



Trachoma Elimination Programme, India

Training Module for Medical Officers and PMOAs

**Dr. RP Centre for Ophthalmic Sciences
AIIMS, New Delhi**

and

**National Program for Control of Blindness & Visual Impairment
Ministry of Health and Family Welfare, Government of India**

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National Program for Control of Blindness & Visual Impairment
Ministry of Health and Family Welfare, Government of India

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1. After training, the Medical Officers and PMOAs should be able to

1. Diagnose and manage active trachoma with antibiotics
2. Diagnose and refer TT and CO patients for surgical treatment
3. Conduct IEC and Health Education about trachoma
4. Train health workers in their areas for
 - a. Referring TT suspect patients for surgical treatment
 - b. Promoting face hygiene in community and schools
 - c. Promoting environmental sanitation in community and schools
5. Ensure adequate trachoma surveillance is implemented

2. What is Trachoma?

Trachoma is the leading infectious cause of blindness. It is the outcome of ocular infection by *Chlamydia trachomatis*. The symptoms of disease range from minor conjunctivitis, congestion and follicular inflammation to advanced long-term conjunctival scarring leading to trichiasis and corneal opacity. These corneal opacities often lead to visual impairment and blindness. It is recognized among the priority neglected tropical diseases (NTDs), disproportionately affecting poor communities and contributing to the vicious cycle of poverty and ill-health among them.

The main source of trachoma infection is infected eye secretions in persons with trachoma. The infective stages of trachoma are usually found in children. The following are the routes of transmission for trachoma:

- Close physical contact e.g. while playing or sharing a bed, mothers of affected children
- Sharing towels, handkerchiefs, pillows etc
- Houseflies
- Coughing and sneezing

Environmental risk factors promote the transmission of the disease:

- poor hygiene
- crowded households
- water shortage
- inadequate latrines and sanitation facilities.

Control of risk factors breaks the cycle of transmission and prevents further spread of the disease.

3. Diagnosis and Management

3.1 Clinical Features

Trachoma can lead to acute (active) infection seen in children. Acute infection has been eliminated from India with < 1% of children aged 1-9 years affected. Late-stage manifestations are seen in individuals above 15 years of age.

Acute Infection

It is important that MOs and PMOAs are able to differentiate trachoma from other conjunctivitis and record separately trachoma diagnosis.

Active trachoma infection is associated with the following symptoms:

- Irritation of eyes
- Mucoïd or muco-purulent discharge
- Swelling of upper eyelids

Many children will be without any symptoms. Clinical signs that can be observed are follicles on palpebral conjunctivae, and the limbus. They are grey or creamy masses measuring approximately 0.2 to 3.0 mm in diameter. Papillae may also be noted at this stage: in mild cases, a few isolated, small red dots can be seen with the naked eye. When inflammation is severe, an intense papillary reaction on the tarsal conjunctiva is associated with a diffuse thickening of the conjunctiva, obscuration of the deep tarsal vessels, and, sometimes, eyelid edema. Vascular corneal pannus or superficial infiltrates occur in some cases, usually at the superior corneal limbus.

Chronic Infection

The chronic stage of trachoma is seen in persons aged 15 years or more. Resolution of acute infections may be accompanied by scarring of the sub-epithelial conjunctiva. Scar deposition is most prominent in the upper eyelid. Scars can result in the formation of Herbert’s pits. Contraction of the scar tissue causes the upper eyelid to turn inward so that the lashes rub against the globe, known as trichiasis (TT). Sometimes the whole lid margin turns inwards known as entropion. Constant rubbing of the eyelashes on the corneal surface leads to formation of corneal ulcers, corneal scarring and eventually corneal opacities (CO). These cause visual impairment and irreversible corneal blindness. Presence of trichiasis is associated with intense irritation in the eyes.

