

NATIONAL TRACHOMA SURVEILLANCE ANNUAL REPORT, 2012

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Abstract

Australia remains the only developed country to have endemic levels of trachoma (a prevalence of 5% or greater among children) in some regions. Endemic trachoma in Australia is found predominantly in remote and very remote Aboriginal communities. The Australian Government funds a National Trachoma Surveillance and Reporting Unit to collate, analyse and report trachoma prevalence data and document trachoma control strategies in Australia through an annual surveillance report. This report presents data collected in 2012. Data are collected from Aboriginal and Torres Strait communities designated as at-risk for endemic trachoma in the Northern Territory, Queensland, South Australia and Western Australia. The World Health Organization grading criteria were used to diagnose cases of trachoma in Aboriginal children with jurisdictions focusing screening activities on the 5–9 years age group; however, some children in the 1–4 and 10–14 years age groups were also screened. The prevalence of trachoma within a community was used to guide treatment strategies as a public health response. Aboriginal adults aged 40 years or older were screened for trichiasis. Community screening coverage of the designated at-risk communities was 96%. Screening coverage of the estimated population of children aged 5–9 years and adults aged 40 years or older in at-risk communities was 71% and 31%, respectively. Trachoma prevalence among children aged 5–9 years who were screened was 4%. Of communities screened, 63% were found to have no cases of active trachoma and 25% were found to have endemic levels of trachoma. Treatment was required in 87 at-risk communities screened. Treatment coverage of active cases and their contacts varied from 79%–97% between jurisdictions. Trichiasis prevalence was 2% within the screened communities. *Commun Dis Intell* 2015;39(1):E146–E157.

Keywords: active trachoma, control activities, endemic, facial cleanliness, Northern Territory, Queensland, SAFE control strategy, South Australia, surveillance, Western Australia

Introduction

This is the 7th national trachoma surveillance annual report prepared by the National Trachoma Surveillance Reporting Unit.^{1–6} Trachoma screening

and management data for 2012 were provided to the National Trachoma Surveillance and Reporting Unit (NTSRU) by the Northern Territory, South Australia, Western Australia and Queensland.

Trachoma is one of the major causes of preventable blindness globally.⁷ Trachoma is an eye infection caused by *Chlamydia trachomatis* serotypes A, B, Ba and C. Infection with the relevant *C. trachomatis* serotypes causes inflammation of the conjunctiva. Diagnosis of trachoma is by visual inspection, and the detection of follicles (white spots) and papillae (red spots) on the inner upper eye lid. Repeated infections, especially during childhood, may lead to scarring with contraction and distortion of the eyelid, which may in turn cause the eyelashes to rub against the cornea. This condition is known as trichiasis and can lead to blindness.^{8,9} Scarring of the cornea due to trichiasis is irreversible. If early signs of in-turned eyelashes are found, surgery is usually effective in preventing further damage to the cornea. The infection can be transmitted through close facial contact, hand-to-eye contact, via fomites (towels, clothing and bedding) or by flies. Trachoma generally occurs in dry, dusty environments and is linked to poor living conditions. Overcrowded households, limited water supply for bathing and general hygiene, poor waste disposal systems and high numbers of flies have all been associated with trachoma. Children generally have the highest prevalence of trachoma and are believed to be the main reservoirs of infection because the infection has a longer duration in children than in adults¹⁰

Trachoma is usually treated by a single dose of the antibiotic, azithromycin. Best public health practice involves treatment of all members of the household in which a person with clinically active trachoma resides, whether or not they have evidence of trachoma. Depending on the prevalence of trachoma in a community, treatment may also be extended to all children aged 6 months to 14 years, or to all members of the community, excluding or including infants less than 6 months of age.¹⁰

The Alliance for the Global Elimination of Blinding Trachoma by 2020 (GET 2020)¹¹ initiative, supported by the World Health Organization (WHO) advocates the implementation of the SAFE strategy, with its key components of surgery (to correct trichiasis), antibiotic treatment, facial cleanliness and environmental improvements.¹²

This strategy is ideally implemented through a primary care model within a community framework, ensuring consistency and continuity in screening, control measures, data collection and reporting, as well as the building of community capacity. The target set by both WHO and the Communicable Diseases Network Australia (CDNA) for elimination of blinding trachoma is community prevalence in children aged 1–9 years of less than 5% over a period of 5 years.^{8,11,13,14}

Trachoma control in Australia

Australia is the only high income country where trachoma continues to be endemic.¹⁵ It occurs primarily in remote and very remote Aboriginal communities in the Northern Territory, South Australia and Western Australia. In 2009, the Australian Government invested in the *Closing the Gap – Improving Eye and Ear Health Services for Indigenous Australians* measure, which included committing \$16 million over 4 years towards eliminating trachoma in Australia. The funding is for improving and expanding screening and control activities, as well as establishing a strong framework for monitoring and evaluation of trachoma control activities. As a result, increased funding was provided to the Northern Territory, South Australia and Western Australia for trachoma control activities from 1 July 2010 and to Queensland and New South Wales in 2012.

The surveillance and management of trachoma is guided by the CDNA *Guidelines for the public health management of trachoma*.¹⁶ These guidelines were recently revised and released in January 2014.¹⁶ This document was developed in the context of the WHO SAFE strategy and make recommendations for improving data collection, collation and reporting systems.

