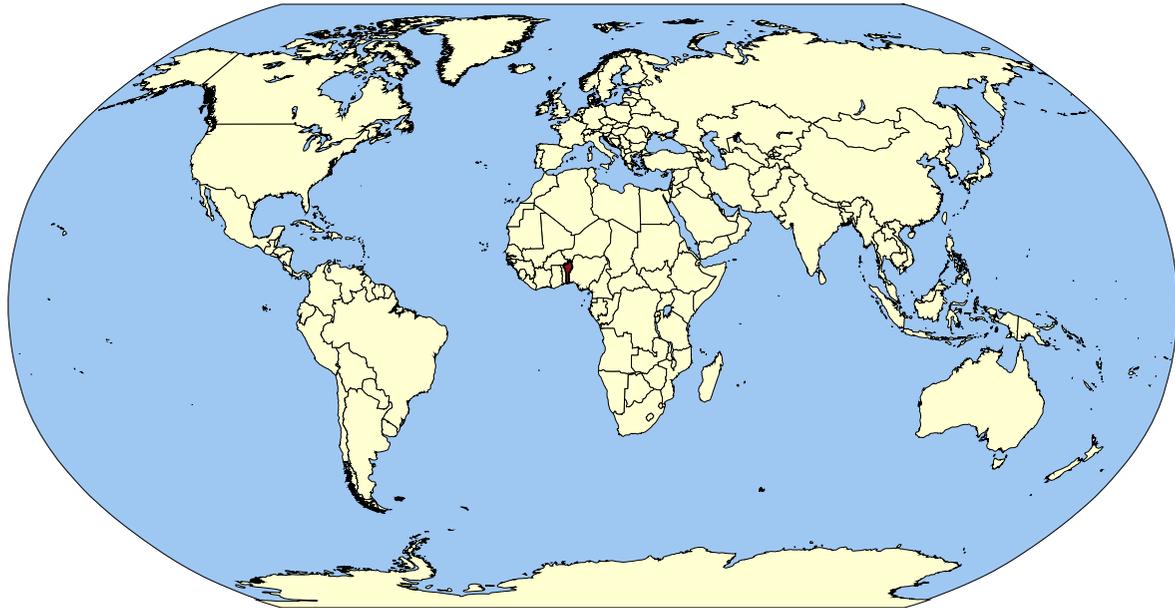


Benin



The History of Schistosomiasis in Benin

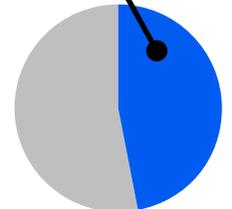
The Republic of Benin achieved full independence from France in 1960 [1]. Historically known as the Kingdom of Dahomey, Benin was a central player in the slave trade for hundreds of years, from the seventeenth century until the abolishment of slavery [1]. The earliest schistosomiasis national surveys in Benin reveal approximately 30 thousand people infected with *S. haematobium* in 1955, which represents about 2% of the population of Benin at that time [2]. However, uncertainty in the early national prevalence estimates due to wide variations in prevalence from locality to locality, ranging from 4-60%, led to a reassessment of early country-level prevalence. In the mid 1980's, *S. haematobium* infected 35.5% of Benin's population, with 1.4 million people infected from the entire country's almost 4 million at risk [3, 4]. The prevalence of *S. mansoni* has historically been lower (0.5% countrywide in the 1980's [4] and 2.5% in 2012 [5]) and isolated to a few foci [4]. Recent data suggest that the situation has not improved in Benin, with current national schistosomiasis prevalence estimates of 35.5% in 2003 [6], 33.1% (3.2 million) in 2010 [6], and 30% (2.6 million) infected in 2012 [5].

Schistosomiasis in Benin [8]

Nearly **1 million people** required schistosomiasis treatment in 2014

47% of the population requires preventative chemotherapy for schistosomiasis

Schistosomiasis treatments are primarily administered to **school-age children** in Benin.



