10 Home environment

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| Strategic areas for action |
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| Governance and leadership and culture |  | Early child development |  | Education and training |  | Healthy lives |  | Economic participation |  | Home environment |  | Safe and supportive communities |
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| 10.1 Overcrowding in housing10.2 Rates of disease associated with poor environmental health10.3 Access to clean water and functional sewerage and electricity services |
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Better environmental health[[1]](#footnote-1) can have positive outcomes for Aboriginal and Torres Strait Islander Australians, and is especially beneficial for children’s physical and emotional wellbeing.

The indicators in this chapter cover some factors that contribute to a healthy home environment and good environmental health for Aboriginal and Torres Strait Islander Australians:

* reducing overcrowding is associated with positive effects on health, family relationships and children’s education (section 10.1)
* improvements in environmental health can help reduce the spread of diseases that are linked to environmental causes (section 10.2)
* clean water and functional sewerage and electricity services, and housing of an acceptable standard, encourage and support healthy living practices (section 10.3).

The home environment affects other COAG targets and headline indicators:

* life expectancy (section 4.1)
* young child mortality (section 4.2)
* disability and chronic disease (section 4.8)
* family and community violence (section 4.11).

Other COAG targets and headline indicators can directly influence the home environment:

* employment (section 4.6)
* household and individual income (section 4.9).

Outcomes in the home environment area can be affected by outcomes in several other strategic areas for action, or can influence outcomes in other areas:

* early child development (chapter 6)
* education and training (chapter 7)
* healthy lives (chapter 8)
* economic participation (chapter 9).

#### Attachment tables

Attachment tables for this chapter are identified in references throughout this chapter by an ‘A’ suffix (for example, table 10A.1.1). These tables can be found on the Review web page (www.pc.gov.au/gsp), or users can contact the Secretariat directly.

10.1 Overcrowding in housing[[2]](#footnote-2)

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| Box 10.1.1 Key messages |
| * Nationally, the proportion of Aboriginal and Torres Strait Islander Australians living in overcrowded households decreased from 27.0 per cent in 2004‑05 to 22.6 per cent in 2012‑13 (figure 10.1.1), including a decrease in overcrowding in very remote areas (from 63.4 per cent in to 53.3 per cent) (figure 10.1.2).
* Nationally, the proportion of Aboriginal and Torres Strait Islander adults reporting overcrowding as a stressor halved from 20.8 per cent in 2002 to 10.0 per cent in 2012‑13 (figure 10.1.3).
* Less cramped living conditions has been linked to positive health, education and family outcomes for Aboriginal and Torres Strait Islander Australians.
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| Box 10.1.2 Measures of overcrowding in housing |
| There is one main measure for this indicator. *Overcrowding in housing* is defined as the proportion of Aboriginal and Torres Strait Islander people, of all ages, who live in overcrowded houses. Supplementary data are provided for Aboriginal and Torres Strait Islander people aged 15 years and over (for comparable time series back to 2002).Overcrowding is calculated according to the Canadian National Occupancy Standard (CNOS) for housing appropriateness (more detail can be found in box 10.1.3). The main data source for this measure is the ABS Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS)/National Aboriginal and Torres Strait Islander Social Survey (NATSISS), with the most recent available data for 2012‑13 (all jurisdictions and remoteness). Supplementary data are also available from the ABS Census of Population and Housing, with the most recent data for 2011 (all jurisdictions by remoteness). Survey and Census data are not directly comparable. Supplementary information is also provided on overcrowding as a stressor. |
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In 2009, COAG agreed to the National Affordable Housing Agreement (NAHA), with one outcome being for Aboriginal and Torres Strait Islander people to have ‘the same housing opportunities as other Australians, and improved housing amenity and reduced overcrowding, particularly in remote areas and discrete communities’ (COAG 2009). The NAHA is supported by National Partnership agreements on homelessness and, for Aboriginal and Torres Strait Islander Australians, remote Indigenous housing. In remote and very remote areas in particular, it is more expensive and logistically more difficult to construct and maintain housing and associated infrastructure (COAG 2008; Fien and Charlesworth 2012).

Better, less cramped living conditions have been linked to positive effects on Aboriginal and Torres Strait Islander health, education and family relationships:

* health — if a house is appropriately designed for the number of residents, the bathroom, adequate kitchen and laundry facilities make it easier to prevent the spread of infectious diseases and to encourage ‘healthy living practices’ (ABS and AIHW 2008; Australian Indigenous HealthInfoNet 2008). Healthy living practices are discussed further in section 10.2
* education — extra space gives children and young people opportunities for enough sleep and relaxation, and allows them to do homework and study without outside disruptions (Biddle 2007)
* family relationships — increase in control over living space, or additional space may help to reduce domestic tensions, leading to fewer instances of domestic violence (Bailie and Wayte 2006).