CDNA guidelines recommend the treatment of active cases and their household contacts. When prevalence is greater than 10% and cases are not clustered within a few households, community-wide treatment is advised. The approach to community-wide treatment differs across jurisdictions. In the Northern Territory, the recommendation is taken to mean the entire community, whereas South Australia and Western Australia choose to treat all children aged between 6 months and 14 years. The differences in approach are a response to the average number of contacts per active case in each jurisdiction: in the Northern Territory 1:24; 1:7 in South Australia; and 1:6 in Western Australia.

Methods

Each participating jurisdiction undertook screening and treatment for trachoma according to its

respective protocols, and in the context of the national 2006 CDNA *Guidelines for the public health management of trachoma in Australia* recommend specific treatment strategies depending on the prevalence of trachoma detected through screening.⁸

In 2006, when the National Trachoma Management Program was initiated,¹ participating jurisdictions identified at-risk communities from historical prevalence data and other knowledge, including known transiency into endemic communities. Over time, additional communities have been reclassified by the jurisdictions as being at-risk due to prevalence rates of over 5%. Screening for trachoma focuses on at-risk communities, but a small number of other communities designated as not-at-risk have also been screened, generally if there is anecdotal information suggesting the presence of active trachoma. Communities that undertook screening and were found not to have trachoma are then classified as being not at-risk.

The WHO trachoma grading criteria¹⁷ were used to diagnose and classify individual cases of trachoma in all jurisdictions except Queensland who also utilised polymerase chain reaction (PCR) testing in children identified with follicles. Forms for data collection at the community level were developed by the NTSRU based on the CDNA guidelines. Completed forms were forwarded from the jurisdictional coordinators to the NTSRU for checking for completeness and accuracy and analysis. Information provided to the NTSRU at the community level for each calendar year included:

- number of Aboriginal children aged 1–14 years screened for clean faces and the number with clean faces, by age group;
- number of Aboriginal children aged 1–14 years screened for trachoma and the number with trachoma, by age group;
- number of episodes of treatment for active trachoma, household contacts and other community members, by age group;
- number of Aboriginal adults (over 40 years of age) screened for trichiasis, number with trichiasis, and the number who had surgery for trichiasis; and
- community level implementation of WHO SAFE strategies.

Northern Territory

Trachoma screening and management in the Northern Territory was undertaken through collaboration between the Department of Health (Centre for Disease Control and Health Development) and Aboriginal Community Controlled Health

Services (ACCHS). Trachoma screening was incorporated into the Healthy School-Age Kids program¹⁸ annual check and conducted by either local primary health-care services or community-controlled services, with support from the Centre for Disease Control Trachoma Team. Following screening, treatment was generally undertaken by primary health-care services with support from the trachoma team when requested.

In 2012, community screening for trichiasis was undertaken primarily by clinic staff, ACCHS, or by optometrists or ophthalmologists from the Regional Eye Health Service based in Alice Springs. In 2 large communities in the Northern Territory, mass trichiasis screening of all Indigenous adults aged over 40 years was conducted with assistance from the Centre for Disease Control Trachoma Team staff. Data relating to trichiasis was received in 42 communities in the Northern Territory. The Northern Territory Department of Health advised that a further 28 communities were screened for trichiasis but data were not made available to the NTSRU.

South Australia

In 2012, Country Health South Australia was responsible for managing the South Australia, trachoma screening and treatment program. Country Health South Australia contracted with local health service providers, ACCHS, the Aboriginal Health Council of South Australia and Nganampa Health Service to ensure coverage of screening services in all at-risk rural and remote areas. Additional screening activities were undertaken by the Eye Health and Chronic Disease Specialist Support Program (EH&CDSSP), coordinated by the Aboriginal Health Council of South Australia and supported by the Medical Specialist Outreach Assistance Program. This program provides regular visits to South Australia, remote Aboriginal communities by optometrists and ophthalmologists. Trichiasis screening was undertaken opportunistically for adults by both the EH&CDSSP team and the trachoma screening service providers, and is also undertaken routinely as part of the Adult Annual Health Checks. Country Health South Australia advised that regional boundary structures had changed in 2 regions in 2011 and 2012 and therefore data from these reports cannot be directly compared with previous reports.

Western Australia

Trachoma screening and management in Western Australia is the responsibility of population health units in the Kimberley, Goldfields, Pilbara and Midwest health regions. In collaboration with the local primary health-care providers, the popula-

tion health units screened communities in each region within a 2-week period, usually at the end of August or early September. People identified with active trachoma were treated at the time of screening. In 2012, two communities in Western Australia, one each in the Goldfields and Pilbara regions did not screen children in the 5–9 years age group, as children in this age group were not present at the time of screening.

Trichiasis screening was undertaken in conjunction with adult influenza vaccinations. Screening of the target population also occurs with the Visiting Optometrist Scheme in the Kimberley region. This amalgamation alters trends presented in reports from 2011 from current and consecutive reports.

Queensland

In 2012, Queensland joined the trachoma screening program and screened 6 remote communities in 3 regions that were considered to be potentially at-risk. This screening was undertaken by the Queensland Health's Deadly Ears Program and supported by an ophthalmologist. Queensland screened according to national guidelines for areas of low prevalence or endemicity, which recommend using the WHO grading system,¹⁵ to identify possible trachoma cases. Children identified with follicles consistent with *C. trachomatis* were further tested using PCR tests unlike other jurisdictions.

