Guidelines for the public health management of trachoma in Australia
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Communicable Disease Network Australia

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Acknowledgements

This document was prepared by Dr Donna Mak in consultation with the Trachoma Steering Committee of the Communicable Disease Network Australia (CDNA). Details of the membership of the Trachoma Steering Committee are provided at Appendix 3.

The opinions of experts and feedback from consultations were also used to develop the guidelines. Thank you to the many people who provided comment as part of the consultation process. Their insight and contributions are appreciated.

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Disclaimer

The Guidelines for the public health management of trachoma in Australia establish a minimum best-practice approach for the public health management of trachoma. The guidelines do not prevent individual jurisdictions, health services or communities from implementing control strategies over and above what is recommended. The members of the Trachoma Steering Committee, the members of the Communicable Diseases Network Australia, and the Commonwealth of Australia do not accept any legal liability or responsibility for any injury, loss or damage incurred by the use of, or reliance on, or interpretation of the information contained in these Guidelines.
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Definitions and Abbreviations

**Aboriginal or Torres Strait Islander:** Any individual identifying themselves as being of Aboriginal or Torres Strait Islander descent.

**Active trachoma:** chronic inflammation of the conjunctiva caused by infection with *Chlamydia trachomatis*; includes WHO grades TF (trachomatous inflammation — follicular) and TI (trachomatous inflammation — intense).

**Cicatricial or scarring trachoma:** scarring of the conjunctiva caused by repeated episodes of active trachoma infection; includes WHO grades TS (trachomatous scarring), TT (trachomatous trichiasis), and CO (corneal opacity).

**Cornea:** specialised transparent tissue covering the pupil and iris of the eye

**WHO trachoma grading**
- **TF:** Trachomatous inflammation follicular (presence of five or more follicles in the upper tarsal conjunctiva of at least 0·5 mm)
- **TI:** Trachomatous inflammation intense (pronounced inflammatory thickening of the tarsal conjunctiva that obscures more than half of the normal deep tarsal vessels)
- **TS:** Trachomatous scarring (presence of scarring in the tarsal conjunctiva)
- **TT:** Trachomatous trichiasis (at least one eyelash rubs on the eyeball or there is evidence of the recent removal of inturned eyelashes)
- **CO:** Corneal opacity (easily visible corneal opacity over the pupil)

**Levels of evidence**
- **Level I:** evidence obtained from a systematic review of all relevant randomised controlled trials (RCTs)
- **Level II:** evidence obtained from at least one properly designed RCT
- **Level III-1:** evidence obtained from well-designed pseudo-randomised controlled trials (alternate allocation or some other method)
- **Level III-2:** evidence obtained from comparative studies with concurrent controls and allocation not randomised (cohort studies), case–control studies, or interrupted time series with a control group
- **Level III-3:** evidence obtained from comparative studies with historical control, two or more single arm studies, or interrupted time series without a parallel control group
- **Level IV:** evidence obtained from case series, either post-test or pre-test and post-test
- **Level V:** opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees
- **No evidence:** after thorough searching no evidence was found regarding the recommendation

**Australian states and territories**
- **ACT:** Australian Capital Territory
- **NSW:** New South Wales
- **NT:** Northern Territory
- **Qld:** Queensland
- **SA:** South Australia
- **Tas:** Tasmania
- **Vic:** Victoria
- **WA:** Western Australia
Acronyms

CDNA  Communicable Diseases Network Australia
CO    Corneal opacity
LCx   Ligase Chain Reaction
NADTs Nucleic Acid Detection Tests
PCR   Polymerase Chain Reaction
PHLN  Public Health Laboratory Network
SAFE  Surgery, Antibiotics, Facial cleanliness and Environmental improvement
TF    Trachomatous inflammation follicular
TI    Trachomatous inflammation intense
TT    Trachomatous trichiasis
TS    Trachomatous scarring
WHO   World Health Organization
Executive Summary

Trachoma continues to be endemic in Aboriginal and Torres Strait Islander populations in some parts of the NT, SA and WA. Trachoma has been endemic in the past in NSW and Qld, but there are no recent data regarding its existence or prevalence in these States. Major improvements in environmental conditions in Aboriginal and Torres Strait Islander communities in Australia are a core requirement for trachoma eradication.

In line with its Vision 2020 initiative, the World Health Organization (WHO) has adopted a resolution to eliminate blinding trachoma by 2020. Guidelines for the Public Health Management of Trachoma in Australia provides recommendations to ensure consistent trachoma screening, control measures and data collection in Australia.

Data collected by the Australian Government Department of Health and Ageing from state and territory public health units were used in the development of these guidelines. Current WHO and Australian guidelines, international literature, the opinions of experts and feedback from consultations were also used to inform the guidelines. The guidelines were prepared by a consultant (Dr Donna Mak), guided by a CDNA Trachoma Steering Committee.

The guidelines establish a minimum best-practice approach for the public health management of trachoma. The guidelines do not prevent individual jurisdictions, health services or communities from implementing control strategies over and above what is recommended here (e.g. screening and/or treating 6-monthly instead of annually, or offering azithromycin to adults in addition to children in high prevalence communities). However, it is important to remember the principle ‘Primum non nocere’ (First, do no harm) when implementing any health intervention.

The guidelines recommend that trachoma control should be the responsibility of state and territory government-run regional population health units. Regional population health units should provide to primary health care services, optometry and ophthalmology services and community representatives information about the natural history and transmission of trachoma, local prevalence data regarding active trachoma and trichiasis, and details of proposed interventions; this will allow informed decisions to be made about the implementation of trachoma control measures.

In addition, the guidelines recommend that regional population health units collect trachoma data in accordance with the minimal national trachoma dataset (see Table 4 and Appendixes 1 and 2) and report these data to a national trachoma database. It is essential to standardise trachoma data collection systems so that data are comparable between regions and states, and so that Australia can contribute meaningful data to global trachoma reports. A central agency will analyse the data each year and collated reports will be distributed to regional population health units and other relevant stakeholders.

The guidelines acknowledge that appropriate engagement with the local community, both Aboriginal and Torres Strait Islander people and non-Indigenous people, is a prerequisite to implementing the WHO ‘SAFE’ (Surgery, Antibiotics, Facial cleanliness and Environmental improvement) strategy and therefore an essential part of effective trachoma control. The principles and processes for engaging with communities recommended by WHO have been successfully adapted by health staff in Australia and will not be reproduced here.

Establishing and maintaining a health workforce with knowledge, skills and experience in trachoma control is another prerequisite of effective trachoma control and should also be the responsibility of regional population health units. There are several challenges to achieving this, including the high staff turnover in rural and remote health care settings and the disappearance of trachoma from many parts of Australia, including the capital cities and regional centres where health professionals are trained.
Summary of the Guidelines for the public health management of trachoma in Australia

These guidelines are based on the WHO SAFE strategy. They have been adapted to the Australian context following analysis of Australian data and consultation with local health professionals and experts on trachoma.

While levels of evidence have been assigned to the recommendations, it should be noted that absence of evidence of effectiveness does not constitute evidence of ineffectiveness. Lack of strong evidence for most of the recommendations should be an incentive for action rather than a deterrent. Through rigorous implementation and evaluation of trachoma control programs, and collection of epidemiological data using standardised datasets, the evidence will become available.

The guidelines make the following recommendations.

<table>
<thead>
<tr>
<th>Management of trachoma control programs</th>
<th>Recommendation</th>
<th>Level of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Health staff in Australia should use the ‘WHO simplified system’ for trachoma grading.1,2 (See Figure 1)</td>
<td>V</td>
</tr>
<tr>
<td>2.</td>
<td>Trachoma control should be the responsibility of government-run regional population health units and be organised on a regional basis where population mobility is high. Primary health care services should be involved in the detection and treatment of trachoma under the coordination of population health units.3</td>
<td>V</td>
</tr>
<tr>
<td>3.</td>
<td>Regional population health units should provide to primary health care services, optometry and ophthalmology services and community representatives information about the natural history and transmission of trachoma, local prevalence data regarding active trachoma and trichiasis and details of proposed interventions so that informed decisions about implementation of trachoma control activities can be made.4</td>
<td>V</td>
</tr>
<tr>
<td>4.</td>
<td>Trachoma control activities should be planned and implemented in consultation with community representatives and other key stakeholders.4</td>
<td>V</td>
</tr>
<tr>
<td>5.</td>
<td>Establishing and maintaining a health workforce with knowledge, skills and experience in trachoma control is a prerequisite of effective trachoma control and should be the responsibility of regional population health units, working with other agencies as appropriate.5</td>
<td>V</td>
</tr>
<tr>
<td>6.</td>
<td>Areas with the highest number of persons with active trachoma and areas with the highest prevalence of active trachoma should be prioritised for trachoma control.4,5,6</td>
<td>V</td>
</tr>
<tr>
<td>7.</td>
<td>Regional population health units should collect trachoma data in accordance with the minimum national trachoma dataset (see Table 4 and Appendixes 1 and 2) and report these data to a national trachoma database.7,8</td>
<td>V</td>
</tr>
<tr>
<td>8.</td>
<td>Prevalence of resistance to the antibiotic azithromycin should be monitored and reported to the national trachoma database.</td>
<td>V</td>
</tr>
</tbody>
</table>
### Guidelines for the public health management of trachoma in Australia

