



dermal leishmaniasis (PKDL) may occur following treatment; PKDL patients are very infective to sand fly vectors. Another incr

malaria control measures where possible) and systematic health education are also indicated.

5. Research priorities include the need for thorough epidemiologic investigations in endemic areas, studies of sand fly entomology, including molecular biology, systematic investigations of the interfaces of host/parasite/vector, and search for a vaccine, but with em

Mectizan) to entire communities to interrupt transmission of lymphatic filariasis in Africa could be having a significant effect on hookworm morbidity, but this is so far unassessed.

The Bill & Melinda Gates Foundation is supporting work towards development of a vaccine to prevent hookworm infection and re-infection. Phase 1 trials are expected to begin in the United States by the end of 2004, and Phase 1-2a trials in Brazil in 2005/6.

### **Conclusions and Recommendations**

1. Hookworm disease cannot now be eradicated, given its ubiquity and the interventions that are currently available, but new tools and understanding make better control possible.
2. Operational research is needed to demonstrate the impact of all currently available interventions, including systematic health education, mass chemotherapy, and improved sanitation, at national and regional levels.
3. Research is needed to monitor the impact of mass de-worming activities on the health of target populations and on transmission of the disease.
4. Operational research is also needed to evaluate ways to sustain interventions, particularly periodic de-worming.