Loa loa

Estimated prevalence of Eye Worm: The surveys were conducted using the RAPLOA methodology[i]. ArcGIS 10.0 was used for spatial analysis of the data. The prevalence of history of eye worm for each village was submitted to a logit transformation. The transformed prevalence data were then analyzed through a geostatistical method called kriging. The kriging analysis involved variography to determine the spatial correlation pattern in the survey data and a process of weighted spatial smoothing to predict the distribution of the logit prevalence throughout the surveyed area. This layer corresponds to figure 4 of the article by Zoure´ et al.[ii]

Lymphatic Filariasis (LF)

Data sources for point level data: Relevant data on the prevalence of LF were identified through a combination of (i) structured searches of electronic bibliographic databases (mostly PubMed and MEDLINE), (ii) additional searches of the 'grey' literature, including unpublished surveys and government and international archives, and (iii) direct contact with researchers and control programme managers. Studies were included if they provided: (i) the number of people surveyed, (ii) the number of LF positive cases, (iii) details about the methodology of diagnosis and (iv) details of the specific site where they were conducted, regardless of the administrative level.

Estimating occurrence[iii]: Boosted regression trees (BRT) modelling was used for mapping the spatial limits of LF transmission. Six environmental variables (precipitation in the wettest quarter, annual minimum temperature, population density 1990-2015, elevation, enhanced vegetation index and regions) were used to build the final risk map. The resulting predictive map quantifies the environmental suitability for LF transmission. In order to convert this continuous metric into a binary map outlining the limits of transmission, a threshold value of environmental suitability was chosen which maximized the trade-off between sensitivity, specificity and proportion correctly classified. Finally, we masked the environmental distribution map to remove areas which are known to be currently non-endemic according to WHO and other sources. Non-endemicity was considered when no cases had been reported for the last 10 years and transmission assessment surveys confirmed the interruption of LF transmission.

Onchocerciasis (oncho)

Estimated prevalence of palpable nodules: A model-based geostatistical analysis of the REMO data was undertaken to generate high-resolution maps of the predicted prevalence of nodules. The geostatistical analysis included the nodule palpation data for 14,473 surveyed villages.[iv]

Schistosomiasis (schisto) and Soil-Transmitted Helminths (STH)

Data sources for point level data: Survey data were identified through structured searches of electronic bibliographic databases (PubMed, EMBASE, MEDLINE) using specified queries (*hookworm OR ascariasis OR trichuriasis OR Necator americanus OR Ancyclostoma duodenale OR Ascaris lumbricoides OR Trichuris trichiura OR intestinal parasites OR geohelminths OR soil-transmitted helminths AND country name. Schistosomiasis OR bilharzia OR Schistosoma mansoni OR Schistosoma haematobium OR Schistosoma intercalatum AND country name).* This was complemented with manual searches of local archives and libraries and direct contact with researchers. Estimates of infection prevalence were included according to pre-defined criteria: only cross-sectional prevalence surveys were included; data were excluded if based on hospital or clinic surveys, post-intervention surveys, or surveys among sub-populations, such as among refugees, prisoners or nomads. No restrictions were placed on sample size or diagnostic method. The longitude and latitude of each survey were determined using a combination of resources including national schools databases, village databases digitised from topographical maps, a range of electronic gazetteers (Geonames, Fuzzy Gazetteer, Google Earth) and contact with authors who used GPS. This methodology is a continuation of work done by Brooker et al.[v]

Estimating cumulative prevalence of STH: The prevalence of infection with any STH species (i.e. cumulative prevalence of STH) was calculated using a simple probabilistic model of combined infection, incorporating a small correction factor to allow for non-independence between species, following the approach of de Silva and Hall[vi]. The cumulative prevalence of STH was estimated as *PHAT* ÷ 1.06 where *PHAT* is the uncorrected cumulative STH prevalence calculated as $PHAT = H + A + T - (HA) - (AT) - (HT) + (HAT)$. H is the prevalence of hookworm infection, A the prevalence of *A. lumbricoides* and T the prevalence of *T. trichiura*.

STH & schisto district classification: The average prevalence of STH, schistosomiasis and blood in urine was calculated for districts where at least 5 surveys with a minimum of 250 individuals (in total) were conducted within a 2 year period in the past decade (since 2003). Districts that did not fulfil these criteria but where any survey reported infection in the past decade were classified as having evidence for transmission. Additionally, the limits of STH transmission were established as described in Pullan & Brooker.[vii] based on high and low land surface temperature and the aridity of environment. District boundaries were derived from the Second Level Administrative Boundaries data set project (SALB).

STH treatments: Regular de-worming with mebendazole or albendazole is a critical component of an STH control strategy because it reduces infection intensity in affected individuals. The treatment data in this tool are provided by Children Without, which oversaw Johnson & Johnson's donation of Vermox® (mebendazole) to Ministries of Health of endemic countries to treat school-age children at-risk of infection. It should be noted that treatment has also been provided by a number of country programs using albendazole, and work is ongoing to map these data.

Trachoma

Trachoma: The data represented in the trachoma layer is trachomatous follicular (TF) derived from population-based prevalence surveys (PBPS). The 10% threshold illustrates the WHO recommended guideline for district level mass drug administration (MDA) of antibiotic.[viii] Data were collected through structured searches of published and unpublished literature to identify cross-sectional epidemiological data on the burden of trachoma since 1980, as a continuation of works done by Smtih et al.[ix]

Trachoma treatments: Azithromycin is the recommended antibiotic used in mass drug administration for trachoma. Pfizer generously donates Zithromax® to treat and prevent active infection each year. This layer illustrates where Pfizer donated Zithromax® has been reported as distributed in 2012.

Trachoma Coverage: WHO recommends an 80% coverage threshold for trachoma mass drug administration. This layer illustrates where 80% of the at risk population in a district reported receiving Pfizer donated Zithromax® in the 2012.

Water Supply and Sanitation[x]

Drinking sources for WSS: Data on household access to drinking-water supply, sanitation and open defecation were abstracted from national Demographic and Health surveys (DHS), multiple indicator cluster surveys (MICS), national malaria and AIDS indicator surveys (MIS/AIS) and living standard measurement studies (LSMS). Extracted data are based upon criteria set down for monitoring the Millennium Development Goal 7C.

Safe drinking water: Maps show the predicted proportion of households with access to an improved drinking-water source. This is defined as one that is protected from outside faecal contamination: piped water, standpipes, tubewells, borewells, protected dug wells, protected springs and rainwater.

Adequate sanitation: Maps show the predicted proportion of households with access to an improved sanitation facility. This is defined as one that hygienically separates excreta from human contact: flush toilets, piped sewer systems, septic tanks, ventilated improved pit latrines, pit latrines with a slab and composting toilets. This metric includes households that share access to an improved facility.

Open defecation: Maps show the predicted proportion of households who report habitually defecating in the open, and have no access to an improved or unimproved sanitation facility.

Estimating access at district level: Spatially-explicit statistical models were developed and used to predict household access at high spatial resolution (district-level or equivalent) for 2010. These models consider the hierarchical structure of the whole dataset; this allows 'borrowing' of information from neighbouring districts to supplement available date, thus creating sufficient statistical power to generate reliable estimates for comparison of district estimates for evaluation purposes. The model also allows different time trends for urban and rural populations by country, but assumes an overall linear change over time. In practice, this means that countries (and districts within countries) are assumed to follow the region (and national) average in cases where trend (or coverage) information is sparse or absent. Further details are provided in Pullan *et al* (2013).

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