Leprosy control activities in India: integration into general health system

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Summary Integration of leprosy control into the general health system is an essential element of a leprosy elimination strategy. In India, the process has been undertaken with the assistance of World Bank in a phased manner. In the first phase (2001-2002), 24 low/moderately endemic provinces for leprosy were targeted. Operational research was undertaken in these low/moderate endemic provinces to assess the progress of integration of leprosy control in general health system using defined categories, viz. structural integration, training status, availability of MDT and recording/reporting of cases. Selection of nine provinces, 18 districts, 86 health facilities and 108 sub-centres was performed using multistage stratified random sampling technique. Data were collected by interviewing GHS/vertical staff, scrutiny of records and spot checking of MDT stock by Health officers of three leprosy institutions of the Government of India. The result showed that district leprosy nuclei had formed in 16 of 18 districts. In 56% of health facilities vertical staff were redeployed for delivering general health care. Forty-five percent of medical officers, 71% of health supervisors and 75% of multipurpose workers were trained in leprosy. MDT treatment was available in 80% of health facilities. In only 2% of health facilities 3 months MDT stock of all types was present. Forty-four percent of sub-centres were delivering subsequent doses (second dose onward) of MDT. Reporting through a simplified information system was universal. This study emphasizes the need for reorientation training of Medical Officers, better MDT stock management and decentralized management of cases up to sub-centre level.

Introduction

Organized efforts to control leprosy in India, which has a long history of endemicity, started in 1954-55, with the introduction of the National Leprosy Control Programme (NLCP). The programme had separate staff and exclusive set up, having no connection with the general health system (GHS). But in absence of effective cure, the aim of the programme was to control disease activity. With the introduction of MDT in 1983, the programme gained a fresh momentum and it was renamed as the National Leprosy Eradication Programme (NLEP). The goal changed from control to elimination. However, it retained the vertical set-up. The programme received a further thrust in 1993–1994, with the introduction of
The World Bank assisted First NLEP Project. The project continued up to 2000 and helped to strengthen the existing structure and increase the coverage of MDT. As a result, the number of leprosy patients fell from over 2.5 million to 0.5 million.1

The decline in PR has raised questions about the economic and operational sustainability of vertical structure in India as well as several other countries of the world.1–3 As a response to the changed scenario and to ensure fulfillment of the objective of elimination of leprosy, many countries of the world initiated integration of leprosy work with GHS but had mixed experiences.4–7 In India too, the Second World Bank assisted NLEP Project started in 2001 with the objective of decentralizing the NLEP responsibilities and integrating anti-leprosy activities with GHS. In a vast country like India, integration was undertaken in a phased manner up to 2004, when the second project ended. Twenty-four provinces with low/moderate endemicity for leprosy (PR < 3 per 10,000 population) were targeted to complete integration by 2002.1,8

In an integrated setup, leprosy diagnosis and treatment is available on all working days in all the health facilities up to primary health centre (PHC) level, and not on fixed days, as in a vertical setup. Subsequent doses of MDT for treatment completion are distributed by multipurpose workers (MPW) of the subcentres who are close to the community. For quality diagnosis and treatment, capacity building of GHS staff by proper training and supply of drugs are essential elements of the strategy. The Central Leprosy Division of the Ministry of Health and Family Welfare, Government of India, has given the responsibility of training of Medical Officers and other GHS staff to provincial health authorities. However, technical support and other necessary inputs are provided by the Government and District Technical Support Teams (DTST). Many voluntary and bilateral agencies working in the concerned areas such as DANLEP, TLM, DANIDA and NLR are partners in DTST. A free supply of MDT has been ensured through WHO and NLEP. However, responsibility for stock management and streamlining 3 months supply of each type up to district and health facility level again lies with the provincial health authorities. Leprosy surveillance and monitoring is undertaken by establishment of the Simplified Information System (SIS), with the use of standardized formats (patient card, treatment register, drug register and reporting format.9

The existing vertical infrastructure of NLEP has also been reorganized. A small district leprosy nucleus (DLN) is created at the district headquarters as per suggested norms,1 to provide backup referral support and supervision of GHS. Some of the vertical staff are posted in high endemic pockets of district at PHC level, taking into account caseload, terrain and population density of the area. The remaining (70–80%) vertical staff are absorbed in GHS after proper training in other national health programmes and general health care delivery.

