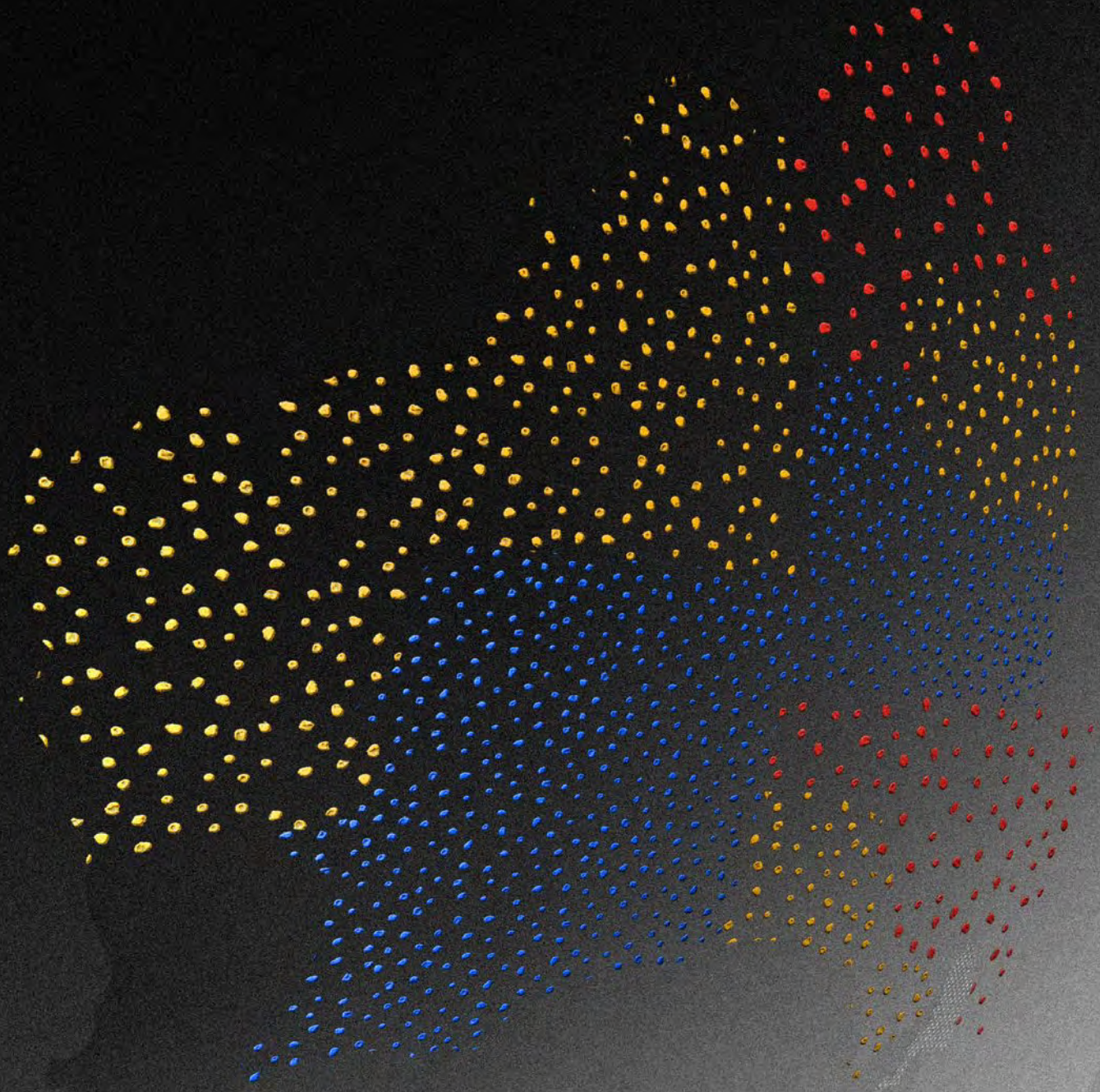
Australian Trachoma Surveillance Report

2011



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THE UNIVERSITY OF NEW SOUTH WALES

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Australian Trachoma Surveillance Report 2011

The Kirby Institute, University of New South Wales

June 2012

Prepared by the National Trachoma Surveillance and Reporting Unit,
The Kirby Institute, University of New South Wales.

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Jurisdictional contributors to trachoma data collection

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- Aboriginal Community Controlled Health Services
- Aboriginal Medical Services Alliance of the Northern Territory
- Centre for Disease Control, Northern Territory Department of Health
- Healthy School Age Kids Program: Top End and Central Australia

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

Technical terms and definitions

Definitions are based on the 2006 CDNA ***Guidelines for the public health management of trachoma in Australia.***

Active trachoma:
The presence of chronic inflammation of the conjunctiva caused by infection with *Chlamydia trachomatis*; includes World Health Organization grades trachomatous inflammation follicular (TF) and trachomatous inflammation intense (TI).

At-risk communities:
Communities classified by jurisdictions as being at higher risk of trachoma (generally based on prevalence above 5% in age group 5-9).

Clean face:
Absence of dirt, dust and crusting on cheeks and forehead.

Community screening coverage:
The number of communities screened for trachoma as a proportion of communities designated by jurisdictions to be at risk of trachoma.

Contacts:
Includes all members of the household or households in which a person with active trachoma regularly sleeps. However where the community prevalence was greater than 10% this term includes all members of the community, not only household members.

Endemic trachoma:
Prevalence of active trachoma of 5% or more in children aged 1-9 years or a prevalence of trichiasis of at least 0.1% in the adult population. Hyperendemic trachoma: Prevalence of active trachoma of 20% or more in children aged 1-9 years.

Prevalence of active trachoma:
Proportion of people found in a screening program to have active trachoma.

Screening coverage:
The proportion of people in a population examined for trachoma or trichiasis through a screening program.

Trachomatous inflammation follicular (TF):
Presence of five or more follicles in the upper tarsal conjunctiva, each at least 0.5 mm in diameter, as observed through a loupe.

Trachomatous inflammation intense (TI):
Pronounced inflammatory thickening of the tarsal conjunctiva that obscures more than half of the normal deep tarsal vessels.

Trachomatous trichiasis (TT):
Evidence of the recent removal of in-turned eyelashes or at least one eyelash rubbing on the eyeball.

Treatment coverage:
The proportion of people requiring treatment for trachoma under guidelines who actually received treatment.

Abbreviations

ABS	Australian Bureau of Statistics
ACCHS	Aboriginal Community Controlled Health Service
AHCSA	Aboriginal Health Council of South Australia
CDNA	Communicable Diseases Network Australia
DoHA	Department of Health and Ageing
EH&CDSSP	Eye Health and Chronic Disease Specialist Support Program
HSAK	Healthy School Age Kids Program
NACCHO	National Aboriginal Community Controlled Health Organisation
NT	Northern Territory
N/R	Not Reported
NTSRU	National Trachoma Surveillance and Reporting Unit
OATSIH	Office for Aboriginal and Torres Strait Islander Health
SA	South Australia
SAFE	Surgery, antibiotics, facial cleanliness and environmental improvement
TF	Trachomatous inflammation – follicular
TI	Trachomatous inflammation – intense
TT	Trachomatous trichiasis
UNSW	University of New South Wales
WA	Western Australia
WHO	World Health Organization

Australian trachoma surveillance 2011: Executive summary

Trachoma screening and management data for 2011 were provided to the National Trachoma Surveillance and Reporting Unit by the Northern Territory (NT), South Australia (SA), and Western Australia (WA). Data were analysed by region, with five regions in the NT, two in SA and four in WA. Jurisdictional authorities had designated 207 remote Aboriginal communities in these regions as being at risk of endemic trachoma in 2011.

Screening coverage

- A total of 152 (73%) of 207 at-risk communities were screened for trachoma during 2011 (Figure 1.2, Table 1.1).
- Within these communities, 4746 (65%) of an estimated 7338 resident children aged 5-9 were screened.
- Screening coverage in children aged 5-9 years in at-risk communities was 65% for the NT, 77% for SA and 60% for WA (Table 1.1).
- Screening coverage in 2011 increased in the NT and SA and decreased in WA compared to 2010 (Figure 1.3).

Clean face prevalence

- A total of 4731 children aged 5-9 years in 152 at-risk communities were assessed for clean faces during 2011 (Table 1.1).
- The overall prevalence of clean faces in children aged 5-9 years was 76%, with 74% in the NT, 88% in SA and 75% in WA (Table 1.1, Figure 1.4).
- The proportion of screened communities with over 80% of children aged 5-9 years having a clean face was 53% in the NT, 67% in SA and 57% in WA (Figure 1.5).

Trachoma prevalence

- The prevalence of trachoma among children aged 5-9 years in screened communities was 7%; with 7% in the NT, 4% in SA, and 8% in WA (Table 1.1).
- The prevalence of trachoma in 5-9 year old children decreased in the NT and WA (Figure 1.7).
- Approximately half (47%; 72/152) of all communities screened had no trachoma detected.
- In 14% (21/152) of all communities screened, hyperendemic levels of trachoma (over 20% prevalence of trachoma) were found. Hyperendemic levels of trachoma were observed in nine of 65 screened communities in the NT, two of 19 screened communities in SA, and 10 of 68 screened communities in WA (Table 1.3).
- The proportion of screened communities with no trachoma detected increased in NT and WA in 2011 compared to 2010.
- The proportion of screened communities with endemic trachoma (>5% prevalence) decreased in NT and WA in 2011 compared to 2010 (Figure 1.10).
- Due to the low screening coverage in previous years it was not possible to examine time trends in trachoma for SA.

Treatment coverage

- Trachoma cases requiring treatment were detected in 80 of 152 communities screened (Table 1.2)
- Of all cases detected that required treatment, 88% received treatment (Table 1.2).
- Estimated treatment coverage of contacts was 65% overall, and 53% in the NT, 98% in SA and 85% in WA (Table 1.2).

Trichiasis

- Trichiasis screening coverage was low in all jurisdictions.
- A total of 1179 adults (less than 10%) of an estimated at-risk population of 13,466 were reported to have been screened for trichiasis across the NT, SA and WA (Table 1.4).
- Overall trichiasis prevalence among those screened was 2%, with nine cases reported in the NT, eight in SA, and two in WA.
- No trichiasis surgery was reported.

Health Promotion activities and environmental conditions

- Health promotion resources or programs and environmental conditions were not reported for the majority of communities.

Background

Trachoma is one of the major causes of preventable blindness globally.[1] It is an eye infection caused by the bacterium *Chlamydia trachomatis (C. trachomatis)* serotypes A, B, Ba and C. The infection can be transmitted through close facial contact, hand-to-eye contact, via fomites (towels, clothing and bedding) or by flies. Trachoma is generally found in dry, dusty environments and is linked to poor living conditions. Overcrowding of 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, due to longer duration of infection compared to adults.

Infections with *C. trachomatis* cause inflammation of the conjunctiva. Diagnosis of trachoma is by visual inspection, and the detection of the presence of follicles (white spots) and papillae (red spots) of the inner upper eye lid. Repeated infections with *C. trachomatis*, especially during childhood, may lead to scarring, contraction and distortion of the eyelid, which may in turn cause the eyelashes to rub against the cornea; this is known as trichiasis and can lead to blindness.[2 3] Scarring of the cornea due to trichiasis is irreversible. However, if early signs of in-turned eyelashes are found, then surgery is usually effective in preventing further damage to the cornea.

Trachoma is usually treated by a single dose of azithromycin. Best public health practice involves treatment of all members of the household in which a case resides, whether or not they have trachoma. Depending on the prevalence of trachoma in a community, treatment may also be extended to all children aged six months to 14 years, or all members of the community, excluding or including infants less than six months of age. [4]

The Global Elimination of Blinding Trachoma (GET) 2020 initiative, supported by the World Health Organization (WHO) Alliance, advocates the implementation of the **SAFE** strategy, with its key components being **S**urgery (to correct trichiasis), **A**ntibiotic treatment, **F**acial cleanliness and **E**nvironmental improvements. 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.[5 6]

Trachoma control in Australia

Australia is the only high income country where trachoma is endemic. It occurs primarily in remote and very remote Aboriginal communities in the Northern Territory, South Australia and Western Australia. In 2008, cases were also found in New South Wales and Queensland, where trachoma was believed to have been eliminated.[4 7 8] In 2009, the Australian Government initiated the *Improving Eye and Ear Health Services for Indigenous Australians for Better Education and Employment Outcomes* measure which included committing $16 million over a four-year period towards eliminating trachoma in Australia. The funding is to be used for improving and expanding screening and control activities, as well as establishing a strong framework for monitoring and evaluation. As a result, an increased level of funding was provided to NT, SA and WA for trachoma control activities from 1 July 2010.

The surveillance and management of trachoma is guided by the Communicable Disease Network of Australia (CDNA) Guidelines for the Public Health Management of Trachoma in Australia, endorsed in 2006. This document was developed in the context of the WHO SAFE strategies and makes recommendations for improving data collection, collation and reporting systems.[9]

The National Trachoma Surveillance and Reporting Unit (NTSRU)

The NTSRU is responsible for trachoma data collation, analysis and reporting related to the ongoing evaluation of trachoma control strategies in Australia. It operates under contract with the Australian Government Department of Health and Ageing. The primary focus from 2006 until and including 2011 (report produced in 2012) has been the three jurisdictions (NT, SA and WA) funded to undertake trachoma control activities by the Australian Government. From the end of 2010, the NTSRU has been managed by The Kirby Institute at the University of New South Wales. It was previously managed by The Centre for Eye Research Australia (2006 to 2008[10 11 12]) and the Centre for Molecular, Environmental, Genetic and Analytic Epidemiology, The University of Melbourne (2009[13]).

Methodology

Each jurisdiction undertook screening and treatment for trachoma according to its respective protocols, and in the context of the national 2006 Communicable Disease Network Australia (CDNA) Guidelines for the public health management of trachoma in Australia, which recommend specific treatment strategies depending on the prevalence of trachoma detected through screening.

In 2006, when the National Trachoma Management Program was initiated, each jurisdiction identified at-risk communities from historical prevalence data and other knowledge. Over time, additional communities have been reclassified as being at risk. Screening for trachoma focuses on the 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.

The WHO trachoma grading criteria (Appendix 1) were used to diagnose and classify individual cases of trachoma.

Data collection forms (Appendix 2) for data collection at the community level were developed by the National Trachoma Surveillance Reference Group, based on the CDNA Guidelines. Completed forms were forwarded from the jurisdictional coordinators to the NTSRU for checking 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 screened for trichiasis, number with trichiasis, and the number who had surgery for trichiasis;
- Community level implementation of WHO SAFE strategies.

Northern Territory

Trachoma screening and management in the NT was undertaken through collaboration between the Department of Health (Centre for Disease Control and Health Development) and Aboriginal community-controlled health services. Trachoma screening was incorporated into the Healthy School Age Kids (HSAK)[14] 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 CDC Trachoma Team when requested.

In 2011, community screening for trichiasis was initiated in a small number of communities by the CDC Trachoma Team. Some adult screening took place during community visits by the CDC Trachoma Team staff, ACCHS, or with optometrists or ophthalmologists from the Regional Eye Health Service based in Alice Springs.

South Australia

In 2011, Country Health South Australia (CHSA) was responsible for managing the South Australian trachoma screening and treatment program. CHSA contracted with local health service providers, Aboriginal community-controlled health services, 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 Aboriginal Health Council of South Australia and supported by the Medical Specialist Outreach Assistance Program (MSOAP) and the Office for Aboriginal and Torres Strait Islander Health, DoHA. This program provides regular visits to South Australian 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.

Western Australia

Trachoma screening and management in WA is the responsibility of Population Health Units (PHUs) in the Kimberley, Goldfields, Pilbara and Midwest Health Regions. In collaboration with the local primary health care providers, the PHUs screened communities in each region within a two week period, usually at the end of August or early September. Treatment was undertaken at the time of screening.

Trichiasis screening was undertaken in conjunction with adult influenza vaccinations. Screening the target population also occurs with the Visiting Optometrist Scheme (VOS) program in the Kimberley.

In 2011 Western Australia changed the definition of community, specifically amalgamating several previously distinct communities into one single community. This alters trends presented in this report compared to previous reports.

Data analysis

For the purpose of this report, a community is defined as a specific location where people reside and there is at least one school. Community coverage is defined as the proportion of at-risk communities screened for trachoma. Individual screening coverage is the proportion of children in the target age group in a community who were actually screened.

Population data were based, as in previous reports, on the 2006 Australian census[15]. The population for communities in subsequent years were projected forward using Australian Bureau of Statistics (ABS) standard estimates of population increase (1.6%, 1.8% and 2.1% in the NT, WA and SA respectively). Population estimates based on the 2006 census do not account for policy change such as the NT Intervention, which may have resulted in unexpected population movements. Prevalence of active trachoma was calculated using the number of children screened as the denominator.

Trachoma data were analysed in the age groups 1-4, 5-9 and 10-15 years. Comparisons over time were mostly limited to the 5-9 year 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 differed from those subsequently adopted.

