REPORT OF THE 4TH GLOBAL SCIENTIFIC MEETING ON TRACHOMA

GENEVA, 27–29 NOVEMBER 2018

World Health Organization

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Summary of outcomes

The 4th Global Scientific Meeting on Trachoma:

1. Recommended that the World Health Organization not change the existing trachomatous inflammation—follicular elimination prevalence threshold [paragraph 2.8];

2. Requested the global trachoma programme to continue to investigate, in national programmes, the role of alternative technical indicators of elimination of trachoma as a public health problem [paragraph 2.8];

3. Recommended that the definition of *trachomatous trichiasis* be changed to "at least one eyelash from the upper eyelid touches the eyeball, or evidence of recent epilation of in-turned eyelashes from the upper eyelid". (The change here is the exclusion of trichiasis that affects only the lower eyelid.) [paragraph 3.8];

4. Noted that in circumstances where there is evidence of upper eyelid trichiasis with little or no evidence of current or past active trachoma, cases of trichiasis should be assessed (by clinicians with appropriate training and expertise) for alternative aetiologies. This may take into account evidence such as trachomatous scarring of the conjunctiva, superior pannus, Herbert's pits and entropion, in order to determine whether upper eyelid trichiasis is due to trachoma or not [paragraph 3.9];

5. Recommended that trichiasis surgeons target a cumulative incidence of post-operative trachomatous trichiasis of < 10% by six months for cases that had minor trachomatous trichiasis (≤ 5 eyelashes touching the eyeball) pre-operatively, and < 20% by six months for cases that had major trachomatous trichiasis (> 5 eyelashes touching the eyeball) pre-operatively [paragraph 4.10];

6. Recommended that in order to improve the outcomes of trachomatous trichiasis surgery, *Trichiasis surgery for trachoma (1)* be revised to include: (i) a section on day one assessment, by the operating surgeon, for under- and over-correction, with instructions on how these conditions should be managed; and (ii) guidance on undertaking audits of trichiasis surgery outcomes at 6 months [paragraph 4.11]; and

7. Agreed that to assess whether the elimination prevalence target for trachomatous trichiasis has been reached, national programmes may use: (i) population-based prevalence surveys powered at evaluation-unit level (i.e. populations of 100 000–250 000 people); (ii) house-to-house case searches (which could be integrated with other public health activities); or (iii)a combination of data from multiple adjacent evaluation units. Professional statistical advice should be sought on how best to combine data from multiple evaluation units, with guidance subsequently given to national programmes and their partners [paragraph 5.4].

1. Background

1.1 Trachoma is the leading infectious cause of blindness *(2)*. It is characterized by repeated conjunctival infection with particular strains of *Chlamydia trachomatis*. This scars the conjunctivae and, in some cases, leads to trichiasis with or without entropion. The abrasive action of eyelashes can damage the cornea. In 2018, trachoma affected the poorest residents of the poorest communities of 43 countries *(3, 4)*.

1.2 The World Health Organization (WHO) convened the 1st Global Scientific Meeting on Trachoma in June 1996 to review the evidence for interventions against trachoma and set the technical framework for establishing, in November 1996, the WHO Alliance for the Global Elimination of Trachoma by 2020 *(5)*. In 1998, the World Health Assembly adopted resolution WHA51.11 calling for increased implementation of the SAFE strategy[1] to support elimination of trachoma as a public health problem worldwide *(7)*.

1.3 As national programmes began to implement the SAFE strategy and conduct impact surveys, formal delineation of the criteria for elimination of trachoma as a public health problem was required. In addition, a new estimate of the global burden of trachoma was needed in order to plan the work ahead. In August 2003, the 2nd Global Scientific Meeting on Trachoma completed those tasks *(8)*.

1.4 By 2009, the need for further clarification of technical indicators for elimination and review of new evidence from operational research was identified. WHO convened the 3rd Global Scientific Meeting on Trachoma in July 2010 *(9)*.