Under the contract between Queensland and the Australian Government Department of Health trichiasis screening was not required to be undertaken.

Data analysis

For the purpose of this report, a community is defined as 'a specific location where people reside and where there is at least 1 school.' At-risk communities are classified by jurisdictions as being at higher risk of trachoma (generally based on prevalence above 5% in age group 5–9 years). Communities are defined as being not-at-risk by having a baseline prevalence of below 5%; if previously at-risk, 5 years of a prevalence below 5%; or no historical evidence of trachoma prevalence. Community coverage is defined as the number of at-risk communities screened for trachoma as a proportion of those that were identified to possibly have trachoma. Individual screening coverage is the proportion of children in the respective target age groups, i.e. 1–4, 5–9 and 10–15 years, in a region that was actually screened. Active trachoma is defined as the presence of chronic inflammation of the conjunctiva caused by infection with *C. trachomatis*. This includes the WHO grades of trachomatous inflammation – follicular (TF) and

trachomatous inflammation – intense (TI).¹⁵ Clean face is defined as the absence of dirt, dust and crusting on cheeks and forehead. The clean face target is at least 80% of children within the community having a clean face at the time of screening. The presence of nasal and ocular discharge significantly correlates to the risk for both acquiring and transmitting trachoma.^{10,19} Trachomatous trichiasis (TT) is defined as the evidence of the recent removal of in-turned eyelashes or at least one eyelash rubbing on the eyeball.

In 2012, population data for trachoma screening coverage were provided by each jurisdiction, which provides a more accurate estimate of population than Australian Bureau of Statistics (ABS) data. The manner in which the populations were calculated differed among jurisdictions, with some jurisdictions using school enrolment lists, Health Information populations lists, or a combination of both and local knowledge. The 2011 ABS census projected population estimates were included in the tables to provide a comparison. For communities where population data were not provided, coverage estimates were based on the 2011 Australian census projected forward.⁸ The population for communities in previous years was derived from projected data from the 2006 Australian census using the ABS standard estimates of population increase (1.6%, 1.8%, 2.1% and 2.6% in the Northern Territory, Western Australia, South Australia and Queensland respectively).²⁰ Population estimates for trichiasis screening coverage were based on the projected 2011 Australian census data. Population estimates based on the 2011 census do not account for population movements within communities, regions and jurisdictions. Prevalence of active trachoma was calculated using the number of children screened as the denominator.

Trachoma data were analysed in the key screening age groups 1–4, 5–9 and 10–14 years. Comparisons over time were limited to the 5–9 years age group, for which screening coverage has been consistently high. Data from 2006 were excluded from assessment of time trends as collection methods in this first year of the surveillance program differed from those subsequently adopted. Trachoma prevalence in the 1–9 years age group was calculated by weighting the population provide by the jurisdictions. For population averaging we took the prevalence for the for ages 1–4 and 5–9 years and calculate a weighted average given the populations in those 2 groups, to better reflect the prevalence of the 1–9 years age group.

The NTSRU in 2011 developed a web-based data entry system that minimised duplicates and incon-

sistent entry. This database is being enhanced to allow improved accessibility in the field and report generation for jurisdictions.

Results

National results

In 2012, 96% (195/204) of designated at-risk communities were screened for trachoma across 16 regions in the Northern Territory, South Australia, Western Australia and Queensland (Figure 1, Table 1). Within regions screened for trachoma, 71% (5,426/7,676) of the estimated resident children at-risk aged 5–9 years were screened. Screening coverage in children aged 5–9 years in at-risk regions increased since the last report in the Northern Territory, South Australia and Western Australia to 67%, 79% and 73% respectively. Screening was conducted in Queensland for the first time in 2012 with a screening coverage of 64%. (Table 1, Figure 2).

The overall national prevalence of active trachoma among children aged 5–9 years in screened communities was 4%, with 4% in the Northern Territory and Western Australia, 1% in South Australia, and nil in Queensland (Table 1). Follicles consistent with TF were observed in 1 community in Queensland; however, PCR tests results were negative for *C. trachomatis*. The prevalence of trachoma in children aged 5–9 years decreased since 2009 in South Australia and from the previous 4 years in the Northern Territory and Western Australia (Figure 3). In 25% (48/193) of all communities where children aged 5–9 years were screened, endemic levels of trachoma (over 5%) were found. Hyperendemic levels of trachoma (over 20% prevalence of trachoma) were found in 8% (15/193) (Figure 4). Of all communities that screened children aged 5–9 years, 63% (121/193) had no trachoma detected (Figure 4). The proportion of screened communities with no trachoma detected increased in the Northern Territory by 20%, in South Australia by 21% and in Western Australia by 3% in 2012 compared with 2011 (Figures 3 and 5) and the proportion of screened communities with endemic trachoma (greater than 5% prevalence) decreased in the Northern Territory (28%), South Australia (9%) and Western Australia (29%) in 2012 compared with 2011 (Figures 4 and 6). Trachoma prevalence was found to be marginally higher in boys compared with girls in all jurisdictions with endemic trachoma (Northern Territory male: 5.3% female: 3.7%; South Australia male: 1.8% female: 1%; Western Australia male: 3.9% female: 3.1% (Figure 7).