Cultural and social factors influence the way housing is used by different Aboriginal and Torres Strait Islander people and communities, and it is important to distinguish between culturally legitimate as opposed to harmful overcrowding (Birdsall-Jones and Corunna 2008). Households with many members, often of multiple generations, and including extended family, are not unusual in Aboriginal and Torres Strait Islander communities, and may be the preferred way of living for some families (AHMAC 2012). McDonald (2011), summarising the research and policy on Indigenous housing and the relationship to Closing the Gap, notes that larger Indigenous households also frequently encompass kin who are elderly, or people with mental or physical ill health, which presents additional stress and challenges.

Larger households may also increase social connectivity, which is associated with positive impacts on health (AHMAC 2012). Foster et. al’s (2011) research synthesis of housing and health evidence suggests that, if heads of Indigenous households have the ability to control and manage the available space (including the allocation of bedrooms), it ameliorates against some of the effects of overcrowding. Foster et. al. (2011) summarised Zubrick et.al’s (2006) work on the Western Australian Aboriginal Child Health Survey (WAACHS), which showed that children in larger households were ‘half as likely [to be] at risk of clinically significant behavioural and emotional difficulties as children in low‑occupancy households’.

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| Box 10.1.3 Housing occupancy standard used by ABS |
| There is no single standard measure for housing overcrowding. The ABS uses a standard which is sensitive to both household size and composition (based on the Canadian National Occupancy Standard). Using the following criteria to assess bedroom requirements, households requiring at least one additional bedroom are considered to be overcrowded:* There should be no more than two persons per bedroom
* A household of one unattached individual may reasonably occupy a bed‑sit (that is, have no bedroom)
* Couples and parents should have a separate bedroom
* Children less than five years of age of different sexes may reasonably share a bedroom
* Children five years of age or over of different sexes should not share a bedroom
* Children less than 18 years of age and of the same sex may reasonably share a bedroom

Single household members aged 18 years or over should have a separate bedroom (ABS 2011). |
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The housing occupancy standard used for this report will reflect the culture and preferences of some, but not all, Aboriginal and Torres Strait Islander people. For example, it does not account for the influence of climate and culture on living arrangements, which vary widely across Australia. In climatic conditions such as extreme heat, it is likely that all members of the household will occupy the most comfortable area of the house (DSS 2007). In warmer rural areas, people may live outside their houses rather than inside them at certain times of the year, and the standard does not take into account how verandahs or larger living spaces might be used (Pholeros, Rainow and Torzillo 1993).

The sizes of Aboriginal and Torres Strait Islander households and community populations can fluctuate dramatically. People may move to visit relatives, to avoid adverse weather events, to escape overcrowding or domestic violence, or to travel to access health and social services (Habibis et al. 2011). A shortage of affordable and flexible housing options may then lead travellers to overcrowded homes of relatives’, public space dwelling and homelessness (Habibis et al. 2011). Some Aboriginal and Torres Strait Islander Australians reported to the ABS that they have family and cultural responsibilities in providing shelter, and that refusing visitors is considered culturally inappropriate, leading to crowded dwellings (ABS 2013).

### Overcrowding in housing

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| Figure 10.1.1 Proportion of Indigenous people (of all ages) in overcrowded households, 2004‑05 to 2012‑13**a,b** |
| Figure 10.1.1 Proportion of Indigenous people of all ages in overcrowded households, 2004-05 to 2012-13  More details can be found within the text surrounding this image. |
| a Households requiring at least one additional bedroom, based on the Canadian National Occupancy Standard for Housing Appropriateness. b Error bars represent 95 per cent confidence intervals around each estimate. |
| *Sources*: ABS (unpublished) National Aboriginal and Torres Strait Islander Health Survey 2004‑05; ABS (unpublished) National Aboriginal and Torres Strait Islander Social Survey 2008; ABS (unpublished) Australian Aboriginal and Torres Strait Islander Health Survey 2012‑13 (2012‑13 NATSIHS component); table 10A.1.1. |
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Nationally in 2012‑13, the proportion of Aboriginal and Torres Strait Islander Australians of all ages living in overcrowded households was 22.6 per cent. This proportion is lower than in 2008 (27.5 per cent) and 2004‑05 (27.0 per cent). The only jurisdiction to show a statistically significant decrease was the NT (from 66.2 per cent in 2004‑05 with 53.8 per cent in 2012‑13), although it still had a higher overcrowding rate than other jurisdictions in 2012‑13 (figure 10.1.1).

Although not directly comparable with survey results, Census data indicate that overcrowding rates among non‑Indigenous Australians are relatively low compared with those for Aboriginal and Torres Strait Islander Australians (in 2011, 6.1 per cent compared with 23.4 per cent) (table 10A.1.8). Census data on overcrowding in Aboriginal and Torres Strait Islander households are also reported for all jurisdictions by remoteness (10A.1.8) and by tenure type (10A.1.9).

The average number of people per Aboriginal and Torres Strait Islander household decreased from 3.4 in 2004‑05 and 2008 to 3.1 in 2012‑13. The average number of bedrooms per Aboriginal and Torres Strait Islander household was similar between 2004‑05 and 2012‑13 (table 10A.1.4). These data are also reported by State and Territory in the same attachment table.

