Initial experiences of implementation of functional integration (FI) in LEPRA India projects in Orissa

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Summary In 2000, the Government of the State of Orissa (population 37 million) in India decided to introduce functional integration for the control of leprosy, in place of the long-established vertical programme, using the general health services and the primary health care system. This paper describes the initial (9 months) experience of implementing this strategy in two projects run by LEPRA India. One of these, in the district of Koraput, was established in 1991 and covers a population of 1.5 million people. The other, in Kalahandi district, started in 1997 and covers a population of 600,000. Both projects operate under difficult conditions with regard to terrain, the use of numerous tribal languages, illiteracy, water shortage, poor roads and communications. The preparatory phase included intensive health education of the public on leprosy, using a wide range of educational media and techniques. At the same time, LEPRA India supported the Government in the training and orientation of trainers, medical officers, primary health care staff and female health workers at village level. In all, over 2000 were trained. This paper describes all aspects of the implementation of functional integration in these two areas. In the 9-month period, 4207 suspect cases were referred to medical officers by health workers, but only 256 (6%) were confirmed as having leprosy. There were 169 confirmed self-reporting cases. Despite the clearly understood intention to involve primary health staff in case detection, 67% of all cases were in fact detected by LEPRA India, possibly due to overlapping attendance at clinics by vertical and general staff. There is obviously a need for further training of the general staff since only 6% of cases referred by them were confirmed as having leprosy. Steps must also be taken to ensure that the emphasis on case detection, confirmation and treatment shifts from the vertical to the general health staff. The supply of anti-leprosy drugs and steroids to primary health centers needs improvement. Appropriate teaching and learning material is urgently needed for both field staff and medical officers.

Introduction

Orissa State is located in the eastern region of India and has a population of 37 million. Western Orissa, which comprises of 35% of the area of the State is hilly, with dense forests.

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Several small villages and hamlets in this area are very difficult to reach. Twenty-two percent of the population of the State is tribal living in outreach areas and speaking different dialects. Fifty-five percent of the population is not literate and 66% of the villages with population of less than 500 do not have access to electronic media. These constraints impose several restrictions on the access to health services.1

Orissa is highly endemic for leprosy. When multidrug therapy (MDT) was started in the State in 1983–1984, the prevalence rate (PR) was 121 per 10,000 population. MDT was implemented in a phased manner and total coverage achieved by 1994–1995. In 1990, the Government of Orissa invited LEPRO India to participate and strengthen the leprosy programme in the difficult outreach areas in the west, which could not be covered adequately by the then existing infrastructure of the health system. LEPRO India established five projects covering four districts totally and two districts partly. In all, 89,376 leprosy cases were recorded and treated with MDT. Of these, 69,991 were released from treatment. The prevalence has shown a significant decline in these districts.

The National Leprosy Elimination Programme (NLEP) was implemented in Orissa with the support of international agencies like DANIDA, SIDA, LEPRO India and The Leprosy Mission India. Over the past 16 years, 736,972 cases have been brought under treatment and 604,030 have been discharged as cured. The PR came down from 121 to 10 per 10,000 of the population by the year 20002 (Figures 1 and 2).

In view of the significant reduction in PR, the Government of Orissa decided to integrate the vertical leprosy programme with the general health services in the year 2000 through a process of functional integration. This decision was prompted by the experiences of modified

![Map of Orissa showing district prevalences](image)

**Figure 1.** Prevalence of leprosy per 10,000 of the population by district, at the beginning of MDT.
leprosy elimination campaigns (MLEC) 1 and 2, in which 90,041 new leprosy cases were detected with the active participation of general health staff for 1 week. The MLEC is a time-bound intensive campaign adopting strategies of intensive health education followed by a rapid house-to-house search programme by health workers, trained Anganwadi workers (female health workers at village level working under the Integrated Child Development Scheme) and local volunteers to detect all leprosy cases and ensuring their treatment by existing health services to achieve the goal of leprosy elimination soon. The first campaign was conducted in January 1998 and the second campaign was conducted in January 2000.

In line with the policy of the State Government, LEPRAl India projects have revised their programme strategy to support provision of leprosy services through Primary Health Care system. In this paper the initial experiences of implementing functional integration in two Orissa projects are presented, the findings discussed and relevant suggestions made to strengthen the process of functional integration.

**Work and achievements of LEPRAL India projects**

**Area characteristics**

The two projects mentioned above are fully staffed and directly managed by LEPRAL India. Each has a full time Medical Officer supported by paramedical and administrative staff.

