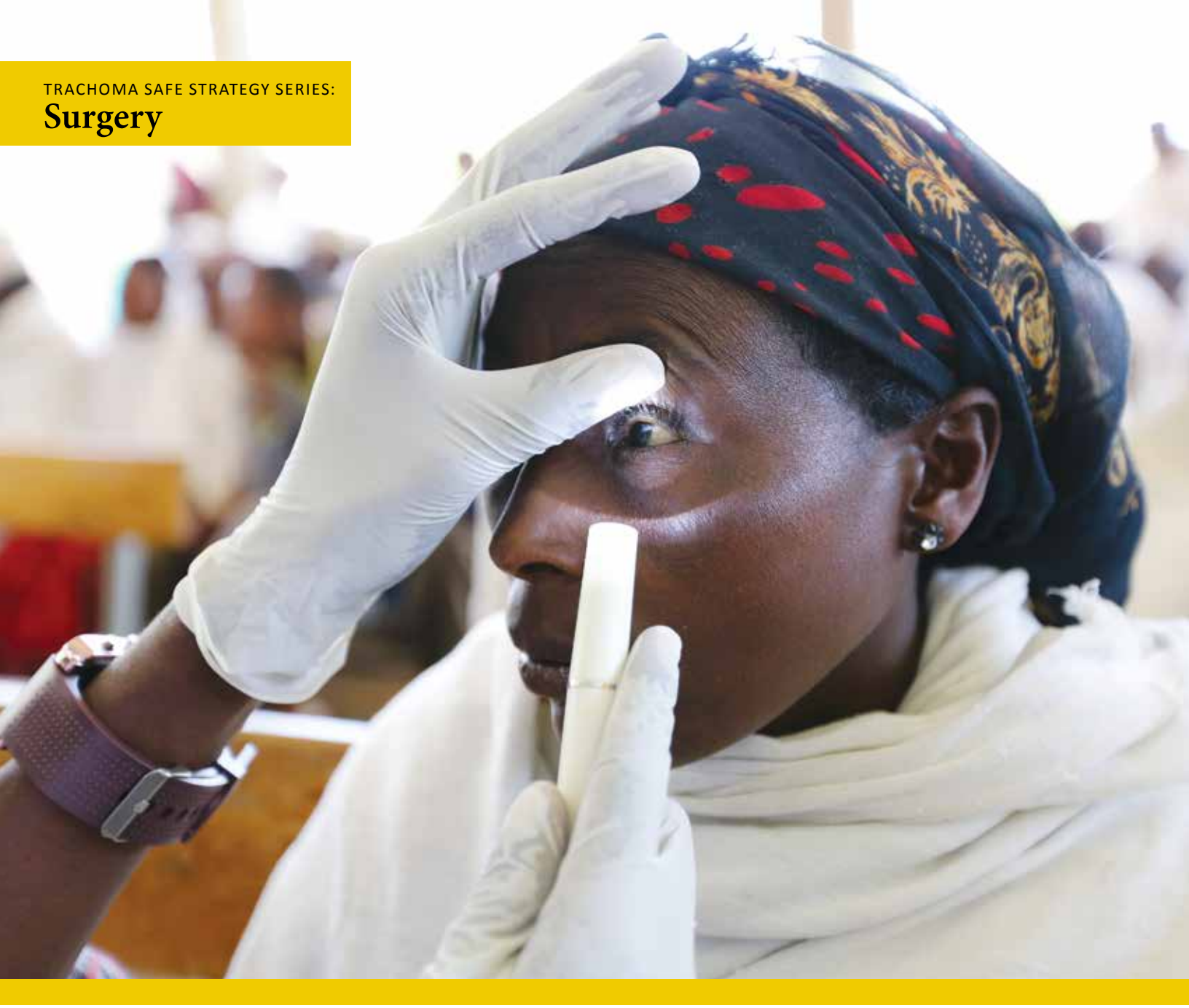
TRACHOMA SAFE STRATEGY SERIES:
**Surgery**



# Organizing trichiasis surgical outreach

A preferred practice for program managers

ICTC International Coalition for Trachoma Control

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Views represented are the preferred practices of the coalition and not necessarily the official views of individual member organizations or agencies.

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**Front cover:** A woman is examined by a member of a surgical team in Oromia, Ethiopia. Photo: Antonio Fiorente/The Fred Hollows Foundation www.hollows.org.au

# Foreword

Countries, partners, and donors are committed to the global elimination of blinding trachoma by 2020. Achieving this public health milestone requires more than funding; it requires health personnel with the right mix of skills, and well supported and managed health systems.

A key component of elimination is to reduce the number of unmanaged trachomatous trichiasis cases to less than 1 per 1,000 population in affected areas. This will require not only a large increase in the number of surgeries performed, but also improvements in the quality of surgery and in the efficiency of surgery provision programs. It also will require that we make special efforts to reach out to women and the most marginalized populations, who are disproportionally affected by trichiasis (TT).

Current estimates suggest that up to eight million individuals may need trichiasis surgery. Various approaches to providing trichiasis surgery have been tested. In many settings, trichiasis surgery is offered in static centers, where patients can present for trichiasis surgery at their local health center at any time. However, this approach has not significantly reduced the backlog.

The consensus from the Global Scientific Meeting on Trachomatous Trichiasis **(Figure 1)** was that there is a need to encourage the use of surgical outreach campaigns to reduce the trichiasis surgery backlog in a swift and efficient manner. The current preferred practice draws on 9 case studies, undertaken in Ethiopia (3), Kenya (1), Mali (1), Niger (1), Tanzania (2), and Uganda (1), as well as experiences of those who have been involved in organizing TT outreaches in Africa.

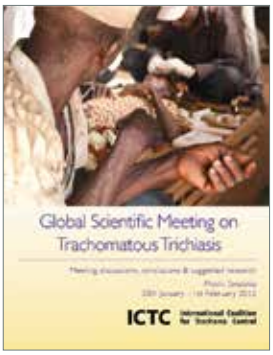



**FIGURE 1**
Global Scientific Meeting on Trachomatous Trichiasis report, 2012

The goal of this preferred practice is to provide a framework for how to conduct an effective and efficient trichiasis surgical outreach program. It addresses all aspects of conducting an outreach, from mobilizing patients to planning and organizing the outreach, surgical counseling, post-operative care, and recording and reporting program outputs.

