



# KALAZAR

(VISCERAL LEISHMANIASIS)

## FACTSHEET

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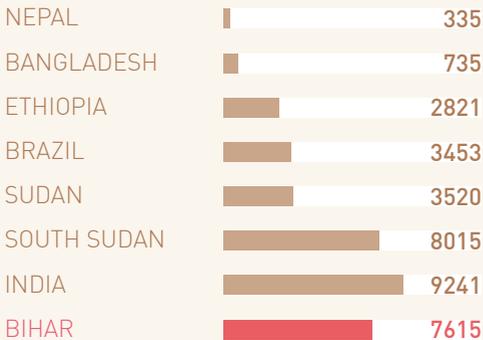


## WHY IS KALA AZAR IMPORTANT TO BIHAR AND INDIA?

India accounts for about 50% of the global Kala Azar burden with 4,632 cases reported till August 2016.

Bihar is home to over 77% of the national burden of Kala Azar, reporting 3,563 cases from January to August 2016.

Bihar and Jharkhand together account for over 90% of Kala Azar cases in the country.



CASES IN 2014

Bihar alone accounts for about as many cases as South Sudan, the country after India in terms of number of cases

SOURCE: WHO WEEKLY EPIDEMIOLOGICAL RECORD, JUNE 2016

## WHAT IS KALA AZAR, THE DISEASE?

Visceral Leishmaniasis (VL) or Kala Azar (KA) as it is called in South Asia, is a relatively rare communicable disease, that usually affects the poorest. It is characterized by prolonged fever and debility, that usually kills unless treated.

- Other than the Indian subcontinent, it is also found in **Brazil in South America, Ethiopia, Somalia, Sudan and South Sudan in Africa** in sizeable numbers.
- It is considered one of the Neglected Tropical Diseases (NTDs), because for a long time there was little attention paid to it, and it remained poorly understood and addressed. Ever since a global effort began in 2005 to eliminate it, Kala Azar has started receiving more attention.



## HOW IS KALA AZAR CAUSED?

**1** Kala Azar is caused by a tiny, one-celled parasite called *Leishmania donovani* - examples of similar parasites are malarial parasite and ameba.

**2** The parasite multiplies in the spleen, liver and bones of the affected person to large numbers and causes a steady deterioration in the health of the person.

**3** The parasite enters the body when a sandfly containing the parasite comes looking for a blood meal and bites the person.

**4** The sandfly picks up the parasite from a person suffering from Kala Azar. It then grows and multiplies inside the sandfly for more than a week, and then gets accidentally injected into the blood of the next person who gets bitten.

## WHY IS KALA AZAR DANGEROUS?

Untreated, it usually kills the infected person.

It spreads slowly but silently from person to person, and even after years of efforts to control it, thousands of cases still occur every year in India.

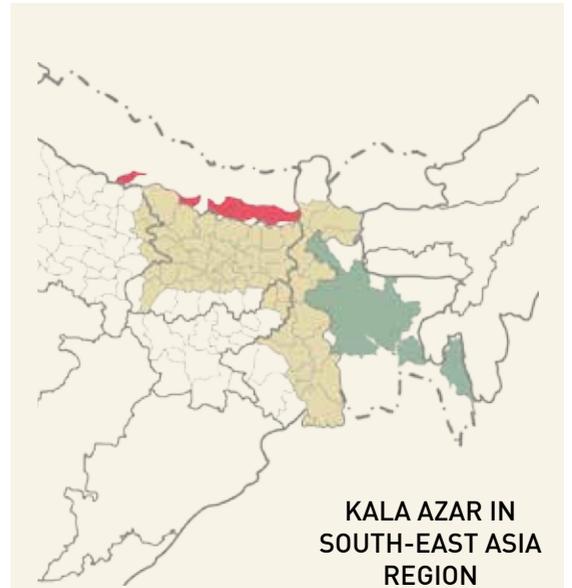
Even before killing, the disease causes severe debility, loss of ability to work and malnutrition.

Because it is rare, people take a long time to realize that they may have Kala Azar, and in the meanwhile they suffer, and also continue to spread the disease.



