J. Jannin, P. Simarro, J.R. Franco
Neglected Tropical Diseases
Origins

Berlin treaty 1885 allows colonial countries to rush inside central Africa.

A few years after they had to face a new killing disease: sleeping sickness.

- Fear of facing a continent empty of all manpower
- Great commitment of politicians, scientists, physicians.
- Allocation of needed funds

Louis Pasteur  
Paul Erhlich  
Robert Koch
The first elimination of HAT

- Jamot's rules
- Systematic screening and Treatment
- Allocation of funds
- International commitment

It has become commonplace to say that trypanosomiasis is almost eradicated in Africa.... Although foci are relatively rare, they are nonetheless irritating...

Labusquière, 1985
1989  20 years ago

CATT was not used everywhere and it was a problem for National Programmes to buy it.

Eflornithine was on the way to be registered but without guarantee to be produced and more, to be used by control teams.

Large epidemics were devastating many foci like Busoga in Uganda.

Many countries were unable to run control activities like Angola, South Sudan or DRC.
1999  10 years ago

• Drugs production was endangered (Aventis - Bayer). Eflornithine was not finding a producer even if the licence was given to the WHO
• It was impossible to find a consensus for melarsoprol or pentamidine administration schedule (expert committee)
• Situation in Angola, Sudan and DRC was more than worrying
• Epidemiological situation was not properly assessed (high uncertainty – estimated at 10 time)
• Access for patients to diagnostic and treatment was weak due to under-funding and political troubles
• Training was weak
• PATTEC was not existing yet
• No partnership was established
• No international awareness and interest for the disease
• No Gates Foundation, no PATTEC, no DNDi, no CPDD, no FIND, which means no attempt for drug development.
• CATT production (Smith Kline endangered)

But
Coordination process initiated in 1996
MSF Access campaign for essential drugs starting
NGO support (MSF, NPA, Caritas)
A few but crucial support from some institutions (IRD, ITM, KETRI, STI, Limoges)
CDC, PAAT, France and Belgium
WHO Network for Treatment monitoring and drug resistance
HAT epidemiological status 2009

20 Countries reporting no cases

Benin, Botswana, Burkina Faso, Burundi, Ethiopia, Gambia, Ghana, Guinea Bissau, Liberia, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Swaziland, Togo and Zimbabwe.

10 Countries reporting less than 100 cases

Cameroon, Congo, Côte d’Ivoire, Equatorial Guinea, Gabon, Guinea, Kenya, Malawi, Tanzania and Zambia

3 Countries reporting between 100 and 500 cases

Angola, Sudan and Uganda

1 Country reporting between 500 and 1000 cases

Chad

2 Countries reporting more than 1000 cases

Central African Republic, Democratic Republic of Congo
### Access to treatment

<table>
<thead>
<tr>
<th>Drug</th>
<th>T.b. gambiense</th>
<th>T.b. rhodesiense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pentamidine</td>
<td>(1940)</td>
<td>Suramin</td>
</tr>
<tr>
<td>Melarsoprol</td>
<td>(1949)</td>
<td>Melarsoprol</td>
</tr>
<tr>
<td>Eflornithine</td>
<td>(1990)</td>
<td></td>
</tr>
<tr>
<td>Nifurtimox-Eflornithine</td>
<td>(2009)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sanofi-aventis</td>
</tr>
</tbody>
</table>

### Availability and Distribution

- **T. b. gambiense**
- **T. b. rhodesiense**

**Drug distribution 2001- April 2010**

<table>
<thead>
<tr>
<th>Drug</th>
<th>TT</th>
<th>nb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melarsoprol</td>
<td>59,420</td>
<td></td>
</tr>
<tr>
<td>Pentamidine</td>
<td>82,339</td>
<td></td>
</tr>
<tr>
<td>Eflornithine</td>
<td>31,836</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>173,585</td>
<td></td>
</tr>
</tbody>
</table>