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Level of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S – Surgery</strong></td>
<td></td>
</tr>
<tr>
<td>9. Regional population health units, primary health care services and specialist eye health services need to decide, collaboratively, on the best way of identifying patients with trichiasis in their region and the best system to ensure that these patients have access to timely surgical referral and treatment.</td>
<td>V</td>
</tr>
<tr>
<td>10. In regions where trachoma is endemic but trichiasis prevalence is unknown, the burden of trichiasis should be quantified.</td>
<td>V</td>
</tr>
<tr>
<td>11. In areas where trachoma or trichiasis is or has been endemic, Aboriginal and Torres Strait Islander people aged 40–54 years should be screened every two years and those aged 55+ years should be screened annually for trichiasis as part of an adult health check (an optional procedure in the Medicare Benefits Schedule for Aboriginal and Torres Strait Islander Adult Health Checks).</td>
<td>V</td>
</tr>
<tr>
<td>12. Patients with trichiasis should be referred to an ophthalmologist for surgical intervention.</td>
<td>II</td>
</tr>
<tr>
<td>13. Following trichiasis surgery, patients should be followed up annually so that recurrences can be detected promptly.</td>
<td>V</td>
</tr>
<tr>
<td><strong>A – Antibiotics</strong></td>
<td></td>
</tr>
<tr>
<td>14. Individual and community consent should be obtained prior to implementing screening programs involving Aboriginal and Torres Strait Islander communities. The best method for obtaining consent for screening and treatment varies between communities and should be a collaborative decision between primary health care staff, the community council and the school principal/council.</td>
<td>V</td>
</tr>
<tr>
<td>15. The minimum target group for active trachoma screening should be all Aboriginal and Torres Strait Islander children aged 5–9 years living in communities/towns where trachoma is endemic.</td>
<td>V</td>
</tr>
<tr>
<td>16. In addition, if there is community agreement, all Aboriginal and Torres Strait Islander children aged 1–4 years and 10–14 years should be screened for active trachoma.</td>
<td>V</td>
</tr>
<tr>
<td>17. In communities where trachoma is endemic, annual screening for active trachoma is recommended until active trachoma prevalence is &lt; 5% for 5 consecutive years, after which annual screening should cease.</td>
<td>V</td>
</tr>
<tr>
<td>18. All children found to have active trachoma (TF and/or TI) should be treated with single-dose azithromycina.</td>
<td>V</td>
</tr>
</tbody>
</table>

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*a Azithromycin dose is 20mg/kg, up to a maximum dose of 1000mg (see Table 3).*
<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Level of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A – Antibiotics continued</strong></td>
<td></td>
</tr>
<tr>
<td>19. If $\geq 10%$ of screened Aboriginal and Torres Strait Islander children aged $&lt; 10$ years have active trachoma and there is no obvious clustering of cases, single-dose azithromycin(^a) is recommended (see Table 1) for:</td>
<td>V</td>
</tr>
<tr>
<td>• all Aboriginal and Torres Strait Islander children in the community aged 6 months to 14 years and • all household contacts aged 6 months or more,(^{17,18,19,20})</td>
<td></td>
</tr>
<tr>
<td>20. If $&gt; 10%$ of screened Aboriginal and Torres Strait Islander children aged $&lt; 10$ years have active trachoma and cases are obviously clustered within several households and health staff can easily identify all household contacts of cases, single-dose azithromycin(^a) is recommended (see Table 1) for:</td>
<td>V</td>
</tr>
<tr>
<td>• all household contacts aged 6 months or more only. Community wide treatment is not required,(^{15,17,18,19,20})</td>
<td></td>
</tr>
<tr>
<td>21. If $&lt; 10%$ of screened Aboriginal and Torres Strait Islander children aged $&lt; 10$ years have active trachoma, single-dose azithromycin(^a) is recommended for all household contacts aged 6 months and over (see Table 1),(^{17,20})</td>
<td>V</td>
</tr>
<tr>
<td>22. Antibiotic treatment of cases, household contacts and community members (when required) should be completed within two weeks of screening.</td>
<td>V</td>
</tr>
<tr>
<td>23. In regions where population mobility is high, all screening and treatment activities within the region should be completed in as short a timeframe as possible to minimise the likelihood of reinfection and to achieve higher population coverage.</td>
<td>V</td>
</tr>
<tr>
<td>24. In regions where trachoma is endemic, clinical examination of patients presenting with conjunctivitis should include eversion of the upper eyelid to check for trachoma,(^{17,20})</td>
<td>V</td>
</tr>
<tr>
<td>25. Individuals who self-present with symptoms of trachoma and who have active trachoma on examination should be treated with single-dose azithromycin,(^\text{22}) Household contacts aged 6 months or more should be treated with single-dose azithromycin(^a) within two weeks of the case being identified,(^\text{22})</td>
<td>V</td>
</tr>
<tr>
<td><strong>F – Facial cleanliness</strong></td>
<td></td>
</tr>
<tr>
<td>26. Facial cleanliness in children should be promoted by including regular face-washing as part of a holistic personal hygiene program,(^{22,24})</td>
<td>V</td>
</tr>
</tbody>
</table>

\(^a\) Azithromycin dose is 20 mg/kg, up to a maximum dose of 1000mg (see Table 3).
<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Level of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E – Environmental health</strong></td>
<td></td>
</tr>
<tr>
<td>27. Environmental health, school and health promotion staff should be involved as key stakeholders when regional population health units and primary health care services plan and implement trachoma control activities so that ‘F’ and ‘E’ strategies appropriate to individual communities/regions can be implemented.23,24,25</td>
<td>V</td>
</tr>
<tr>
<td><strong>NADTs (nucleic acid detection tests)</strong></td>
<td></td>
</tr>
<tr>
<td>28. Trachoma NADTs are not recommended in the context of a population-based trachoma control program unless they are taken as part of a quality improvement or research project with clear aims and an agreed protocol for how to deal with discrepancies between clinical and laboratory results.</td>
<td>V</td>
</tr>
<tr>
<td>29. Trachoma NADTs may be useful in the clinical investigation of patients from areas of unknown or very low trachoma endemicity who present with conjunctivitis and clinical signs of trachoma.</td>
<td>V</td>
</tr>
</tbody>
</table>
Table 1. Recommended antibiotic treatment and trachoma screening frequency with varying prevalence of trachoma

<table>
<thead>
<tr>
<th>Trachoma prevalence in screened Aboriginal and Torres Strait Islander children aged &lt; 10 years</th>
<th>Treatment of cases with active trachoma(^a)</th>
<th>Treatment for household contacts of cases with active trachoma(^a)</th>
<th>Community treatment(^a)</th>
<th>Screening frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 10% with no obvious clustering in the community</td>
<td>Single-dose azithromycin(^b)</td>
<td>Single-dose azithromycin(^b) to all household contacts aged 6 months and over</td>
<td>Single-dose azithromycin(^b) to all Aboriginal and Torres Strait Islander children in the community aged 6 months to 14 years</td>
<td>Annual</td>
</tr>
<tr>
<td>&gt; 10% and cases are obviously clustered within several households and health staff can easily identify all household contacts of cases</td>
<td>Single-dose azithromycin(^b)</td>
<td>Single-dose azithromycin(^b) to all household contacts aged 6 months and over</td>
<td>Nil</td>
<td>Annual</td>
</tr>
<tr>
<td>&lt; 10%</td>
<td>Single-dose azithromycin(^b)</td>
<td>Single-dose azithromycin(^b) to all household contacts aged 6 months and over</td>
<td>Nil</td>
<td>Annual</td>
</tr>
<tr>
<td>&lt; 5%</td>
<td>Single-dose azithromycin(^b)</td>
<td>Single-dose azithromycin(^b) to all household contacts aged 6 months and over</td>
<td>Nil</td>
<td>Annual</td>
</tr>
<tr>
<td>&lt; 5% for 5 consecutive years</td>
<td>Single-dose azithromycin(^b)</td>
<td>Single-dose azithromycin(^b) to all household contacts aged 6 months and over</td>
<td>Nil</td>
<td>Cease screening</td>
</tr>
</tbody>
</table>

\(^a\) Antibiotic treatment of cases, contacts and community members should be completed within two weeks of screening.

\(^b\) Azithromycin dose is 20 mg/kg, up to a maximum dose of 1000 mg
Section 1 – A brief history of trachoma

Trachoma has been recognised and documented since ancient times in many parts of the world. In the 19th and early 20th centuries trachoma was endemic and was a significant cause of blindness in many parts of the Western world, including Europe, North America and Australia. It was prevalent in urban slums and poor rural villages such as those in the Appalachian Mountains of North America. The impetus for the formation of the world’s first specialist eye hospital, Moorfields, seems to have been an epidemic of trachoma which was brought back to England by British troops returning from the Napoleonic wars in Egypt. Trachoma is no longer endemic in developed countries. This is due to improvements in hygiene and environmental health rather than specific trachoma control programs. In most Indigenous American communities, trachoma had virtually disappeared by the 1950s; in the 1970s and 1980s only occasional active cases were reported. Conversely, the reappearance of endemic, blinding trachoma has been documented from regions of Egypt and Brazil, where it was thought to have been controlled for decades.

