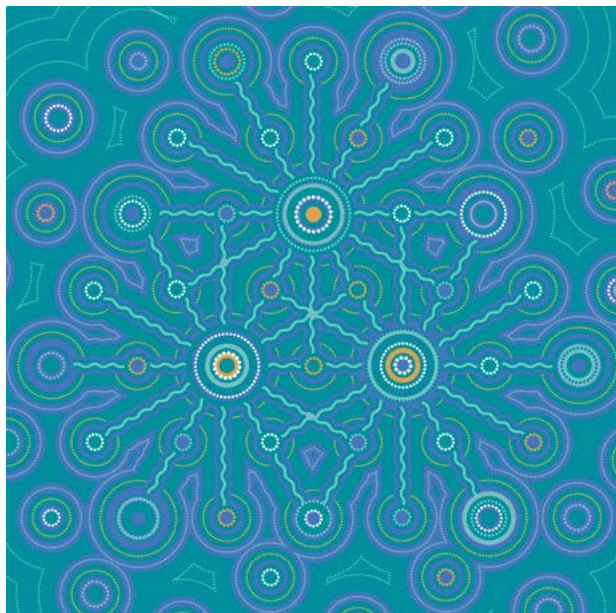


How does NSW compare?



The Bureau of Health Information acknowledges the people of the many traditional countries and language groups of New South Wales. It recognises the knowledge and wisdom of Elders who have passed, those of today and tomorrow, and pays respect to Aboriginal communities of the land.



The artwork

The original artwork that features on the front cover and within the report, was created by Marcus Lee, a proud Aboriginal descendant of the Karajarri people.

The three main circular shapes represent the three core dimensions of healthcare performance indicators in this report: Accessibility, Appropriateness and Effectiveness.

The connecting pathways symbolise the strong communication lines between the NSW healthcare system and Aboriginal patients to help improve health outcomes for Aboriginal people. This communication will help drive improvements in Aboriginal people's healthcare experiences and provide culturally safe health services.

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State Health Publication Number: (BHI) 180365
ISSN: 1838-6989

Suggested citation:

Bureau of Health Information. *Healthcare in Focus 2017*. Sydney (NSW); BHI; 2018.

Published August 2018

Please note that there is the potential for minor revisions of data in this report.
Please check the online version at **bhi.nsw.gov.au** for any amendments.

The conclusions in this report are those of BHI and no official endorsement by the NSW Minister for Health, the NSW Ministry of Health or any other NSW public health organisation is intended or should be inferred.

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Foreword

Each year, the Bureau of Health Information (BHI) benchmarks the performance of NSW hospital, ambulance and community health services against comparable countries and Australian states and territories.

Healthcare in Focus examines healthcare in the context of three important dimensions of performance – accessibility, appropriateness and effectiveness – across more than 60 measures. This year we look at healthcare for Aboriginal and Torres Strait Islander people across these dimensions.

Comparing countries' healthcare performance is an informative and powerful motivator to improve. International comparisons help NSW determine whether its performance is among world leaders, or whether we should emulate other jurisdictions that have demonstrated what better care looks like.

For NSW, we look at variation in performance across local health districts and hospitals to identify good practice and outcomes, and highlight opportunities to improve.

We have taken NSW strategic priorities and policies into account, such as the Leading Better Value Care Program, the Patient Safety First Program and the NSW Aboriginal Health Plan. We have looked to clinical guidelines, national performance standards, jurisdictional and year-on-year comparisons to determine what health leaders expect performance to look like. We've done this to identify priority measures to include in this report and to benchmark performance.

It is now 10 years since the Council of Australian Governments (COAG) first set targets aimed at closing the gap in outcomes between Aboriginal people and non-Indigenous Australians. That milestone gave us an added cause to apply an "equity lens" to reflect on our values of fairness and equal opportunity in relation to healthcare experiences and outcomes for Aboriginal people.

More than 216,000 Aboriginal people live in NSW. In 2016, BHI released a report that, for the first time, provided system-wide and detailed information about Aboriginal patients' experiences of hospital care in NSW. We heard from almost one in every 10 adult Aboriginal patients admitted to hospital and the findings were presented in a comprehensive and positively received report, *Patient Perspectives: Hospital care for Aboriginal people*.

Two years later, it's time to hear what Aboriginal patients say about their experiences of care in NSW. This year we consider equity of health outcomes and experiences for Aboriginal people in selected, key areas. Accordingly, one-third of the measures in this report are dedicated to enhancing understanding about healthcare and opportunities to improve health outcomes for Aboriginal people.

A recent Chief Health Officer report, *Aboriginal Kids – a healthy start to life*, highlighted improvements in the health of Aboriginal children in NSW in the first five years of life. Meanwhile, the Aboriginal Maternal Infant Health Strategy, NSW Health's Transfer of Care from Mental Health Inpatient Services directive, and the KIT SMART project for Aboriginal people with diabetes are examples of a health system that is responsive to the needs and aspirations of Aboriginal people.

On behalf of BHI's Board and staff, we hope *Healthcare in Focus* will make a meaningful contribution to inform health professionals whose work is dedicated to improving care for Aboriginal people. Equally, we hope this report provides a fair account of healthcare performance in NSW, while highlighting areas where improvements in care for all patients can be made.

Dr Diane Watson

Chief Executive, Bureau of Health Information

Summary

Each year the Bureau of Health Information (BHI) provides an annual report to the Minister and Parliament on the performance of the New South Wales (NSW) public health system. This edition of *Healthcare in Focus* offers insights regarding the accessibility, appropriateness and effectiveness of the NSW public health system across more than 60 measures of performance.

This edition of the annual report also applies an equity lens to compare results for Aboriginal and Torres Strait Islander people (referred to as Aboriginal people in this report). Comparisons of health system performance across local areas within NSW are made to further assess equity. Local and international comparisons of performance are used to identify good practice and outcomes, and highlight opportunities to improve.

Key findings

In 2016-17, among 7.8 million people in NSW, there were 1.1 million overnight public hospital stays and 884,000 visits to a public hospital for same-day care. There were 2.7 million emergency department (ED) attendances and 1.1 million calls to NSW Ambulance (page 14).

Overall, 93% of adults admitted to a public hospital in 2016 rated the care they received as 'very good' or 'good'. There is wide variation in adult ratings of their overall experience across public hospitals and EDs. Hospital-specific ratings of 'very good' care vary by over 30 percentage points for inpatient care measures and by over 40 percentage points across EDs highlighting areas of good practice and for targeted improvement (page 16).

For the most part, NSW public hospitals meet or exceed expected standards for patient care in relation to access, appropriateness and effectiveness. However, there is variation in performance between NSW and other jurisdictions, across NSW public hospitals and between Aboriginal and non-Aboriginal people.

Accessibility: Healthcare when and where needed

In NSW, more than three-quarters of ambulance local response areas met a 90% threshold for the percentage of emergency cases with a call to ambulance arrival time of within 30 minutes. In addition, most patients who arrived at an ED by ambulance had their care transferred to ED staff within 30 minutes (pages 21 and 22).

NSW outperforms other Australian states and territories when it comes to wait times to care in the ED. However, there is wide variation across NSW public hospitals in terms of patients transported by ambulance to EDs whose care was transferred within 30 minutes, and the timeliness of care in EDs (pages 23 and 24).

Most patients received elective surgery within the recommended time in NSW public hospitals with large improvements in performance over the last five years (page 31).

When compared to other countries, a higher percentage of adults aged 65+ years in NSW said they had problems paying medical bills. NSW also had the second-highest percentage of patients who reported skipping care due to cost – second only to the United States (page 29).

Appropriateness: The right healthcare in the right way

Most patients in NSW received hip fracture surgery within the clinically recommended time frames though there is wide variation across public hospitals (page 37).

While the number of knee arthroscopies has decreased over the last five years, this procedure continues to be performed on older patients and those with osteoarthritis despite evidence of little benefit for these groups and there is wide variation across public hospitals (page 39).

Just over half of NSW women in the target age group were screened by BreastScreen NSW. The experiences of women participating in screening were generally positive, with a majority saying they intended to continue with routine mammograms (page 41).

When looking at discharges from hospital, most survey respondents aged 65+ years said the hospital made arrangements for follow-up care after they were discharged. About three-quarters of patients in public hospitals (aged 18+ years) said they were 'completely' given sufficient information to manage their care at home (page 43).

Effectiveness: Making a difference for patients

Unplanned patient returns to hospital following an inpatient stay or emergency department visit are not always avoidable. However, they can reflect shortcomings in the initial healthcare encounter, access to general practitioners, follow-up arrangements or integration of care, or inadequacy in discharge planning.

Among patients admitted to public and private hospitals with a severe fall-related fracture, 14% returned to hospital with a subsequent, severe fracture within two years, ranging from 2% to 29% across NSW public hospitals (page 55).

Effective care is also safe care. NSW has among the lowest rates of bloodstream infections in the country. However, across comparator countries, rates of obstetric trauma in NSW are mid-range and complication rates of post-surgical blood clots and sepsis are relatively high. Among admitted hospital patients, 16% said they experienced a complication related to their care (pages 57, 59, 61, 63).

Equity: Focus on Aboriginal patients

For the first time since 2013, a lower percentage of Aboriginal adults admitted to NSW public hospitals in 2016 rate the care they received as 'very good' in comparison to non-Aboriginal adults (page 17).

In 2016, a lower percentage of Aboriginal patients said they were treated with respect and dignity, and that their cultural beliefs were respected, compared with non-Aboriginal patients. A higher percentage of Aboriginal people left hospital against medical advice (page 51).

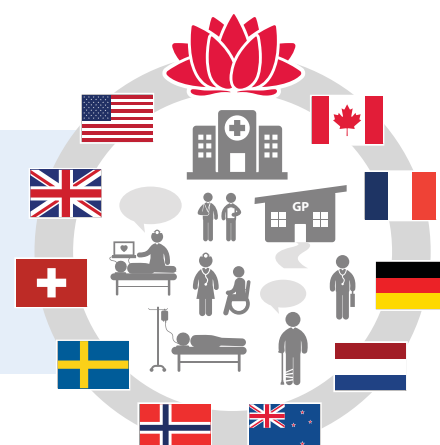
In terms of accessibility, most patients received elective surgery within recommended timeframes, regardless of Aboriginality. However, Aboriginal patients had longer median waiting times for three out of the four selected elective surgical procedures (page 31). A lower percentage of Aboriginal patients with end-stage kidney disease had kidney transplants, and received dialysis at home (page 33).

In terms of appropriateness, Aboriginal people had lower rates of community follow-up after being discharged from acute psychiatric services. They also have lower rates of antenatal visits within the first 14 weeks of pregnancy, and breastfeeding at hospital discharge compared with non-Aboriginal people (pages 47, 49).

In terms of effectiveness, Aboriginal people had higher rates of hospitalisation for diabetes, and higher rates of unplanned returns to psychiatric services and emergency departments (pages 65, 67, 69).

Visit our website at bhi.nsw.gov.au to view our chartpack which summarises NSW results, placing them in an international context.

The NSW viewpoint, 2017 Commonwealth Fund International Health Policy Survey, Adults aged 65+ years (Released: 18 January 2018)



About this report

This report: In context

Healthcare in Focus is an annual publication that uses a combination of international and local comparisons to reflect on the performance of the NSW healthcare system with a focus on care provided in public hospitals. This year, the report features measures that compare NSW's performance against state or national benchmarks, recognised best practice and/or expected patient experience.

Measures in this report are primarily focused on public hospitals. Other NSW public health services – ambulance and community mental health – are also included.

Structure of the report

The report is structured based on a framework that BHI has adopted for annual performance reporting.

For this edition we have focused on four core dimensions of healthcare performance:

- **Accessibility:** Healthcare, when and where needed – are patients' and populations' healthcare needs met? How easy is it for them to obtain healthcare?
- **Appropriateness:** The right healthcare in the right way – are evidence-based services provided in a technically proficient way? Are services delivered in ways that are responsive to patients' expectations?
- **Effectiveness:** Making a difference for patients – do healthcare services address patients' problems and improve their health?
- **Equity:** Health for all, healthcare that's fair - is healthcare provided without discrimination on the basis of gender, age, race or other demographic factors? Is healthcare distributed fairly? Does everyone have the opportunity to reach their full health potential?

Approach to content

This report is organised in a way that compares NSW performance against expected or best practice. Where possible, the results for each performance dimension and indicator place NSW in an international context and present variation within NSW at the regional or hospital levels.

It has been designed to provide tiered reporting of performance measures for NSW by presenting data from three different perspectives:

1. Looking out: Health system performance comparisons

Comparing the performance of the NSW healthcare system with other countries or jurisdictions within Australia provides an opportunity for learning – to note differences, study the successful policies and clinical practices that have been introduced elsewhere and adapt them to fit the local context.

2. Looking in: Comparing regional or hospital variation within NSW

Comparing results between regions or hospitals within NSW elucidates how much internal variation exists behind the overall result and flags outliers that may warrant further investigation.

Questions that may be asked include: How does the NSW result compare with expected practice? Has there been a change over time? What is the variation among hospitals? Is there room for improvement among hospitals?

3. Applying an equity lens to Aboriginal people's healthcare experiences and outcomes

This approach delves deeper into NSW's performance by applying an equity lens to compare Aboriginal people's healthcare-related experiences and outcomes with those of non-Aboriginal people.

What to keep in mind when comparing to other jurisdictions

The rising interest in health system comparisons between different countries is driven by the growing ease with which health-related data can be gathered and disseminated.

In many countries, institutions have been created for the purposes of collecting and publicly reporting data. The free flow of information online has fostered greater public engagement as people compare their circumstances with those of others. This in turn has encouraged greater transparency and accountability for health system performance.

Comparing results internationally can identify areas for deeper investigation. However, population, organisational and healthcare system differences between countries limit comparative analyses of performance. Additionally, the different types and ways data is collected across countries varies and can affect data quality. A careful interpretation of the results necessitates recognition of these limitations.

Despite these limitations, the usefulness of comparative analyses stems from the common health system objectives pursued by different countries. Health systems strive to improve population health, to be responsive to the needs of patients, to mitigate the burden of poor health among those in need of services, and maintain a productive system that promotes efficiency and effectiveness.¹

What to keep in mind when comparing results for Aboriginal and non-Aboriginal people

Several indicators in this report are presented by Aboriginality, using the Indigenous status variable in each data collection. Aboriginal people are known to be under-reported on health data collections and this is a limitation of the analyses presented in this report. Reporting has improved over time in NSW. In the Admitted Patient Data Collection, the reporting of Aboriginal people is estimated to have improved

from 55.5% in 2001-02 to 89.0% in 2016-17. In the Emergency Department Data Collection, it is estimated to have improved from 45.5% in 2005 to 83.8% in 2017. In the Perinatal Data Collection, it is estimated to have improved from 61.9% in 2001 to 88.2% in 2015 for Aboriginal mothers.² For indicators calculated using the NSW Ministry of Health Hospital Performance Dataset, Aboriginality was based on the 'Enhanced Reporting of Aboriginality' variable. This variable uses information from linked datasets to improve the identification of Aboriginal people in health data collections.

In NSW, the age structure of the Aboriginal population is younger than that of the non-Aboriginal population and they experience a higher prevalence of most chronic diseases at younger ages than non-Aboriginal people. There are lower rates of employment and tertiary education. The results presented in the equity lens sections are not adjusted for variation in socio-demographic characteristics. These characteristics can influence patient experiences and outcomes.

Why these measures?

Indicator selection for this report was based on five criteria for inclusion that prioritised:

- showing meaningful indicators in terms of patient, clinical or policy relevance
- providing a balanced view of NSW performance using a suite of measures
- the ability to compare NSW with other jurisdictions or with itself over time
- the feasibility of obtaining valid and reliable data
- measuring aspects that are amenable to change.

The indicators in this report align with the strategic initiatives outlined in the *NSW State Health Plan* and, in some cases, key performance indicators for local health districts.



Applying an equity lens to Aboriginal people's healthcare experiences and outcomes

There are more than 216,000 Aboriginal people living in NSW. Aboriginal people represent a relatively small percentage (2.9%) of the total NSW population. However, NSW is home to more Aboriginal people than any other state or territory – about one-third of the total Australian Aboriginal population live in NSW. Aboriginal people continue to experience poorer health outcomes, with a burden of disease that is 2.3 times the rate for non-Aboriginal Australians.³

Chronic diseases are responsible for 70% of the total health gap.³ Aboriginal Australians are more likely to be hospitalised than non-Aboriginal Australians, but are less likely to receive a medical or surgical procedure while they are in hospital.⁴

Given these disparities, and based on consultation with Aboriginal Health Leaders, for this year's report we have applied an equity lens to select measures included in the accessibility, appropriateness and effectiveness chapters. We highlight where differences exist in the outcomes or experiences of care for Aboriginal and non-Aboriginal people in NSW and aim to address the following questions:

- Are there disparities between the two groups in access to healthcare in hospitals?
- Do Aboriginal people receive care that is respectful and culturally safe in NSW public hospitals?
- Are there differences in patient outcomes that may suggest shortcomings in the effectiveness of care?

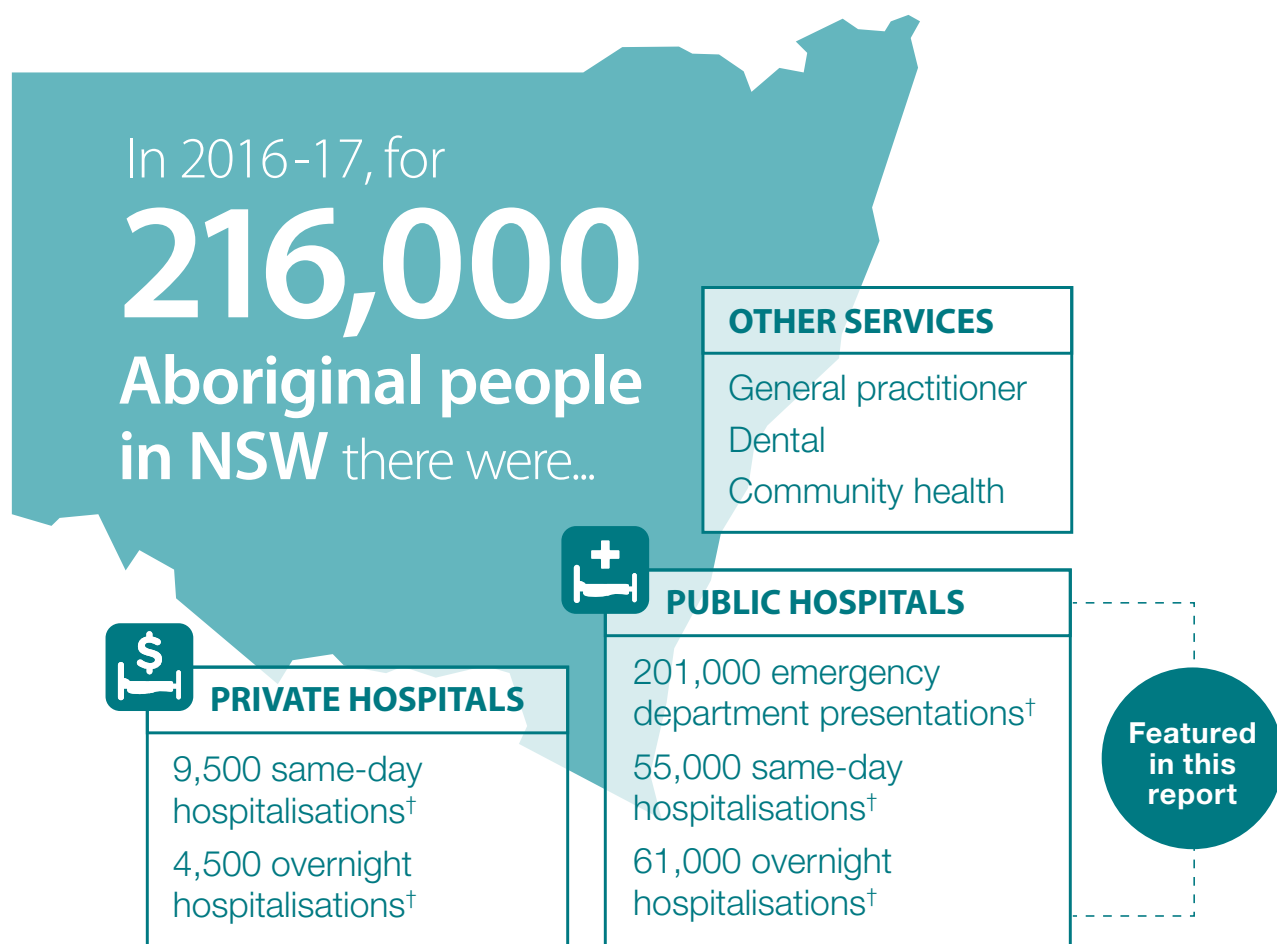
The NSW Government, in partnership with the Aboriginal Health and Medical Research Council of NSW, developed the *NSW Aboriginal Health Plan 2013–2023*. This document outlines the state's commitment to closing the health gap and it emphasises the impact that system-wide quality improvement efforts can have on Aboriginal people's health.

The resilience of the Aboriginal people, and the strategies developed in the *NSW Aboriginal Health Plan*, provide the foundation upon which to improve the health outcomes of Aboriginal people. The plan emphasises the need to ensure Aboriginal people participate in all levels of health service delivery and management, to strengthen the Aboriginal workforce, and provide culturally safe health services.

In 2016-17, there were 130,000 hospitalisations in NSW by Aboriginal patients. The majority of these hospitalisations (89%) occurred in public hospitals. There were 201,000 emergency department presentations in NSW by Aboriginal patients over this period (Figure 1).

The analysis provided in this edition of *Healthcare in Focus* is intended to identify areas where improvement is needed for a selection of health services-related measures, and to help drive improvements in Aboriginal people's experiences and outcomes of public hospital care.

Figure 1 Aboriginal healthcare in NSW, 2016-17



[†] BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 30 May 2018.

Overview of measures included in this report

Setting the scene	
Overall views of the healthcare system and hospital care	Overall views of healthcare system, adults aged 65+ years
	Overall ratings of care, adult admitted and ED patients
Aboriginal patients' overall views of experience	Adult admitted patients who said their care was 'very good' overall, by Aboriginality
	Patients who said their care was 'very good' overall, by service type and Aboriginality
	Emergency department patients who said their care was 'very good' overall, by Aboriginality
Accessibility – Healthcare when and where needed	
Ambulance and transfer of care	Ambulance code 1 response times, median and 90th percentile
	Priority category 1 responses with a call to ambulance arrival time within 30 minutes
	Patients transported to the ED by ambulance whose care was transferred within 30 minutes
Timely emergency department treatment	ED patients seen on time
	ED triage category 2 patients whose treatment started on time
	ED triage category 3 patients whose treatment started on time
Time spent in the emergency department	Patients who spent four hours or less in the ED
	Median length of time spent in the ED by admission status
Patient-reported experiences of emergency care	Patients who said their condition got worse while waiting to be treated in the ED
	Patients who said their departure from the ED was delayed
	ED patients who said a member of staff explained the reason for delay
Financial barriers to accessing healthcare	MBS average patient contribution per service for out-of-hospital and patient-billed services
	Adults aged 65+ years who said they skipped care due to cost, or had problems paying medical bills
	Persons who at least once delayed seeing or did not see a health professional due to cost
Equity lens: Elective surgery	ES procedures performed on time, by urgency category
	Median waiting times for ES procedures by urgency category, remoteness of residence and Aboriginality
	Median waiting times for selected ES procedures, by Aboriginality
Equity lens: End-stage kidney disease	Patients with end-stage kidney disease who had a functioning renal transplant, by Aboriginality
	Patients with end-stage kidney disease receiving dialysis who were having the treatment at home, by Aboriginality

Appropriateness – The right healthcare in the right way	
Hip fracture surgery	Hip fracture surgery initiated within two calendar days of hospital admission, patients aged 65+ years
Knee arthroscopy	Knee arthroscopies performed on people aged 50+ years and/or patients of all ages with osteoarthritis
Breast cancer screening experiences with BreastScreen NSW	Experiences before screening mammogram, women aged 50 to 74 years
	Experiences during screening mammogram, women aged 50 to 74 years
	Experiences following screening mammogram, women aged 50 to 74 years
Discharge from hospital	Adults aged 65+ years who said the hospital made arrangements for follow-up care
	Patients who said they were 'definitely' involved in decisions about their discharge from hospital
	Patients who said they were given 'completely' enough information to manage care at home
Seclusion in acute mental health care	Seclusion events in public specialised mental health acute inpatient units
	Average duration of seclusion events in public specialised mental health acute inpatient units
Equity lens: Mental health care in the community	Community follow-up within seven days of discharge from a mental health hospitalisation, by Aboriginality
Equity lens: Maternity care	Summary of maternity care patient experience measures, by Aboriginality
	Pregnant women receiving their first antenatal visit within 14 weeks' gestation, by Aboriginality
	Infants receiving breastmilk at hospital discharge, by Aboriginality
Equity lens: Culturally appropriate care	Patients discharged from hospital against medical advice, by Aboriginality
	Selected adult admitted patient experience measures, by Aboriginality
Effectiveness – Making a difference for patients	
Returns to hospital with subsequent fracture	Patients aged 50+ years who presented with a fall-related fracture and returned to hospital within two years with a subsequent fracture
Patient safety: Healthcare-associated infections	Healthcare-associated Staphylococcus aureus bloodstream infections in public hospitals
Patient safety: Maternity care	Obstetric trauma, vaginal births with and without instrument
Patient safety: Complications after surgery	Post-operative deep vein thrombosis and pulmonary embolism following hip and knee surgical procedures
	Post-operative sepsis following abdominal surgical procedures
	Post-operative retained foreign body
Patient-reported complications	Adult admitted patients who said they experienced a complication or problem during or shortly after their hospital stay
	Adult admitted patients who said they were readmitted to any hospital because of complications related to their care
	Adult admitted patients who said they went to an ED after discharge because of complications related to their care
Equity lens: Diabetes care	Diabetes-related adult admissions to public and private hospitals
Equity lens: Mental health readmissions	Overnight hospitalisations in acute psychiatric inpatient services that were followed by a readmission within 28 days of discharge, by Aboriginality
Equity lens: Emergency departments	Emergency presentations to EDs that ended with patients who did not wait or left at their own risk, by Aboriginality
	Emergency presentations to EDs among patients who did not wait or left at their own risk that were followed by a re-presentation to any hospital within 48 hours, by Aboriginality

Setting the scene

Healthcare in Australia and NSW: In context

NSW has a pluralist healthcare system with a mix of Commonwealth and state government responsibilities and funding streams; public, private and not-for-profit providers; and intersectoral networks of community, primary, secondary, tertiary and quaternary care. Patient pathways may cross both geographical and organisational boundaries.