Active trachoma cases requiring treatment were detected in 87 of 195 communities screened, with

Table 1: Trachoma screening coverage, trachoma prevalence and clean face prevalence among at-risk Aboriginal communities, Australia, 2012, by state or territory

	Northern Territory			South Australia			Western Australia			Queensland			Total							
	1-4	5-9	10-14	1-4	5-9	10-14	1-4	5-9	10-14	1-4	5-9	10-14	1-4	5-9	10-14	1-14				
Number of communities at risk	82			38			78			6			204							
Number of communities screened	76			36			77			6			195							
Age group (years)	1-4	5-9	10-14	1-4	5-9	10-14	1-4	5-9	10-14	1-4	5-9	10-14	1-4	5-9	10-14	1-14				
ABS estimated number of Aboriginal children at risk	3,492	3,981	3,359	10,832	942	961	855	2,758	1,965	2,097	1,896	5,958	380	414	286	1,080	6,779	7,453	6,396	20,628
Jurisdiction estimated number of Aboriginal children at risk	3,091	3,893	3,733	10,717	1,176				524	2,306	1,387	4,217	224	385	96	705	3,839	7,760	5,216	15,639
Children examined for clean face	446	2,640	1,895	4,981	14	930	323	1,267	254	1,709	811	2,774	1	194	52	247	715	5,473	3,081	9,269
Children with clean face	293	1,972	1,719	3,984	9	843	320	1,172	179	1,379	713	2,271	1	136	50	187	482	4,330	2,802	7,614
Clean face prevalence	66%	75%	91%	80%	64%	91%	99%	93%	70%	81%	88%	82%	100%	70%	96%	76%	67%	79%	91%	82%
Children examined for trachoma	362	2,610	1,908	4,880	14	933	322	1,269	244	1,689	793	2,726	1	194	52	247	621	5,426	3,075	9,122
Trachoma screening coverage	12%	67%	51%	46%		79%			47%	73%	57%	65%	0.4%	50%	54%	35%	16%	70%	59%	58%
Children with active trachoma	24	117	35	176	0	13	1	14	6	71	34	111	0	0	0	0	30	201	70	301
Active trachoma prevalence	7%	4%	2%	4%	0%	1%	0.3%	1%	2%	4%	4%	4%	0%	0%	0%	0%	5%	4%	2%	3%
Trachoma prevalence 1-9 years (weighted by population)*	6%			1%			3%			0%			4%							

* Calculated as the proportion of children with active trachoma in age groups 1-4 and 5-9 years, weighted by the estimated population sizes of each age group. This calculation accounts for uneven coverage with respect to age groups.

Figure 1: Proportion of at risk communities screened and trachoma prevalence in children aged 5–9 years in screened communities, Australia, 2012, by region

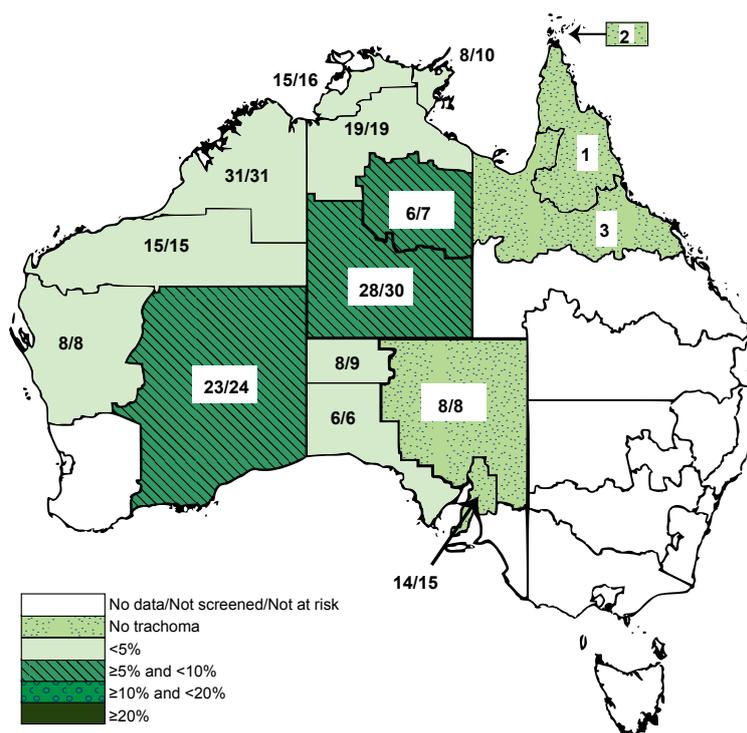
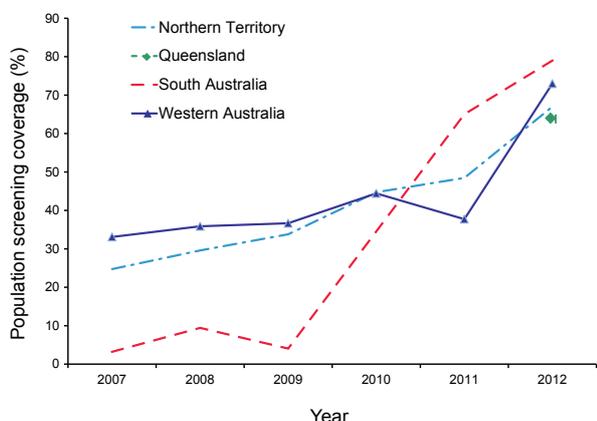
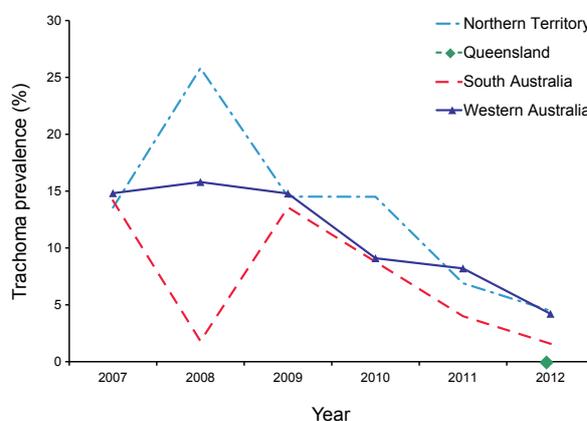