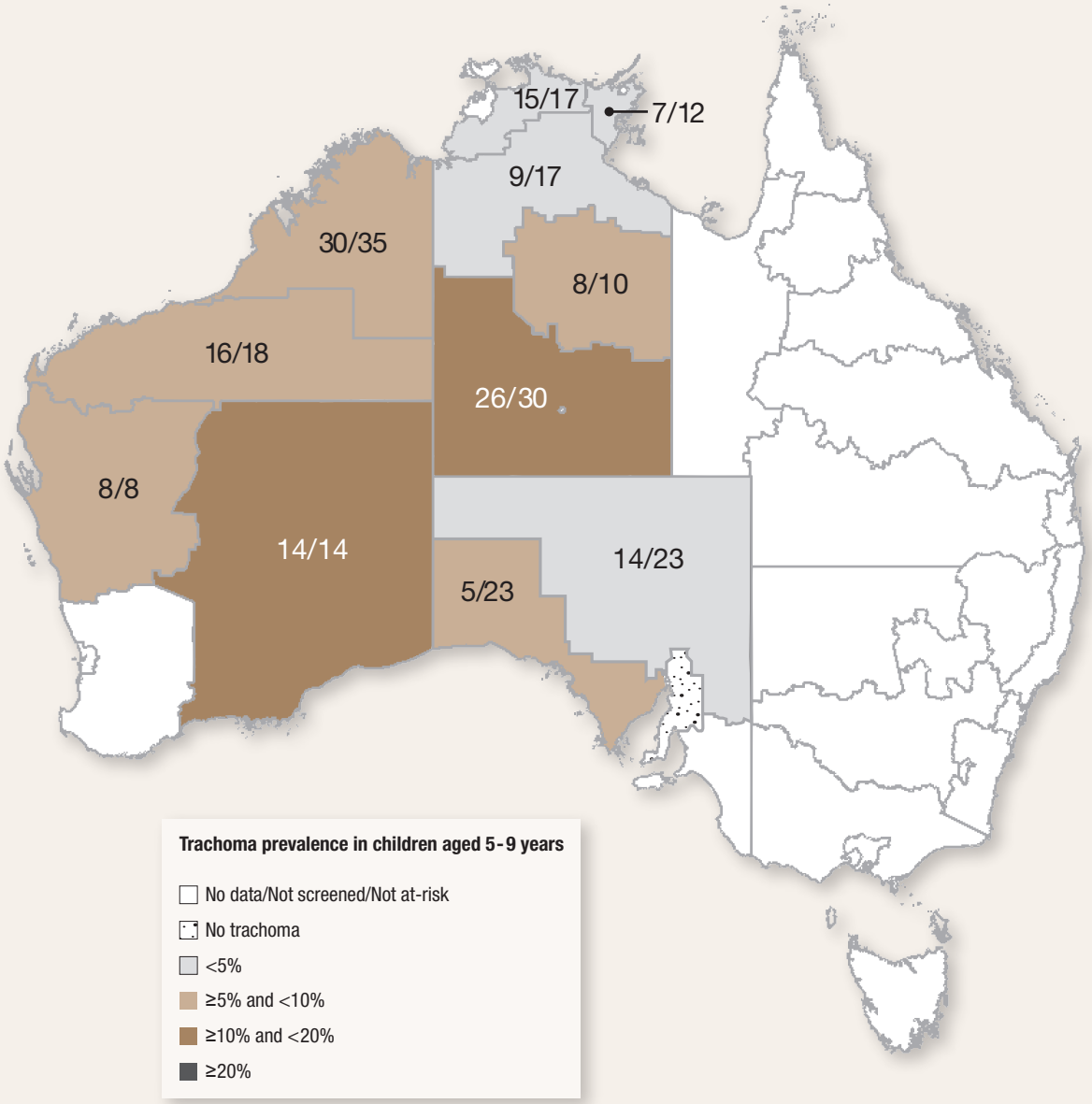
Adherence to the CDNA treatment guidelines was assessed by calculating the proportion of active cases and contacts requiring treatment that were treated.

If the prevalence of trachoma exceeded thresholds specified in the CDNA guidelines, the number of individuals requiring treatment was estimated according to the treatment strategies used in each jurisdiction (see Appendix 3 for further details):

- Targeted treatment - this is the treatment strategy used in SA and WA:
    - Estimate of treatment requirement = number of cases of trachoma detected through screening + the number of household contacts reported as requiring treatment. If the number of contacts was not reported, it was calculated as the number of children in the community aged six months to 14 years plus the average number of household contacts of cases detected at screening from communities, where this was reported.
- Whole of community treatment - this is the treatment strategy used in the NT.
    - Estimate of treatment requirement = total population of the community from ABS projected population data.

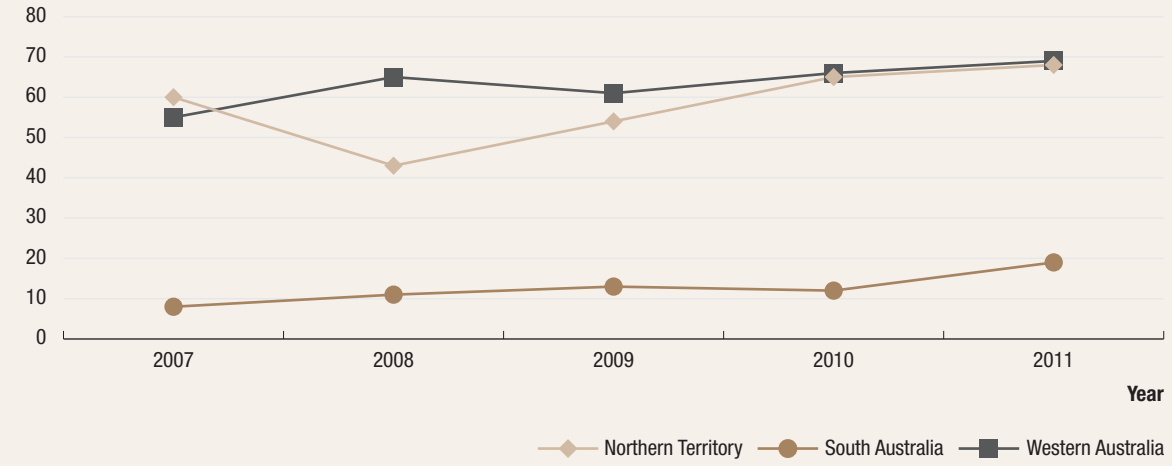
National results 2011

Figure 1.1 **Colour-coded trachoma prevalence in children aged 5-9 years and number of communities screened*/ number of at-risk communities in 2011**



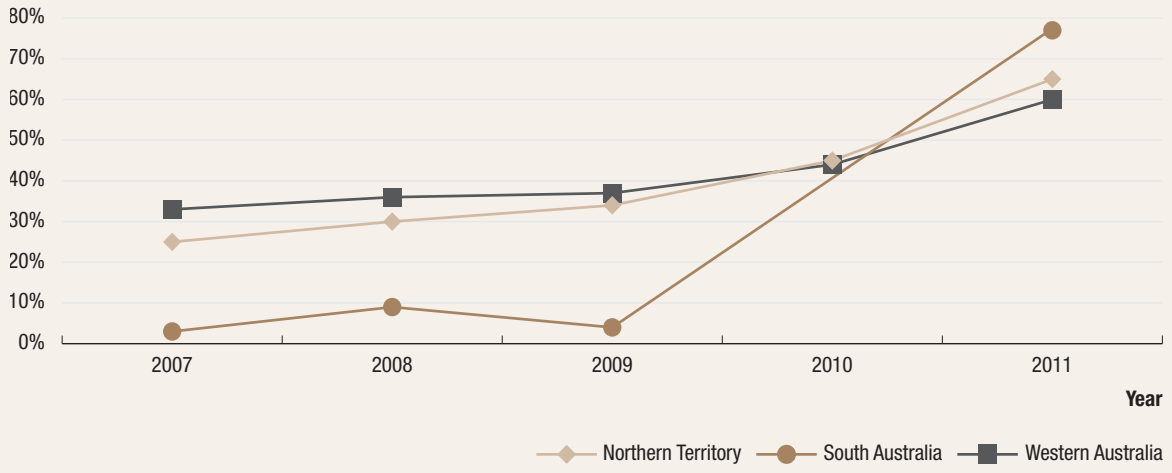
* Including communities screened but not at risk

Figure 1.2 Number of communities screened* by year and jurisdiction



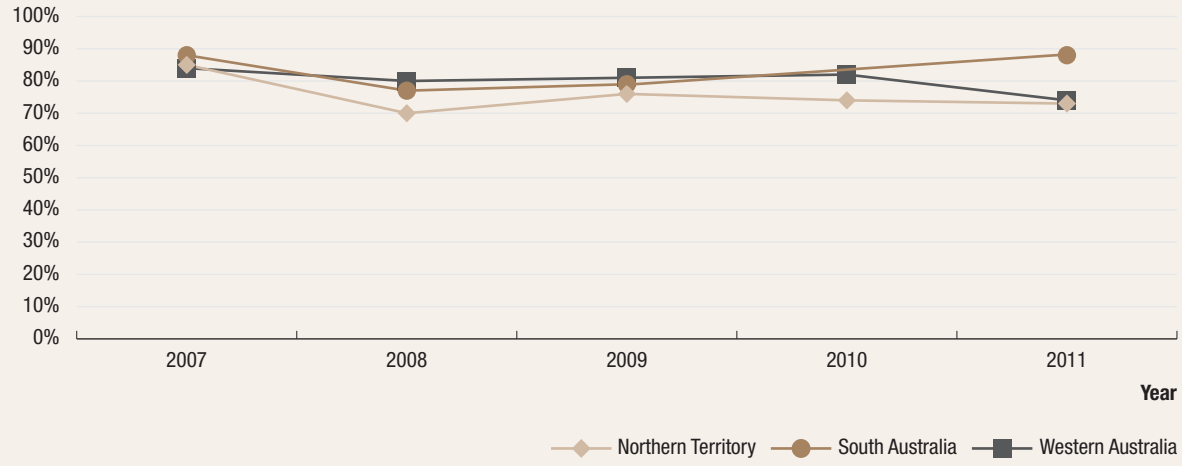
* Including communities screened but not at risk

Figure 1.3 Population screening coverage* of children aged 5-9 years by year and jurisdiction



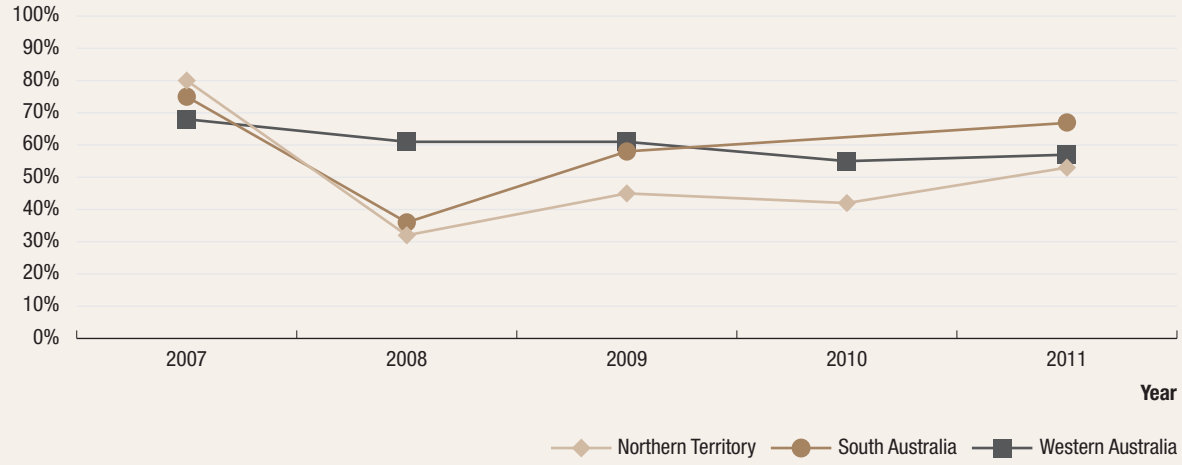
* Calculated as the number of children screened (in at-risk and not-at-risk communities) in region containing at least one at-risk community divided by the estimated population size of region

Figure 1.4 Proportion of screened children* aged 5-9 years who had a clean face by year and jurisdiction



* Including children in communities screened but not at risk

Figure 1.5 Proportion of communities screened* meeting clean face target in children aged 5-9 years by year and jurisdiction

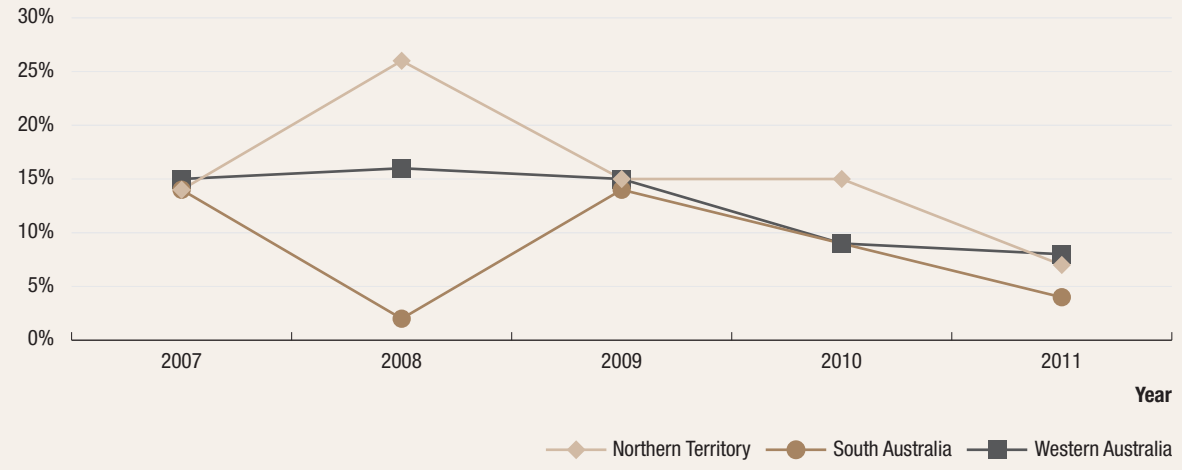


* Including children in communities screened but not at risk

Figure 1.6 Trachoma prevalence among screened* children aged 1-4 years by year and jurisdiction

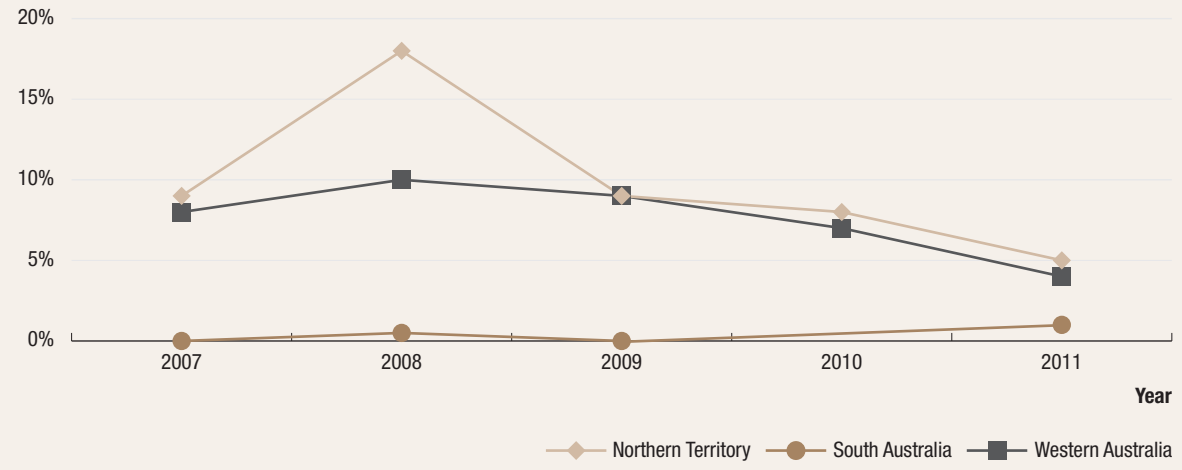
* Including children in communities screened but not at risk

Figure 1.7 Trachoma prevalence among screened* children aged 5-9 years by year and jurisdiction



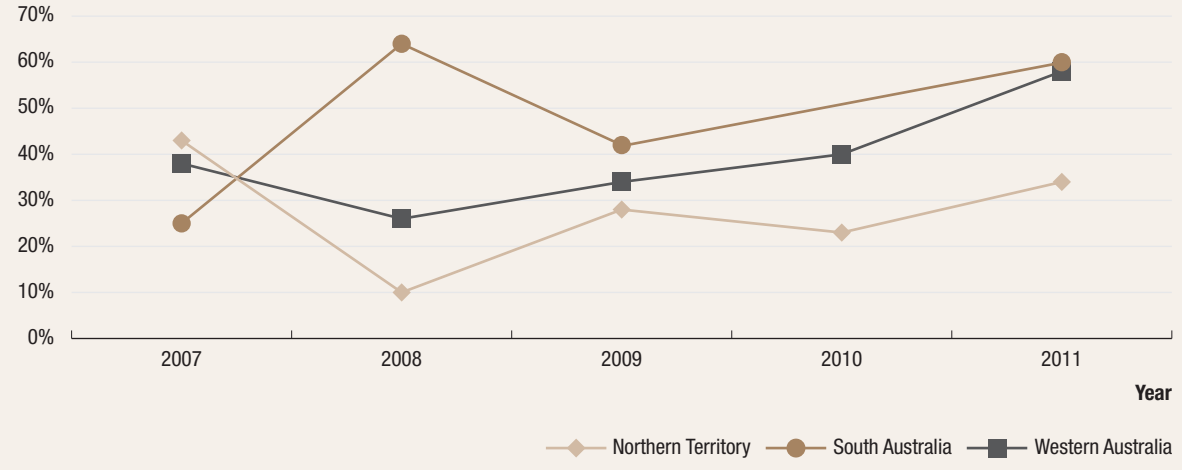
* Including children in communities screened but not at risk

Figure 1.8 Trachoma prevalence among screened* children aged 10-14 years by year and jurisdiction



* Including children in communities screened but not at risk

Figure 1.9 Proportion of screened* communities in which no trachoma was reported among children aged 5-9 years by year and jurisdiction



* Including communities screened but not at risk

Figure 1.10 Proportion of screened communities* with endemic trachoma† among children aged 5-9 years by year and jurisdiction

* Including communities screened but not at risk

† Prevalence greater than 5%

Figure 1.11 Trachoma prevalence (and 95% CI) in communities with at least 10 children consistently screened each year between 2007 and 2011, among children aged 5-9 years by year and jurisdiction