Population distribution in NSW

NSW is Australia's most populous state with 7.8 million residents, as of 2017.¹ Most of the population is concentrated in Sydney and distributed in communities along the coast. With the exception of regional centres, inland populations are gradually less dense the further away they are from the coastline.

Compared with other Australian states, NSW has the largest number of people of Aboriginal origin (216,176; 2.9% of the population in NSW).² While most live in metropolitan areas, they make up a small percentage of the population (for example, 1.1% in the Sydney local health district). In some regional areas of NSW, people of Aboriginal origin comprise a greater percentage of the population and represent up to 11.1% and 11.7% in the Far West and Western NSW local health districts, respectively.³

Organisation of services and financing healthcare

Commonwealth, state and local governments in Australia are involved in the funding and delivery of health services. Universal healthcare (Medicare) is administered at the federal level and financed by general tax revenue and an earmarked income tax.

Public hospitals and ambulance, public dental, mental health and community health services are overseen by each state and financed using a mix of federal and state funds.

In NSW in 2015–16, total current expenditure on healthcare was estimated at \$50 billion. This equates to \$6,523 per person.

Private health insurance can cover general treatments, hospital stays or ambulance services. In 2017, 46.5% and 55.5% of Australians had private health insurance to cover hospital and general treatment costs, respectively.⁴

Health services utilisation

NSW Ambulance responded to 1.1 million calls in 2016–17 with about 614,000 transports to public hospitals.

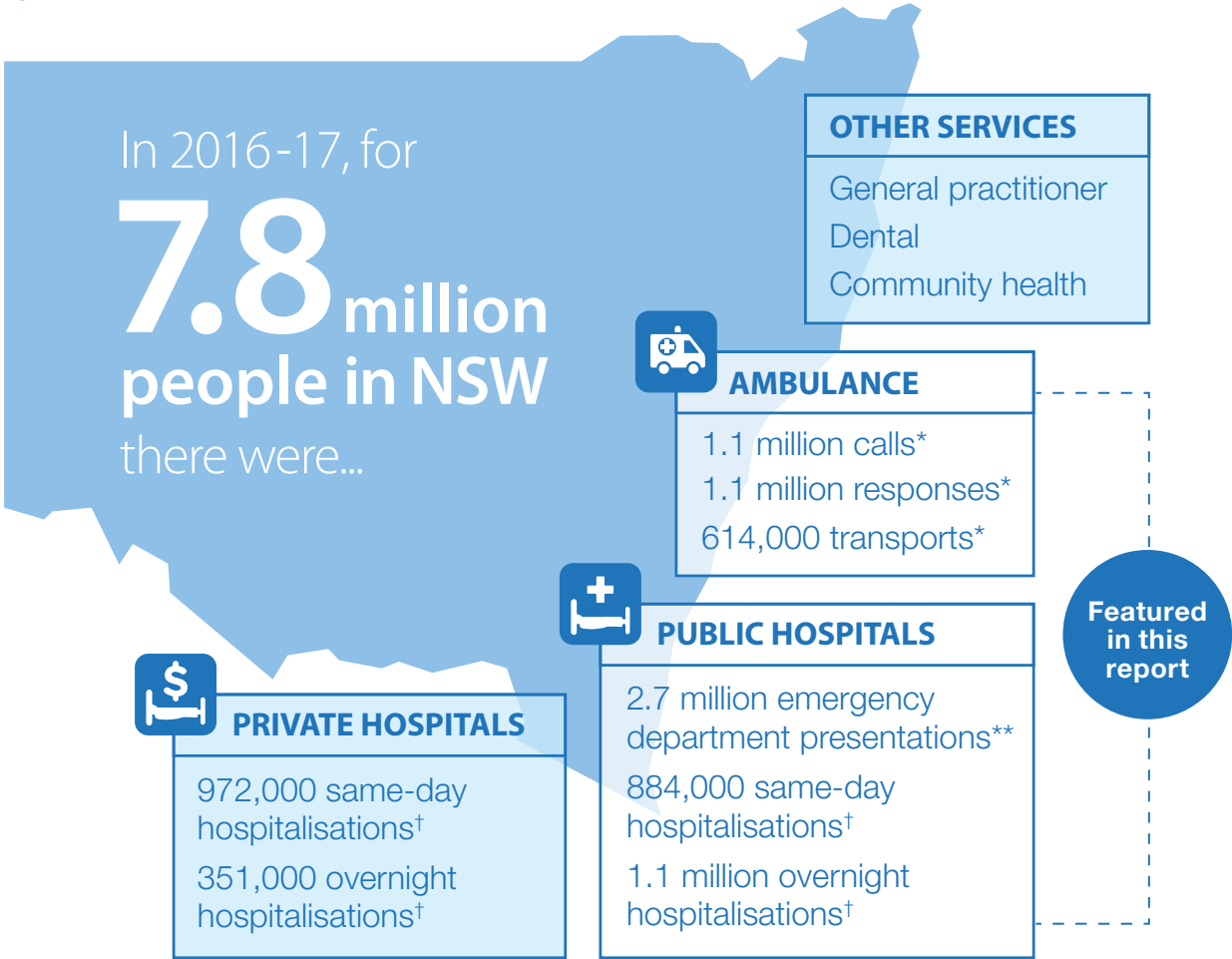
There were 2.7 million emergency department presentations in NSW over this period. Most of these presentations (65.1%) were treated and discharged and more than a quarter (25.6%) were treated and admitted to hospital.⁵

In 2016–17, 59.7% of the 3.3 million hospitalisations in NSW occurred in public hospitals. Hospitalisations can be classified as overnight or same-day. While the majority of overnight stays (75.4%) were in public hospitals, most same-day hospitalisations (52.4%) were in private hospitals.

In 2016–17, there were 972,000 same-day and 351,000 overnight hospitalisations in private hospitals (Figure 2).

Private facilities are licensed and regulated by NSW Health. Accordingly, in this report, data for private hospitals are provided at the aggregate level for comparison purposes only in a number of hospital variation graphs.

Figure 2 **Healthcare in NSW, 2016–17**



Sources: * BHI analysis of ambulance activity data, NSW Ambulance Computer Aided Dispatch (CAD) System, data provided on 21 July 2017.

** Australian Institute of Health and Welfare, Emergency department care 2016–17: Australian hospital statistics

† BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 19 April 2018.

Overall views of the healthcare system and hospital care

One important way to assess system performance is to ask NSW residents about their overall views and perceptions.

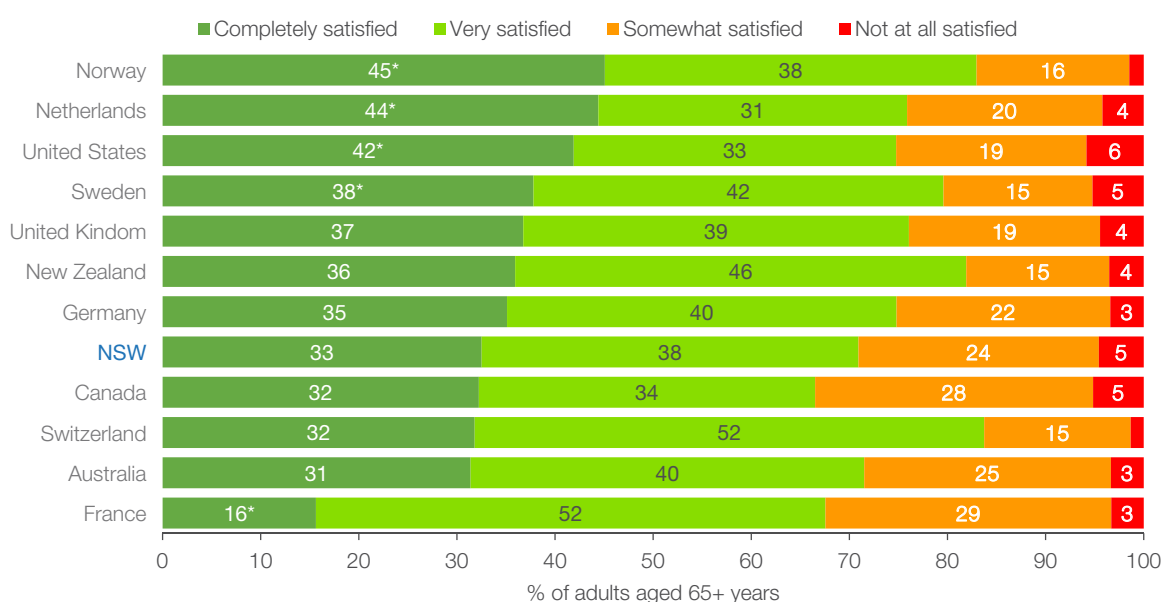
In 2017, one-third (33%) of people aged 65 and over said they were 'completely' satisfied with the quality of healthcare received during the past 12 months – significantly lower than for four comparator countries. An additional 38% said they were 'very satisfied' (Figure 3).

Among NSW adults admitted to a public hospital in 2016, more than six in 10 (65%) said overall, the care they received was 'very good'. Across hospitals, this ranged from 88% to 51%. An additional 28% said the care they received was 'good' (Figure 4).

Emergency department patients were slightly less positive than admitted patients in their overall ratings of care. In 2016-17, the percentage of these patients who said their overall care was 'very good' ranged from 85% to 42% across facilities (Figure 4). These results are consistent with 2015-16 results.

Figure 3 Overall views of healthcare system, adults aged 65+ years, NSW and comparator countries, 2017

Overall, how satisfied are you with the quality of healthcare you have received during the past 12 months?

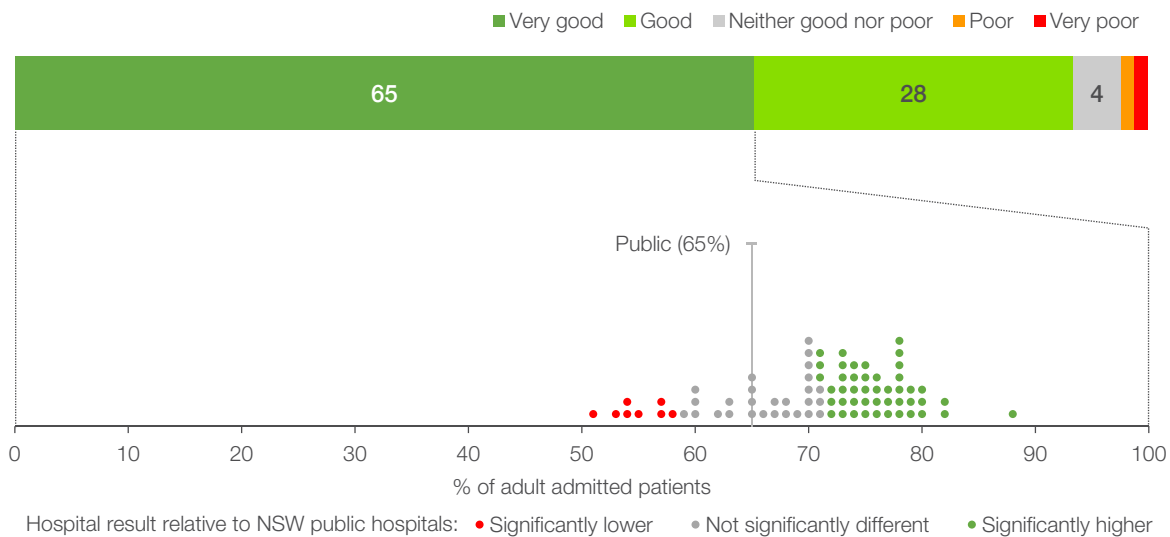


Source: 2017 Commonwealth Fund International Health Policy Survey of Older Adults.

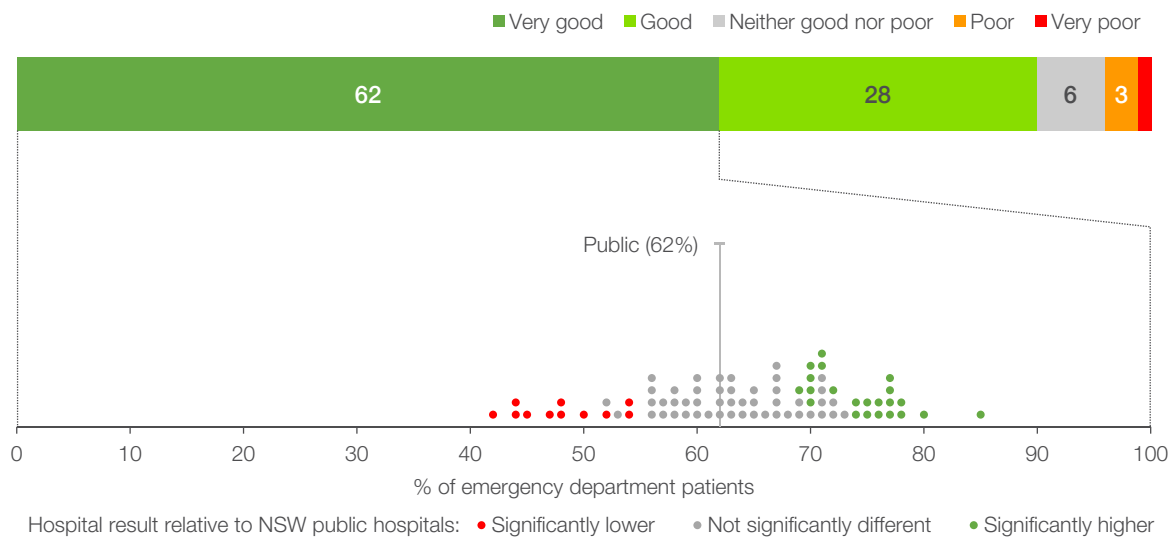
*Estimate is significantly different from NSW.

Figure 4 Overall ratings of care, adult admitted and emergency department patients, NSW public hospital variation, 2016–17

Overall, how would you rate the care you received while in hospital?



Overall, how would you rate the care you received while in the ED?



Source: Bureau of Health Information Adult Admitted Patient Survey 2016, Emergency Department Patient Survey 2016–17.

Aboriginal patients' overall views of experience

For Aboriginal patients, measuring experiences can help assess cultural sensitivity in healthcare delivery.

Among patients admitted to NSW public hospitals in 2016, a lower percentage of Aboriginal people than non-Aboriginal people rated their care as 'very good' (58% vs 65%). This significant difference was not observed in previous years (Figure 5).

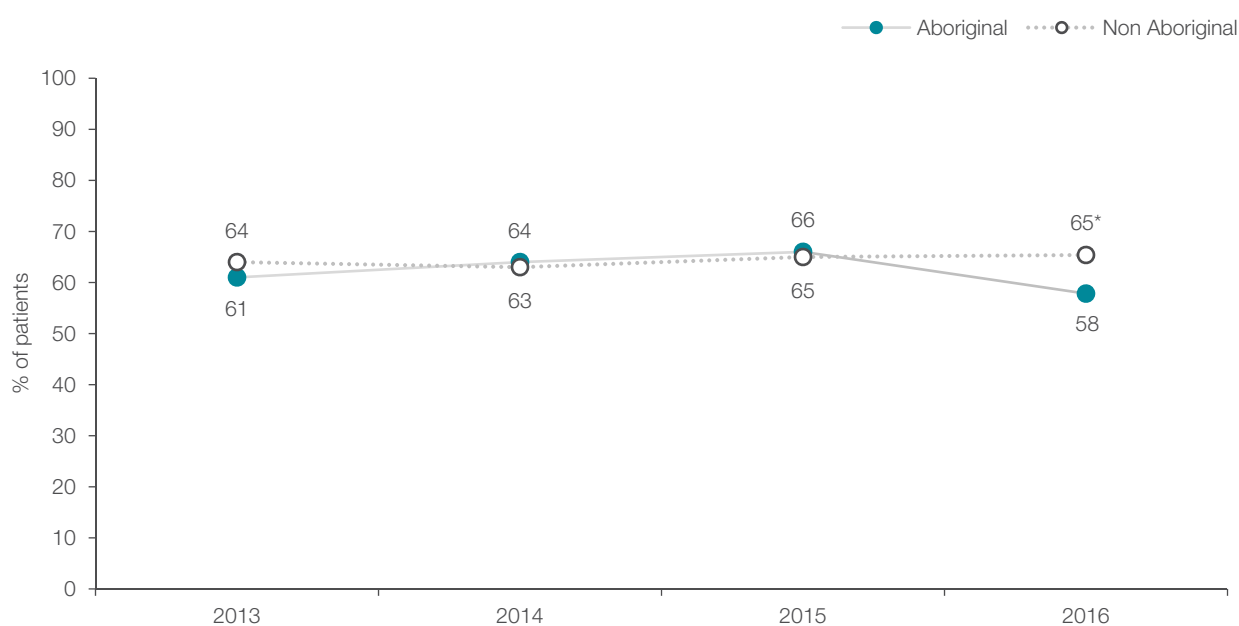
Looking across the various aspects of care addressed in the Adult Admitted Patient Survey 2016, questions about observational elements of care and the physical environment such as hand washing and access to parking showed there were small or no differences in responses between Aboriginal and non-Aboriginal patients. However, when asked about interpersonal or relational aspects of care such as respectfulness of staff, Aboriginal patients were significantly less positive than non-Aboriginal patients (page 52).

When overall ratings of care were examined across three other different care settings (antenatal, labour and birth and cancer outpatient), there were no significant differences between Aboriginal and non-Aboriginal people (Figure 6).

Results over time for emergency department patients show overall ratings for all patients have increased from 2013–14 to 2016–17 and in 2016–17 there has been no significant difference between the result for Aboriginal and non-Aboriginal patients since 2014–15 (Figure 7).

In this year's report, we have examined experiences for maternity patients (page 49) and adult admitted patients (page 51) and show where significant differences between Aboriginal and non-Aboriginal patients exist.

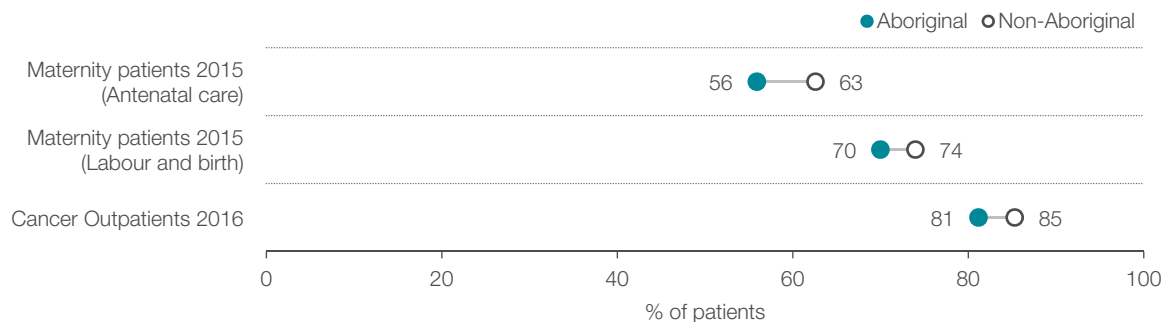
Figure 5 Adult admitted patients who said their care was 'very good' overall, by Aboriginality, NSW public hospitals, 2013 to 2016



Source: Bureau of Health Information Adult Admitted Patient Survey 2013 to 2016.

*Result for Aboriginal patients significantly different to result for non-Aboriginal patients.

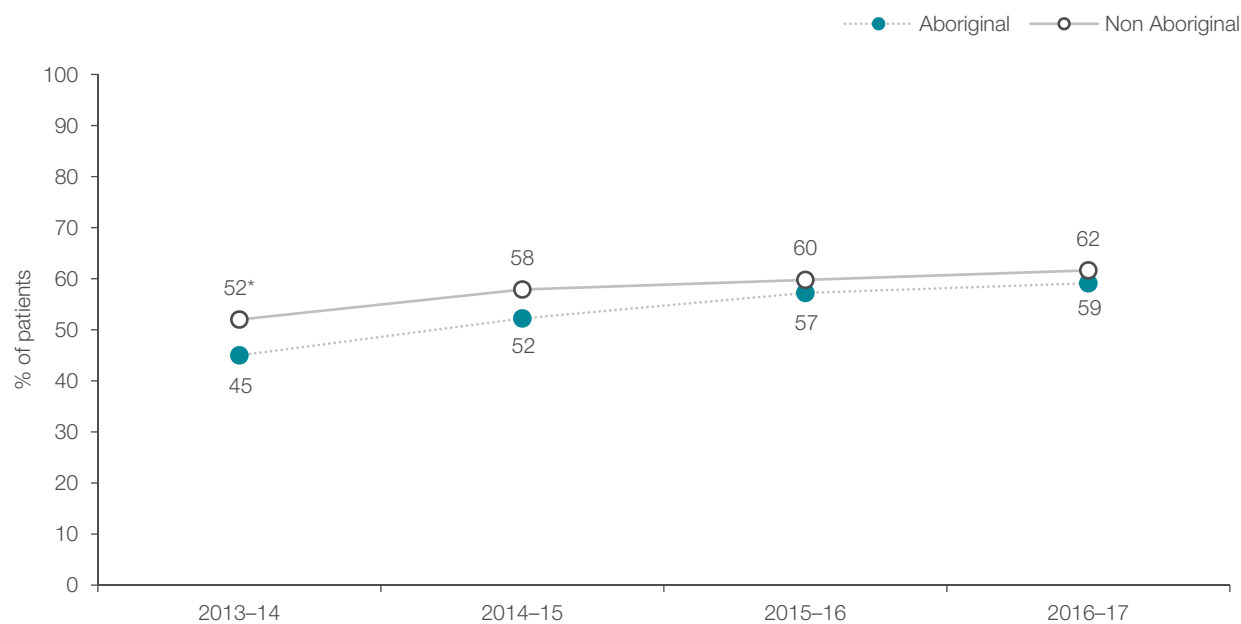
Figure 6 Patients who said their care was 'very good' overall, by service type and Aboriginality, NSW, 2016 or most recent



Source: Bureau of Health Information Patient Survey Program.

Note: There were no significant differences between results for Aboriginal patients and non-Aboriginal patients.

Figure 7 Emergency department patients who said their care was 'very good' overall, by Aboriginality, NSW public hospitals, 2013–14 to 2016–17



Source: Bureau of Health Information Emergency Department Patient Survey 2013–14 to 2016–17.

*Result for Aboriginal patients significantly different to result for non-Aboriginal patients.

Accessibility



Healthcare when and where needed

Accessibility refers to the patients' ability to obtain healthcare services when and where they need them. It reflects the availability of healthcare services, along with consideration of whether the costs to patients in terms of time, effort or money are reasonable or onerous.

The accessibility measures in this chapter compare wait times for care such as ambulance response times, wait times to access care in the ED and wait times for elective surgery. Accessibility can also be measured based on unmet needs, and avoidance of care due to geographical, organisational or economic barriers. Measures in this chapter include out-of-pocket costs for all patients and proximity to specialised treatment centres for dialysis for Aboriginal patients who live in remote areas.

Ambulance and transfer of care

More than nine in 10 patients had their care transferred from paramedics to emergency department staff within 30 minutes

Shorter ambulance response times and timely transfers of care from ambulance to emergency department (ED) staff can improve patient outcomes and experiences of care and increase ambulance availability.

Ambulance response times for code 1 incidents is a national performance indicator in the Productivity Commission's annual *Report on Government Services* (RoGS), which defines 'code 1' as an emergency event and 'response time' as the time between call receipt and the arrival of the first ambulance at the scene. In 2016–17, NSW was among states and territories with longer code 1 response times (Figure 1.1).

