TAS Best Practices Webinar

12 December 2019
Speakers

**Jonathan King**, PhD  
LF Focal Point  
World Health Organization  
Geneva

**Molly Brady**, MPH  
Senior NTD Advisor  
USAID’s Act to End NTD’s East Program  
RTI International  
Washington, DC
Getting Started

• Webinar technology orientation
  • **Audio** - A unique link for computer audio is in the confirmation email for joining through the computer. Within that confirmation email, there are also dial-in instructions for those who would like to call-in.
    • Participants are automatically muted when they join. Please stay muted.
  • **Type questions** by clicking on the Q&A box and typing them into question box anytime
  • **Type comments** by clicking on chat box to type comments or note the need for technical assistance

• Access to slides and recording of the webinar

• We want your feedback!
USAID’s Act to End NTDs | East Program

• Five-year program funded by USAID (2018-2023)
• Supports control or elimination of 7 neglected tropical diseases
• Implemented by RTI International in partnership with The Carter Center, Fred Hollows Foundation, IMA World Health, Light for the World, Sightsavers, Save the Children, Results for Development, and WI-HER
• Twitter: @RTIfightsNTDs
Find what you’re looking for by searching by disease or NTD program phase.

**VIEW TOOLS BY DISEASE**
- LF
- ONCHO
- TRACHOMA
- STH
- SCHISTO

**VIEW TOOLS BY PROGRAM PHASE**
1. PLANNING NTD PROGRAMS
2. MDA MANAGEMENT
3. DATA MANAGEMENT AND M&E
4. IMPACT ASSESSMENTS & SURVEILLANCE
5. OTHER NON-PC ACTIVITIES
6. SUSTAINABILITY AND SELF-RELIANCE

ntdtoolbox.org
Lymphatic Filariasis transmission assessment survey: Guidance, Best Practices and FAQs
Outline

- Overview of TAS guidance
- Best practices
- Frequently asked questions
Transmission Assessment Survey (TAS)

- Decision making tool, tells when to stop MDA
- Standardized survey with statistically robust, yet practical design
- Uses children as an indicator of incident infection
WHO TAS guidance

- 2011 M&E TAS manual

- TAS Facilitator’s Guide and TAS ppt modules

- Responding to failed Transmission Assessment Surveys
  [https://www.who.int/lymphatic_filariasis/resources/9789241511292/en/](https://www.who.int/lymphatic_filariasis/resources/9789241511292/en/)
### GPELF recommended diagnostic tests

<table>
<thead>
<tr>
<th>Field assay</th>
<th>Detection target</th>
<th>Recommended for use during</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood smear</td>
<td>Microfilariae (Mf)</td>
<td>Mapping, sentinel site and spot-check site monitoring</td>
</tr>
<tr>
<td>Alere Filariasis Test Strip (FTS)</td>
<td>Filarial <strong>antigen</strong> (Ag)</td>
<td>Mapping, sentinel site and spot-check site monitoring, TAS</td>
</tr>
<tr>
<td>Brugia Rapid™ test</td>
<td>Antifilarial <strong>antibody</strong> (Ab)</td>
<td>TAS</td>
</tr>
</tbody>
</table>
GPELF Strategic Framework

Integrated Vector Management

Mapping

MDA

Post-treatment surveillance

Post-validation surveillance

Pre-TAS
<1% Mf/ <2% Ag

TAS1

TAS2

TAS3

Validation

Blood smear

Brugia Rapid

FTS

World Health Organization
# Transmission Assessment Survey (TAS)

<table>
<thead>
<tr>
<th><strong>Who is tested?</strong></th>
<th>Children aged 6–7 years</th>
</tr>
</thead>
</table>
| **What test is used?** | Alere *Filariasis Test Strip* – antigen *W. bancrofti*  
Brugia Rapid™ - antibody *Brugia* spp. |
| **Where to survey?** | Evaluation Unit (EU) <2 million population* |
| **When to conduct?** | After *eligibility criteria* met |
| **How to sample?** | Cluster or systematic sampling in schools/community |

*smaller-sized EUs will better reflect true mean incident infection
Best practices to prepare for TAS

1. Ensure all EUs meet eligibility criteria → pre-TAS
1st eligibility criterion for TAS 1

Achieve at least 65% epidemiological coverage

- Coverage must be met in each evaluation unit:
  - ≥5 rounds of 2-drug MDA
  - ≥2 rounds of IDA
Epidemiological coverage

- **Epidemiological coverage** is defined as "the proportion of individuals in an IU who actually ingested the medicines"

\[
\text{No. people recorded to have ingested the medicines} = \frac{\text{Total population in IU}}{100} \times 100
\]

\[
\frac{8}{10} \times 100 = 80\%
\]
2\textsuperscript{nd} eligibility criterion for TAS 1

- Survey sentinel sites (SS) and spot-check (SC) sites expected high-risk
  - At least 1 SS and 1 SC per 1 million population (more if resources allow)

- Criteria must be met in each site in each evaluation unit

\textbf{Mf} <1\% or \textbf{Ag} <2\% among at least 300 persons
Best practices to prepare for TAS

