Organisation has demonstrated an ability to identify and attempt to rectify problems. For example, it has made efforts to strengthen RHTCs in keeping with the objectives and needs of the Project, to change from mass media to face-to-face communication strategies, and to involve NGOs in the programme to enhance community participation. Insofar as this evaluation is a systematic attempt to provide

valuable suggestions for modifications and improvements in the Project, a discontinuation of support would amount to denying the Project the opportunity to respond actively to this feedback.

There have also been constraints at the field level which must be considered when assessing the progress of the Project. Although the Project was designed to be implemented by both male and female multipurpose workers, the stay order of the Madras High Court on the male multipurpose workers has meant that these male workers have continued to work as unipurpose workers. Thus, the service achievements (such as increases in ANC and PNC coverage; see Table VIII.1) are those of the female MPWs in the absence of their male counterparts. It is felt that the concept of the multipurpose team is an important project component, which deserves fair trial once male MPWs have been instituted through due process of law.

3. Most of all, the minority recommendation for continued support by DANIDA to the Project is based on the very strong conviction that five (in effect, less than four) years is much too short a time for the maturing of several project components which have been started - especially the software such as training, IEC and community participation.

Although these are not in as much evidence as would be desired, it is felt that expectation of the achievement, for example, of community participation within the first five years of any project is quite unrealistic.

The minority group believe that the Project is at a "take-off" stage, given the infrastructural and personnel achievements discussed above. A non-renewal of support at this critical juncture would not allow consolidation of gains, and the investment of the past five years might be lost. Withdrawal of support could demoralise the health workers at all levels, especially as renewal of support has been recommended for the Project in Madhya Pradesh which, to all indications, is far behind in many respects. It is the considered opinion of the minority that the health care machinery in Tamil Nadu, in general, and in the project area, in particular, which has shown itself to be effective in providing disaster relief, in malaria and cholera surveillance, and in delivering family planning services, can be harnessed to reach out into communities and deliver integrated maternal and child health services



successfully, if properly guided and supported. Thus, DANIDA's continued support could significantly enhance the flexibility and effectiveness of the Project.

An important objective of the area projects is to develop and test innovative strategies for wider application. The GOTN has already indicated its plans to extend to other areas of the State certain Project innovations e.g. the Disposable Delivery Kits (DDKs). It is felt that other Project activities, for example, the district mobile in-service training, have immense potential for replication if they are permitted and encouraged to develop further.

The minority believe that the Project Organisation is now in a position to concentrate on the development of Project software. With DANIDA's continued support, the Project could move ahead and within a few years become a suitable health care model for other areas.

#### 2.1 Minority Recommendation

Support to the Project should be continued for a further period of five years, the latter three years being conditional on a satisfactory review of progress after two years from the date of renewal. The Project should focus specifically on consolidation of project activities in consonance with the detailed recommendations of this report.

The Project should not extend into new geographical areas.

Special attention should be paid to the development of software and such other processes as facilitate effective delivery of primary health care.

The emphasis on family planning activities should be so tempered that more equitable effort is expended on the delivery of integrated maternal and child health services.

Ongoing monitoring and evaluation (preferably participatory) should be built into the Project to minimize the distance between project goals and implementation procedures/methodologies.



The exigencies of budgetary planning and quantitative parameters for evaluation should not be allowed to obstruct/interfere with a qualitatively-oriented process of implementation and assessment - a process which, though admittedly time-consuming, is essential to the proper success of the Project.

The SPCC and its constituent members should play a more active and dynamic role in overseeing and monitoring the Project.

