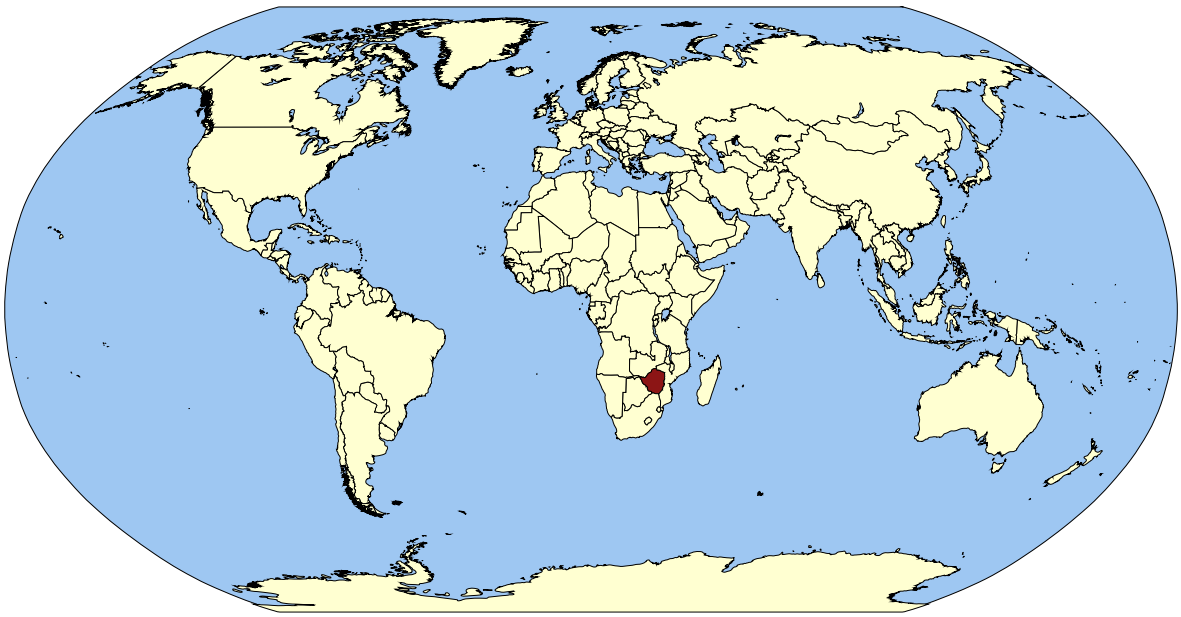
Zimbabwe



The History of Schistosomiasis in Zimbabwe

Schistosomiasis has persisted in Zimbabwe at high prevalence since at least 1909 [1]. While the distribution of schistosomiasis wasn't thoroughly assessed until 1980, as early as 1961, it was estimated that 80% of the African population in Zimbabwe was infected, with much lower but still significant rates of infection among European and Asian immigrants [1]. In Zimbabwe infection is almost invariably higher in boys than girls and affects children at a much greater frequency than adults [1].

Both intestinal and urinary schistosomiasis are endemic in Zimbabwe, caused by Schistosoma mansoni and S. haematobium, respectively. The disease is widespread throughout the entire country in both urban and rural areas, although spatial surveys conducted in 1981-1983 found S. haematobium to be more widespread than S. mansoni. S. mansoni and S. hameatobium are transmitted by the intermediate snail hosts Biomphalaria pfeifferi and Bulinus globosus, respectively, with both snail species common in most bodies of fresh water [1, 2].

Schistosomiasis in Zimbabwe [8]

3,255,067 people required schistosomiasis treatment in 2014

23% of the population requires preventative chemotherapy for schistosomiasis

49% of the population requiring treatment for schistosomiasis are school-age children

Overview of Zimbabwe [9]

- Population in 2015: 14,229,541
- Official Languages: Shona, Ndebele
- Capital: Harare
- Semi-Presidential Republic
- Percentage of Population with Access to Improved Drinking Water in 2015: 76.9%
- Percentage of Population with Access to Improved Sanitation in 2015: 36.8%

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Control of Schistosomiasis in Zimbabwe

Since the 1960s, numerous regional efforts at schistosomiasis control have been implemented to varying degrees of success in Zimbabwe [3]. One focal program in the Hippo Valley Sugar Estates was particularly effective, combining chemical snail control using niclosamide along with biological control using ducks as snail predators and annual targeted chemotherapy [3]. This program achieved a sustained period of prevalence below 10% [3]. Later assessments showed reduced prevalence persisted decades after the control ended, although it is not clear if the control was solely responsible for this long-term trend [3]. Molluscicides derived from plant sources such as Phytollacca dodecandra and Jatropha curcas have been shown to be extremely potent, however attempts to implement them in Zimbabwe, as part of control programs, have proven difficult [3-6]. Attempts at biological control with ducks (as mentioned above), fish (cichlid species, Sargochromis codringtonii), and competitor snails (Bulinus tropicus) were also pursued in several focal control programs conducted over various short-term timeframes between the 1970s and early 2000s in Zimbabwe [3]. Ducks were found to be effective, but prohibitively expensive to breed, transport, and care for [3]. Cichlids were very effective, although snails found refuge in vegetation and the cichlids didn't necessarily prefer intermediate snails over other species [3]. Enclosure studies did not find the presence of competitor snails to significantly alter population densities of schistosomiasis obligate intermediate host snail species [3].

Current Status

National programs to control schistosomiasis have only recently been implemented in Zimbabwe. In 2012 the government launched a mass drug administration program with praziquantel, targeting school children for treatment of schistosomiasis alongside treatment for intestinal helminthes [7]. The first round of treatment for both schistosomiasis and intestinal helminthes in 2012 reached 27% of the target population of school-aged children [7]. The program is expected to continue until 2016 [7]. As of now it is too early to assess the efficacy of this program.

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