**Reported cases 2000 – 2009:** 175,416
Access to treatment

Best treatment

Challenge:
Switching from melarsoprol to eflornithine
Painful and toxic

Distribution kit eflornithine (2006)
Treatment for two cases
1 treatment
20 kg
710 USD

Distribution kit NECT (2009)
Treatment for four patients
1 treatment
9 kg
360 USD
Access to treatment

Preparation

Storage

Shipment and storage at country level

Transport to and use of kits in health care facilities
Access to treatment

• Training of trainers
• On the spot
  – Hopital Roi Baudoin (DRC)
  – Omugo Health Centre (Uganda)
• 34 selected staff from 10 different countries (DRC, Congo, Côte d'Ivoire, Equatorial Guinea, Chad, CAR, Cameroon, Gabon, Uganda and Sudan)
Access to treatment
Training and country support

- Staff trained on the spot
  - Diagnosis
  - Case management
    - Eflornithine use
    - Nifurtimox – Eflornithine use
    - Pentamidine

More than 400 technicians involved in HAT control from 24 endemic countries.

ICAT 1-5 (3 weeks intensive training course)

105 participants, 83 from HAT endemic areas (79%), 22 countries and 10 non-endemic countries

Distribution of reagents: More than 21 million CATT tests have been distributed

Logistics and equipment
Sample bank

- Collected samples from 1,527 people (786 cases, 659 controls and 82 suspects) from 14 sites in DRC, Guinea, Chad, Uganda, Malawi, United Republic of Tanzania

- Around 20.00 s

- Samples stored in the central repository

- 2,000 samples distributed to 8 different research institutions
Countries: 
19 out of 21

In process 
DRC & Angola

Cases Reported: 
175,416

Cases Included: 
122,121


Developed with FAO within the frame of the PAAT
The role of WHO

Leadership

Coordination
SS National programme since 1996
WHO - ISCTRC

Networking
• FAO/WHO/IAEA/AU PAAT
• PATTEC
• Drug resistance network (1999-2006)

Partnerships
- sanofi-aventis since 2001
- Bayer AG since 2001
- FIND 2006 Diagnostics
- CPDD drug development
- DNDi Drug development
- PATTEC Vector control
- BMGF Vector control

Key actor

National control programmes
Elimination

International Task Force for Disease Eradication
October 2002

The signing on 3 May 2001 of a partnership agreement between WHO and A.... sleeping sickness, have heralded the dawn of a new era in the struggle to eliminate this scourge of Africa. Private partners, NGOs and institutional partners such as the governments of Belgium and France are already mobilized together with relevant UN organizations (FAO, IAEA, WHO), and it is hoped that new partners will join soon. It is also of great significance that the Organization of African Unity, at its meeting of Heads of State held in Lome (Togo) in June 2000, created the Pan African Tsetse and Trypanosomiasis Eradication Campaign (PATTEC) and declared 2001 as the year of eradication of the tsetse fly.

FIFTY-SIXTH WORLD HEALTH ASSEMBLY

Agenda item 14.1

2. COMMENDS the efforts being made by WHO and other partners, including the private sector, to monitor and control the disease and to implement a programme for the elimination of African trypanosomiasis as a public health problem, which contribute to the global fight against this disease;

Ninth plenary meeting, 26 May 2003
A56/VR/9
What to do?

- Maintenance
- Reduction
- Sustain
- Sustain control?
- Sustain elimination?
Strategies

Maintain? Can we keep the same strategies?

For high prevalence areas, there is a need for reducing the number of new cases.

Strategies can be maintained

Is it the same to maintain in low prevalence areas than in high prevalence areas?

Strategies cannot be maintained
Is it reasonable to think about elimination?

Why?

• It has been done 60 years ago
• Excellent knowledge of the epidemiological situation
• Potential partners
• Commitment of NP
• People trained
• Good level of coordination

Can we wait?

• Risk of re-emergence in some foci
• Progressive reduction of HR
• Progressive reduction of technicity