## WHICH REGIONS ARE MOST AFFECTED?

- The disease is regularly found in the Indian subcontinent in **58 districts in India**, **11 districts in Bangladesh** and **16 districts in Nepal**.
- In India **34 districts in Bihar**, **4 districts in Jharkhand**, **11 districts in West Bengal**, and **9 districts in Uttar Pradesh** are consistently affected.
- Bhutan has sporadic cases, and occasional cases turn up in different states of India, usually in people traveling out of the affected areas.



NEPAL - 11 DISTRICTS

BANGLADESH - 16 DISTRICTS

INDIA - 58 DISTRICTS

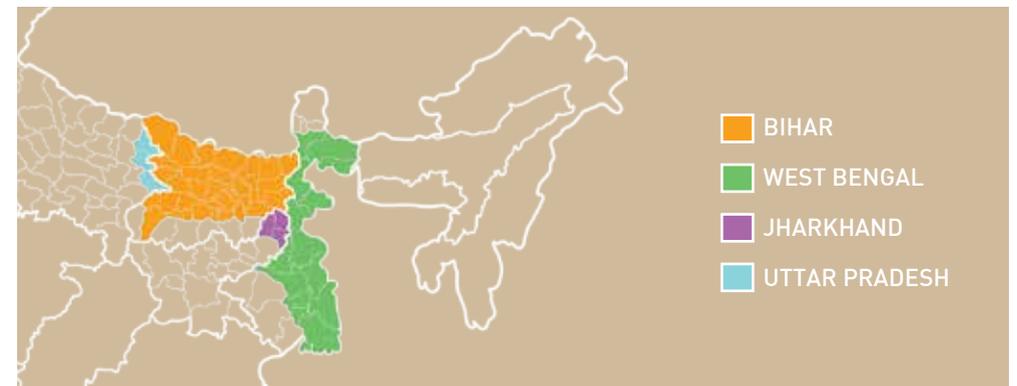
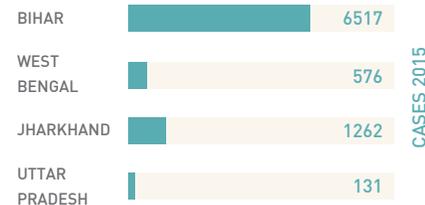
BIHAR - 34 DISTRICTS

WEST BENGAL - 11 DISTRICTS

JHARKHAND - 4 DISTRICTS

UTTAR PRADESH - 9 DISTRICTS

No. of VL Cases in affected states in India



## SYMPTOMS AND DIAGNOSIS OF KALA AZAR



- ▶ **Fever** that does not respond to usual treatment for malaria, typhoid, viral infections for **two weeks or longer**
- ▶ **Enlargement of the abdomen** due to the spleen and liver becoming large
- ▶ **Tiredness, loss of appetite** and **loss of weight**
- ▶ **Skin turning dark**

A person who has **fever** for more than **15 days**, and a **large spleen** should take a special blood test for Kala Azar. If the test is positive, this confirms the diagnosis of Kala Azar.

## WHO GETS KALA AZAR?

The disease is seen more among:

People in villages

People living in kutcha homes

People sleeping on the floor, without a cot

People living in villages that have been affected by Kala Azar



People living close to cattle

People from socially vulnerable communities such as mahadalits

People who are not well off economically

## WHERE ARE SANDFLIES FOUND?

**1** The sandfly is a small insect, **a third the size of mosquito**, that is found in almost all rural and semi urban areas of the subcontinent. Sandflies are often found in places that have heavy annual rainfall, a mean humidity of above 70%, a temperature range of 15-38 °C, abundant vegetation, high subsoil water and alluvial soil.

**2** It particularly likes to **live in dark and damp places**, close to sources of blood, such as cracks and **crevices in the walls of cowsheds and homes**.

**3** Flood-prone areas with **kutcha houses** provide the sandfly a perfect place to breed.

**4** It has a **short life span**, not more than **3-4 weeks**.

**5** Just as with mosquitoes, male sandflies **live on plant juices**, but **females require blood meals**, particularly after mating, for their eggs to mature – that is why female sandflies look for animals or humans to bite.

**6** Females **lay eggs in damp soil or dung**. After an egg is laid, over the period of one week it develops into a larva, then a pupa and finally into a winged adult.