1.5 Since then, considerable advances have been made. As of November 2018, baseline mapping of suspected trachoma-endemic districts *(10)* had been nearly completed worldwide *(11)*, more than half of all districts requiring interventions were participating in trachoma elimination programmes *(4)*, and a total of eight countries had been validated as having eliminated trachoma as a public health problem *(12)*.

1.6 During the course of these advances, several technical questions arose, notably:

1. Are the technical indicators for *elimination of trachoma as a public health problem* appropriate for the WHO Western Pacific Region, or should they be changed?

2. For the purposes of defining the technical indicators for elimination of trachoma as a public health problem, how should *trachomatous trichiasis* be defined?

3. How and when should trichiasis surgery outcomes be assessed, and what should the targets be?

4. How should the prevalence of trachomatous trichiasis unknown to the health system be measured for the purposes of establishing that trachoma has been eliminated as a public health problem?

1.7 The 4th Global Scientific Meeting, convened by WHO in Geneva on 27–29 November 2018, considered these questions and determined whether new evidence should lead to refinement of recommendations made at previous global scientific meetings *(5, 8, 9)* and consultations *(13-15)*.

1.8 Participants are listed in Annex 1. Professor Allen Foster and Dr Rabebe Tekeraoi were nominated as the meeting's Chair and Vice-Chair, respectively; they were approved for these roles by acclamation.

1.9 No participant declared interests that were considered to require partial or complete exclusion from the meeting. Potential conflicts of interest that were considered necessary to be publicly declared are listed in Annex 2.

1.10 The meeting agenda, adopted without amendment, is presented in Annex 3.

[1] SAFE represents Surgery, Antibiotics, Facial cleanliness and Environmental improvement *(6)*.

1.11 A list of trachoma programme terms, compiled to help standardize and improve scientific communication about trachoma, was agreed by the participants and is presented in Annex 4.

1.12 After the main meeting closed, and at the request of several participants, the management of post-operative trachomatous trichiasis (PTT) was discussed. This topic had not been included on the meeting agenda, and not all the participants remained for the discussion. The notes from this discussion are included in Annex 5.

2. Technical indicators for elimination

2.1 In June 2016, WHO published standard operating procedures for validation of elimination of trachoma as a public health problem *(16)*, which include the three previously established *(8, 9)* technical indicators for elimination of trachoma as a public health problem, namely:

> (i) a prevalence of trachomatous trichiasis unknown to the health system in ≥ 15-year-olds of < 0.2% (where the phrase *unknown to the health system* excludes individuals with PTT, individuals who have refused surgery, and individuals who have not yet received an operation but for whom a surgical date has been set), in each formerly-endemic district;
>
> (ii) a prevalence of trachomatous inflammation—follicular (TF) in 1–9-year-olds of < 5%, sustained for at least two years in the absence of antibiotic mass drug administration, in each formerly-endemic district; and
>
> (iii) written evidence that the health system can identify and manage incident cases of trachomatous trichiasis, using defined strategies, with evidence of appropriate financial resources to implement those strategies.

In this context, a *district* is defined as the normal administrative unit for health care management, which for the purposes of clarification consists of a population unit between 100 000 and 250 000 persons *(9)*. In some countries, the term *district* has a different meaning. This document will therefore use the generic term *evaluation unit* instead.

2.2 The first two of these three technical indicators incorporate elimination prevalence thresholds for trachomatous trichiasis and TF, respectively.

2.3 The elimination prevalence threshold for trachomatous trichiasis is intended to reflect the current public health impact of trachoma on progressive trachomatous visual impairment. The elimination prevalence threshold for TF is intended to reflect the future public health impact of trachoma within the current cohort of 1–9-year-olds. In the absence of previous interventions (or evidence of socioeconomic changes) that could have altered the intensity of population-level transmission of ocular *C. trachomatis*, it is generally assumed that current TF prevalence reflects the historical TF prevalence;