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| Figure 10.1.2 Proportion of Indigenous people (all ages) living in overcrowded households, by remoteness**a,b** |
| Figure 10.1.2 Proportion of Indigenous people of all ages living in overcrowded households, by remoteness  More details can be found within the text surrounding this image. |
| a Households requiring at least one additional bedroom, based on the Canadian National Occupancy Standard for Housing Appropriateness. b Error bars represent 95 per cent confidence intervals around each estimate. |
| *Sources*: ABS (unpublished) National Aboriginal and Torres Strait Islander Health Survey 2004‑05; ABS (unpublished) National Aboriginal and Torres Strait Islander Social Survey 2008; ABS (unpublished) Australian Aboriginal and Torres Strait Islander Health Survey 2012‑13 (2012‑13 NATSIHS component); table 10A.1.3.  |
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Overcrowding increases with remoteness. In 2012‑13, the proportion of Aboriginal and Torres Strait Islander people of all ages living in overcrowded households ranged from 17.1 per cent in major cities to 53.3 per cent in very remote areas, with a similar trend observed in 2008 and 2004‑05. Over time, the only statistically significant decrease in overcrowding was in very remote areas (from 63.4 per cent in 2004‑05 to 53.3 per cent in 2012‑13) (figure 10.1.2).

#### Overcrowding by housing tenure

Rates of overcrowding vary according to housing tenure. In 2012‑13, Aboriginal and Torres Strait Islander people of all ages living in rental households had higher overcrowding rates (27.1 per cent) than those living in households that were owned with or without a mortgage (12.2 per cent). Around 84 per cent of those in overcrowded households were living in rental households (table 10A.1.5).

Additional data on housing by tenure type is available in section 9.3.

### **Overcrowding as a stressor**

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| Figure 10.1.3 Proportion of Indigenous people (18 years and over) reporting overcrowding as a stressor, by remoteness, 2002 to 2012‑13**a** |
| Figure 10.1.3 Proportion of Indigenous people 18 years and over reporting overcrowding as a stressor, by remoteness, 2002 to 2012-13  More details can be found within the text surrounding this image. |
| a Error bars represent 95 per cent confidence intervals around each estimate. |
| *Sources*: ABS (unpublished) National Aboriginal and Torres Strait Islander Social Survey 2002; ABS (unpublished) National Aboriginal and Torres Strait Islander Health Survey 2004‑05; ABS (unpublished) National Aboriginal and Torres Strait Islander Social Survey 2008; ABS (unpublished) Australian Aboriginal and Torres Strait Islander Health Survey 2012‑13 (2012‑13 NATSIHS component); table 10A.1.6. |
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Nationally, the proportion of Aboriginal and Torres Strait Islander people aged 18 years and over reporting overcrowding as a stressor halved from 20.8 per cent in 2002 to 10.0 per cent in 2012‑13. The largest decrease over this period was in very remote areas (from 50.2 per cent to 14.9 per cent) (figure 10.1.3).

Data on Aboriginal and Torres Strait Islander Australians reporting overcrowding as a stressor are also reported by remoteness (table 10A.1.6).

### Things that work

Overcrowding in Aboriginal and Torres Strait Islander households can be due to lack of access to adequate, appropriate and well‑maintained housing stock (AIHW 2009). Larger households need not be overcrowded, provided sufficient space is available, which includes extra bedrooms, bathrooms, kitchen spaces and storage space for personal possessions. This requires innovation in the provision of housing, rather than changes to household structure (AHMAC 2012; Healthhabitat 2013).

Aside from additional or improved housing stock, better service responses can help manage overcrowding, by providing transport or financial assistance to individuals and families to return to home communities, supporting host households to manage visitors, providing accessible short‑term accommodation, and developing partnerships with health services, particularly to meet the needs of renal dialysis patients (Habibis et al. 2011).

### Future directions in data

The current model of overcrowding used by the ABS, based on the CNOS, is structured around the number of people per bedroom (box 10.1.3). Pholeros and Phibbs (2012) note that crowding could also be examined using a ‘stress model’ where reducing or removing sources of stress may be more helpful. It is desirable to investigate the most suitable concepts for measuring overcrowding in Aboriginal and Torres Strait Islander households, to present a nuanced picture of Indigenous housing.

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## 10.2 Rates of disease associated with poor environmental health[[3]](#footnote-3)

