COR-NTD 2015
Philadelphia, PA, October 22-23

Breakout Group Summary Report

This document is intended to capture the key outputs of your breakout discussion, and to be representative of the group as a whole. Please denote your group's topic, presentations and research priorities before the start of the session, and dedicate the latter portion of your session to determining the key discussion points, knowledge gaps and recommended steps. Also, please indicate whether your group's recommendations align with the specified initial priority target. Your report will be shared on the NTD-SC website, and will inform future advisory panel discussions and donor priorities.

Breakout Topic:

3C: Trachoma Impact Surveys: What should be next?

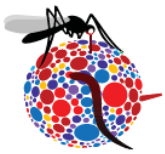
Presentations:

1. Trachoma surveillance surveys: experience from two countries (Nepal and Tanzania) using clinical exam, tests for infection, and tests for antibodies (Sheila West)
• The GeneXpert is likely to be as sensitive as the Aptima Combo 2 for conjunctival Chlamydia trachomatis infection.
• More data are needed to determine whether there is a role for an antibody test for cumulative C. trachomatis exposure history; at present there are no established thresholds.
• No evidence of re-emergence of active trachoma 2-4 years after cessation of mass azithromycin distribution in three districts.
• Test for conjunctival C. trachomatis infection added no information in this context. Test for antibodies to pgp3 showed low positivity in all 3 districts.

2. Preliminary results from a study on use of pooling in nucleic acid amplification testing for conjunctival C. trachomatis after mass treatment with azithromycin for trachoma in Uganda (Julie Schachter)
• London consensus was a target of 1% NAAT positivity after treatment
• Low prevalence of NAAT positivity in this study was good news for the program but not helpful for assessing pooling strategy

3. Pgp3 ELISA used in a potential 'hotspot' study (Stephanie Migchelsen)
• Is age-specific seroprevalence of anti-C. trachomatis antibodies an effective method of detecting changes in C. trachomatis infection transmission?
• How many infections of what intensity are required to precipitate sero-conversion?

4. Research priorities for anti-C. trachomatis antibody testing for post-validation surveillance (Diana Martin)
• We assume that there will be little or no funding available post-validation for trachoma surveillance; surveillance will be needed years after validation is achieved; trachoma programs will have been dismantled; it will be difficult to train graders.
• Serosurveillance addresses many of these challenges.
• Antibody prevalence can act as a trachoma indicator in lieu of TF; antibody levels are low in post elimination settings; can integrate into other surveillance activities or surveys; low cost options are available.
• Age seroprevalence curves are likely to reflect transmission intensity better than anything else that we currently have available.



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Presentations *(cont.)*

• Age seroprevalence curves should in theory measure the impact of F&E (WASH) interventions, for which there are currently no reliable and easily measurable empirical markers: successful implementation of F&E should reduce transmission of C. trachomatis.
• Serology could also play a particularly useful role where there is TF but apparently little or no conjunctival C. trachomatis and little or no trachoma-related blindness.

5. The utility of mathematical models for trachoma control (Amy Pinsent)
• Overview of the use of mathematical models for trachoma, including how they can be used to help guide design of impact surveys to assess rebound of infection. Provided suggestions on how antibody data may be linked to transmission.

Research Priorities Discussed

1) Obtain district-wide PCR and serology data from baseline and post-MDA settings; 2) Investigate decision-making algorithms that incorporate serological data; 3) Determine acceptable sampling strategies/methodologies for trachoma surveillance, whilst considering how to integrate them into other survey activities when resources are low; 4) Evaluate the performance of the lateral flow assay against bead-based multiplex assays and ELISA; 5) Evaluate the lateral flow assay in the field, under different ambient temperatures and humidity levels

What were your group's key discussion points?

1. Reviewed previous and ongoing work on use of serology and PCR in trachoma impact and surveillance surveys.
2. Defined priority research needs for trachoma impact and surveillance surveys for 2016.

What knowledge gaps (if any) did your group identify?

1. Need longitudinal data obtained at district level in the programmatic context (particularly in highly endemic countries, tracking age-seroprevalence curves over time). Modelers to help analyze. Outputs could be used programmatically to help avoid over- or under-treatment.
2. Need to better understand the drivers to sero-conversion, and the capacity of seropositive individuals to sero-revert with time.
3. Need increased capacity in countries to undertake laboratory testing, with international standardization through parallel processing of specimen panels.
4. Need more data on the biological limitations to specimen pooling.

What next steps does your group recommend?

1. Undertake longitudinal studies in a broad range of environments. This should be done in the context of national programs. It will be important to be opportunistic.
2. Incorporate PCR and serology in baseline, impact and surveillance surveys wherever feasible. Serology is a potential adjunct to clinical data for evaluating the impact of the A, F and E components of the SAFE strategy, and may have a particular role in evaluating the impact of the F&E interventions. More data are needed before serology could be considered a program-ready tool.
3. Continue to engage the NTD Modeling Consortium to help make sense of data as they accumulate.
4. Work with potential funders to sensitize them to the importance of these investigations.

Do your recommended steps align with the research priorities identified on page 1? ◉ **Yes** ○ **No**