Figure 2: Population screening coverage of children aged 5–9 years, Australia, 2007 to 2012, by year and jurisdiction



* Queensland data only available for 2012.

Figure 3: Trachoma prevalence among screened children aged 5–9 years, Australia,* 2007 to 2012, by year and jurisdiction



* Queensland data only available for 2012.

95% of those with active trachoma reported to be appropriately treated (Table 2). Estimated treatment coverage of contacts of those with active trachoma was 81% overall, 79% in the Northern Territory, 97% in South Australia and 95% in Western Australia (Table 2). Estimates of appropriate contacts requiring treatment were provided by the jurisdictions. Six communities in Western Australia did not provide estimates for contacts to be treated and treated active cases only. No treatment was required for Queensland (Table 2).

Trichiasis screening coverage of adults over 40 years of age increased in the Northern Territory, Western Australia and South Australia, both in terms of the number of communities screened and population screened from 2011 to 2012. A total of 4,468 (33%) adults of an estimated at-risk population of 13,406, were reported to have been screened for trichiasis across the Northern Territory, South Australia and Western Australia (Table 3). Overall trichiasis prevalence among those screened was 2% with 61 cases reported in the Northern Territory,

Table 2: Trachoma treatment coverage among at-risk Aboriginal communities, Australia, 2012, by state or territory

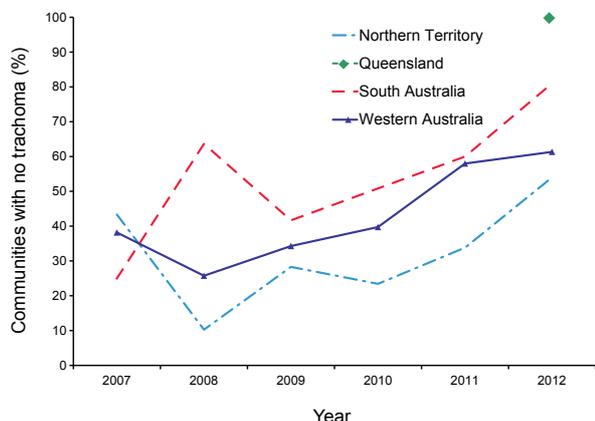
	Northern Territory					South Australia					Western Australia					Queensland					Total				
	0-4	5-9	10-14	15+	All	0-4	5-9	10-14	15+	All	0-4	5-9	10-14	15+	All	0-4	5-9	10-14	15+	All	0-4	5-9	10-14	15+	All
Number of communities at risk	82					38					78					6					204				
Number of communities screened	76					36					77					6					195				
Number of communities requiring treatment	43					9					35					0					87				
Number of communities treated according to CDNA guidelines*	41					8					26										75				
Age group (years)	0-4	5-9	10-14	15+	All	0-4	5-9	10-14	15+	All	0-4	5-9	10-14	15+	All	0-4	5-9	10-14	15+	All	0-4	5-9	10-14	15+	All
Active cases requiring treatment	24	115	35		174	0	13	1		14	6	71	34		111	30	199	70		299	30	199	70		299
Active cases who received treatment	23	114	33		170		13	1		14	6	68	29		103	29	195	63		287	29	195	63		287
% Active cases received treatment	96%	97%	94%		98%	100%	100%			100%	100%	96%	85%		93%	97%	98%	90%		96%	97%	98%	90%		96%
Estimated contacts requiring treatment	572	619	581	2,532	4,304	9	21	10	63	103	91	135	112	301	639	672	775	703	2,896	5,046	672	775	703	2,896	5,046
Number of contacts who received treatment	450	557	474	1,911	3,392	9	20	10	61	100	75	126	103	290	594	534	703	587	2,262	4,086	534	703	587	2,262	4,086
% estimated contacts received treatment	79%	90%	82%	75%	79%	100%	95%	100%	97%	97%	82%	93%	92%	96%	93%	79%	91%	83%	78%	81%	79%	91%	83%	78%	81%
Estimated overall treatment coverage	79%	91%	82%	75%	80%	100%	97%	100%	97%	97%	84%	94%	90%	96%	93%	80%	92%	84%	78%	82%	80%	92%	84%	78%	82%

* Communicable Diseases Network Australia (CDNA), Guidelines for the public health management of trachoma in Australia. March 2006

11 in South Australia, and 22 in Western Australia. Trichiasis surgery was reported to have been undertaken for 16 people with trichiasis in 2012; 5 in the Northern Territory, 2 in South Australia and 9 in Western Australia. Queensland was not required in the program agreement with the Australian Government Department of Health and Queensland to screen for trichiasis in 2012.