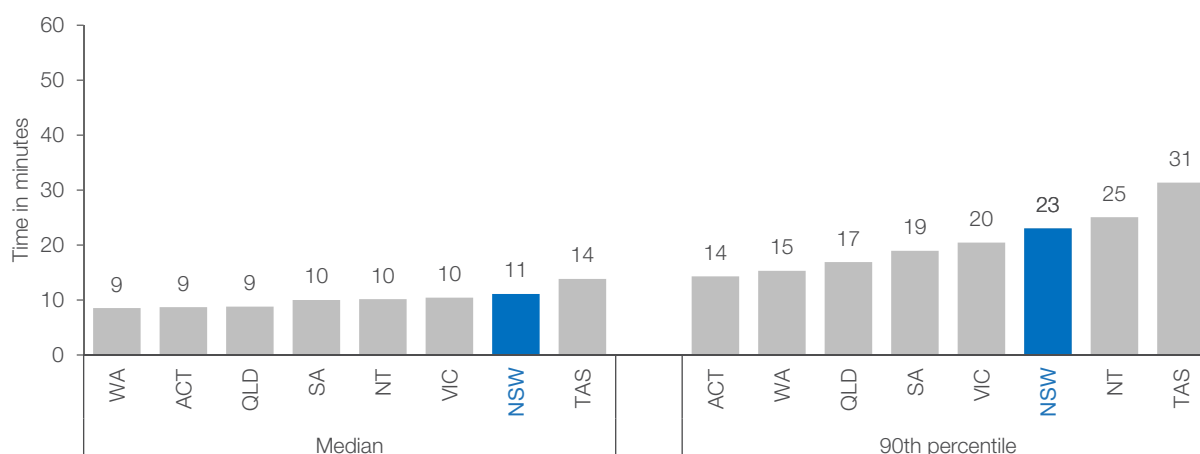
Ambulance stations in NSW are located in geographical units called local response areas (LRAs). LRAs are organised into 18 metropolitan and regional zones. There are four main types of LRAs based on staffing and organisational arrangements: 24-hour, 24-hour (with on-call), non-24-hour and community and volunteer. Similar to 'code 1', in NSW 'priority 1' refers to emergency cases.

In 2016–17, 111 of 147 LRAs (76%) met a 90% threshold for the percentage of priority 1 call to ambulance arrival times within 30 minutes. There is variation across the 18 Ambulance zones in NSW, and most of the LRAs that did not meet this threshold are in regional areas with longer travel times (Figure 1.2).

Following ambulance arrival at an ED, the percentage of patients whose care is transferred from paramedics to ED staff within 30 minutes is a key performance indicator in the NSW Ministry of Health's Service Agreement with local health districts.

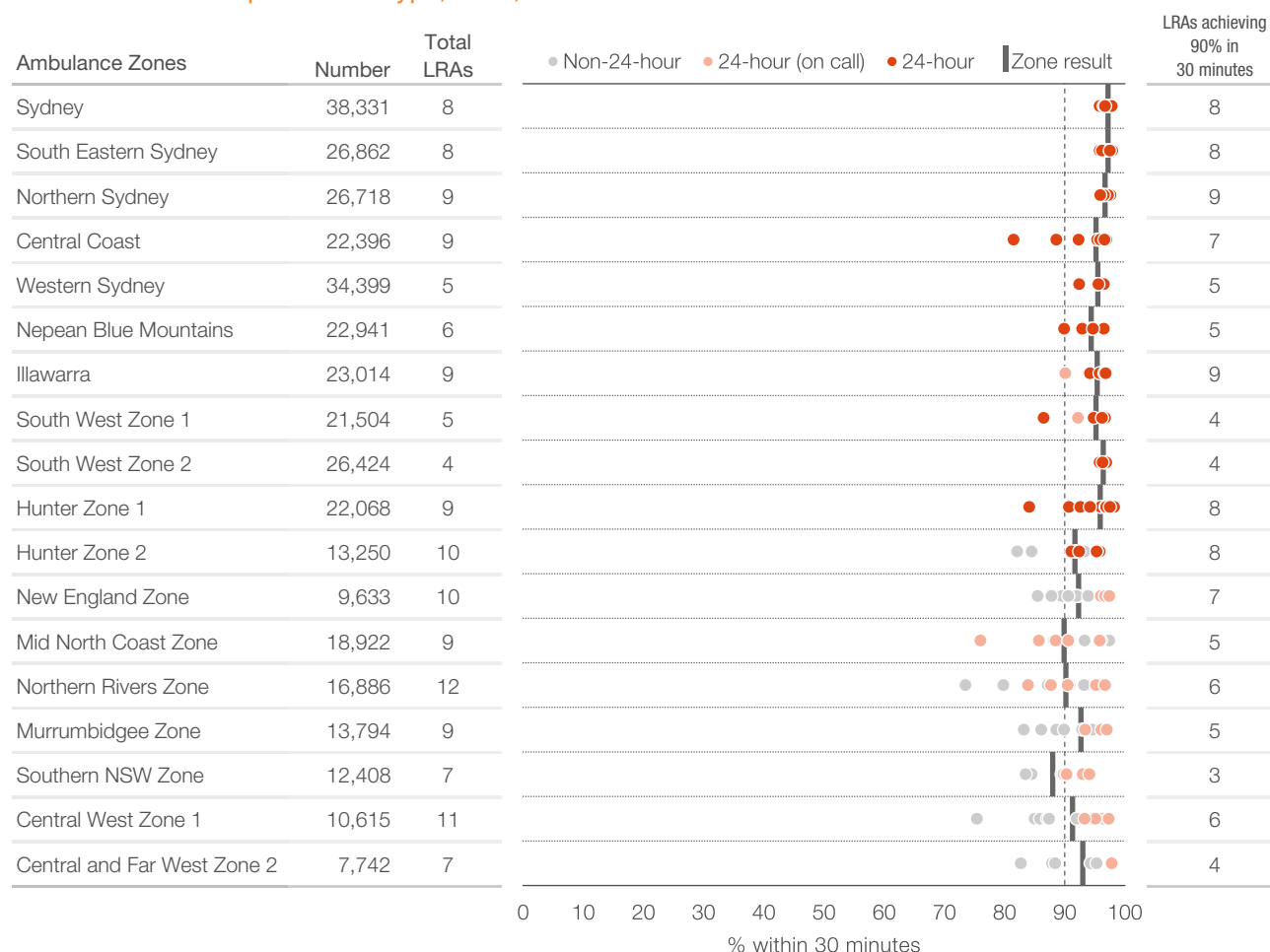
In 2016-17, 91% of patients who arrived at an ED by ambulance in NSW had their care transferred within 30 minutes. Across hospitals, results ranged from 99% to 76% (Figure 1.3).

Figure 1.1 Ambulance code 1 response times, median and 90th percentile, Australian states and territories, 2016–17



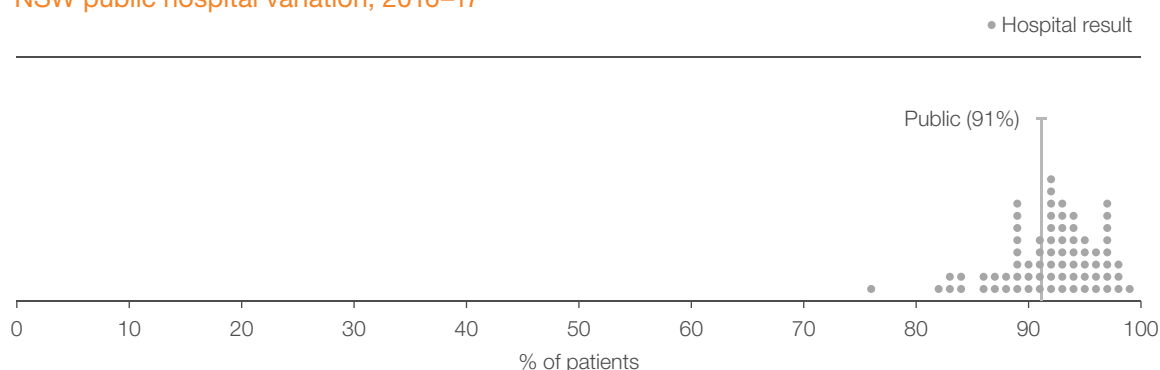
Source: Productivity Commission Report on Government Services 2018, Part E: Health, based on state and territory governments (unpublished).
 Note: Differences across jurisdictions in the geography, personnel mix, and system type for capturing data, affect statewide response times.¹

Figure 1.2 Priority category 1 responses with a call to ambulance arrival time within 30 minutes, by zone and response area type, NSW, 2016–17



Source: BHI analysis of ambulance activity data, NSW Ambulance Computer Aided Dispatch (CAD) System, data provided on 21 July 2017.

Figure 1.3 Patients transported to the ED by ambulance whose care was transferred within 30 minutes, NSW public hospital variation, 2016–17



Source: BHI analysis of transfer of care data, Transfer of Care Reporting System, NSW Health, data extracted 21 July 2017.

Timely emergency department treatment

Nationally, NSW had the highest percentage of emergency department patients whose treatment started within clinically recommended time frames

The timely treatment of patients in emergency departments, according to clinical urgency, is important to meet patient needs and use resources efficiently.

On arrival at the ED, patients are allocated to one of five triage categories based on urgency. For each category, the Australasian College for Emergency Medicine recommends a maximum waiting time within which treatment should start:

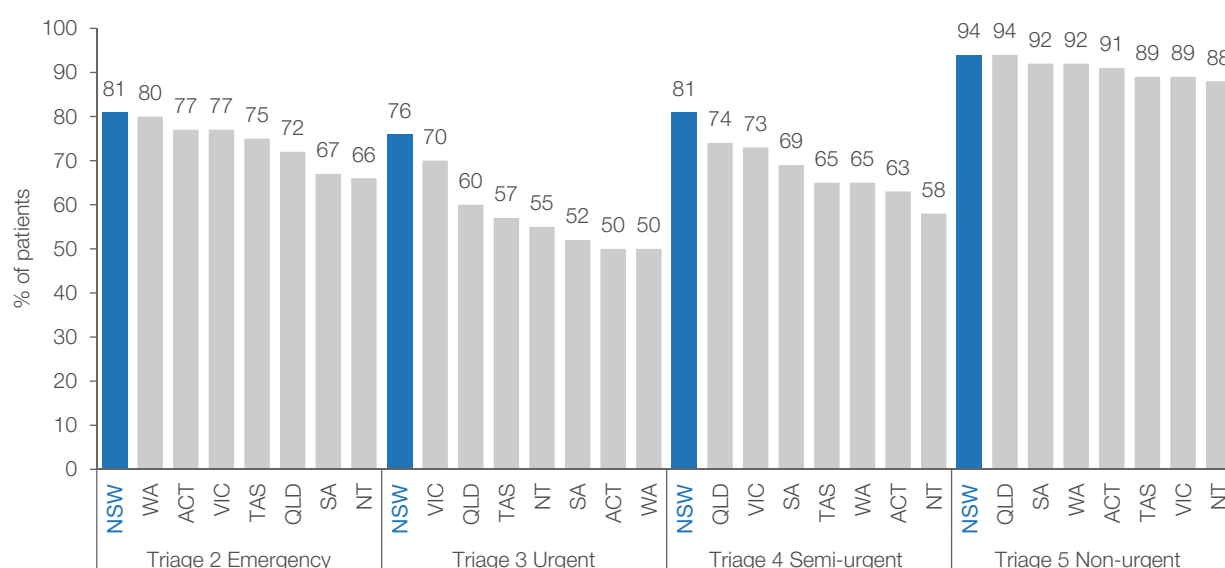
- Triage 1: Resuscitation (within two minutes)
- Triage 2: Emergency (within 10 minutes)
- Triage 3: Urgent (within 30 minutes)
- Triage 4: Semi-urgent (within 60 minutes)
- Triage 5: Non-urgent (within 120 minutes).

The percentage of ED patients seen on time is one of the performance indicators in the Council of Australian Governments' (COAG) National Healthcare Agreement.

In 2016–17, NSW had the highest percentage of patients seen on time across all triage categories relative to all other states and territories (Figure 1.4). In NSW, 81% of triage 2, 76% of triage 3, 81% of triage 4, and 94% of triage 5 patients were seen on time. NSW's performance on this measure was stable from the previous year (data not shown).

The percentage of patients starting treatment on time varied across NSW public hospitals – from 97% to 32% for triage 2 patients (Figure 1.5) and 96% to 33% for triage 3 patients (Figure 1.6). Principal referral hospitals had the lowest percentage of triage 2 and 3 patients starting treatment on time relative to major and district hospitals (Figures 1.5 and 1.6).

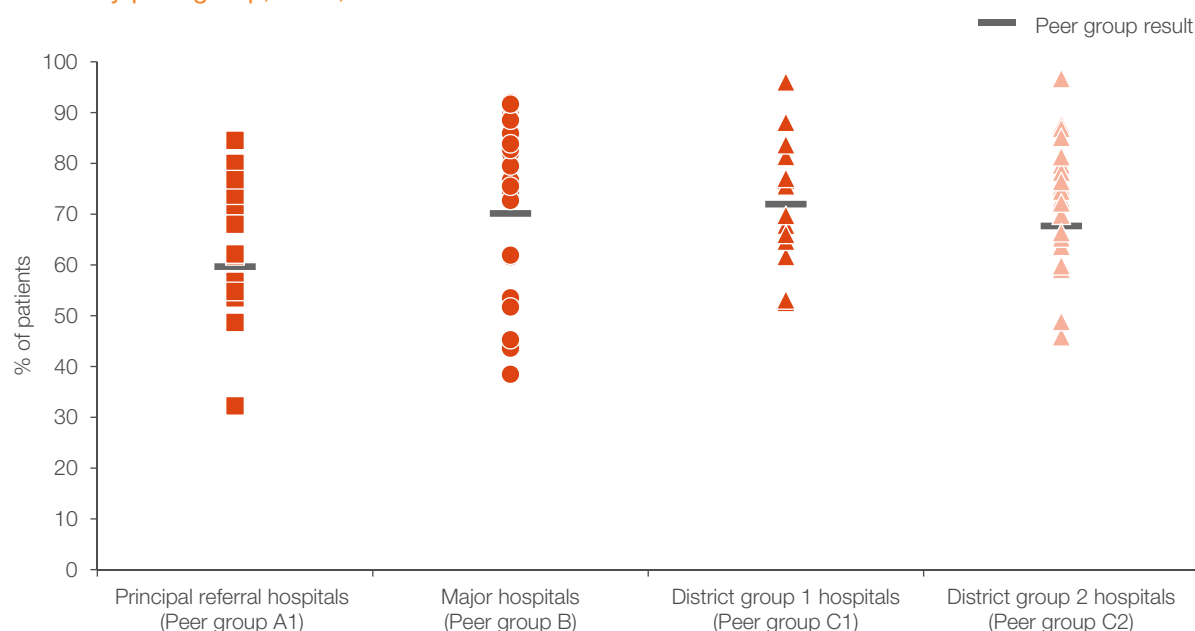
Figure 1.4 Emergency department patients seen on time, by triage category, Australian states and territories, 2016–17



Source: Australian Institute of Health and Welfare, Emergency department care 2016–17: Australian hospital statistics.

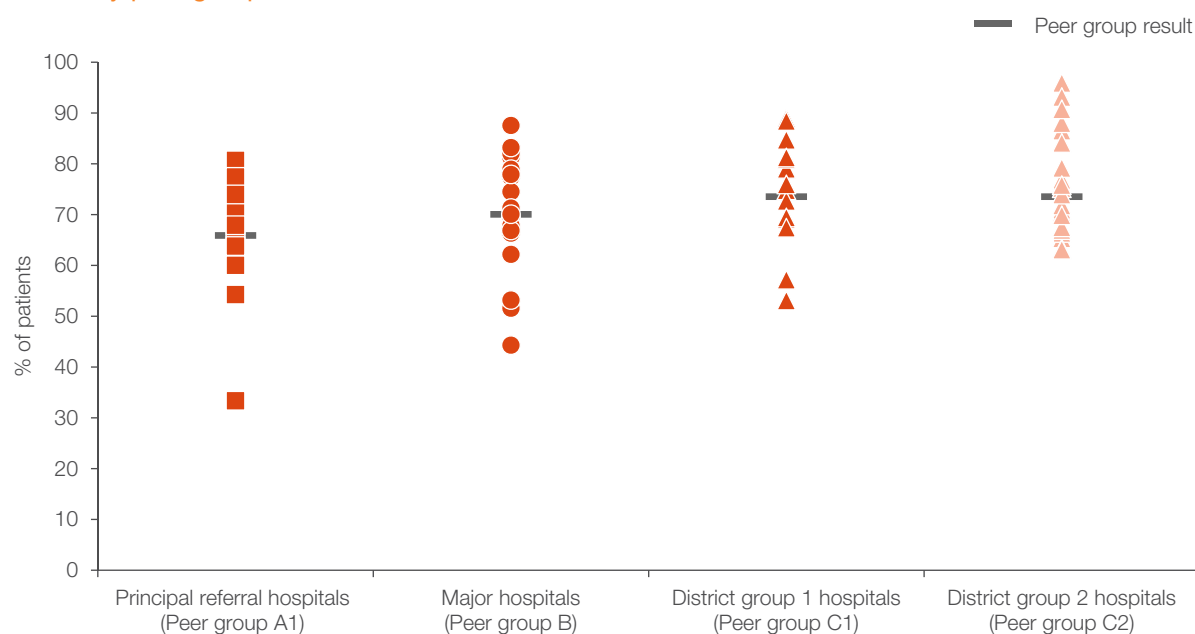
Note: Triage 1 patients are the most urgent and are almost all treated within two minutes. Clinicians are focused on providing immediate and essential care, rather than recording times, therefore times to start treatment are generally not reported. The comparability of emergency department waiting times data across jurisdictions can be influenced by differences in data coverage and clinical practices – in particular, the allocation of cases to urgency categories.²

Figure 1.5 Emergency department triage category 2 patients whose treatment started on time, by peer group, NSW, 2016–17



Source: BHI analysis of Emergency Department Data Collection, Health Information Exchange, NSW Health, data extracted 21 July 2017

Figure 1.6 Emergency department triage category 3 patients whose treatment started on time, by peer group, NSW, 2016–17



Source: BHI analysis of Emergency Department Data Collection, Health Information Exchange, NSW Health, data extracted 21 July 2017.

Note: BHI results differ from those published by AIHW due to the differences in emergency department coverage (related to timeliness and electronic patient data submission).

Time spent in the emergency department

Three quarters of NSW patients spent four hours or less in the ED, the highest proportion nationwide

Longer times spent in the ED are associated with overcrowding and poorer health outcomes. The historic use of a four-hour national target has been associated with improved patient flows and outcomes. However, there are instances when the target is not appropriate and should not overrule clinical judgement.³

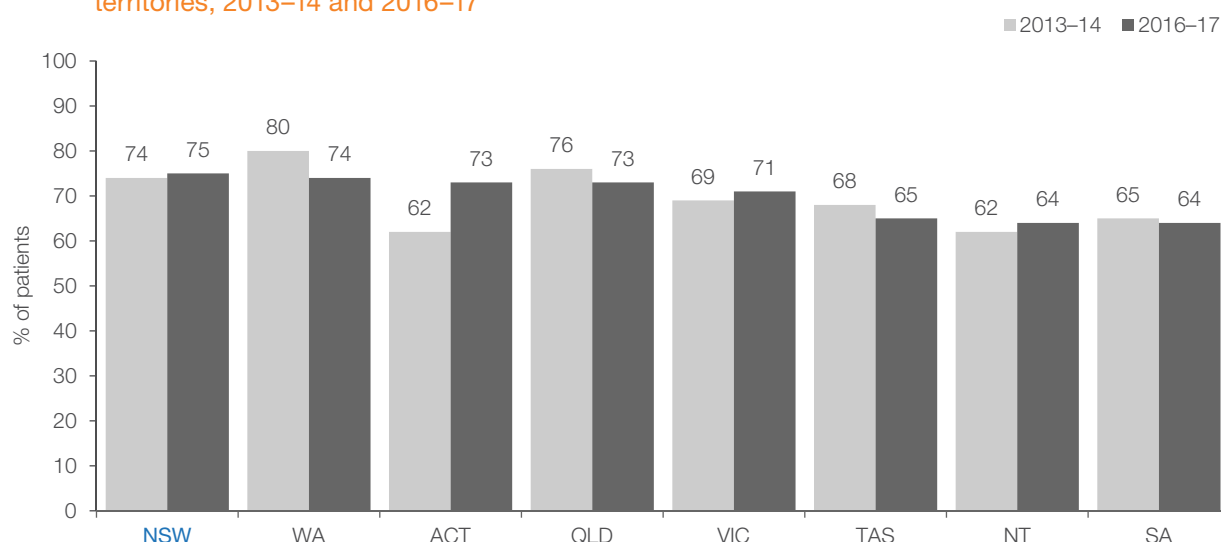
The percentage of patients who spent four hours or less in the ED is one of the performance indicators in the Council of Australian Governments' National Healthcare Agreement. Time spent in the ED is measured from the time the patient presents to the ED to the time they depart.

In 2016–17, 75% of ED patients in NSW spent four hours or less in the ED, the highest percentage nationally, and just above Western Australia, the Australian Capital Territory and Queensland. There was little change in NSW's results between 2013–14 and 2016–17 (Figure 1.7).

Among Australian states and territories in 2016–17, NSW had the shortest median time spent in the ED for all patients (155 minutes or 2hr 35 min) and for patients treated and not admitted (123 minutes or 2hr 3 min). Patients who are treated and admitted usually spend longer in the ED. For these patients, the NSW result was mid-range (274 minutes or 4h 34m) (Figure 1.8).

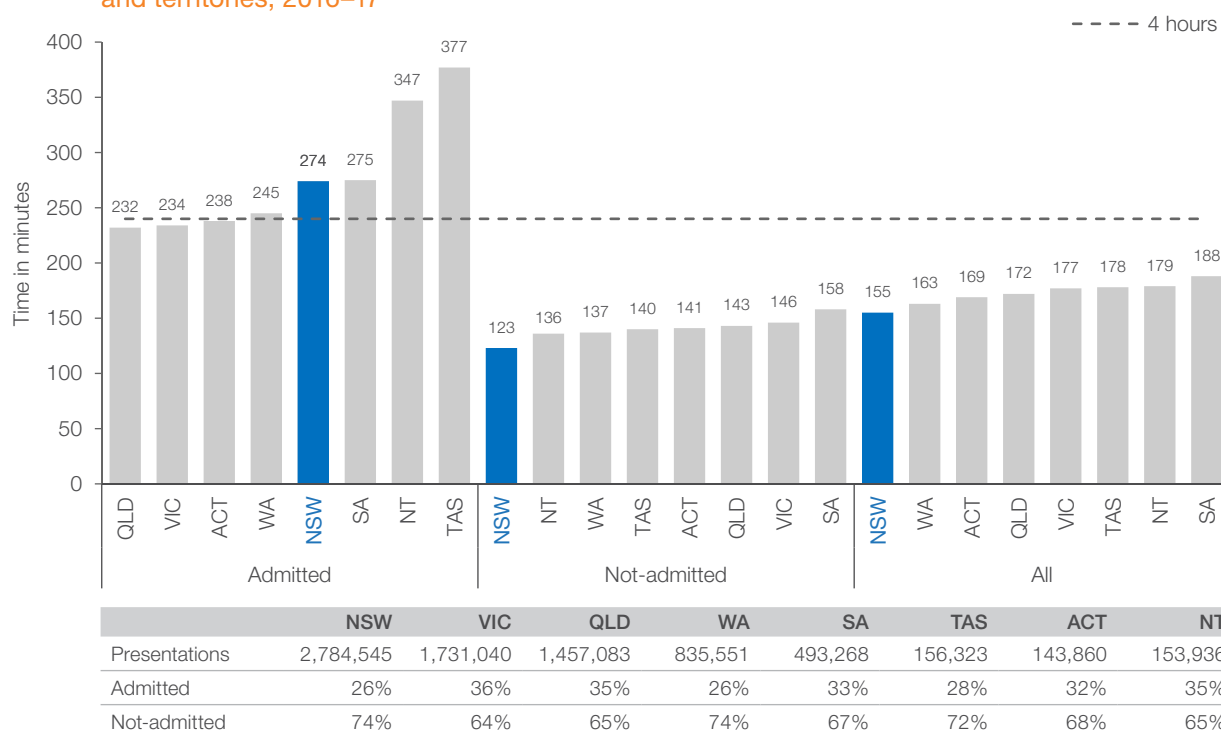
Within NSW, hospital-level results for patients spending four hours or less in the ED ranged from 97% to 53% for all patients and 91% to 18% for patients treated and admitted. District hospitals had the highest percentage of patients who spent four hours or less in the ED compared with principal referral and major hospitals (Figure 1.9).

