Informal consultation on end-game challenges for trachoma elimination

Task Force for Global Health, Decatur, United States of America
7–9 December 2021

World Health Organization

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1. Background

Trachoma is the leading infectious cause of blindness worldwide *(1)*. It is most common in poor rural communities. Repeated infection with particular strains *(2,3)* of *Chlamydia trachomatis* causes episodes of conjunctival inflammation ("active trachoma") that resolve with scar formation *(4)*. Eventually, scarring can draw the eyelashes inwards to rub on the surface of the eye ("trachomatous trichiasis"), potentially damaging the cornea and impairing vision. Since 1993, the World Health Organization (WHO) has recommended the "SAFE" strategy (surgery, antibiotics, facial cleanliness, environmental improvement) to reduce the prevalence of trachoma *(5)*. The S component is offered to individuals with advanced disease. The A, F and E components are offered to entire districts or "evaluation units" (EUs) of 100 000–250 000 people *(6)* in which the prevalence of the active trachoma sign "trachomatous inflammation—follicular" *(7)* in 1–9-year-olds ($TF_{1–9}$) is ≥ 5%.

Since 1996, trachoma has been targeted for elimination as a public health problem worldwide *(8,9)*. The active trachoma criterion for national elimination as a public health problem is a $TF_{1–9}$ < 5%, sustained for at least two years in the absence of antibiotic mass drug administration (MDA), in each formerly endemic EU *(10)*. Using A, F and E, health ministries and their partners have made considerable progress towards achieving this criterion in formerly endemic EUs worldwide. In 2002, an estimated 1517 million people lived in EUs in which EU-wide implementation of the A, F and E components of SAFE were thought to be needed for the purposes of global elimination of trachoma as a public health problem *(11)*; by June 2021, that number had fallen to 136.2 million, a 91% reduction *(12)*. Approximately 85% of the 136.2 million people living in EUs needing A, F and E in June 2021 were in WHO's African Region *(12)*.

Alongside this general progress, it is evident that in a small proportion of EUs there is difficulty sustaining $TF_{1–9}$ < 5%. Such EUs fall into two broad categories: those in which $TF_{1–9}$ remains at or above the elimination threshold (5%) despite implementation of interventions *(13–15)*; and those in which $TF_{1–9}$ < 5% is achieved at impact survey, but subsequently returns to ≥ 5% during the two-and-a-half-year period of surveillance after stopping MDA [data in press]. Using current A, F and E interventions, modelling suggests a low likelihood of successful elimination by 2030 in at least some of these EUs *(16,17)*.

How these EUs should be managed is presently unclear. Uncertainty is deepened by programmatic reliance on $TF_{1–9}$ as the WHO-recommended indicator for decision-making; this marker is known to lag behind the prevalence of conjunctival *C. trachomatis* infection as infection prevalence declines *(18–22)*, and would likely lag behind population-level infection recrudescence too.

Health ministries and their partners are keen to find solutions to this group of problems. In response, WHO convened an informal consultation on 7–9 December 2021 to discuss affected EUs of Ethiopia, Mozambique, Niger, Uganda and the United Republic of Tanzania, where the absence of a plan of action agreed between stakeholders put programmatic funding for 2022 at risk. Given the ongoing COVID-19 pandemic and the associated travel restrictions, a hybrid meeting format was adopted whereby some participated in person at the Task Force for Global Health in Decatur (GA), USA, and others virtually.

Professor Simon Brooker and Mr Fikre Seife were elected as Co-chairs of the meeting. The participants are listed in Annex 1. Invited experts completed the WHO declaration of interests form before the meeting. The declarations were assessed by the Secretariat. Declared interests are listed in Annex 3.

The agenda is reproduced in Annex 2. On day 1, working definitions were agreed and the magnitude of the problem outlined. On days 2 and 3, reviews of published evidence were presented by designated meeting participants, and consensus was reached amongst participants on special measures that could be incorporated into programmes.

2. Working definitions

In order to increase the efficiency of the conversation, estimate the potential magnitude of the problem and facilitate future research, the following working definitions were adopted:

- a **category 1 EU ("persistent TF")** is an EU with at least two impact surveys at which $TF_{1–9}$ is ≥ 5%, without ever having had a $TF_{1–9}$ < 5%; and
- a **category 2 EU ("recrudescent TF")** is an EU with at least one surveillance survey at which $TF_{1–9}$ is ≥ 5%.

Notes:

(a) In the definition of category 1, reference to data from two impact surveys implies that there has been a baseline survey in the EU, followed by implementation of A, F and E interventions both before the first impact survey and between the first and second impact surveys of this pair.

(b) In the definition of category 1, exclusion of EUs in which $TF_{1–9}$ has ever been < 5% restricts the focus to EUs that remain problematic and makes categories 1 and 2 mutually exclusive.

3. Magnitude of the problem

In December 2021, 176 EUs worldwide, or 8% of all EUs that had ever been observed to have a $TF_{1–9}$ ≥ 5%, met the criteria for category 1. The majority of category 1 EUs (145/176, 82%) were in Ethiopia (Table 1). Within category 1 EUs, those in Ethiopia were more likely than those in other countries to have a most recent[1] $TF_{1–9}$ ≥ 10% (113/145, 78%, in Ethiopia; 14/31, 45%, in all other countries combined).

Of 774 EUs worldwide that had conducted at least one surveillance survey, 123 (16%) met the criteria for category 2, of which 57 (46%) were in Ethiopia (Table 2). Of the 45 EUs with subsequent impact survey data, 35 (78%) had subsequently recorded a $TF_{1–9}$ < 5%. The 10 EUs that did not were in Ethiopia (8), Uganda (1) and the United Republic of Tanzania (1).