The overall prevalence of clean faces in children aged 5–9 years was 79%. The prevalence was 75% in the Northern Territory, 90% in South Australia, 81% in Western Australia and 70% in Queensland (Table 1). The proportion of screened communities

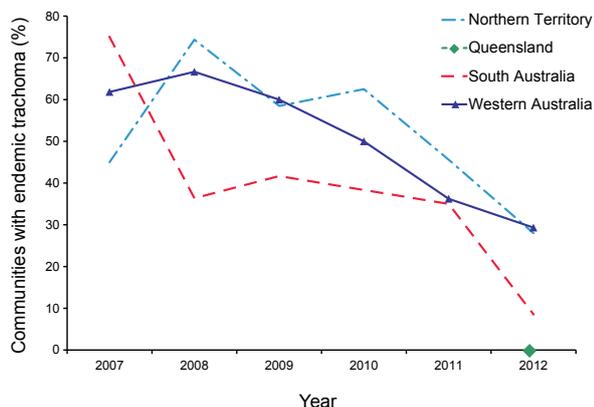
Figure 4: Proportion of screened at-risk communities* according to level of trachoma prevalence in children aged 5–9 years, Australia, 2012, by jurisdiction



* Two communities in Western Australia did not screen children in the 5–9 years age group.

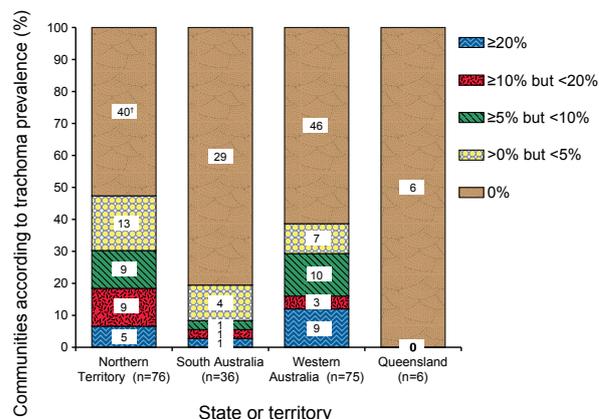
† Number of communities

Figure 5: Proportion of screened communities in which no trachoma was reported among children aged 5–9 years, Australia, 2007 to 2012, by year and jurisdiction



* Queensland data only available for 2012.

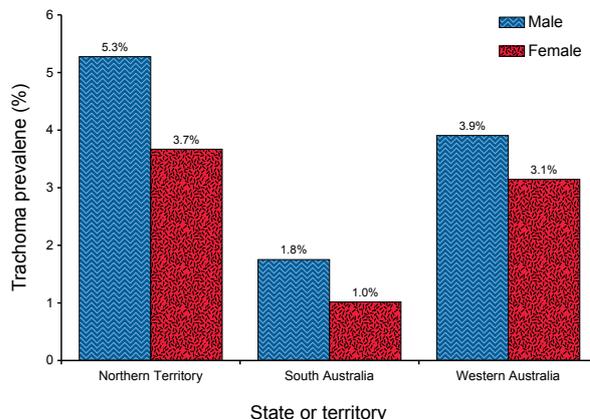
Figure 6: Proportion of screened communities with endemic trachoma* among children aged 5–9 years, Australia, 2007 to 2012, by year and jurisdiction



* Prevalence greater than 5%.

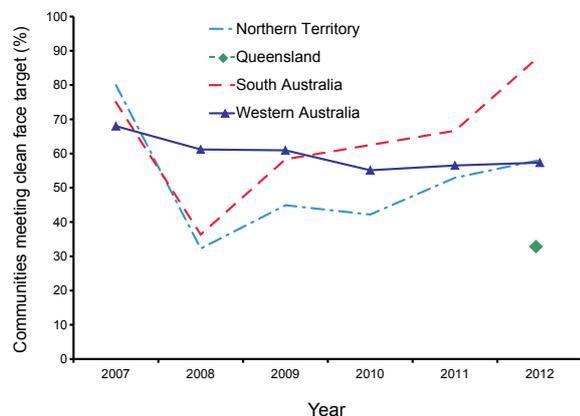
† Queensland data only available for 2012.

Figure 7: Trachoma prevalence among children aged 5–9 years in screened at-risk communities, Australia, 2012, by sex and jurisdiction



with over 80% of children aged 5–9 years reported as having a clean face was 58% in the Northern Territory, 89% in South Australia, 57% in Western Australia and 33% in Queensland (Figure 8). Health promotion activities were reported to be taking place in 133 at-risk communities across all jurisdictions. These activities included education sessions regarding trachoma and facial hygiene, distribution of print material and social marketing campaigns to increase the knowledge and risk factors of trachoma in communities.

