Elimination of human African trypanosomiasis

Nairobi, 5th June 2013.
New cases reported and supporting frame

- 300,000 estimated cases
- 20,000 estimated cases

Rhodesiense HAT 2%
Gambiense HAT 98%
New cases reported and supporting frame

- WHO resolution for reinforcement of surveillance and control
- Lome Declaration, Launch PATTEC
- WHA resolution for HAT elimination
- WHO public-private partnership
- HAT included in WHO NTD roadmap
- WHA NTD STAG
- WHO NTD Staging
- WHO HAT Expert Committee
- London Declaration
- WHA NTD resolution

Year


Number of cases reported

0 5'000 10'000 15'000 20'000 25'000 30'000 35'000 40'000
14.5 million people at risk
460,000 km² at risk

37.5 million people at risk
687,000 km² at risk
Grey settings

There are still some areas that need further investigation to assess disease intensity transmission

- known active foci with difficult access due to topography (DRC) or to security constraints (Côte d’Ivoire, Nigeria, the CAR and DRC).
  *(need to assess intensity of transmission)*

- foci which have not reported cases in the last decades and have no effective surveillance system (Gambia, Guinea-Bissau, Liberia, Niger, Senegal and Sierra Leone).
  *(need to verify or not the absence of transmission)*
22,000 people at high risk
1,430,000 people at moderate risk
10,900,000 people at low risk

1,600 km² at high risk
23,600 km² at moderate risk
145,900 km² at low risk
Rhodesiense HAT control strategies

Being a zoonosis with domestic and wild animals serving as reservoirs, the elimination of rhodesiense HAT as the total interruption of transmission is considered as not feasible at this time.

To combat rhodesiense HAT, "One health" approach is required: That means to combine the different methods available in a multisectoral approach:

- Control of animal reservoir: Chemotherapy curative or prophylactic for livestock and domestic animals (not applicable in wild animals)
- Vector control, using the different tools available (traps and screens, insecticide treated cattle, spraying, SAT, SIT, …)
- Passive case-finding involving available health facilities
- Active screening when appropriate
Gambiense HAT elimination: Feasibility

- *T. b. gambiense* is epidemiologically vulnerable. Humans are the significant reservoir.
- Proof of principle exists.
- Detailed knowledge of the geographical distribution of infection is available.
- The scope and geographic distribution of infection is limited.
- Arriving new test for individual screening will expand the ability to perform diagnosis and surveillance within the health system.
- The availability of treatment drugs through generous donations from pharma industry ensures treatment of all cases detected.
- Drug profile of new compounds under development will facilitate the involvement of health system.
- There is commitment and political will for HAT elimination.
To combat gambiense HAT, it is necessary to appropriately combine three classical control methods:

- Active case-finding through mobile teams,
- Passive case-finding involving available health facilities and
- Vector control to reduce the tsetse population.

The selection of the most appropriate combination and “dosage” of each method has to rely on

- the precise understanding of the epidemiological setting, including geographical and demographical data,
- the accessibility and capabilities of the existing health facilities and
- vector knowledge including the sites where vector control must be applied and methods to be utilized.

See pages 13-22 for more details.
Progress toward elimination will be measured by two quantitative indicators updated annually:

- Number of cases reported
- Number of foci declared as eliminated

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<td>10%</td>
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Qualitative indicators, to assess the quality and extent of the elimination activities:

- Rate of population at risk covered by control and surveillance activities
- Progress of population at different levels of risk
Gambiense HAT elimination: Essentials

In a turmoil free environment, elimination of gambiense HAT requires

- **Ownership by endemic countries of the objectives and process of elimination.** Policy-makers should prioritize elimination of gambiense HAT as a health objective when competing with other national priorities.
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- **Capacity of the health system in rural areas to implement control and surveillance activities.** The overall performance of the health system in rural areas where gambiense trypanosomiasis is prevalent is often characterized by unskilled staff, low attendance and low coverage. Therefore it must be reinforced to perform the activities included in the elimination strategies.
Gambiense HAT elimination: Challenges (I)

• *Improving knowledge of current gaps in geographical distribution*. No data are available in several foci, mainly due to difficult access and an absence of effective surveillance.
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- **Sustainability** of the elimination process as essential to detecting the epidemiological risk of disease reintroduction.
Furthermore, NSSCPs encounter the following additional difficulties in the daily management that demand responses and solutions:

- **Low participation** rates of the population at risk during active screening by mobile teams and **low attendance** rates at health-care facilities in charge of passive surveillance.

- **Lack of preparedness** of staff in health-care facilities to incorporate gambiense HAT in their routine activities, either because control and surveillance of the disease historically has been considered a matter for specialized teams with external support or they are already overwhelmed.

- Progressive **retirement of experienced staff** in NSCPs, and lack of perspective of appropriate replacement.
Gamibiense HAT elimination: Research gaps (I)

Screening, diagnosis and staging

- The current screening tools (CATT and rapid test) are based in the same antigen and there is a ceiling in the production of antigen. New screening tools using new antigens easy to produce are needed.

- The staging of HAT to define the treatment to be used is based in the analysis of CSF obtained by lumbar puncture. Tests for stage determination in blood or urine are encouraged.
Treatment

- The current therapeutic schemas are complex to use with a cumbersome logistics distribution and having non-negligible safety concerns. Safe, if possible oral, drugs which are active against both disease forms and both stages are easy to use, are required.
Gambiense HAT elimination: Research gaps (III)

Epidemiological knowledge

- Additional indicators and modeling tools for estimating location and the proportion of undetected cases have to be developed.

- The feasibility of detection of *T. b. gambiense* in vectors should be explored as a potential xeromonitoring tool for use in elimination of gambiense HAT.

- Operational research aimed at integrating HAT into existing health systems, and optimizing passive case detection, surveillance and management for HAT in these systems, is encouraged.