**BOX 1**
**Reference material manuals**

| |
|---|
| The Global Scientific Meeting on Trachomatous Trichiasis |
| LSHTM trichiasis surgery DVD |
| WHO Trichiasis Surgery for Trachoma (yellow manual) |
| Planning for the elimination of trichiasis manual |
| Training of trainers for trichiasis surgery (includes use of Head Start) |
| Supervision guidelines for trichiasis surgery |
| List of TT instruments & consumables for a team plus the unit cost (or per 50 cases) |
| Monitoring outcome of trichiasis surgery (including standard form) |

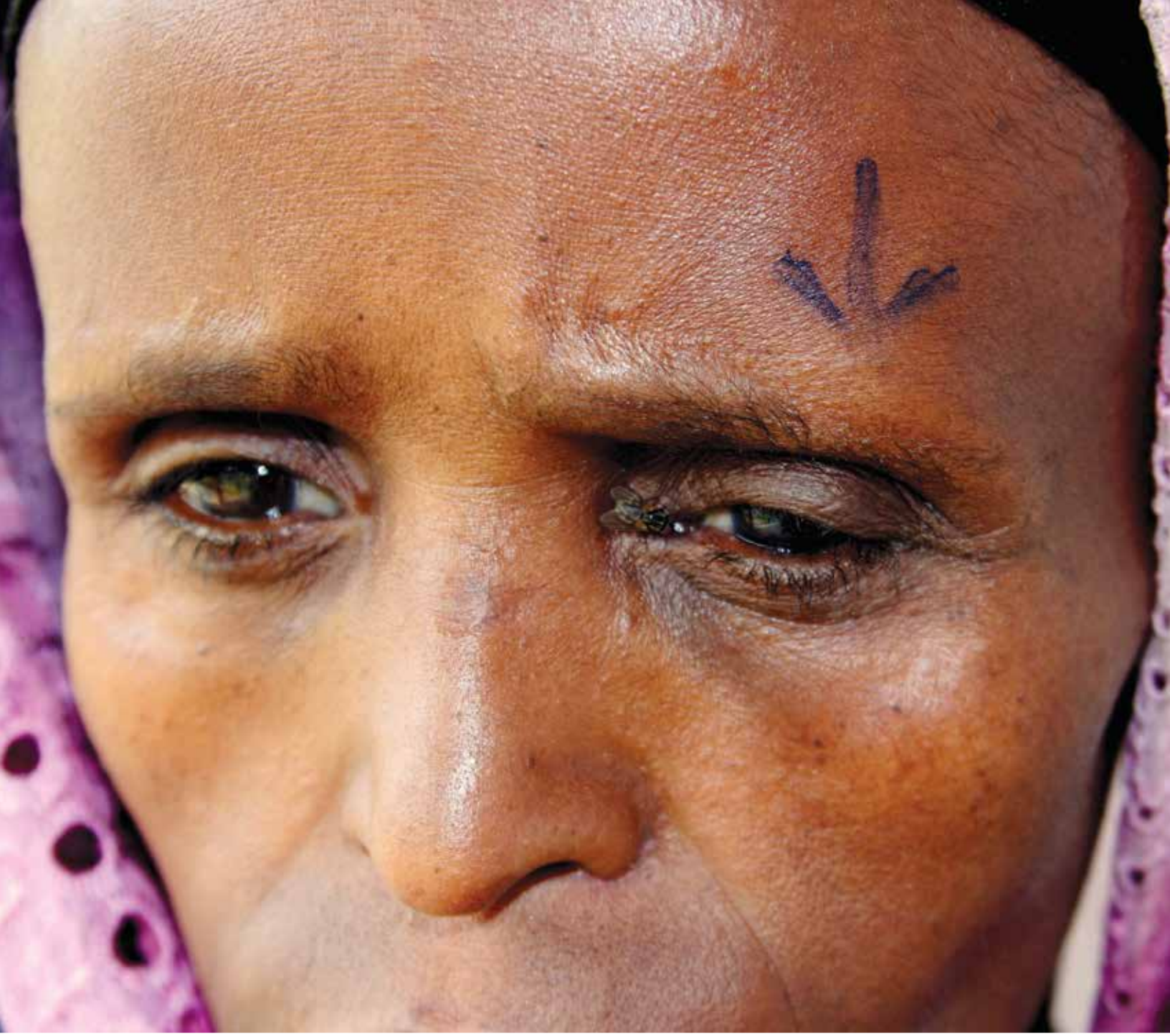
This document is not prescriptive. Context varies by country and in large countries there are likely to be differences noted across regions that influence how trichiasis outreach is planned, implemented and reported. Thus, we hope you will adapt these tools to your environment.

It is essential that those who use this preferred practice also have access to other trichiasis management material **(Box 1)**. We refer to different manuals whenever appropriate, rather than repeating information. Finally, it is important to recognize that approaches for trichiasis outreach are not rigid and that new innovations may be found to address the challenges in delivering trichiasis surgery.

We ask you to help us by letting us know about your ideas and experiences. Please contact ICTC at trachomacoalition@gmail.com.

With thanks,

Martin Kollmann (ICTC Chair) and Emily Gower and Amir Bedri Kello (ICTC trichiasis management practices and capacity strengthening working group Co Chairs)



An Ethiopian woman following an examination by a local health worker at a clinic in Ressa kebele, Amhara. The arrow above her eye indicates which eye needs to be operated on. Photo: The Carter Center/K. Callahan

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A surgeon preparing to be assessed for certification in Niger. Photo: The Carter Center/Aryc W. Mosher

# 1. Organizational activities before the outreach

Adequate planning in advance of the outreach campaign is essential for success. There are a number of factors to consider, highlighted in the sections below.

## How to decide where/if outreach needs to take place in a 'district'

This preferred practice is intended to provide guidance in situations where TT remains a public health problem. Evidence indicates that it is necessary for surgical teams to travel out to remote locations in order to bring services to the majority of TT patients. Most patients cannot make their way to the hospitals. As long as a significant backlog exists, teams will need to travel to rural locations.

Planning should be done for a year at a time and be based on the annual intervention objectives for the district. It is essential to have a map of the area to be served, showing roads and facilities. If there is evidence of 'pockets' of TT either from baseline or impact surveys or health records, then it makes sense to offer outreach close to these pockets. If TT is expected to be spread evenly through a district, outreach should be placed in sites so that each sub-district has access to at least one. Generally, one should assume that patients will not walk more than 1-2 hours to access an outreach. Depending on the number of patients expected to reside in the district and the number of operations planned (the annual intervention objective), outreach might be offered at each site one or more times per year. The outreach need not be limited to health facilities, but can also take place at a school or another community building.

## Liaising with local health, political, and religious authorities

Once sites have been selected for outreach, local health authorities should be contacted to ensure their cooperation and participation. Political authorities may also need to be contacted. Be prepared to explain the purpose of the outreach, how many days it will take and exactly what you will want in terms of participation from the authorities. They will probably be in a good position to suggest ways to advertise the outreach.

One of the key steps in planning a successful campaign is having a good mobilization plan that allows the team to know how many patients to expect at the outreach. Because mobilization is so important, this essential topic has its own dedicated section **(Section 2)** within this guide.