Figure 1.7 Patients who spent four hours or less in the emergency department, Australian states and territories, 2013–14 and 2016–17



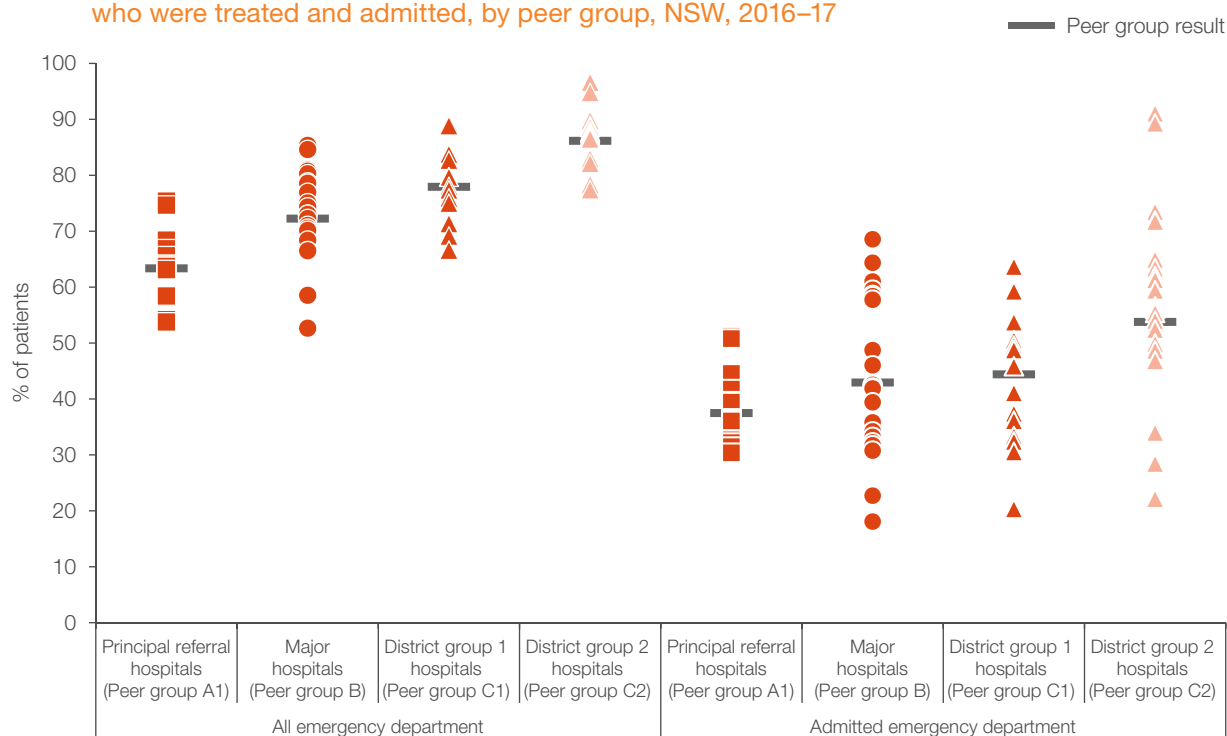
Source: Australian Institute of Health and Welfare, Emergency department care 2016–17: Australian hospital statistics.

Figure 1.8 Median length of time spent in emergency departments, by admission status, Australian states and territories, 2016–17



Source: Australian Institute of Health and Welfare, Emergency department care 2016–17: Australian hospital statistics.

Figure 1.9 Patients who spent four hours or less in the emergency department, all patients and patients who were treated and admitted, by peer group, NSW, 2016–17



Source: BHI analysis of Emergency Department Data Collection, Health Information Exchange, NSW Health, data extracted 21 July 2017.

Note: BHI results differ from those published by AIHW due to the differences in emergency department coverage (related to timeliness and electronic patient data submission).

Patient-reported experiences of emergency care

About one in four emergency department patients in NSW said their condition got worse while waiting to be treated

Many factors can influence a patient's experience of care in the emergency department, such as waiting times and delays in departure. While waiting for treatment in the ED, a patient's condition may deteriorate, meaning an access issue has rendered care less effective. Delays in departure from the ED may cause frustration.

In NSW in 2016–17, 62% of adults who visited an ED rated the care they received as 'very good' and 28% as 'good' (see Figure 4 page 16).

Most ED patients started treatment within recommended time frames and 75% spent four hours or less in the ED (see Figure 1.4 page 23 and Figure 1.7 page 25).

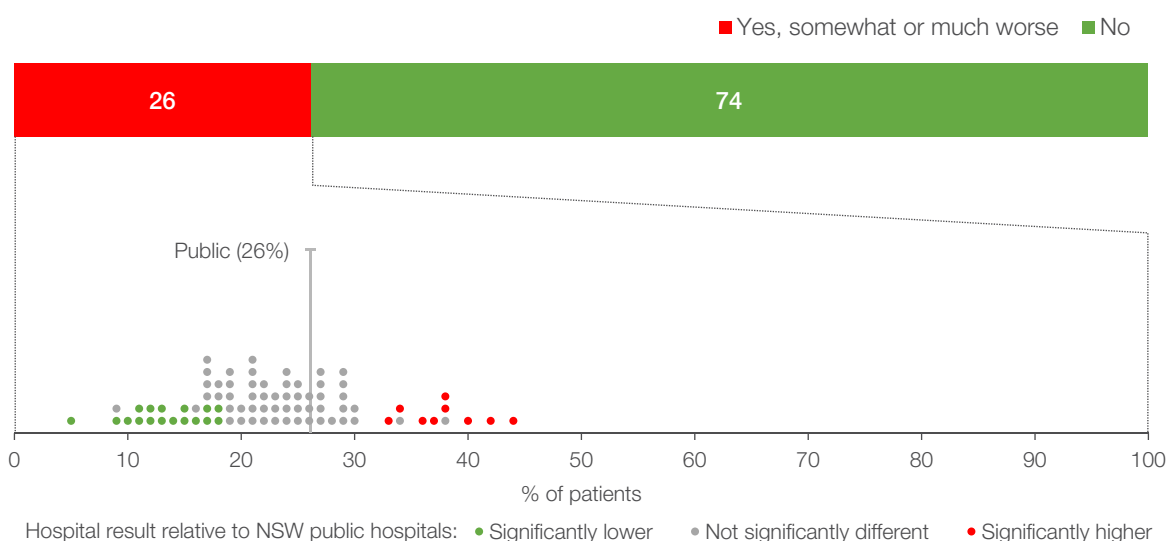
In 2016–17, one-quarter of adults (26%) said their condition got worse while waiting to be treated in an emergency department. This result was the same as the previous year. Across hospitals, the percentage ranged from 5% to 44% (Figure 1.10).

In 2016–17, 18% of adults who visited an ED in NSW said their departure from the ED was delayed. This result was unchanged from the previous year. Across hospitals, the percentage ranged from 3% to 33% (Figure 1.11).

Of the patients who were delayed, 73% said a member of staff explained the reason for the delay. The most common reasons for delay were waiting for a bed in a ward (36%) and waiting to see the doctor (33%) (Figure 1.12).

Figure 1.10 Patients who said their condition got worse while waiting to be treated in the emergency department, NSW public hospital variation, 2016–17

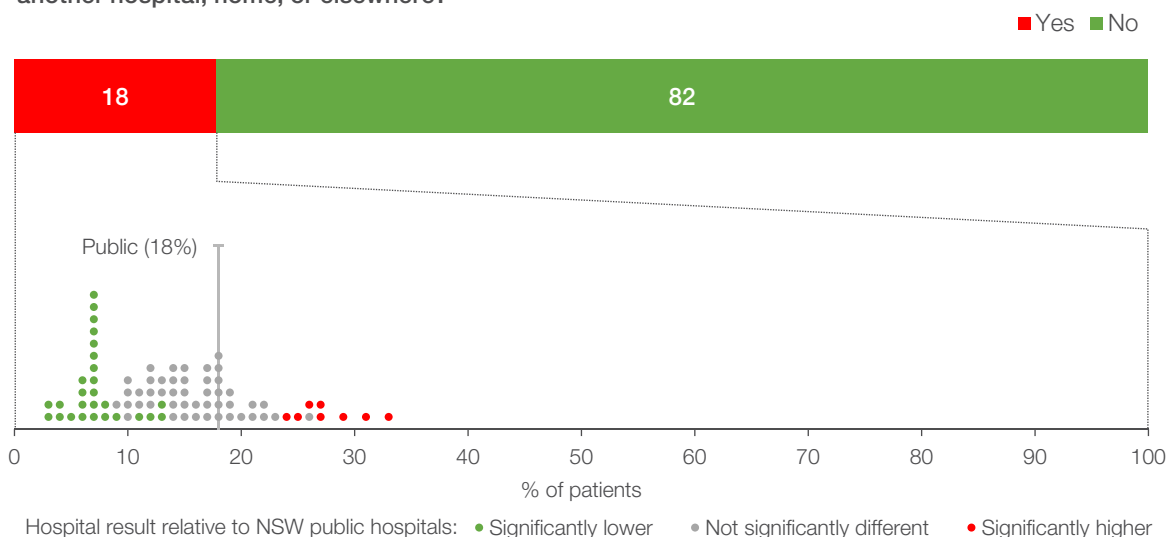
While you were waiting to be treated, did your symptoms or condition get worse?



Source: Bureau of Health Information Emergency Department Patient Survey 2016–17.
Note: Groups reporting 'much worse' (5%) and 'somewhat worse' (21%) were combined.

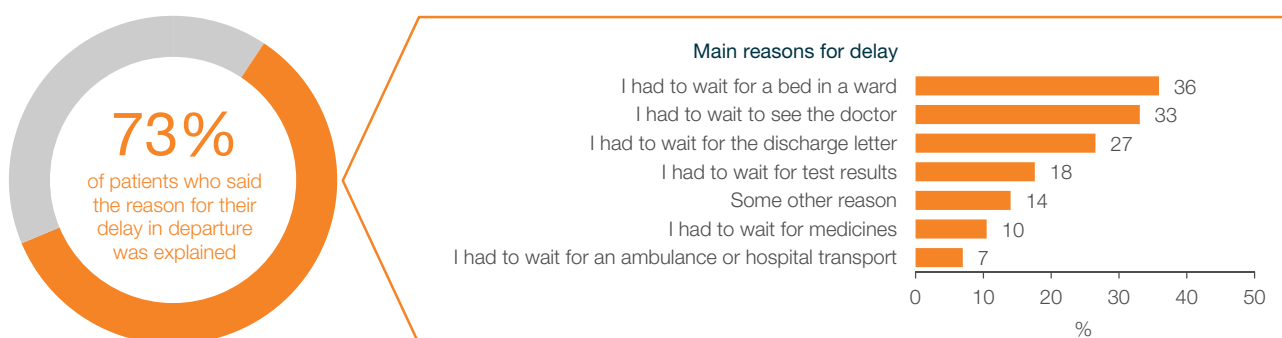
Figure 1.11 Patients receiving treatment who said their departure from the emergency department was delayed, NSW public hospital variation, 2016–17

Was your departure from the ED delayed – that is, before leaving the ED to go to a ward, another hospital, home, or elsewhere?



Source: Bureau of Health Information Emergency Department Patient Survey 2016–17

Figure 1.12 Emergency department patients whose delayed departure was explained by staff and the main reasons given, NSW, 2016–17



Source: Bureau of Health Information Emergency Department Patient Survey 2016–17.

Note: Respondents may select multiple categories so percentages do not sum to 100.

Financial barriers to accessing healthcare

About 15% of NSW adults aged 65+ years had problems paying medical bills

Gaps in financial coverage for healthcare can have important consequences for accessibility.

In Australia, financial coverage for healthcare is provided by a mix of national, state/territory and local government funding and private health insurance. Gaps in financial coverage are bridged by out-of-pocket spending by individuals. If out-of-pocket costs are too high, some people may forgo preventive care or treatment and their health may deteriorate.

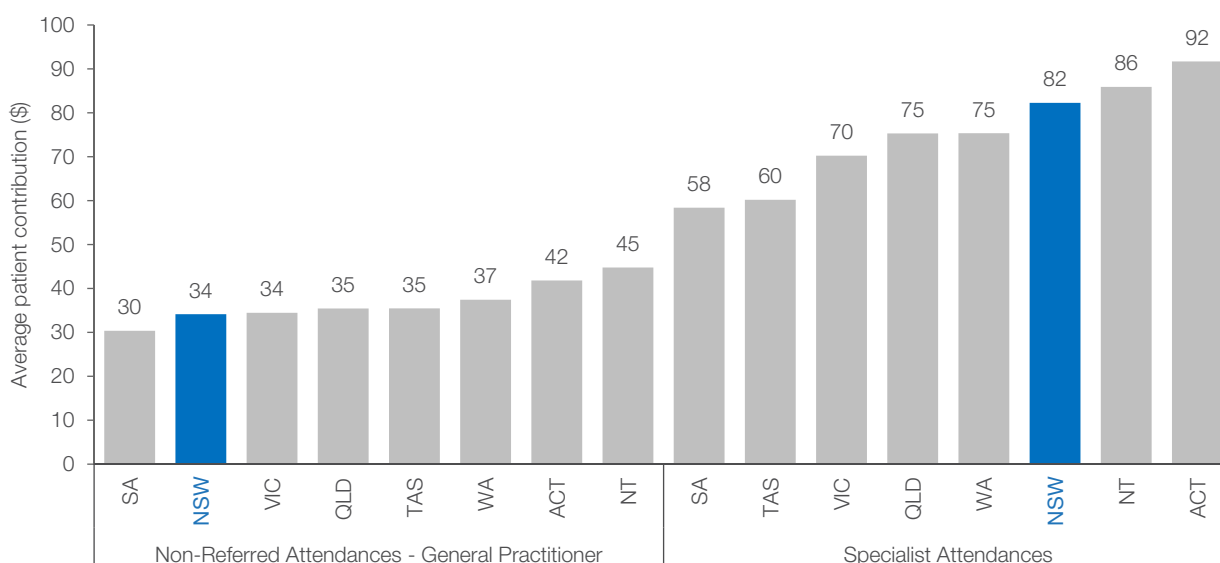
In 2016–17, NSW had the third-highest average out-of-pocket costs for medical specialists (\$82) compared with other states and territories (Figure 1.13). In contrast, the average out-of-pocket cost for General Practitioners (\$34) was at the lower end of the range across states and territories (Figure 1.13).

In the 2017 Commonwealth Fund International Health Survey of older adults, 14% of NSW adults aged 65+ years said they skipped care (prescription, consultation or treatment) due to cost, the second highest percentage among comparator countries. Furthermore, 15% said they had problems paying medical bills, the highest percentage among comparator countries (Figure 1.14).

In the 2016–17 ABS Patient Experience Survey of all adults, 4% of NSW adults said they delayed seeing or did not see a general practitioner due to cost. The result was 8% for a medical specialist and 17% for a dental professional (Figure 1.15).

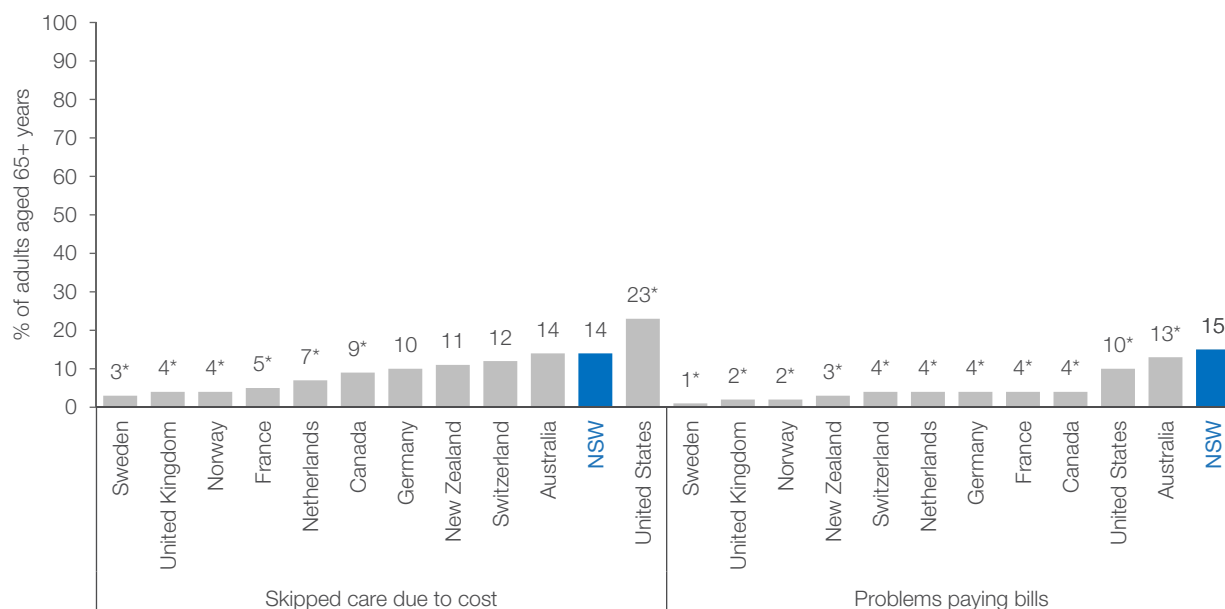
When stratified by age, these results were higher for people aged 15–64 years compared with people aged 65+ years, meaning younger adults were more likely than seniors to report skipping care due to cost (Figure 1.15).

Figure 1.13 Medicare Benefits Scheme average patient contribution (\$) per service for out-of-hospital and patient-billed services, Australian states and territories, 2016–17



Source: Australian Department of Health, Annual Medicare Statistics.

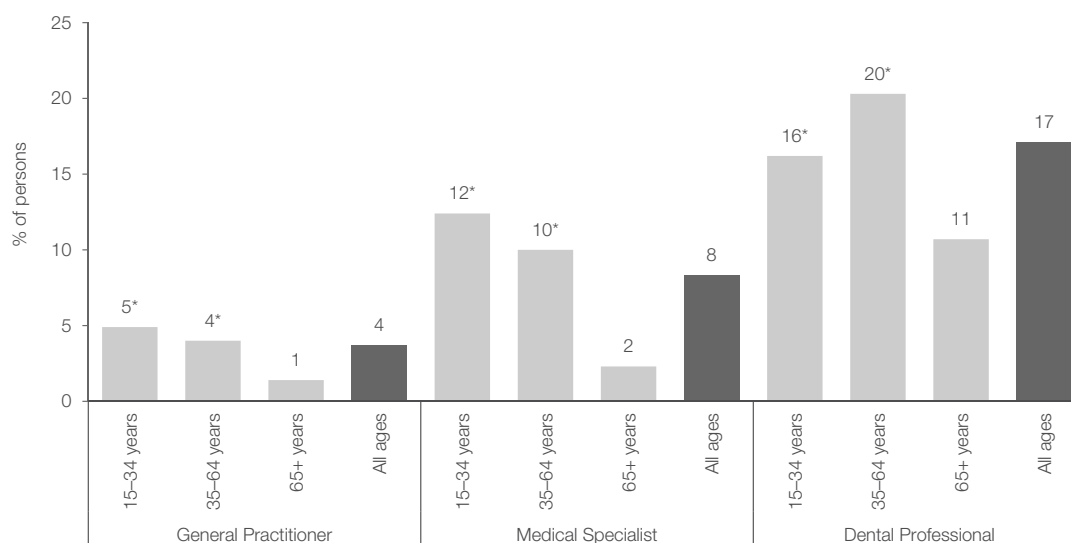
Figure 1.14 Adults aged 65+ years who said they skipped care (prescription, consultation or treatment) due to cost, or had problems paying medical bills, NSW and comparator countries, 2017



Source: 2017 Commonwealth Fund International Health Policy Survey of Older Adults.

*Estimate is significantly different from NSW.

Figure 1.15 Persons who at least once delayed seeing or did not see a health professional due to cost, by age group, NSW, 2016–17



Source: Australian Bureau of Statistics, Patient Experience Survey 2016–17 (customised request).

*Estimate is significantly different from oldest age group (65+ years).

Equity lens: Elective surgery

Most Aboriginal and non-Aboriginal patients received elective surgery within the recommended time.

Timely access to elective surgery is important to reduce the burden of disease and injury for patients. It is particularly important for Aboriginal people who experience a higher burden of disease than non-Aboriginal people.

Elective surgical procedures are classified into one of three urgency categories based on the time frame in which the procedure is clinically indicated, as judged by the treating clinician:

- Category 1: Urgent (30 days)
- Category 2: Semi-urgent (90 days)
- Category 3: Non-urgent (365 days).⁴

The percentage of procedures performed on time has increased in NSW since 2011–12 but has been fairly stable in the last three years for all patients in all urgency categories (Figure 1.16).

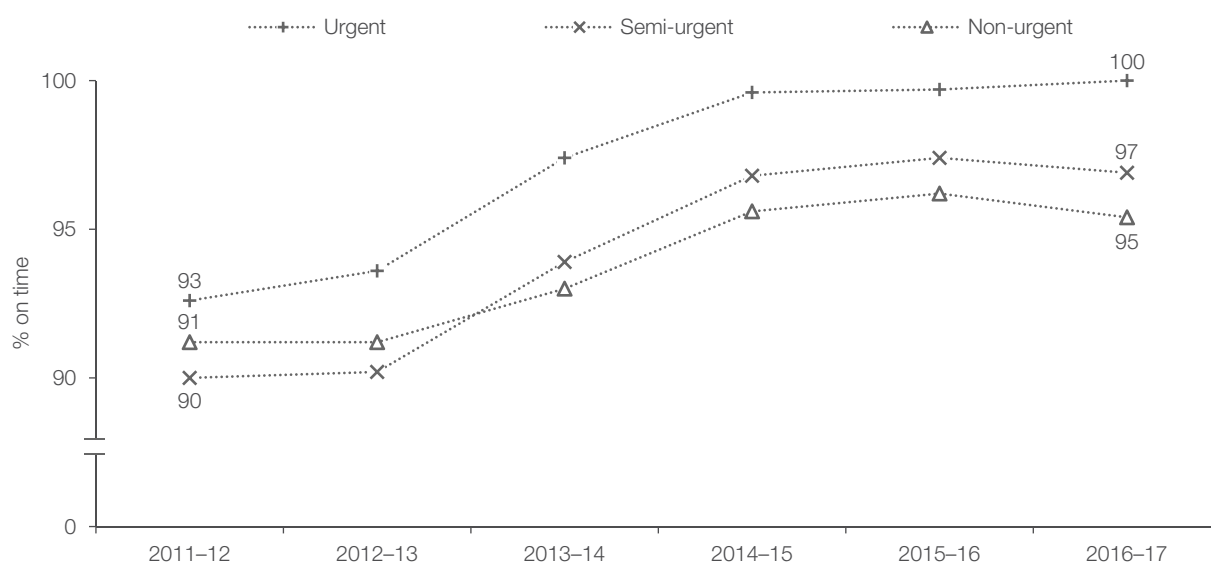
In 2016–17, nearly 100% of urgent, 97% of semi-urgent, and 95% of non-urgent procedures were performed on time for both Aboriginal and non-Aboriginal patients (data not shown).

The timeliness of elective surgery can also be measured by median waiting times. Overall, Aboriginal patients had a shorter median waiting time for urgent surgery, but longer median waiting times for semi-urgent and non-urgent surgery compared with non-Aboriginal patients (Figure 1.17).

When stratified by remoteness of patient residence, Aboriginal patients had shorter median waiting times for urgent surgery in all regions. Median waiting times for semi-urgent and non-urgent surgery were similar for Aboriginal and non-Aboriginal patients in all regions, with the exception of non-urgent surgery in major cities, where it was longer for Aboriginal patients (Figure 1.17).

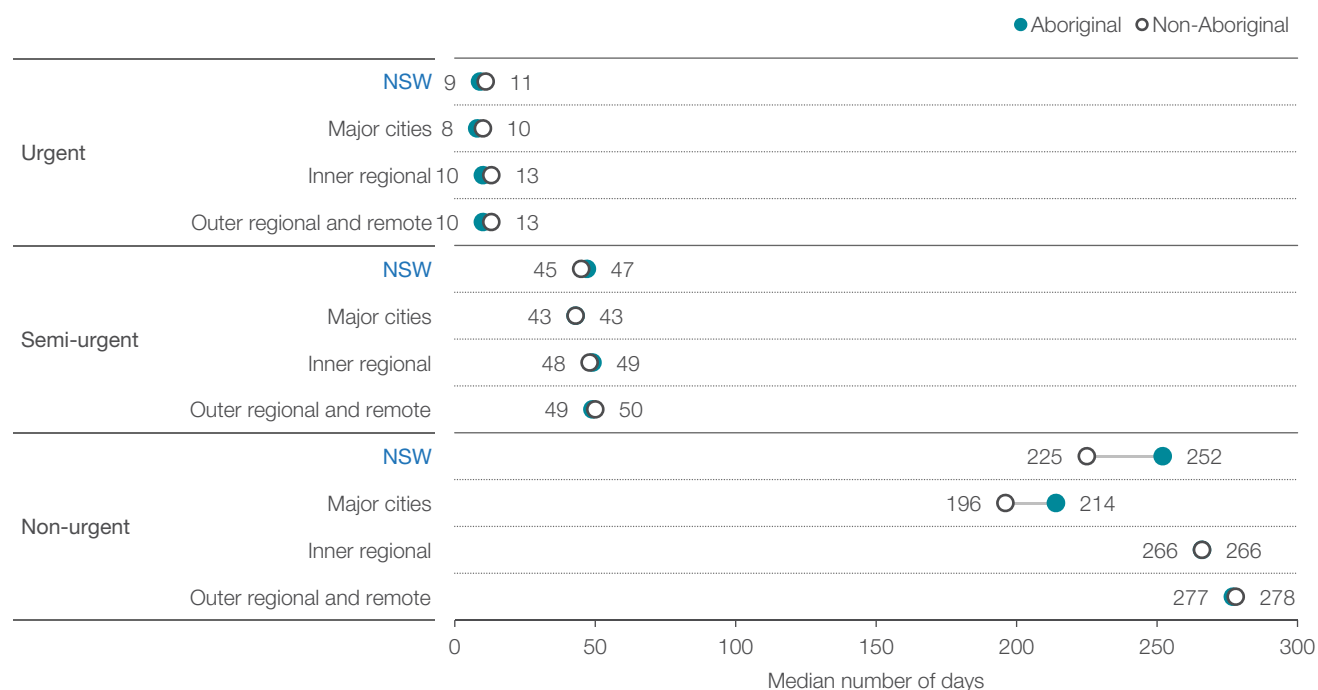
Looking at common elective surgical procedures, Aboriginal patients had longer median waiting times than non-Aboriginal patients for total hip and knee replacement surgery and cataract extraction. However, Aboriginal patients had shorter median waiting times for coronary artery bypass graft (Figure 1.18)

Figure 1.16 Elective surgical procedures performed on time, by urgency category, NSW public hospitals, 2011–12 to 2016–17



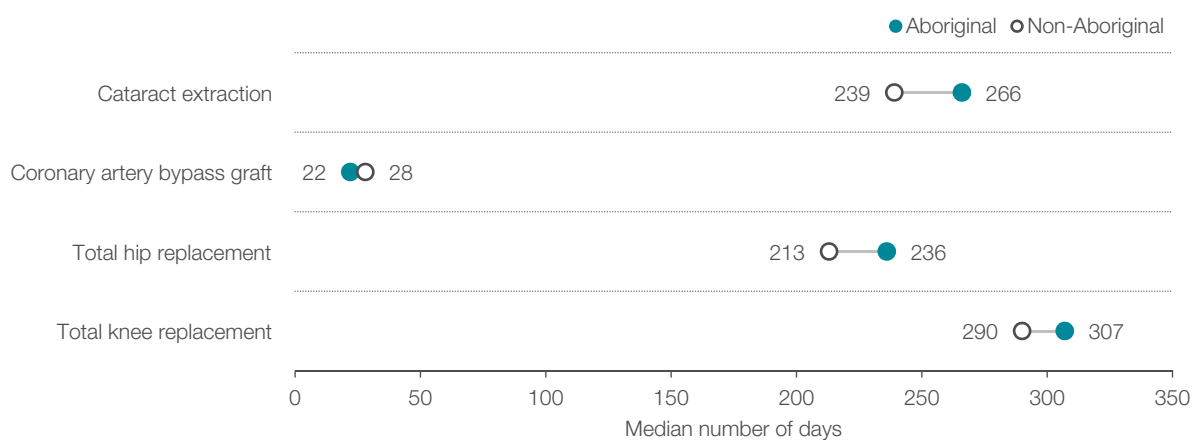
Source: BHI analysis of elective surgery waiting list data, Waiting List Collection On-line System, NSW Health, data extracted 18 July 2017.