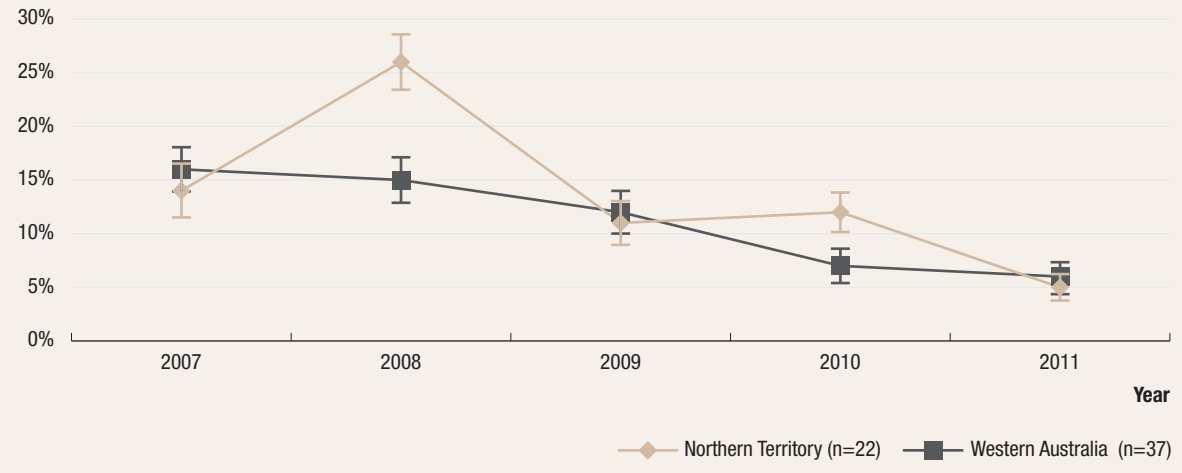
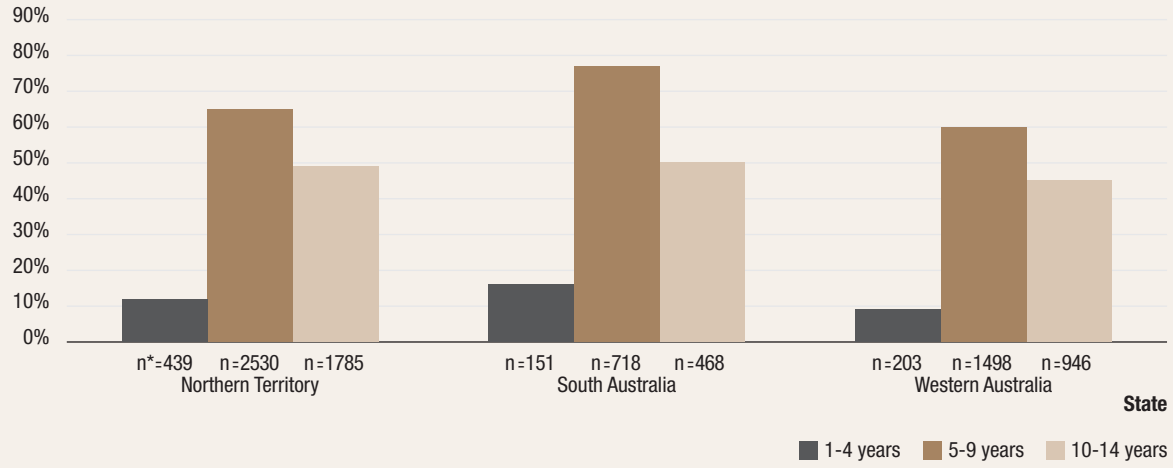
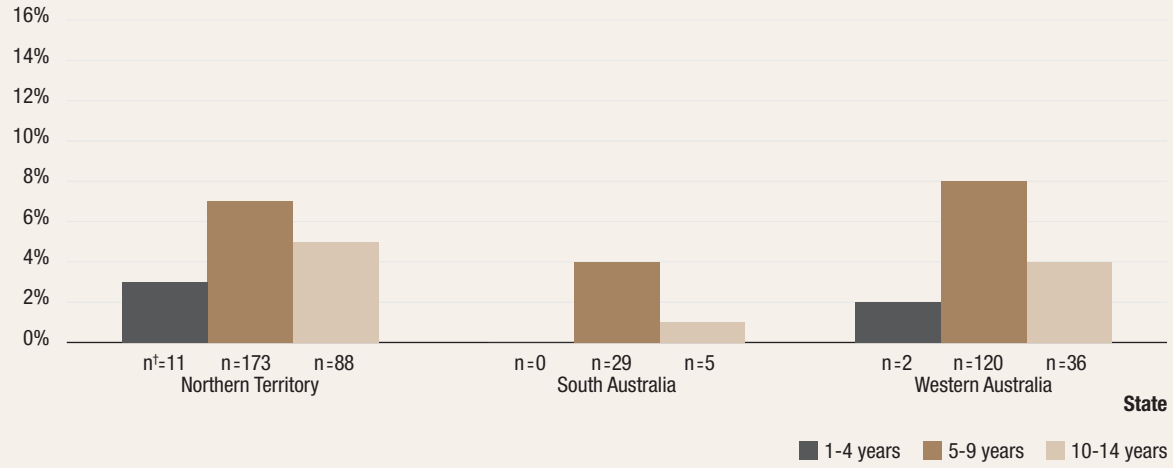


Figure 1.12 Screening coverage of children in at-risk communities in 2011 by age group and jurisdiction



* Number of children screened

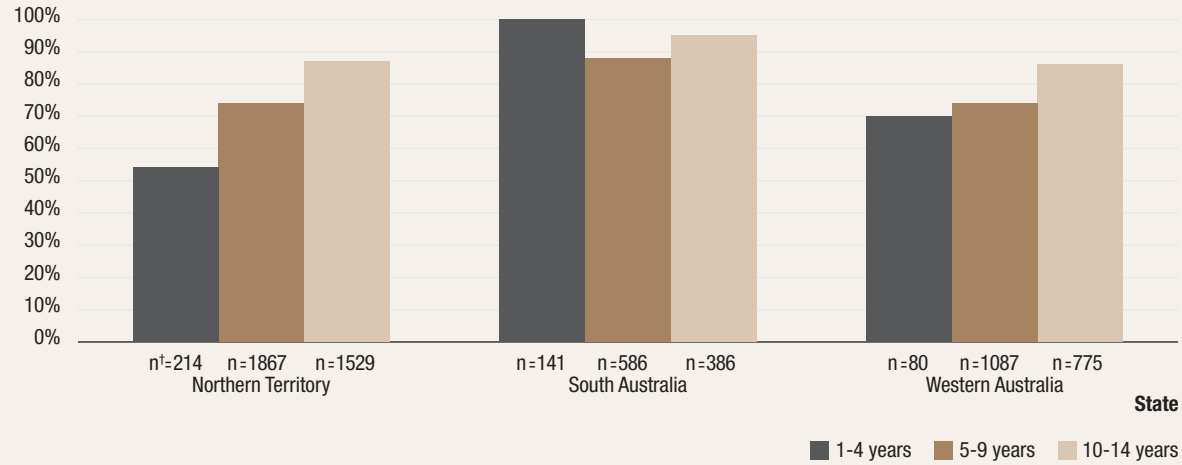
Figure 1.13 Trachoma prevalence in children screened in at-risk communities in 2011 by age group and jurisdiction*



* In communities where more than 5 children were screened

† Number of children detected with trachoma

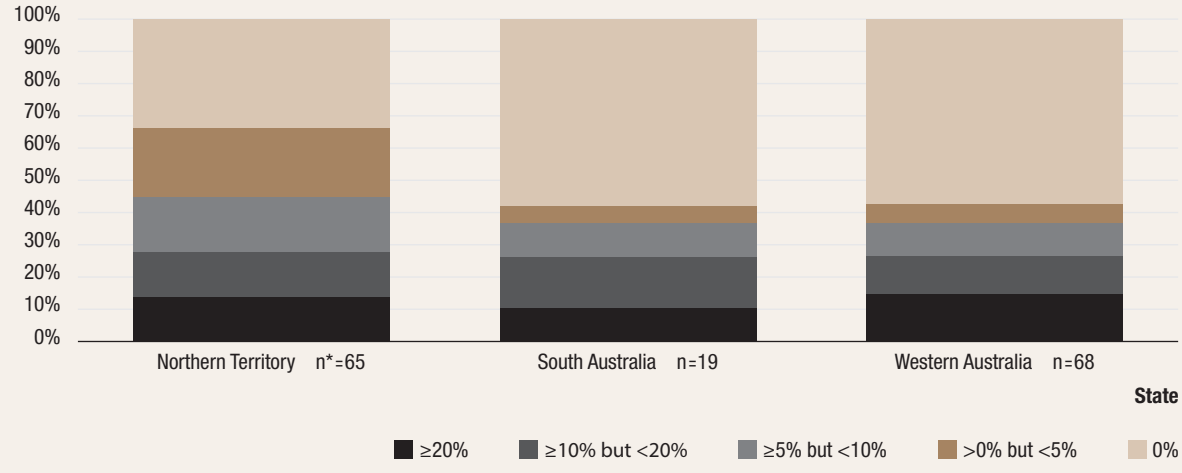
Figure 1.14 **Clean face prevalence among children screened in at-risk communities in 2011 by age group and jurisdiction***



* In communities where more than 5 children were screened

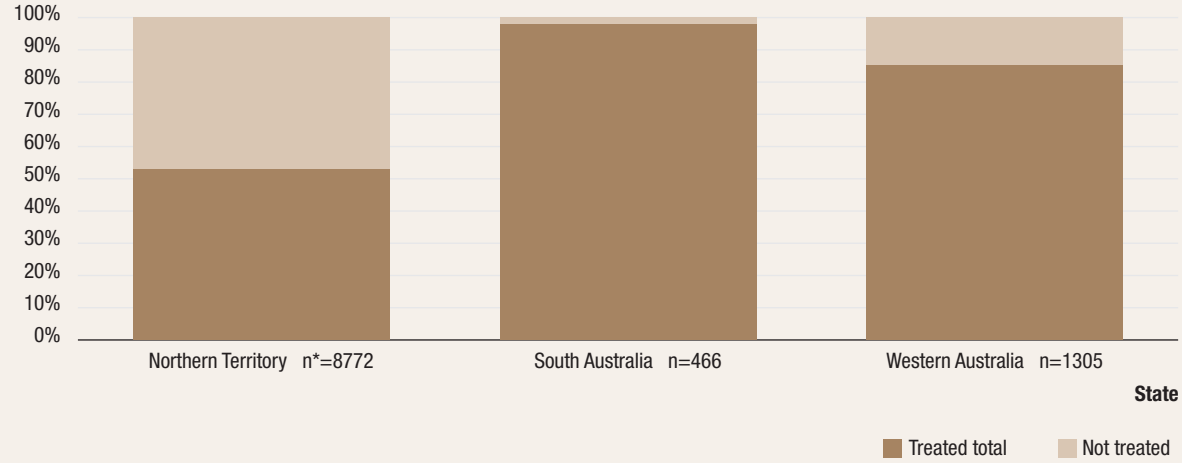
† Number of children observed to have a clean face

Figure 1.15 **Proportion of screened at-risk communities according to level of trachoma prevalence in 5-9 year old children in 2011, by jurisdiction**



* Number of communities screened for trachoma

Figure 1.16 Estimated proportion of population treated of those requiring treatment in at-risk communities, by jurisdiction



* Number of people estimated to require treatment for trachoma

Table 1.1 Trachoma screening coverage, trachoma prevalence and clean face prevalence among at-risk communities in 2011 by jurisdiction

	Northern Territory				South Australia				Western Australia				Total			
Number of communities at risk*	**86**				**46**				**75**				**207**			
Number of communities screened	**65**				**19**				**68**				**152**			
Age group (years)	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***
Estimated number of Aboriginal children at risk*	3637	3909	3653	11199	938	931	935	2804	2265	2498	2095	6858	6840	7338	6683	20861
Children examined for clean face	498	2550	1790	4838	150	683	405	1238	207	1498	946	2651	855	4731	3141	8727
Children with clean face	281	1875	1550	3706	148	599	386	1133	123	1117	820	2060	552	3591	2756	6899
Clean face prevalence	56%	74%	87%	77%	99%	88%	95%	92%	59%	75%	87%	78%	65%	76%	88%	79%
Children examined for trachoma	439	2530	1785	4754	151	718	468	1337	203	1498	946	2647	793	4746	3199	8738
Trachoma screening coverage	12%	65%	49%	42%	16%	77%	50%	48%	9%	60%	45%	39%	12%	65%	48%	15%
Children with active trachoma	19	175	91	285	2	29	5	36	3	123	38	164	24	327	134	485
Active trachoma prevalence	4%	7%	5%	6%	1%	4%	1%	3%	1%	8%	4%	6%	3%	7%	4%	6%
Trachoma prevalence 1-9 years	7%				4%				7%				6%			
Trachoma prevalence 1-9 years (weighted by population)*	6%				3%				5%				5%			

* Calculated as the proportions 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 was done in order to account for uneven coverage with respect to age groups

Table 1.2 Trachoma treatment coverage among at-risk communities in 2011 by jurisdiction

	Northern Territory					South Australia					Western Australia					Total				
Number of communities at risk	**86**					**46**					**75**					**207**				
Number of communities requiring treatment	**43**					**8**					**29**					**80**				
Age group (years)	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***
Active cases requiring treatment	19	175	91		285	2	29	5		36	3	123	38		164	24	327	134	0	485
Active cases who received treatment	19	150	66		235	2	27	5		34	3	121	35		159	24	298	106	0	428
% Active cases received treatment					82%					94%					97%					88%
Estimated contacts requiring treatment (according to jurisdictional interpretation of guidelines)					8772					466					1304					9509
Number of contacts who received treatment	626	841	512	2636	4615	36	51	52	316	455	118	254	177	556	1105	780	1146	741	3508	6175
Estimated overall treatment coverage (total)*					**53%**					**98%**					**85%**					**65%**

* Estimated using average number of household contacts per child in communities who reported number of contacts requiring treatment and population statistics (see Methodology for detail)

Table 1.3 Number of at-risk communities according to trachoma prevalence ranges among children aged 5-9 years in 2011

Prevalence	Northern Territory		South Australia		Western Australia		Total	
0%	22	34%	11	58%	39	57%	72	47%
>0% but <5%	14	22%	1	5%	4	6%	19	12%
≥5% but <10%	11	17%	2	11%	7	10%	20	13%
≥10% but <20%	9	14%	3	16%	8	12%	20	13%
≥20%	9	14%	2	11%	10	15%	21	14%
Total	**65**		**19**		**68**		**152**	

Table 1.4 Trichiasis screening coverage, prevalence and treatment among Aboriginal adults aged over 40 years in 2011

	Northern Territory		South Australia		Western Australia		Total	
Adult population size of at-risk* communities	7007		1921		4538		13466	
Number of communities at risk*	86		46		75		207	
Number of communities screened for trichiasis	8	9%	7	15%	5	7%	20	10%
Number (%) of adults examined	212	3%	712	37%	255	6%	1179	9%
Number (%) of adults with trichiasis	9	4%	8	1%	2	1%	19	2%
Number of adults offered ophthalmic consultation	1		2		3		6	
Number of adults receiving trichiasis surgery in past 12 months	0		0		0		0	

Northern Territory results 2011

Screening coverage

- There has been a steady increase over the past four years in the number of at-risk communities being screened for trachoma (Figure 2.2), with a plateau in most regions over the past two years.
- Community coverage of trachoma screening over the five endemic regions was 76%, with 65 out of 86 at-risk communities screened (Table 2.1). In addition, three communities designated as not-at-risk were screened.
- The proportion of children aged 5-9 years screened in the 65 communities was 65%, with screening coverage ranging from 49% to 82% (Table 2.1, Figure 2.3).
- Since 2008, the screening rates of children aged 5-9 years in at-risk communities has increased in all regions of the NT (Figure 2.3), with greatest coverage in Darwin Rural and Alice Springs Remote.

Clean face prevalence

- The overall prevalence of clean faces among 5-9 year old children screened in the NT was 74%. The highest levels were found in East Arnhem (Figure 2.4).

Trachoma prevalence

- The overall prevalence of trachoma in children aged 5-9 years screened in the NT was 7%. Prevalence ranged from 4% in East Arnhem to 14% in Alice Springs Remote (Table 2.1).
- No active trachoma was detected in 34% (22/65) of communities screened (Table 2.1).
- There was a substantial decrease in the percentage of communities with trachoma prevalence greater than 5%, from 62% in 2010, to 46% in 2011 (Figure 1.10).
- There is evidence of a decreasing trend since 2008 in trachoma prevalence among 5-9 year old children in all regions except East Arnhem (Figure 2.5).
- The highest prevalence of trachoma among children aged 5-9 years was 52% within a community in the Alice Springs Remote region.
- Three not at-risk communities were screened. Trachoma was detected in two of those communities.

Treatment coverage

- Of the active cases of trachoma detected at screening, 82% received treatment.
- An estimated 53% of the population requiring treatment were treated with azithromycin (Table 2.2). Treatment coverage differed substantially between regions, ranging from 38% to 99% (Table 2.2).

Trichiasis

- Trichiasis screening was undertaken in Alice Springs Remote and Katherine regions with 6% (212/3423) of the target population in these regions screened, and 3% (212/7007) of the overall at-risk population screened in the NT (Table 2.4).
- Trichiasis was detected in 4% of adults screened.
- No cases of trichiasis were reported to have received surgery (Table 2.4).

SAFE strategy compliance

- A trichiasis referral process was in place in 66% (43/65) of communities screened.
- The presence of facial cleanliness resources and programs was reported for less than half (48%) of screened communities.
- Of 15 screened communities that reported on environmental conditions, seven stated that they had good conditions, six described conditions as variable, and two had poor conditions (Table 2.5).
- NT did not report on the environmental conditions in 72% of communities screened.