Overview of Benin [1]

- » Population in 2015: 10,448,647
- » Official Language: French
- » Capital: Porto-Novo
- » Republic
- » Percentage of Population with Access to Improved Drinking Water in 2015: 77.9%
- » Percentage of Population with Access to Improved Sanitation in 2015: 19.7%

Benin's Geography and Schistosomiasis

There is a north-south gradient in climate and population in Benin - with more water and more people concentrated in the south. As a result, south Benin has a higher risk for schistosomiasis transmission. The mountainous regions also pose high, though focal, risk where man-made or natural water bodies are present and human settlements congregate[4].

Treatment and Control

Despite recognition of the schistosomiasis problem in Benin since the mid 20th century, national schistosomiasis control efforts did not begin until recent years. In 2008, the pharmaceutical company Merck KGaA donated 6 million praziquantel tablets to the World Health Organization (WHO), with the tablets slated for Nigeria, Benin, and Madagascar [7]. Needless to say, Benin's control efforts focused primarily on mass drug administration (MDA) using these donated drugs. That first year in 2008, Benin reported to the WHO that 51,433 people were treated for schistosomiasis, which represented <1% of the population needing treatment in Benin at the time [8]. In 2010, the MDA program was scaled up to address 16% of the population in need, treating 364,697 out of about 2.2 million people requiring treatment. Since then, MDA efforts have been reported every other year, with 5% or less of the population in need treated each year, according to the records at WHO [8].

Water and Sanitation

The proportion of the population lacking access to improved sanitation remains high in Benin at 80%, which likely contributes to the schistosomiasis problem in the country [9]. A recent report revealed that no WASH (Water, Sanitation & Hygiene) interventions have yet been implemented for the National Neglected Tropical Disease plan in Benin [10]. Despite the fact that Benin has not implemented WASH within its control activities, access to improved sanitation and improved water have been steadily, albeit slowly, increasing since they were first monitored by the World Bank in 1990, with an increase from 6.8% to 19.7% of the population with access to improved sanitation and from 57.1% to 77.9% with access to piped water from 1990 to 2015 [9]. The increase in access is probably due to non-schistosomiasis related development activities, but the effects might have impacted schistosomiasis transmission in some areas inadvertently.

Looking Ahead

All in all, Benin's schistosomiasis history represents an all-too-familiar story for the Sub-Saharan African region: the endemic schistosomiasis problem has been known for decades, but little if any concerted control has been organized until recently. The praziquantel donations made by Merck KGaA started in 2008 and is slated to continue until 2020. This represents an opportunity for Benin to achieve some morbidity reductions for the lucky few people that receive praziquantel. But, the low and inconsistent coverage has contributed to only modest headway on national schistosomiasis prevalence in Benin since control began.

References

1. *The World Factbook*. 2013-14 [cited 2015 Oct]; Available from: <http://www.cia.gov/library/publications/the-world-factbook/>.
2. Gaud, J., *Les bilharzioses en Afrique Occidentale et en Afrique Centrale*. Bulletin of the World Health Organization, 1955. 13: p. 209-258.
3. Utroska, J.A., et al., *An estimate of the global needs for praziquantel within schistosomiasis control programs*, 1989, World Health Organization: Geneva, Switzerland.
4. Doumenge, J.P., et al., *Atlas of the global distribution of schistosomiasis*, 1987, World Health Organization: Geneva, Switzerland.
5. Lai, Y.S., et al., *Spatial distribution of schistosomiasis and treatment needs in sub-Saharan Africa: a systematic review and geostatistical analysis*. *Lancet Infect Dis*, 2015. 15(8): p. 927-40.
6. Rollinson, D., et al., *Time to set the agenda for schistosomiasis elimination*. *Acta Trop*, 2012.
7. Merck and WHO Start Control of Schistosomiasis in Nigeria, Benin and Madagascar. 2008 [cited 2015; Press release]. Available from: http://news.merck.de/N/0/B23A91B7DE6E9BC0C125742C002B0A3B/SFile/MRKWHO_e.pdf.
8. WHO. *PCT databank*. http://www.who.int/neglected_diseases/preventive_chemotherapy/databank/en/. [cited 2015 Oct].
9. World Bank: *World Development Indicators*. [cited 2015; databank]. Available from: <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>.
10. Ogden, S., et al., *WASH and the Neglected Tropical Diseases: A Manual for WASH implementers: Benin* 2013.