A person may be suffering from TT if they complain of:

- Eye lashes touching the eye and causing irritation.
- Say that removal of hair from the eye / epilation brings relief
- Person feels as though something is inside the eyes (foreign body sensation),
- Pain in her eyes every time eyes are blinked.
- Eye stay red and irritated
- Continuous tears from eyes
- Sensitivity and pain when exposed to light

These patients require TT surgery. In case surgery is not possible, temporary relief can be given by removing the eyelashes which are touching the cornea with the help of forceps. This process is called epilation. In case corneal opacity has developed, patient will require corneal transplantation.

MPWs, ANMs and other Community-Based Workers will be referring suspected TT cases to the PHC/CHC. The MOs and PMOAs should confirm the diagnosis of all the referred cases and ensure that only confirmed TT cases are reported through PHC/CHC.

3.2 Grading

WHO simplified trachoma grading system has been designed for assessment of trachoma. As shown in Table 1, it includes five stages, often abbreviated as FISTO.

Table 1: The Simplified WHO Trachoma Grading System

Grade	Description
TF = Trachomatous inflammation - Follicular	Five or more follicles, at least 0.5mm in size, on the ‘flat’ surface of the upper tarsal conjunctiva.
TI = Trachomatous inflammation Intense	Inflammatory thickening of the upper tarsal conjunctiva with more than half of the normal deep tarsal vessels obscured.
TS = Trachomatous Scarring	Scarring of the tarsal conjunctiva (fibrosis).

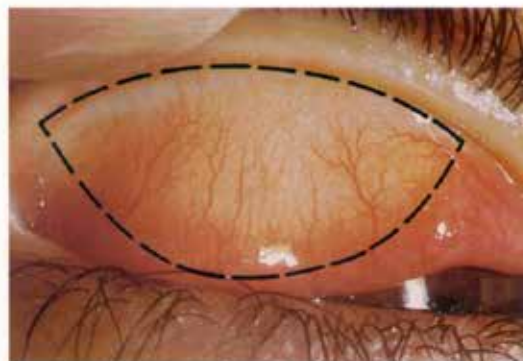
Grade	Description
TT = Trachomatous Trichiasis	At least one eyelash rubbing on the eyeball or evidence of eyelash removal. This should be in conjunction with evidence of trachomatous scarring.
CO = Corneal Opacity	At least part of the pupil is blurred or obscured

TRACHOMA GRADING CARD

- Each eye must be examined and assessed separately.
- Use binocular loupes (x 2.5) and adequate lighting (either daylight or a torch).
- Signs must be clearly seen in order to be considered present.

The eyelids and cornea are observed first for inturned eyelashes and any corneal opacity. The upper eyelid is then turned over (everted) to examine the conjunctiva over the stiffer part of the upper lid (tarsal conjunctiva).

The normal conjunctiva is pink, smooth, thin and transparent. Over the whole area of the tarsal conjunctiva there are normally large deep-lying blood vessels that run vertically.



Normal tarsal conjunctiva (x 2 magnification). The dotted line shows the area to be examined.

TRACHOMATOUS INFLAMMATION – FOLLICULAR (TF): the presence of five or more follicles in the upper tarsal conjunctiva.

Follicles are round swellings that are paler than the surrounding conjunctiva, appearing white, grey or yellow. Follicles must be at least 0.5mm in diameter, i.e., at least as large as the dots shown below, to be considered.



Trachomatous inflammation – follicular (TF).

TRACHOMATOUS INFLAMMATION – INTENSE (TI): pronounced inflammatory thickening of the tarsal conjunctiva that obscures more than half of the normal deep tarsal vessels.

The tarsal conjunctiva appears red, rough and thickened. There are usually numerous follicles, which may be partially or totally covered by the thickened conjunctiva.



Trachomatous inflammation – follicular and intense (TF + TI).

TRACHOMATOUS SCARRING (TS): the presence of scarring in the tarsal conjunctiva.

Scars are easily visible as white lines, bands, or sheets in the tarsal conjunctiva. They are glistening and fibrous in appearance. Scarring, especially diffuse fibrosis, may obscure the tarsal blood vessels.



Trachomatous scarring (TS)

TRACHOMATOUS TRICHIASIS (TT): at least one eyelash rubs on the eyeball.

