How Can Current LF and Trachoma Survey Data Influence Policy?

Session Date: Friday, October 26

Session Time: 1:00pm – 4:00pm

Session Location: Maurepas, 3rd Floor

Session Description: Ensuring that outcomes of data analysis are widely shared and used to influence the next generation of policy is critical. The Global Programme to Eliminate Lymphatic Filariasis (GPELF) and the World Health Organization Alliance for the Global Elimination of Trachoma by 2020 (GET2020) both have standardized methodologies for determining when mass drug administration (MDA) can be stopped. Pass rates for the LF stopping-MDA transmission assessment survey and the trachoma impact survey are quite different. Potential reasons for this difference include transmission dynamics, such as the role of hygiene and environment in transmission of trachoma; diagnostic methods used; and recommendations for survey eligibility. The overall aim of this session is to present the latest analysis of factors impacting lymphatic filariasis (LF) and trachoma survey results. The session will explore how the factors causing these differences could influence policy changes for each disease, and what further evidence is needed before policy could be changed.

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KEY DISCUSSION POINTS

There is value in investigating the factors that affect whether the Transmission Assessment Survey for lymphatic filariasis (TAS), pre-TAS, trachoma impact survey (TIS), and trachoma surveillance survey (TSS) results cross the target prevalence threshold, in order to inform programmatic actions in preparation for and response to the surveys, as well as to raise whether there should be any consideration of changes to global policy.

In analysing data from 554 districts that implemented pre-TAS between 2012-2017 (480/554 passed), Ms. Clara Burgert of RTI International found that districts with baseline prevalence 10+% were significantly more likely to fail, and low elevation, high population density, and rainfall were also associated with failing. Districts where Culex was the primary vector were also more likely to fail, as were districts which implemented more than 6 MDA rounds. It is important to note that there was not much variability in MDA coverage data, as the vast majority of districts implemented pre-TAS after they had achieved at least 5 rounds of sufficient coverage. Further investigations could include analysing re-pre-TAS outcomes, the impact of vector control, and conducting analysis using site-specific data (rather than data aggregated to the district level).

Dr. Elizabeth Cromwell, University of Washington, examined whether covariates that are summarized to the evaluation unit (EU) level predict failure of TAS. Geospatial covariates tested include access, aridity, distance to rivers, nighttime lights, elevation, vegetation, population density, and some LF-specific variables such as baseline prevalence, number of MDA rounds, and LF species. Data for 746 TAS observations across 32 countries were analysed (681/746 TAS passed). Multiple methods were employed to define areal covariate values, with similar results observed: using areal unit of analysis likely masks important fine scale variation. Additional analyses could include exploring the association between community/school data and covariate values from those locations, identifying which predictors can trigger programmatic action, and longitudinal analysis of pre-TAS and TAS data.

Dr. Jeremiah Ngondi, RTI International, presented the results of analysing TIS and TSS across 9 countries. He showed that the vast majority (98%) of TSS showed trachomatous inflammation – follicular (TF) below the target threshold of 5%, while a slightly lower proportion (80%) of TIS showed TF <5%. He did note that in the 15 times where multiple TIS were required, the repeat TIS often still showed TF ≥5%. Univariate logistic regression analysis showed that higher baseline TF, average MDA coverage <80%, and <25% of MDA rounds with ≥80% coverage were associated with TF ≥5% at TIS. It was noted that it would be valuable to conduct analysis of TIS and TSS outcomes using data from GET2020 database; incorporating data on WASH, SES, and population/migration; and also conducting analyses to see whether it is possible to predict areas where TIS/TSS outcomes are likely to be TF ≥5%.

Dr. Upendo Mwingira, Ministry of Health and Family Welfare in Tanzania, described the differences between trachoma and LF surveys in Tanzania. She noted that TIS and TSS outcomes of TF ≥5% is associated with low MDA coverage, higher baseline prevalence, migration, and low WASH coverage. Key challenges in eliminating trachoma include the rebound of TF after stopping MDA in 2 districts, and persistent TF of 5-9.9%% in a number of districts where TIS has been repeated up-to 4 times. Key challenges for LF elimination include persistent hot spots in several districts and post-MDA surveillance.

KNOWLEDGE GAPS IDENTIFIED

- Should duration of MDA programming for LF be informed by initial prevalence of infection?
- What is the most cost-effective way to respond to “hot spots”? Should this be different than an EU-level response?
- What risk factors would emerge if results of multiple programs were analyzed together, e.g., if LF and trachoma programs were both succeeding or not succeeding in a district?
- What are the most cost-effective strategies for investigating systematic non-compliance, particularly in areas that fail pre-TAS, TAS, TIS, or TSS?
- What are the most cost-effective strategies to investigate vector-related factors after failure for LF?
- What is the half-life of antigen/antibodies? What is the relationship to historical exposure?
- Does the timing of the MDA with respect to the rainy season (or other factors affecting vector density, as well as access to the population) affect the likelihood of transmission?
- What threshold of water and sanitation and environmental improvement would achieve elimination target for TF?
- Is there a higher rate of recurrence if baseline is high?
- What is the risk to recrudescence from children found positive in TAS2 or TAS3?
- What is the role of xenomonitoring in post-validation surveillance for LF?

- How should spatial heterogeneity of transmission be considered in the survey design for surveillance?

RECOMMENDED NEXT STEPS

- Conduct a study to determine whether duration of MDA programming for LF should be informed by initial prevalence of infection, and consider adjusting LF policy based on findings
- Consider changing requirements for reporting TAS data to the World Health Organization to include cluster-specific data, to inform more granular analyses and guidance for following up positive cases
- Conduct an analysis of TIS and TSS outcomes using data from GET2020 database, and incorporating data on WASH, socio-economic status, and population/migration, to see whether it is possible to predict areas where TIS/TSS outcomes are likely to be TF ≥5%
- Use modeling to quantify the threshold of water and sanitation and environmental improvement that would achieve elimination target for TF
- Convene experts to develop a standard definition of 'hot spots,' and conduct a study to generate evidence to guide national programs to respond to hot spots