Koraput Leprosy Project (KORALEP) was established in 1991 and covers a population of 1.5 million in two tribal districts in Orissa. The area, spread over 14,494 km², comprises over

![Map of Orissa with districts highlighted](image-url)
6300 villages, many of them tiny and located in deep jungles and hilltops. The population is mostly tribal and speaks eight different dialects. Only a few villages are accessible by road and many can be reached only on foot. The area remained largely uncovered till the project was established by LEPRO India.

Junagarh Leprosy Project (JUNLEP) was established in 1997 and covers a population of 600,000 in Kalahandi district. The district is mostly drought-prone. The project area is spread over 2300 km² and comprises 582 villages. Twenty-six percent of the population is tribal and stay in villages located on hilltops.

There were 370 leprosy cases on record when the area was handed over to LEPRO India.

**ACTIVITIES AND ACHIEVEMENTS**

The Survey, Education and Treatment (SET) method of work with MDT as the treatment regimen was implemented in both projects. Information-Education-Communication (IEC) activities were carried out by flash card demonstrations, group talks, school education programmes, exhibitions and group meetings. For mass awareness programmes, audio-visual aids were mainly used in view of low literacy levels in the areas. Video cassettes were produced by LEPRO India in local languages to convey information about leprosy to the people. Specially equipped IEC vans with projectors, Public Address system equipment, a screen for projection and generator were all provided to facilitate health education in various ways.

Mass surveys were carried out with camp approach, because of difficulty of terrain and distances to be covered between villages. Annual school and contact surveys were also included. Many patients reported voluntarily. Details are given in Table 1.

For treatment, circuits with several drug delivery points (DDPs) were established in both projects (Figure 3). Every month, the paramedical workers visit the villages having active cases and motivate them to attend the DDPs, which were so organized that the patients did not have to walk more than 5 km. The Medical Officer and his team makes a circuit once a month, halting at each DDP. Patients are examined and treated at the DDPs. Altogether, 22,688 patients were treated with MDT and 19,872 were released from treatment in these projects up to December 2000.

The medical and paramedical staff of the projects were trained for 3 weeks to provide prevention of disabilities (POD) services, prevention of worsening of disabilities (POWD) and socio-economic rehabilitation (SER). These activities were systematically planned, implemented and monitored regularly.

**Table 1. Case detection by different methods**

<table>
<thead>
<tr>
<th>Project</th>
<th>Mass survey/RES</th>
<th>School surveys</th>
<th>Contact surveys</th>
<th>Voluntary reporting</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junlep</td>
<td>4889</td>
<td>74</td>
<td>420</td>
<td>1449</td>
<td>6832</td>
</tr>
<tr>
<td>Koralep</td>
<td>9043</td>
<td>330</td>
<td>773</td>
<td>5710</td>
<td>15856</td>
</tr>
</tbody>
</table>
IMPACT OF PROGRAMME IMPLEMENTATION

The positive impact of all the activities was assessed by standard indicators and the results are shown in Table 2. There has been a significant fall in the PR and disability rate (grade 2) in these projects during the last 5 years. The new case detection rate (NCDR) showed an initial decline but remained constant from 1997 to 2000.

Operational strategy of functional integration

HEALTH DELIVERY SYSTEM IN ORISSA

The health care system in Orissa is headed by the Director of Health Services, who manages all health programmes in the State, assisted by Joint Directors. The Joint Director (Health)

<table>
<thead>
<tr>
<th>Table 2. Indicators of programme impact</th>
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<tbody>
<tr>
<td>Indicators</td>
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<tr>
<td>--------------</td>
</tr>
<tr>
<td>PR</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>NCDR</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Disability rate (G2)</td>
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</table>
manages the health programmes in the State. At district level, the Chief District Medical
Officer is in charge of all health programmes, assisted by an Additional District Medical
Officer (ADMO). The ADMO for public health and malaria is also responsible for the district
leprosy programme.

The district is organized into a number of blocks. A block covers a population of around
100,000. Each block has a Primary Health Centre (PHC) supported by three additional PHCs.
The staff of a block PHC includes four Medical Officers, four Health Supervisors and about
20 Multi-purpose Health Workers (MPHW). The basic health services are delivered by the
MPHWs at sub-centres. This staff is distributed among the sector PHCs.

A functional organizational chart of health delivery systems in Orissa is shown in Figure 4.