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| Box 10.2.1 Key messages |
| * From 2003–2007 to 2008–2012, after adjusting for differences in population age structures, the death rate for Aboriginal and Torres Strait Islander Australians from diseases associated with poor environmental health decreased by 20 per cent but was still 1.7 times the non‑Indigenous rate (for NSW, Queensland, WA, SA and the NT combined) (tables 10A.2.12‑13).
* Nationally in 2012‑13, hospitalisation rates for Aboriginal and Torres Strait Islander Australians for diseases associated with poor environmental health:
* were highest for intestinal infectious diseases (372.1 per 100 000 population), influenza and pneumonia (358.3 per 100 000 population) and bacterial disease (203.8 per 100 000 population) (table 10A.2.1)
* (after adjusting for population age structures) were higher than for non‑Indigenous Australians for all selected diseases (table 10A.2.11)
* were higher in remote and very remote areas than in non‑remote areas for all disease types except lung disease. There was no clear relationship between disease rates and remoteness for non‑Indigenous Australians (table 10A.2.11).
* From 2004‑05 (2008-09 for intestinal infectious diseases) to 2012‑13 for NSW, Victoria, Queensland, WA, SA and the NT combined, hospitalisation rates for Aboriginal and Torres Strait Islander Australians for most selected diseases increased, particularly for intestinal infectious diseases and bacterial diseases (table 10A.2.1).
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| Box 10.2.2 Measures of rates of disease associated with poor environmental health |
| There are two main measures for this indicator.* *Hospitalisation rates for selected types of environmentally based diseases* is defined as the number of people with a disease associated with poor environmental health divided by the population, and is presented as a rate per 100 000 people. Data for this measure are sourced from the AIHW National Hospital Morbidity Database, with the most recent data available for 2012‑13 (all jurisdictions; age; remoteness).

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| Box 10.2.2 (continued) |
| * *Death rates for diseases associated with poor environmental health* is defined as the number of deaths associated with poor environmental health divided by the population, and is presented as a rate per 100 000 people. Data for this measure are sourced from the ABS Causes of Death collection, with the most recent available data for 2012 (NSW, Queensland, WA, SA and the NT; sex).
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During the late 1800s and early 1900s, most public health efforts focused on the control of infectious diseases, particularly epidemics. In the following century, improvements in sanitation, drinking water quality, food safety, disease control and housing conditions resulted in large improvements in public health and longevity for most Australians (AIHW 2014; EnHealth Council 2000). However, many rural and remote Aboriginal and Torres Strait Islander communities still struggle to achieve the basic level of environmental health that has been achieved for the rest of the population (EnHealth Council 2000; Knibbs and Sly 2014; McDonald, Bailie and Michel 2013).

The hospitalisation data used in this section reflect more serious cases of diseases, but do not necessarily show the overall incidence of disease, as people may not go to a hospital for treatment. In addition, a patient in a remote area may be admitted to hospital whereas the same patient in an urban area might be managed as an outpatient. Hospital data can also include some duplication, as patients can have multiple admissions for some chronic conditions, as well as changes in conditions (such as transfer from a medical ward to a rehabilitation centre within a hospital) (AIHW 2014b).

Hospitalisations data are reported from 2004‑05 to 2009‑10 for six jurisdictions (NSW, Victoria, Queensland, WA, SA and the NT). These six jurisdictions were considered to have acceptable quality of Indigenous identification in hospitalisation data. From 2010‑11 onwards, Indigenous status in hospital separations data is considered of sufficient quality for reporting in all jurisdictions.

### Hospitalisation rates for selected diseases

Nationally in 2012‑13, crude hospitalisation rates for Aboriginal and Torres Strait Islander Australians for diseases associated with poor environmental health were highest for intestinal infectious diseases (372.1 per 100 000 population), influenza and pneumonia (358.3 per 100 000 population) and bacterial disease (203.8 per 100 000 population)
(table 10A.2.1). Overall, for these three environmental diseases the hospitalisation rate was higher for those aged 65 years and over compared to the younger age groups (table 10A.2.10).

In 2012‑13, after adjusting for differences in population age structures, hospitalisation rates for all diseases associated with poor environmental health were higher for Aboriginal and Torres Strait Islander Australians than for non‑Indigenous Australians. For Aboriginal and Torres Strait Islander Australians the rates were higher in remote and very remote areas compared to non‑remote areas for all disease types except lung disease due to the environment. There was no clear pattern between disease rates and remoteness for non‑Indigenous Australians (table 10A.2.11).

Between 2004‑05 and 2012‑13, for NSW, Victoria, Queensland, WA, SA and the NT combined, hospitalisation rates for Aboriginal and Torres Strait Islander Australians:

* increased for influenza and pneumonia (from 363.0 to 369.8 per 100 000 population) and bacterial disease (from 164.0 to 210.1 per 100 000 population)
* decreased slightly for asthma (from 159.4 to 153.4 per 100 000 population) (table 10A.2.1).

Between 2008‑09 and 2012‑13[[4]](#footnote-4), for NSW, Victoria, Queensland, WA, SA and the NT combined, rates for Aboriginal and Torres Strait Islander Australians for intestinal infectious diseases increased (from 331.7 to 380.1 per 100 000 population in 2012‑13) (table 10A.2.1).

For comparison between populations, age standardised rates illustrating the differences in hospitalisation between Aboriginal and Torres Strait Australians and non‑Indigenous Australians are presented in figure 10.2.1; tables 10A.2.2–10). The rates for Aboriginal and Torres Strait Islander Australians for these four disease types are higher than the rates for non‑Indigenous Australians, with similar trends over time.