Trachoma had disappeared from most parts of Australia by the 1930s as housing, hygiene and living conditions improved. However, these improvements did not occur in many parts of remote Australia. In the 1940s, Father Frank Flynn was the first to recognise endemic trachoma in NT Aboriginal populations. Dame Ida Mann documented endemic trachoma in Aboriginal people in WA after World War II and Professor Fred Hollows documented it in far western NSW in the 1960s. As a result of their work and advocacy, the Federal Government and the Royal Australian College of Ophthalmologists established the National Trachoma and Eye Health Program. In many parts of regional Australia where trachoma continues to be endemic, the trachoma control programs implemented today are the legacy of the National Trachoma and Eye Health Program.
Section 2 – Clinical features and natural history of trachoma

Trachoma is a contagious infection of the eye by specific strains of the bacteria *Chlamydia trachomatis*. The strain of chlamydia which causes trachoma differs from the genital strains. Recurrent trachoma infection can cause scarring of the eyelid and inturned eyelashes (trichiasis), which can result in blindness if not treated with surgery.

The *Chlamydia trachomatis* serotypes usually responsible for trachoma are A, B, Ba and C. A mild mucopurulent conjunctivitis usually occurs after an incubation period of 5–15 days. The conjunctiva becomes red and swollen, and small red dots (papillae) and follicles (whitish round spots) appear on the tarsal conjunctiva (inner eyelid) (See Figure 1). Corneal changes of active trachoma, limbal follicles and corneal pannus (thickened tissue covering the outer part of the cornea), may occur. Resolution of limbal follicles results in depressions known as Herbert's pits, which are a highly specific, but not sensitive, clinical sign of trachoma. Most infections resolve spontaneously and trachoma does not invariably lead to blindness.

Chronic conjunctivitis caused by repeated trachoma infections, often with secondary infection with other bacteria, leads to conjunctival scarring, which may progress to contraction of the eyelid, inturned eyelashes and inturned eyelid margin (entropion). Chronic trachoma may also cause scarring of the tear glands of the eyelid, leading to reduced tear production and dry eye symptoms. Continual abrasive action of inturned eyelashes causes corneal scarring, opacity and visual loss. Secondary bacterial and fungal corneal infections due to compromised tear production and/or corneal damage from inturned eyelashes also contribute to visual loss. Corneal opacity due to trachoma is not easily treated by corneal grafting because reduced tear production adversely affects graft survival.
Section 3 – Trachoma grading

Health staff in Australia should use the scheme recommended by the World Health Organization for trachoma control programs, the ‘WHO simplified system’ (see Figure 1), as it requires minimal equipment and, with training, allows good intra- and inter-observer agreement to be achieved in the field.1 2

Figure 1. WHO simplified trachoma grading classification system
(Source: World Health Organization, 1987) 1

(A) Normal everted upper tarsal conjunctiva

(B) 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 to be considered.

(C) 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.

(D) 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.

(E) Trachomatous TRICHIASIS (TT): at least one eyelash rubs on the eyeball. Evidence of recent removal of inturned eyelashes should also be graded as trichiasis.

(F) 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.
Section 4 – Trachoma transmission

The main source of trachoma infection is human cases of active trachoma. The prevalence of active trachoma is highest among pre-school aged children, and infections in children persist longer than those in adults, suggesting that young children form a reservoir for infection. Animal reservoirs of C. trachomatis have not been found.

Routes of transmission include:
- direct eye-to-eye spread (eg while playing or sharing a bed)
- conveyance on fingers
- indirect spread on fomites (eg shared towels)
- eye-seeking flies
- coughing/sneezing.

The relative importance of these routes is likely to vary with time, place and cultural norms; it is difficult to establish the relative importance of each route.

Trachoma prevalence varies greatly between communities within a geographical area. Within a community, trachoma is strongly clustered by households; within households it is clustered by sleeping rooms. This suggests that sustainable transmission depends on close, prolonged contact.

Trachoma occurs more commonly in dry, dusty conditions and is associated with sub-optimal living conditions such as overcrowding, reduced availability and use of water (for washing hands, faces and clothing), inadequate waste disposal and high numbers of flies.
Section 5 – Trachoma prevalence in Australia
Trachoma is known to be endemic in Aboriginal and Torres Strait Islander populations in some parts of the NT, SA and WA. While trachoma has been endemic in NSW and QLD in the past, there are no recent data indicating its existence or prevalence in these states.

In contrast with developing countries where active trachoma and trichiasis are more common among adult women than men, Australian surveys have not identified any sex differences in active trachoma or trichiasis prevalence.11,15,39,40,41,42

Figures 2 and 3 show trachoma prevalence indicated by data collected by the Office for Aboriginal and Torres Strait Islander Health (OATSIH) for the WHO Global Mapping Project for active trachoma and trichiasis.

Figure 2. Distribution of active trachoma in children aged < 10 years in the Western Pacific Region (Source: World Health Organization).7
When interpreting these figures it must be remembered that the reported prevalences are regional prevalences, and there may be wide variations between Aboriginal and Torres Strait Islander communities within a region. For example, in the Kimberley in 2003, the regional prevalence of active trachoma was 11%, but trachoma prevalence in screened schools/communities ranged from 5% to 60% and some towns and coastal Aboriginal and Torres Strait Islander communities in which trachoma is no longer endemic were not screened. Similarly, the regional prevalence of trichiasis in the Kimberley in 1998 was 2.9%, but the figure ranged from 11% in Halls Creek Shire to 1% in Broome Shire.

Although Figure 2 is labelled ‘Distribution of active trachoma in children aged < 10 years in the Western Pacific Region’, this is not strictly correct. First, in some regions, data from a small number of non-Aboriginal and Torres Strait Islander children are included. Second, in most regions, few (if any) children aged 1–4 are screened. Third, some regions include data from children > 10 years. Fourth, data from Aboriginal and Torres Strait Islander children who were not screened (either because they were targeted for screening but were not present at the time of screening or because they were not targeted for screening) do not contribute to the denominator. Similarly, most trichiasis prevalence data in Australia are from surveys of Aboriginal and Torres Strait Islander people aged more than 40 or 50 years, in specific communities or towns, not all Aboriginal and Torres Strait Islander adults aged > 15 years.
Section 6 – The WHO SAFE strategy

In line with its Vision 2020 initiative, WHO has adopted a resolution to eliminate blinding trachoma by 2020. To achieve this goal, WHO recommends the SAFE strategy (Surgery, Antibiotics, Facial cleanliness and Environmental improvement) for countries implementing trachoma control programs. Table 2 summarises the interventions recommended in each component of SAFE and the evidence base supporting these interventions.

Table 2. Summary of evidence supporting the WHO SAFE strategy

<table>
<thead>
<tr>
<th>Evidence</th>
<th>Intervention</th>
<th>Clinical trials</th>
<th>Cohort studies</th>
<th>Case control studies</th>
<th>Surveys</th>
<th>Overall assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>Bilamellar tarsal rotation for people with TT 6</td>
<td>A variety of surgical procedures can relieve trichiasis; no particular procedure is more effective 11</td>
<td>Surgery can relieve trichiasis 11</td>
<td>None available</td>
<td>People with major trichiasis are more likely to have corneal opacity 43</td>
<td>Strong support</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>Screen 1–9-year-olds for active trachoma</td>
<td></td>
<td>Topical and oral antibiotics appear to lower active trachoma prevalence compared with a placebo</td>
<td>None available</td>
<td>Reduncions in trachoma prevalence may be unrelated to SAFE interventions 27, 45, 46, 47</td>
<td>Weak to moderate support</td>
</tr>
<tr>
<td>Facial cleanliness</td>
<td>Promote face-washing to achieve 80% of children with clean faces 50</td>
<td>Intensive face-washing reduces TI prevalence, but not active trachoma prevalence 22</td>
<td>None available</td>
<td>None available</td>
<td>Moderate association between dirty face and trachoma 24</td>
<td>Moderate support</td>
</tr>
<tr>
<td>Environmental health</td>
<td>Improve water access, latrines, waste and fly control, and reduce crowding 50</td>
<td>Intensive, unsustainable fly control using insecticide reduces active trachoma prevalence 23, 25</td>
<td>None available</td>
<td>Quantity of water used for washing children associated with trachoma; independent of water availability 36</td>
<td>Moderate association between water access, fly population, latrines, cattle, household waste, crowding and trachoma 24</td>
<td>Moderate support for fly control; weak support for other environmental strategies</td>
</tr>
</tbody>
</table>

a Adapted from ‘A critical review of the SAFE strategy’ 51
Part 2. The Guidelines

These guidelines are based on the WHO SAFE strategy adapted for the Australian setting. Data collected by the Australian Government Department of Health and Ageing from state and territory public health units were used in the development of these guidelines. Current WHO and Australian guidelines, international literature, the opinions of experts and feedback from consultations were also used to inform the guidelines. The guidelines were prepared by a consultant (Dr Donna Mak), guided by a CDNA Trachoma Steering Committee.

These guidelines provide the minimum requirement for the screening, management and treatment of trachoma in Australia. The guidelines do not preclude individual jurisdictions, health services or communities from implementing control strategies over and above what is recommended here (e.g. screening and/or treating 6-monthly instead of annually, or offering azithromycin to adults in addition to children in high prevalence communities). However, it is important to remember the principle ‘Primum non nocere’ (First, do no harm) when implementing any health intervention.

