

# Leprosy elimination: A myth or reality

Leprosy (Hansen’s disease) is a chronic granulomatous<sup>[1]</sup> disease caused by *Mycobacterium leprae* (*M. leprae*), an acid-fast bacillus demonstrated by Ziehl–Neelsen’s staining. It is essentially a disease of the peripheral nerves also affecting the skin. It is most prevalent in the tropics and the subtropics.

The implementation of MDT (multi-drug therapy) along with NLEP (National Leprosy Eradication Program) has been responsible for a significant decline in the new case detection rate. Though this decline is significant, India alone accounts for 54% of the total cases detected across the globe,<sup>[2]</sup> having a prevalence rate of 0.68 per 10,000 population and a new case detection rate of 0.99 per 10,000 population, as of March 2014.<sup>[3]</sup> Despite all efforts, transmission of leprosy has continued. States such as Bihar, Chhattisgarh, Jharkhand, Uttar Pradesh, West Bengal, Orissa and Maharashtra contribute to 66% of the country’s case load.<sup>[3]</sup>

The NLEP aimed at elimination of leprosy through the principles of surveillance, education and treatment. However, now the vertical program has been disbanded and disease integration has been done with the general health services to avoid stigmatization of leprosy patients. For the success of this integrated program, it is essential that the population at risk is more closely observed by the general healthcare staff.

Two important factors would be crucial in the efforts to eradicate leprosy: First, to increase awareness for patients to self-report for early detection and prompt treatment with MDT to prevent deformities and disabilities. Second, the efforts to identify geographically hidden pockets which still have a relatively high prevalence and incidence of leprosy and take suitable control measures.<sup>[4]</sup>

The important factors for successful eradication of leprosy can be grouped under three categories:<sup>[5]</sup>

- Leprosy services—Trained manpower, drug availability, leprosy expertise in institutions, continuous surveillance, rapid appraisal
- Leprosy research—Second-line drugs, vaccines, immunotherapy, reconstructive surgeries
- Leprosy awareness—Early self-reporting, reducing stigma and defaulters.

The Milestones in Leprosy eradication program can be summarized as following:<sup>[6]</sup>

- 1955—Government of India launched National Leprosy Control Program (NLCP) based on dapsone domiciliary treatment through vertical units implementing survey education and treatment activities
- 1981—Government of India established a high power committee under chairmanship of Dr M.S. Swaminathan for dealing with the problem of leprosy
- 1982—The MDT came into use following the recommendation by the WHO Study Group, Geneva, in October 1981
- 1983—National Leprosy Eradication Program (NLEP) was launched. Districts were covered in a phased manner and all the districts in the country could be covered only by the year 1996
- 1991—The World Health Assembly resolved to eliminate leprosy at a global level by the year 2000
- 1993–2000—The 1<sup>st</sup> phase of the World Bank supported National Leprosy Elimination Project was launched in 1993 and completed in March 2000
- 1998–2004—The NLEP introduced the modified leprosy elimination campaign activities in 1997–1998. Five such campaigns were conducted upto 2004
- 2001–2004—The 2<sup>nd</sup> phase of the World Bank supported National Leprosy Elimination Project was launched in 2001 and completed in December 2004. During this phase, the NLEP responsibilities were decentralized from the Center to the States/UTs through State/District Leprosy Societies. Leprosy services were also integrated with the General Health Care System from the erstwhile vertical system
- 2002–2004—A system of monitoring of the program was started in the form of leprosy elimination monitoring (LEM) exercise jointly

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by Government of India with World Health Organization, International Federation of Anti-Leprosy Associations (ILEP) in collaboration with the National Institute of Health and Family Welfare. These studies were carried out during 2002, 2003 and 2004. During the last 2 years a component of validation of case diagnosis was introduced

- 2005—A survey to monitor performance at close of the 2<sup>nd</sup> National Leprosy Elimination Project was carried out during April–May 2005 through an independent agency, the Indian Institute of Health Management and Research, Jaipur
- 2005—Leprosy was eliminated as a public health problem at national level in December 2005
- 2005 onward—Program continues with Government of India support since January 2005. In 2005, a strategic plan for the elimination of leprosy was introduced
- 2006–2010—WHO introduced the “Global Strategy for Further Reducing the Leprosy Burden and Sustaining Leprosy Control Activities” to address the remaining challenges in providing services for leprosy patients under conditions of low prevalence. The main intentions were those of ensuring program sustainability by reducing reliance on vertical infrastructure and promoting integration within the general health system. This ushered in a renewed focus on issues related to quality of services, reaching underserved communities and building effective partnerships that would further reduce the disease burden<sup>[7]</sup>
- 2011–2015—The enhanced global strategy for further reducing the disease burden due to leprosy: Together with the updated operational guidelines was introduced to enhance the elements of the enhanced global strategy.<sup>[8]</sup>

In spite of all the above efforts, leprosy eradication remains a distant dream. Newer and newer cases are being reported, many of them with a high bacterial load. Some of them being treated in the past with the fixed duration MDT or some of them defaulting due to lack of available drugs, mainly because the NGO distributing drugs has closed down due to scarcity of funds. The practice of removing a patient’s name from the records once the fixed duration MDT is completed and that too by the health worker should be discontinued and only a qualified person should decide about stopping the treatment. Every patient needs to be managed individually as per his/her disease and its complications.

The clinical, bacteriological, and histopathological characteristics of newly detected cases evidently indicate the grave nature of the problem. A study by Yadav *et al.* helps in concluding that leprosy is still not eliminated

and active surveillance is still needed to detect the sub-clinical cases and undiagnosed cases.<sup>[9]</sup>

We have won the battle but the war is still on and there is a need for research on early diagnosis, treatment, and prevention, such as further use of molecular analysis of the *M. leprae* genome, implementation of BCG vaccination, and administration of chemoprophylaxis or effective immunoprophylaxis to household contacts. There is a need to sustain and provide quality leprosy services to all persons through general health system, including good referral system.

By adopting the various strategies mentioned above, one can only hope that India will be successful in eradicating the ancient scourge of leprosy through its medical and social breakthroughs.

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