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| Figure 10.2.1 Age standardised hospitalisation rates for selected diseases, NSW, Victoria, Queensland, WA, SA, and public hospitals in the NT, 2004‑05 to 2012‑13**a, b, c** |
| Figure 10.2.1 Age standardised hospitalisation rates for selected diseases, NSW, Victoria, Queensland, WA, SA and public hospitals in the NT, 2004-05 to 2012-13 Intestinal infectious disease  More details can be found within the text surrounding this image.Figure 10.2.1 Age standardised hospitalisation rates for selected diseases, NSW, Victoria, Queensland, WA, SA and public hospitals in the NT, 2004-05 to 2012-13 influenza and pneumonia  More details can be found within the text surrounding this image. | **Figure 10.2.1 Age standardised hospitalisation rates for selected diseases, NSW, Victoria, Queensland, WA, SA and public hospitals in the NT, 2004-05 to 2012-13 bacterial disease  More details can be found within the text surrounding this image.Figure 10.2.1 Age standardised hospitalisation rates for selected diseases, NSW, Victoria, Queensland, WA, SA and public hospitals in the NT, 2004-05 to 2012-13 asthma  More details can be found within the text surrounding this image.** |
| a Directly age standardised using the 2001 Australian population. b ‘Other Australian’ includes ‘non‑Indigenous’ and cases where Indigenous status was ‘not stated’. c See tables 10A.2.2–10 for further caveats on these data. |
| *Source*: AIHW (unpublished) National Hospital Morbidity Database; tables 10A.2.2–10. |
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Acute rheumatic fever and trachoma are virtually unknown in the non‑Indigenous population but remain at relatively high rates among some populations of Aboriginal and Torres Strait Islander Australians, particularly in areas with poor environmental health coupled with poor hygiene practices (AIHW 2013; The Kirby Institute, UNSW 2013).

Although based on small numbers, in 2012‑13, after adjusting for differences in population age structures, the hospitalisation rate for Aboriginal and Torres Strait Islander Australians for acute rheumatic fever was 55.9 times the rate for non‑Indigenous Australians. (table 10A.2.11). Hospitalisation rates for trachoma are suppressed due to the small numbers, but surveillance data are available for 195 communities at ‘higher risk’ of trachoma and screened for the condition in Queensland (6 communities), WA (77 communities), SA (36 communities) and the NT (76 communities). In 2012, the rates of active trachoma prevalence in children aged 1–14 years were 4 per cent in the NT and WA, 1 per cent in SA and none in Queensland (The Kirby Institute, UNSW 2013).

Remote Aboriginal communities of northern Australia also have the highest reported rates of crusted scabies in the world (Lokuge et al. 2014). In 2012‑13, after adjusting for differences in population age structures, the hospitalisation rate for Aboriginal and Torres Strait Islander Australians for scabies was 38.3 times the rate for non‑Indigenous Australians (table 10A.2.11).

### Death rates for diseases associated with poor environmental health

Data on deaths from diseases associated with poor environmental health are available for five jurisdictions (NSW, Queensland, WA, SA and the NT). The sample size of Aboriginal and Torres Strait Islander identification and quality of data from these jurisdictions was considered acceptable for statistical analysis. Data are available in five‑year groupings (2003–2007 and 2008–2012), due to the volatility of small numbers each year.

After adjusting for population age structures, the death rate for Aboriginal and Torres Strait Islander Australians from diseases associated with poor environmental health reduced from 1.8 times the non‑Indigenous rate in 2003–2007 to 1.7 times the non‑Indigenous rate in 2008–2012 (for NSW, Queensland, WA, SA and the NT combined) (tables 10A.2.12‑13).

Data on deaths from diseases associated with poor environmental health are also reported by sex (tables 10A.2.12–13).

### Things that work

Box 10.2.3 provides an example of a program that helps improve environmental health for Aboriginal and Torres Strait Islander Australians, through management of crusted scabies. Scabies is caused by a mite living in the skin, and can lead to kidney and heart problems. Crusted scabies is a type of scabies caused by the same mite which is highly contagious and occurs when a person’s immune system cannot control the number of mites. There is often a reduced life expectancy and a high risk of reoccurrence, and this disease is managed as a chronic disease (Central Australian Rural Practitioners Association 2014).

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| Box 10.2.3 ‘Things that work’ — Improving environmental health for Aboriginal and Torres Strait Islander Australians |
| **The East Arnhem Scabies Control Program** (EASCP) was established in early 2011 as a joint initiative of One Disease, Miwatj Health Aboriginal Corporation and the NT Government Department of Health. The program has three main goals:1. to eliminate crusted scabies as a public health issue in all participating East Arnhem communities by the end of the third year of the program
2. to document a 50 per cent reduction in scabies and skin sores rates from baseline by the end of the third year of the program in at least three participating communities while aiming for all communities
3. to support related environmental health and regulatory initiatives.