Section 7 – Responsibility for trachoma control

The report of the Review of the Implementation of the National Aboriginal and Torres Strait Islander Eye Health Program was released in October 2003. It made the following recommendation:³

Trachoma control should be the responsibility of government-run and regional public health units and be organised on a regional basis where population mobility is high. Primary health care services should be involved in the detection and treatment of trachoma under the coordination of public health units.

Australian trachoma control programs have found that this model has worked well in most regions where it has been implemented and the recommendation is supported by CDNA. Furthermore, state and territory health authorities should support population health units in trachoma management. There should be a database for collation of state/territory-wide trachoma data, and technical expertise and professional development should be made available as appropriate.
Section 8 – Engaging with communities for trachoma control activities

Engagement with the local community, both Aboriginal and Torres Strait Islander people and non-Indigenous people, is a prerequisite to implementing the SAFE strategy and an essential part of effective trachoma control. The WHO document Achieving community support for trachoma control outlines the principles and processes WHO recommends for engaging with communities. These have been successfully adapted by health staff in Australia and are not reproduced here. Health services are advised to refer to the primary source.4

The experience of staff working in trachoma control programs throughout Australia shows that primary health care staff, including Aboriginal health workers and community health and remote area nurses, are likely to be the best placed to engage with community councils, leaders and members, and key non-Indigenous stakeholders/individuals regarding trachoma control. This is because they are more likely to be personally known to local people, be familiar with local political and kinship/family networks, understand the protocols required for seeking consent, and have credibility within the local community. Regional population health unit staff also have a role in engaging with regional community stakeholder organisations, by providing information and support to primary health care services. The primary health care staff can then communicate and negotiate with local community representatives about the need for trachoma control, the prioritisation of trachoma control within the primary health care service, the evidence for SAFE and how each component of SAFE can be best implemented in the local setting.

The colour slides in ‘Primary health care level management of trachoma’5 and the ‘WHO simplified trachoma classification system’52 can be used to inform community representatives and members about the clinical features of trachoma and the natural history of untreated trachoma.

Regional population health units should be able to provide the following locally relevant health information to community representatives and primary health care, optometry and ophthalmology services so that they can make informed decisions about the implementation of trachoma control:

- active trachoma prevalence in the community, neighbouring areas and the region during recent years
- trichiasis prevalence in the community or region
- details of interventions proposed in the regional trachoma control program, evidence for these interventions and the nature and likelihood of possible adverse events resulting from interventions.

WHO recommends that areas with the highest number of persons and the highest prevalence of trichiasis and suspected trichiasis should be prioritised for trachoma control.5,6,7 In the Australian setting it is more appropriate to prioritise for trachoma control in the areas with the highest number of persons with active trachoma and areas with the highest prevalence of active trachoma.

Planning of trachoma control activities must involve consultation with community representatives and other key stakeholders (eg schools) to ensure that activities are acceptable to the community and scheduled so as not to interfere with other community priorities. Health staff should be aware that planned trachoma control activities may need to be rescheduled at short notice (eg if a death or funeral occurs in the community).
Section 9 – Educating the health workforce

Establishing and maintaining a health workforce with knowledge, skills and experience in trachoma control is a prerequisite of effective trachoma control and should be the responsibility of regional population health units. Challenges to achieving this include the high staff turnover in rural and remote health care settings and the disappearance of trachoma from many parts of Australia, including the capital cities and regional centres where health professionals are trained.

In parts of Australia where trachoma education for health staff occurs regularly as a planned activity supporting the trachoma control program, responsibility for education is assumed by the regional population health or disease control units (working with other agencies as appropriate). Much of the education is actually conducted by experienced primary health care staff; however, regional coordination and support for staff education by the regional population health or disease control unit is necessary to ensure that staff training is delivered in a timely manner to those who need it.

Models of staff education that have been implemented in Australia include the following.

- The **regional population health unit** assesses trachoma workforce education needs annually in the course of coordinating the regional trachoma control program and provides education in areas where it is needed. Every 2 years the population health unit organises and funds a 1-day trachoma training workshop in a trachoma hyperendemic area to which primary health care staff throughout the region are invited. Training includes sessions on trachoma control programs; recognition of trachoma and trachoma grading; eyelid eversion; community consultation; options for obtaining consent; and supervised clinical practice in trachoma screening and treatment in schools. Experienced population health and primary health care staff work collaboratively to teach and supervise less experienced colleagues.

- An **experienced population health unit staff member** conducts trachoma screening and treatment in the field with primary health care staff, providing on-the-job training as it is required. Every few years, an ophthalmologist conducts a trachoma training workshop for population health and primary health care staff, and supervises their clinical skills in the field.

- Trachoma screening is done by a **visiting specialist (ophthalmologist or optometrist)** with the assistance of population health staff and, to a lesser extent, primary health care staff. The specialist then provides clinical skills training in the field.

- Trachoma education is included in the **orientation program** of all remote area staff before, or soon after, they begin work.

Staff education should include supervised clinical practice in eyelid eversion and trachoma grading, preferably in a field setting.

Useful staff education resources include the following documents.

- Primary health care level management of trachoma (includes trachoma slides) (WHO 1989)\(^5\)
- Achieving community support for trachoma control. (WHO 1995)\(^4\)
- Trichiasis surgery for trachoma and bilamellar tarsal rotation procedure (WHO 1993).\(^6\)
- The SAFE strategy. Preventing trachoma. A guide for environmental sanitation and improved hygiene (Mariotti and Pruss for WHO 2000)\(^50\)
- Trachoma grading system (WHO 2004)\(^52\)
  http://www.who.int/hcd/vision2020_actionplan/contents/extra/slide_tgrading.htm
- Specialist eye health guidelines. For use in Aboriginal and Torres Strait Islander Populations. Cataract, diabetic retinopathy, trachoma (Commonwealth of Australia 2001)\(^15\)
- Trachoma (Couzos and Taylor 2003: 572–93) [In Aboriginal Primary Health Care: An Evidence-based approach]\(^53\)
Section 10 – ‘S’: Surgery

Screening and treatment for trichiasis have not been implemented in a systematic way in most Australian trachoma control programs.

Epilation (removal of eyelashes) is not recommended, other than as a temporary measure while waiting for surgery, because of the potential for corneal damage from regrowth of inturned lashes and because broken lashes can be more harmful than unbroken lashes. Epilation should be done carefully using good lighting and magnification loupes.15

There is sufficient evidence from longitudinal studies and RCTs to support referral of patients with trichiasis to an ophthalmologist for surgical intervention. WHO recommends bilamellar tarsal rotation, but this has not been conclusively demonstrated to be the best procedure for all patients.11 In the Australian context, the choice of surgical procedure should be made on a case-by-case basis.

Surgery does not alter the natural history of cicatricial trachoma, so even after successful surgery, trichiasis may recur after 1–2 years and further surgery may be required. The proportion of patients who remain trichiasis free after 1–2 years ranges from 68% to 81%.54 Patients and staff need to be aware of this and patients should be followed up annually after surgery so that recurrences can be detected promptly.15

People with trichiasis do not always self-present for treatment. Therefore, in regions where trachoma is endemic and trichiasis prevalence is unknown, the burden of trichiasis should be quantified. In addition, health services need to ensure that a process is in place for timely surgical referral and treatment of patients with trichiasis.

The following options can be used to identify patients with trichiasis who should be referred to an eye specialist.

- In areas where trachoma or trichiasis is endemic, Aboriginal and Torres Strait Islander people aged 40–54 years should be screened every two years and those aged 55+ years should be screened annually for trichiasis as part of an adult health check (an optional procedure in the Medicare Benefits Schedule for Aboriginal and Torres Strait Islander Adult Health Checks).3,9,10
- Conduct systematic trichiasis surveys in Aboriginal and Torres Strait Islander people aged > 40–50 years every 2–3 years, aiming for high population coverage, as trichiasis is an indolent, slowly progressing condition.
- Educate staff in aged care services, hostels and nursing homes to be aware of trichiasis and empower them to refer patients with suspected trichiasis to primary health care services.
- Include trichiasis screening for Aboriginal and Torres Strait Islander adults in optometrist consultations.

Population-based surveys and trichiasis screening performed in the context of specialist eye health services (eg diabetic retinopathy screening, optometry and ophthalmology clinics) have the advantages that it is easier to collect trichiasis prevalence data in these situations.

Opportunistic screening in primary health care settings and as part of adult health checks has the advantage of potentially being able to reach more people. However this method of screening does not lend itself to systematic collection of trichiasis prevalence data unless a high proportion of the population undergoes regular adult health checks and trichiasis screening results are recorded in a central information system from which they can be readily retrieved.

Regional population health units, primary health care services and specialist eye health services (including optometrists and ophthalmologists) need to decide collaboratively on the best way to identify patients with trichiasis in their region and the best system to ensure that these patients have access to timely surgical referral and treatment.
Section 11 – ‘A’: Antibiotics

The rationale behind antibiotic treatment is that antibiotics are thought to reduce the prevalence and intensity of active trachoma infection, preventing the development of scarring and blindness. A recent Cochrane review of the evidence supporting the ‘A’ component of SAFE found insufficient evidence to support the use of topical or oral antibiotics using either active trachoma (clinical evidence of infection) or laboratory evidence of ocular Chlamydia trachomatis as outcome measures. In trials comparing oral or topical antibiotic against placebo or no treatment, the data were consistent with there being no effect of antibiotics, but were suggestive of a lowering of the prevalence of active trachoma and laboratory evidence of infection at 3 and 12 months post-treatment. Trials comparing oral with topical antibiotics suggested that neither was more or less effective than the other. The reviewers were unable to determine by subgroup analysis who should be treated (eg the whole community, all children < 10 years, all women and children or families of children with active trachoma).