**7** The sandfly does not fly but hops up to six feet, so people **living close to where sandflies breed** or people **sleeping on the floor** are more likely to get bitten.

**8** Sandflies only **accidentally get infected by the Kala Azar parasite**, when they happen to bite a person having Kala Azar. Similarly, **they accidentally transmit the infection a week later**, when they bite another person for another blood meal. Of the many types of sandflies, only one type – **Phlebotomus argentipes** – **transmits Kala Azar in India**.

## HOW ARE CASES OF KALA AZAR FOUND AND MANAGED?

**1** Typically, people having fever seek treatment from nearby doctors. In cases where the fever becomes prolonged and the person does not get well with treatment for simple causes of fever like malaria or viral infection, the doctor or the patient suspects that this could be Kala Azar.

**2** When the patient arrives at a government hospital, the patient is asked about the duration of their fever. If fever has lasted for more than 15 days, and if the patient has an enlarged spleen, a special blood test is conducted. A positive test then confirms the diagnosis of Kala Azar.

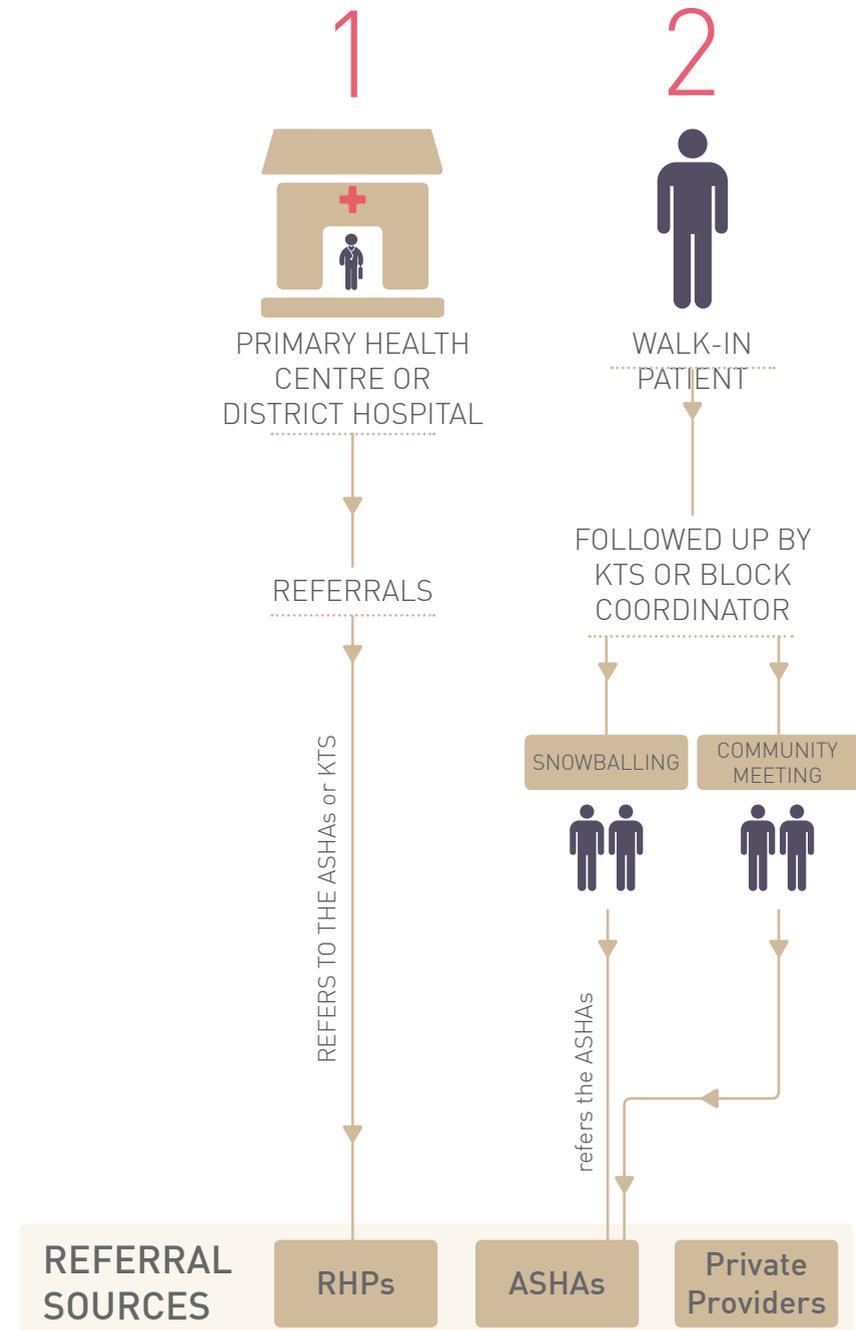
**3** The examination and testing facility is available at all Government Health Facilities in the affected districts.