Evidence of recent removal of inturned eyelashes should also be graded as trichiasis.



Trachomatous trichiasis (TT)

CORNEAL OPACITY (CO): easily visible corneal opacity over the pupil.

The pupil margin is blurred viewed through the opacity. Such corneal opacities cause significant visual impairment (less than 6/18 or 0.3 vision), and therefore visual acuity should be measured if possible.



Corneal opacity (CO)

TF:- Give topical Treatment (e.g. Azithromycin)

TI:- Give topical and consider systemic treatment.

TT:- Refer for eyelid surgery.



**WORLD HEALTH ORGANIZATION
PREVENTION OF BLINDNESS AND DEAFNESS**



Support from the partners of the WHO Alliance for the Global Elimination of Trachoma is acknowledged.

Figure: Grading of trachoma

3.3 Examining patients for TF and TI

First, explain to the person who is to be examined, or their parent, the reason for the examination and what the examination will involve.

To examine a young child, obtain the help of an assistant. This may be the child's parent. When many children are to be examined, however, it is usually easier to have a dedicated assistant who understands your requirements and is skilled at handling children. Instruct your assistant that, if necessary, the child should be held very firmly: if the child is unable to move his or her head, arms or legs, the examination can be completed quickly and painlessly. The child should sit on the assistant's lap facing you, with his or her back against the assistant's front. The assistant should hold the child's head against his or her

The right upper eyelid is then turned over (everted). To do this, instruct the subject to look down and not to close his or her eyes. Use the thumb and first or second finger of your right hand to gently pull downwards on the subject's lashes, and place the little finger of your left hand (or a small, blunt, smooth tool, such as a matchstick) at the upper edge of the tarsal plate.

Fold the lid backwards over the tool or your finger, and keep the lid everted.

Examine each eye separately, under adequate lighting (either daylight or a torch; daylight and binocular loupe preferable). Examine the right eye first, then the left eye. If you always do this, it helps to ensure that you do not forget in which eye you saw an abnormality.

The tarsal conjunctiva is pink, smooth, thin and transparent; there are normally large, deep-lying blood vessels that run vertically over its entire area.

Repeat this procedure for the left eye.

3.4 Examining patients for TT

First, explain to the person who is to be examined, or their parent, the reason for the examination and what the examination will involve. To examine an adult or an older child, you and the subject of the examination should sit or stand so that your heads are at approximately the same level. Examine each eye separately. Push the upper eyelid of the right eye slightly upwards to expose the lid margin, and look carefully to see if there is TT. Then look carefully at the cornea to see if there is CO. If either of these signs is present, visual acuity must also be measured. You should do this after you have finished examining both eyes. Repeat this procedure for the left eye.

Also ask for and check for evidence of recent removal of in-turned eyelashes.

3.5 Treatment of TF and TI

Children over one year of Age – Azithromycin

Preparation: 500mg tablet or 40mg/ml powder reconstituted with water as 200mg/5ml suspension

Administration: orally as a single dose 20mg/kg (maximum dose 1000mg)

6kg to <10kg	160mg / 4ml
10kg to <15kg	240mg / 6ml
15 kg to <20kg	400mg / 10ml

20kg to <30kg	500mg / 1 tablet / 12.5ml
30kg to <40kg	750mg / 1 ½ tablets
over 40kg and adults	1000mg / 2 tablets

Single dose azithromycin is contraindicated only in the case of a known allergy. In cases where allergy to azithromycin is present, doxycycline or tetracycline is recommended.

Children under one year of Age – tetracycline 1% eye ointment applied topically twice daily for 6 weeks.

Screening of other family members Request the family to bring all other children to the clinic for checking trachoma. The adults of that family should be checked for chronic trachoma.

Counselling - Education should be provided to family members about the disease and its transmission. The importance of maintaining good personal hygiene, especially of the face and hands, should be emphasized.