Figure 2.1 Colour-coded trachoma prevalence and number of communities screened/ number of at-risk communities in the NT in 2011

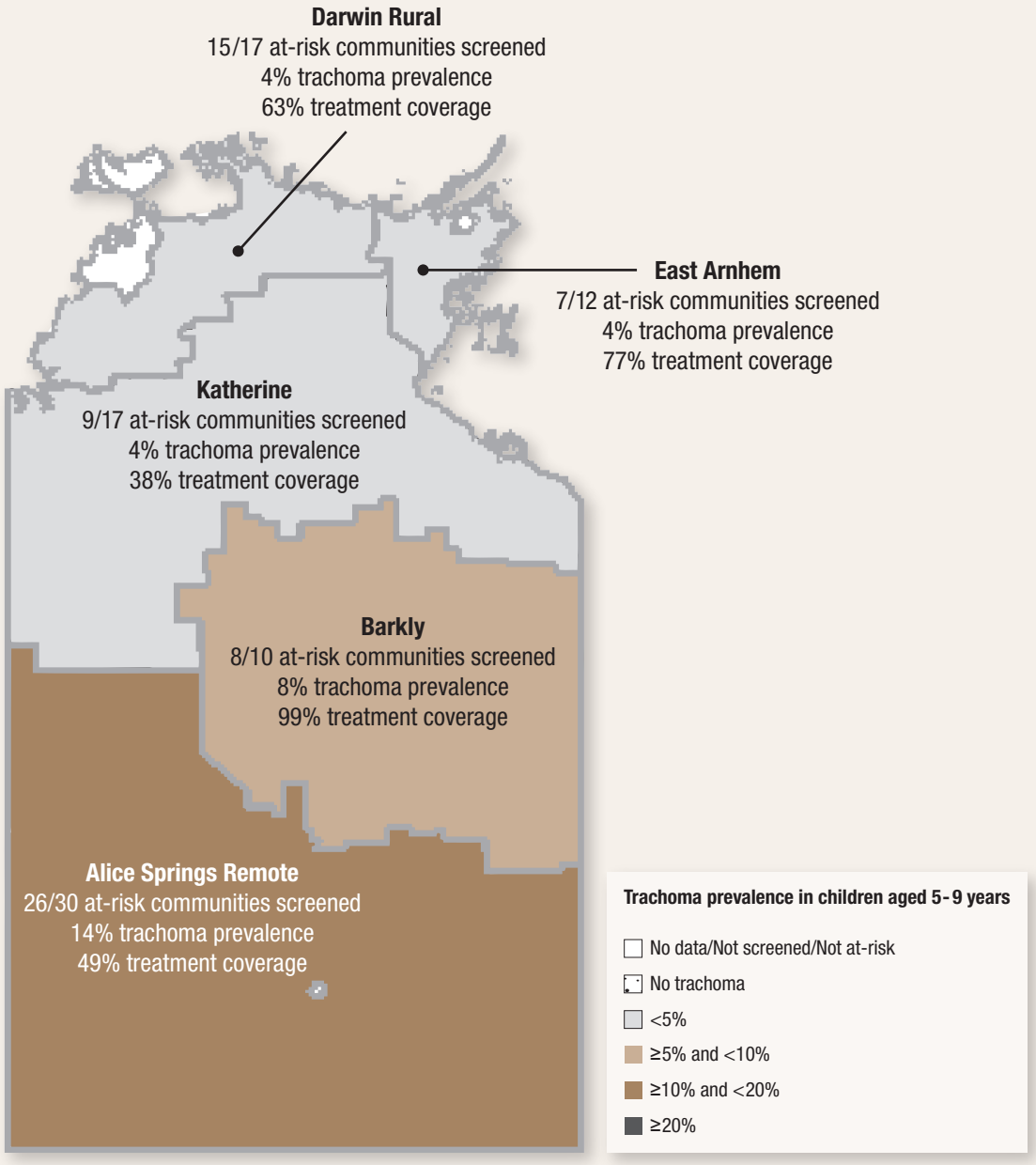
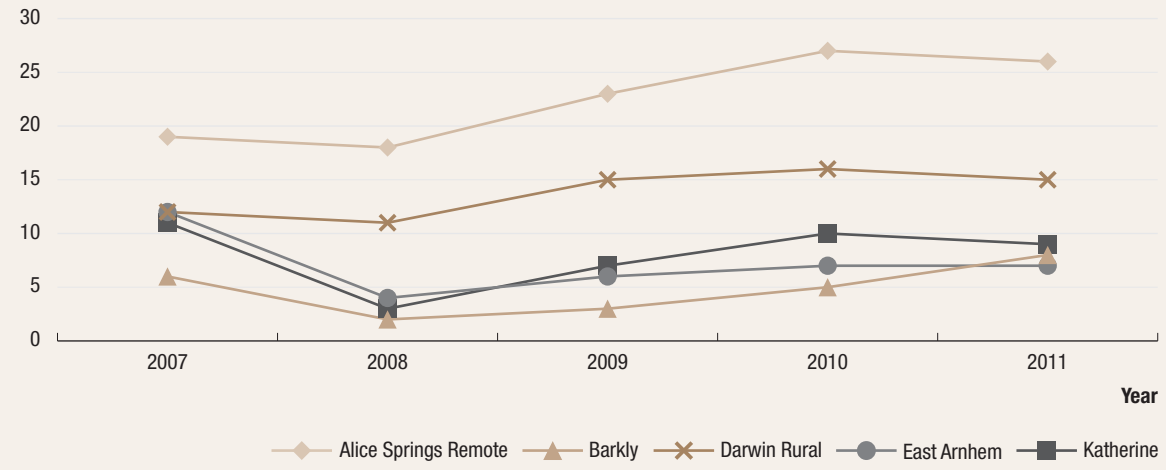
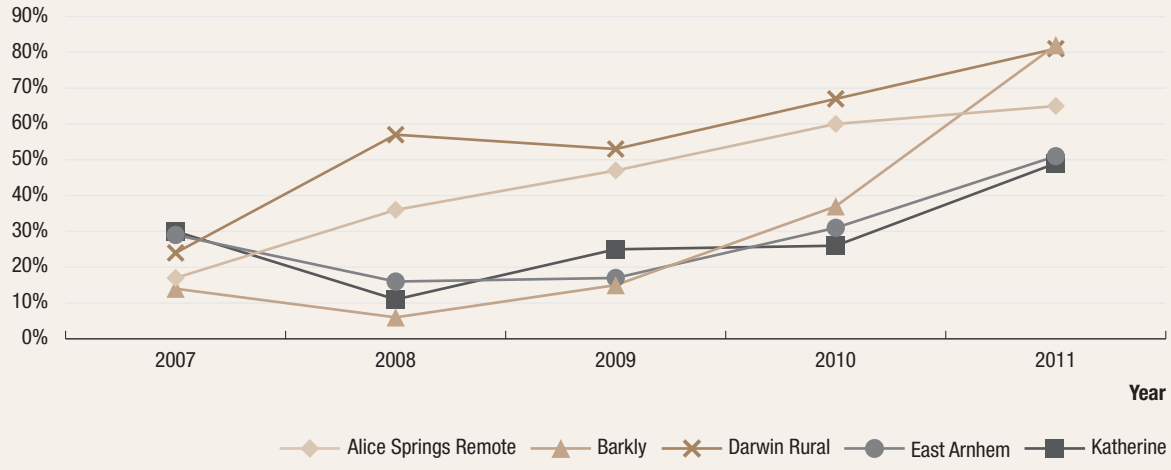


Figure 2.2 Number of communities screened* by year and region in the NT



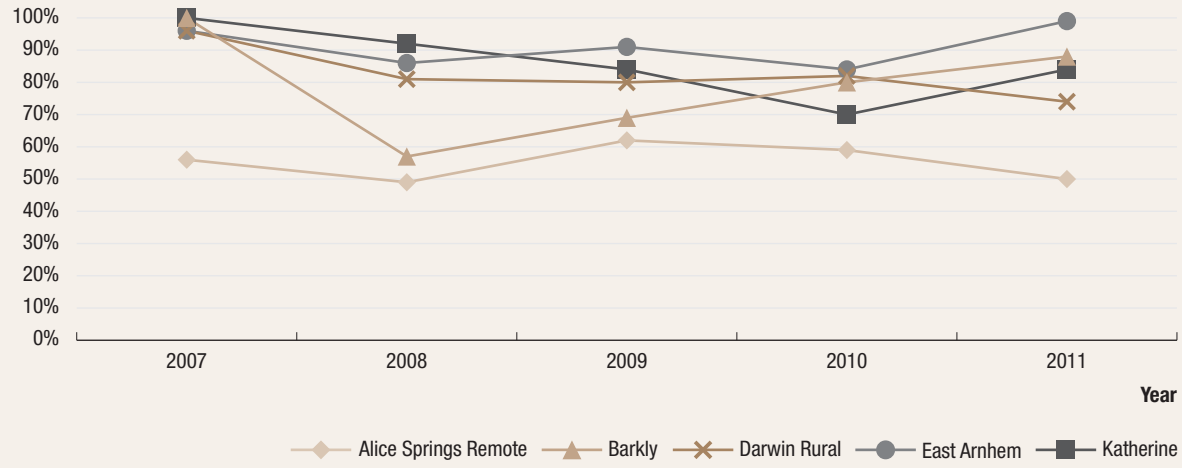
* Including communities screened but not at risk

Figure 2.3 Population screening coverage* of children aged 5-9 years in regions containing at least one at-risk community by year and region in the NT



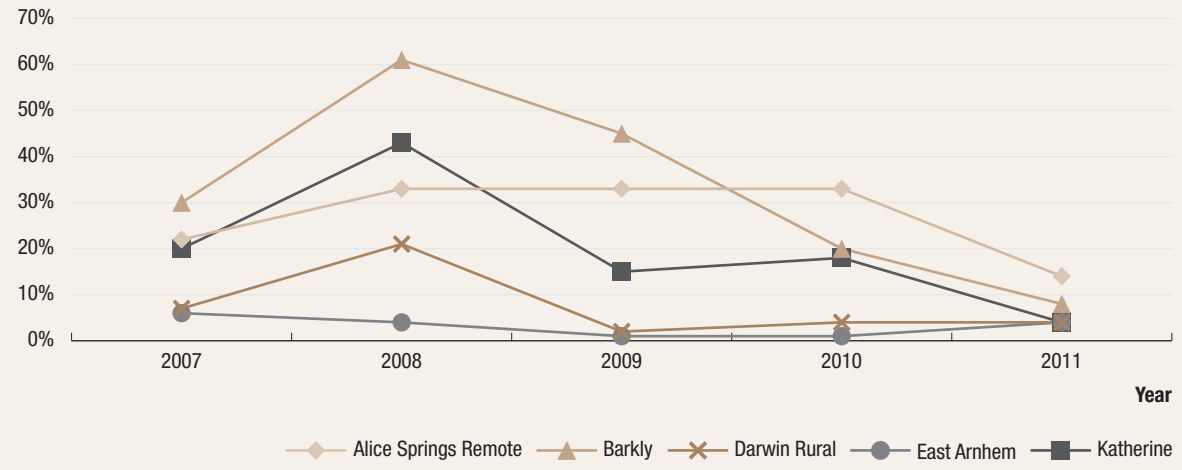
* Calculated as the number of children screened (in at-risk and not-at-risk communities) in region containing at least one at-risk community divided by the estimated population of region

Figure 2.4 Proportion of screened* children aged 5-9 years who had a clean face by year and region in the NT



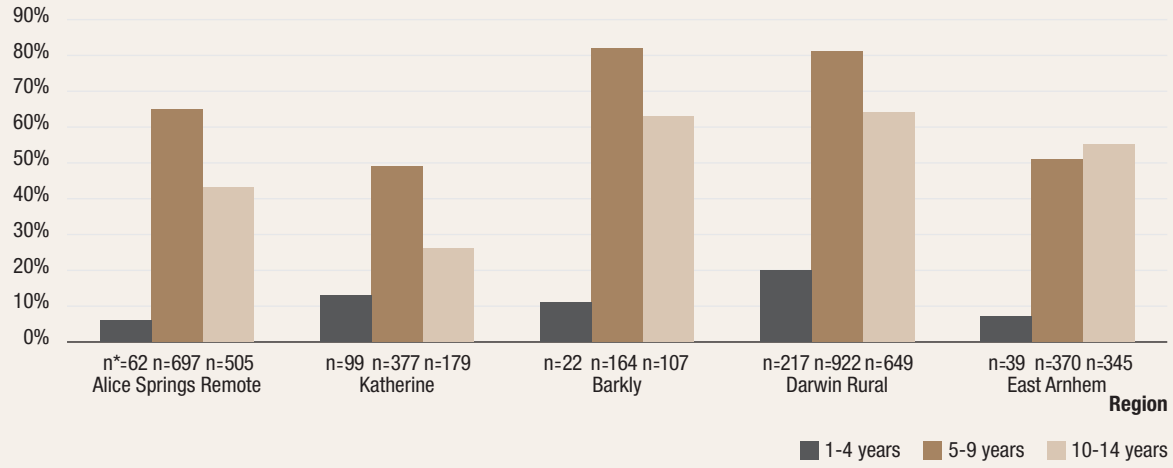
* Including children in communities screened but not at risk

Figure 2.5 Trachoma prevalence among screened* children aged 5-9 years by year and region in the NT



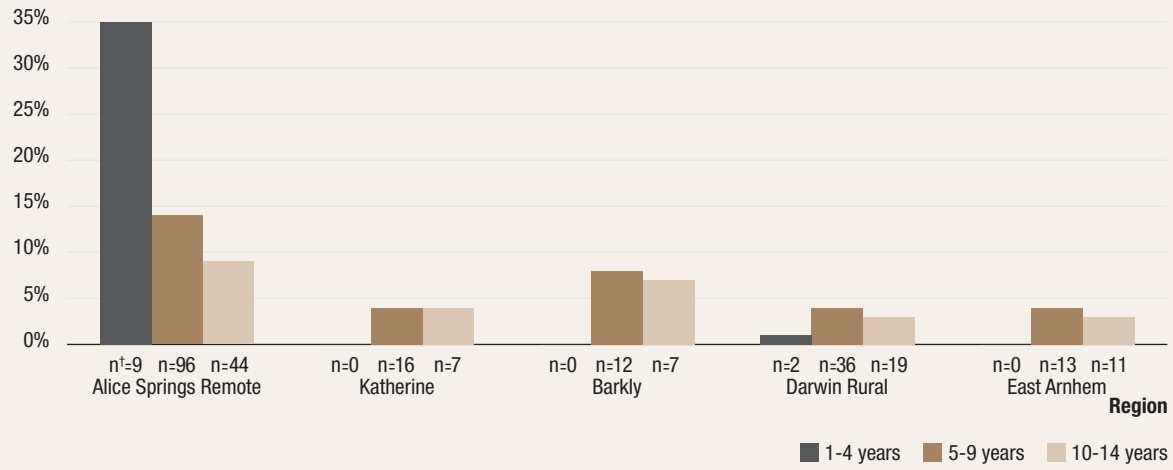
* Including children in communities screened but not at risk

Figure 2.6 Screening coverage of children in at-risk communities in 2011 by age group and region in the NT



* Number of children screened

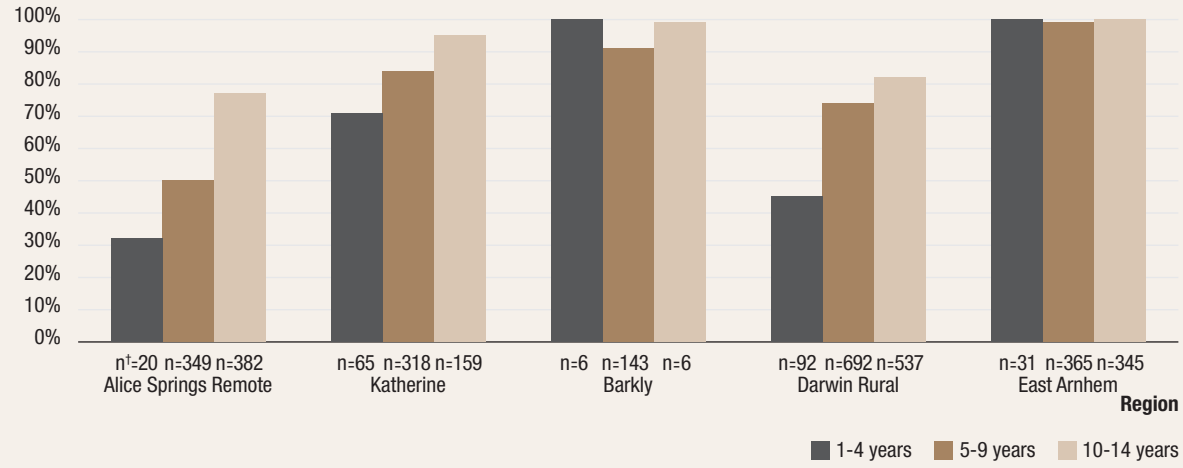
Figure 2.7 Trachoma prevalence among children screened in at-risk communities in 2011 by age group and region in the NT*



* In communities where more than 5 children were screened

† Number of children detected with trachoma

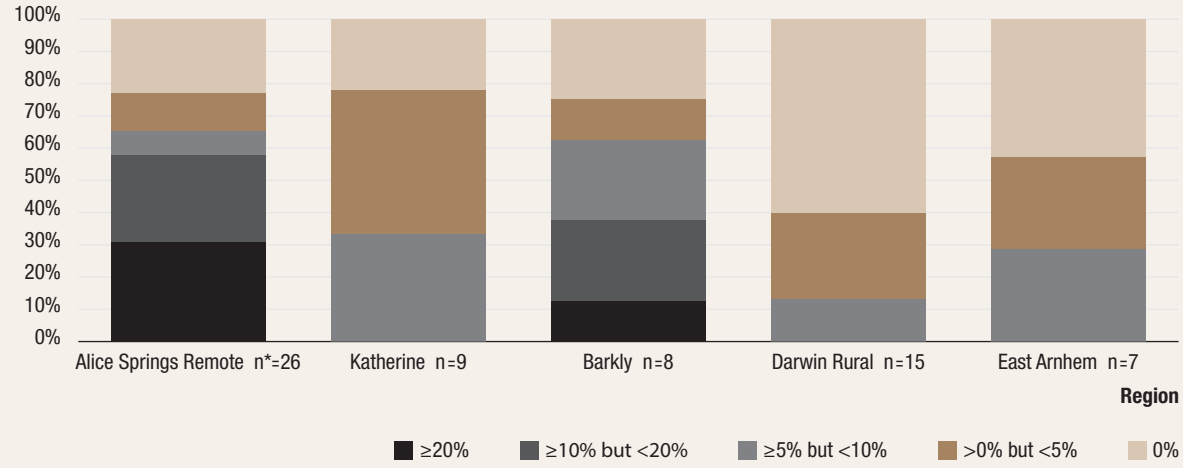
Figure 2.8 Proportion of screened children who had a clean face in 2011 by age group and region in the NT*



* In communities where more than 5 children were screened

† Number of children observed to have a clean face

Figure 2.9 Trachoma prevalence among screened at-risk communities in 2011 by region in the NT



* Number of communities screened for trachoma

Table 2.1 Trachoma screening coverage, trachoma prevalence and clean face prevalence in the NT in 2011 by region

