



### ***Developing more user-friendly diagnostics for HAT***

#### **About African trypanosomiasis or sleeping sickness**

Sleeping sickness, also known as human African trypanosomiasis (HAT), is one of the major neglected diseases today and is always deadly without treatment. The small, single-celled organisms called trypanosomes that cause the disease are transmitted through the bite of the tsetse fly found only in Africa. In the early stage of the disease, the parasites are found in the blood and other organs, except the brain. They eventually cross the blood-brain barrier and invade the central nervous system (CNS). Drugs to treat this stage are relatively safe, but inefficient in the second (late) stage. The second (late) stage, which starts when parasites invade the CNS, is difficult to treat and the drugs used are highly toxic, with 2% to 10% mortality during or shortly after treatment.

During the mid 1960s, sleeping sickness was successfully controlled through active case finding and treatment. However, from around 1970, the disease re-emerged as a major public health challenge in many parts of rural Africa and received very little attention, both locally and internationally.

**Today, more than 60 million people in Africa are at risk of being infected.** The disease spreads more easily in poor settings, generally occurring in remote rural areas where health systems are weak or non-existent.

The disease takes two forms, depending on the type of parasite involved:

- ***Trypanosoma brucei gambiense*** causes disease in west and central Africa. This is a chronic form of infection that represents more than 90% of the cases of sleeping sickness reported. A person can be infected for months or even years without major signs or symptoms. However, by the time definite symptoms emerge, the disease is often in an advanced stage, meaning the patient's CNS is affected.
- ***Trypanosoma brucei rhodesiense*** is found in eastern and southern Africa. This form of the disease represents less than 10% of reported cases and causes an acute infection. The first signs and symptoms are observed a few weeks or months after infection. The disease develops rapidly and parasites quickly invade the CNS.

#### **What is the diagnostic need?**

- Typically, diagnosis is based on observation of parasites in the blood, lymph node fluid, or cerebrospinal fluid (CSF) by microscopy
- However, this approach is not efficient and the procedures are cumbersome.
- Simple and accurate diagnostic tests that can be used at community health worker level are desirable as HAT is a disease of poor and remote rural areas.

---

References: World Health Organization: <http://www.who.int>

For more information on FIND's projects, please visit: <http://www.finddiagnostics.org>