# Report of the Second Meeting of the WHO Onchocerciasis Technical Advisory Subgroup

UNAIDS BUILDING, ROOM 46025

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## I. Abbreviations

AE	adverse event
ALB	albendazole
ATP	annual transmission potential
CAR	Central African Republic
CDC	United States Centers for Disease Control and Prevention
DBS	dried blood spots
DfID	United Kingdom's Department for International Development
DRC	Democratic Republic of Congo
ELISA	enzyme-linked immunosorbent Assay
ESPEN	Expanded Special Project for the Elimination of Neglected Tropical Diseases
EU	evaluation unit
FTS	Filariasis Test Strip
HRP	horseradish peroxidase
iTAS	Integrated transmission assessment survey
IVM	ivermectin
LF	lymphatic filariasis
LGA	local government area
MDA	mass drug administration
M&E	monitoring and evaluation
MEC	Mectizan Expert Committee
Mf	microfilariae
NIH	United States National Institutes of Health
NOEC	national onchocerciasis expert committee
NTD	Neglected Tropical Diseases
OCP	Onchocerciasis Control Programme
OEM	Onchocerciasis Elimination Mapping
OEPA	Onchocerciasis Elimination Program for the Americas
OTS	Onchocerciasis Technical Advisory Subgroup
PCR	polymerase chain reaction
Pre-TAS	Pre-Transmission Assessment Survey
PTS	post-treatment surveillance
QA	quality assurance
QC	quality control
RAPLOA	rapid mapping for loiasis
RDT	rapid diagnostic test
SAE	severe adverse event
TAS	Transmission Assessment Survey
TFGH	Task Force for Global Health
TnT	Test and Not Treat
USAID	United States Agency for International Development
WHO	World Health Organization

#### **II. Executive Summary**

The WHO Onchocerciasis Technical Advisory Subgroup (OTS) was established in order to provide advice to WHO in accordance with the terms of reference developed for the subgroup. The objectives of the 2<sup>nd</sup> meeting were to develop common strategies for mapping and ivermectin treatment in areas co-endemic for onchocerciasis and loiasis, review lessons learned from co-evaluation of onchocerciasis and lymphatic filariasis (LF) and apply them to current strategies, and begin standardization on entomological activities. The key conclusions and recommendations of the OTS are described below. Please not that many of the recommendations are provisional and thus may change over time as new evidence emerges. Evidence that emerges after the meeting will not be reflected in this report. Some lessons will have to be learned while programmes continue to strive to eliminate the transmission of onchocerciasis. Recommendations are based on consensus unless otherwise noted. When consensus could not be reached, operational research questions were defined that should provide the evidence required to obtain a consensus in the future.

1. Strategies for areas co-endemic for onchocerciasis and loiasis. The OTS felt that the current data supported the use of the LoaScope for the measurement of Loa loa microfilarial density in the ranges relevant for identifying individuals at risk for severe adverse events (SAEs) and marked adverse events (AEs), though it would be useful to understand the intra-individual variability as measured by the LoaScope in a field setting. The results of the Test and Not Treat (TnT) study were also encouraging, with more than 37,000 treatment given and no SAEs identified in the high risk study area, though it was not clear how best to implement the TnT strategy in the programmatic context. There is the possibility of using the LoaScope as part of a model-based mapping strategy that would identify communities in areas that are hypoendemic for onchocerciasis that need TnT in order to implement ivermectin mass drug administration (MDA) and those that can proceed with MDA without individual testing. However, a mapping strategy to reduce areas that require TnT requires determination of the acceptable risk for missing an individual who subsequently develops an SAE. Consensus could not be reached on this issue. OTS recommended that WHO convene an ad hoc meeting that would include additional stakeholders where a final recommendation about the acceptable risk could be determined. OTS also recommended operational research be conducted to examine whether the TnT strategy could be used in areas that are poorly performing and meso- or hyper-endemic for onchocerciasis to increase compliance with ivermectin MDA. Additional evidence that using the TnT strategy allows achievement of the coverage required to interrupt transmission of onchocerciasis and that the strategy only needs to be used in ivermectin naive individuals would also be welcome.