**4** The ASHA in the village is trained to identify people having prolonged fever and refer them to a Primary Healthcare Centre (PHC) for further tests. If she refers a case who is confirmed to have Kala Azar, and helps the patient complete the full treatment, she gets an incentive from the health department.

**5** All confirmed cases are provided treatment in government hospitals. Less than 10% of all cases are treated in private hospitals.

[SOURCE: ASSESSMENT BY CARE]

## KALA AZAR DETECTION - PROCESS FLOW



## HOW IS KALA AZAR TREATED?



1 Earlier, all cases used to be treated with a painful injection called SSG, which was given daily for a full month or longer.



2 However, with use, the parasite developed resistance to it and higher doses had to be given, which were harmful for the patient.



3 In 2008 a new medicine called Miltefosine was introduced in the affected states for the treatment of Kala Azar. It could be given as capsules, as a course lasting 28 days. It was also more effective, and therefore became more popular than the painful SSG injections.



4 Later a new treatment became available, where complete cure could be achieved in most cases by giving a single dose of a drug called Liposomal Amphotericin B, or LAmB, given intravenously. This was better than miltefosine because miltefosine could damage a growing baby in a mother's womb, and thus could not be given to women who may be pregnant.

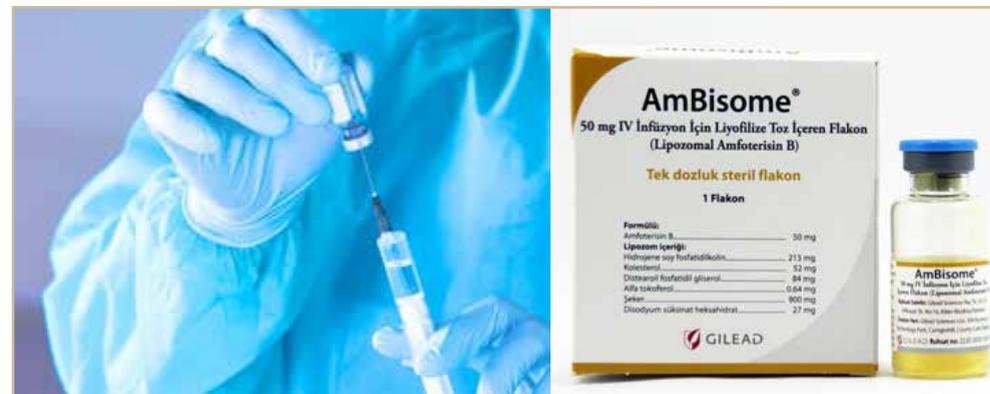


5 Another variant of the drug, Amphotericin B has been used since long but is inconvenient as the patient has to be kept in the hospital for a month.



6 Miltefosine, Amphotericin and LAmB are all expensive drugs, LAmB being the most expensive of them all. They are all provided free of cost to cases of Kala Azar. LAmB is provided free of cost to the Government of India by the WHO. LAmB has to be stored continuously at a low temperature in an ice lined refrigerator.

## CURRENT TREATMENT



Currently, LAmB is the first choice of treatment in the Kala Azar elimination program in India. It was introduced in 2014, and is now provided from government hospitals in all affected districts in Bihar.



In Bihar, this treatment is available in all district hospitals, Medical College hospitals, research institutes like RMRI and also at selected PHCs which have cases in their areas. Cases from all areas are transported to these hospitals for treatment, free of cost.