To assess the progress of integration, an operational research was undertaken covering 24 provinces with low/moderate endemicity for leprosy, using indicators on four broad categories, namely structural integration, training of GHS staff in leprosy, availability of MDT services in GHS and maintenance of leprosy records by GHS staff.

Materials and methods

Settings

India’s population resides in 28 provinces and seven Union Territories, which are further subdivided into districts. Districts are the most peripheral administrative units. There are more than 600 districts in India. A district on average has a population of about 1.7 million.
GENERAL HEALTH SYSTEM (GHS) INFRASTRUCTURE

A typical district health organization consists of the following basic infrastructure:

1. District hospital (DH): one in each district for providing secondary and referral health care services. In addition a district may have one or two sub-divisional hospitals, urban health centres and a few rural hospitals, depending on its population size.

2. Community health centre (CHC): this is the first referral centre covering a population of 80,000–120,000 (Community development block). It has specialists in selected disciplines. There are about 2–10 CHCs in a district.

3. Primary health centre (PHC): caters to population of 20,000–30,000. It has about six SCs under it. It is the most peripheral health unit that has a Medical Officer, Health Supervisors and other supporting staff. There are 6–60 in a district.

4. Subcentre (SC): it is the most peripheral out post of GHS established on every 3000–5000 population. It is manned by multipurpose workers (MPWs). Each district has about 50–500 sub-centres.

VERTICAL SET UP OF NLEP, RE-ORGANIZATION OF VERTICAL STAFF AND PATTERN OF DLN

There are about 22,200 regular vertical staff under NLEP. Most of these are non-medical supervisors (NMS), paramedical workers (PMW) and physiotherapists (PT). Of these, 12,500 are working in low/moderately endemic provinces. After integration of these 12,500 staff, about 70–80% staff are supposed to be working in GHS. For this, they are provided training in various national health programmes and general health care delivery. Their training responsibilities lie in provincial health authorities. The remaining 20–30% are retained for leprosy work. Most of them are redeployed in endemic pockets of the district. However, a small nucleus is created at district headquarters. The pattern of DLN is given in Table 1.

PARTICIPATING UNITS

Three institutions of union government located in south, east and central India and engaged in leprosy control activities for some time were identified. These are the Central Leprosy Teaching and Research Institute Chengalpattu, and two Regional Leprosy Training and Research Institutes at Aska and Raipur (Nodal agency). All participating units provided three teams each of health officers for field work and data collection.

Table 1. Pattern of district leprosy nuclei

<table>
<thead>
<tr>
<th>In districts with PR &lt; 1</th>
<th>In districts with PR &gt; 1</th>
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<tbody>
<tr>
<td>1 District leprosy officer</td>
<td>1 Deputy chief medical officer (responsible for leprosy and other programmes)</td>
</tr>
<tr>
<td>1 Medical Officer</td>
<td>1 Non-medical supervisor</td>
</tr>
<tr>
<td>1 Physiotherapist</td>
<td>1 Paramedical worker</td>
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<tr>
<td>1 Driver</td>
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<td>1 Worker</td>
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STUDY AREA

The study relates to 24 provinces (population: 529,681,096)\(^1\) with low/moderate endemicity for leprosy. Leprosy services in these provinces were planned for integration into GHS by the end of 2002.

SAMPLING PROCEDURE

At the outset, each participating unit, based on convenience, was assigned eight provinces. Subsequently, three provinces were randomly allocated to each participating unit, giving a total of nine provinces. The prevalence rate of leprosy in these provinces ranged from 0.2 to 2.9 per 10,000 population in the year 2003.\(^1\)

Selection of districts

In the second stage from each province, two districts were identified randomly, to give a total of 18 districts in nine provinces.