## Estimating the number of patients expected for an outreach

Estimating the number of patients expected for an outreach is best done after mobilization efforts have been undertaken. As noted in the mobilization section **(Section 2)** the mobilization effort should lead to identification of trichiasis patients in communities in the catchment area of the planned outreach. While it is likely that some patients, even after identification and counseling, will fail to turn up for intervention, planning should be based on the total count of patients generated during the mobilization efforts.

The estimate of trichiasis patients expected for an outreach should be used to determine the following:

- The number of outreach teams and the composition of the outreach team
- The amount of consumables and number of instrument sets to prepare
- The number of days to be spent on outreach

## Requirements for equipment, instruments, and consumables

Requirements for equipment, instruments, and consumables will depend partly on the staff included in the team and the number of surgeons. Every outreach will require the following:

- Equipment for sterilizing instruments (described in section 8.2 in WHO Trichiasis Surgery for Trachoma)
- Working torch and spare batteries: at least one per examiner and two spares per team
- Water and soap for washing hands and instruments (if not available at the site)
- Operating instruments sets, described in section 7.2 in **WHO Trichiasis Surgery for Trachoma**. Having 3 or more sets per surgeon can eliminate time spent waiting for sterilization between patients. It is best to have all instrument sets sterile before you go to the site.
- Sufficient supplies of consumables (sutures, blades, etc., described in section 7.2 in **WHO Trichiasis Surgery for Trachoma**).

- Drums of sterile towels, drapes, gowns and masks, and gauze bandages. These are usually packed and sterilized before going out to the site. Long handled forceps are very good for handling them.
- Logbooks and forms (or mobile devices) for recording operations, and referral forms **(see annex)** for patients who need them
- Antibiotics to provide patients after surgery and high quality epilation forceps for those who refuse surgery

## Requirements for the venue

The most basic requirement is a clean room with good light, large enough to accommodate one or more operating tables, an operating trolley and an instrument table, allowing space for patients and staff to move around without bumping into equipment or each other. The room should be secured in advance to avoid conflicts with other activities at the site. This is discussed in more detail in section 7.1 in **WHO Trichiasis Surgery for Trachoma**.

## Staffing requirements

Determining the staffing needs requires considering the different tasks that must be undertaken during an outreach. The basic tasks include:

- Registration
- Examination and selection of patients
- Counseling
- Surgery
- Escorting patients in and out of the surgery room
- Sterilization
- Data recording

One person can take on more than one task as some of these tasks are of short duration. For example, the person doing sterilization may also help in the surgery room or the counselor may help escort patients on and off the table. Some tasks can be done by someone at the outreach site. The key is to make sure that everyone knows who is responsible for which task. As some personnel need to be released from duties at their facility, planning in advance and communication with supervisors is critical.

## Planning what to do with patients with other (non trichiasis) eye problems

In many communities, other visually impairing conditions, such as cataract, may be more common than trichiasis. Having a plan for dealing with such cases is essential. Having a plan, however, does not require offering cataract (or other) surgery at the outreach. Safe cataract surgery requires a far more sophisticated infrastructure than trichiasis surgery and trying to provide it in an inappropriate environment can have catastrophic results. The trichiasis outreach team must have detailed plans for what they will tell patients with cataract, including, at a minimum where and when they can receive treatment and how much it will cost. This means coordinating ahead of time with an eye service that offers cataract surgery. An example of a referral form is provided in the annex, but it is not enough just to hand this to patients with cataract. The form needs to be made appropriate to the local situation and an organized system for referral has to be set up before outreach takes place. The balance between providing only trichiasis services and services for other eye conditions requires careful consideration; it will depend to some extent on whether trichiasis surgeons are trained eye workers with experience in dealing with all eye conditions and should only be considered if proper infrastructure is available at the TT outreach site.

KCCO's Fortunate Shija meets with a Masai microfinance leader/ trainer following a mobilization of Masai women for trichiasis outreach undertaken in Ngorongoro District, Tanzania. Photo: Ellen Crystal/Seva Canada

# 2. Mobilization activities before the outreach

It is well recognized that implementing strategies to increase the use of trichiasis surgical services is key to reducing the trichiasis backlog in the community. There are no 'magic bullets' to mobilization; instead, national and local programs need to use available evidence to plan mobilization activities and to think strategically and critically. Furthermore, programs need to consider that as some barriers to use of services are addressed, others may become apparent. That means mobilization efforts may need to evolve with time; new techniques for mobilization may be required, especially as fewer patients remain.

Mobilization needs to be considered from the standpoint of a pyramid with the base being 'awareness', the next layer being 'access', and the third layer being 'acceptance'. Each of these needs to be addressed, starting from the bottom and working up.

The steps needed to mobilize people with trichiasis to attend an outreach are many and require good organizational capacity of those implementing the programs.

## Generating awareness

In order to identify patients in need of trichiasis surgical services, the community must first be aware that trichiasis is a problem. They must also understand that it can be treated (managed) and where to go for treatment. Awareness by the population is necessary but not sufficient for increasing the use of trichiasis services.

Strategies to generate awareness need to be built around the local context in which people like to receive trusted information. Thus, what works in Nigeria may be different from what works in Malawi. Some methods that have been used to raise awareness successfully are listed in **Box 2**. Key principles include:

- Identify the most effective means of communicating to the people with the greatest need. Mass media (radio and TV) can reach large audiences but may not penetrate to the population 'at the end of the road', often those most in need of trichiasis intervention.
- Determine who is most trusted to provide information about trichiasis. The messenger is just as important as the message. We assume that health workers are good messengers; in fact, other people within the community are often more trusted.
- Clearly define the messages that you want delivered. It is impossible to get everyone to understand everything; what simple messages do you want everyone to know? These messages will usually be something along the lines of: [1] trichiasis can be managed successfully and [2] [here] is where to find service.
- Provide more detailed messages to people with trichiasis and their family members. There are often misunderstandings of trichiasis surgery such as the need to avoid work for weeks. Messages for people with trichiasis and their families need to provide accurate information and also correct misunderstandings that may exist in the community. Ideally, these messages should be provided to one family at a time, giving them the opportunity to ask questions and voice concerns.

**BOX 2**

### Methods of generating awareness

- Traditional rulers, opinion leaders and community-based organizations
- Community radios
- Announcements at public gatherings: market days
- Public address systems: megaphones, town criers
- Religious leaders
- Locally trusted individuals
- Microfinance leaders
- Posters at health units
- 'Eye ambassadors': community members

## Creating access to trichiasis management

Bringing the surgical service close to the patient is critical to success; in virtually all settings this means providing an outreach service to individual villages or small groups of nearby villages. This preferred practice assumes that outreach will be organized accordingly. Nevertheless, just providing the surgical service close to the community, by itself, is insufficient to ensure that people in need of trichiasis services actually receive them.