Figure 8: Proportion of screened communities meeting clean face target* in children aged 5–9 years, Australia,† 2007 to 2012, by year and jurisdiction



* Clean face target is at least 80% of children within the community having a clean face at time of screening.

† Queensland data only available for 2012.

Discussion

Screening coverage

Population estimates were generally similar for the 5–9 years age group except in Queensland. In 2012, all regions increased trachoma screening coverage of children aged 5–9 years except the Darwin Rural region in the Northern Territory and the Far North region in South Australia, compared with 2011 data.

The newly revised *Guidelines for the public health management of trachoma in Australia*¹⁶ allow

endemic communities to focus resources on treatment without the need for repeat screening for up to 3 years. This strategy will affect the number of communities screened and the regional screening coverage of children. The impact of this strategy may not be apparent for several years.

Trachoma prevalence

NTSRU has been able to estimate the prevalence using population weights. In Australia, the prevalence in the 5–9 years age group is accepted as a sufficient measure of the prevalence of trachoma within at-risk communities.

Across all 4 jurisdictions in 2012, the prevalence of trachoma in children aged 5–9 years in screened at-risk communities was 4%. This was lower than the prevalence of 7% in this age group in 2011.⁹

Subsequently, Queensland has concluded that trachoma is not a public health concern for Queensland and will review further screening activities.

In all other reporting jurisdictions, a decreasing trend in trachoma prevalence among screened individuals has been observed since 2009. Decreasing trends in the Northern Territory, South Australia and Western Australia were also observed in the number of communities found to have prevalence of greater than 5% among screened children aged 5–9 years (endemic trachoma), while there was an increasing trend in the number of communities that reported no trachoma in screened children aged 5–9 years. It may be timely to review the risk classifications of communities that have reported no evidence of trachoma, such as three in the

Table 3: Trichiasis screening coverage, prevalence and treatment among Aboriginal adults aged over 40 years, Australia, 2012

	Northern Territory		South Australia		Western Australia		Total	
	n	%	n	%	n	%	n	%
Number of communities at risk	82		38		78		198	
Number of communities screened for trichiasis	42*	51	14	37	52	69	108	52
Adult population of at-risk communities	7,030		2,246		4,130		13,406	
Adults examined (% of estimated population at risk)	1,278	18	1,061	47	2,129	52	4,468	3
With trichiasis (% of adults examined)	61	5	11	1	22	1	94	2
Offered ophthalmic consultation	49		11		22		82	
Surgery in past 12 months	5		2		9		16	

* Twenty-eight further communities were screened in the Northern Territory, but findings were not made available to the National Trachoma Surveillance and Reporting Unit.

Darwin Rural region, four in the Katherine region (Northern Territory); one in Eyre and Western region, seven in the Far North region, all of the York and Mid North region (South Australia); two in the Goldfields region, two in the Midwest region and three in the Kimberley region (Western Australia). This process will allow resources to be better targeted to endemic communities.

The target set by both WHO and CDNA for elimination of blinding trachoma is community prevalence in children aged 1–9 years of less than 5% over a period of 5 years.^{8,11}

As communities are reclassified as being not at-risk due to prevalence rates below 5% at either baseline screen or consistently over 5 years, future prevalence trends may increase for a period of time as the at-risk population becomes more concentrated.

In 2012, the NTSRU collected prevalence data by sex. These data had not been collected in previous years. There is evidence in many trachoma endemic countries that women are disproportionately more likely to be at-risk of trachoma, and become blind due to trichiasis.¹⁰ However, the national results from 2012 illustrate that males in all Australian jurisdictions had a higher prevalence of trachoma compared with females.

Trachoma treatment

Ninety-five per cent of active cases received treatment in 2012.

In 2012, jurisdictions supplied estimates of the populations requiring treatment. These estimates were influenced by the interpretation of the current treatment guidelines. For 6 communities in Western Australia in which only active cases were treated, estimates of the number of household contacts or community members requiring treatment were not obtained; therefore treatment coverage was overestimated for Western Australia. Nationwide, 75 of the 87 communities that required treatment were treated according to their jurisdictional interpretation of the current CDNA treatment guidelines.

The Northern Territory also undertook 6-monthly treatment of all members of the community in 6 communities that detected hyperendemic levels of trachoma and achieved an overall coverage level of 70% for the second treatment.

Trichiasis

Screening for trichiasis among Aboriginal adults aged over 40 years in the Northern Territory, South Australia and Western Australia increased in 2012.

However, coverage remained low, with screening rates of 18% in the Northern Territory, 47% in South Australia and 52% in Western Australia. Prevalence of trichiasis of adults screened in communities designated as at-risk for trachoma was 2% (94/4,468). These prevalence levels include data collected in communities currently designated as at-risk, and do not take into account the possibility that endemic areas may have changed over time.

Facial cleanliness

Facial cleanliness is a major component of the SAFE strategy, recognising that the presence of nasal and ocular discharge significantly correlates with the risk for both acquiring and transmitting trachoma.¹⁰ The proportion of children aged 5–9 years screened who had clean faces increased slightly in the Northern Territory, Western Australia and South Australia compared with 2011.

Program delivery and monitoring

Significant improvements in program delivery have been reported in 2012 with increased coverage of screening and treatment delivery and health promotion activities. Data quality also improved in all jurisdictions; however, as many regions chose to focus on the 5–9-years age group, data regarding the 1–4-years age group were not comprehensive.