Selection of health facilities

For the purpose of study, health facilities were taken as any province owned health institution with a Medical Officer posted. This included district hospitals, community health centres, subdivisional hospitals, urban health centres, urban hospitals and primary health centres. For the survey, the following five health facilities were identified randomly from the list of particular health facilities in the selected districts as follows: district hospital, one; community health centre, one; subdivisional hospital/urban health centre/urban hospital, one; primary health centre, two.

The number of health facilities expected to be covered by nine teams comprised 18 district hospitals, 18 community health centres, 18 subdivisional hospitals/urban health centres/urban hospitals and 36 primary health centres (total 90 health facilities). However, data were available from 86 health facilities, as two states had no subdivisional hospital/urban health centre/urban hospital in the surveyed districts.

In each of the selected primary health centre areas, three subcentres were identified randomly. Thus in total, 108 subcentres were surveyed.

DATA COLLECTION

Data were collected by nine teams of health officers from the participating units during February 2004. Information is based on interview of GHS and vertical staff, scrutiny of records and spot checking of stock of MDT. Data were collected from different levels (province, health facilities and subcentres) on separate specially designed formats which were pretested before actual use in the field. On average, each team took 15 days for collection of data.

DATA COMPILATION AND ANALYSIS

Data compilation was done at RLTRI Raipur (Nodal agency) and 12 indicators were worked out as given in Table 2.
The value of indicators for integration of leprosy services into GHS is presented in Table 1, and discussed under the following headings.

**STRUCTURAL INTEGRATION**

This included formation of DLN and redeployment of vertical staff in health facilities. Sixteen districts (89%) out of 18 had created District Leprosy Nuclei. In 12 districts number of staff was as per Government of India’s norm, whereas in four it absorbed all the existing vertical staff. Of 86 health facilities surveyed, in 48 (56%) vertical staff were deployed to deliver GHC.

**TRAINING STATUS**

A total of 47% of medical officers, 71% of health supervisor, 75% of multipurpose workers and 82% of media staff were trained in leprosy after integration.
Training of vertical staff in GHC delivery

Out of 557 vertical staff included in the study, 47% were trained in GHC delivery.

Availability of MDT services in GHS

In more than 80% of rural and urban health facilities MDT treatment was available, and in 76% of health facilities it was available on all working days. In 74% of health facilities Medical Officers were diagnosing leprosy cases. Three months stock of MBA, MBC, PBA and PBC blister packs was available in 54%, 26%, 51% and 23% of health facilities, respectively. Only 2% of health facilities had 3-month stock for all types of blister packs. About 44% of subcentres were providing subsequent doses of MDT and 31% were maintaining patient cards.

Recording and reporting as per SIS formats

SIS 2002 guidelines and formats were available in all the surveyed health facilities and their use was universal. However, involvement of GHS staff in maintaining drug and treatment registers was seen in 44% and 59% of health facilities, respectively.

Discussion

India is committed to achieve the goal of leprosy elimination (PR < 1 cases per 10,000 population) by the end of year 2005 with integration as an essential element of the strategy. This is done with the support of the World Bank. In the first year (2001–2002) of the second project, 24 low/moderate endemic provinces were targeted. However, integration is a gradual process and requires many operational and administrative adjustments. It also requires close monitoring and evaluation, more so in the initial years. Hence, operational research has been undertaken by the Government of India, to assess degree of integration using four distinct categories, which are discussed under separate headings.