The outreach coordinator (who is likely also to be responsible for organizing the mobilization efforts) should use a map and population figures to identify communities for engagement and determine where outreach camps can be conducted. Generally, a 'hub and spoke' system works best in which the hub is the site where outreach surgery is to be carried out, and the spokes are the lines to communities where identification and referral of trichiasis patients are to be done.

Ensuring access to the trichiasis services requires identification of those in need of these services. There are different ways to do this, and there is not just one 'right way'; **Box 3** lists a few options. Although it is labor intensive, it may require someone going from house to house to look for people with trichiasis. As programs mature, it is likely that this approach will be needed to find the last remaining cases. An example of a program for house-to-house case finding is described in **Box 4**.

Whatever methods are used to identify trichiasis patients, it is important that those doing the identification (health workers or community members) keep a list of people who need services. This list of known trichiasis patients at the community level serves multiple purposes. First, the number of patients on the list should be communicated to the coordinator for planning the outreach: determining the size of the team, amount of consumables, and days needed in the field. Second, after the campaign, the team should compare the number expected to the number who actually turn up, in order to monitor uptake of services. Examples of data collection forms are provided in the annex. Finally, when patients identified in the community don't turn up for the outreach, they can be revisited, encouraged to attend, and registered in the same system that is used at outreach.

**BOX 3**

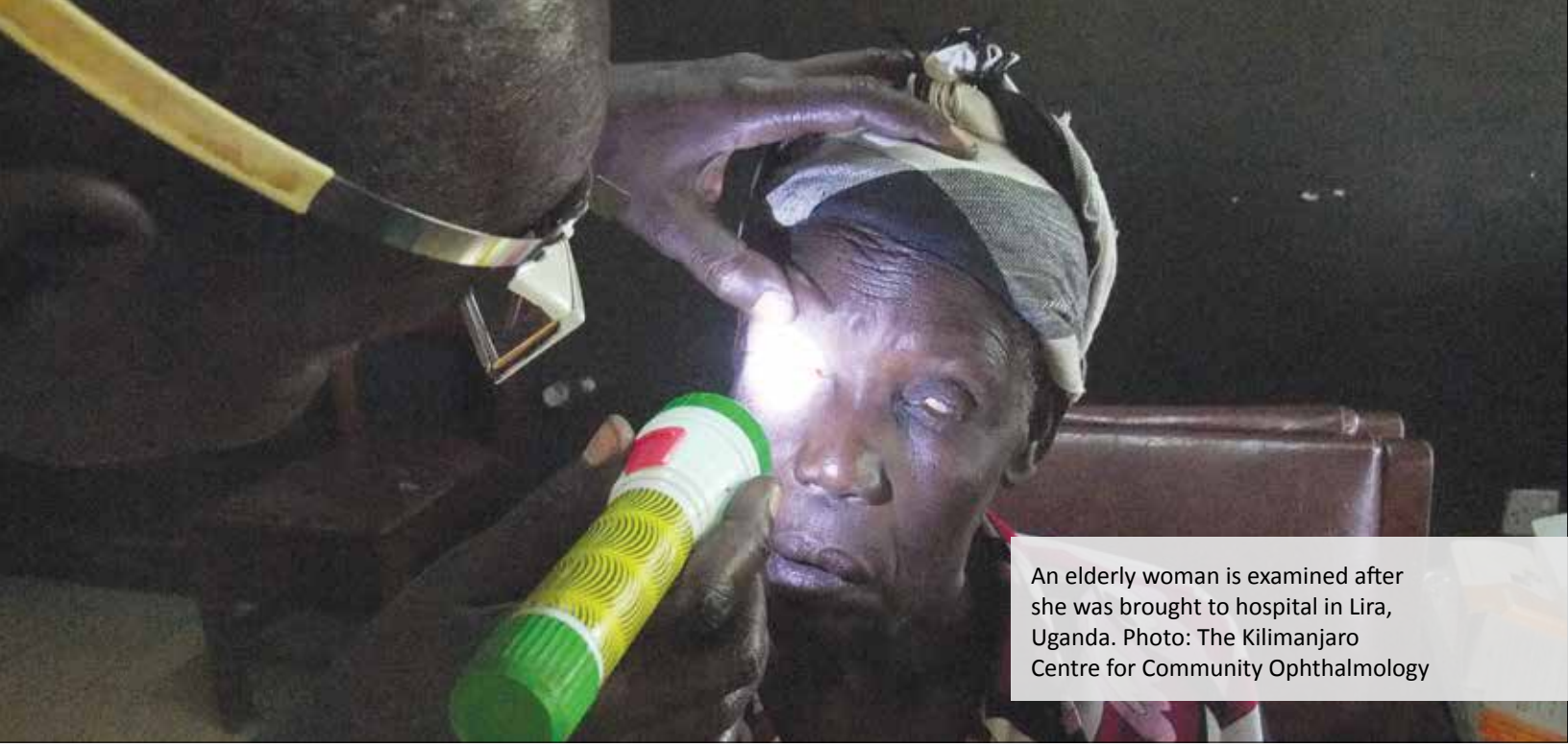
### Some approaches that are used for identifying trichiasis patients

- 'Eye ambassadors': community members, who have been trained to look for TT, visit every household in the village and examine everyone aged 15 and older.
- Women involved in microfinance groups in the community are trained to look for TT and go house to house, providing information.
- MDA providers trained to look for TT screen all community members aged 15+ during MDA provision.
- Health centre workers identify trichiasis patients among those self-presenting to these facilities.
- Trichiasis patients may self-present during cataract outreach campaigns.

**BOX 4**

### Case study: Selection and training of 'Eye ambassadors' in Ethiopia

Selecting the appropriate persons is based on: the ability to read and write the national language (completed at least grade 6), the individual's influence and respect within their community, and preferably member of village administration team or religious leader. Each Kebele (village) leader is given the opportunity to select their own Eye Ambassadors. A half-day theoretical and practical training on trachoma and how to identify trichiasis patients is provided for the Eye Ambassador, including examination using a torch and counseling patients (addressing the main issues that might prevent patients from attending surgery), and how to register all trichiasis patients, including a full address. A series of pictures showing the various types of trichiasis are shown to them and they practice the examination technique and counting of lashes on real trichiasis patients. A registration logbook and torch is provided at the end of the training.



An elderly woman is examined after she was brought to hospital in Lira, Uganda. Photo: The Kilimanjaro Centre for Community Ophthalmology

**BOX 5**

### Misconceptions about TT surgery: an example from Ethiopia

In our area of Ethiopia almost all of the trichiasis patients who participated in a discussion on barriers to use of trichiasis surgery believe that the surgical wound needs lots of time to heal (up to 2 months) during which they should not go outside of their house to avoid sunlight exposure and should not be involved in productive activities such as farming and cooking. Women, in particular, believe that they should not get near fire or smoke for at least 2 weeks and up to a few months as this 'can result in recurrence'. Some trichiasis surgeons have admitted they share these beliefs and advise that patients should avoid cooking to avoid exposure to smoke and fire, as they believe these might result in post-operative trichiasis. Some patients avoid surgery as they cannot stop working or cooking even for a few days.