	At-risk communities																								Not at risk communities			
	Alice Springs Remote				Barkly				Darwin Rural				East Arnhem				Katherine				Total				Total			
Number of communities at risk	30				10				17				12				17				86							
Number of communities screened	26				8				15				7				9				65				3			
Age group (years)	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***
Estimated number of Aboriginal children at risk	1021	1072	1166	3259	202	200	169	571	1086	1142	1018	3246	579	720	624	1923	748	774	677	2199	3637	3909	3653	11199				
Children examined for clean face†	105	700	505	1310	22	164	107	293	230	939	654	1823	39	370	345	754	102	377	179	658	498	2550	1790	4838	15	28	39	82
Children with clean face	35	351	391	777	22	149	106	277	116	692	537	1345	39	365	345	749	69	318	171	558	281	1875	1550	3706	5	19	36	60
Clean face prevalence	33%	50%	77%	59%	100%	91%	99%	95%	50%	74%	82%	74%	100%	99%	100%	99%	68%	84%	96%	85%	56%	74%	87%	77%	33%	68%	92%	73%
Children examined for trachoma	62	697	505	1264	22	164	107	293	217	922	649	1788	39	370	345	754	99	377	179	655	439	2530	1785	4754	11	33	38	82
Trachoma screening coverage	6%	65%	43%	39%	11%	82%	63%	51%	20%	81%	64%	55%	7%	51%	55%	39%	13%	49%	26%	30%	12%	65%	49%	42%				
Children with active trachoma	15	97	47	159	1	13	7	21	3	36	19	58	0	13	11	24	0	16	7	23	19	175	91	285	1	3	0	4
Active trachoma prevalence	24%	14%	9%	13%	5%	8%	7%	7%	1%	4%	3%	3%	0%	4%	3%	3%	0%	4%	4%	4%	4%	7%	5%	6%	9%	9%	0%	5%
Trachoma prevalence 1-9	15%				8%				3%				3%				2%				7%							
Trachoma prevalence 1-9 years (weighted by population)*	19%				6%				3%				2%				2%				6%							

* Calculated as the proportions 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 was done in order to account for uneven coverage with respect to age groups

Table 2.2 Trachoma treatment coverage in the NT in 2011

	At-risk communities																										Not at risk communities				
	Alice Springs Remote					Barkly					Darwin Rural					East Arnhem					Katherine					Total					Total				
Number of communities at risk	30					10					17					12					17					86									
Number of communities requiring treatment	20					6					6					4					7					43					2				
Age group (years)	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***
Active cases requiring treatment	15	97	47	N/A	159	1	13	7	N/A	21	3	36	19	N/A	58	0	13	11	N/A	24	0	16	7	N/A	23	19	175	91	N/A	285	1	3	0	N/A	4
Active cases received treatment	15	90	42	N/A	147	1	13	7	N/A	21	3	22	5	N/A	30	0	10	7	N/A	17	0	15	5	N/A	20	19	150	66	N/A	235	1	3	0	N/A	4
% Active cases received treatment	100%	93%	89%	N/A	92%	100%	100%	100%	N/A	100%	100%	61%	26%	N/A	52%		77%	64%	N/A	71%		94%	71%	N/A	87%	100%	86%	73%	N/A	82%	100%	100%	0%	N/A	100%
Estimated contacts requiring treatment (according to jurisdictional interpretation of the guidelines)					4046					185					2606					268					1667					8772					38
Total Number of contacts who received treatment	288	361	252	1066	1967	23	45	23	93	184	209	263	144	1013	1629	16	27	26	137	206	90	145	67	327	629	626	841	512	2636	4615	5	8	4	21	38
Estimated overall treatment coverage*					49%					99%					63%					77%					38%					53%					100%

* Estimated using average number of household contacts per child in communities who reported number of contacts requiring treatment and population statistics (see Methodology for detail)

Table 2.3 Number of communities according to different trachoma prevalence ranges (among children aged 5-9 years) in the NT in 2011

Prevalence	At-risk communities												Not at-risk communities	
	Alice Springs Remote		Barkly		Darwin Rural		East Arnhem		Katherine		Total			
0%	6	23%	2	25%	9	60%	3	43%	2	22%	22	34%	1	33%
>0% but <5%	3	12%	1	13%	4	27%	2	29%	4	44%	14	22%	0	0%
≥5% but <10%	2	8%	2	25%	2	13%	2	29%	3	33%	11	17%	1	33%
≥10% but <20%	7	27%	2	25%	0	0%	0	0%	0	0%	9	14%	1	33%
≥20%	8	31%	1	13%	0	0%	0	0%	0	0%	9	14%	0	0%
Total	**26**		**8**		**15**		**7**		**9**		**65**		**3**	

Table 2.4 Trichiasis screening coverage, prevalence and treatment among Aboriginal adults aged over 40 years in 2011 in the NT

	Alice Springs Remote		Barkly		Darwin Rural		East Arnhem		Katherine		Total	
Adult population of at-risk communities	2259		350		1803		1432		1164		7007	
Number of communities at risk	30		10		17		12		17		86	
Number of communities screened for trichiasis	3	10%	0	0%	0	0%	0	0%	5	29%	8	9%
Adults examined (% of estimated population at risk)	70	3%	0	0%	0	0%	0	0%	142	12%	212	3%
With trichiasis (% of adults examined)	4	6%	0	0%	0	0%	0	0%	5	4%	9	4%
Offered ophthalmic consultation	1		0		0		0		0		1	
Surgery in past 12 months	N/R		N/R		N/R		N/R		N/R		N/R	

Table 2.5 Adherence to SAFE protocols in reported communities* in 2011 in the NT

	Alice Springs Remote		Barkly		Darwin Rural		East Arnhem		Katherine		Total	
Surgery for trichiasis												
Referral process exists	17	73%	3	38%	10	66%	2	29%	9	100%	43	63%
No referral process	0	0%	0	0%	0	0%	0	0	0	0%	0	0%
Referral unknown	0	0%	0	0%	0	0%	0	0	0	0%	0	0%
Not Reported	7	27%	5	72%	5	34%	5	71%	0	0%	25	37%
Antibiotics												
Distribution in line with CDNA guidelines	**23**	**88%**	**6**	**75%**	**9**	**60%**	**5**	**71%**	**9**	**100%**	**52**	**80%**
Active cases and contacts treated within two weeks	19	80%	5	83%	1	11%	3	60%	7	88%	0	0%
No treatment required	4	20%	1	17%	8	89%	2	40%	2	22%	0	0%
Distribution not in line with CDNA guidelines	**3**	**12%**	**2**	**25%**	**6**	**40%**	**2**	**39%**	**0**	**0%**	**13**	**20%**
Active cases and contacts treated but not within two weeks	2	77%	2	100%	5	83%	1	50%	0	0%	0	0%
Not all contacts treated†	0	0%	0	0%	1	17%	0	0%	0	0%	0	0%
Active cases only treated	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
No distribution	1	33%	0	0%	0	0%	1	50%	0	0%	0	0%
Facial cleanliness resources												
Present and used	16	62%	0	0%	4	27%	1	13%	8	88%	29	45%
Present, not used	2	8%	0	0%	0	0%	0	0%	0	0%	2	3%
No resources	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Not reported/Unsure	8	30%	8	100%	11	73%	7	87%	1	12%	34	52%
Facial cleanliness programs												
Program exists	15	58%	0	0%	2	13%	1	13%	6	67%	24	37%
No program	3	12%	0	0%	0	0%	0	0%	2	22%	5	8%
Not reported/Unsure	8	30%	8	100%	13	87%	7	87%	1	11%	36	55%
Environmental Conditions												
Good	8	30%	0	0%	1	6%	0	0%	1	11%	7	11%
Variable	4	15%	0	0%	1	6%	0	0%	1	11%	6	9%
Poor	1	4%	0	0%	0		0	0%	1	11%	2	3%
Not reported	13	50%	8	100%	13	86%	7	100%	6	77%	47	72%

* Including communities screened but not at risk

† Less than 80% of contacts treated

Table 2.6 Treatment coverage for second treatment of trachoma in hyperendemic communities in the NT from 2009 - 2011

Region	Alice Springs Remote*					Alice Springs Remote*					Alice Springs Remote*					Katherine†				
Year	**2009**					**2010**					**2011**					**2010**				
Age group (years)	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***
Estimated Number of contacts requiring treatment‡	26	30	35	152	243	210	225	210	1205	1850	330	329	354	1867	2880	102	100	97	592	891
Number of cases and contacts who received a second treatment	31	26	17	141	215	137	166	140	706	1149	234	213	151	467	1065	16	17	7	45	85
Estimated overall second treatment coverage	118%	85%	49%	93%	88%	65%	74%	67%	59%	62%	71%	65%	43%	25%	37%	16%	17%	7%	8%	10%

* Number of communities with second treatment was 1, 6, and 7 in 2009, 2010 and 2011 respectively

† Number of communities with second treatment in Katherine was 2 in 2010

‡ Number of contacts estimated from ABS projections of whole of community

South Australia results 2011

- The regions for which data were reported in 2011 differed from the regions for which data were reported in previous years. Communities screened in previous years were reclassified in this report for consistency with 2011 reporting.
- Data collected to 29 February 2012 were included in this year's report.
- Some trend figures do not include data collected in 2010 due to differences in age ranges previously reported.
- Interpretation of results and trends over time were limited due to small sample sizes.

Screening coverage

- Overall, South Australia has increased screening coverage, both in the number of communities screened and at-risk population screened, with the greatest gains in the Far North region (Figure 3.2).
- Community coverage of trachoma screening in the two regions screened was 41%, with 19 of the 46 designated at-risk communities being screened (Table 3.1).
- The proportion of children screened aged 5-9 years in those 19 at-risk communities was 77%.

Clean face prevalence

- The overall prevalence of clean faces among screened children aged 5-9 in SA was 88%, ranging from 47% to 94% (Table 3.1).

Trachoma prevalence

- The overall prevalence of trachoma in children screened aged 5-9 in SA was 4% (Table 3.1).
- No active trachoma was detected in 58% (11/19) of at-risk communities screened (Table 3.3).
- Of communities screened, 26% (5/19) had a prevalence of trachoma of over 10% (Table 3.3).
- The highest prevalence of trachoma among children aged 5-9 years was 32% within a community in the Eyre/ Western region.
- One not-at-risk community was screened in 2011, with no active trachoma detected.

Treatment coverage

- In 8/19 of at-risk communities screened, treatment was required for trachoma (Table 3.2).
- Of the active cases requiring treatment for trachoma, 94% (34/36) received treatment (Table 3.2).
- An estimated 98% of the population requiring treatment was treated with azithromycin (Table 3.2)

Trichiasis

- Of the at-risk population adults, 37% (712/1921) were screened for trichiasis in eight communities.
- Among adults screened, the prevalence of trichiasis was 1% (8/716) (Table 3.4).

SAFE strategy compliance

- Facial cleanliness resources were present and in use in 37% (7/19) of communities screened. The presence of facial cleanliness resources and programs were reported for 55% (11/19) of screened communities (Table 3.5).
- Environmental conditions were reported for 15/19 communities screened. Of these, 75% reported good environmental conditions, 10% variable (Table 3.5).

Figure 3.1 Colour-coded trachoma prevalence and number of communities screened/number of communities at-risk communities screened in 2011 in SA

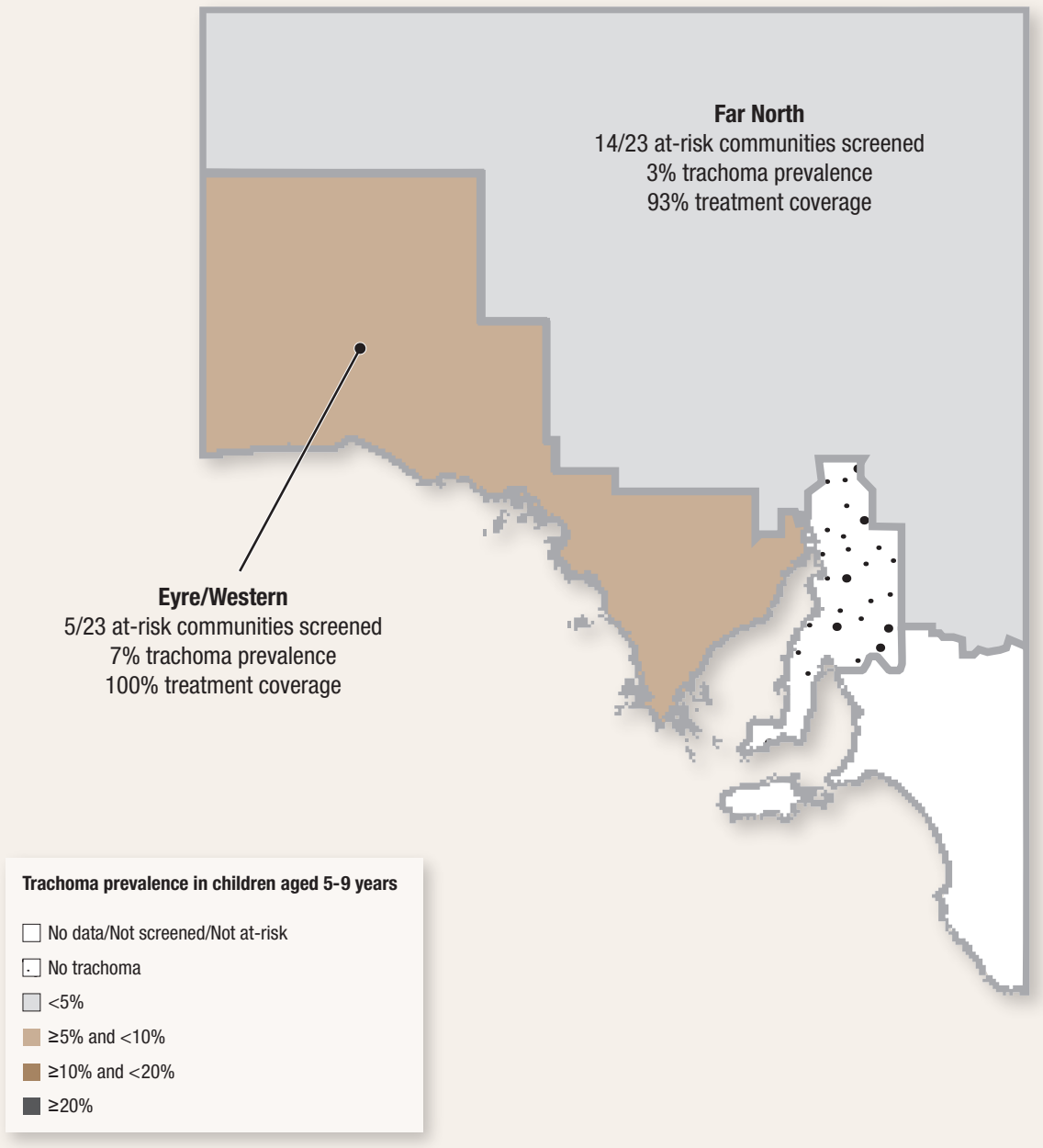
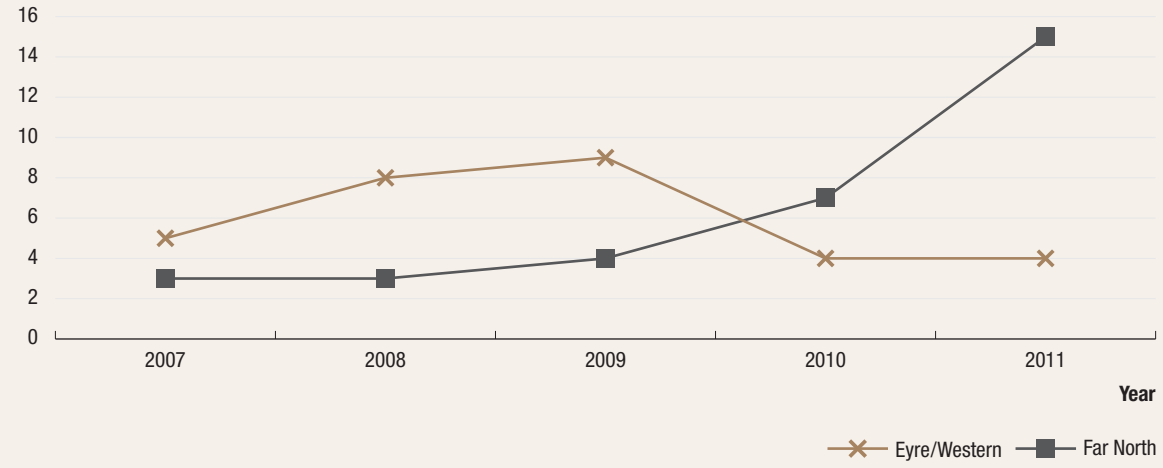


Figure 3.2 Number of communities screened* by year and region in SA

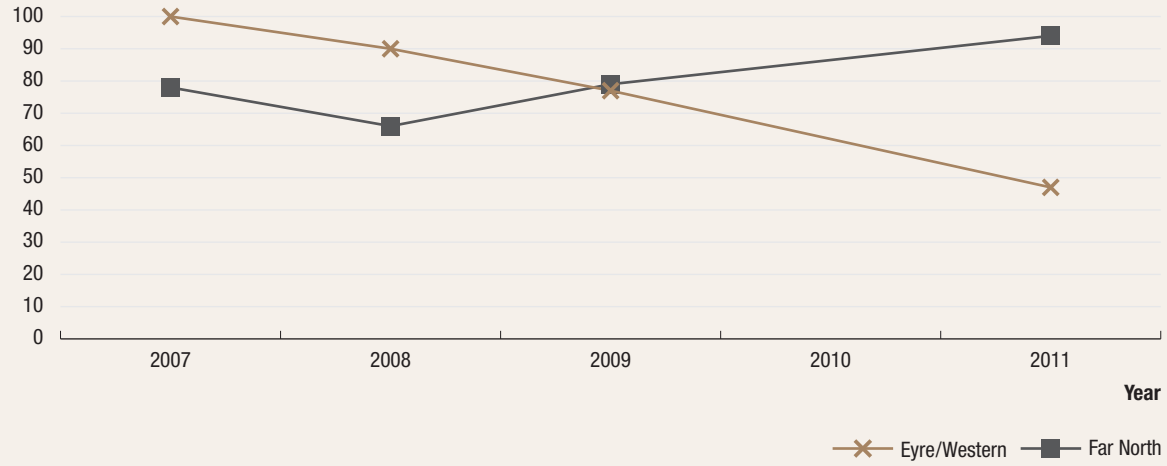


* Including communities screened but not at risk

Figure 3.3 Population screening coverage* of children aged 5-9 years over all regions containing at least one at-risk community by year and region in SA

* Calculated as the number of children screened (in at-risk and not-at-risk communities) in region containing at least one at-risk community divided by the estimated population of region