Figure 1.17 Median waiting times for elective surgical procedures, by urgency category, remoteness of residence and Aboriginality, NSW public hospitals, 2016–17



Source: BHI analysis of elective surgery waiting list data, Waiting List Collection On-line System, NSW Health, data extracted 18 July 2017.

Figure 1.18 Median waiting times for selected elective surgical procedures, by Aboriginality, NSW public hospitals, 2016–17



Source: BHI analysis of elective surgery waiting list data, Waiting List Collection On-line System, NSW Health, data extracted 18 July 2017.

Equity lens: End-stage kidney disease

Aboriginal people have higher need but poorer access to transplantation

Access to appropriate care for end-stage kidney disease is particularly important for Aboriginal people because the national incidence rate of this disease is almost five times as high among Aboriginal people compared with non-Aboriginal people.⁵

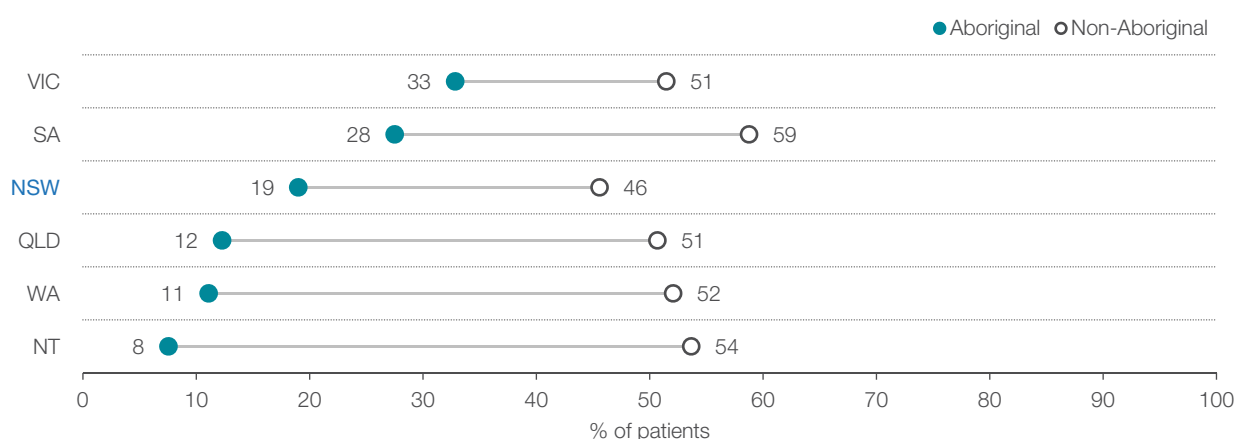
Chronic kidney disease is the occurrence of kidney damage or reduced kidney function that lasts for at least three months. Early detection and management can reduce the risk of further deterioration of kidney function, as well as cardiovascular disease.

If the condition progresses to end-stage kidney disease, the optimal treatment is kidney transplantation where this is appropriate. Compared with the other treatment option of dialysis, it promotes longer life expectancy, better quality of life and lower costs.⁶

Dialysis can prolong the lives of people waiting for a kidney transplant. It may also be the only treatment option for people not considered suitable candidates for transplantation.

The prevalence of kidney transplant recipients is lower among Aboriginal patients throughout Australia. In NSW, 19% of Aboriginal patients receiving treatment for end-stage kidney disease had a functioning kidney transplant at the end of 2016. This rate was lower than two of five other states where there are comparable data. By contrast, the rate was 46% for non-Aboriginal patients (Figure 1.19).

Figure 1.19 Patients with end-stage kidney disease who had a functioning renal transplant at the end of 2016, by Aboriginality, Australian states and territories

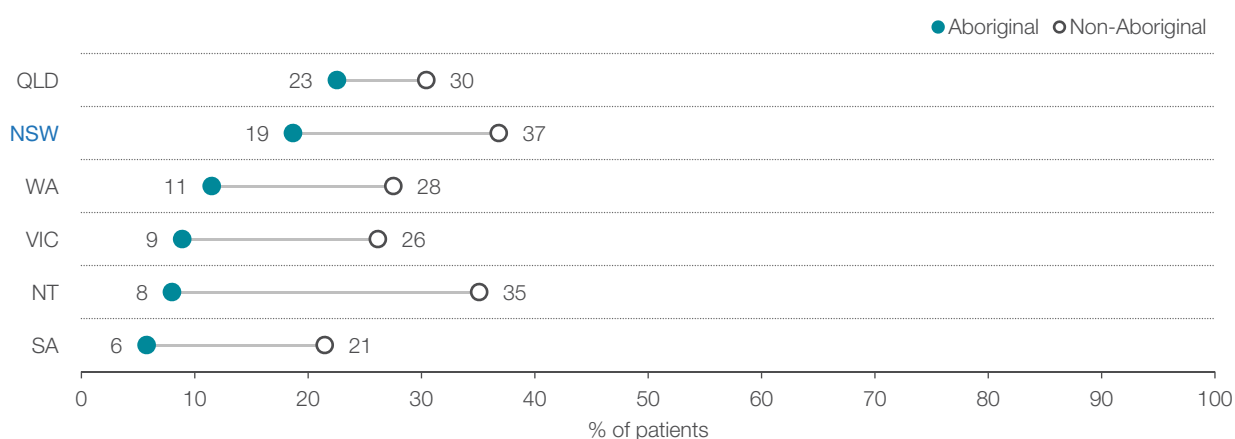


Source: Australia & New Zealand Dialysis and Transplant Registry (ANZDATA).

Aboriginal people are also less likely to receive dialysis at home. In NSW at the end of 2016, 19% of Aboriginal patients receiving dialysis were undergoing the treatment at home. This was one of the higher rates among Australian states and territories. By contrast, the rate was 37% among non-Aboriginal patients (Figure 1.20).

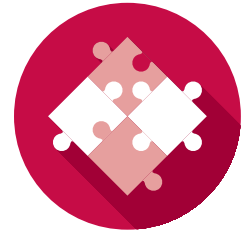
Many Aboriginal people have expressed a preference to receive care close to home.⁷ However, many Aboriginal patients live in areas with neither dialysis nor transplant facilities. Those living in remote areas must leave their families and communities to access dialysis treatment in larger cities. The impact of this dislocation is a lack of social support, and social and cultural isolation.^{7,8} The provision of care closer to where Aboriginal people live is recommended.^{7,8}

Figure 1.20 Patients with end-stage kidney disease receiving dialysis who were having the treatment at home at the end of 2016, by Aboriginality, Australian states and territories



Source: Australia & New Zealand Dialysis and Transplant Registry (ANZDATA).

Appropriateness



The right healthcare in the right way

Appropriateness refers to the extent to which patients receive services that respond to their health needs, social circumstances and reasonable expectations regarding how they want to be treated and cared for. Appropriate healthcare translates into people receiving the right healthcare, the right way.

Appropriateness measures in this chapter that focus on whether healthcare services are provided to patients in line with the evidence base and best-practice models of care – was ‘the right care’ delivered – include hip fracture surgery and knee arthroscopy. Appropriateness measures that focus on the way in which healthcare was delivered and encompass technical proficiency and patient experiences – was healthcare provided in ‘the right way’ – include breast cancer screening, discharge from hospital, mental health care seclusion rates and care in the community, and Aboriginal patients’ ratings of culturally safe care.

Hip fracture surgery

Nine in 10 patients who needed hip fracture surgery had the procedure within two days of admission

Delays to hip fracture surgery can result in prolonged pain and discomfort and poor outcomes. Surgery within 48 hours has been found to be associated with a clinically significant reduction in mortality, increased return to independent living, reduced pressure ulcers and reduced complications.¹

In line with international best practice, the Australian Commission on Safety and Quality in Health Care (ACSQHC) Hip Fracture Clinical Care Standard recommends that patients hospitalised with a hip fracture should undergo surgery within 48 hours of admission to hospital.

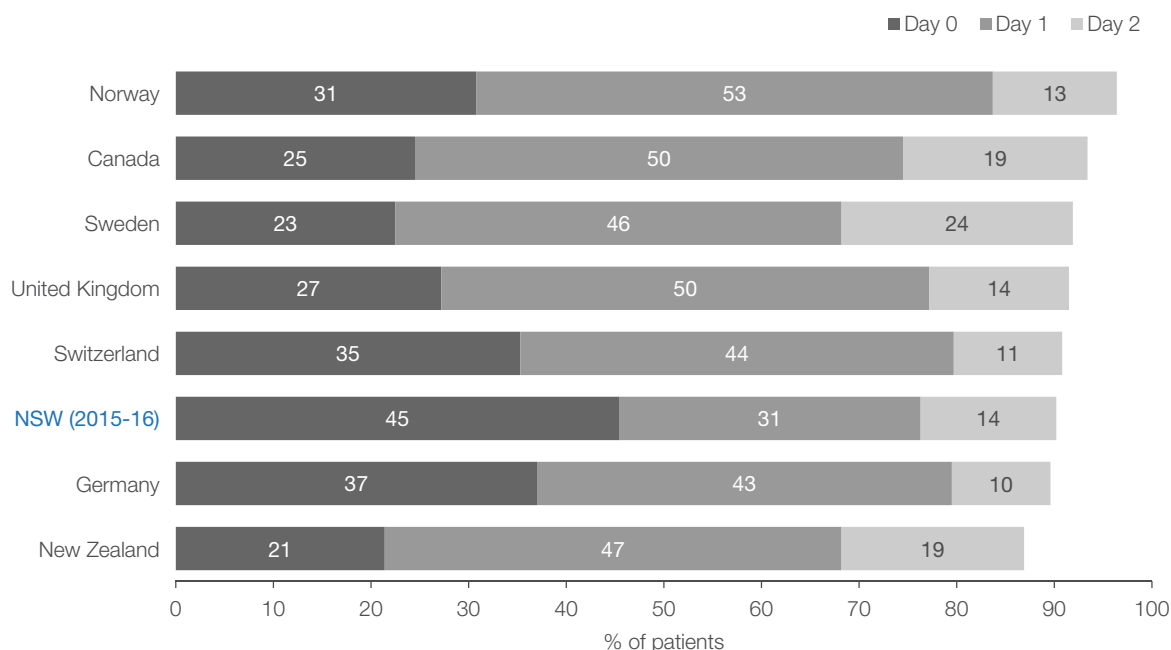
In NSW in 2015–16, 90% of patients aged 65+ years who underwent hip fracture surgery in a public hospital had their surgery initiated within two calendar days of admission to hospital (Figure 2.1). When analysed by day, 45% of patients in NSW had their surgery initiated on the same day as hospital admission, 31% the first day after admission, and 14% the second day after admission. NSW had the highest percentage of patients with surgery initiated on the same day as admission among comparator countries. For the percentage of patients with surgery initiated by the end of the first day and the end of the second day after admission, NSW was mid-range among comparator countries.

One year later, in 2016–17, 92% of patients had their hip fracture surgery initiated within two calendar days of admission to a NSW public hospital. This varied across public hospitals, from 100% to 80% (Figure 2.2).

Note on indicator definition and data comparability

As of 2015, the OECD defined this indicator as the percentage of hip fracture surgery among patients aged 65+ years, with surgery initiated within two calendar days of hospital admission (including days zero, one and two). This has resulted in a change of BHI methodology. As such, comparisons with years prior to 2015–16 should not be made. While clinical guidelines stipulate that hip fracture surgery should be performed within 48 hours, the OECD define the indicator in terms of days because some countries do not have data on procedure time. It is also not available in the data source used by BHI. The OECD definition of hip fracture surgery within two calendar days means that some surgeries that occurred after 48 hours will be counted. An analysis of surgery by day is provided to better understand the timeliness of surgery.

Figure 2.1 Hip fracture surgery initiated within two calendar days of hospital admission, patients aged 65+ years, NSW public hospitals and comparator countries, 2015 or nearest year

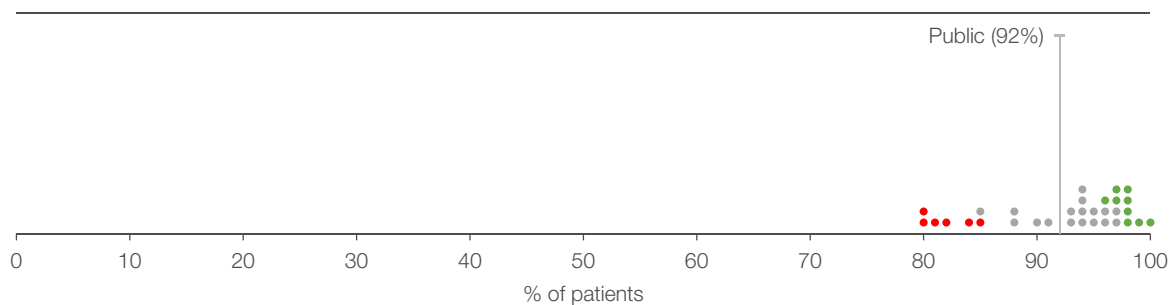


Source: OECD Health Statistics 2017. BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 30 May 2018.

Note: The percentage is higher than reported in previous years, due to changes in the definition of the indicator. Procedure date is not available for secondary procedures in the data source used by BHI, so this indicator only includes episodes where the surgery was recorded as the principal procedure. Private hospital data are not included.

Figure 2.2 Hip fracture surgery initiated within two calendar days of hospital admission, patients aged 65+ years, NSW public hospital variation, 2016–17

Hospital result relative to NSW public hospitals: ● Significantly lower ● Not significantly different ● Significantly higher



Source: BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 22 March 2018.

Knee arthroscopy

About two-thirds of knee arthroscopy procedures were performed on patients for whom there is little benefit

There is evidence that knee arthroscopy is of little benefit for patients with osteoarthritis.^{2,3,4} Arthroscopy is also not recommended for older patients with knee pain, with or without symptoms of osteoarthritis. Systematic reviews have identified small, short-term benefits that were outweighed by the potential for serious complications.^{5,6}

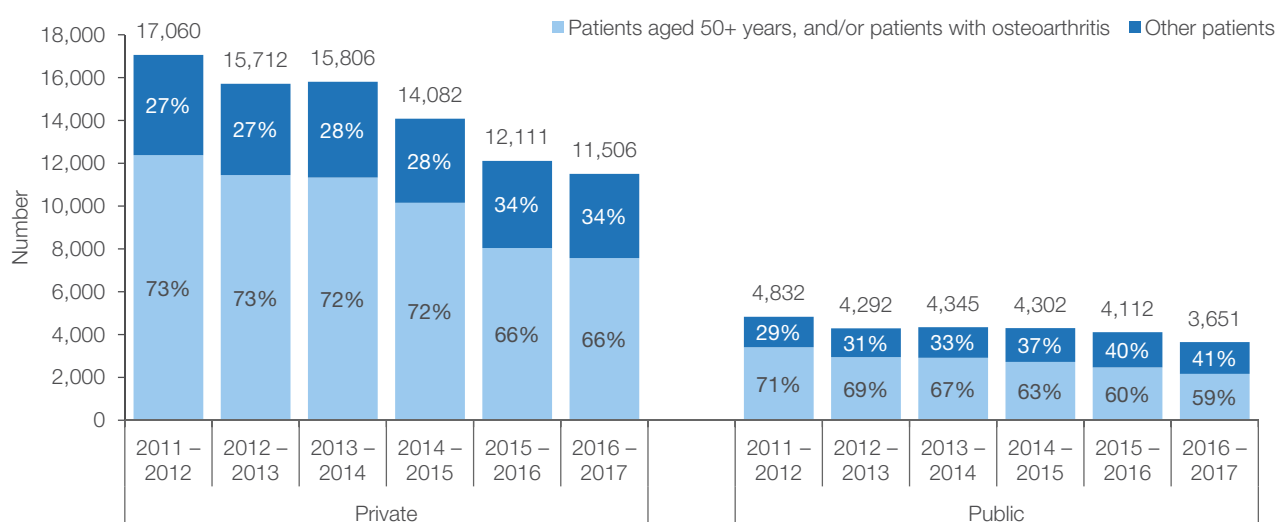
The Australian Commission on Safety and Quality in Health Care's national guidelines state that arthroscopic procedures are not effective treatments for knee osteoarthritis, and should only be offered if the patient has true mechanical locking or another appropriate indication for these procedures.

While the total number of knee arthroscopies performed in NSW hospitals has been decreasing over time (Figure 2.3), the procedure continues to be performed on older patients and patients with osteoarthritis.

In 2016–17, more than 15,000 knee arthroscopies were performed in NSW hospitals. Three-quarters of these procedures were performed in private hospitals. The cohort of patients for whom there is evidence of little benefit (older patients and patients with osteoarthritis) accounted for 66% of procedures in private hospitals, and 59% of procedures in public hospitals (Figure 2.3).

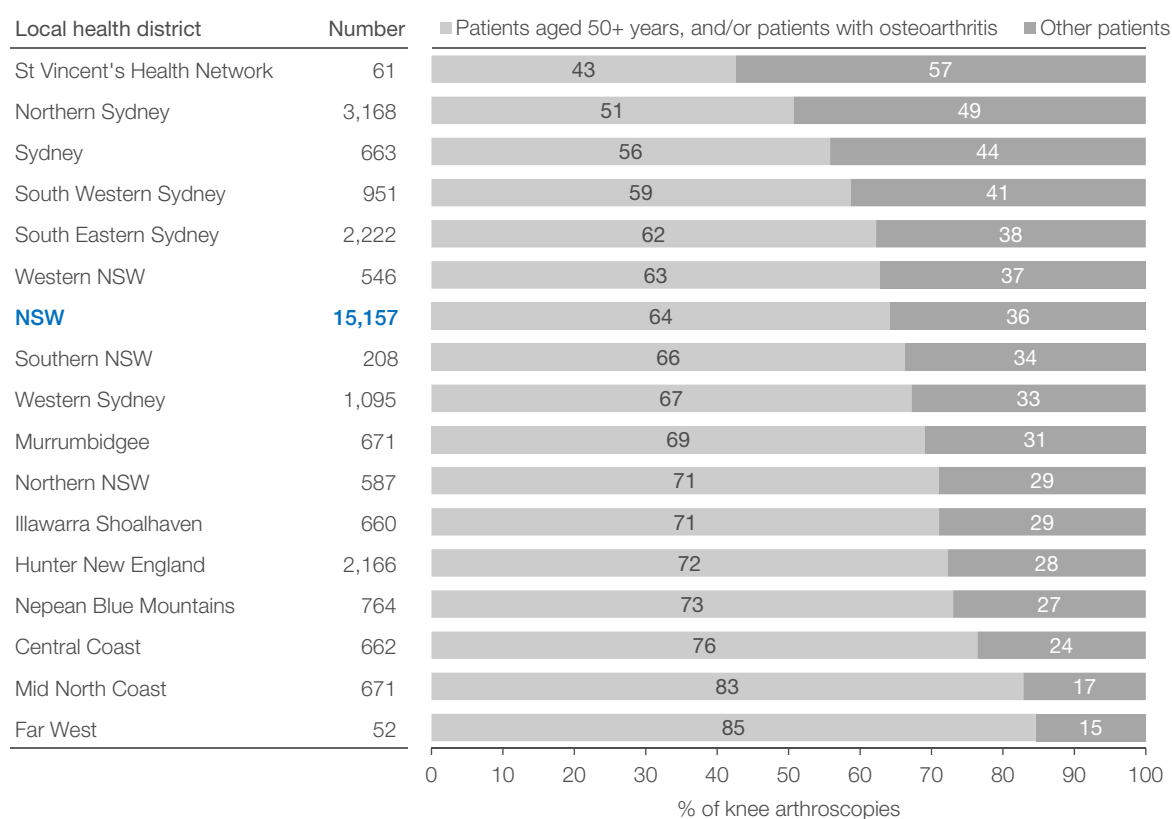
The percentage of knee arthroscopies performed on older patients and patients with osteoarthritis varied across local health districts, from 43% to 85% (Figure 2.4). For public hospitals, it ranged from 27% to 92% (Figure 2.5).

Figure 2.3 Knee arthroscopies, NSW public and private hospitals, 2011–12 to 2016–17



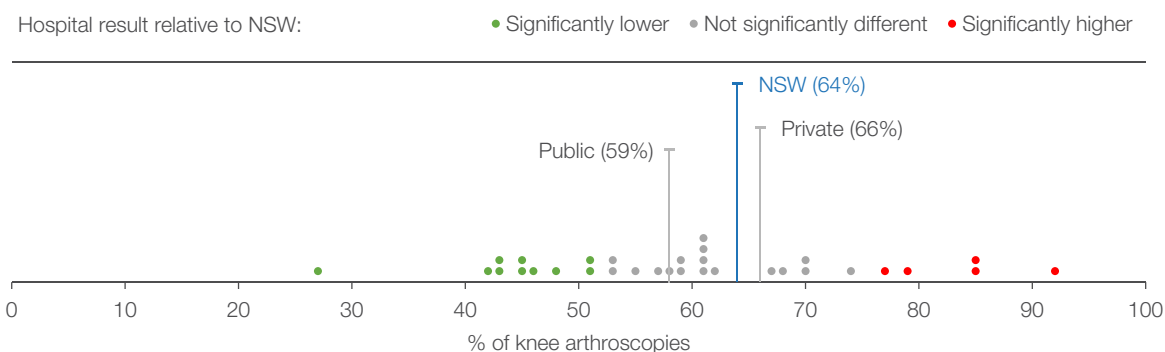
Source: BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 21 March 2018.

Figure 2.4 Knee arthroscopies performed on people aged 50+ years and/or patients of all ages with osteoarthritis, by NSW local health district where the surgery was performed, NSW public and private hospitals, 2016–17



Source: BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 21 March 2018.

Figure 2.5 Knee arthroscopies performed on patients aged 50+ years and/or patients of all ages with osteoarthritis, NSW public hospital variation, 2016–17



Source: BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 21 March 2018.

Breast screening experiences with BreastScreen NSW

Of women aged 50–74, 93% intend to continue with routine mammograms

Screening using mammography facilitates early detection of breast cancer and helps to improve survival outcomes. The national breast screen program targets women aged 50–74 years to undergo screening for breast cancer by mammogram every two years. In NSW in 2015–16, 53% of women aged 50–74 years were screened by BreastScreen NSW.⁷

BreastScreen NSW is committed to delivering a high quality breast screening service that meets client's needs and improves outcome for women. In October 2017, the Bureau of Health Information and BreastScreen NSW conducted a survey of women's experiences of breast screening. Responses were collected from 10,342 women aged 50–74 years who had a screening mammogram with BreastScreen NSW in July or August 2017 and were not recalled for assessment.

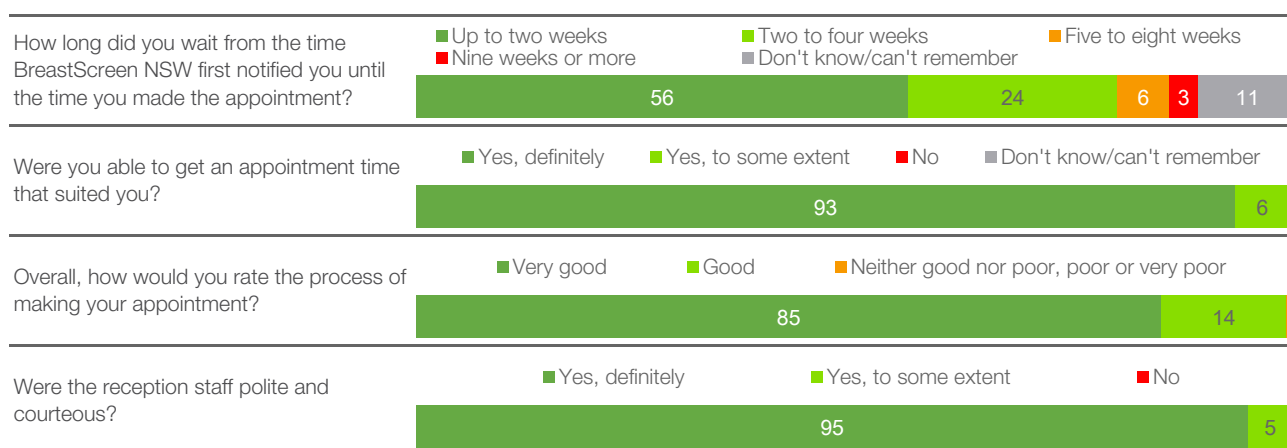
Women were generally positive about their experiences before, during and after the screening mammogram. Before screening, women had positive experiences with making their appointment and with reception staff. Nearly all women said they were 'definitely' able to get an appointment time that suited them (93%). Further, most women said the process

of making an appointment was 'very good' (85%) and reception staff were 'definitely' polite and courteous (95%) (Figure 2.6).