3.6 Treatment of TT

Surgery: For treatment of TT, WHO recommends the bilamellar tarsal rotation procedure. Other surgical techniques have been used as well. Trained ophthalmologists are available in each district for TT surgery. The MOS and PMOAs are expected to refer identified cases to these ophthalmologists for surgery. Epilation (plucking of the offending eye lashes using epilation forceps / tweezers) can be offered to persons who refuse surgery. Epilation can be done by the PMOAs and will need to be repeated as per need.

4. Trachoma Elimination

4.1 Targets for Trachoma Control

Elimination of trachoma as a public health problem is defined as:

1. The proportion of persons ≥ 15 years of age suffering from TT “unknown to the health system” $< 0.2\%$ in each district of trachomatous (approximately 1 case per 1000 total population)
2. The proportion of children 1-9 years of age suffering from TF/TI $< 5\%$ in each district, sustained for at least two years in the absence of ongoing antibiotic mass treatment, in each formerly endemic district; plus
3. Presence of a health system able to identify and manage new trachomatous trichiasis cases
 - a. defined strategies,
 - b. appropriate financial resources to implement those strategies

4.2 SAFE Strategy

Elimination programmes in endemic countries are being implemented using the WHO-recommended SAFE strategy. This consists of:

- Surgery to treat the blinding stage of the disease (trachomatous trichiasis);
- Antibiotics to clear infection, particularly mass drug administration of the antibiotic azithromycin
- Facial cleanliness; and
- Environmental improvement, particularly improving access to water and sanitation.

A multi-pronged approach is required for SAFE Strategy implementation. The key activities include:

1. Trachoma surveillance in entire country
2. TT management in all districts
3. IEC in high burden districts aimed at SAFE components

4.3 Implementation of SAFE strategy

The medical officers and PMOAs should ensure that the MPWs, ANMs and other Community-Based Workers conduct following activities in their areas -

- During VHNDs, Diarrhea Fortnight and other meetings with Panchayat Members, school teachers, mahila-mandals / women group and other well-known and respected people / leaders of the village, MPW should convey following key messages:
 - o Trachoma is an important cause of blindness
 - o Spread of trachoma can be prevented by ensuring face and personal hygiene
 - Ensuring water is available in households
 - Taking baths
 - Washing hands after doing chores, before eating food etc
 - o Cleanliness of surroundings is as important as cleanliness inside house
 - o Use of sanitary latrines also prevents spread of disease
 - o Trachoma in adults can be treated by surgery
 - o The danger of open defecation. Even one open defecation site in the community may put all community members at risk for trachoma
 - o Sharing towels or cloths can put their loved ones at risk of infection if someone has trachoma. The bacterium that causes trachoma is easily spread through towels, bed sheets, clothes and wash cloths.
- MPW should encourage people to
 - o Promote face washing among families – especially children. Even small amounts of water can be used to clean children’s faces throughout the day so that flies are not attracted to them.
 - o Towels and cloths should be washed with soap to kill trachoma-causing bacteria.
 - o Every household to maintain access to a latrine
 - o Community-wide cooperation and vigilance to encourage community wide sanitation
- Ensure that MPW should request people to
 - o Improve water source availability in households
 - o Help improve cleanliness of village
 - o Take up “Swachh Bharat”
- MO in monthly meeting should take information about the health education activities conducted by MPWs in each village.
- MO should receive report of suspected TT cases referred from Subcentre to the PHC/ CHC / Surgical center. They should examine and confirm the diagnosis of referred cases reaching at the PHC/CHC..
- Ensure MPWs to maintain the TT register.

5. Recording and Reporting formats

Register will be maintained by the Medical Officer at the PHC/CHC/ SDH in co-ordination with PMOA if available. The reports from the sub-centres under the jurisdiction of the respective Block (PHC/ CHC) will be collated by the MO and send to the respective DPO/DPM.