Most trichiasis patients and their relatives strongly believe that the surgery is very painful, and they do not know that it is done under local anaesthesia. So they prefer to just keep epilating. We have also realised that there are considerable number of patients with recurrent trichiasis or lid closure defect in the community. Most trichiasis patients raised the issue that they think that there is no point in having the surgery and undergoing considerable pain if their trichiasis is going to return like it happened to their neighbour and people in their villages.

Health workers or community members responsible for identifying and mobilizing trichiasis patients require some training and may also benefit from:

- Having a few (laminated) photos of trichiasis showing cases of varying severity, from a few eyelashes touching the eyeball to many eyelashes touching the eyeball
- Having a torch or other device to assist with trichiasis identification
- Having pre-scripted messages for counseling patients with trichiasis
- Using mobile phones to communicate relevant information (such as the number of TT patients to expect) to the outreach coordinator.

## Encouraging patients with trichiasis to accept interventions

Effective counseling is critical to improve uptake of trichiasis services; the first opportunity for one-on-one counseling is in the community by the person identifying trichiasis patients. At the community level, counseling should focus on overcoming the known barriers and misconceptions about use of trichiasis surgery services in the area. Health workers who have experience with trichiasis will often be aware of these. An example of misconceptions is given in **Box 5**.

The decision to accept surgery is rarely made by the individual with trichiasis alone. For women in most trachoma-endemic countries, the decision to seek

trichiasis intervention usually rests with the husband; for this reason, counseling needs to be carried out with the family as well as with the patient. This is easiest to do if identification of trichiasis patients occurs in the community.

Community-based counseling may need to be undertaken on more than one occasion; the first occasion should be when initial identification of the patient is made. This may be the first time the family is aware of interventions for trichiasis or aware of the risk of vision loss due to trichiasis. Key messages are given in **Box 6**. While those identifying trichiasis patients may feel that they need to provide a lot of information (and there is a lot of information), it is important to recognize that people can only absorb small amounts of information at one time. Sufficient time should be allocated to listening rather than talking. Listening to the concerns of the family and then providing honest but encouraging answers will help build respect and trust, two vital emotions for acceptance of intervention to occur. The second community-based opportunity for counseling would likely arise either just before or on the day that outreach is to occur. At this time a visit to the family to remind them and possibly to assist transport needed to reach the surgical site will also provide an opportunity for further counseling.

Community members responsible for identification and counseling may get discouraged if people refuse surgery; they should not. The decision to have surgery is not an easy one; a kind yet persistent attitude is needed. Multiple interactions and counseling before the outreach date may be needed to ensure that these individuals and their families have additional opportunities to accept surgery.

Finally, it is critical that patients and families know exactly where to report for surgery and when. It's always a good idea to get them to repeat the information to ensure that it is clearly understood.

**BOX 6**

## Key messages for people with trichiasis

Whoever provides counseling information will obviously need to understand the local situation in order to provide accurate information. Read the messages carefully and be prepared to modify as needed for the local situation.

**Basic messages to provide anyone with trichiasis**

Your eyelashes have turned inward and are rubbing your eye, causing pain/discomfort.

The rubbing can damage your eye and lead to loss of vision or blindness.

There is a surgical procedure that can be done to return the eyelashes to their normal position and stop the rubbing of the lashes.

The surgical procedure:

- Is done by trained health workers and is available (place and date)
- The cost of the surgery is _____
- For surgery, the patient will have a needle 'stick' (injection) in the eyelid to make the area numb
- The patient needs to lie flat and still throughout the procedure, which takes about 20 minutes per eye.

After surgery the eye will be bandaged for 24 hours. If both eyes are operated, someone will need to guide the patient home (depending on the outreach location).

After the bandage is removed the next day, the patient can resume all normal activities.

Follow up after surgery is important and this may require 3 visits; day after surgery, 1 week, and 3-6 months.

A Trichiasis patient being screened prior to surgery in Wolkite, Ethiopia. Photo: Nigel Pedlingham

# 3. At the outreach site

If mobilization has been effective there may be a lot of people waiting for assessment and possible treatment on the first morning of an outreach campaign. Ensure that the crowd of people can hear the person leading the campaign, who should loudly (ideally with a loudspeaker) introduce himself and the team and explain how the outreach will be run. He should emphasise that the service offered is trichiasis surgery for those with trachomatous trichiasis; advice and some basic management of other conditions will be provided where possible.

## Patient flow

Logical patient flow is important for ensuring that all patients who present to an outreach site are identified and receive services on the correct eye(s). The first time that a site is to be used for outreach, a visit should be made in advance to plan how the facility will be used. During this advance visit, the team should identify which room(s) will be used for surgery and should lead a discussion with local staff to inform them how the outreach team works, the desired patient flow, where to conduct counseling and registration, and where sterilization can be done. The team should also identify the surgical room(s) and ask the local staff to do a thorough cleaning of the room the day before the team arrives for the outreach.

## Triage

The patients should be arranged into a well-organized queue. They can then be quickly and efficiently triaged to separate patients with trichiasis from patients with other eye conditions. Those with trichiasis should be sent to a special area for full examination and registration. This is particularly helpful if there are many non-trichiasis patients at the outreach site.

## Examination and registration of trichiasis patients

All patients suspected to have trichiasis must be examined as described in section 4-6 in **WHO Trichiasis Surgery for Trachoma**. If trichiasis is present they need to be registered and have specific information collected, ***even if they are not going to have surgery***. This will allow them to be counted towards the elimination goals. The information may be collected in a dedicated logbook, on individual patient records (which will need to be kept by the program in a specially designated binder), or in a specially-designed app for an electronic device. Regardless of the method used for data collection, it is recommended that you collect as much information as possible based on the data on the TT patient form, shown in the annex. These data form the patient record to document the initial clinical findings, the disease management (surgery or epilation), and the follow up.

Once a patient is determined to have trichiasis requiring surgery, he/she needs counseling. The basic messages are provided in **Box 6**. Fitness for surgery must be assessed before a final decision is made to do the surgery as described in section 6 in **WHO Trichiasis Surgery for Trachoma**. Ideally, counseling and assessment should be done in a quiet, private area. However, if there are a large number of patients, group counseling may be more efficient. The steps in the examination and indications for surgery are detailed in sections 4-5 in **WHO Trichiasis Surgery for Trachoma**.

## Consent for surgery

Consent for surgery must be provided by each individual. This is usually obtained by a health worker according to local practices.

Tell the patient about the potential complications of the surgery:

- Bleeding and bruising
- Infection, which may need extra antibiotics
- Over- or under-correction of the eyelid, which might require a second operation
- Recurrence of the trichiasis any time after the operation (in around 10-30% of cases). Use local statistics if they are available.