Most women (84%) said the radiographer 'completely' explained what would take place in an understandable way and 'definitely' put them at ease (81%). More than six in 10 women (64%) said they experienced discomfort or pain (data not shown). Of these women who experienced discomfort or pain, 46% said they experienced mild discomfort, 26% rated it as mild pain, 23% rated it as moderate pain, and 5% of women said they experienced severe pain. While a majority of women who experienced discomfort or pain said the radiographer 'definitely' acknowledged it (60%), almost one in 10 women (9%) said it was not acknowledged by the radiographer (Figure 2.7).

After the mammogram, 90% of women were told how they would receive results. Most women (67%) received results in two weeks or less. Overall, 79% of women rated their experience as 'very good' and 93% said they would 'definitely' continue with routine mammograms (Figure 2.8).

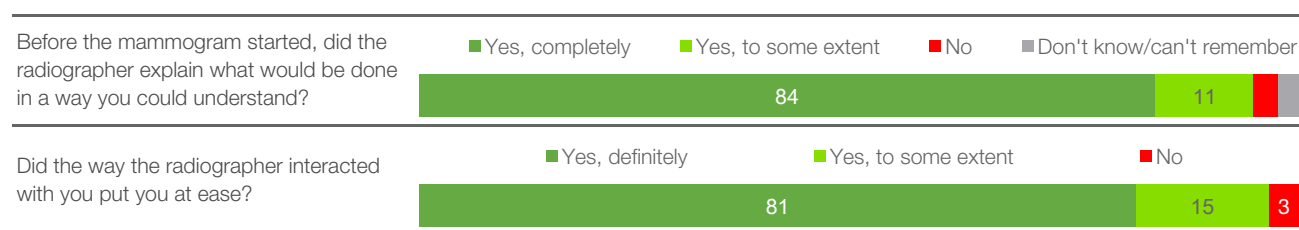
Figure 2.6 Experiences before screening mammogram, women aged 50–74 years, NSW, 2017



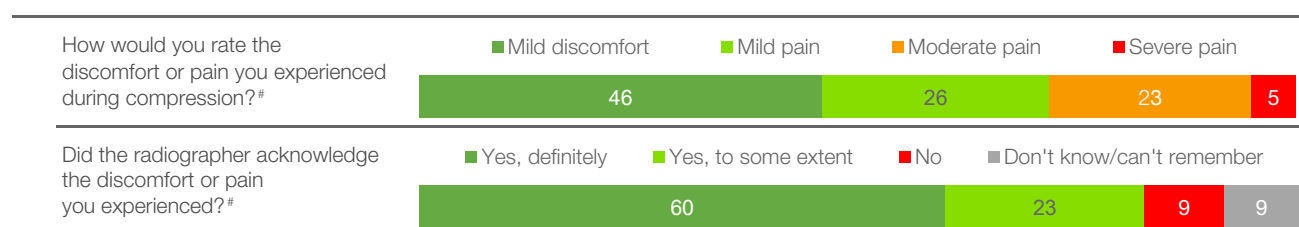
Source: Bureau of Health Information and Cancer Institute NSW, BreastScreen NSW Client Experience Survey 2017.

Note: Numbers may not add up to 100% due to rounding.

Figure 2.7 Experiences during screening mammogram, women aged 50–74 years, NSW, 2017



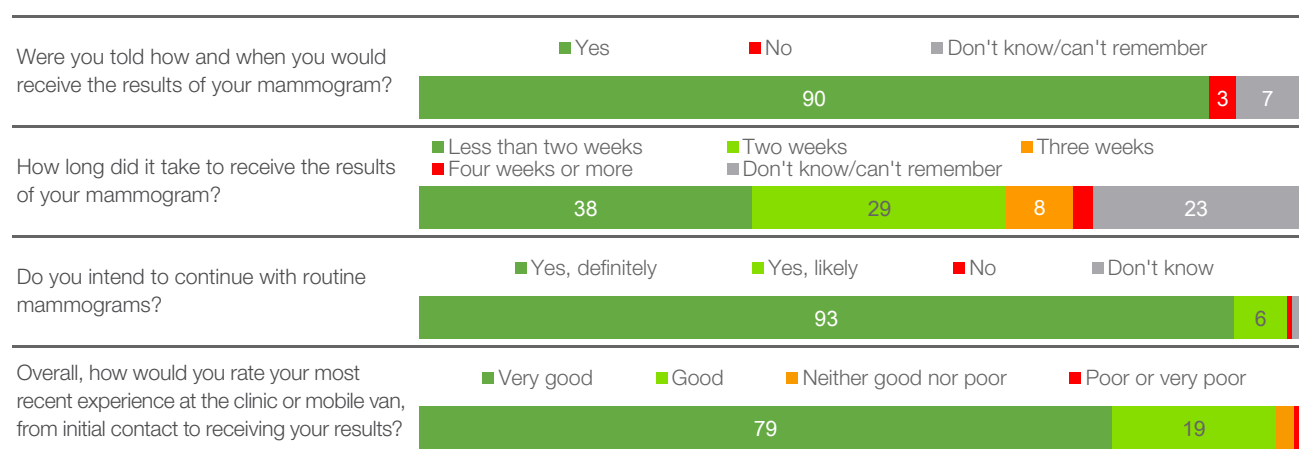
The 64% of women who reported experiencing discomfort or pain, were also asked:



Source: Bureau of Health Information and Cancer Institute NSW, BreastScreen NSW Client Experience Survey 2017.

Results are based on 6,655 of 10,342 women (64%) who said they had pain and rated it on a scale. Numbers may not add up to 100% due to rounding.

Figure 2.8 Experiences following screening mammogram, women aged 50–74 years, NSW, 2017



Source: Bureau of Health Information and Cancer Institute NSW, BreastScreen NSW Client Experience Survey 2017.

Note: Numbers may not add up to 100% due to rounding.

Discharge from hospital

NSW hospitals perform well among international comparators in making arrangements for follow-up care

A discharge plan that is tailored to an individual patient is associated with reductions in hospital length of stay and readmission rates.⁸

Effective discharge planning should be person-centred, involving collaboration between the patient, their family and a multidisciplinary team of healthcare workers.⁹

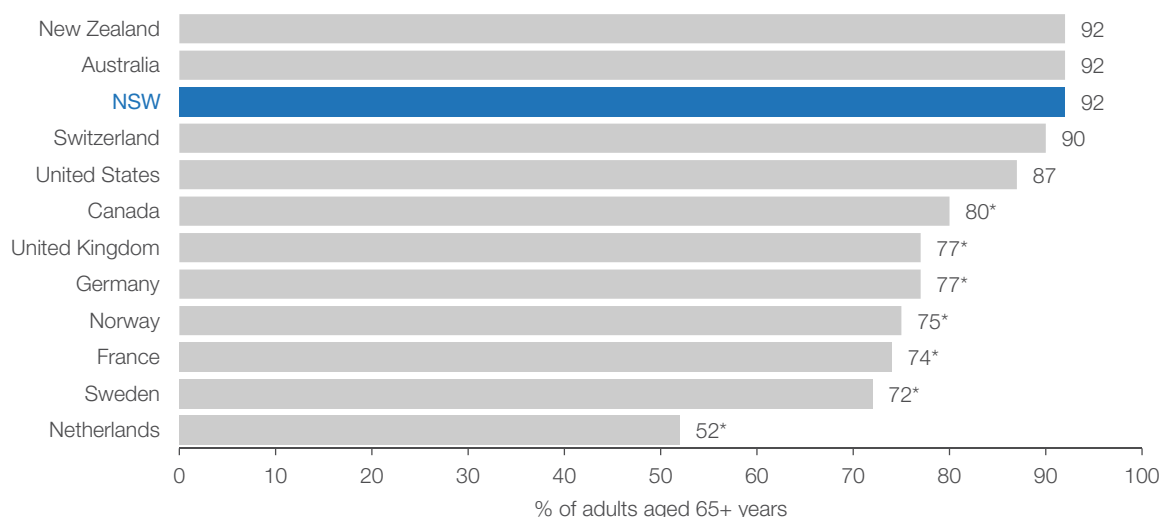
Follow-up care should also be timely. For example, studies show that heart attack and heart failure patients who have a follow-up visit with a doctor within seven days of discharge from hospital are at lower risk of 30-day readmission.^{10,11}

Good discharge planning aims to improve the coordination of a patient's care in the community after they leave hospital. Poorly coordinated care is associated with a risk of medical errors.¹²

In 2017 and 2016:

- 92% of NSW public and private patients aged 65+ years said the hospital made arrangements for their follow-up care, the highest rate among comparator countries (Figure 2.9).
- 65% of adult patients said they 'definitely' felt involved in decisions about their discharge from hospital. This varied across public hospitals, from 85% to 51% (Figure 2.10).
- 74% of adult patients said they were 'completely' given enough information about how to manage their care at home. This varied across public hospitals, from 93% to 67% (Figure 2.11).

Figure 2.9 Adults aged 65+ years who said the hospital made arrangements for follow-up care, NSW public and private hospitals and comparator countries, 2017

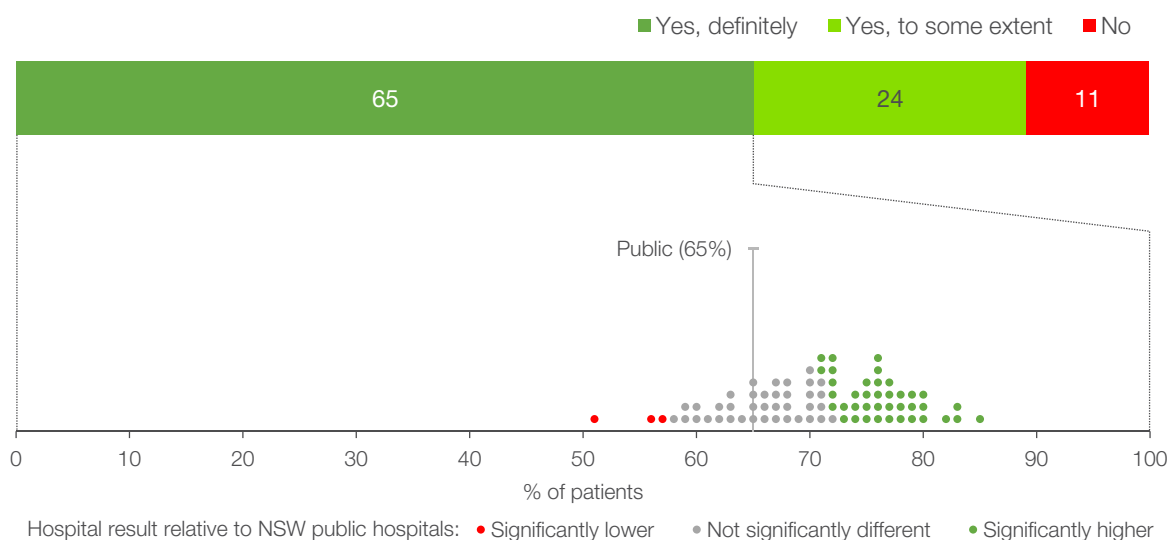


Source: 2017 Commonwealth Fund International Health Policy Survey of Older Adults.

*Estimate is statistically significantly different from NSW.

Figure 2.10 Patients who said they were ‘definitely’ involved in decisions about their discharge from hospital, NSW public hospital variation, 2016

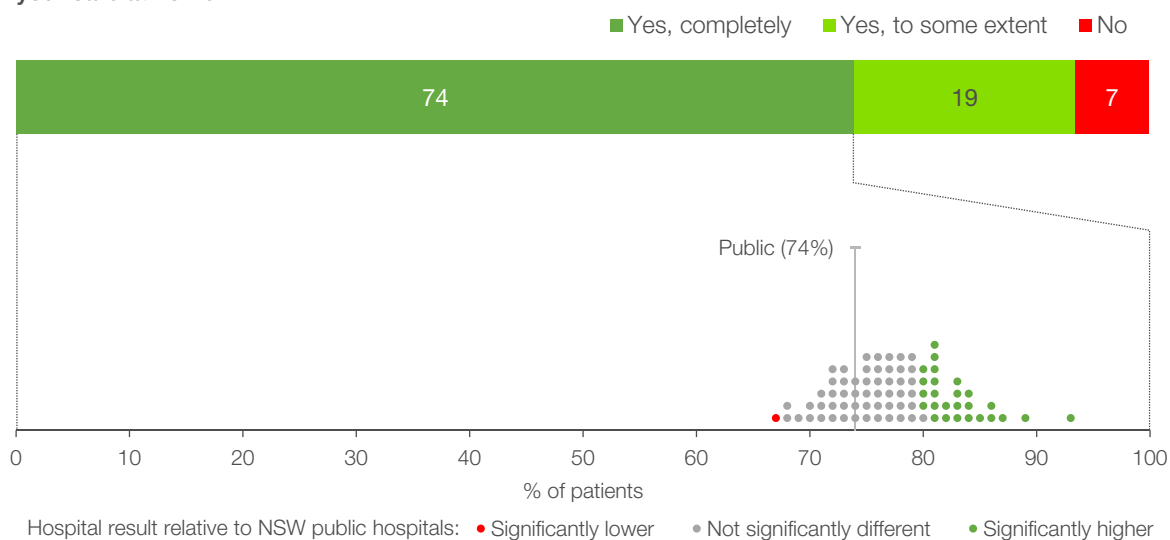
Did you feel involved in decisions about your discharge from hospital?



Source: Bureau of Health Information Adult Admitted Patient Survey 2016.

Figure 2.11 Patients who said they were given ‘completely’ enough information to manage care at home, NSW public hospital variation, 2016

Thinking about when you left hospital, were you given enough information about how to manage your care at home?



Source: Bureau of Health Information Adult Admitted Patient Survey 2016.

Seclusion in acute mental health care

There were seven seclusion events per 1,000 bed days

People with severe exacerbations of a mental health condition often require admission to hospital for treatment. Mental health care in hospital should be safe, respectful and provided in the least restrictive manner.

Seclusion is used as a last resort in mental health wards when there is the potential for patients to cause harm to themselves or others. When a patient is placed in seclusion, they are confined alone in an area and cannot freely leave.

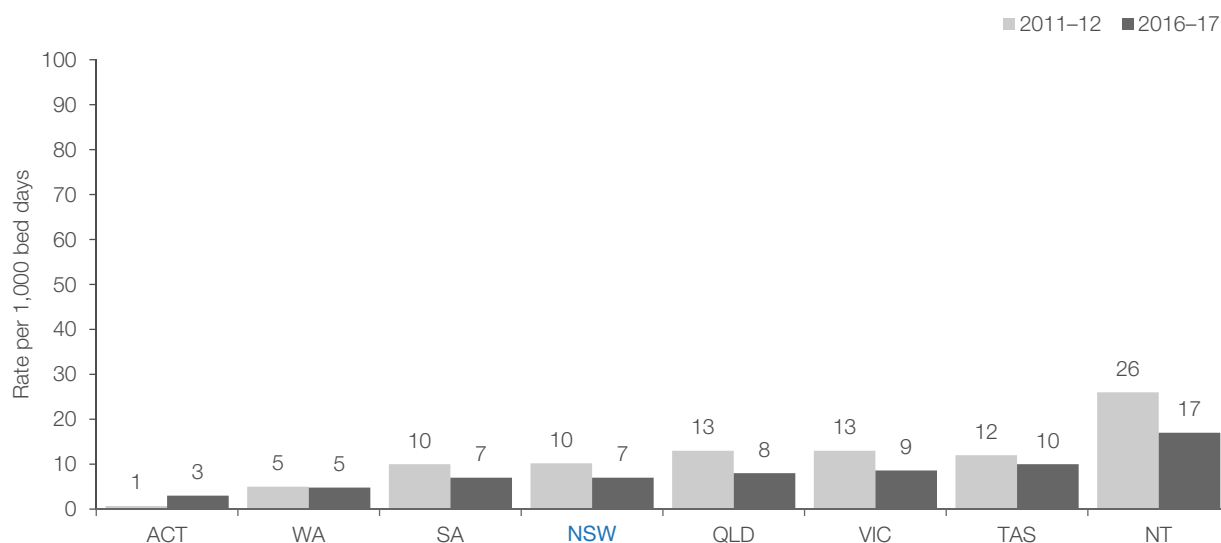
NSW Health has a policy to reduce the use of restrictive practices in mental health services. The policy emphasises that seclusion or restraint can be used to manage the risk of serious imminent harm only when other safe options have been considered and trialled, and only for the briefest period required to allow the patient to safely regain control of their behaviour.

In 2016–17, there were seven seclusion events per 1,000 bed days in NSW mental health acute inpatient units, placing the state mid-range in national comparisons (Figure 2.12). This was a reduction from 10 events per 1,000 bed days in 2011–12.

The rate of seclusion varied across public hospitals in NSW, from one to 14 seclusion events per 1,000 bed days (Figure 2.13).

The average duration of seclusion events in NSW was 5.5 hours, placing the state mid-range in national comparisons (Figure 2.14).

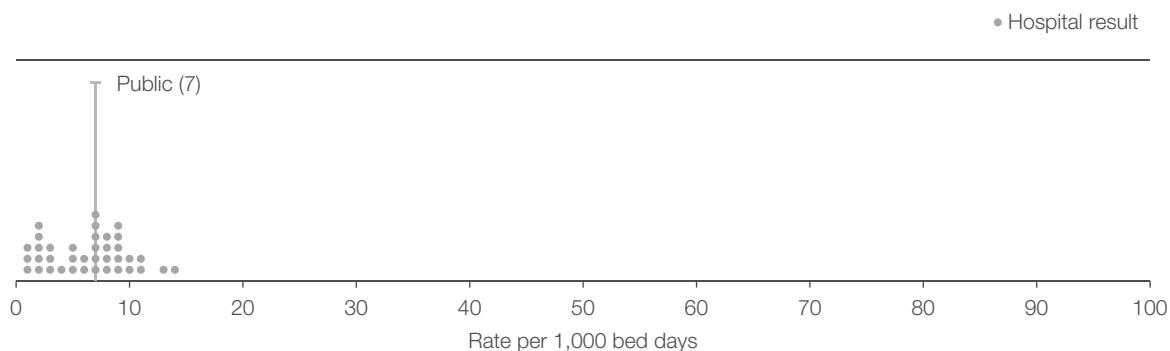
Figure 2.12 Seclusion events in public specialised mental health acute inpatient units, Australian states and territories, 2011–12 and 2016–17



Source: Productivity Commission Report on Government Services 2018, Part E: Health, based on Australian Institute of Health and Welfare (unpublished) National Seclusion and Restraint Data Collection.

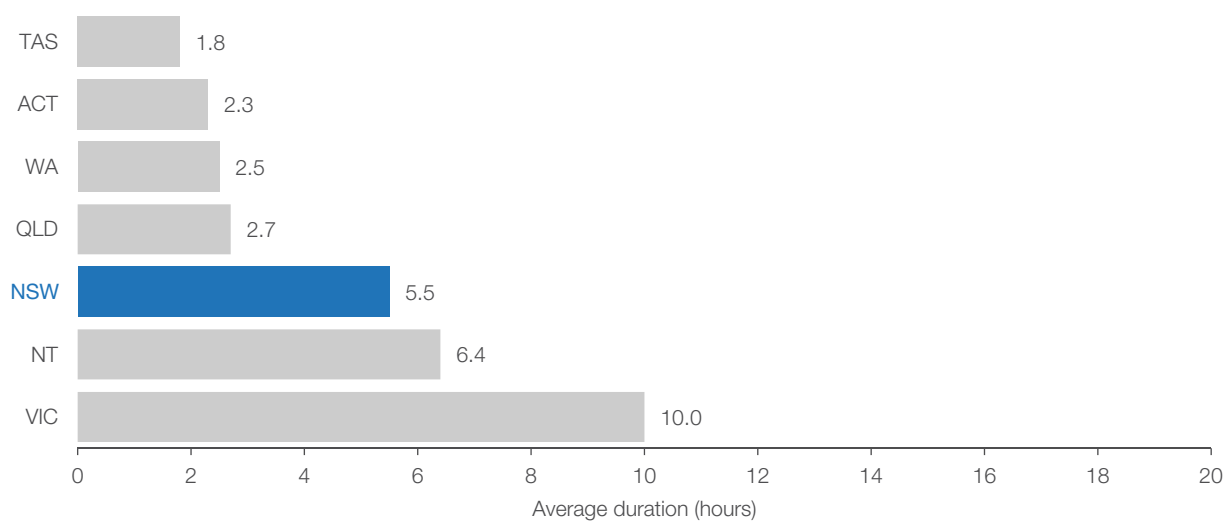
Note: Variation in jurisdictional legislation may result in differences in the definition of a seclusion event. Data reported by jurisdictions may therefore vary and comparisons should be made with caution.

Figure 2.13 Seclusion events in public specialised mental health acute inpatient units, NSW public hospital variation, 2016–17



Source: NSW Health Annual Report 2016–17.

Figure 2.14 Average duration of seclusion events in public specialised mental health acute inpatient units, Australian states and territories, 2016–17



Source: Productivity Commission Report on Government Services 2018, Part E: Health, based on Australian Institute of Health and Welfare (unpublished) National Seclusion and Restraint Data Collection.

Note: South Australia reports seclusion duration in four-hour blocks. Therefore the mean duration could not be calculated.



Equity lens: Mental health care in the community

Aboriginal people were less likely to receive follow-up support after discharge from hospital

The provision of culturally safe mental health care in the hospital and when discharged to the community is important for Aboriginal people.

People with mental health conditions who do not have any contact with health services after they are discharged from hospital are more likely to require readmission.¹³ People newly discharged from inpatient psychiatric services are also vulnerable to suicide, violent behaviour and social exclusion.¹⁴

Accordingly, NSW Health policy specifies that 70% of discharges from acute psychiatric inpatient units should be followed by a recorded community contact within seven days of discharge.

Supporting people with mental health conditions to live well in the community is central to the NSW Mental Health Commission's policy *Living Well: A Strategic Plan for Mental Health 2014–2024*.

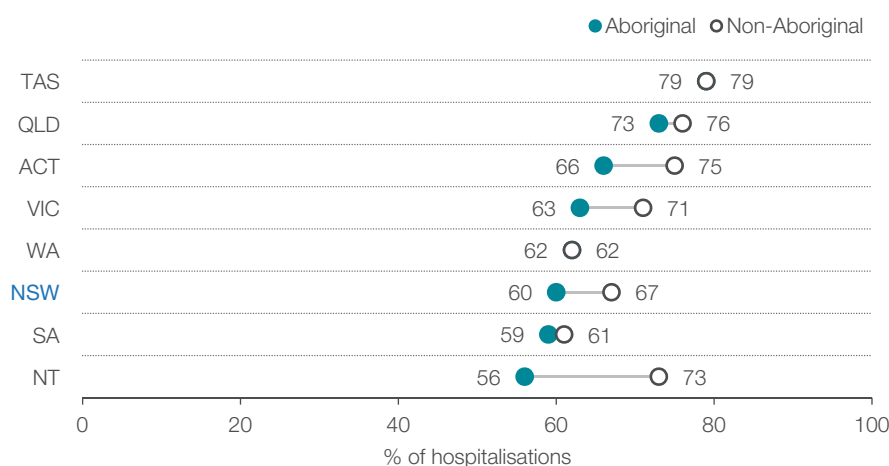
Hospitalisation rates for mental health-related conditions have increased for Aboriginal people between 2004–05 and 2014–15 and are higher than rates for non-Aboriginal people.¹⁵

In 2015–16, the most recent national data available, 60% of Aboriginal patients in NSW received follow-up support in the community within seven days of discharge from a mental health hospitalisation, compared with 67% of non-Aboriginal patients – a gap of seven percentage points. Tasmania and Queensland exceeded 70% for both Aboriginal and non-Aboriginal patients (Figure 2.15).

More recent data for NSW indicates the rate for both Aboriginal and non-Aboriginal patients has improved but the gap has remained stable. In 2016–17, 67% of Aboriginal patients and 74% of non-Aboriginal patients received follow-up support within seven days of discharge (Figure 2.16).

