

Publication**Bayesian geostatistical model-based estimates of soil-transmitted helminth infection in Nigeria, including annual deworming requirements****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 3122565**Author(s)** Oluwole, Akinola S; Ekpo, Uwem F; Karagiannis-Voules, Dimitrios-Alexios; Abe, Eniola M; Olamiju, Francisca O; Isiyaku, Sunday; Okoronkwo, Chukwu; Saka, Yisa; Nebe, Obiageli J; Braide, Eka I; Mafiana, Chiedu F; Utzinger, Jürg; Vounatsou, Penelope**Author(s) at UniBasel** [Utzinger, Jürg](#) ; [Vounatsou, Penelope](#) ;**Year** 2015**Title** Bayesian geostatistical model-based estimates of soil-transmitted helminth infection in Nigeria, including annual deworming requirements**Journal** PLoS neglected tropical diseases**Volume** 9**Number** 4**Pages / Article-Number** e0003740

The acceleration of the control of soil-transmitted helminth (STH) infections in Nigeria, emphasizing preventive chemotherapy, has become imperative in light of the global fight against neglected tropical diseases. Predictive risk maps are an important tool to guide and support control activities.; STH infection prevalence data were obtained from surveys carried out in 2011 using standard protocols. Data were geo-referenced and collated in a nationwide, geographic information system database. Bayesian geostatistical models with remotely sensed environmental covariates and variable selection procedures were utilized to predict the spatial distribution of STH infections in Nigeria.; We found that hookworm, *Ascaris lumbricoides*, and *Trichuris trichiura* infections are endemic in 482 (86.8%), 305 (55.0%), and 55 (9.9%) locations, respectively. Hookworm and *A. lumbricoides* infection co-exist in 16 states, while the three species are co-endemic in 12 states. Overall, STHs are endemic in 20 of the 36 states of Nigeria, including the Federal Capital Territory of Abuja. The observed prevalence at endemic locations ranged from 1.7% to 51.7% for hookworm, from 1.6% to 77.8% for *A. lumbricoides*, and from 1.0% to 25.5% for *T. trichiura*. Model-based predictions ranged from 0.7% to 51.0% for hookworm, from 0.1% to 82.6% for *A. lumbricoides*, and from 0.0% to 18.5% for *T. trichiura*. Our models suggest that day land surface temperature and dense vegetation are important predictors of the spatial distribution of STH infection in Nigeria. In 2011, a total of 5.7 million (13.8%) school-aged children were predicted to be infected with STHs in Nigeria. Mass treatment at the local government area level for annual or bi-annual treatment of the school-aged population in Nigeria in 2011, based on World Health Organization prevalence thresholds, were estimated at 10.2 million tablets.; The predictive risk maps and estimated deworming needs presented here will be helpful for escalating the control and spatial targeting of interventions against STH infections in Nigeria.

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