The program was evaluated between August 2011 and June 2013.1 Seven patients in the three communities under evaluation and seven paired contacts (a household child contact with the same primary resistance) were included in the evaluation.The evaluation examined the number of presentations involving recurrences of crusted scabies in patients and paired contact presentations for simple scabies. The evaluation found that, compared to the baseline (prior to intervention), there was a significant decrease in total recurrences (44 per cent) and paired contact presentations (58 per cent). These results are positive, although the generalisability of the results may be limited by the small sample size. Despite this limitation, the Central Australian Rural Practitioners Association Standard treatment manual (2014) has been updated to feature the EASCP’s model of care. |
| 1 Although this evaluation was not independent, it was published in the Medical Journal Of Australia (MJA), a leading peer‑reviewed general medical journal. |
| *Source*: Lokuge, B., Kopczynski, A., Woltmann, A., Alvoen, F., Connors, C., Guyula, T., Mulholland, E., Cran, S., Foster, T., Lokuge, K., Burke, T. and Prince, S. 2014, ‘Crusted scabies in remote Australia, a new way forward: lessons and outcomes from the East Arnhem Scabies Control Program’, *The Medical Journal Of Australia*, vol. 200, no. 11, pp. 644–648; Central Australian Rural Practitioners Association 2014*, CARPA Standard Treatment Manual*, 6th edn, Centre for Remote Health, Alice Springs. |
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10.3 Access to clean water and functional sewerage and electricity services[[5]](#footnote-5)

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| Box 10.3.1 Key messages |
| * Nationally, the majority of Aboriginal and Torres Strait Islander households in 2012‑13 had working household facilities (96.7 per cent for washing people, 94.1 per cent for washing clothes and bedding, 90.1 per cent for preparing food and 97.0 per cent with working sewerage facilities) (table 10A.3.8).
* However, many lived in dwellings with major structural problems (from 33.5 per cent in non‑remote areas to 46.1 per cent in remote/very remote areas) (table 10A.3.11).
* The proportion of Aboriginal and Torres Strait Islander households living in housing of an acceptable standard (reflecting the structural issues and working facilities) decreased from 83.2 per cent in 2008 to 77.8 per cent in 2012‑13 (table 10A.3.16).
* New outcome data on access to clean water, functional sewerage and electricity services for discrete Indigenous communities were not available for this report. The most recent available data are for 2006, with no further collection currently planned.
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| Box 10.3.2 Measures of access to clean water, functional sewerage and electricity services |
| There are two main measures for this indicator.* *Access to common/community water, sewerage and electricity services* is defined as the proportion of discrete Indigenous communities with access to common/community water, sewerage and electricity services. The data source for this measure is the ABS Community Housing and Infrastructure Needs Survey (CHINS), with the most recent available data for 2006 (some jurisdictions; and remoteness).
* *Indigenous households living in housing of an acceptable standard* is defined as a household with four working facilities and not more than two major structural problems. The data source for this measure is the ABS Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS)/National Aboriginal and Torres Strait Islander Social Survey (NATSISS), with the most recent data for 2012‑13 (all jurisdictions and capital city and balance of state). Supplementary data for the components of working facilities and major structural problems are also reported (all jurisdictions and remoteness). The data from the AATSIHS are ‘self‑reported’ and are based on the respondent’s view of their house and its functionality.
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A clean, adequate and reliable supply of water is required for drinking, cooking and washing (Australian Indigenous HealthInfoNet 2013). A functional sewerage system prevents sewage from contaminating drinking water and food (Australian Indigenous HealthInfoNet 2008). Access to a reliable electricity (or gas) supply is essential for cooking, refrigeration, and running household appliances, such as washing machines (AHMAC 2012). Adequate disposal of human waste, rubbish removal and power supply are associated with better health outcomes (Osbourne, Baum and Brown 2013).

Access to functional ‘health hardware’, which support the healthy living practices, is associated with a positive impact on health, as found in Ware’s review of housing and health literature (2013). Health hardware are key appliances and structures, and include: ‘toilets, lights, and drains to taps, showers and kitchens’ (Pholeros et al. 2013).

Recent literature reviews have found that it is more expensive and logistically more difficult to construct and maintain housing and associated infrastructure in remote areas (Fien and Charlesworth 2012; Ware 2013). Even bearing this in mind, concerns have been raised that infrastructure in remote Indigenous communities does not meet the standard generally available in equivalent non‑Indigenous communities. There is a need for data allowing comparison between services in discrete Indigenous communities and those in equivalent non-Indigenous communities.

However, a 2009‑10[[6]](#footnote-6) audit of municipal and essential services, involving site visits to 86 remote Indigenous communities and 14 non‑Indigenous communities of comparable size and location, found that there were differences between remote Indigenous and remote non‑Indigenous communities, stating ‘ … the level of infrastructure in remote Indigenous communities does not meet the standard generally available in non‑Indigenous communities of a similar size and location, and … services are consistently unreliable and suffer major disruptions … ’(Australian Government 2013).

In 2009, COAG agreed to the National Affordable Housing Agreement (NAHA), which included the outcome that Aboriginal and Torres Strait Islander Australians should have ‘the same housing opportunities as other Australians, and improved housing amenity … particularly in remote areas and discrete communities’(COAG 2012).