Progress towards Australia's elimination target

As a signatory to the WHO Alliance of the Global Elimination of Blinding Trachoma by the year 2020 (GET 2020), Australia is committed to ensuring that trachoma levels continue to decrease to below endemic levels in at-risk communities. This report has shown significant decreases in trachoma prevalence in the Northern Territory, South Australia and Western Australia. With the implementation of new guidelines in 2014 and sustained efforts, as reported in this report, Australia remains on course to eliminate trachoma by 2020.

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South Australia

Aboriginal Community Controlled Health Services

Aboriginal Health Council of South Australia

Country Health South Australia

Western Australia

Aboriginal Community Controlled Health Services

Communicable Diseases Control Directorate, Health Department of Western Australia

Goldfields Population Health Unit

Kimberley Population Health Unit

Midwest Population Health Unit

Pilbara Population Health Unit

The National Trachoma Surveillance and Control Reference Group

The NTSRU is guided by the National Trachoma Surveillance and Control Reference Group, members of which include the following representatives and organisations:

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David Scrimgeour: Aboriginal Health Council of South Australia

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Vicki Krause: Communicable Disease Network Australia

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References

1. Tellis B, Dunn R, Keeffe JE. National Trachoma Surveillance and Reporting Unit: Surveillance report for active trachoma, 2006. *Commun Dis Intell* 2007;31(4):366–374

2. Tellis B, Dunn R, Keeffe JE, Taylor HR. Trachoma Surveillance annual report, 2007. A report by the National Trachoma Surveillance and Reporting Unit. *Commun Dis Intell* 2008;32(4):388–399.
3. Tellis B, Fotis K, Dunn R, Keeffe JE, Taylor HR. *Trachoma Surveillance Report 2008*. National Trachoma Surveillance and Reporting Unit. Melbourne, Centre for Eye Research Australia; 2009.
4. Adams K, Burgess J, Dharmage S. *National Trachoma Surveillance Report 2009*. National Trachoma Surveillance and Reporting Unit. Melbourne: Centre for Molecular, Environmental, Genetic and Analytic Epidemiology, University of Melbourne; 2010.
5. Cowling CS; Popovic G; Liu BC; Ward JS; Snelling TL; Kaldor JM, et al. Australian trachoma surveillance annual report, 2010. *Commun Dis Intell* 2012;36(3):E242–E250.
6. Cowling CS; Liu BC; Ward JS; Snelling TL; Kaldor JM, Wilson, DP. Australian trachoma surveillance annual report, 2011. *Commun Dis Intell* 2013;37(2):E121–E129.
7. Resnikoff S, Pascolini D, Etya'ale D, Kocur I, Pararajasegaram R, Pokharel GP, et al. Global data on visual impairment in the year 2002. *Bull World Health Organ* 2004;82(11):844–851.
8. Communicable Diseases Network Australia. *Guidelines for the public health management of trachoma in Australia*. March 2006. Canberra: Commonwealth of Australia; 2006.
9. Polack S, Brooker S, Kuper H, Mariotti S, Mabey D, Foster A. Mapping the global distribution of trachoma. *Bull World Health Organ* 2005;80(12):913–919.
10. Taylor HR. *Trachoma: a blinding scourge from the Bronze Age to the Twenty First Century*. Melbourne: Centre for Eye Research Australia; 2008.
11. World Health Organization. *WHA51.11 Global Elimination of Blinding Trachoma; 1998*. Last reviewed August 2014. Available from: <http://www.who.int/blindness/causes/WHA51.11/en/>
12. Kuper H, Solomon AW, Buchan J, Zondervan M, Foster A, Mabey D. A critical review of the SAFE strategy for the prevention of blinding trachoma. *Lancet Infect Dis* 2003;3(6):372–381.
13. World Health Organization. *Future Approaches to Trachoma Control – Report of a Global Scientific Meeting*. Geneva, 17–20 June 1996. Geneva: WHO; 1997.
14. Mariotti SP, Pararajasegaram R, Resnikoff S. Trachoma: Looking forward to Global Elimination of Trachoma by 2020 (GET 2020). *Am J Trop Med Hyg* 2003;69(5 Suppl):33–35.
15. Taylor HR. Trachoma in Australia. *Med J Aust* 2001;175(7):371–372.
16. Communicable Diseases Network Australia. *Guidelines for the public health management of trachoma in Australia*. January 2014. Canberra: Commonwealth of Australia; 2014.
17. World Health Organization. SAFE documents: Trachoma simplified grading cards. Last accessed August 2014. Available at: http://www.who.int/blindness/causes/trachoma_documents/en/index.html
18. The Healthy School-Age Kids (HSAK) Program [online]. Last reviewed: July 2011. Available from: http://remotehealthatlas.nt.gov.au/healthy_school_age_kids_program.pdf
19. Mariotti SP, Pruss A. The SAFE strategy. Preventing trachoma. A guide for environmental sanitation and improved hygiene. WHO/PBD/GET/00.7/Rev1. Geneva: World Health Organization; 2000.
20. Australian Bureau of Statistics. *Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 1991 to 2021*. Released 8 September 2009. Accessed: 15 May 2011. Canberra: ABS cat No: 3238.0; 2009.