11.1 How to obtain consent for screening and treatment

A variety of methods are currently used in Australia to obtain consent for screening and treatment. These methods include:

- **Verbal community-based agreements for screening and treatment** of schoolchildren and the treatment of children with trachoma and their household contacts according to the regional trachoma control program. Agreement is obtained by primary health care staff from the community council in consultation with the school principal/council.

- **Verbal community-based agreements for screening** of schoolchildren according to the regional trachoma control program. Primary health care staff obtain agreement from the community council in consultation with the school principal/council. Verbal agreement for treatment is obtained from the parents of each child with trachoma.

- In consultation with the community council and school principal/council, parents are informed verbally and by letter about screening and treatment of schoolchildren using an **opt-out system**. Parents are informed that it is their responsibility to inform the school health nurses if they do not want their child to participate in trachoma screening and treatment, and that no response will be taken to mean agreement.

- In consultation with the community council and school principal/council, parents are informed verbally and by letter about screening and treatment of schoolchildren using an **opt-in system**. Children are screened only if their parent has signed a consent form for screening. If treatment is indicated, the child and his/her parent are asked to attend the clinic, where verbal and/or written agreement for treatment is obtained.

There is no evidence to support one method rather than another. The decision about which method to use in any particular school or community should be a collaborative decision between primary health care staff, the community council and the school principal/council following appropriate consultation. Individual and community consent should be obtained prior to implementing screening programs involving Aboriginal and Torres Strait Islander communities.

11.2 Who to screen for active trachoma

The minimum target group for screening should be Aboriginal and Torres Strait Islander children aged 5–9 years living in communities/towns where trachoma is endemic. If health services have the resources and if there is community agreement, children aged 1–4 years and 10–14 years should also be screened.

Current practice in Australian trachoma control programs is to screen school-aged children, most of whom are aged 5–14 years. It is generally accepted that this underestimates trachoma prevalence in 1–9-year-olds (the WHO recommended screening target group) as pre-school aged children carry the bulk of a community’s chlamydial load. For both organisational and patient/family acceptance reasons, it is much easier to screen school-aged children.
11.3 How often should screening be conducted?

Where trachoma is endemic in communities, annual screening for active trachoma is recommended until active trachoma prevalence is < 5% for 5 consecutive years, after which annual screening should cease.

WHO recommends screening every 3 years if active trachoma prevalence is ≥ 5% and no screening if regional trachoma prevalence < 5%. However these Australian guidelines recommend annual screening until active trachoma prevalence is < 5% for 5 consecutive years. This is because of wide intraregional variations in trachoma prevalence between individual communities and because Aboriginal and Torres Strait Islander communities are small, so prevalences in individual communities tend to be unstable and can vary widely from year to year. In addition, as staff turnover is high, annual screening provides a regular opportunity to maintain clinical awareness of trachoma and clinical skills in trachoma grading.

11.4 Screening procedure for trachoma grading

- Use 2.5x magnification loupes and good lighting
- Wash hands with soap and water or an alcohol-based handwash
- Signs must be clearly seen if trachoma is to be reported as present
- Refer to the WHO simplified trachoma grading classification system52
- Observe facial cleanliness (is there ‘sleep’, dirt or crusting around the eyes?)
- Examine for trichiasis (inturned lashes or evidence of previously removed lashes; to check for this the upper eyelid may need to be pushed upwards slightly to expose the lid margins)
- Examine the cornea for opacities
- Evert the right upper eyelid, examine and record the presence of TF, TI and TS
- Evert the left upper eyelid, examine and record the presence of TF, TI and TS

**Everting the upper eyelid**

- Ask the patient to look down
- Gently hold the upper eyelashes between your thumb and first finger
- Using a clean, new orange stick or cotton bud held in your other hand, evert the upper eyelid
- Steady the everted lid and examine for TF, TI and TS
- Gently reinvert the eyelid

**Equipment required**

- Binocular loupes, 2.5x magnification
- Orange sticks or cotton buds
- Soap, water and a sink or an alcohol-based handwash
- Rubbish disposal bag or bin
- Good lighting (sunlight, torch or headlamp)
- Data collection form
- Pens
- WHO simplified trachoma grading classification system 52
11.5 Who to treat with antibiotics

Following a community screening program:

- All children found to have active trachoma (TF and/or TI) should be treated with single-dose azithromycin.\(^{11}\)
- If \(>10\%\) of screened Aboriginal and Torres Strait Islander children aged \(<10\) years have active trachoma and there is no obvious clustering of cases, single-dose azithromycin is recommended (see Table 1) for:
  - all Aboriginal and Torres Strait Islander children in the community aged 6 months to 14 years \(\text{and}\)
  - all household contacts aged 6 months or more.\(^{17,18,19,20}\)
- If \(>10\%\) of screened Aboriginal and Torres Strait Islander children aged \(<10\) years have active trachoma and cases are obviously clustered within several households \(\text{and}\) health staff can easily identify all household contacts of cases, single-dose azithromycin is recommended (see Table 1) for:
  - all household contacts aged 6 months or more \(\text{only}\). Community wide treatment is not required.\(^{15,17,18,19,20}\)
- If \(<10\%\) of screened Aboriginal and Torres Strait Islander children aged \(<10\) years have active trachoma, single-dose azithromycin is recommended for all household contacts aged 6 months and over (see Table 1).
- Antibiotic treatment of cases, household contacts and community members (when required) should be completed within two weeks of screening.
- In regions where population mobility is high, all screening and treatment activities within the region should be completed in as short a timeframe as possible to minimise the likelihood of reinfection and to achieve higher population coverage.

Sporadic cases presenting outside a community screening program

- In regions where trachoma is endemic, clinical examination of patients presenting with conjunctivitis should include eversion of the upper eyelid to check for trachoma.\(^{17,20}\)
- Individuals who self-present with symptoms of trachoma and who have active trachoma on examination should be treated with single-dose azithromycin.\(^{21}\) Household contacts aged 6 months or more should be treated with single-dose azithromycin within two weeks of the case being identified.

The main reasons for the above recommendations are:

- In areas of hyperendemicity, high chlamydial loads are found in younger children, with children aged \(<7\) years contributing \(90\%\), and those \(<10\) years contributing \(97\%\) of total community ocular chlamydial load.\(^{20}\)
- In a randomised trial, community-wide treatment of children aged 1–10 years was shown to be as effective as targeted household treatment in decreasing the prevalence of active trachoma. Trachoma prevalence decreased from \(15.5\%\) to \(6.4\%\) in villages given mass treatment and from \(15.1\%\) to \(4.4\%\) in villages given targeted treatment. Targeted treatment was also more cost-effective: many adults, requiring large doses, were treated in households, so less azithromycin and staff time were required.\(^{18,19}\)
- If \(>10\%\) of screened children have active trachoma, antibiotic treatment of all community members (including adults) is resource intensive and costly; there was limited support for such treatment among staff working in Australian trachoma control programs.
- Development of antibiotic resistance in *Streptococcus pneumoniae* has been documented in a remote NT Aboriginal community following single-dose azithromycin given for trachoma. Azithromycin-resistant strains were isolated from \(1.3\%\) of pre-treatment swab samples and from \(21.3\%\) and \(6\%\) of samples taken 2 and 6 months post-treatment.\(^{55}\) Similar findings have been reported in Nepal.\(^{56}\) These studies indicate that antibiotic resistance patterns take 6 months to return to baseline levels after a single-dose community-wide treatment. Thus annual treatment is not likely to have long-term effects on antibiotic resistance patterns.
• Some authors (Lightman et al 1999) have suggested an increase in the frequency of antibiotic administration from annually to 6 monthly if the active trachoma prevalence in children is greater than 50%. This is based on one paper that uses a mathematical model to estimate the frequency of mass azithromycin treatment required to eliminate trachoma. However, the assumptions underlying the model (95% treatment efficacy, no immigration, homogeneous case distribution) may not apply in Aboriginal and Torres Strait Islander communities and this recommendation has not been adopted here.

• A cohort study conducted in Ethiopia to determine the rate at which ocular chlamydial infection (measured by polymerase chain reaction testing of eye swabs) returns after mass community treatment found that in an area with a 56% prevalence of ocular chlamydial infection the minimum treatment frequency required for elimination was 11.6 months.

• Recommendations for the antibiotic treatment of adult female caregivers and all adult female community members are based on two observations found in overseas studies: a higher prevalence of active trachoma and trichiasis in adult females than males, and an association between active trachomatous and other bacterial infections and the progression of trachomatous scarring in adult females. However, in Australia adult females are no more likely than adult males to have either active or cicatricial trachoma, so the recommendation may not be appropriate here.