## WHAT IS BEING DONE TO REDUCE THE SPREAD OF KALA AZAR?

### 1. Killing sandflies in villages where there are known cases, so that infection is not spread

- Villages having cases are identified and sprayed with insecticide twice a year until 3 years after the last case in the village.
- The inside of every room in every house is sprayed in these villages. It's called Indoor Residual Spraying (IRS). The effect of the spray is expected to last for 3 months.
- Typically, spraying is carried out once in Feb-March, and then again in June-July in the state of Bihar.
- Initially DDT was the insecticide used. Over time, sandflies have become increasingly resistant to DDT, and so new insecticides are being tested and introduced. Currently, the program uses an insecticide called alphacypermethrin, a synthetic pyrethroid, in the worst affected areas. It is highly effective against sandflies. This insecticide is also safer for the environment as compared to DDT.
- In order to improve the efficiency of the spraying and make work easier for the spray teams, the old stirrup pumps are being replaced with imported Hudson hand compression pumps. Currently, 15 districts are using Hudson pumps, and over time most affected districts will have them.



## **2. Diagnosing and treating all cases of Kala Azar as early as possible, so that spread of infection can be limited as much as possible**

- A person with symptoms is tested as soon as possible, if even after 15 days their fever does not respond to treatment for other diseases like malaria and typhoid.
- Confirmed cases are followed up until treatment is completed, and every few months thereafter to detect relapse, if any.
- For each case, neighbors and relatives are screened for symptoms of Kala Azar, and anyone with symptoms is tested.
- ASHAs, local doctors, panchayat members and the general public are alerted about the symptoms of the disease and asked to suspect Kala Azar in any person who has fever for more than 15 days, and refer them to government hospitals.
- A systematic information system records the details of every case both on paper and online to help accurately count and locate all cases. The location is important for deciding where to spray insecticide, for follow up and to assess whether a given block or village is free from Kala Azar.

## **3. Communication to raise awareness about both of the above**



## WHAT ARE THE RESULTS OF THESE EFFORTS?

The efforts have yielded large improvements in the reach of interventions and in the impact they produce:

Every year, insecticide spraying is carried out twice.

COVERAGE IN

2014 - 52%

2016 - 78%

[SOURCE: CARE INDIA MONITORING DATA]

Deaths attributed to Kala Azar

2010 - 105

2016 - Nil

[SOURCE: PROGRAM DATA]

86%

reduction in the number of cases between 2011 and now

[SOURCE: PROGRAM DATA]

COMPLETE TREATMENT

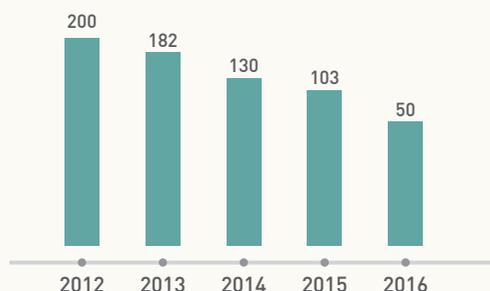
has been provided to all detected cases

[SOURCE: PROGRAM DATA]

### TREND OF DISEASE BURDEN : NATIONAL



### NO. OF BLOCKS YET TO REACH ELIMINATION IN BIHAR



## KALA AZAR ELIMINATION STRATEGY

The aim of the National Kala Azar program is to achieve 'Elimination of Kala Azar as a Public Health Problem'.

This means that Kala Azar should not remain a threat to the health of the people in the community.

The strategy devised for the National Kala Azar Elimination Program has four main parts:

1

Early diagnosis and complete case management

2

Integrated vector management and vector surveillance

3

Strengthening the capacity of human resources in health

4

Advocacy, communication and social mobilization for behavioral impact and inter-sectoral convergence

ELIMINATION IS CURRENTLY DEFINED AS THE OCCURRENCE OF LESS THAN ONE NEW CASE OF KALA AZAR PER TEN THOUSAND POPULATION IN A BLOCK IN ONE YEAR.

BLOCKS YET TO ACHIEVE ELIMINATION IN BIHAR & JHARKHAND BY THE END OF THE YEAR:

	TOTAL	Bihar	Jharkhand
2015	129	103	26
2016	89	65	24

### OTHER IMPORTANT ACTIONS FOR ELIMINATION OF KALA AZAR

#### PROGRAM MANAGEMENT

Day-to-day management of program activities like cold chain maintenance for LAmB, drug requisitions, procurement and transportation of drugs, diagnostics and commodities, and planning and monitoring need to be strengthened at all levels of implementation.