1. Ensure all IUs meet eligibility criteria

2. Form Evaluation Units wisely
Survey area for a TAS

- Implementation unit (IU): The administrative unit in a country used for MDA

- Evaluation unit (EU): An area selected for a TAS
Forming an EU

- IUs within an EU can be combined, divided or remain the same
- IUs in an EU are usually contiguous
- EU should not exceed 2 million population
  - smaller-sized EUs will better reflect true mean incident infection than larger EUs, develop as many smaller EUs as resources allow

Smaller is better
All areas in the EU should have **similar epidemiological features and LF transmission dynamics**

- baseline prevalence
- drug coverage
- prevalence of Mf or Ag in sentinel and spot-check sites
- parasite species

\[ \text{Apples} + \text{Apples} = \checkmark \]

\[ \text{Apples} + \text{Orange} = \times \]
Best practices to prepare for TAS

1. Ensure all IUs meet eligibility criteria
2. Form Evaluation Units wisely
3. Use Survey Sample Builder to plan TAS
Survey design tool

Automated survey design support – Survey Sample Builder (SSB)

To effectively use SSB, the following information is needed:

- Total population size of target age group → target sample size
- School enrollment rate for EU → school- or community-based survey
- Total number of schools or enumeration areas in EU → cluster or systematic sampling
Best practices to prepare for TAS

1. Ensure all IUs meet eligibility criteria
2. Form Evaluation Units wisely
3. Use Survey Sample Builder to plan TAS
4. Submit TAS Eligibility and Planning form to WHO for review
TAS Eligibility and Planning

- TAS Eligibility Form to be submitted to WHO
- Allows multiple evaluation units
- Reviewed independently by RPRG
- Submit early (preferably 6 months prior to planned TAS or immediately after eligibility criteria met)
- Estimates required diagnostic tests

http://www.who.int/entity/lymphatic_filariasis/resources/WHO_TAS_EPF.xlsm
Best practices to prepare for TAS

1. Ensure all IUs meet eligibility criteria
2. Form Evaluation Units wisely
3. Use Survey Sample Builder to plan TAS
4. Submit TAS Eligibility and Planning form to WHO for review by RPRG
5. Make a request for diagnostic tests well in advance of planned TAS
Filariasis Test Strip Subsidy

- FTS needed for surveys now available through WHO
- Countries submit the following to WHO country office (cc RO & HQ):
  - Letter of request from MOH
  - “No objection certificate” for importation
  - If TAS, completed WHO TAS Eligibility and Planning Form
- Expected time from cleared request to delivery is 12 weeks (submit request as early as possible)
- FTS has 12-month shelf life from production
Best practices to prepare for TAS

1. Ensure all IUs meet eligibility criteria
2. Form Evaluation Units wisely
3. Use Survey Sample Builder to plan TAS
4. Submit TAS Eligibility and Planning form to WHO for review by RPRG
5. Make a request for diagnostic tests well in advance of planned TAS
6. Use positive control for local quality assurance of FTS
When to use positive control

A. Upon receipt of FTS order at national level

B. Immediately prior to use in surveys
How to get positive control

1. Country submits a letter of request (WHO template) and signed agreement through WHO country office (CO)

2. WHO CO forwards to WHO Regional Offices and WHO HQ for review

3. Name and address of consignee provided by WHO CO

4. DHL delivery from Geneva to consignee
Best practices to prepare for TAS

1. Ensure all IUs meet eligibility criteria
2. Form Evaluation Units wisely
3. Use Survey Sample Builder to plan TAS
4. Submit TAS Eligibility and Planning form to WHO for review by RPRG
5. Make a request for diagnostic tests well in advance of planned TAS
6. Use positive control for local quality assurance of FTS
7. Use TAS checklists
Use **checklists** for Improving TAS Outcomes

1. **TAS preparation** *before* every TAS
2. **TAS supervision** *during* every TAS
3. Failed TAS1 response
4. reTAS1 preparation
Use **checklists** for Improving TAS Outcomes

- Annex 3 in Responding to failed Transmission Assessment Surveys
  https://www.who.int/lymphatic_filariasis/resources/9789241511292/en/

**Best Practice**

- Adapt checklists to the local country / survey contexts
- Use available job-aides

Best practices to prepare for TAS

1. Ensure all IUs meet eligibility criteria
2. Form Evaluation Units wisely
3. Use Survey Sample Builder to plan TAS
4. Submit TAS Eligibility and Planning form to WHO for review by RPRG
5. Make a request for diagnostic tests well in advance of planned TAS
6. Use positive control for local quality assurance of FTS
7. Use TAS checklists
8. Implement LF-STH TAS
Implement LF-STH TAS

- WHO recommends assessing STH infections during TAS
- Re-evaluate the epidemiological situation and revise the deworming plan

A. lumbricoides fertilized egg  
T. trichiura egg  
hookworm egg

Source: www.dpd.cdc.gov/dpdx
Electronic Data Collection (EDC)