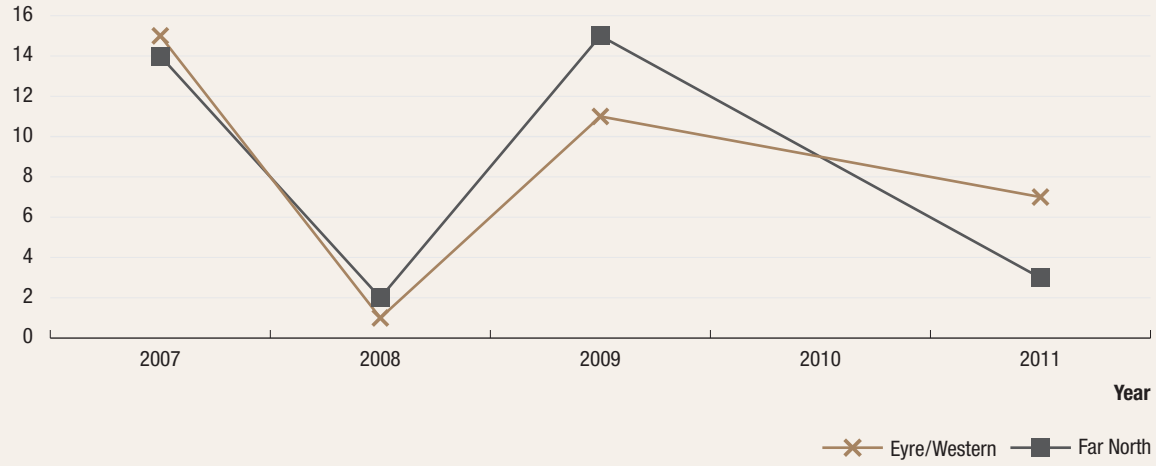
Figure 3.4 Proportion of screened* children aged 5-9 years who had a clean face by year and region in SA†



* Including children in communities screened but not at risk

† Where 10 or more children were screened

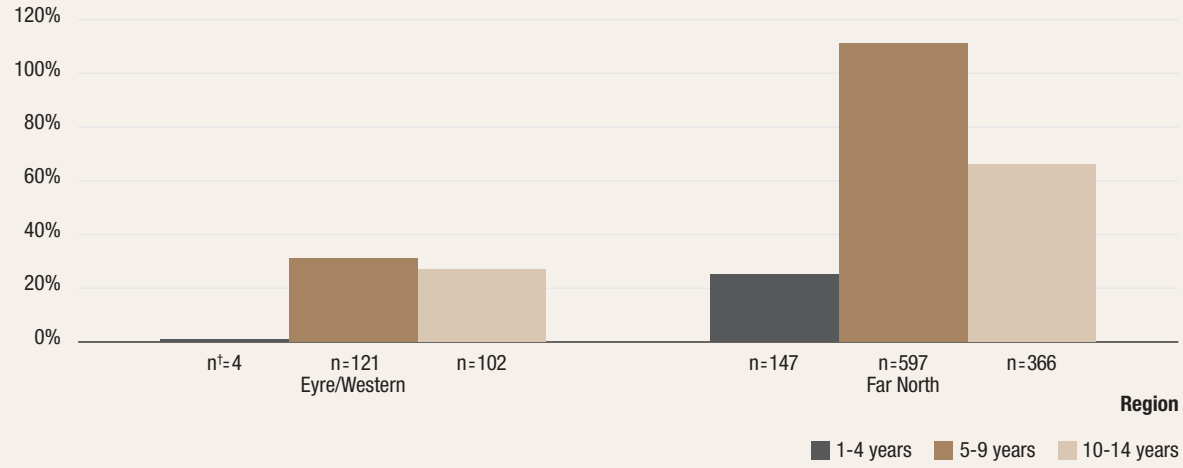
Figure 3.5 Trachoma prevalence among screened* children aged 5-9 years by year and region in SA†



* Including children in communities screened but not at risk

† Where 10 or more children were screened

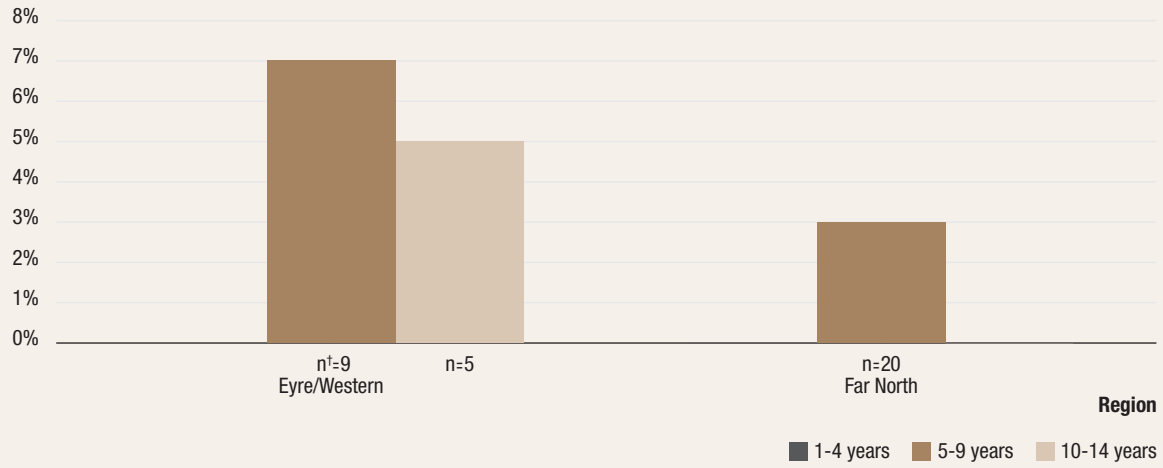
Figure 3.6 Screening coverage of children in at-risk communities in 2011 by age group and region in SA*



* Coverage levels over 100% due to population estimates

† Number of children screened

Figure 3.7 Trachoma prevalence among children screened in at-risk communities in 2011 by age group and region in SA*

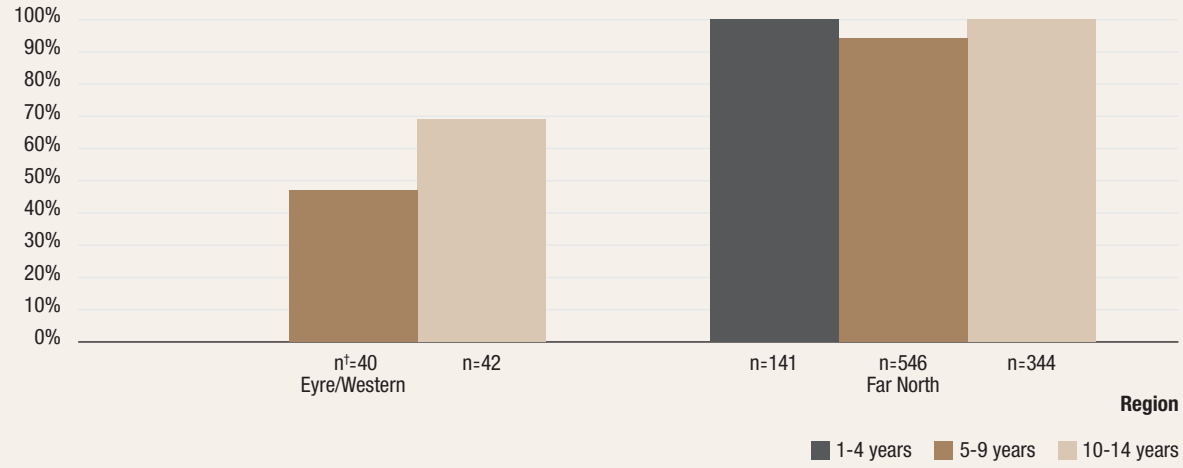


* In communities where more than 5 children were screened

† Number of children detected with trachoma

Note small numbers in all regions

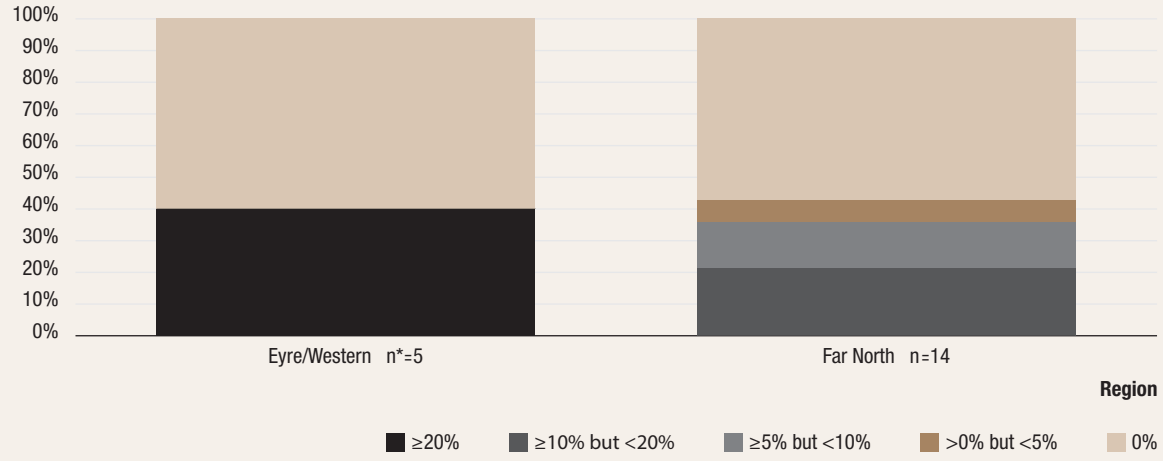
Figure 3.8 Proportion of screened children who had a clean face in 2011 by age group and region in SA*



* In communities where more than 5 children were screened

† Number of children observed to have a clean face

Figure 3.9 Trachoma prevalence among screened at-risk communities in 2011 by region in SA



* Number of communities screened for trachoma

Table 3.1 Trachoma screening coverage, trachoma prevalence and clean face prevalence in SA in 2011 by region

	At-risk communities												Not at-risk communities			
	Eyre/Western				Far North				Total				Total			
Number of communities at risk	23				23				46							
Number of communities screened	5				14				19				1			
Age group (years)	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***	***1-4***	***5-9***	***10-14***	***1-14***
Estimated number of Aboriginal children at risk	352	394	382	1128	586	537	553	1676	938	931	935	2804	88	105	87	280
Children examined for clean face	3	86	61	150	147	597	344	1088	150	683	405	1238	0	0	0	0
Children with clean face	3	40	42	85	145	559	344	1048	148	599	386	1133	0	0	0	0
Clean face prevalence	100%	47%	69%	57%	99%	94%	100%	96%	99%	88%	95%	92%				
Children examined for trachoma	4	121	102	227	147	597	366	1110	151	718	468	1337	0	7	22	29
Trachoma screening coverage	1%	31%	27%	20%	25%	111%	66%	66%	16%	77%	50%	48%	0%	7%	25%	10%
Children with active trachoma	2	9	5	16	0	20	0	20	2	29	5	36	0	0	0	0
Active trachoma prevalence	50%	7%	5%	7%	0%	3%	0%	2%	1%	4%	1%	3%		0%	0%	0%
Trachoma prevalence 1-9 years	9%				3%				4%				0%			
Trachoma prevalence 1-9 years (weighted by population)*	28%				2%				3%				0%			

* Calculated as the proportions 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 was done in order to account for uneven coverage with respect to age groups

Table 3.2 Treatment coverage in SA in 2011 by region

	At-risk communities														
	Eyre/Western					Far North					Total				
Number of communities at risk	23					23					46				
Number of communities requiring treatment	2					6					8				
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***
Active cases requiring treatment	2	9	5	N/A	16	0	20	0	N/A	20	2	29	5	N/A	36
Active cases received treatment	2	9	5	N/A	16	0	18	0	N/A	18	2	27	5	N/A	34
% Active cases received treatment	100%	100%	100%	N/A	100%	0%	90%	0%	N/A	90%	100%	93%	100%	N/A	94%
Estimated contacts requiring treatment according to jurisdictional interpretation of the guidelines					306					160					466
Number of contacts who received treatment	27	34	37	208	306	9	17	15	108	149	36	51	52	316	455
Estimated overall treatment coverage (total)*					**100%**					**93%**					**98%**

* Estimated using average number of household contacts per child in communities who reported number of contacts requiring treatment and population statistics (see Methodology for detail)

Table 3.3 Number of communities according to different trachoma prevalence ranges (among children aged 5-9 years) in SA in 2011

Prevalence	At-risk communities						Not at-risk communities	
	Eyre/Western		Far North		Total			
0%	3	60%	8	57%	11	58%	1	100%
>0% but <5%	0	0%	1	7%	1	5%	0	0%
≥5% but <10%	0	0%	2	14%	2	11%	0	0%
≥10% but <20%	0	0%	3	21%	3	16%	0	0%
≥20%	2	40%	0	0%	2	11%	0	0%
Total	**5**		**14**		**19**		**1**	

Table 3.4 Trichiasis screening coverage, prevalence and treatment among Aboriginal adults aged over 40 years in 2011 in SA

	Eyre/Western		Far North		Total	
Adult population of at-risk communities	518		1402		1921	
Number of communities at risk*	5		14		46	
Number of communities screened for trichiasis	2	40%	5	36%	7	15%
Adults examined (% of estimated population at risk)	45	9%	667	48%	712	37%
With trichiasis (% of adults examined)	2	4%	6	1%	8	1%
Offered ophthalmic consultation	2		6		2	
Surgery in past 12 months	N/R	N/R	N/R	N/R	N/R	N/R

Table 3.5 Adherence to SAFE protocols in screened* communities in 2011 in SA

	Eyre/Western		Far North		Total	
Surgery for trichiasis						
Referral process exists	4	100%	7	47	11	55%
No referral process	0	0%	0	0%	0	0%
Referral unknown	0	0%	0	0%	0	0%
Not Reported	0	0%	8	53%	9	45%
Antibiotics						
Distribution in line with CDNA guidelines	**2**	**50%**	**15**	**100%**	**18**	**90%**
Active cases and contacts treated within two weeks	0	0%	6	40%	0	0%
No treatment required	2	100%	9	60%	0	0%
Distribution not in line with CDNA guidelines	**2**	**50%**	**0**	**0%**	**2**	**10%**
Active cases and contacts treated but not within two weeks	2	50%	0	0%	0	0%
Not all contacts treated†	0	0%	0	0%	0	0%
Active cases only treated	0	0%	0	0%	0	0%
No distribution	0	0%	0	0%	0	0%
Facial cleanliness resources						
Present and used	2	50%	4	27%	7	37%
Present, not used	0	0%	1	7%	1	5%
No resources	1	25%	2	13%	3	15%
Not reported/Unsure	1	25%	8	53%	9	45%
Facial cleanliness programs						
Program exists			1	7%	2	10%
No program	3	75%	4	27%	7	37%
Not reported/Unsure	1	25%	10	66%	11	55%
Environmental Conditions						
Good	3	75%	11	73%	15	75%
Variable	1	25%	1	7%	2	10%
Poor	0	0%	0	0%	0	0%
Not reported	0	0%	3	20%	3	15%

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Western Australia results 2011

Screening coverage

- The overall community screening coverage in WA over the four regions with endemic trachoma was 91%, with 68 communities screened for trachoma out of the 75 at-risk communities (Table 4.1).
- No definitive trend is obvious over time across the regions, however, fewer communities were screened in the Kimberley region compared to last year (Figure 4.2).
- Ten communities within the Goldfields region were amalgamated for the purpose of presenting data for this report, which may alter data presented in the 2010 report.
- The proportion of children aged 5-9 years screened in 68 at-risk communities was 60%; this ranged from 47% in the Goldfields region to 87% in the Midwest region (Table 4.1, Figure 4.3).
- There was a decrease in the number of children screened in the Kimberley region, with 855 children being screened in 2011 (58% of at-risk population) compared to 933 in 2010 (71% of at-risk population).

Clean face prevalence

- The overall prevalence of clean faces among screened populations in WA was 80%, and 78% in at-risk communities.
- There was a decrease in the prevalence of clean face in all regions except in the Midwest region which remained stable at 92% compared to the results the previous year (Table 4.1, Figure 4.4).

Trachoma prevalence

- The prevalence of trachoma among children aged 5-9 years who were screened in WA was 8%. The prevalence of active trachoma among screened children aged 5-9 years was 5% in the Pilbara, 7% in the Kimberley, 9% in the Midwest, and 12% in the Goldfields region (Table 4.1).
- No active trachoma was detected in 58% (40/69) of communities screened (Table 4.3).
- Of communities screened, 26% (18/69) had a prevalence of trachoma of greater than 10% (Table 4.3).

Treatment coverage

- In 29/69 of communities screened, treatment was required for trachoma (Table 4.2).
- An estimated 85% of the at-risk population requiring treatment were treated with azithromycin (Table 4.2).

Trichiasis

- Overall, 6% of the target population were screened for trichiasis (Table 4.4).
- Two cases of trichiasis were reported in adults screened; both were found in the Pilbara region.
- No cases of trichiasis were reported to have received surgery, although three cases were reported to have been offered an ophthalmic consultation (Table 4.4).

SAFE strategy compliance

- Of all communities screened for trichiasis, 67% reported an operating trichiasis referral process.
- Of communities screened, 58% reported the presence and use of facial cleanliness resources.
- Of communities screened, 71% reported having facial cleanliness programs functioning within the community.
- Of communities screened, 49% reported good environmental conditions, 13% reported variable environmental conditions, 6% reported poor environmental conditions, and 32% did not report on environmental conditions (Table 4.5).