• Targeted household treatment of family/household members of trachoma cases regardless of the level of endemicity is consistent with current knowledge of trachoma transmission within families. However, this approach requires health staff to have an intimate knowledge of community structure and dynamics and may be logistically difficult to implement (especially if the turnover of health staff is high). This applies particularly to traditional Aboriginal and Torres Strait Islander communities where it is the norm for children to eat and sleep in more than one household, have more than one or two caregivers and have close contact with most of their classmates at school. In these communities, if trachoma prevalence is high and not obviously clustered within one or two families/households, family-based treatment is essentially the same as community-wide treatment. Conversely, if cases are obviously clustered within one or two families/households and health staff have the local knowledge required to easily identify all family/household contacts of cases, they should be encouraged to use this knowledge to better target antibiotic treatment and reduce the number of unnecessary treatments.

• Although azithromycin is rarely associated with adverse effects, the likelihood of an adverse drug side effect or an adverse drug interaction increases as more people are treated. An adverse effect following azithromycin administration in a person who did not have trachoma or was not a family/household contact of trachoma could jeopardise all trachoma control activities. It is better to limit azithromycin administration to those for whom there is a strong indication.

11.6 Antibiotic doses
Azithromycin in a single dose is recommended for the treatment of trachoma and for the treatment of household contacts and community members. The recommended dose of azithromycin is 20 mg/kg, with a maximum dose of 1000 mg (see Table 3). Health practitioners administering azithromycin should be familiar with the manufacturer’s prescribing information, including contraindications and precautions. Azithromycin is not recommended for children under the age of 6 months or weighing less than 6kg. Azithromycin is a category B1 drug in pregnancy, indicating that it has been used in a limited number of pregnant women and women of childbearing age without any known harm, and animal studies have not shown harm in pregnancy.
Table 3. Azithromycin for trachoma, dose by weight

<table>
<thead>
<tr>
<th>Weight (kg)</th>
<th>Single dose(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3–5</td>
<td>N/A (^b)</td>
</tr>
<tr>
<td>6–9</td>
<td>160 mg, 4ml (^c)</td>
</tr>
<tr>
<td>10–14</td>
<td>240 mg, 6 ml (^c)</td>
</tr>
<tr>
<td>15–19</td>
<td>400 mg, 10 ml (^c)</td>
</tr>
<tr>
<td>20–29</td>
<td>500 mg, 1 tablet (^d)</td>
</tr>
<tr>
<td>30–39</td>
<td>750 mg, 1 1/2 tablets (^d)</td>
</tr>
<tr>
<td>40+</td>
<td>1000 mg, 2 tablets (^d)</td>
</tr>
</tbody>
</table>

\(^a\) Based on an azithromycin dose of 20 mg/kg
\(^b\) If patient is < 6 months of age or < 6kg, use erythromycin 62.5mg (2.5ml of a 25mg/ml suspension) orally, twice a day for 14 days or discuss treatment with a medical practitioner
\(^c\) 40 mg/ml suspension
\(^d\) 500 mg tablet

11.7 When to screen and treat
WHO does not recommend any particular time of the year for trachoma screening and antibiotic treatment.

In regions where population mobility is high, all screening and treatment activities within the whole region should be completed within as short a timeframe as possible. This minimises the likelihood of treated individuals being reinfected by untreated people from within the region. In addition, frequent mobility between communities means that higher population coverage is likely to be achieved using this strategy. For the same reasons, consideration should be given to cross-regional and/or cross-state collaboration on the scheduling of trachoma control activities where people are known to move frequently across regions/state borders between communities with strong family/cultural links.

The following factors should also be considered when planning screening and treatment activities:
- Community factors (eg trachoma control activities should not coincide with ceremonial law, school camps, sports days and other major community events, and should be rescheduled if a death or a funeral occurs)
- Logistical factors (eg availability of skilled staff, availability of transport to remote communities)
- Seasonal factors (eg accessibility of communities by road transport and the fact that trachoma transmission is thought to increase when fly populations increase during and just after the wet season).\(^{52}\)
Section 12 – ‘F’ and ‘E’: Face-washing and Environmental health

Observational studies suggest that children with clean faces are less likely to have active trachoma than those with ocular or nasal discharge or flies on the face. However, the only published face-washing intervention trial demonstrated that implementation of a labour-intensive face-washing program was associated with a lower prevalence of severe trachoma (TI), but no difference in active trachoma (TF and/or TI) prevalence between villages receiving antibiotics and face-washing and those receiving antibiotics only. One year after baseline, there was no significant difference in ‘clean-face’ prevalence between children in control and intervention villages. There are no published studies of face-washing from Australia.

Facial cleanliness in children should be promoted by including regular face-washing as part of a holistic personal hygiene program, which may also include tooth-brushing, the ‘breathe, blow, cough’ (BBC) program, and ear toileting and showering (if required).

Environmental health interventions recommended by WHO include increasing water availability, improving access to latrines, reducing fly density, avoiding overcrowding and educating people about hygiene behaviours. The applicability of some of these recommendations (eg pit latrines, fly traps and the use of water-filled gourds for hand-washing) to Aboriginal and Torres Strait Islander settings is questionable. Evidence of the effectiveness of environmental health interventions is limited. Two RCTs of fly control have shown that intensive insecticide spraying to reduce fly populations is effective in reducing child eye–fly contact and trachoma prevalence. Despite this, the authors concluded that fly control based on insecticide use was unsuitable as a long-term community-based control strategy because it was expensive, labour-intensive and likely to result in the development of insecticide resistance. One RCT showed that providing latrines, even without health education, resulted in a small (statistically insignificant) reduction of trachoma prevalence.

A recent study conducted in two remote Aboriginal communities in WA showed that swimming pools were associated with a reduction in the prevalence of pyoderma and tympanic membrane perforations. Unfortunately data on trachoma prevalence were not collected as part of this study. In one of these communities, there had been no trachoma control program for many years (if ever); a trachoma outbreak occurred there in 2004 while the swimming pool was operational (Cas Knudsen, Gascoyne Population Health Unit, personal communication). The other community was in a region where the trachoma control program had been resurrected in 2004 after 5 years without any trachoma control activities. In 2004, 66% of those screened had TF and 6.4% had TI (Sally Connelly, Pilbara Population Health Unit, personal communication). This suggests that the relationship between trachoma and the availability of water for swimming may not be straightforward.

Useful community education resources to support the ‘F’ and ‘E’ components of SAFE include the following:

- The trachoma sickness colouring book (Katherine Disease Control Unit, Katherine, NT)
- The Trachoma Story (Katherine Disease Control Unit)

Given the evidence linking environmental health and personal hygiene not only with trachoma, but with many other common illnesses among Aboriginal and Torres Strait Islander Australians (eg scabies, otitis media, rheumatic fever and gastrointestinal infections) it is recommended that health organisations responsible for trachoma control promote an intersectoral approach. Environmental health, school and health promotion staff should be involved as key stakeholders when regional population health units and primary health care services plan and implement trachoma control activities so that ‘F’ and ‘E’ strategies appropriate to individual communities/regions can be implemented. The sustainability of these partnerships may be protected by formal agreements at regional and, if possible, state and territory levels.
Section 13 – Program evaluation
The effectiveness of trachoma control programs should be routinely assessed using a variety of process and outcome indicators. These may include the following.

Process
- The proportion of target populations screened for active trachoma/clean face (defined as absence of dirt, dust or crusting on the cheeks and forehead) and trichiasis
- The proportion of Aboriginal and Torres Strait Islander children with active trachoma who received antibiotic treatment within 2 weeks of screening
- The proportion of household contacts aged 6 months or more who received antibiotic treatment within 2 weeks of the case being identified.
- If active trachoma prevalence was ≥ 10%, the proportion of Aboriginal and Torres Strait Islander children aged 6 months to 14 years in the community who received antibiotic treatment within 2 weeks of screening.
- The surgical waiting time for patients with trichiasis
- Community/patient satisfaction with trachoma control activities
- Evidence of collaborative partnerships in trachoma control between health, environmental health, education, health promotion and community sectors.

Outcomes
- The prevalence of TF, TI and TS in the Aboriginal and Torres Strait Islander population aged 1–4 years, 5–9 years and 10–14 years
- The prevalence of TT in the Aboriginal and Torres Strait Islander population.
Section 14 – Data collection
These guidelines recommend that trachoma data collection systems should be standardised so that data are comparable between regions and states, and so that Australia can contribute meaningful data to global trachoma reports.

The dataset shown in Table 4 has been developed from trachoma data currently being collected by Australian trachoma control programs and WHO trachoma reporting requirements. Non-Indigenous populations are, for practical purposes, not at risk of developing trachoma, and therefore have been excluded from data collections. Appendixes 1 and 2 show sample data collection forms for field staff to document active trachoma data.

Routine collection and central collation of these data represent public health surveillance, not epidemiological research. Additional data collection for research purposes would need to comply with the National Health and Medical Research Council’s National Statement on Ethical Conduct in Research Involving Humans.