- EDC:
  - Provides *real-time* data capture and *near-real-time* data monitoring to check for issues (e.g. large number of invalids, low response rates)
  - Improves data quality with in-built controls

- EDC for site-level info and results tabulations alone is useful

- EDC in the field is not without challenges:
  - Some extra logistics required for programming, entry and training teams prior to each survey
Geo-referenced sites

- Geolocate survey sites
  (both pre-TAS sites and TAS schools/communities)

- Geographic data can assist in:
  - Data quality monitoring, did survey teams go where you expected,
  - Understanding the spatial distribution of positives after a survey,
  - Making maps to identify potential “hot spots”
TAS-Related Frequently Asked Questions
TAS-Related Frequently Asked Questions

1. Does RPRG need to approve pre-TAS survey plans?
   - No
   - RPRG is to technically review TAS eligibility before TAS and TAS results after TAS throughout the year on a virtual basis
2. Is a cold-chain required for the FTS or Brugia Rapid?

   — No

   — Store FTS / Brugia Rapid tests in a cool and dry setting at all times prior to use in accordance with the specifications set forth by the manufacturer
3. How often should we train survey teams?

– Before every planned TAS implementation
– Retraining and refresher training is always warranted

Best Practice

– Limit technicians to only those who demonstrate efficiency in blood collection and test function
– Develop a team of TAS trainers to build capacity in TAS implementation; supervise correct methodology and test operation in the field
4. If a chosen school is closed or inaccessible in a TAS, can it be replaced with a nearby school?
   
   – It should be replaced with one of the extra schools chosen from the Survey Sample Builder.
5. When should a diagnostic test be repeated?

- 1\textsuperscript{st} test is positive
- 1\textsuperscript{st} test is invalid

**Best practice**

- take a photo of positive and invalid results
- repeat a test no more than once per person
6. How to interpret the result of a repeat test?

<table>
<thead>
<tr>
<th>1&lt;sup&gt;st&lt;/sup&gt; Result</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Result</th>
<th>Interpretation</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Positive</td>
<td>Positive</td>
<td>Provide treatment</td>
</tr>
<tr>
<td>Positive</td>
<td>Negative</td>
<td>Indeterminate</td>
<td>Exclude from sample and treat</td>
</tr>
<tr>
<td>Positive</td>
<td>Invalid</td>
<td>Positive</td>
<td>Provide treatment</td>
</tr>
<tr>
<td>Invalid</td>
<td>Positive</td>
<td>Positive</td>
<td>Provide treatment</td>
</tr>
<tr>
<td>Invalid</td>
<td>Invalid</td>
<td>Indeterminate</td>
<td>Exclude from sample and treat</td>
</tr>
<tr>
<td>Invalid</td>
<td>Negative</td>
<td>Negative</td>
<td>-</td>
</tr>
</tbody>
</table>
7. How to follow up positive results?

- Treat

In EUs that pass TAS

- Ongoing operational research to determine best methodology

- Refer to the investigation algorithm proposed in the TAS manual
  http://apps.who.int/iris/handle/10665/44580
TAS-Related Frequently Asked Questions

8. How many MDA rounds are needed after failed pre-TAS?

– 2 rounds with effective coverage regardless of regimen
TAS-Related Frequently Asked Questions

9. How many MDA rounds are needed after failed TAS?

– 2 rounds with effective coverage regardless of regimen
10. Are sentinel and spot-check surveys needed after a failed pre-TAS?

- Yes
- Re-survey sites that did not meet criteria
- Select a new spot-check site to replace a site that met criteria
11. Should spot-check sites from failed pre-TAS be revisited in re-pre-TAS?

- Revisit if the spot-check site was $\text{>2\% Ag \ or \ >1\% Mf}$ in pre-TAS

- Substitute a new spot-check site for any sentinel or spot-check site $<2\% \text{ Ag \ or \ <1\% Mf}$ in previous surveys
12. Are sentinel and spot-check surveys needed after a failed TAS?

  – Yes

  – Select two new spot-check sites expected highest risk
13. Should migrant populations be eligible for pre-TAS and TAS?

- Yes
- Treat persons testing positive
- Assess length of residency
- **Exclude persons** who have lived in the community/EU for **less than 1 year** in analysis
14. Should problems with diagnostic tests be reported?
   - Yes, collect information in a new detailed form
   - Notify WHO
   - FTS send to ts.scr@alere.com or ts.binax@abbott.com
   - Brugia Rapid send to mook@reszonics.com
Thank you

Photo courtesy of K Won
Q & A

- **Type questions** by clicking on the Q&A box and typing them into question box anytime

- We will send out a Q&A document next week that will address all the questions submitted during registration and today.

This presentation is made possible by the generous support of the American People through the United States Agency for International Development (USAID). The contents are the responsibility of Act to End NTDs | East, led by RTI International in partnership with The Carter Center, Fred Hollows Foundation, IMA World Health, Light for the World, Sightsavers, Results for Development, Save the Children, and WI-HER under cooperative agreement No. 7200AA18CA00040 and do not necessarily reflect the views of USAID or the United States Government.