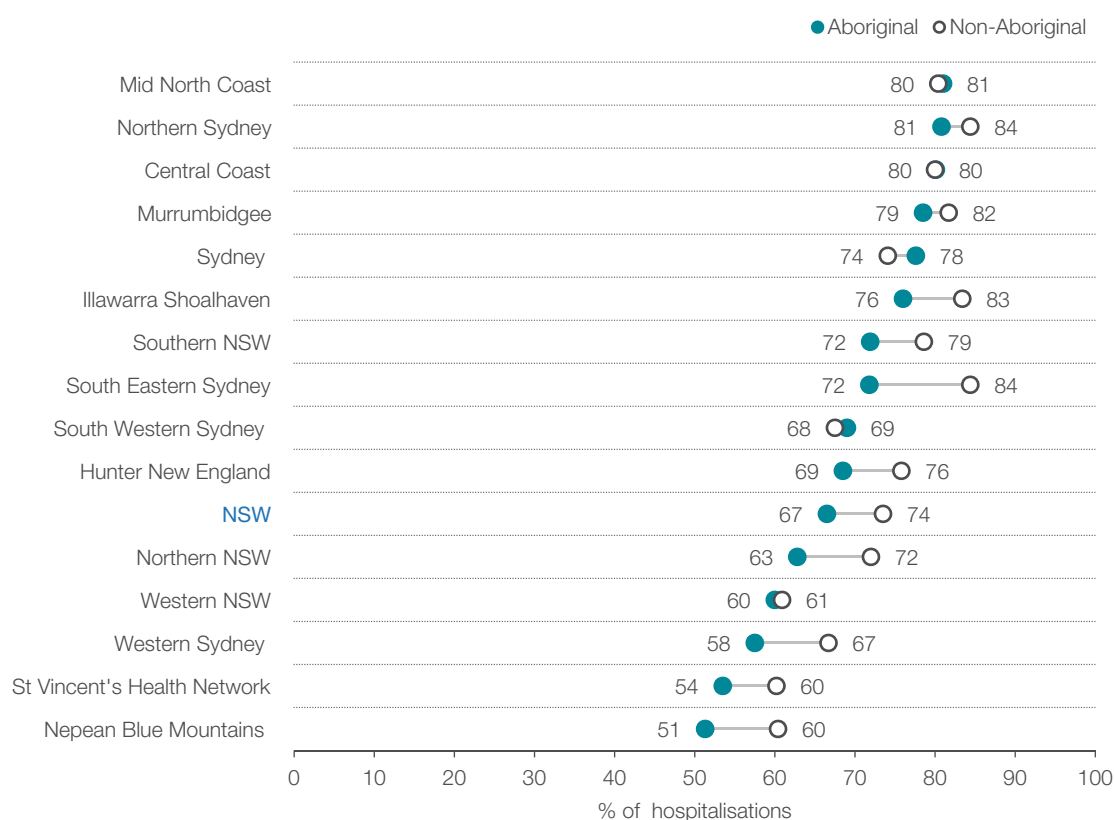
Across LHDs, 11 out of 15 had a lower rate of follow-up support for Aboriginal patients compared with non-Aboriginal patients (Figure 2.16).

Figure 2.15 Community follow-up within seven days of discharge from a mental health hospitalisation, by Aboriginality, Australian states and territories, 2015–16



Source: Productivity Commission Report on Government Services 2018, Part E: Health, based on state and territory (unpublished) admitted patient and community mental health care data.

Figure 2.16 Community follow-up within seven days of discharge from a mental health hospitalisation, by Aboriginality, NSW local health districts, 2016–17



Source: NSW Ministry of Health, System Information and Analytics Branch, InforMH.

Note: Local health districts with at least 50 hospitalisations for Aboriginal people and at least 50 hospitalisations for non-Aboriginal people are presented.

Equity lens: Maternity care

The gap between Aboriginal and non-Aboriginal women receiving antenatal care in the first trimester has decreased

Culturally safe maternity care should include specific programs for Aboriginal women, care continuity, an Aboriginal health workforce, and culturally safe physical environment and health promotion activities.¹⁶

For the eight questions analysed from the 2015 Maternity Care survey, there were no significant differences for Aboriginal women compared with non-Aboriginal women (Figure 2.17).

Aboriginal women who receive antenatal care in the first trimester, compared with those who receive no antenatal care, are four times less likely to have a pre-term or low birthweight baby.¹⁵ The National Aboriginal Health Performance Framework sets out a goal that by 2023, 60% of Aboriginal women attend their first antenatal visit in the first trimester of their pregnancy.

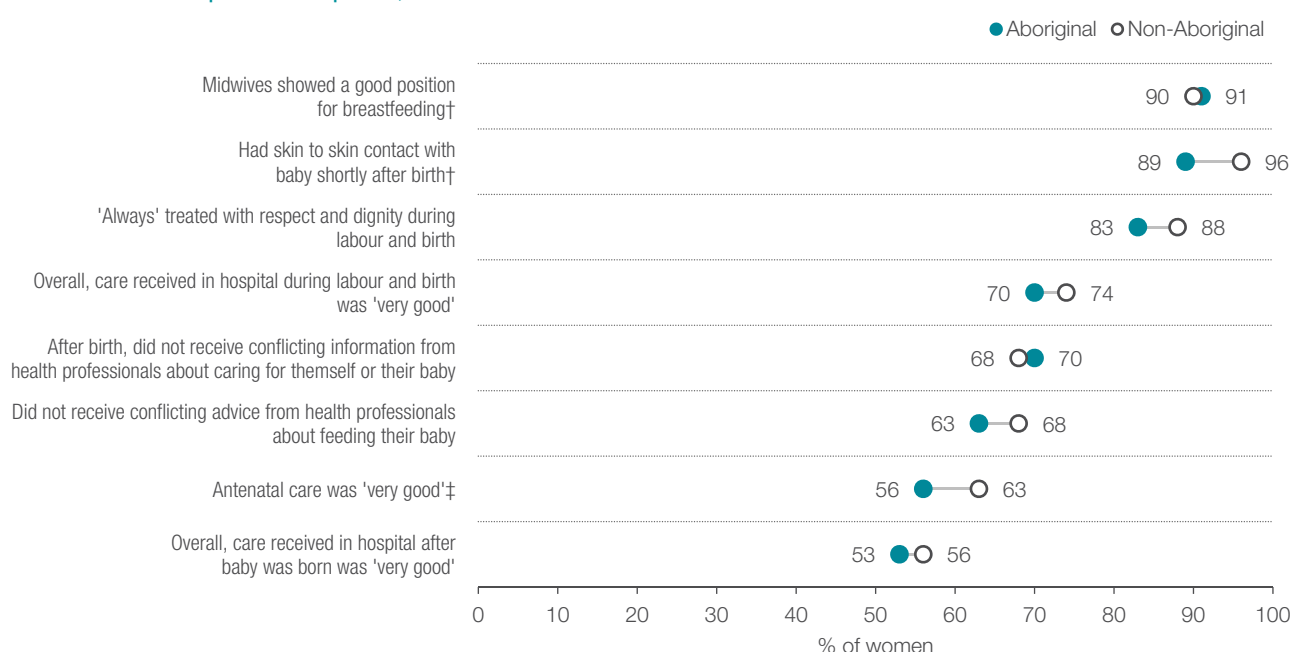
In 2016, 65% of pregnant Aboriginal women in NSW had their first comprehensive antenatal visit within 14 weeks' gestation, compared with 68% of non-Aboriginal women. The gap between Aboriginal women and non-Aboriginal women has closed in recent years (Figure 2.18).

Breastfeeding is the normal and most beneficial way of feeding young infants. Culturally safe breastfeeding care and support is important for Aboriginal women.

In 2016, 75% of infants of non-Aboriginal mothers were fully breastfed at hospital discharge, compared with 63% of infants of Aboriginal mothers. Only 8% of infants of non-Aboriginal mothers were fed infant formula only, compared with 25% of infants of Aboriginal mothers (Figure 2.19).

NSW Health has an *Aboriginal Maternal Infant Health Strategy* which aims to improve health outcomes of Aboriginal women and women with Aboriginal partners during pregnancy and birth.

Figure 2.17 Summary of maternity care patient experience measures, by Aboriginality, NSW public hospitals, 2015

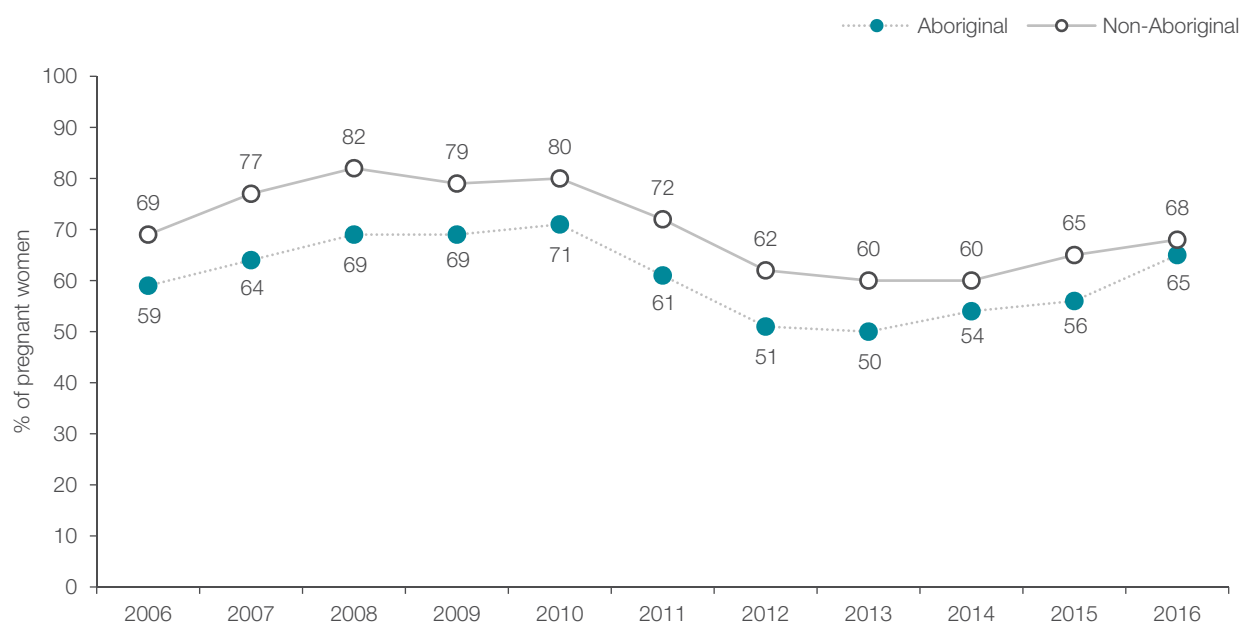


Source: Bureau of Health Information Maternity Care Survey 2015.

† Does not include patients who did not want assistance or for whom the question was not relevant.

‡ Includes only patients who received antenatal care. There were no significant differences between results for Aboriginal women and non-Aboriginal women.

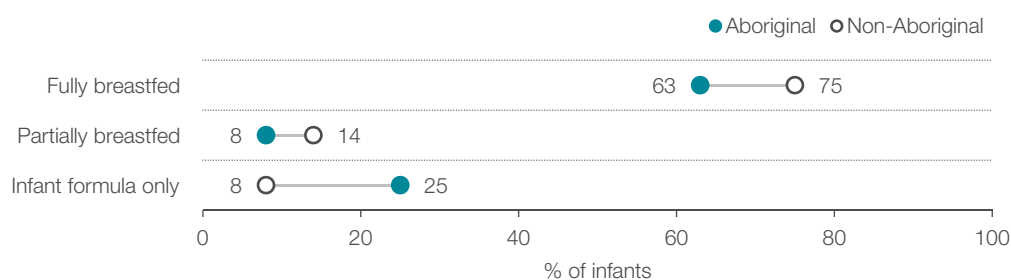
Figure 2.18 Pregnant women receiving their first antenatal visit within 14 weeks' gestation, by Aboriginality, NSW, 2006–2016



Source: NSW Ministry of Health, Centre for Epidemiology and Evidence, HealthStats NSW.

Note: Up to 2010, the data captured duration of pregnancy at first antenatal visit. From 2011, the data captures duration of pregnancy at first comprehensive booking or assessment by clinician. Because this more specifically defines the type of visit, the percentage of mothers who commenced antenatal care in 2011 is lower than in previous years.

Figure 2.19 Infants receiving breastmilk at hospital discharge, by Aboriginality, NSW public and private hospitals, 2016



Source: BHI analysis of NSW Perinatal Data Collection, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 23 March 2018.

Note: Infant feeding status at hospital discharge was not stated for 4% of infants of Aboriginal mothers and 3% of infants of non-Aboriginal mothers.

Equity lens: Culturally safe care

A higher percentage of Aboriginal patients said they experienced unfair treatment

Discharge against medical advice, in which a patient chooses to leave hospital against a doctor's advice, is considered an indicator of the responsiveness of health services, particularly to the needs of Aboriginal people. It is associated with adverse outcomes such as readmission, morbidity and mortality.¹⁷

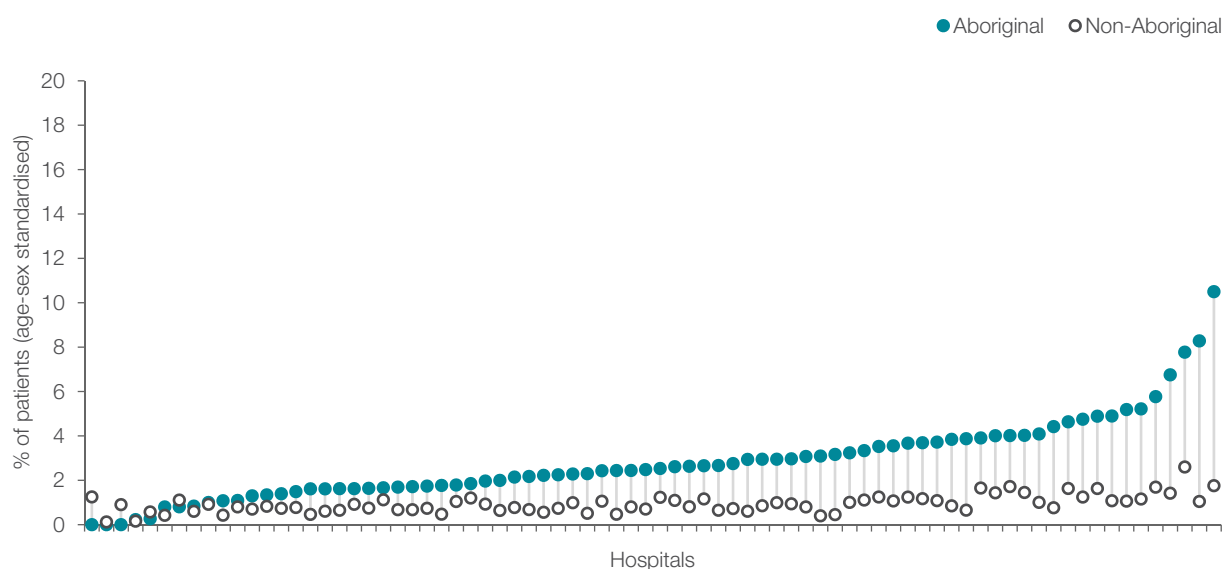
In NSW in 2016–17, 3% of Aboriginal patients discharged themselves at their own risk against the advice of the hospital (age-sex standardised rate). For non-Aboriginal patients, the rate was 1% (data not shown). The percentage varied across hospitals, from 0% to 11% among Aboriginal patients (Figure 2.20).

Factors associated with Aboriginal patients discharging themselves at their own risk include institutionalised racism, a lack of cultural safety, a distrust of the health system, miscommunication, family and social obligations, and isolation and loneliness.¹⁸

Building respectful and trusting partnerships between health services and Aboriginal communities is a focus of the *NSW Aboriginal Health Plan*. This includes strengthening the Aboriginal health workforce and providing culturally safe health services.¹⁹

NSW Health provides cultural training to all staff to empower them to build positive relationships with Aboriginal people who may be patients, visitors or fellow workers, and to deliver more respectful and responsive services for Aboriginal people.

Figure 2.20 Patients who discharged themselves at their own risk against the advice of the hospital, by Aboriginality, NSW public hospital variation, 2016–17

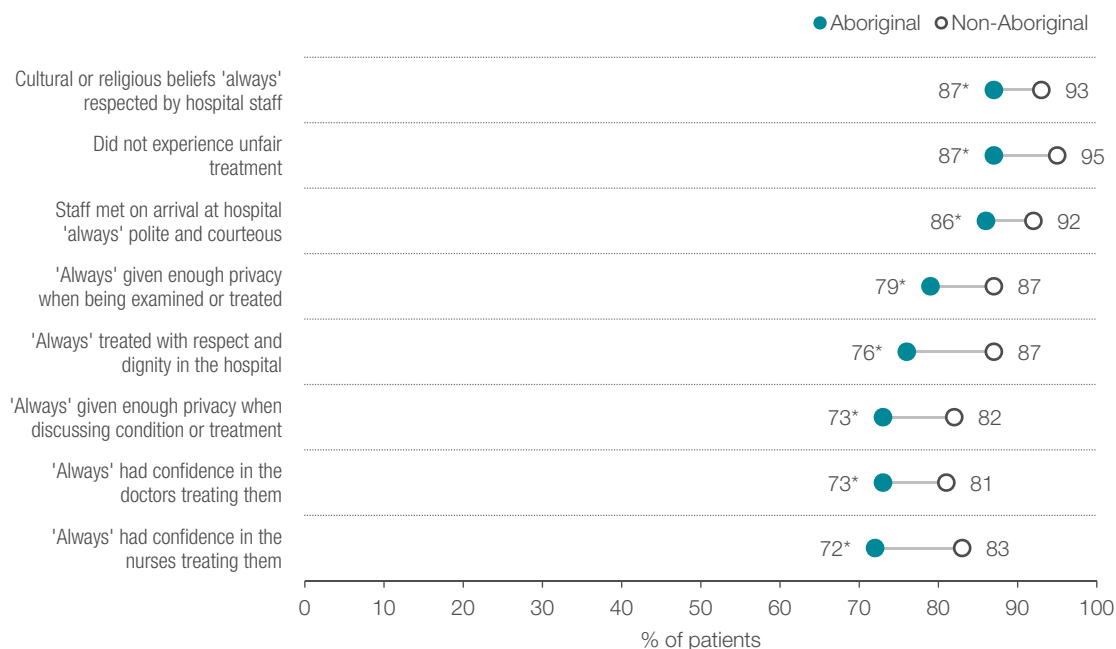


Source: BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 19 March 2018.

Note: Acute public hospitals from peer groups A–C with at least 50 Aboriginal and 50 non-Aboriginal patients are presented. The data are age-sex standardised to the 2001 Australian standard population.

Measures of patient experience can also indicate whether patients have been treated in a culturally safe way. In 2016, 87% of Aboriginal patients said that hospital staff 'always' respected their cultural beliefs, compared with 93% of non-Aboriginal patients. Aboriginal patients were also less likely to say they had not experienced unfair treatment (87% vs 95%) and that they were 'always' treated with respect and dignity (76% vs 87%) (Figure 2.21).

Figure 2.21 Selected adult admitted patient experience measures, by Aboriginality, 2016



Source: Bureau of Health Information Adult Admitted Patient Survey 2016.

*Result for Aboriginal patients significantly different to result for non-Aboriginal patients.

Effectiveness



Making a difference for patients

Effectiveness refers to the extent to which healthcare services deliver the benefits expected from them – do they reduce the incidence, duration, intensity or consequences of patients' health problems?

Effective care is also aligned with high-value care. High-value care is care that is both efficient and of a high quality, promoting good outcomes for patients. Within this context, in this chapter we have explored measures related to unplanned returns to hospital, patient safety and patient-reported complications to assess the effectiveness of hospital care in NSW. With a specific focus on Aboriginal patients, we assess health system effectiveness for diabetes care, mental health readmissions and care in the emergency department.

Returns to hospital with subsequent fracture

Among patients aged 50+ years with a fall-related fracture, 14% were admitted to hospital within two years with a subsequent fracture

Fracture, a complete or partial break in a bone, is associated with an increased risk of mortality in older people.¹

Advanced age, osteoporosis and a prior fracture are among risk factors for fracture. With the population ageing, the incidence of fracture is predicted to grow.²

Patients that present to hospital with an osteoporotic fracture (a fragility fracture sustained through falling) should receive access to diagnosis, treatment and self-management support for osteoporosis to reduce the risk of a subsequent fracture.³

Fractures are commonly treated in the emergency department setting, however patients with fractures that require more complex care may need to be admitted to hospital.

Between July 2013 and June 2015, 44,630 patients aged 50+ years were admitted to NSW public and private hospitals with fracture as a principal diagnosis and fall as the cause (data not shown). After excluding those patients who did not have a subsequent fracture but died during the two year follow-up period, data from 35,510 remaining patients were assessed to determine the percentage of patients who were admitted to hospital with a subsequent fracture.

Of these patients, 14% were admitted to a NSW public or private hospital with a subsequent fracture within two years after the initial fracture (Figure 3.1).

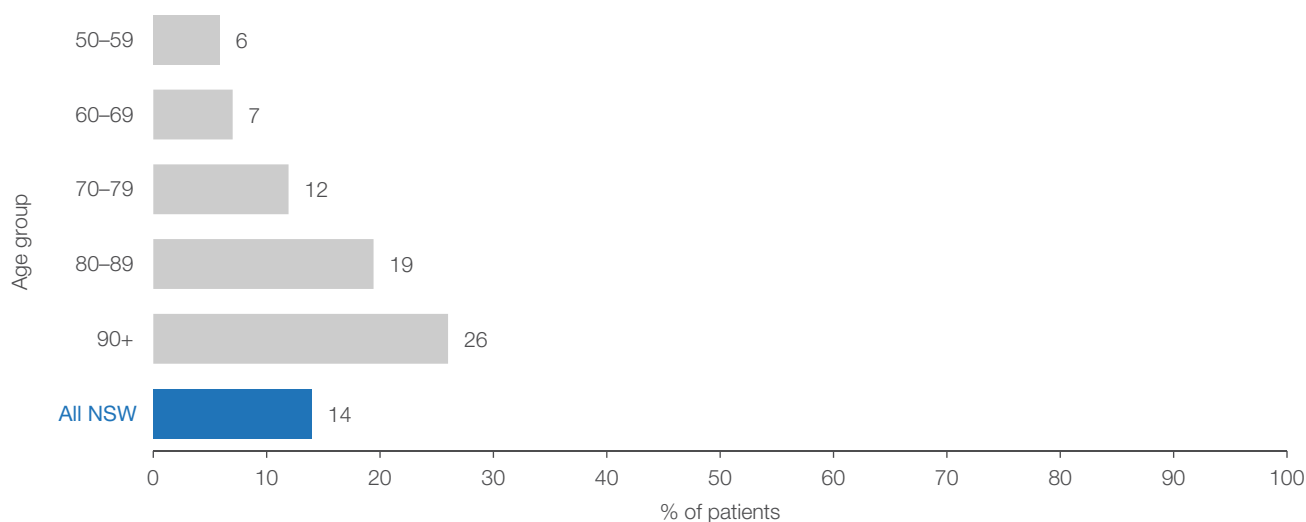
Across NSW public hospitals, the percentage of patients admitted to hospital within two years with a subsequent fracture ranged from 2% to 29% (Figure 3.2).

The incidence of hospital admissions for subsequent fracture increased with age, with 26% of patients aged 90+ years experiencing a subsequent fracture within two years compared with 6% of patients aged 50–59 years (Figure 3.1).

The Agency for Clinical Innovation Musculoskeletal Network has developed a model of care for osteoporotic refracture prevention. The key element of the model is a fracture liaison service in each local health district to coordinate the care of patients with an osteoporotic fracture between the hospital and primary care.³

This model of care will be implemented across all NSW local health districts in 2017-18 as part of the NSW Health's Leading Better Value Care initiative.

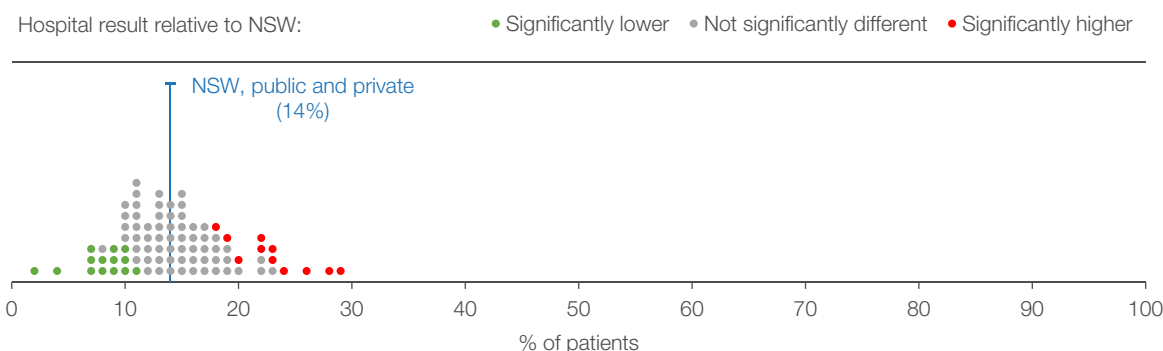
Figure 3.1 Patients who presented with a fall-related fracture (from July 2013 to June 2015) and returned to hospital within two years with a subsequent fracture (up to June 2017), by age, NSW public and private hospitals



Age group	Fractures	Subsequent fractures	Percentage subsequent fracture
50-59	5,197	312	6%
60-69	7,242	541	7%
70-79	8,464	998	12%
80-89	11,009	2,068	19%
90+	3,598	946	26%
All NSW	35,510	4,865	14%

Source: BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 20 March 2018.

Figure 3.2 Patients aged 50+ years who presented with a fall-related fracture (from July 2013 to June 2015) and returned to hospital within two years with a subsequent fracture (up to June 2017), NSW public hospital variation



Source: BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 20 March 2018.