Figure 4.1 Colour-coded trachoma prevalence, community screening coverage and treatment coverage in communities designated as at-risk of trachoma and screened in 2011 in WA

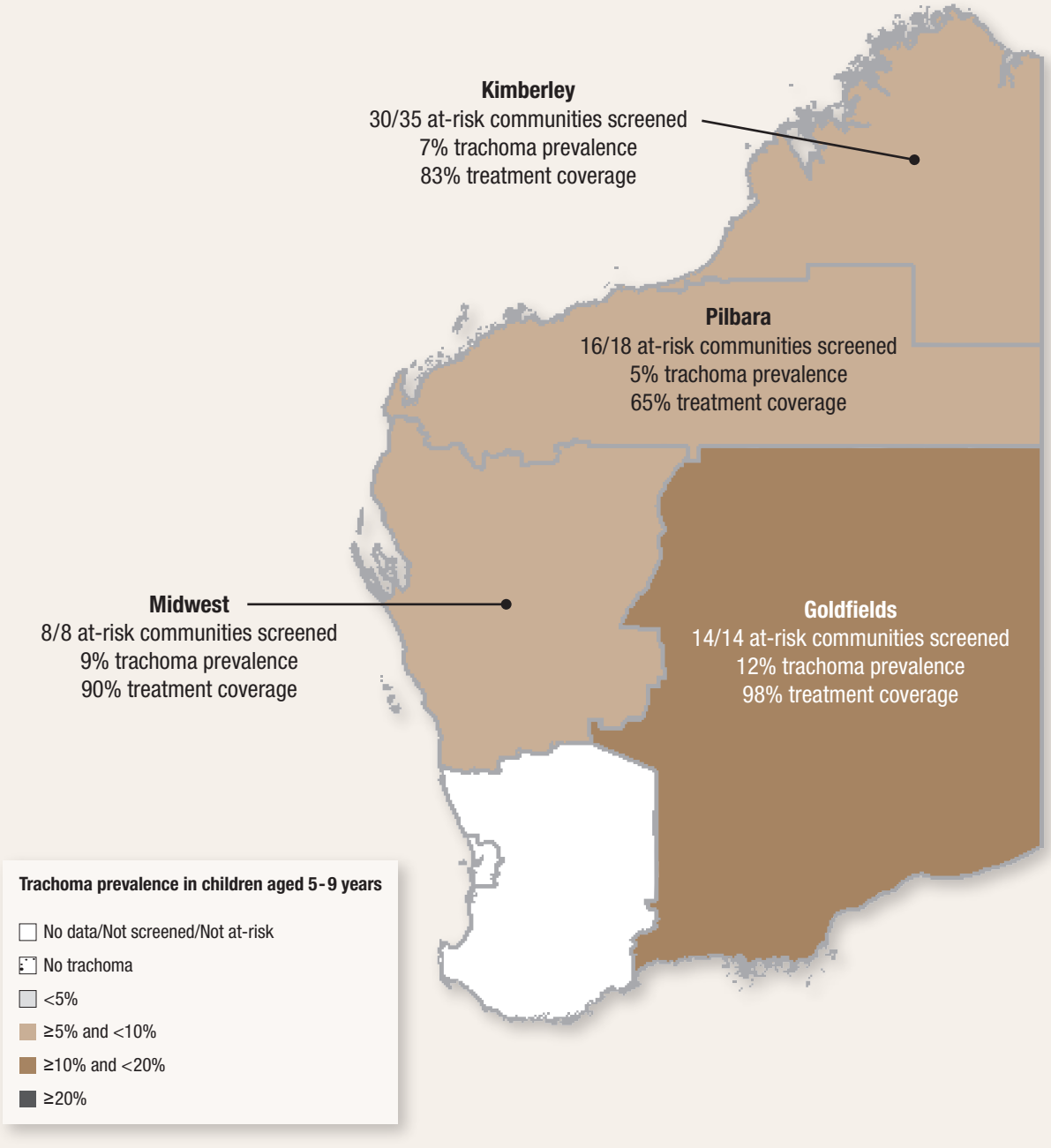


Figure 4.2 Number of communities screened* by year and region in WA

* Including communities screened but not at risk

Figure 4.3 Population screening coverage* of children aged 5-9 years over all regions containing at least one at-risk community by year and region in WA

* Calculated as the number of children screened (in at-risk and not-at-risk communities) in region containing at least one community at-risk divided by the estimated population of region

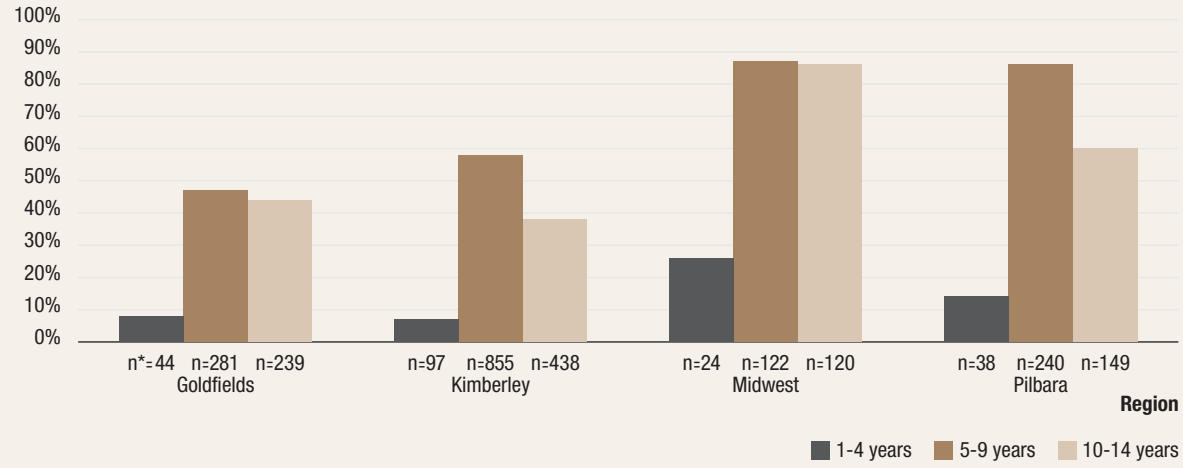
Figure 4.4 Proportion of screened children* aged 5-9 years who had a clean face by year and region in WA

* Including children in communities screened but not at risk

Figure 4.5 Trachoma prevalence among screened* children aged 5-9 years by year and region in WA

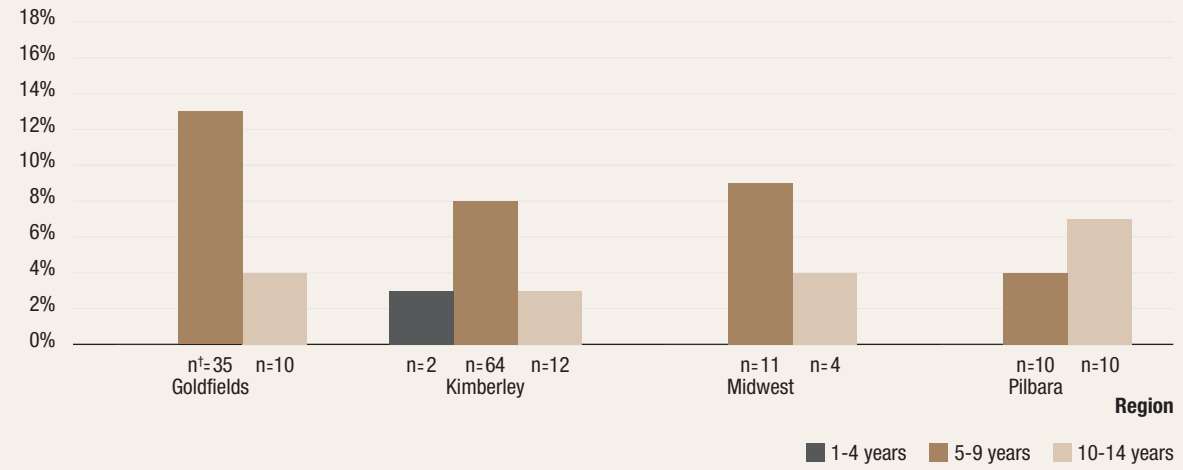
* Including children in communities screened but not at risk

Figure 4.6 Screening coverage of children in at-risk communities in 2011 by age group and region in WA



* Number of children screened

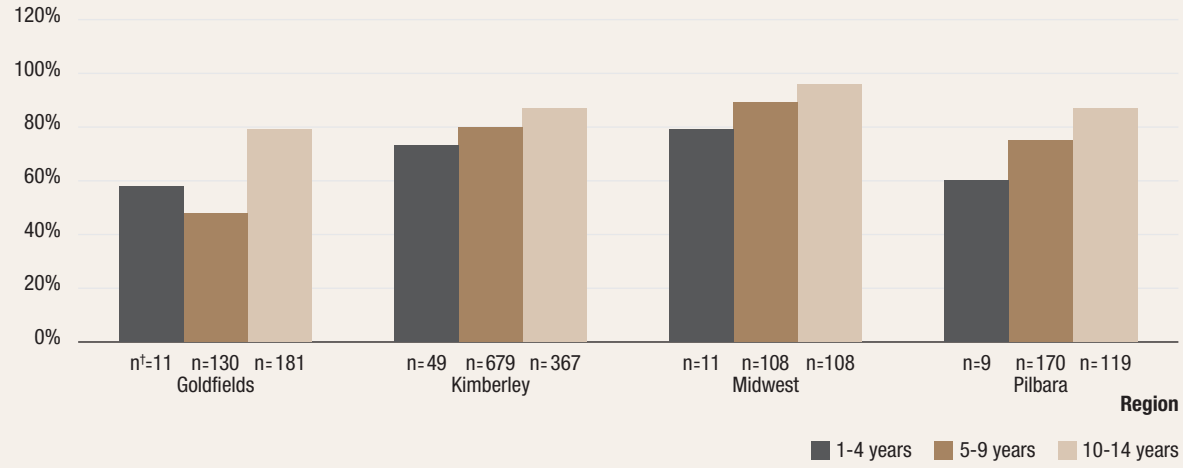
Figure 4.7 Trachoma prevalence among children screened in at-risk communities* in 2011 by age group and region in WA



* In communities where more than 5 children were screened

† Number of children detected with trachoma

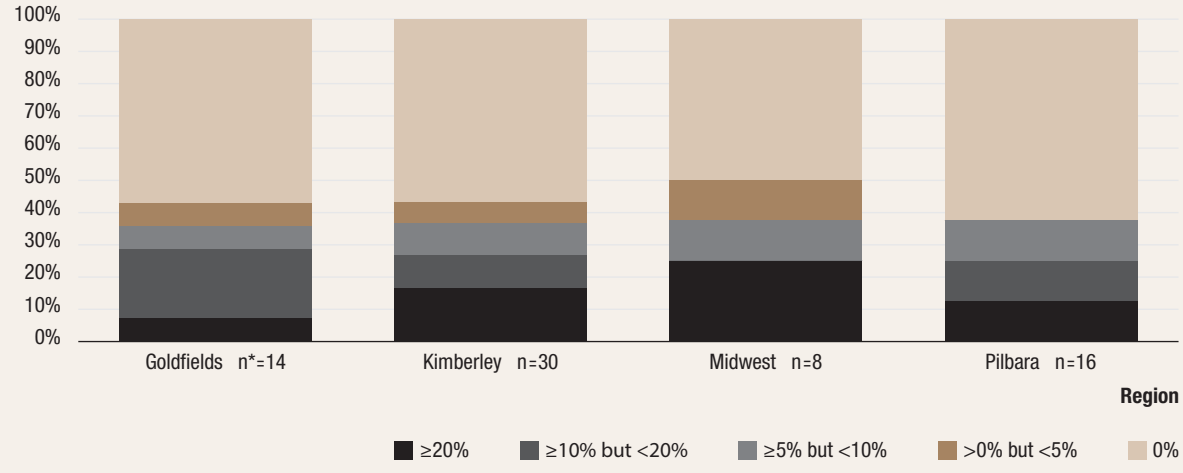
Figure 4.8 Proportion of screened children* who had a clean face in 2011 by age group and region in WA



* In communities where more than 5 children were screened

† Number of children observed to have a clean face

Figure 4.9 Trachoma prevalence among screened at-risk communities in 2011 by region in WA



* Number of communities screened for trachoma

Table 4.1 Trachoma screening coverage, trachoma prevalence, and clean face prevalence in WA in 2011 by region

	At-risk communities																				Not at-risk communities			
	Goldfields				Kimberley				Midwest				Pilbara				Total				Total			
Number of communities at risk	14				35				8				18				75							
Number of communities screened	14				30				8				16				68				1			
Age group (years)	***1-4***	***5-9***	***10-14***	***All***	***1-4***	***5-9***	***10-14***	***All***	***1-4***	***5-9***	***10-14***	***All***	***1-4***	***5-9***	***10-14***	***All***	***1-4***	***5-9***	***10-14***	***All***	***1-4***	***5-9***	***10-14***	***All***
Estimated number of Aboriginal children at risk	558	602	540	1700	1346	1475	1167	3988	92	141	139	372	269	280	249	798	2265	2498	2095	6858				
Children examined for clean face	48	281	239	568	97	854	438	1389	24	123	120	267	38	240	149	427	207	1498	946	2651	9	6	39	54
Children with clean face	22	139	191	352	62	685	383	1130	20	110	115	245	19	183	131	333	123	1117	820	2060	4	1	38	43
Clean face prevalence	46%	49%	80%	62%	64%	80%	87%	81%	83%	89%	96%	92%	50%	76%	88%	78%	59%	75%	87%	78%	44%	17%	97%	80%
Children examined for trachoma	44	281	239	564	97	855	438	1390	24	122	120	266	38	240	149	427	203	1498	946	2647	9	6	39	54
Trachoma screening coverage	8%	47%	44%	33%	7%	58%	38%	35%	26%	87%	86%	72%	14%	86%	60%	54%	9%	60%	45%	39%				
Children with active trachoma	0	35	10	45	3	64	12	79	0	11	5	16	0	13	11	24	3	123	38	164	0	0	0	0
Active trachoma prevalence	0%	12%	4%	8%	3%	7%	3%	6%	0%	9%	4%	6%	0%	5%	7%	6%	1%	8%	4%	6%	0%	0%	0%	0%
Trachoma prevalence 1-9 years	11%				7%				8%				5%				7%				0%			
Trachoma prevalence 1-9 years (weighted by population)*	6%				5%				5%				3%				5%				0%			

* Calculated as the proportions 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 was done in order to account for uneven coverage with respect to age groups

Table 4.2 Treatment coverage in WA in 2011 by region

	At-risk communities																							
	Goldfields					Kimberley					Midwest					Pilbara					Total				
Number of communities at risk	14					35					8					18					75				
Number of communities requiring treatment	6					13					4					6					29				
Age group (years)	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***	***1-4***	***5-9***	***10-14***	***15+***	***All***
Active cases requiring treatment	0	35	10		45	3	64	12		79	0	11	5		16	0	13	11		24	3	123	38		164
Active cases received treatment	0	35	10		45	3	64	10		77	0	11	5		16	0	11	10		21	3	121	35		159
% Active cases received treatment	100%	100%	100%		100%	100%	100%	83%		97%	100%	100%	100%		100%	100%	85%	91%		88%	100%	98%	92%		97%
Estimated contacts requiring treatment (according to jurisdictional interpretation of the guidelines)					315					579					121					289					1304
Number of contacts who received treatment	18	72	46	178	314	63	116	79	235	493	17	20	13	59	109	20	46	39	84	189	118	254	177	556	1105
Estimated overall treatment coverage (total)*					98%					47%					90%					65%					85%

* Estimated using average number of household contacts per child in communities who reported number of contacts requiring treatment and population statistics (see Methodology for detail)

Table 4.3 Number of communities according to different trachoma prevalence ranges among children aged 5-9 years in WA in 2011

Prevalence	At-risk communities										Not at-risk communities	
	Goldfields		Kimberley		Midwest		Pilbara		Total			
0%	8	57%	17	57%	4	50%	10	63%	39	57%	1	100%
>0% but <5%	1	7%	2	7%	1	13%	0	0%	4	6%	0	0%
≥5% but <10%	1	7%	3	10%	1	13%	2	13%	7	10%	0	0%
≥10% but <20%	3	21%	3	10%	0	0%	2	13%	8	12%	0	0%
≥20%	1	7%	5	17%	2	25%	2	13%	10	15%	0	0%
Total	**14**		**30**		**8**		**16**		**68**		**1**	

Table 4.4 Trichiasis screening coverage, prevalence and treatment among Aboriginal Adults aged over 40 years in 2011 in WA

	Goldfields		Kimberley		Midwest		Pilbara		Total	
Adult population of at risk communities	1212		2481		274		571		4538	
Number of communities at risk	14		35		8		18		75	
Number of communities screened for trichiasis	3	21%	0	0	8	100	2	11%	5	7%
Adults examined (% of estimated population at risk)	34	3%	0	0%	198	72%	23	4%	255	6%
With trichiasis (% of adults examined)	0	0%	0	0%	0	0%	2	9%	2	1%
Offered ophthalmic consultation	0		0		0		3		3	
Surgery in past 12 months	N/R		N/R		N/R		N/R		N/R	

Table 4.5 Adherence to SAFE protocols in screened* communities in 2011 in WA

	Goldfields		Kimberley		Midwest		Pilbara		Total	
Surgery for trichiasis										
Referral process exists	12	86%	23	74%	8	100%	3	19%	46	67%
No referral process	2	14%	4	13%	0	0%	0	0%	6	9%
Referral unknown	0	0%	4	13%	0	0%	10	65%	14	20%
Not Reported	0	0%	0	0%	0	0%	3	16%	3	4%
Antibiotics										
Distribution in line with CDNA guidelines	13	100%	28	90%	8	100%	10	63%	59	87%
Active cases and contacts treated within two weeks	6	46%	13	46%	6	75%	3	30%	0	0%
No treatment required	7	64%	15	54%	2	25%	7	70%	0	0%
Distribution not in line with CDNA guidelines	**0**	**0%**	**3**	**10%**	**0**	**0%**	**6**	**37%**	**9**	**13%**
Active cases and contacts treated but not within two weeks	0	0%	1	33%	0	0%	2	33%	0	0%
Not all contacts treated†	0	0%			0	0%	2	33%	0	0%
Active cases only treated	0	0%	2	77%	0	0%	1	17%	0	0%
No distribution	0	0%			0	0%	1	17%	0	0%
Facial cleanliness resources										
Present and used	13	93%	24	77%	2	25%	1	6%	40	58%
Present, not used	1	7%	3	10%	3	37.5%	3	19%	10	14%
No resources	0	0%	2	6%	3	37.5%	8	50%	13	19%
Not reported/unsure	0	0%	2	6%	0	0%	4	25%	6	9%
Facial cleanliness programs										
Program exists	14	100%	27	87%	5	62.5%	3	19%	49	71%
No program	0	0%	1	3%	3	37.5%	8	50%	12	17%
Not reported/Unsure	0	0%	3	10%	0	0%	5	31%	8	12%
Environmental Conditions										
Good	0	0%	18	58%	7	88%	9	56%	34	49%
Variable	0	0%	6	19%	1	12%	2	12.5%	9	13%
Poor	0	0%	1	3%	0	0%	3	19%	4	6%
Not reported	14	100%	6	19%	0	0%	2	12.5%	22	32%

* Including communities screened but not at risk

† Less than 80% of contacts treated

Discussion

Screening coverage

Screening coverage was measured as both the proportion of at-risk communities screened and the proportion of 5-9 year old children screened in at-risk communities predominantly through primary school-based initiatives. Screening of older (10-14 year old) and younger (1-4 year old) children also takes place, but less consistently.