The NAHA is supported by the National Partnership Agreement on Remote Indigenous Housing (NPARIH), which aims to improve housing in remote communities, including funding for minor repairs and maintenance (COAG 2009). In 2012, the COAG Reform Council (CRC), in its report on progress under the COAG reform agenda, stated that the NPARIH was on track to achieve its objectives, with all milestones fully or largely met to date. For 2011‑12, these included the completion of 595 new houses and 1591 refurbishments in remote Indigenous communities across Australia (CRC 2012).

### Water, sewerage and electricity services in discrete Indigenous communities

Many Aboriginal and Torres Strait Islander Australians live in urban areas where reliable drinking water, sewerage and electricity systems are available to everyone. In rural and remote areas, there is a greater reliance on local or individual household systems, like generators, septic tanks and drinking water sourced from bores and rainwater tanks (Australian Indigenous HealthInfoNet 2013).

This section contains a summary of the most recent available data on access to clean water and functional sewerage and electricity services in discrete Indigenous communities, from the CHINS 2001 and 2006 (ABS 2007). More detailed information can be found in previous editions of this Report. However, these CHINS data predate the introduction of the NAHA and NPARIH, and therefore may not necessarily be representative of current conditions.

CHINS data are limited to discrete Indigenous communities and are not comparable with performance indicators commonly used by mainstream water, sewerage and electricity utilities to measure performance. ‘Discrete Indigenous communities’ are defined as geographic locations inhabited predominantly (greater than 50 per cent of residents) by Aboriginal or Torres Strait Islander Australians, with housing or infrastructure that is managed on a community basis. The majority of people in discrete Indigenous communities lived in very remote areas in both 2001 (85 per cent) and 2006 (74.5 per cent) (ABS 2007).

Discrete Indigenous communities range in size from fewer than 50 inhabitants to over 1000 inhabitants. Although there were a larger number of small communities (865 with fewer than 50 inhabitants in 2006) around two thirds (66.0 per cent) lived in communities with 200 or more inhabitants (table 10.3.1).

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| Table 10.3.1 Reported usual population of discrete Indigenous communities, 2006**a,b** |
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| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Less than 50 | 50 to 99 | 100 to 199 | 200 to 499 | 500 to 999 | 1000 or more | All communities |
| No. of communities | 865 | 123 | 92 | 71 | 19 | 17 | 1 187 |
| Reported usual population | 10 701 | 8 121 | 12 748 | 21 140 | 12 940 | 27 310 | 92 960 |
| % of population | 11.5 | 8.7 | 13.7 | 22.7 | 13.9 | 29.4 | 100.0 |

 |
| a Reported usual population includes some non‑Indigenous people. b These data are not available for 2001. |
| *Source*: ABS (Australian Bureau of Statistics) 2007, Housing and Infrastructure of Aboriginal and Torres Strait Islander Communities, Australia, Cat. no. 4741.0, Canberra. |
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#### Water

* *Source* — Between 2001 and 2006, the number of discrete Indigenous communities that were connected to a town water supply increased from 186 to 209 (from 15.3 per cent to 17.6 per cent of all communities), and the number of communities with no organised water supply decreased from 21 to 9 (from 1.7 per cent to 0.8 per cent of all communities) (table 10A.3.1).
* *Reliability* — In 2006, 182 discrete Indigenous communities reported drinking water interruptions in the previous 12 months (information on water restrictions was only known for 366 out of all 1187 communities). Of those 182 communities with interruptions, 69 (37.9 per cent) reported five or more interruptions (table 10A.3.2). Comparable data are not available for 2001.
* *Quality* — In 2006, 978 discrete Indigenous communities were not connected to a nearby mainstream town water supply. Of these communities, 164 (16.7 per cent) had drinking water sent away for testing. Of those tested, 48 (29.3 per cent) failed (table 10A.3.3). Comparable data are not available for 2001.

#### Sewerage

* *Source* — In 2006, 25 discrete Indigenous communities (2.1 per cent of all communities) reported having no organised sewerage system, a decrease from 91 communities (7.5 per cent) in 2001 (table 10A.3.4). Although septic tanks with leach drains and pit toilets were the main sewerage systems in communities in both 2001 and 2006, the number of communities connected to a nearby mainstream town sewerage system increased from 89 (7.3 per cent of all communities) to 121 (10.2 per cent) over the period (table 10A.3.4).
* *Reliability* — In 2006, 142 discrete Indigenous communities reported sewerage overflows or leakages in the previous 12 months (information on sewerage overflows or leakages was only known for 361 out of all 1187 communities) (table 10A.3.5). Comparable data are not available for 2001. These data are reported by selected jurisdictions in table 10A.3.6.

#### Electricity services

* *Source —* In 2006, 32 discrete Indigenous communities (2.7 per cent of all communities) reported that they had no organised electricity supply (table 10A.3.7), a decrease from 80 communities (7 per cent) in 2001 (ABS 2007).