Collection of these data allows for the following calculations of trachoma prevalence:

- Prevalence of TF, TI, active trachoma and TS in the screened Aboriginal and Torres Strait Islander population in the 1–4, 5–9 and 10–14 years age groups
- Minimal regional prevalence of TF, TI, active trachoma and TS in Aboriginal and Torres Strait Islander people in the age groups stated above
- Estimated likely regional prevalence of TF, TI, active trachoma and TS in Aboriginal and Torres Strait Islander people in the age groups stated above
- TT prevalence in the screened Aboriginal and Torres Strait Islander population
- Minimal regional TT prevalence in Aboriginal and Torres Strait Islander people in the screened age group
- Estimated likely regional TT prevalence in Aboriginal and Torres Strait Islander people in the screened age group

where

- Trachoma prevalence in the screened Aboriginal and Torres Strait Islander population is the number of Aboriginal and Torres Strait Islander people with trachoma divided by the number of Aboriginal and Torres Strait Islander people screened
- Minimal regional Aboriginal and Torres Strait Islander trachoma prevalence is the number of Aboriginal and Torres Strait Islander people with trachoma divided by the regional Aboriginal and Torres Strait Islander population in screened age groups. (This calculation assumes that all Aboriginal and Torres Strait Islander people not screened do not have trachoma).
- Estimated likely regional Aboriginal and Torres Strait Islander trachoma prevalence is the trachoma prevalence in the screened Aboriginal and Torres Strait Islander population multiplied by the number of Aboriginal and Torres Strait Islander people in the screening target group, and resulting number then divided by the regional Aboriginal and Torres Strait Islander population in screened age groups. (This calculation assumes that trachoma prevalence in the screened Aboriginal and Torres Strait Islander population is a true estimate of trachoma prevalence in Aboriginal and Torres Strait Islander groups targeted for screening, and that all Aboriginal and Torres Strait Islander people outside the screening target groups do not have trachoma).
### Table 4. Trachoma dataset

<table>
<thead>
<tr>
<th>Core components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trachoma in Aboriginal and Torres Strait Islander children (preferably 1–10 years)</td>
</tr>
<tr>
<td>• State</td>
</tr>
<tr>
<td>• Population health unit region</td>
</tr>
<tr>
<td>• Location (local government area or region)</td>
</tr>
<tr>
<td>• Define screening target group (eg Aboriginal and Torres Strait Islander children living in community X or town Y)</td>
</tr>
<tr>
<td>• Age range of children surveyed</td>
</tr>
<tr>
<td>• Month and year of survey</td>
</tr>
<tr>
<td>• Number of Aboriginal and Torres Strait Islander children examined for trachoma and clean face in 1–4, 5–9 and 10–14 years age groups, where clean face is defined as the absence of dirt, dust or crusting on the cheeks and forehead</td>
</tr>
<tr>
<td>• Number of Aboriginal and Torres Strait Islander children with TF in 1–4, 5–9 and 10–14 years age groups</td>
</tr>
<tr>
<td>• Number of Aboriginal and Torres Strait Islander children with TI in 1–4, 5–9 and 10–14 years age groups</td>
</tr>
<tr>
<td>• Number of Aboriginal and Torres Strait Islander children with active trachoma (TF and/or TI) in 1–4, 5–9 and 10–14 years age groups</td>
</tr>
<tr>
<td>• Number of Aboriginal and Torres Strait Islander children with TS in 1–4, 5–9 and 10–14 years age groups</td>
</tr>
<tr>
<td>• Number of Aboriginal and Torres Strait Islander children with clean face (defined as the absence of dirt, dust or crusting on the cheeks and forehead) in 1–4, 5–9 and 10–14 years age groups</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Survey season (wet, dry, or not applicable)</td>
</tr>
<tr>
<td>• Survey location (rural [eg discrete community or rural town], urban [eg city], or both)</td>
</tr>
<tr>
<td>• Sampling strategy (random, whole community, special group [specify, eg school based], or other)</td>
</tr>
<tr>
<td>• Sexes surveyed (male, female, or both)</td>
</tr>
<tr>
<td>• Trachoma control activities in surveyed area pre- and post-survey (free text field for brief summary of each the 'S', 'A', 'F' and 'E' components)</td>
</tr>
<tr>
<td>• Number of Aboriginal and Torres Strait Islander children in the screening target group aged 1–4 years, 5–9 years and 10–14 years (ie number in the community or enrolled at school in each of these age groups)</td>
</tr>
<tr>
<td>• Number of Aboriginal and Torres Strait Islander children in the local government area or region aged 1–4 years, 5–9 years and 10–14 years (from census data)</td>
</tr>
<tr>
<td>• Publication status of above data (journal, book, departmental report, or other [specify])</td>
</tr>
<tr>
<td>• Details of publications (free text field)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Process evaluation data</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The number and proportion of Aboriginal and Torres Strait Islander children with active trachoma (TF and/or TI) who received antibiotic treatment within 2 weeks of screening</td>
</tr>
<tr>
<td>• The proportion of household contacts aged 6 months or more who received antibiotic treatment within 2 weeks of the case being identified.</td>
</tr>
<tr>
<td>• If active trachoma prevalence was ≥ 10%, the number and proportion of Aboriginal and Torres Strait Islander children aged 6 months to 14 years in the community who received antibiotic treatment within 2 weeks of screening.</td>
</tr>
</tbody>
</table>
### Table 4. Trachoma dataset continued

**Optional components**

*Trichiasis in Aboriginal and Torres Strait Islander adults*

- State
- Population health unit region
- Location (local government area or region)*
- Define screening target group and sampling strategy
- Age range of people surveyed
- Month and year of survey
- Number of Aboriginal and Torres Strait Islander adults examined for trichiasis
- Number of Aboriginal and Torres Strait Islander adults with trichiasis
- Number of Aboriginal and Torres Strait Islander adults in the screening target group (i.e., number of Aboriginal and Torres Strait Islander adults in the screened age group in communities/towns targeted for screening)
- Number of Aboriginal and Torres Strait Islander adults in local government area or region in the screened age group (from census data)
- Number of Aboriginal and Torres Strait Islander adults with trichiasis who were offered an ophthalmological consultation within 3 and 6 months of screening
- Number of Aboriginal and Torres Strait Islander adults who underwent trichiasis surgery within 3 and 6 months of being diagnosed with trichiasis by an ophthalmologist

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*a* Census data for Aboriginal and Torres Strait Islander populations are routinely available for Australian Bureau of Statistics census collection districts and for local government areas.

*b* If ≥ 10% of screened Aboriginal and Torres Strait Islander children aged < 10 years have active trachoma

*c* If < 10% of screened Aboriginal and Torres Strait Islander children aged < 10 years have active trachoma
Section 15 – The role of NADT in trachoma screening and diagnosis

Of the several nucleic acid detection tests (NADTs) commercially available for genital *C. trachomatis* diagnosis, only two, the Amplicor polymerase chain reaction (PCR) (Roche Diagnostic Systems, Pleasanton, CA) and the LCx ligase chain reaction (LCR) (Abbot Laboratories, Abbott Park, IL) have been used to diagnose trachoma in research settings. NADTs used in Australia for detection of genital *C. trachomatis* infection are the Amplicor PCR and PathWest’s in-house PCR test which also tests for adenovirus, gonococcus, herpes I and II and varicella (Pathwest WA). Neither of these are validated tests for the diagnosis of ocular trachoma; however, the pathology laboratories in which they are performed have provided verbal advice that they are able to detect ocular *C. trachomatis*.

WHO does not recommend the use of NADTs or other laboratory tests as part of implementing trachoma control programs in the field. However, health staff in the NT and WA have been taking eye swabs for trachoma for several years, so information about the role and interpretation of NADTs for trachoma has been included in these guidelines.

The presence or absence of active trachoma (TF and/or TI) according to the WHO criteria does not correlate perfectly with laboratory evidence of *C. trachomatis* infection, for the following reasons:

- *C. trachomatis* infection is not the only cause of the clinical signs of TF or TI
- It takes time for clinical signs of TF or TI to develop after ocular infection with *C. trachomatis*
- TF can persist for weeks or months after ocular infection with *C. trachomatis* has resolved (either spontaneously or post-treatment).

The role of laboratory diagnosis of trachoma in Australia can be seen in the context of an individual patient presenting with clinical signs of trachoma and in the context of a population-based trachoma control program.

In the case of an individual patient presenting with conjunctivitis and signs of active trachoma, as with a patient presenting with any clinical problem, there is no point in doing a laboratory test unless it will influence the patient’s management. If the patient is from a community where trachoma is endemic, an NADT is unlikely to be helpful as the positive predictive value of clinical signs is very high. If trachoma is suspected the patient and his/her family/household contacts should be treated with azithromycin immediately. If the patient is from a community where trachoma is not known to be endemic or is of low prevalence (e.g., Broome and some remote coastal Aboriginal and Torres Strait Islander communities), NADTs may be useful for two reasons. First, they may confirm the diagnosis before a decision is made to treat the patient and his/her family/household contacts with azithromycin. Second, the may confirm the presence of ocular *C. trachomatis* infection in the community as this could have public health implications. If the patient is from a community known not to have trachoma (e.g., Melbourne), the positive predictive value of clinical signs is very low and laboratory testing could be useful in deciding whether the patient has ocular *C. trachomatis* infection and, if genotyping is available, in identifying whether the infection is due to an ocular or a genital serovar.