5.1 Trachoma Register for PHC, and CHC

S.No.	Date	Name of Patient	Phone No	Age	Gen der	Address	TF/TI (1-9 year)		TT (>= 15 year)		
							TF/TI	Treated	TT	Epilated	Referred
							Y/ N	Y/ N	Y/ N	Y/ N	Y/ N
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

5.2 Monthly Trachoma Surveillance and Activity Report for CHC / PHC

Name of District: _____ Name of Facility: _____ Type: CHC / PHC _____

Month of reporting Year: 2019 / 2020 /

SR.	INDICATOR	NUMBERS
1	No. of activities related to Trachoma Elimination (including activities in sub-centres)	
1a	Health talks/ education in community related to environment sanitation and facial hygiene	
1b	Health talks / education in schools related to facial hygiene and environmental sanitation	
1c	Co-ordination with other Government sectors (WASH etc)	
1d	Others _____	
2	Trachoma Cases seen at PHC or CHC *	
2a	No of cases (>= 15 years of age) with Trachomatous Trichiasis (TT)	
2b	No of TT cases epilated	
2c	No of TT cases referred for surgery	
2d	No of children 1-9 years age diagnosed with active Trachoma (TF/TI)	
2e	No of TF/TI cases who received treatment with Azithromycin/ tetracycline	
3	Whether Azithromycin tablets available at the center	Yes / No
4	Whether IEC material is available/ displayed at the center	Yes / No



ट्रेकोमा (रोहे/कुक्करे व परबाल)



रोहे/कुक्करे एक संक्रामक रोग है। यह आँख की पलकों को प्रभावित करता है। बाद में पलक अंदर की तरफ मुड़ जाती है। पलक के बाल कार्निया (काली पुतली) पर रगड़ने लगते हैं तथा उसको नुकसान पहुंचाती हैं। परबाल ज्यादातर 15 साल से बड़ी उम्र के लोगों में होता है।

ट्रेकोमा (रोहे/कुक्करे) को फैलाने वाले कारक

- वातावरण तथा व्यक्तिगत साफ-सफाई की कमी
- पानी की कमी
- अपर्याप्त शौचालय और स्वच्छता की सुविधाओं की कमी

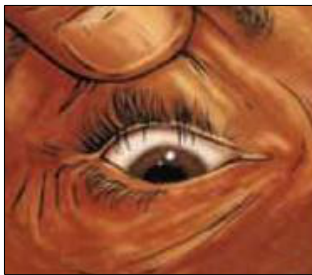
ट्रेकोमा (रोहे/कुक्करे व परबाल) के लक्षण

- पलक अंदर की तरफ पलट जाती है व पलक के बाल कार्निया (काली पुतली) पर रगड़ने/चुभने लगते हैं।
- व्यक्ति को लगता है जैसे आँखों में कुछ बाहरी कण गिरा हुआ है।
- जब पलकों को झपकते हैं तो उनमें दर्द होता है
- आँखें लाल रहती हैं और उनमें से लगातार पानी आने लगता है।
- पलक के जो बाल आँखों में चुभ रहे होते हैं उन्हें चिमटी से निकलाने पर राहत मिलती है।

ट्रेकोमा की रोकथाम

- रोहे से बचने के लिए चेहरे को धोने के साथ-साथ व्यक्तिगत साफ-सफाई रखनी चाहिए।
- आस-पास का वातावरण को स्वच्छ रखें। ताकि मक्खियाँ पैदा न हो सकें।
- अपने परिवार के प्रत्येक सदस्य के लिए अलग तौलिया, चादर आदि रखें और उनको साफ रखें।

सेफ (SAFE) कार्यनीति द्वारा ट्रेकोमा (रोहे/कुक्करे) का उपचार



S—(सर्जरी) अंदर की पलक की सर्जरी



A—एंटीबायोटिक दवा के इस्तेमाल द्वारा



F—(फेसियल क्लीनलीनेस) बार-बार चेहरे को धोना



E— (एन्वायरमेंटल सैनिटेशन) स्वच्छ वातावरण

रोहे की रोकथाम के लिए व्यक्तिगत साफ-सफाई और आसपास के वातावरण की स्वच्छता सर्वोत्तम उपाय है।



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