



## Viewpoint

### Accelerating kala-azar elimination in India

Kala-azar or Visceral leishmaniasis (VL) has been a major public health problem in India for the last several decades. Several States such as Bihar are badly affected<sup>1</sup>. The disease is transmitted by the bite of an infected female sand-fly *Phlebotomus argentipes*.

The Government of India (GOI) launched a centrally sponsored kala-azar Control Programme in the endemic States in 1990-1991<sup>2</sup>. The programme brought a significant decline in kala-azar morbidity, but could not sustain the pace of decline for long. In 2002, The GOI set the goal of kala-azar elimination by the year 2010 which was revised to 2015<sup>3</sup>.

Given the cross-border nature of the disease, India signed a Tripartite Memorandum of Understanding with Bangladesh and Nepal to achieve kala-azar elimination from the South-East Asia Region<sup>3</sup>. Elimination is defined as reducing the annual incidence of kala-azar to less than one case per 10,000 population at the sub-district (block) level in Bangladesh and India and at the district level in Nepal.

#### The status of elimination

The elimination programme in India is spearheaded by the National Vector Borne Disease Control Programme (NVBDCP)<sup>2</sup>. The strategy consists of (i) early diagnosis and complete case management; (ii) integrated vector management and vector surveillance; (iii) supervision, monitoring, surveillance and evaluation; (iv) strengthening capacity of human resource in health; (v) advocacy, communication and social mobilization for behavioural impact and inter-sectoral convergence; and (vi) programme management.

The surveillance for kala-azar includes listing of cases in every village and use of these data for planning of disease prevention and case management. For early diagnosis and case management, anyone with fever of more than two weeks and enlarged spleen and liver

in an endemic area with a laboratory confirmation are treated with liposomal amphotericin B in a single dose of 10 mg/kg or with combination regimen namely paromomycin-miltefosine injection for 10 days<sup>4,5</sup>.

The disease incidence has been declining steadily, albeit very slowly; from 13869 in 2013 to 3145 in 2019. Of the cases reported in 2019, nearly 60 per cent cases were from four States alone<sup>6</sup>. These included Bihar with maximum number (2416 cases), followed by Jharkhand (541), Uttar Pradesh (97) and West Bengal (87)<sup>7</sup>.

In addition, 821 cases of post-kala-azar dermal leishmaniasis (PKDL) were reported and these were considered as the main cause of transmission in the community<sup>6</sup>.

The GOI endeavoured to eliminate the disease by December 31, 2017 but could not achieve the target because the desired number of kala-azar cases in Bihar and Jharkhand (*i.e.*, one patient per 10,000 populations in sub-district level) could not be achieved. The State and Central governments tried hard to achieve the desired goal by December 31, 2020 – the latest target date set by the programme but this was also not achieved due to some other reason.

The definition of elimination of kala-azar is complex. Here the elimination means having to reach and maintain a target of less than one case per 10 thousand people in all endemic areas for three consecutive years at district or sub-district level<sup>8</sup>. The programming had three phases attack to bring down cases below 1/10,000 for three years from 2017 to 2019, maintenance of case level below 1/10,000 between 2017 and 2019 and maintain of case level below 1/10,000 beyond 2020<sup>9</sup>. Nepal has succeeded in maintaining that level<sup>10</sup>. At present, the government needs to substantially enhance programme implementation in order to eliminate kala-azar from these two States as well as from rest of the States.

### What it would take to achieve the goal

According to the NVBDCP, 54 districts are still endemic for kala-azar, affecting mostly those living in rural areas<sup>6</sup>. Against this background, the topmost priority actions that are urgently needed to facilitate achievement of the elimination target are the following:

First, a special search and investigation team is to be established proactively in each endemic block for active case finding and investigation of any one with fever of more than 10 days duration be investigated for kala-azar and referred to district hospital for management. In spite of the gradual but slow progress in kala-azar elimination in India, it is believed that the process of elimination can be accelerated if active search for both kala-azar and PKDL cases is taken up as a priority at district level. The team consisting of at least two persons in each block who can pay house to house visits in search of kala-azar cases. Accredited Social Health Activist (ASHA) and village level workers should be trained in detection of active cases of kala-azar. Such patients should be tested for confirmation of kala-azar and referred to district hospital for case management. The district hospital should be equipped with facilities for the diagnosis of kala-azar and also for the treatment of kala-azar. The higher authority of Health Ministry should ensure that at block level full health facilities are available. This team will have the accountability for their block and report to the block medical officers on regular basis regarding progress and what resources are required for the elimination programme.

PKDL is an important complication of kala-azar and occurs one to two years after cure of kala-azar. Since PKDL is also a source of infection for kala-azar, these cases should be treated fully. The search for PKDL and kala-azar cases should be done simultaneously.

Second, the insecticide residual spray operations as a part of kala-azar elimination are critical for vector control and breaking the human-vector-human cycle of transmission. In fact, kala-azar was almost eliminated during malaria eradication programme during 1950s due to DDT spray at that time (<https://www.epa.gov/ingredients-used-pesticide-products/ddt-brief-history-and-status>). The spray operations must be carried out twice a year to cover all houses and cattle sheds in the villages. These operations should be monitored and supervised closely by the health authorities to ensure that these operations are carried out to achieve the desired results.

Third, as the incidence of kala-azar gradually goes down, many in the community are less aware of the lingering problem and the health workers develop a sense of complacency resulting in a casual approach to programme implementation. Therefore, social mobilization programmes and awareness campaigns for community engagement must reach every house in the block with messages. All the existing communication methods both mass media as well as interpersonal communication methods should be used to convey messages that are prepared keeping the local context in mind. Community volunteers and community-based organizations can play a key role in this regard and must be mobilized.

In addition to the community, forging partnership with private sector can help ensure treatment initiation and adherence. It is estimated that about 20 per cent of kala-azar patients seek treatment in the private sector. Information from private sector is essential to have better picture of burden of the disease and sustain the gains achieved towards elimination. The private sector should take responsibility of diagnosing and treating the patients and the government should ensure that private practitioners are fully engaged in the Programme. In this regard, support from other national and international stakeholders should be leveraged to achieve the national objective.

Finally, programme management including supervision, monitoring and evaluation is the most important operational component for success of the Kala-azar Elimination Programme. It involves close coordination between Centre and State level offices for policy, strategy and planning level as well as effective coordination and harmonization of activities with different partners at the operational level. Senior national experts can be invited to make field visits and assist in supportive supervision. These experts can help also in advocacy by briefing the State level policy makers and programme managers for administrative and management support for the Programme. Day-to-day management of the Programme activities need to be strengthened at all levels of implementation to make sure there is uninterrupted supply of drugs, availability of diagnostics and programme activities are implemented effectively and on timely basis.

If all these measures are taken kala-azar could be eliminated from India in another couple of years.

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