Structural integration

Twelve of 18 districts had formed DLN as per criteria based on prevailing PR to work as referral units. In another four districts, although DLN were formed, they had too many staff. In general, redeployment of vertical staff in GHS is much lower than recommended norms. There may be several reasons for this. First, vertical staff prefer to be posted at district headquarters, thus avoiding posting to peripheral areas which are devoid of facilities available at headquarters. Second, there has been lack of organized training of vertical staff who are to be absorbed in GHS. Third, the GHS staff may also prefer to avoid examining leprosy cases, because of lack of training and social stigma. In China, similar observations were made where more than 80% of cases were still diagnosed by dermatologists following integration. In Argentina, the presence of vertical staff has been identified as a hindrance to integration in leprosy.

Training status of GHS staff

Training levels of different health functionaries in leprosy were assessed, as acquired after integration. Less than half of the medical Officers (45%) were trained, but for lower level of
staff (HS and MPW) training was better. The latter are closer to the community, hence the possibility of missing suspected cases is less. Confirmation of these suspects is later carried out by medical officers and vertical staff. However, lack of training of medical officers may have serious implications in diseases such as leprosy, where recent leprosy elimination monitoring (LEM) surveys have shown that as high as 9.4% of registered cases were wrongly diagnosed and 11–13% were wrongly classified by medical officers. Others working in the field have also emphasized the need of training of GHS staff in leprosy. The Government of India recommends 100% training for all existing health functionaries.

AVAILABILITY OF MDT SERVICES AND MDT STOCK MANAGEMENT

More than 80% of health facilities had MDT availability, but the stock position was not maintained as per Government of India norms. All health facilities are supposed to keep 3 months stock of all types of MDT. In our study, figures were even lower than reported in LEM surveys. However, the latter were undertaken in high endemic states. Absence of child cases in many low endemic areas was one of the important factors for lesser availability of child blister packs in our study. In these low endemic areas, guidelines are not critically adhered to and drugs are transported to the health facilities concerned from the district depot according to need. During LEM 2004, MDT stock management was also found poor at district and health facilities levels.

After full integration, responsibility for treatment continuation lies on subcentre staff. In the present study involvement of subcentres is much lower than desired. In India, subcentres are manned by MPWs, who are the most grass root level workers of GHS. These workers are closest to the community and hold key positions in delivery of health care. In the study, it was observed that in spite of their higher training level, MPWs are still not orientated to the task of MDT delivery and maintaining patient care, although they are helping in identification of suspects and follow-up of cases under treatment. However, for more than half of the cases, treatment continuation is done by PHC staff, mostly health supervisors and redeployed vertical staff. In the long run, better involvement of subcentres is desired, so that leprosy cases can also complete treatment close to their homes, as for other common prevailing ailments, without disrupting their daily routine. Moreover, there is also some problem of work allocation between GHS and vertical staff at the grass root level which needs a closer look.

RECORDING AND REPORTING

The Government of India has issued uniform standardized Simplified Information System (SIS) formats and guidelines for recording and reporting of cases to all the provinces. Our study showed the same guidelines and records were available and used in all the health facilities. However, involvement of GHS staff in reporting was lower, as in about half of the surveyed health facilities treatment and drug registers were filled by the vertical staff. This again may be due to poorer training of GHS staff. However, our figures show improvement over the LEM 2003 findings. In many health facilities, redeployed vertical staff who are supposed to deliver GHC are still involved in leprosy work mostly recording reporting and case confirmation activities.

One of the important aspects which was not covered in the study is community perspective and client satisfaction. A follow-up study should be carried out to investigate those aspects not covered here.
Integration of leprosy control activities into GHS is required for long-term sustainability of these services in a cost-effective manner, and also to protect the achievements of the vertical programme. It requires enhancement of the capability of care providers through training and retraining, as well as back support of referral network. In India, although the process has begun, achievements are lower than desired in many areas. In a few areas, such as MDT availability in health facilities, reporting as per SIS guidelines and training of lower levels of health functionaries, the progress is satisfactory. The weaker areas include low training of medical officers, poor MDT stock management and lack of decentralization of services up to subcentre level. Progress in these areas needs to be speeded up to ensure the achievements made so far are protected and new cases are detected and treated without delay.

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