2. <u>Post-treatment surveillance and entomology</u>. The deliberations about post-treatment surveillance (PTS) generated a fair number of questions and a few recommendations. It is clear that programmes will need to increase their entomological capacity, particularly at the level of field entomologists or entomology technicians. The identification of new breeding sites, confirmation of the continued productivity of previously identified breeding sites, establishment of biting rates, and determination of transmission seasons should all be considered components of monitoring and

evaluation (M&E) that provide important information to programmes (e.g. information required for identification of 1<sup>st</sup>-line villages and implementation of stop-MDA surveys) and do not require capacity for molecular testing of blackflies. OTS recommended that the existing entomologic operational manuals be updated with standard approaches to vector monitoring based on the recent experience in Africa and the Americas. The OTS recognized concerns with the length of time required for PTS and looks forward to learning from the experiences of the programmes in Venezuela (Bolivarian Republic of) and Ethiopia, which have plans for addressing challenges not covered in current WHO guidelines. Additionally, the subgroup pointed out that the minimums specified in the WHO guidelines are minimums. If programmes have concerns about particular foci, PTS can be extended for longer time periods or more than 6,000 flies can be evaluated.

3. Co-evaluation of onchocerciasis and LF. Co-evaluation of the two diseases remains a complex issue, particularly as strategies for a variety of onchocerciasis evaluations are still being developed. None-the-less, programmes should consider integrated or coordinated evaluations whenever one of the two diseases needs to be evaluated, as multiple countries have obtained actionable information from such co-evaluations. Co-evaluations that involved adding an onchocerciasis evaluation to LF transmission assessment surveys (TAS) demonstrated that random evaluations of non-1<sup>st</sup>-line onchocerciasis villages revealed gaps in programmes' understanding of transmission in MDA areas. OTS recommended that random surveys be incorporated both into the onchocerciasis elimination mapping (OEM) strategy and stop-MDA surveys. OTS requested that a draft protocol for the random stage of OEM be presented at the next OTS meeting so that it could be finalized for piloting. The data also suggested that pre-stop-MDA-surveys, based primarily on evaluations in 1<sup>st</sup>-line villages, would be a reasonable approach. Therefore additional operational research is warranted in order As LF evaluations are school-based in many circumstances and to establish thresholds. onchocerciasis evaluations are community-based, comparing the two approaches for onchocerciasis evaluations would help determine if the random component of onchocerciasis evaluations could be school-based and thus integrated with other school-based evaluations. Finally, work is needed to determine the appropriate age group for OEM in areas that have already received ivermectin for LF.

#### III. Report

Despite the release of the 2016 WHO guidelines for stopping mass drug administration and verification of the elimination of human onchocerciasis, many challenges remain for implementing the guidelines. Additionally, many country programmes are transitioning from disease control to interruption of transmission. In order to augment the guidelines with common strategies for a variety of programme activities needed to achieve elimination and to facilitate the development of the evidence base required for development of new guidelines, OTS was established. The OTS provides advice to WHO in accordance with the terms of reference developed for the subgroup. The objectives of the 2<sup>nd</sup> meeting were to develop common strategies for mapping and ivermectin treatment in areas co-endemic for onchocerciasis and loiasis, review lessons learned from co-evaluation of onchocerciasis and LF and apply them to current strategies, and begin standardization on entomological activities.

### 1. Highlights of the 1st OTS Meeting

A brief review of the last meeting was presented. Only highlights will be given in this report because all of the details can be found in the report of the 1<sup>st</sup> OTS meeting.

- More data are needed for the OTS to make a decision about the preferred Ov-16 enzymelinked immunosorbent assay (ELISA); programmes using one of the currently available ELISAs need to develop a system of quality assurance (QA)
- The Ov-16 rapid diagnostic test (RDT) cannot be used for stopping decisions, but it may be used for onchocerciasis elimination mapping (OEM) and routine monitoring and evaluation (M&E); dried blood spots (DBS) should be collected for confirmatory testing until the performance of the RDT in low prevalence settings is better defined
- The first steps of OEM include exclusion mapping and purposeful mapping of high risk villages (e.g. known proximity to a breeding site, known black fly nuisance, known proximity to hyper/meso-endemic areas); a mapping protocol that includes a strategy for random sampling is needed for areas that do not identify transmission during purposeful mapping or where first-line villages cannot be readily identified
- The indicator of choice for mapping is Ov-16
- Suggested strategies for M&E were developed; coverage surveys are an important component of M&E and require no laboratory testing
- Entomology is required for identification of first-line villages, however, extensive studies are

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