Always remember to give the patient an opportunity to ask questions. The patient should sign, initial, or fingerprint the TT patient form or some other document that will become part of the record to indicate that he/she agrees to surgery.

Before the operation, the eye that will be operated must be marked with an arrow or with tape, or if both eyes are to be operated then both should be marked. If both eyelids require operation, a friend or relative will be required to guide the patient home.

## What about patients who refuse surgery?

Some patients will refuse to have surgery, even after final counseling. Most importantly, every individual with trichiasis needs to be treated with respect and to be provided some form of intervention. For those with minor trichiasis (just a few eyelashes not rubbing the cornea and no eyelid) epilation has been shown to be as effective as surgery. Eyelashes can be epilated by the team; however, since epilation will need to be carried out on a regular basis, patients and family members need to be taught how to epilate. Ideally, they should be provided a pair of high-quality epilation forceps. Patients should be instructed to wash the forceps with soap before use. Usually it will be a friend or family member who does the epilation, and this person should wash hands with soap before performing the epilation. Individuals who epilate need to be managed in the same way as individuals who receive surgery; that is, they need follow up. Each follow up interaction is an opportunity to provide additional counseling and offer surgery again, particularly for people whose trichiasis worsens, such that they have many eyelashes abrading the eye. To be able to provide follow up, it is essential that the person be registered the same way as one accepting surgery.

## Surgery room

The room does not have to be a special operating room. Surgery can be performed in places like a school classroom or a village hall. Section 7.1 in **WHO Trichiasis Surgery for Trachoma** describes the essential characteristics of a suitable room.

Someone will need to assist the patient to enter the surgery room and lie on the operating bed; after surgery, assistance is needed to leave the room. It is more efficient to have this done by an assistant, rather than by the surgeon. The assistant might be someone from the local health centre or a community volunteer. The assistant should have on clean clothes and be instructed not to touch anything in the surgery room.

The ***sterile equipment table*** should be covered with a sterile cloth and anyone who touches it should have sterile gloves on. This is where all the surgical equipment is laid out neatly so that it is readily available.

The ***stool and operating bed*** should be in a position where good light is available.

A ***rubbish container*** should be used for all clinical waste materials except surgical sharps. This rubbish should be incinerated after use. A ***sharps bin*** must be used for disposing of all sharps, such as needles and blades. It is important that this is conveniently located for the surgeon.

The ***surgeon's sterile trolley*** contains surgical materials to be used for a single patient. The trolley should be covered using a sterile trolley drape. This trolley should be placed at the side of the operating bed, and the contents should be changed after every procedure.

The ***surgical equipment kit*** for trichiasis surgery is described in section 7.2 in **WHO Trichiasis Surgery for Trachoma**.

## Staffing in the surgery room: who needs to be in the room and what are they doing?

The ***surgeon*** is obviously in the room to perform the surgery. Patients will have had counseling; however, the surgeon also has an important responsibility to communicate clearly with the patient once he/she is on the operating bed. The surgeon should explain what is expected of the patient, such as the need to lie still during the surgery. Briefly tell the patient what is happening; for example, 'I will place this drape on your face to keep the area clean', and 'you will feel a small scratch now'. Maintaining communication throughout the surgery helps the patient to remain still during the surgery and helps the patient to have a positive experience which they will convey to other patients with trichiasis.

A surgeon will need some assistance; several surgeons that are operating at the same time can share one or more ***assistants*** who will help with tasks such as leading the patient into and out of the room and getting them comfortable on the bed. The assistant, if trained in sterile technique, can also get surgical equipment and consumables that the surgeon requires during the operation.

A patient is treated by a surgeon in Samburu, Kenya. Photo: CBM

**BOX 7**

### Proper use of an autoclave

- Carefully read and understand the manufacturer's instructions. Follow the instructions exactly.
- There is a danger of transmitting HIV, hepatitis viruses or other infectious diseases if the surgical materials are not properly sterilised and there is also a danger of causing serious injury if the autoclave is not used correctly. To avoid this, good training in autoclave usage and intermittent supervision are required.
- Always ensure there is the correct amount of water in the autoclave before every use.
- Do NOT open the autoclave until the pressure reaches zero.
- Do NOT use an autoclave if parts are malfunctioning, for example, if the pressure does not rise and there is continual escape of steam.

The assistant is also needed to clean the used surgical materials and perform safe instrument sterilization. It is the surgeons' responsibility to teach the cleaner how to properly handle the surgical materials including the cleaning and drying of used instruments and every step of the sterilization.

## Cleaning and sterilization of instruments

Sterilization is the elimination of infectious agents including bacteria, fungi and viruses. This is usually done with steam under pressure in an autoclave or dry heat in a sterilizing oven. Chemical processes and boiling do not usually destroy spores and are not recommended. Some important aspects of sterilization are described in section 8 in WHO Trichiasis Surgery for Trachoma.

Instruments must be thoroughly cleaned after use on each patient, before sterilization, as follows:

- Wearing gloves, place instruments in a solution of 0.5% chlorine. Leave to soak for 10 minutes without touching them
- Move instruments to a bowl containing soap solution, cleaning them thoroughly to remove blood and other debris
- Put instruments in a bowl of clean water in order to remove the chemicals
- Remove instruments and allow to dry thoroughly before sterilizing

At the end of the outreach, the instruments should be oiled either by placing a drop of oil at every joint, or by soaking them for five minutes in an oily solution. This will prolong the life of instruments. Oiling may be also be done any time instruments are stiff during the outreach, after they are dried and before sterilization. Ensure thorough cleaning after oiling to prevent oil entering the surgical wound.

Important issues to keep in mind with an autoclave include the points in **Box 7**.

## Post-surgical counseling and care

Once surgery is complete it must be documented in the patient record; this will usually be done by the surgeon immediately following surgery so that nothing is forgotten. The information to record is included in the TT patient form **(see annex)**. It may go onto an individual paper form for each patient, a large logbook, or be collected digitally.

Ideally there will be someone besides the surgeon to provide post-operative instructions so that the surgeon can move on to operating the next patient. Counseling messages will depend on how follow up is planned and will have to be tailored for different settings. Issues to be discussed in post-operative counseling are shown in **Box 8**.

**BOX 8**

### Key messages for post-surgery recovery

- Many patients may require simple pain relief, such as paracetamol
- Patients should keep the eyelid clean and not rub it. Gentle face washing is ok.
- A firm pad will remain on the eye until the next day. This will be removed the day after surgery either by the patient himself or by health staff if the patient can return.
- Patients should rest for one day after surgery and then may resume normal activity with caution, making sure to keep their face clean.
- Patients are given a single dose of azithromycin to take before leaving the site. If this is not available then they should receive one tube of tetracycline eye ointment for each eye that has been operated on, to be instilled into the lower fornix each morning and evening until the tube is finished. This should be demonstrated to patients (those who have only one eye operated) and to the person who is accompanying the bilaterally operated patients.
- It is important for patients to have follow up after the surgery. Ideal follow up would be on day 1, then 7-14 days after surgery (suture removal), and finally about 6 months after surgery (to check final outcome).
- Patients should be warned about important complications that would require them to come for follow up before scheduled visits. These are shown in **Box 9**.