**Functional Integration – Objectives**

*Enhanced accessibility of MDT services to community*

In the circuit system followed under the NLEP, MDT is provided to patients on a fixed day in
a month, at limited treatment points. Patients unable to attend these points on the assigned day

**Director of Health Services**

↓

**Joint Director of Health Services**

(Health Sectors)

↓

**Chief District Medical Officer**

↓

**ADMO (PH & Malaria)**

↓

**ADMO (FW)**

↓

**ADMO (Med)**

↓

**Block PHCs**

↓

**Sector PHC**

↓

**Figure 4.** Organizational chart of health delivery system.
would either miss the treatment or would be visited by the paramedical worker (PMW) to provide domiciliary treatment. Under functional integration, the availability of MDT at all sub-centres and PHCs is intended to greatly enhance easy access by patients to treatment.

**Early identification, detection and treatment of cases**

The MPHWs have limited field areas of 5000 population and visit the families in each village frequently for their general health activities. With the training imparted in leprosy to them, it is anticipated that they will be able to suspect early cases of leprosy, refer to PHCs for diagnosis and provide regular treatment to confirmed cases.

**Better coverage round the year**

Under the vertical programme, the paramedical worker is able to visit a village for active case finding programme at intervals of 2–3 years. In functional integration strategy, the MPHW will be visiting each village by rotation at least once in 3 months. By including leprosy case detection and treatment in the routine activities, the MPHW should thus be able to provide better coverage for leprosy programme round the year.

**Early achievement of goal of elimination**

With participation in the PHC system resulting in enhanced and frequent coverage of population for early case detection, extending MDT coverage and providing regular treatment to patients, it is expected that the target of leprosy elimination can be achieved sooner.

**Methodology of functional integration**

The operational guidelines of the Government of Orissa for implementation of functional integration (FI) have specified the methodology of the work and the roles of the staff of PHCs and NLEP. The PHC system is responsible for detection and treatment of leprosy. The block PHC functions as the Unit, the sector PHCs as sub-units and the sub-centres as the treatment points. Anti-leprosy drugs will be made available at all PHCs and sub-centers. The MPHWs will refer suspected cases to the Medical Officer of the PHC for confirmation. The Medical Officer, after confirming the case, prepares a patient card, administers the first dose of treatment and refers the case back to the concerned sub centre for treatment continuation. Simple recording and reporting systems were devised for MPHWs. The reports of leprosy work will be generated from the sub-center level, and consolidated at PHC and district level.

The FI system involves the services of a full-time PMW. The PMW will visit each sub-centre once a month and help the MPHW in treatment, surveys, updating records and preparation of reports. He will also confirm the cases suspected by the MPHW and replenish the stock of anti-leprosy drugs. The PMW will individually carry out special surveys, IEC, POD activities and surveillance of cases released from treatment (RFT).

**Implementation of functional integration in LEPRA India projects**

**TRAINING**

LEPRA India has supported the State Government in capacity building of PHC staff to facilitate the implementation of functional integration. The first level of training was
conducted at State level for training of trainers from the districts. All the CDMOs and ADMOs (leprosy) were trained at Bhubaneswar, the State Capital. LEPRA India provided resource persons for these training programmes. Both the LEPRA India projects have trained the PHC staff for implementing the operational strategy. Two training programmes were conducted for the PHC staff, which facilitated and strengthened their participation in MLEC and in functional integration. One hundred and forty-eight Medical Officers of PHCs and 974 health workers were trained in leprosy, besides 1500 Anganwadi workers. Suitable printed material on leprosy in regional language for health workers and in English for doctors was provided during the training.

With the active participation of the PHC staff, the MLEC programmes have achieved commendable results. The index of suspicion (percentage of confirmed cases among suspected cases) also has shown a significant increase from 4% in the first MLEC to 13% in the second MLEC, indicating the positive impact of the reorientation training. The achievements of MLEC programmes are summarized in Table 3.

An orientation-training programme was conducted for the LEPRA India staff to acquaint them with the roles they had to perform in association with PHC staff in implementing FI.

**AREA REORGANIZATION**

Under the vertical programme, the area of the projects was divided into sectors having a population of 25,000 and assigned one each to a paramedical worker for implementation of the leprosy programme. In the operational strategy, the project area was reorganized according to location of PHCs and one PMW is placed at each block PHC.

**REALLOCATION OF ACTIVITIES**

The routine MDT circuits were discontinued and the activity plan of the paramedical staff was completely revised. Six to eight sub-centres were visited by the workers to help the MPHWs in treatment of leprosy patients. Cases suspected by MPHWs were examined by the PMW or non-medical supervisor (NMS) and confirmed cases were put on treatment. The MPHWs were assisted in maintaining case cards, treatment register, suspect register, stock register and preparation of monthly reports. The paramedical staff accompany the MPHWs for rapid surveys and school surveys during these visits. The PMWs/NMS gave spot training to the MPHWs on aspects concerning diagnosis and treatment of leprosy.