Table 5 outlines the interpretation of a trachoma NADT result in a patient presenting with conjunctivitis and clinical signs of active trachoma.
Table 5. Interpretation of a trachoma NADT result in a patient presenting with conjunctivitis and clinical signs of active trachoma

<table>
<thead>
<tr>
<th>NADT result</th>
<th>Prevalence of trachoma in patient’s community</th>
<th>Trachoma known not to occur</th>
</tr>
</thead>
</table>
| Positive    | NADT not necessary | Patient has trachoma or a genital *C. trachomatis* serovar ocular infection.  
Treat patient with azithromycin.  
Further clinical information required to decide whether to treat household contacts for trachoma or sexual partners for genital *Chlamydia*.  
Consider the need to investigate the prevalence of trachoma in children, especially if trachoma was previously endemic.  
Consider referring the sample to a PHLN laboratory for genotyping. | Patient probably has a genital *C. trachomatis* serovar ocular infection or possibly trachoma.  
This can be confirmed by referring the sample to a PHLN laboratory for genotyping.  
Clinical management as for genital *Chlamydia*. |
| Negative    | NADT not necessary | Patient has trachoma (false negative test), a genital *C. trachomatis* serovar ocular infection or another infective/inflammatory ocular condition.  
Further clinical information required to decide on clinical management.  
If > 1 patient presenting, consider the need to investigate the prevalence of trachoma in children, especially if trachoma was previously endemic. | Patient may have a genital *C. trachomatis* serovar ocular infection or another infective/inflammatory ocular condition or possibly trachoma.  
Further clinical information required to decide on clinical management. |
The role of NADT in patients presenting with cicatricial trachoma is questionable as the results are unlikely to influence clinical management.

Trachoma NADTs are not recommended in the context of a population-based trachoma control program unless they are taken as part of a quality improvement or research project with clear aims and an agreed protocol for how to deal with discrepancies between clinical and laboratory results. The evidence supporting trachoma control programs is based largely on clinical, not laboratory, diagnosis of trachoma. If there is a discrepancy, it would seem more appropriate to base public health management decisions on clinical results rather than laboratory results.

Situations in which NADT may have a role in trachoma control in Australia in a quality improvement or research context include:

- **Validating the clinical diagnosis of trachoma in hyperendemic communities**
  
  Based on overseas research, around 50% of patients with active trachoma could be expected to test positive.\(^7\) If this proportion is much lower in Australia, especially in areas where staff are poorly trained or inexperienced, it may indicate that trachoma is being overdiagnosed.

- **Genotyping trachoma strains**
  
  A recent Australian study of 31 ocular *C. trachomatis* isolates from the NT showed that one predominant genotype, corresponding to serovar C, accounted for 87% of isolates NT-wide and 100% of isolates in the coastal communities. All isolates of a less common genotype, corresponding to serovar Ba, came from one inland community.\(^7\) Information on the molecular epidemiology of trachoma in Australia, coupled with local knowledge about cultural mobility patterns, could be used in two ways: firstly to inform and refine decisions about which communities should be treated at the same time, and secondly to provide evidence of the need for regional, cross-regional and cross-state approaches to trachoma control.

- **Determining the need for continued trachoma control in areas of declining endemicity**
  
  In parts of Australia where trachoma is declining because of improved socioeconomic and environmental health conditions, and/or where blinding trachoma no longer occurs or has never been known to occur, the positive predictive value of a clinical diagnosis of trachoma is low. In these communities, laboratory testing of active trachoma cases, preferably using an NADT that can detect other infective causes of conjunctivitis, may provide evidence to support a planned decrease in trachoma control activities so that limited health resources can be used to achieve the best possible health outcomes.

If such studies are to be conducted, it is essential to use the following procedure to minimise carryover contamination of samples for NADT, and to prevent carryover transmission of ocular pathogens from one subject to the next. The examiner wears two pairs of latex medical examination gloves. The outer pair is removed and discarded after each subject is seen (to get rid of the DNA), and the inner pair is sprayed with isopropyl alcohol and allowed to air dry (to kill live microorganisms). A new pair of outer gloves is then donned. A new clean orange stick/cotton bud is used to evert the eyelid of each individual (Anthony Solomon, London School of Hygiene and Tropical Medicine, personal communication).

As *C. trachomatis* is an intracellular organism, the conjunctiva needs to be swabbed firmly in order to collect conjunctival cells. Conjunctival scrapes could also be collected, but they are more difficult to collect (especially in children) and it has not been shown that they produce an additional yield by PCR (David Smith, Public Health Laboratory Network, personal communication).
References


Appendix 1. Sample data collection form for active trachoma screening

Name of school/community screened …

Number of Aboriginal and Torres Strait Islander children in school/community aged 1–4 years…

Number of Aboriginal and Torres Strait Islander children in school/community aged 5–9 years …

Number of Aboriginal and Torres Strait Islander children in school/community aged 10–14 years…

Date of screening.

Name(s) of staff doing trachoma screening

<table>
<thead>
<tr>
<th>Name</th>
<th>Age/DOB</th>
<th>Indigenous Y/N</th>
<th>Sex</th>
<th>R eye</th>
<th>L eye</th>
<th>Face</th>
<th>Azithromycin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TF</td>
<td>TI</td>
<td>TS</td>
<td>Clean/dirty</td>
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</tr>
</tbody>
</table>

Guidelines for the public health management of trachoma in Australia
Appendix 2. Sample summary form for active trachoma data

Name of school/community

Date of screening

Name(s) of staff implementing trachoma control

<table>
<thead>
<tr>
<th></th>
<th>1–4 years</th>
<th>5–9 years</th>
<th>10–14 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Aboriginal and Torres Strait Islander children in community/enrolled in school</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Aboriginal and Torres Strait Islander children examined for trachoma and clean face* in school/community</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Aboriginal and Torres Strait Islander children with TF in school/community</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Aboriginal and Torres Strait Islander children with TI in school/community</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Aboriginal and Torres Strait Islander children with active trachoma (TF and/or TI) in school/community</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Aboriginal and Torres Strait Islander children with TS in school/community</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Aboriginal and Torres Strait Islander children with clean face* in school/community</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Aboriginal and Torres Strait Islander children in school/community requiring azithromycin for active trachoma (TF and/or TI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Aboriginal and Torres Strait Islander children in school/community who received azithromycin for active trachoma (TF and/or TI) within 2 weeks of screening</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Defined as the absence of dirt, dust or crusting on the cheeks and forehead

<table>
<thead>
<tr>
<th></th>
<th>&lt; 1 year</th>
<th>1–4 years</th>
<th>5–9 years</th>
<th>10–14 years</th>
<th>&gt; 14 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of household contacts requiring treatment with azithromycin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of household contacts treated with azithromycin within two weeks of the case being identified</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If trachoma prevalence ≥ 10%

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Aboriginal and Torres Strait Islander community members requiring treatment with azithromycin</td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Number of Aboriginal and Torres Strait Islander community members treated with azithromycin within 2 weeks of screening</td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>

N/A – not applicable
Trachoma control activities implemented

<table>
<thead>
<tr>
<th>Description of activity</th>
<th>Completeness of implementation</th>
<th>Intersectoral partnerships</th>
</tr>
</thead>
<tbody>
<tr>
<td>S' Surgery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A' Antibiotics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F' Face washing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E' Environmental health</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In September 2003, the Communicable Diseases Network Australia (CDNA) established the Trachoma Steering Committee to provide recommendations to CDNA on standards for surveillance and reporting of trachoma and a mechanism to develop a nationally consistent approach to the public health management of trachoma in Australia.

Membership of the Steering Committee was drawn from CDNA with NT, WA, SA and Population Health Division of Department of Health and Ageing participating together with the Office for Aboriginal and Torres Strait Islander Health.

The guidelines were required due to the ongoing high prevalence of trachoma in some regions of Australia, and inconsistencies in data collection and trachoma control.

The draft guidelines were made available to CDNA members and key stakeholders for comment on the 19 November 2004 and 21 December 2004 respectively. The consultation period closed on 28 February 2005.

Eight submissions were received reflecting the varying stakeholder and professional perspectives. All submissions received during the consultation were taken into consideration in finalising the guidelines. Submissions were received from the following individuals and organisations:

- Dr Sophie Couzos, National Aboriginal Community Controlled Health organisation, Western Australia
- Ms June Doyle, Department of Health Western Australia
- Dr Tim Henderson, Royal Australian and New Zealand College of Ophthalmologists, Indigenous Health Committee
- Dr Gary Lum, Public Health Laboratory Network
- Dr Henry Newland
- Ms Merle O’Donnell, Indigenous Environmental Health Forum and Indigenous Environmental Health Coordinator, Central Public Health Unit QLD
- Dr Jenny Reath, Royal Australian College of General Practitioners
- Professor Hugh Taylor

The CDNA endorsed the guidelines in September 2005.

The Trachoma Steering Committee membership comprised:

**Chair**

Dr Moira McKinnon, Australian Government Department of Health and Ageing

**Members**

Dr Gary Dowse, Department of Health Western Australia
Dr Keith Edwards, Northern Territory Department of Health and Community Services
Dr Rod Givney, Department of Health South Australia
Dr Ana Herceg, Australian Government Department of Health and Ageing

**Project Consultant**

Dr Donna Mak, Department of Health Western Australia

**Secretariat**

Ms Robyn Leader (Nov 03 – Aug 04)
Dr Iris Domeier (Aug 04 – Nov 04)
Ms Nada Pavlak (Nov 04 – Mar 05)
Ms Claire Brady (Apr 05 – 06)
Australian Government Department of Health and Ageing