### Indigenous households living in housing of an acceptable standard

Reporting on Aboriginal and Torres Strait Islander households living in housing of an acceptable standard is aligned with the related indicator in the National Affordable Housing Agreement (SCRGSP 2012).

The ‘acceptable standard’ measure is made up of two components:

* working household facilities
* major structural problems.

Each component is discussed separately below.

Overall, nationally in 2012‑13, 77.8 per cent of Aboriginal and Torres Strait Islander households were living in houses of an acceptable standard, with no significant difference between the rates for capital cities (80.4 per cent) and other areas (‘balance of state’) (76.2 per cent) (table 10A.3.16). From 2008 to 2012‑13, the national proportion deceased by 4.4 percentage points (from 83.2 to 77.8 per cent), a statistically significant deterioration. This decrease was in both capital cities (from 85.4 to 80.4 per cent) and other areas (82.0 to 76.2 per cent) (table 10A.3.16). The national result was driven by decreases in Queensland, WA and the NT (table 10A.3.16).

#### Access to household facilities

Nationally in 2012‑13, more than 90 per cent of Aboriginal and Torres Strait Islander households had working household facilities:

* 96.7 per cent for washing people
* 94.1 per cent for washing clothes and bedding
* 90.1 per cent for preparing food
* 97.0 per cent with working sewerage facilities

Results were similar across states and territories (table 10A.3.8).

From 2002 to 2012‑13, in Queensland, NSW and WA there were statistically significant decreases in the proportions of Aboriginal and Torres Strait Islander households with working household facilities (table 10A.3.8).

In 2012‑13, a lower proportion of Aboriginal and Torres Strait Islander households, in remote plus very remote areas, had access to working household facilities, compared to non‑remote areas (table 10A.3.9). In remote plus very remote areas, only three out of four Aboriginal and Torres Strait Islander households (76.4 per cent) had working facilities to prepare food, compared with 92.5 per cent in non‑remote areas (table 10A.3.9).

#### Housing with major structural problems

Nationally in 2012‑13, over one‑third (35.4 per cent) of Aboriginal and Torres Strait Islander households lived in dwellings with major structural problems (table 10A.3.10), with this proportion higher in remote plus very remote areas (46.1 per cent) than in non‑remote areas (33.5 per cent) (table 10A3.11). The most commonly reported structural issue in remote plus very remote areas was major plumbing problems (18.0 per cent), while in non‑remote areas it was major cracks in walls/floors (14.2 per cent) (table 10A3.11).

From 2008 to 2012‑13, the proportion of Aboriginal and Torres Strait Islander households reporting major structural problems (excluding rising damp) rose from 26.1 per cent to 33.8 per cent (table 10A.3.12).

Data on Aboriginal and Torres Strait Islander Australians reporting that their dwellings had major structural problems are also available by State and Territory in tables 10A.3.10, 10A.3.12 (excluding rising damp) and 10A.3.14.

### Future directions in data

New data on access to water, sewerage and electricity services are available infrequently. The CHINS was conducted in 1994, 2001 and 2006. There is currently no date for the next CHINS, despite an agreed NPARIH output being ‘improved data collection through a three‑yearly CHINS‑like collection’ (COAG 2009). New data for this measure, whether from the CHINS or a comparable survey, are critical to enable ongoing reporting for discrete Indigenous communities.

Data on access to household facilities and condition of Indigenous housing are collected in the ABS AATSIHS/NATSISS. For this report, data on major structural problems are not directly comparable between 2008 and 2012‑13 due to different treatment of ‘rising damp’. Consistent collection of data across surveys is desirable to enable comparisons of the complete measure over time.

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1. Environmental health addresses the physical, chemical and biological factors external to a person which can potentially affect a person’s health. [↑](#footnote-ref-1)
2. The Steering Committee notes its appreciation to the Working Group on Aboriginal and Torres Strait Islander Environmental Health, which reviewed a draft of this section of the report. [↑](#footnote-ref-2)
3. The Steering Committee notes its appreciation to the Working Group on Aboriginal and Torres Strait Islander Environmental Health, which reviewed a draft of this section of the report. [↑](#footnote-ref-3)
4. In 2008-09, coding for intestinal infectious diseases changed as a result of changes to gastroenteritis coding in the Australian Modification of the 10th revision of the International Classification of Diseases. Therefore, rates of intestinal diseases cannot be compared with rates for previous years, resulting in a break in the time series. See attachment tables for further caveats to these data. [↑](#footnote-ref-4)
5. The Steering Committee notes its appreciation to the Working Group on Aboriginal and Torres Strait Islander Environmental Health, which reviewed a draft of this section of the report. [↑](#footnote-ref-5)
6. The national Municipal and Essential Services Audit (the audit) was agreed to by the Commonwealth, States and the NT Governments under the NPARIH in November 2008. The audit was undertaken by a number of audit delivery teams across each jurisdiction, consisting of professional engineers. The Australian Government advised that the audit was conducted in accordance with an audit implementation plan, agreed to by the Commonwealth and the State and NT governments during November-December 2009. [↑](#footnote-ref-6)