The MOs of the projects regularly visit the PHCs and support the MOs of PHCs in diagnosis and treatment of cases with complications. The MOs also attend the monthly meetings at PHCs to review the programme and conduct reorientation training.

<table>
<thead>
<tr>
<th>Programme</th>
<th>Population covered</th>
<th>Coverage (%)</th>
<th>Cases detected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>MB</td>
</tr>
<tr>
<td>MLEC 1</td>
<td>19,82,301</td>
<td>92</td>
<td>221</td>
</tr>
<tr>
<td>MLEC 2</td>
<td>20,67,362</td>
<td>91</td>
<td>145</td>
</tr>
</tbody>
</table>

**Table 3. MLEC achievements**
Table 4. Initial results of functional integration

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suspects referred to PHCs by MHWs</td>
<td>4207</td>
</tr>
<tr>
<td>Number confirmed by MOs of PHCs</td>
<td>256</td>
</tr>
<tr>
<td>Percent confirmed cases</td>
<td>6%</td>
</tr>
<tr>
<td>Self-reporting cases confirmed by MOs of PHCs</td>
<td>169</td>
</tr>
<tr>
<td>New cases detected by LI staff only during this period</td>
<td>870</td>
</tr>
<tr>
<td>Percent cases detected by PHC staff</td>
<td>33%</td>
</tr>
<tr>
<td>Percent cases detected by leprosy programme staff</td>
<td>67%</td>
</tr>
</tbody>
</table>

**INITIAL TRENDS OF FUNCTIONAL INTEGRATION**

The operational strategy has been implemented in both the projects during last 9 months and the findings discussed in this paper relate to this period. Although this is too short a period to draw any specific conclusions, the findings may be valuable in indicating trends and the current levels of participation of the PHC staff in this revised strategy. These are briefly summarized in Table 4.

The index of suspicion at 6% is obviously very low. Furthermore, the staff of LEPRO India projects detected 67% of the new cases during this 9-month period.

**COMPARATIVE TRENDS OF PROGRAMME INDICATORS AFTER FI**

The PR and NCDR at the commencement and by the end of 9 months of implementation of functional integration were studied. Both the rates in these two projects indicate a slight fall. The PR shows a decline from 5.9 to 5.3 while the NCDR shows a decline from 8.2 to 5.8 per 10,000 population. It is, however, too early to draw any significant inferences from these trends.

**Observations**

When a vertical programme is integrated with the general health services, it is inevitable that the service delivery will not be of the same quality. Similarly, when a programme is restructured from active case finding methods by the service providers to passive methods with a shift of emphasis to self-reporting, the trends of occurrence of new cases between these two strategies will not be comparable. Thus, the initial falls in the trends of PR and NCDR after functional integration are not comparable with the earlier rates at this stage of the programme.

It was observed that the participation of PHC staff and MHWs was disappointing. Sixty-seven percent of the new cases were still detected by the leprosy programme staff. The PHC staff are still relying on active participation of NLEP staff in case detection, confirmation and treatment initiation. This is because the weekly clinics at PHCs and the monthly clinics at sub-centres by MHWs are attended by paramedical workers. This has created a tendency to shift the burden of work to the NLEP staff.
Suggestions

There is need for validation of the data of case detection and treatment trends under functional integration by sample surveys for estimating the true PR and NCDR.

To assess the qualitative impact of functional integration, it is essential to analyse the clinical profile of the cases registered in PHCs/sub-centres in relation to type classification, nerve involvement, disability status, treatment regularity and mode of detection in order to assess the stage of the disease and the levels of awareness for self reporting.

It is necessary to conduct reorientation training for PHC staff to improve their diagnostic skills, as it was observed that the index of suspicion was very low.

It is also essential to provide learning material on leprosy for diagnosis and treatment to the field staff. Similarly, to improve the competencies of Medical Officers of PHCs to diagnose leprosy and treat complications, appropriate reference material has to be provided.

It was observed that the PHC field staff did not have suitable IEC material in their centres. Appropriate steps should be taken to remedy this as soon as possible.

It is suggested that the performance of PHC staff in the leprosy programme be reviewed by Medical Officers of PHCs and the performance of PHC MOs by the district officers every month, so that functional integration is established more effectively and properly monitored.

The supply of anti-leprosy drugs and steroids to PHCs for the treatment of leprosy and complications needs improvement.

The State of Orissa is one of the top five endemic States in India for leprosy, with a current prevalence rate of 7 per 10,000 of the population. If elimination as a public health problem is to be achieved by the year 2005, problems such as those listed above clearly call for urgent identification and correction.

References