
3. Parasitic diseases

Chagas disease or American trypanosomiasis*

1. Brief description of the condition/disease

Chagas disease, also known as American trypanosomiasis, is caused by the parasitic protozoan *Trypanosoma cruzi* and is transmitted primarily by triatomine insects; it can also be transmitted by blood transfusion. Neither an effective vaccine nor therapy is available. In approximately 30% of cases, chronic, often severe and life-threatening cardiac or digestive tract disease occurs 20–30 years after initial infection.

2. Current global burden and rating within the overall burden of disease

The disease is believed to affect 16–18 million people, primarily in Central and South America; an estimated 100 million people are at risk, accounting for approximately 25% of the entire population of this region. Chagas disease accounts for an estimated 45 000 deaths each year and is ranked third behind malaria and schistosomiasis by WHO in terms of global burden as a tropical disease.

3. Feasibility (biological) of elimination/eradication

WHO has targeted elimination of domestic transmission of Chagas disease. Because it exists as a zoonosis, complete eradication is not feasible; however, control of human transmission is considered achievable by eliminating domestic insect vector populations.

4. Estimated costs and benefits of elimination/eradication

Early estimates suggested that effective control could result in medical and economic benefits ex-

ceeding US\$ 53 million per year, in the Southern Cone countries alone, compared with an estimated total cost of US\$ 190–350 million for the 10-year programme. More recent (1997) estimates suggest that the overall benefits of disease elimination could exceed US\$ 3500 million per year.

5. Key strategies to accomplish the objective(s)

Elimination efforts focus on domiciliary insecticide applications using residual pyrethroids, improvement of housing conditions, and blood bank surveillance.

6. Research needs

Research needs include studies of vector population biology and genetics, evaluation of the impact of current vector-control programmes, tools for more effective blood bank screening, new effective drugs for treatment, and studies on immunopathogenesis.

7. Status of elimination/eradication efforts to date

Through the efforts of the Southern Cone Initiative, the chief regional vector *Triatoma infestans* has been virtually eliminated from most of Uruguay and Chile, from much of its original distribution in Brazil and Argentina, and from regions of Paraguay and southern Bolivia, resulting in effective interruption of disease transmission in these countries. A 70% reduction of incidence of *T. cruzi* infection in young age groups has been achieved between 1985 and 1997.

8. Principal challenges to elimination/eradication

Effective coordination, thoroughness, and long-term sustainability of vector control efforts are the primary challenges to elimination efforts.

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