By both screening measures, the screening coverage substantially improved in SA in 2011. Coverage of 5-9 year old children has improved steadily in NT and WA over the past four years, but there was evidence of a slight decline in WA in 2011.

Interpretation of the coverage data is limited by the accuracy of community population estimates and the designation of communities at risk. Community population estimates are based on projections from census data. Although this approach is the most feasible, the estimates may not accurately reflect populations at the time of screening, given the small size and mobility of some communities.

Trachoma prevalence

Endemic trachoma is defined as a prevalence of active trachoma of 5% or greater in children aged 1-9 years. Although the focus of screening was 5-9 year old children, we were able to estimate the prevalence in the larger age band from available data. Across all three jurisdictions in 2011, the prevalence of trachoma in 1-9 year olds was 5%, representing a decrease from the 2010 combined prevalence of 13%. At a regional level, the prevalence of trachoma in 1-9 years ranged from 2% to 28%.

There was strong evidence of a decreasing trend in overall trachoma prevalence in the NT and WA, which was also found when analyses were restricted to the communities that had been screened every year since 2007. Decreasing trends in those two jurisdictions were also observed in the number of communities found to have prevalence greater than 5% (endemic trachoma) in screened children aged 5-9 years, and there was an increasing trend in the number of communities that reported no trachoma in screened children aged 5-9 years.

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 five years. Several communities designated as at risk have reported prevalences of less than 5% over the past three years, and are therefore on track to be designated not at risk if this status is maintained for two more years.

Trachoma treatment

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 NT, the recommendation is taken to mean the entire community, whereas in SA and WA it means all children aged between six months and 14 years.

Across all three jurisdictions, 65% of those found through screening to have trachoma or to be the household contact of an active case were recorded as having been treated appropriately. Of active cases, 88% received treatment. At the jurisdictional level, 53%, 98% and 85% of the population requiring treatment in NT, SA and WA were treated, respectively. Population estimates are based on projections from ABS census data, which may not accurately represent actual population numbers at time of treatment; however, use of ABS census data is current best practice. Since 2009, the NT has also undertaken six-monthly treatment in hyperendemic communities (>20% prevalence of trachoma). The expansion of this approach in 2010, particularly in the Alice Remote region, may have contributed to the notable decrease in trachoma in that region, from 33% in 2010 to 14% in 2011.

Trichiasis

Coverage of screening for trichiasis among Aboriginal adults aged over 40 years across all jurisdictions remained very low, with screening rates of 3% in the NT, 37% in SA and 6% in WA. Based on these coverage levels, the reporting systems may not provide an accurate estimate of trichiasis prevalence in Aboriginal communities. Furthermore, prevalence levels only include data collected in communities currently designated as communities at risk of trachoma, and do not take into account the possibility that endemic areas have changed over time, so that current at-risk communities may not adequately reflect the place of residence of adults previously exposed to trachoma. Among the limited number of individuals screened, the prevalence of trichiasis in the NT was low.

Referral processes were reported to be functioning within the majority of communities, but the effectiveness of the systems has not been verified. No episodes of trichiasis surgery were reported in 2011, but this may not reflect the true level of ophthalmic consultation and surgical activities occurring.

Facial cleanliness

Facial cleanliness is a major component of the SAFE strategy, recognising that the presence of nasal and ocular discharge is a significant risk factor for both acquiring and transmitting trachoma. The proportion of children screened who had clean faces remained stable in the NT and WA, with prevalences of 77% and 78% screened respectively. In SA, the prevalence of facial cleanliness was recorded at 92% in screened children in 2011.

The status of resources and programs aimed at encouraging facial cleanliness within at-risk communities were not well reported in 2011.

Environment

Data on environmental conditions were not well reported in 2011, with the majority of communities having no relevant data provided. Early in 2012, the Trachoma Surveillance Reporting Group (TSRG) decided that the previously used methods of data collection do not accurately capture the environmental conditions recognised to affect trachoma prevalence and transmission. The TSRG and NTSRU are currently collaborating with environmental health agencies to develop more accurate reporting processes for this component of the SAFE strategy.

Program delivery and monitoring

Despite considerable improvement in several aspects of program delivery and monitoring in 2011, there are several issues that remain to be adequately addressed.

Population denominators: The analyses in this report have used population denominator estimates based on projections from census figures. These estimates are recognised as having the potential for substantial error in communities that are small or show considerable mobility. The problem is not unique to trachoma surveillance and monitoring. While there are alternative denominators that could be considered within specific jurisdictions, they were not available consistently across all locations covered by the trachoma control program. The consequence of erroneous population estimates is a bias in the estimates of screening and treatment coverage rates presented in this report. We have no means for determining the extent or direction of any bias that may be present.

Interpretation of trachoma management guidelines: Through the process of analysing and reporting on the trachoma screening and treatment data, it has become apparent that there are differences across jurisdictions in the interpretation of the *2006 CDNA Guidelines for the Public Health Management of Trachoma in Australia.* There is also a need to ensure that the guidelines are up to date. In 2011, the CDNA agreed to undertake a review of the document, to incorporate the latest information on the screening, treatment and management of trachoma. The document is central to supporting trachoma control programs in the NT, SA and WA, and new programs are being established in New South Wales and Queensland.

The Trachoma Framework Review Working Group, acting as a CDNA subcommittee, will guide the review process, and the NTSRU will manage the review process.

Data quality: For the 2011 report, as with previous reports, there were issues of data quality in all jurisdictions, including missing or inconsistent entries. During 2011, the NTSRU developed a web-based interface program to increase the likelihood of consistent reporting across jurisdictions and regions through the use of a standard, simple to use data entry system. The system also allows for more efficient data validation and reporting to stakeholders, including communities. It is anticipated that all components of the web-interface data entry and reporting system will be fully operational in the course of 2012.

Progress towards Australia's elimination target

As a signatory to the WHO Alliance of Global Elimination of Trachoma by the year 2020, Australia is committing to ensuring that trachoma levels continue to decrease to below-endemic levels in at-risk communities.

This report shows strong evidence of increasing coverage of trachoma screening and control activities. In NT and WA, there is also evidence of a decline in the prevalence of infection that may be attributable to improvement in control activities. Despite these apparent advances, trachoma prevalence remains at endemic levels in many communities of remote Australia. Continued efforts are required to ensure that Australia remains on track to reach the goal of elimination by 2020 or earlier.

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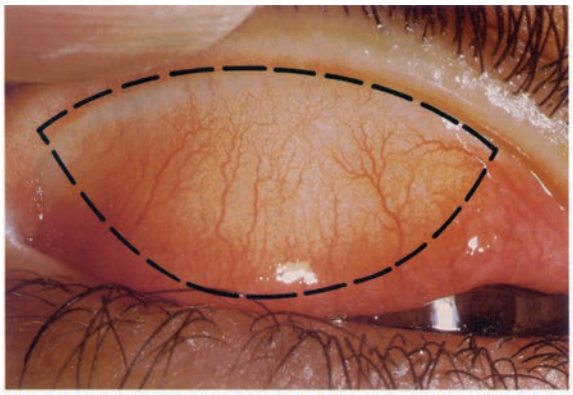
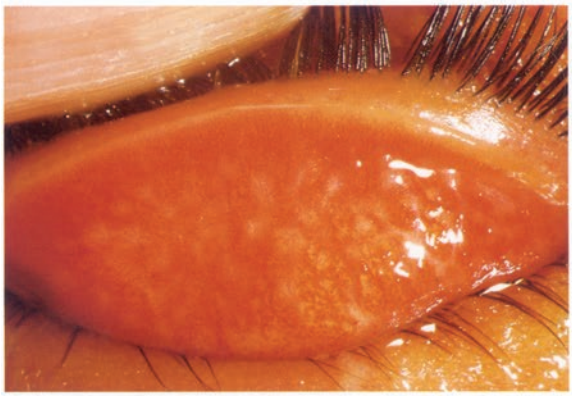
Appendix 1: World Health Organization Trachoma Grading Card

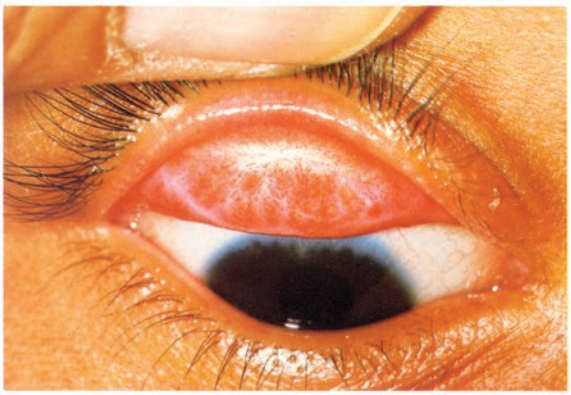


Normal tarsal conjunctiva (x 2 magnification). The dotted line shows the area to be examined.

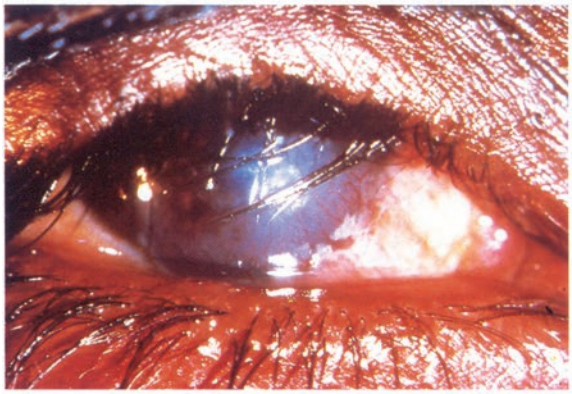
Trachomatous inflammation – follicular (TF).



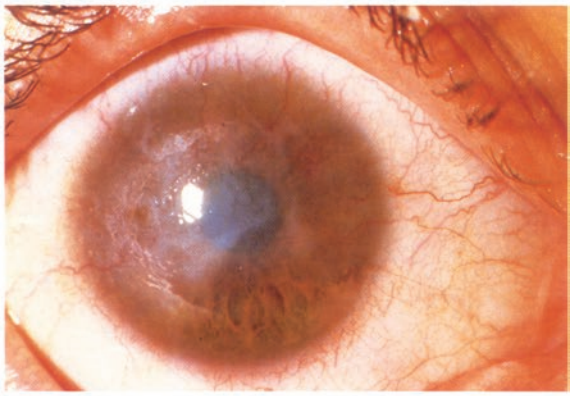
Trachomatous inflammation – follicular and intense (TF + TI).



Trachomatous scarring (TS)



Trachomatous trichiasis (TT)



Corneal opacity (CO)

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http://www.who.int/blindness/causes/trachoma_documents/en/index.html

Appendix 2: Data Collection Forms

Summary form 1: Active cases of trachoma

State/Territory	
Region:	
Community:	
School:	
Date/s of screening:	

Male children screened for trachoma

	Age (in years)		
	1-4	5-9	10-14
M1. Estimated number of Aboriginal children in the community/school			
M2. Number of children examined for trachoma			
M3. Number of children with TI			
M4. Number of children with TF			
M5. Number of children with active trachoma (TF and/or TI)			
M6.Number of children with TS			
M7. Number of children examined for clean face			
M8. Number of children with clean face			
M9. Number of children with absence of clean face and active trachoma			
M10. Number of children requiring treatment with azithromycin			
M11. Number of active cases who received treatment with azithromycin in total			
M12. Number of active cases who received treatment with azithromycin within two weeks of screening			

Female children screened for trachoma

	Age (in years)		
	1-4	5-9	10-14
F1. Estimated number of Aboriginal children in the community/school			
F2. Number of children examined for trachoma			
F3. Number of children with TI			
F4. Number of children with TF			
F5. Number of children with active trachoma (TF and/or TI)			
F6. Number of children with TS			
F7. Number of children examined for clean face			
F8. Number of children with clean face			
F9. Number of children with absence of clean face and active trachoma			
F10. Number of children requiring treatment with azithromycin			
F11. Number of active cases who received treatment with azithromycin in total			
F12. Number of active cases who received treatment with azithromycin within two weeks of screening			

Summary form 2: Household and community treatment

State/Territory	
Region:	
Community:	
School:	
Date/s of screening:	

All Children Screened for trachoma

	Age (in years)		
	0 - 4	**5 – 9**	**10 - 14**
1. **Number of ALL children examined for trachoma**			
2. **Number of ALL children with active trachoma (TF and/or TI)**			
3. **Active trachoma prevalence in children**			
4. **Were cases obviously clustered in several households in the community (please tick)?**	☐ **Yes**		☐ **No**
5. **Treatment Strategy (please tick one only):**	☐ **Household** ☐ **Community** ☐ **Active Cases only** ☐ **No treatment given** ☐ **No treatment required (prevalence=0)**		

CDNA guidelines recommendation for treatment:

- ***If prevalence >10% in children & no clustering: Community treatment required:***
  Treat Aboriginal children 6 months to 14 years in community and all household contacts aged 6 months and over all
- ***All other situations: Household treatment required***
  Treat all household contacts aged 6 months and over

Treatment of Household contacts and community members (not including active cases)

6. **Number of households requiring treatment**	
7. **Number of households treated**	
8. **Date of first treatment**	
9. **Date of last treatment**	

	Age (in years)									
	0		**1-4**		**5-9**		**10-14**		**15 +**	
	M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
10. **Number of household and community contacts requiring treatment with azithromycin**										
11. **Number of household and community contacts who received treatment with azithromycin**										
12. **Number of household and community contacts who received treatment with azithromycin within two weeks of screening**										
13. **Number of household and community contacts who received treatment with azithromycin within two weeks of commencement of treatment.**										
14. **Treatment delayed due to (Please tick):**	☐ **Sorry business** ☐ **Weather** ☐ **Other**									

Summary Form 3: Trichiasis

State/Territory	
Region:	
Community:	
Date/Year of screening	

	Sex/Age (in years)					
	Male			Female		
	15-39	40-49	50+	15-39	40-49	50+
Number of Aboriginal adults in age group						
Number of Aboriginal adults examined for trichiasis						
Number of Aboriginal adults with trichiasis						
Number of Aboriginal adults with trichiasis who were offered ophthalmological consultation within 6 months of the previous screening						
Number of Aboriginal adults with trichiasis who declined ophthalmological consultation within 6 months of the previous screening						
Number of Aboriginal adults who underwent trichiasis surgery in the last year						

Data collection form: SAFE strategy

State/Territory	
Region:	
Community:	
School:	
Date of screening:	

Please tick only **one** best answer for each question

Surgery	☐ Referral exists ☐ No referral process ☐ Don't know ☐ Other	**Comments:**
Antibiotics	☐ Distribution in line with CDNA ☐ Distribution NOT in line with CDNA ☐ NO Distribution ☐ Don't know ☐ Other	**Comments:**
Facial cleanliness resources	☐ Present and used ☐ Present, NOT used ☐ NO resources ☐ Don't know ☐ Other	**Comments:**
Facial cleanliness programs	☐ Program exists ☐ NO program ☐ Don't know ☐ Other	**Comments:**
Environmental health	**Are all main roads paved?**	☐ **Yes** ☐ **No** ☐ **Don't know**
	Is there regular rubbish collection?	☐ **Yes** ☐ **No** ☐ **Don't know**
	Is there a functioning bathroom in households?	☐ **All households** ☐ **Most households** ☐ **Some Households** ☐ **Don't Know**
	Is there a swimming pool in the community?	☐ **Yes and operational at time of screening** ☐ **Yes but not operational at time of screening** ☐ **No** ☐ **Don't Know**
	Is there a frequented water hole in the community?	☐ **Yes** ☐ **No** ☐ **Don't know**
	Is there a community based environmental health program/officer	☐ **Yes** ☐ **No** ☐ **Don't know**
	Comments:	
Comments		

Appendix 3: Methods for estimating number of people requiring treatment

As stated in the Methods section, two approaches are used to estimate the denominator of the number of people requiring treatment for each region. The methods are based on the following assumptions:

Method 1 (targeted treatment) assumes that if a community has reported the number of contacts requiring treatment then this number is correct, and contacts are only estimated when this number is not reported. In the case that community treatment is required, it is assumed that all children in the community aged six months to 14 years as well as household contacts of active cases require treatment.

Method 2 (whole community treatment) additionally estimates the number of contacts requiring treatment, assuming that all members of the community require treatment if community treatment is required, rather than just those aged six months to 14 years and household contacts of active cases.

Each approach follows the following steps but the two methods only differ in points d and e of Step 2.

Step 1: Estimate the average number of contacts of each active case in jurisdiction

- For each community where household treat-ment is reported, calculate the average number of contacts requiring treatment per active case by dividing total number of contacts by total number of active cases.
- Calculate the unweighted average number of contacts per active case in each jurisdiction by averaging over each the estimates in (a) for each community in the jurisdiction.

Step 2: Estimate the number of community and household contacts requiring treatment

a. If trachoma prevalence in children aged 1-9 years is less than 10% go to (b), otherwise go to (d).

b. If number of household and community contacts requiring treatment is given, take this number as the true number of household and community contacts requiring treatment and exit algorithm, otherwise go to (c).

c. Estimate number of contacts requiring treatment as (Number of active cases of trachoma in the community) multiplied by (average number of contacts per active case in communities which used household treatment strategy in the jurisdiction) and exit algorithm.

Method 1	Method 2
d. If number of household and community contacts requiring treatment is given, take this number as the true number of household and community contacts requiring treatment and exit algorithm, otherwise go to (e).	d. If community reports clustering of cases and the number of household contacts is reported, take this number as the true number of household and community contacts requiring treatment and exit algorithm, otherwise go to (e).
e. Estimate number of contacts requiring treatment as Reported (during screening) number of children in community aged 1-14 years **plus** (Number of active cases if trachoma in the community) multiplied by (average number of contacts per active case in communities which used household treatment strategy in the juris-diction) and exit algorithm.	e. Estimate the total number of persons (active cases and contacts) in the community who require treatment as the total population of the community using ABS data and exit algorithm.

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