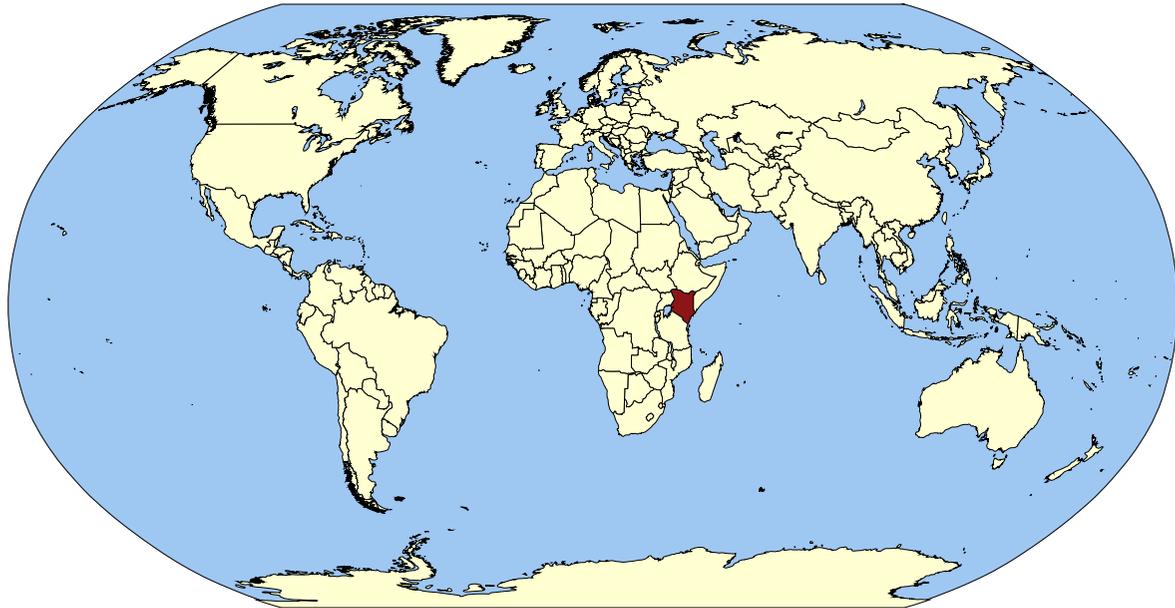


Kenya



The History of Schistosomiasis in Kenya

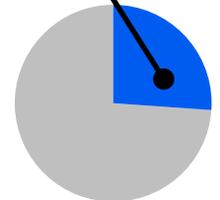
Schistosomiasis is endemic throughout the entire region of Kenya, and the entire human population is considered at-risk for contracting the disease - a figure that has grown from 48% in 1977 to 89% in 1986 to 100% by 1995 [1,2,3]. Estimates for the proportion of the population infected have remained at 23% since the first estimation in 1986 [2,4]. Both *Schistosoma haematobium* and *S. mansoni*, the agents responsible for urinary schistosomiasis and intestinal schistosomiasis, respectively, are endemic in Kenya. There are numerous intermediate host snail species acting as the environmental reservoir of the disease and maintaining transmission, including *Biomphalaria sudanica* and *Biomphalaria pfeifferi* for *S. mansoni*, and *Bulinus africanus* and *Bulinus globosus* for *S. haematobium* [5]. Additional snail intermediate hosts include: *Bulinus ugandae*, *Bulinus tropicus* and *Bulinus nasutus* for *S. haematobium*, and *Biomphalaria choanomphala* for *S. mansoni* [6].

Schistosomiasis in Kenya [11]

School-age children make up **nearly half** of the infected population in Kenya.

26% of the population requires preventive chemotherapy for schistosomiasis

12 million people require treatment annually for schistosomiasis, but only **1 million** people were treated in 2013. This makes up only **15%** of the population in need.



Overview of Kenya [12]

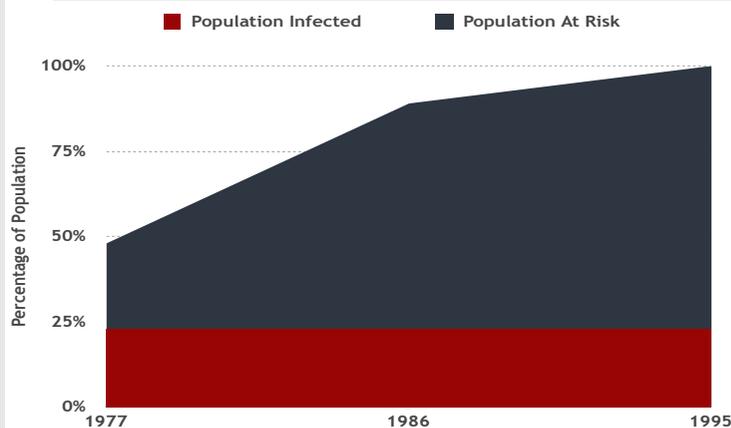
- » Population in 2015: 45,925,301
- » Official Languages: English and Kiswahili
- » Capital: Amman
- » Constitutional Monarchy
- » Percentage of Population with Access to Improved Drinking Water in 2012: 61.7%
- » Percentage of Population with Access to Improved Sanitation in 2011: 70.4%

Schistosomiasis Control Efforts

In 2011, the Kenyan government launched the National School-Based Deworming Program (NSBDP) with aims to treat all children at risk for intestinal worms and schistosomiasis, working with the Deworm the World Initiative (DWTWI) [7]. After mapping 15 of 47 counties, 123,150 people were treated with praziquantel in 2013 and 475,508 people in 2014 (total population in 2013 was 44.35 million, estimated number infected near 10.2 million). The Ministry of Health (MOH), DWTW and the END Fund are moving forward with schistosomiasis mapping and treatment [7]. Meanwhile, the Schistosomiasis Consortium for Operational Research and Evaluation (SCORE) project began a 5-year study designed to evaluate the optimal method for MDA delivery in Western Kenya [8]. Prior to these recent efforts towards comprehensive disease control in Kenya, a five-year pilot study from 1983-1988 was conducted in a community of 2,219 people in a rice irrigation scheme to evaluate the outcome of integrated control measures. The project, which involved health education aimed to change human behavior regarding water contact, environmental engineering schemes to create alternative water sources and latrines, and mass chemotherapy with praziquantel, proved to greatly reduce the rate and intensity of schistosomiasis [9]. Unfortunately, efforts in this small-scale study did not mobilize action and control efforts did not resume until the recent efforts previously described.

Looking Ahead

While the current control measures focus on human chemotherapy for morbidity control and prevalence reduction, some attention was given to the potential of biological control of snails via the predatory crayfish, *Procambarus clarkii* in the past. Between 1994 and 1997, monitoring of snail population density and human schistosomiasis infection following mass chemotherapy in communities located at (1) control sites and (2) crayfish enclosures revealed a lasting and significant impact of the crayfish on reducing transmission and reinfection [10]. *P. clarkii*, or the Louisiana red swamp crayfish, was introduced to East Africa in the 1950's and is currently widely distributed [10]. Taking advantage of this invasion to reduce schistosomiasis transmission remains potentially useful for long-term transmission interruption.



Population at risk has increased to include 100% of Kenyans. The population infected has remained around 23%.

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