**BOX 9**

### Recommended post-operative visits

Each trichiasis surgery patient needs to be seen after surgery. If the eyelid is not appropriately corrected it should be fixed immediately. Patients should be seen at the following intervals whenever possible:

- 1 day post-operatively for patch removal and immediate evaluation
- 7-14 days post-operatively, particularly for suture removal when applicable
- 3-6 months post-operatively.

For the health worker doing post-operative care, the steps required on day 1 and day 8-14 are described in section 12 in **WHO Trichiasis Surgery for Trachoma**. Additional recommendations are provided in the section on follow up below.

## Cleaning up after the campaign

The team is responsible for ensuring that cleaning of the surgical equipment is done thoroughly and correctly. Therefore the team leader (usually the surgeon) should appoint a responsible cleaner or assistant and teach them how to properly handle, clean, oil, and sterilize the instruments and should periodically monitor the cleaning process. Regular sharpening of scissors is essential to prevent working with blunt scissors. Blunt scissors will clasp tissue instead of cutting it, which causes contusion of the tissue, leading to non-optimal wound healing. Make sure that the rooms used during the outreach are cleaned and wastes are disposed properly. Leave the surgical site in a similar (or better) condition to which you found it.

TT surgery in Iganga District, Uganda.
Photo: Amir B Kello, Light for the World

This young man escorted his grandmother to the eye clinic for her TT surgery, and then two weeks later for a check up. Photo: Beth Kurylo/International Trachoma Initiative

# 4. Follow up of patients after surgery

Follow up of patients and accurate reporting of outreach activities are both important to the success of efforts to eliminate TT. Accurate record keeping throughout the outreach process is essential. It allows for future follow up of patients and for planning efficient future surgical camps. Additionally, it provides supervisors with adequate data to provide supportive supervision during the follow up phase.

## Follow up of patients

Follow up will vary in different sites. Ideally, all trichiasis surgery patients should be examined at least twice after surgery, and preferably three times as shown in **Box 9**.

## Day 1 post op

In most settings, patients can be seen at the surgical location the day after surgery by either the operating surgeon or by health center staff. At this visit, eye patches are removed, and the lids are examined as described in section 12 in **WHO Trichiasis Surgery for Trachoma**. In addition to the steps listed there, in this early post-operative phase, if the eyelid is not appropriately corrected, surgical adjustment can be made by retying the sutures in order to get a good outcome. It is easier to fix an inadequate correction immediately after surgery than it is at a later time.

If patients live too far from the outreach site and do not spend the night at the site on the night after surgery, arrangements can be made for the patients to be seen at a location more convenient to their home for the 1st post-op day visit. In such situations, however, one must ensure that adequately trained staff are available at that site to examine the patient.

## Day 7-14 post op

In settings where silk or other non-absorbable sutures are used, a follow up visit for suture removal should be scheduled for 7-14 days after surgery, depending on the program's protocol for suture removal. The activities to take place at this visit are described in section 12 in **WHO Trichiasis Surgery for Trachoma**. Ideally this visit would be conducted by the operating surgeon so that s/he can examine the short-term outcomes. However, in settings where this is not practical, the team should arrange follow up visits in collaboration with the health center or health post where the surgery takes place, in order to ensure that all operated patients have a guaranteed place to return for suture removal. Regardless of where suture removal takes place, the team needs to ensure that the person who removes the sutures is knowledgeable and skilled with suture removal, because inadequate removal can lead to granuloma formation. When the operating surgeon cannot be present, the person who removes the sutures should note any adverse events, such as post-operative trichiasis or eyelid deformity, and make sure such notes are transmitted to the surgeon. If resources permit, a photograph of the eyelid should be taken and shared with the operating surgeon.

**BOX 10**

### Potential post-operative complications

- **Trichiasis**: Eyelashes touching the eye.
- **Infection:** Tearing or discharge from the operated eye.
- **Granuloma:** Feeling of a foreign body in the eye, accompanied by a visible lump on the inner side of the eyelid, which causes discomfort.
- **Lagophthalmos:** When the eyelid is closed, a portion of the eye is visible.

The use of absorbable sutures has increased substantially since a study demonstrated similar outcomes between absorbable and silk suture. When absorbable sutures are used, the 7-14 day follow up visit is not essential. However, it is still advisable to check the wound, and patients should be encouraged to come for follow up if they experience problems.

## Final follow up (3-6 months post-operative)

The Global Scientific Meeting on Trachomatous Trichiasis strongly recommended follow up of all TT patients within the first six months after surgery. The condition of the patient at this time point is usually considered the final result of the surgery.

All patients should be encouraged to seek care between scheduled visits if complications arise. Prior to leaving the surgical site, patients should be told about the major complications, described in **Box 10**.


An outreach team support worker. Photo: Michael Amendolia/ The Fred Hollows Foundation www.hollows.org.au

# 5. Record keeping and reporting

## Recording patient information

The surgery day trichiasis patient record **(see annex)** form is started when the patient is identified during the outreach. Basic demographic information, clinical information and management are recorded. Any operative complications are also recorded. At each follow up visit, specific information should be recorded on all surgical cases and all epilation cases. Note that information should be recorded for EACH eye separately. The information must be collected regularly for a supervisor to monitor the program.

## Summary statistics form for outreach

One team member should be assigned primary responsibility for recording all pertinent outreach level information at the end of each outreach. Recommended information to collect is shown on the summary statistics form **(see annex).** If an electronic system is used for collecting the TT patient information, the summary statistics may be automatically collated. This information can be used to help guide future outreach activities, as described below. Spot checks by supervisors at outreaches are helpful to confirm that information collected is accurate.

At the end of each outreach program, a list of operated patients with tracking information should be provided to the local governing bodies. Programs are strongly encouraged to have an independent monitor verify a portion of the surgeries. Verification increases accountability of the team and the program at large. Within a day of completion of the outreach, data should be reported to the relevant local authorities; within a week it should also be reported to the supervisor to be passed on to the national trachoma/eye care program. The national program, in conjunction with the supporting Non Governmental organization (NGO), is responsible for reporting findings against targets at the district and national level.

## Using summary findings to guide future outreach activities

In areas with a high prevalence of trichiasis and where trichiasis surgery previously has not been readily available, it is likely that large numbers of trichiasis patients will be identified, and many surgeries will be conducted in a short time period. In such settings, including two to four trichiasis surgeons in the outreach team can be an efficient use of resources and will help to rapidly reduce the backlog. However, as the backlog decreases in a specific area, the number of surgeons necessary for each team is likely to decline. Hence, when planning future outreach activities, the planning teams should review reports from previous outreach activities to determine the prior volume and how this will affect future plans.

