

Challenges and Solutions for Trachoma Surveys

Session Date: Saturday, October 27

Session Time: 9:00am – 12:00pm

Session Location: Frontenac, 3rd Floor

Session Description: Population-based trachoma prevalence surveys have presented challenges for implementation. In this session, those challenges were discussed, such as surveys in remote areas with low density populations, and solutions sought.

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KEY DISCUSSION POINTS

Challenges with mapping and impact surveys in populations that cross borders: Lessons from the Americas

There are a number of logistical, financial, and cultural challenges in conducting trachoma population-based surveys in South America. Many indigenous populations are in hard-to-reach areas. A low population density results in significant time required to travel between clusters and also impacts on the applicability of constructing evaluation units in the WHO-recommended population range (100,000-250,000). There is also significant migration of communities, often across country borders, which makes it difficult to survey populations and assign them to an evaluation unit (EU).

The use of a standardized data collection instrument: Tropical Data

Success of global trachoma mapping efforts has been largely driven by the use of a standardised approach. Tropical Data, the successor to the Global Trachoma Mapping Project (GTMP), standardizes most aspects of the survey process, although still has the flexibility to adapt to the needs of the health ministry and the local context. A few recent adaptations and improvements of the approach were highlighted:

- Introduction of follicle size guides (thumbnail stickers)
- Surveys for trichomatous trichiasis (TT) only (used infrequently – for example where trichomatous inflammation – follicular (FF) is less than 5% but previous surveys suggested TT >0.2%)
- 3D images of TT to support grader training and inter-grader agreement exercises for TT
- Support for surveys of other diseases, both integrated with trachoma surveys and as stand-alone exercises

Challenges in using surveys to meet the *trichomatous trichiasis* goal for elimination

TT is a relatively rare event and there are a number of key challenges in providing TT estimates through a survey approach, particularly the relatively large stochastic variation in TT backlog estimates as a result of imperfect survey precision, with prevalence estimates having wide

confidence intervals. There are often discrepancies between TT surgical backlog estimates determined through surveys and numbers of TT cases identified by programmes; as a general recent rule, programmes have had difficulty identifying the number of people estimated to have TT on of the basis of survey-derived prevalence figures. Improved approaches to estimating TT prevalence and calculating TT surgical backlog, especially in the endgame, would be advantageous.

Progress towards alternative tools for surveillance surveys

The potential utility of anti-chlamydial antibodies as a measure of *Chlamydia trachomatis* transmission intensity was discussed. In general, studies to date have shown age-seroprevalence profiles that would be consistent with our understanding of historical *Ct* transmission status in the studied population. Anti-chlamydial antibodies could potentially be used for post-validation surveillance. There are a number of available assays including the multiplex bead array, ELISA and two lateral flow assay formats, which have all been evaluated in the WHO Collaborating Centre for Trachoma at the Centers for Diseases Control and Prevention (CDC). The advantages and disadvantage of each were discussed. Test optimization continues.

Outcomes from the recent “Technical Consultation on the Use of Serology for Trachoma Surveillance” were discussed. Priorities for operational research (OR) identified there were: (1) collection of data from high-priority settings (treatment-naïve districts and settings where individuals can be followed longitudinally), (2) studies to address the potential contribution of sexually transmitted *C. trachomatis* to antibody responses when conducting serologic surveillance for trachoma, (3) ensuring testing of younger-age individuals in serological studies, (4) following up in sites where there is disagreement between TF and antibody/infection data, (5) ensuring that studies collecting serologic data conform to WHO recommendations for trachoma surveys, collect data on all indicators (TF, antibody, and infection), and have consent forms that allow for future use of samples for test development, and (6) implementation of robust quality assurance and quality control for immunological assays.

KNOWLEDGE GAPS IDENTIFIED

- How can graders be trained in the absence of TF without loss of survey quality?
- What alternative sampling methodologies can be used for hard-to-reach populations that may consist of small clusters or EU population sizes?
- What opportunities are there for integrated surveys (and programme implementation), including using integrated serosurveillance?
- Are there opportunities for more innovative survey methodologies or approaches to improve the efficiency of trachoma survey methodologies, in particular for small clusters as seen in Latin America?
- What might be the best approach to survey migratory/nomadic populations, to ensure the population surveyed is the population for whom decisions are applied?
- Can satellite or new technology be used to identify populations for sampling and interventions? (Identify where communities are at time of survey)
- What alternative methods (aside from a survey) are there for determining if national programmes have reached TT elimination thresholds? What are the respective roles of door-to-door case finding, TT-only surveys, and integrated case finding?
- How programmatically significant a problem is non-trachomatous trichiasis?
- What is the effect of including trachomatous scarring (TS) in TT surveys (impact on training and service delivery)?

- Can we use serology to help understand trachoma transmission dynamics? Will it help to identify areas at risk of disease recrudescence?

RECOMMENDED NEXT STEPS

- Explore the role of assistive aids for grader training (e.g., augmented reality).
- Develop guidance on affordable post-elimination surveillance systems/methodologies.
- Validate different approaches for generating TT prevalence estimates – surveys and TT case finding (passive or active). Include an assessment of cost-effectiveness.
- Develop guidance on conducting a TT door-to-door case search as an alternative to surveys for determining if TT elimination thresholds have been reached or sustained.
- Determine the burden of non-trachomatous trichiasis and implications on training and service delivery of including TS in TT surveys.
- Complete the OR agenda identified at the “Technical Consultation on the Use of Serology for Trachoma Surveillance.”