#### SUPERVISION, MONITORING, SURVEILLANCE AND EVALUATION

Strengthening the surveillance systems at Government facilities would lead to better monitoring of the Kala Azar situation. Information from private and non-organized health sectors is also important since a large number of people go to these providers as their first point of contact with the health system. Some patients even take full treatment from them.

## WHEN WILL KALA AZAR BE ELIMINATED?

- In 2002, India aimed to **eliminate** Kala Azar by 2015, now **revised to 2017**.
- Elimination does not mean the disease will disappear, it only means that its occurrence will be so low that it will **no longer be a major threat** to the health of the public. The target is to **eliminate Kala Azar** from all blocks by **2017** and continue to keep it down.

## INCENTIVES BEING PROVIDED TO ASHA

- ASHA workers are given **Rs.300** upon the completion of treatment of KA patients whom they have referred for diagnosis and treatment.
- They are given **Rs.100 per round** of IRS for facilitating spray operations in their respective village.

## INCENTIVES BEING PROVIDED TO PATIENTS FROM GOVERNMENT OF INDIA AND GOVERNMENT OF BIHAR

- Patients are **treated for free** in government hospitals. They are given a **compensation of Rs.6600** to make up for the loss of wages they may have suffered because of their illness and also for associated expenses. This is provided from the **Chief Minister's Relief Fund**.
- The Government of India provides **Rs 500** to every **patient** of Kala Azar and **Rs 2000** to every **patient** of Post Kala Azar Dermal Leishmaniasis (PKDL).

## WHAT IS PKDL

- Post Kala Dermal Leishmaniasis is a complication of Kala Azar which primarily affects the skin.
- It has a number of types and forms of skin lesions, mostly small pale lesions that do not itch or lose sensation. The patients of PKDL do not feel any symptoms other than cosmetic disfigurement.
- It occurs in a small proportion of cases of Kala Azar long after they have recovered from the primary disease, sometimes years later.

- However, it sometimes occurs in people who did not have Kala Azar before.
- Certain kinds of skin lesions of PKDL contain large numbers of parasites, and thus these cases are likely to be sources of spread of the disease.
- PKDL cases are also detected and treated in the program.
- The drugs that are used for treatment of Kala Azar are also used to treat PKDL. However, the medicines are given for a longer time.

## WHO ARE THE HEROES WHO ARE MAKING KA ELIMINATION POSSIBLE?

- Political Leadership
- Primary Health Center (PHC) Staff
- Health Program Leadership
- Administrative Leadership
- Spray Squads



## WHICH AGENCIES HAVE SUPPORTED GOI AND GOB IN KALA AZAR ELIMINATION?

### In Operations and Monitoring:

- **Regional Office of Health & Family Welfare**, Patna, Kolkata, and Lucknow
- **World Health Organization (WHO) Country Office** for India and SEARO
- **CARE India**, Bihar
- **KalaCORE** comprising of **MSF**, **DNDi**, **LSTMH** and **Mott MacDonald** with implementing partners including **New Concepts**, **IPE Global**, **PHFI**, **FRHS** etc.
- **New Concepts** and **IPE Global**

### In Research:

- Rajendra Memorial Research Institute (**RMRI**), (an ICMR institute)
- Patna Branch of National Centre for Disease Control (**NCDC**)
- All India Institute of Hygiene and Public Health (**AIIH&PH**), Kolkata
- Kala Azar Medical Research Center (**BHU IMS**)
- Drugs for Neglected Diseases Initiative (**DNDi**)
- **PATH India**
- World Health Partners (**WHP**)
- **Genesis Labs**
- **Liverpool School of Tropical Medicine** (UK)
- **London School of Hygiene and Tropical Medicine** (UK)
- **CARE India**, Bihar
- **KalaCORE** comprising of **MSF**, **DNDi**, **LSTMH** and **Mott MacDonald** with implementing partners including **New Concepts**, **IPE Global**, **PHFI**, **FRHS** etc.

### In Providing External Resources:

- **Bill & Melinda Gates Foundation**, USA
- **Department For International Development**, UK



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