The coordinator of each outreach should compare the numbers of TT patients who came to the outreach to the number that was expected, based on communication with health workers or community members who were used to identify patients. Ideally the expected number should be recorded on the summary statistics form.

In many settings, surgeon payment is linked to the number of trichiasis surgeries performed. Previous outreach campaigns and research projects have demonstrated that trichiasis surgeons should be able to perform a minimum of 10 surgeries (eyes not people) in a given day. Twice this many may be possible if patients are present and the team is efficient. Therefore, when evaluating prior campaign data to plan future campaigns, one should determine what the average number of surgeries being done is and consider restructuring specific aspects of the campaign to increase efficiency whenever possible. Specifically, look at the mobilization activities that were utilized. Did they provide sufficient number of patients? If not, reassess awareness, access, and acceptance. Talk with the organizers of the prior campaigns and learn from them what worked and what did not. Travel costs and allowances for staff will always be major drivers of program costs, so make sure to use these resources wisely.

In settings where multiple groups are conducting trichiasis surgeries within the same district, it is essential that all parties communicate regularly to plan future surgical camps in an efficient manner. These parties should meet on a regular basis to discuss plans for outreach campaigns and to see where efforts can be combined.

# Surgery Day Trichiasis Patient Record

## Individual TT Case

| Patient details | |
|---|---|
| Name | |
| Date of birth | / / |
| Age at first visit | years |
| Sex | □ Female □ Male |
| **Patient address and contact** | |
| Region, district and village | |
| | |
| | |
| Neighborhood/subunit (traceable address): | |
| | |
| | |
| Mobile phone contact (patient, relative, neighbor): | |
| | |
| | |
| Date of visit | / / |
| GPS coordinates | |
| Preoperative photograph taken of face | □ Yes □ No |
| Consent of patient for ID photo | *Thumbprint or sign* |

| | Right eye | Left eye |
|---|---|---|
| Visual acuity | | |
| Number of trichiatic lashes (Count up to 10. If more, record 10+) | | |
| Evidence of epilation (if yes, indicate what proportion of lid is epilated) | □ No<br>□ Yes <1/3 of lid<br>□ Yes, 1/3-2/3 of lid<br>□ Yes >2/3 of lid | □ No<br>□ Yes <1/3 of lid<br>□ Yes, 1/3-2/3 of lid<br>□ Yes >2/3 of lid |
| Preoperative photograph of eye taken (optional) | □ Yes □ No | □ Yes □ No |
| Cataract (causing VI or blindness) | □ Yes □ No | □ Yes □ No |

| Consent of patient for TT surgery | If patient refuses TT surgery, confirmation that they were counseled on epilation |
|---|---|
| *Patient signature or thumbprint* | *Patient signature or thumbprint* |

# Operative Record

**To be collected for everyone undergoing TT surgery**

| | |
|---|---|
| Name of operating surgeon | |
| Name of patient | |

| | **Right eye** | **Left eye** |
|---|---|---|
| Type of operation | ☐ BTRP<br>☐ Trabut | ☐ BTRP<br>☐ Trabut |
| Clamp used (choose one) | ☐ No<br>☐ Yes | ☐ No<br>☐ Yes |
| Suture (choose one) | ☐ Silk<br>☐ Absorbable | ☐ Silk<br>☐ Absorbable |
| Complications (choose all that apply) | ☐ Excess bleeding<br>☐ Margin fragment severed<br>☐ Globe puncture<br>☐ Other _____ | ☐ Excess bleeding<br>☐ Margin fragment severed<br>☐ Globe puncture<br>☐ Other _____ |

| | |
|---|---|
| **Immediate post-operative photo (optional for verification)** | ☐ No ☐ Yes |

# Post-operative / Epilation Record

| | |
|---|---|
| Date of follow-up | |
| Patient name | |
| Photo on each follow up (for ID) | ☐ No ☐ Yes |
| Name of person conducting follow-up | |

| | **Right eye** | **Left eye** |
|---|---|---|
| Number of trichiatic lashes (Count up to 10. If more, record 10+) | | |
| Granuloma | ☐ Absent<br>☐ Present | ☐ Absent<br>☐ Present |
| Eyelid contour abnormalities<br>If present, type of abnormality | ☐ Absent<br>☐ Present | ☐ Absent<br>☐ Present |
| Over-correction | ☐ Absent<br>☐ Present | ☐ Absent<br>☐ Present |
| Management (choose all that apply) | ☐ Offered surgery<br>☐ Removed sutures<br>☐ Requested to return for follow-up in _____ months<br>☐ No further follow-up required | ☐ Offered surgery<br>☐ Removed sutures<br>☐ Requested to return for follow-up in _____ months<br>☐ No further follow-up required |

# Summary Statistics Form

**To be completed during each outreach activity or every quarter from a fixed facility.**

| | |
|---|---|
| Date of outreach or period covered | |
| Site of outreach or name of facility (could be pre populated) | |
| **Number of patients expected with TT (based on mobilization efforts)** | |

| | | | | |
|---|---|---|---|---|
| **Number patients identified with TT** | Male | | Female | |
| Number patients <=15 years old from above identified with TT | Male | | Female | |

| | | | | |
|---|---|---|---|---|
| **Number accepting surgery** | Male | | Female | |
| Number of patients operated | Male | | Female | |
| Number of eyes operated | Male | | Female | |
| Number of patients refusing surgery and counselled to epilate | Male | | Female | |

You may download editable Word versions of these forms from the ICTC website: **www.trachomacoalition.org/trichiasisoutreach**

# Referral Form for Patients Requiring Additional Eye Care Services

*(may modify this or substitute any official referral form)*

**Patient Referral**

| | |
|---|---|
| Today's date | |
| Name of patient | |
| Referral to (name of clinic/hospital) | |
| Patient advised to report by this date | |

During an outreach for trichiasis surgery at _____ this patient was discovered to have

_____
_____
_____
_____
_____
_____
_____
_____

Kindly examine and treat as necessary.

Thank you.

_____

| Person making referral | |
|---|---|
| Name | |
| Contact phone number | |

## International Coalition for Trachoma Control (ICTC)

**VISION:**
**Global Elimination of blinding Trachoma by 2020.**

**MISSION:**
**To act as a catalyst for the implementation of the SAFE strategy in support of endemic countries' trachoma control programs.**

**ICTC has a highly committed and professional multi-stakeholder membership, including Non-Governmental Development Organizations, donors, private sector organizations and research/ academic institutions that demonstrate a commitment to GET 2020 and the WHO-endorsed SAFE strategy.**

**ICTC members at time of publication:**

**ICTC observers at time of publication:**

# ICTC International Coalition for Trachoma Control

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