Patient safety: Healthcare-associated infections

NSW public hospitals had one of the lowest rates of healthcare-associated Staphylococcus aureus bloodstream infections nationally

Healthcare-associated infections are among the most common and the most serious complications that occur in hospitals. While they are not always preventable, their risk of occurring can be reduced through appropriate patient management.

Bloodstream infections (or bacteraemia) can be life-threatening. Evidence-based approaches to reduce the spread of bacteria and the incidence of bloodstream infections include good hand hygiene; use of gloves and gowns; appropriate mouth, nose and eye protection; the safe handling and disinfection of equipment used during patient care; and appropriate handling of laundry.⁴

Patients who are seriously ill, such as immune-compromised patients or those in intensive care units, are more vulnerable to developing bloodstream infections. Hospitals that treat more complex patients are likely to have higher rates of infection.

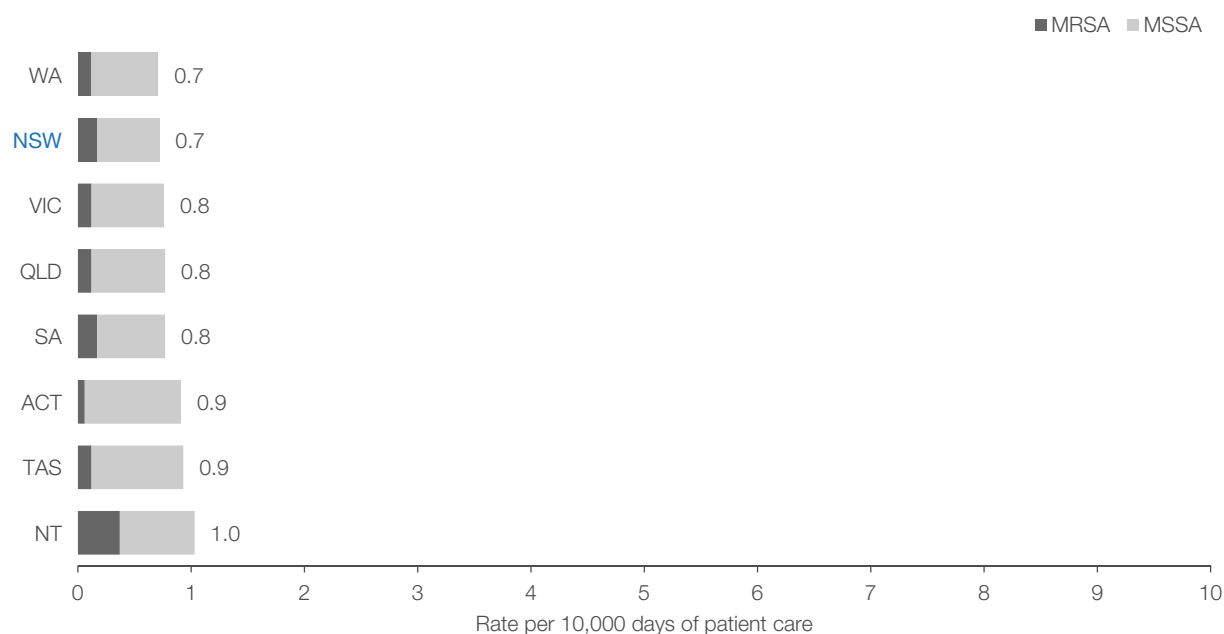
Methicillin-resistant Staphylococcus aureus (MRSA) is the cause of particularly serious infections, as these bacteria are resistant to most antibiotics. Methicillin-sensitive Staphylococcus aureus (MSSA) is more responsive to antibiotics, and is more common than MRSA.

The Council of Australian Governments' (COAG) nationally agreed benchmark is no more than two Staphylococcus aureus bacteraemia (SAB) cases per 10,000 days of patient care.

In 2016–17, the rate of SAB in NSW public hospitals was 0.7 per 10,000 bed days, which was one of the lowest rates nationally. MRSA accounted for 0.17 per 10,000 bed days (Figure 3.3).

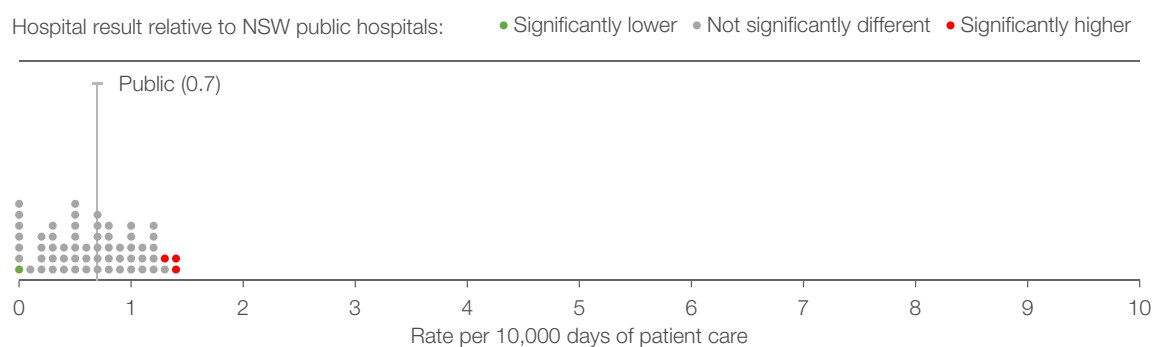
Across NSW public hospitals, the rate varied from 0 to 1.4 per 10,000 bed days (Figure 3.4).

Figure 3.3 Healthcare-associated *Staphylococcus aureus* bloodstream infections in public hospitals, Australian states and territories, 2016–17



Source: Australian Institute of Health and Welfare, *Staphylococcus aureus* bacteraemia in Australian public hospitals 2016–17: Australian hospital statistics.

Figure 3.4 Healthcare-associated *Staphylococcus aureus* bloodstream infections, NSW public hospital variation, 2016–17



Source: BHI analysis of Australian Institute of Health and Welfare, *Staphylococcus aureus* bacteraemia in Australian public hospitals 2016–17: Australian hospital statistics.

Patient safety: Maternity care

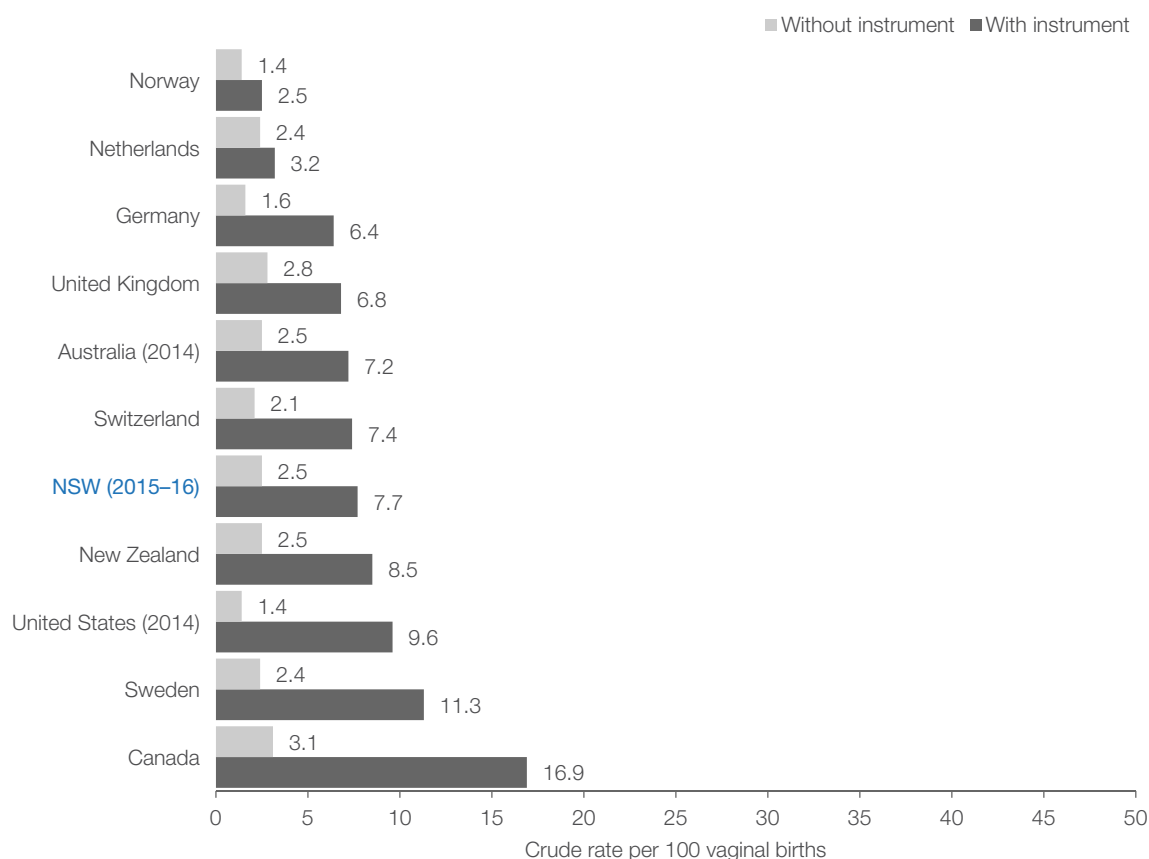
Rates of obstetric trauma in NSW were mid-range internationally

Potentially avoidable complications can occur during childbirth, such as laceration or tears of the perineum. Severe tears (categorised as third- or fourth-degree tears) are referred to as obstetric trauma. They often require surgical repair and can have long-term consequences for mothers, such as ongoing pain and incontinence.

Risk factors for perineal tears include Asian ethnicity, never giving birth before, a birthweight greater than four kilograms, difficulty passing the baby's shoulders during labour, the back of the baby's head being positioned against the mother's back during birth (occipitoposterior position), a prolonged second stage of labour, and delivery with instrument.⁵

Obstetric trauma occurred in 7.7 per 100 instrument-assisted vaginal births (e.g. those using forceps or vacuum) in NSW public and private hospitals in 2015–16. Among vaginal births that were not instrument-assisted, the rate of obstetric trauma was 2.5 per 100 births. Across comparator countries for both measures, NSW was placed mid-range (Figure 3.5).

Figure 3.5 Obstetric trauma, vaginal births with and without instrument, public and private hospitals, NSW and comparator countries, 2015 (or nearest year)

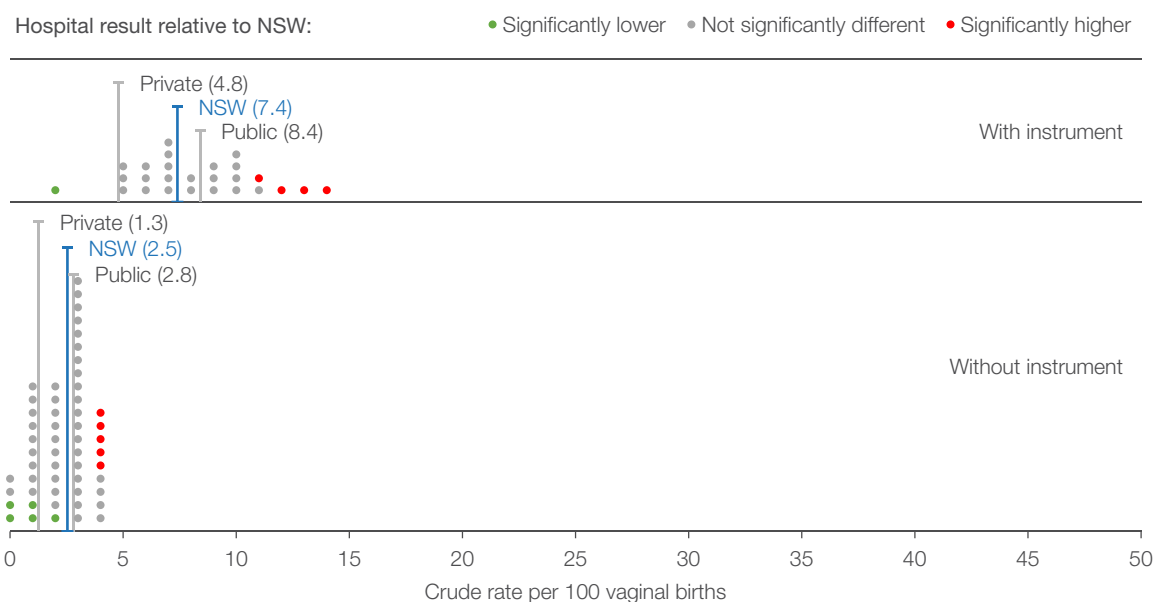


Source: OECD Health Statistics 2017. BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 2 March 2018.

More recent NSW data shows that in 2016–17 the rate of obstetric trauma during vaginal births was 7.4 per 100 instrument-assisted vaginal births, and 2.5 per 100 vaginal births that were not instrument-assisted. The rate of obstetric trauma during instrument-assisted vaginal births was higher in NSW public hospitals (8.4) than private hospitals (4.8). The rate was also higher in public hospitals than private hospitals for vaginal births that were not instrument-assisted (2.8 and 1.3 per 100 vaginal deliveries, respectively) (Figure 3.6).

Across public hospitals, the rate of obstetric trauma ranged from 1.9 to 13.9 per 100 instrument-assisted vaginal births, and 0 to 4.4 not instrument-assisted (Figure 3.6).

Figure 3.6 Obstetric trauma, vaginal births with and without instrument, NSW public hospital variation, 2016–17



Source: BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 5 March 2018.

Patient safety: Complications after surgery

NSW had higher recorded rates of blood clots and sepsis than comparator countries

In NSW, the Patient Safety First policies and programs are a top policy and practice priority. Safe care has many dimensions, and can be compared internationally based on potentially avoidable blood clots, sepsis and retained foreign objects following surgery.

A venous thromboembolism (VTE), or blood clot, causes complications and can be fatal. A VTE occurs when blood pools and thickens inside veins – blocking the flow of blood through the body. When the clot forms in a deep vein, most often in the leg or pelvis, it is known as a deep vein thrombosis (DVT) and causes swelling, pain and other complications. If the clot breaks loose and lodges in the lung, it can cause a pulmonary embolism (PE) and often results in serious morbidity or death. Patients are at risk of VTE after surgical procedures, including hip and knee surgery.⁶

VTE among hospitalised patients can be effectively prevented through assessing risk factors and providing appropriate prophylaxis.⁷

In NSW public and private hospitals in 2015–16, the rates of DVT and PE following hip and knee surgery were 1,713 and 439 cases per 100,000 surgical discharges, respectively. Both types of complications were higher than recorded nationally and in comparator countries (Figure 3.7).

Sepsis is caused by the body's severe reaction to an infection, and can lead to organ dysfunction and death. Post-operative infections that trigger sepsis can be prevented through the use of antibiotics before surgery, ensuring patients are in the best condition possible before elective surgery, the use of antiseptic solution around surgical incisions, and the use of sterile equipment and clean scrubs and masks among surgical staff.⁸

In NSW public and private hospitals in 2015–16, the rate of sepsis among patients who underwent an abdominal surgical procedure was 2,894 cases per 100,000 surgical discharges – higher than recorded nationally and in comparator countries (Figure 3.8).

In most healthcare systems, a retained foreign object following surgery is regarded as a sentinel event – one where a rate of zero is both a feasible and fundamental objective. In 2015–16, NSW public and private hospitals had a rate of seven per 100,000 surgical discharges – lower than recorded nationally and similar to comparator countries with available data (Figure 3.9).

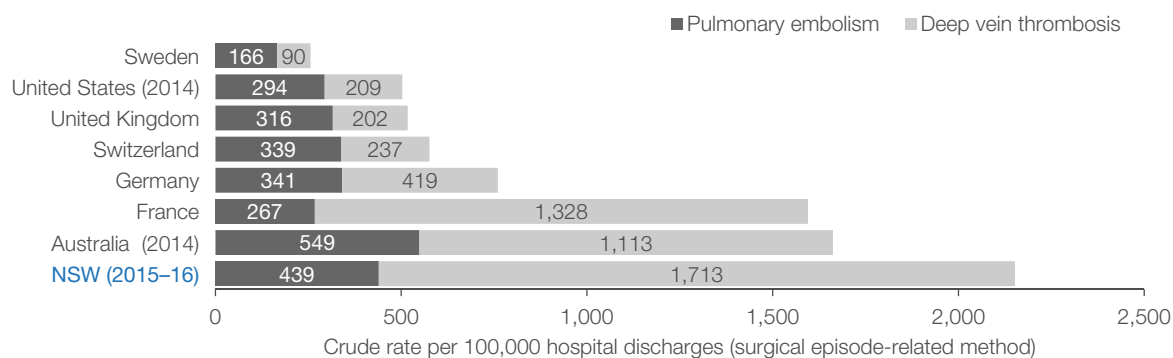
Note on data comparability

International variation in patient safety data may be influenced by coding practices. Higher rates may result from more complete patient safety monitoring systems rather than worse care. Measurement of VTE is complex due to disconnected hospital and community care, differences in coding practices and inadequate detection. Other countries may identify and manage more of these complications in the community. All indicators are based on episode-level data.

The data reported for NSW do not take into account the use of condition onset flag (a marker routinely used in hospitals that enables identification of conditions present at admission). Most comparator countries also do not use the condition onset flag.

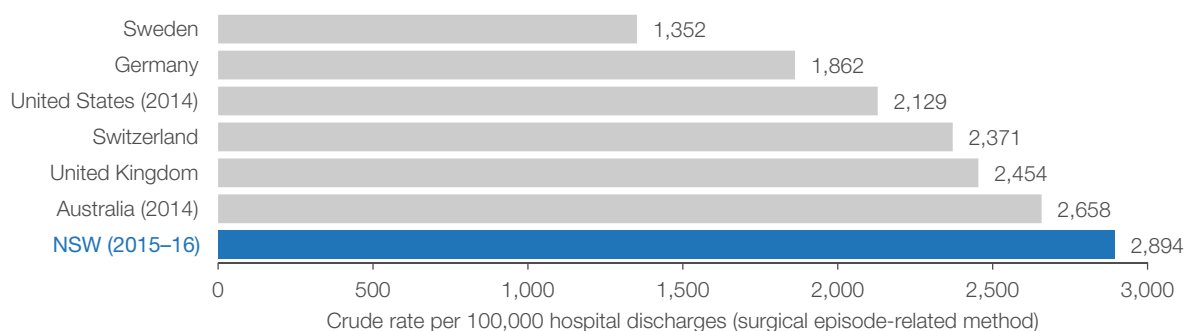
For more information about patient safety indicators, see the Technical Supplement available at bhi.nsw.gov.au

Figure 3.7 Post-operative deep vein thrombosis and pulmonary embolism following hip and knee surgical procedures, public and private hospitals, NSW and comparator countries, 2015 (or nearest year)



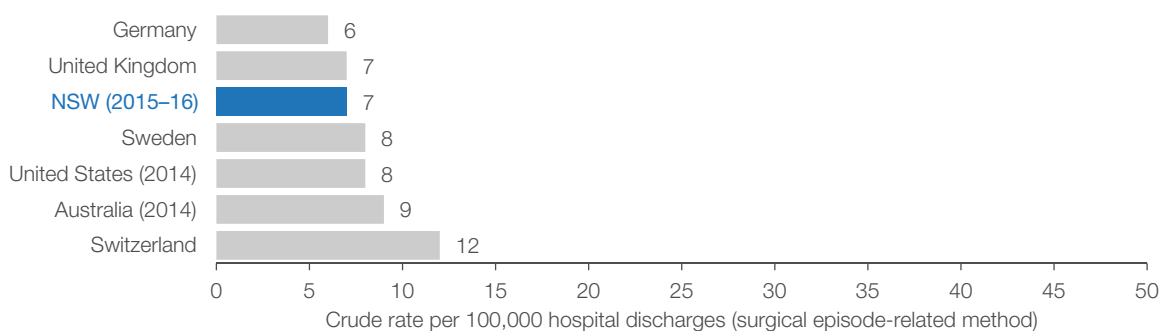
Source: OECD Health Statistics 2017. BHI analysis of hospital performance dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 6 March 2018.

Figure 3.8 Post-operative sepsis following abdominal surgical procedures, public and private hospitals, NSW and comparator countries, 2015 (or nearest year)



Source: OECD Health Statistics 2017. BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 7 March 2018.

Figure 3.9 Post-operative retained foreign body, public and private hospitals, NSW and comparator countries, 2015 (or nearest year)



Source: OECD Health Statistics 2017. BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 5 March 2018.

Patient-reported complications

About 16% of patients admitted to NSW public hospitals said they experienced a complication

Healthcare-related complications can contribute to longer lengths of stay for patients, increased mortality and readmission to hospital. While they cannot always be avoided, their incidence and impact can be reduced.

Patient surveys capture patients' perspectives on outcomes that matter to them, and can capture the impact healthcare has on their pain, mobility, functional status and quality of life.

Patient survey data also offers information both on the incidence and impact of complications of care.

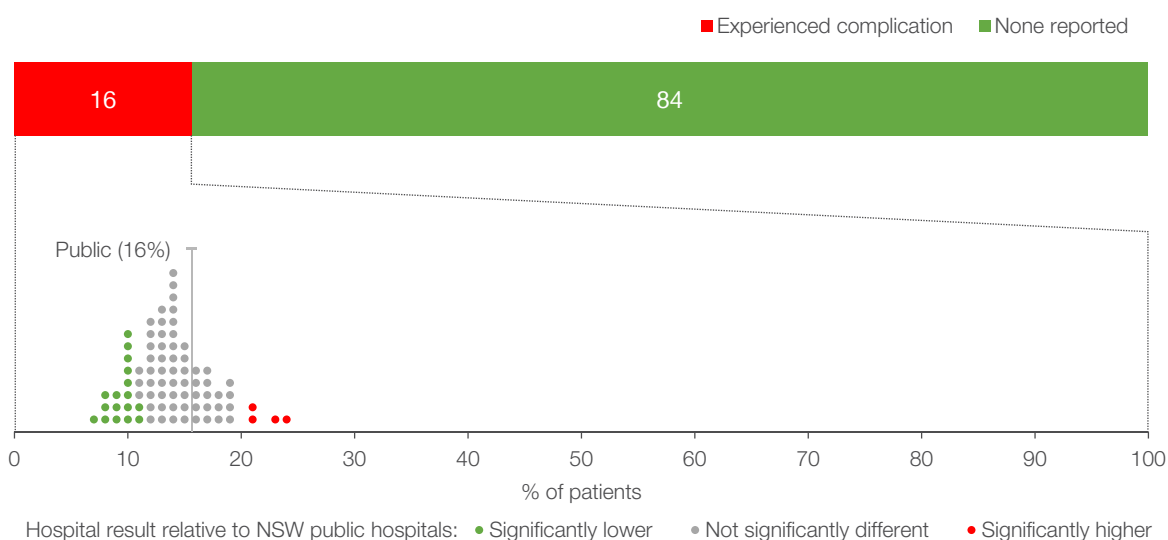
Among adults admitted to a NSW public hospital in 2016, 16% said they experienced a complication during or shortly after their hospital stay. Across hospitals, the percentage ranged from 7% to 24% (Figure 3.10). The most common complication reported was infection.

In 2016, 6% of adults admitted to a NSW public hospital said they were readmitted to hospital because of a complication. This ranged from 1% to 10% across hospitals (Figure 3.11).

In the same survey, 7% of patients said they went to an ED due to a healthcare-related complication. This ranged from 2% to 11% across hospitals (Figure 3.12).

Figure 3.10 Adult admitted patients who said they experienced a complication or problem during or shortly after their hospital stay, NSW public hospital variation, 2016

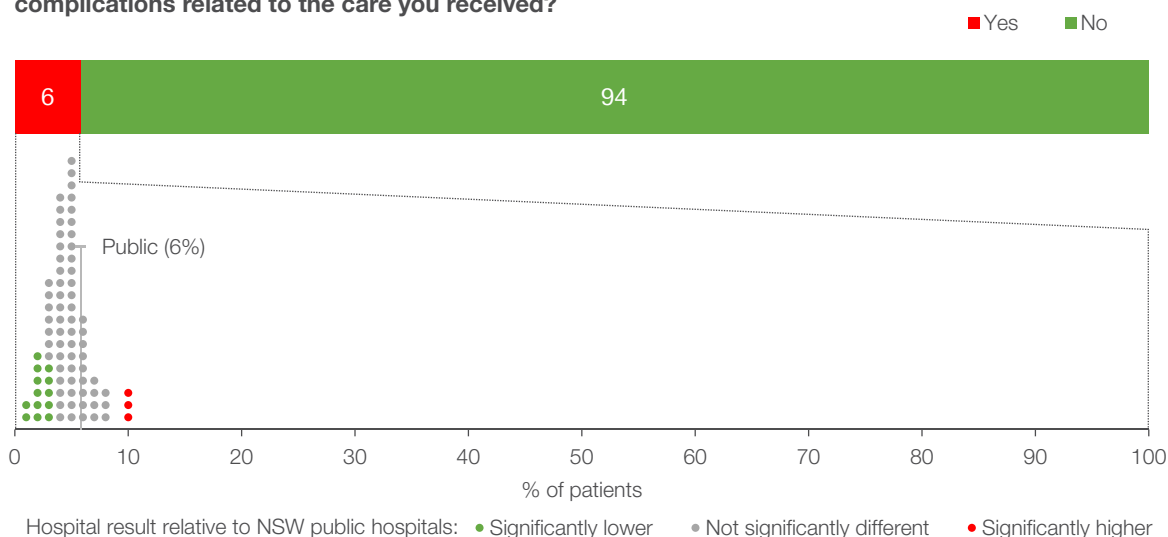
Did you experience a complication or problem during or shortly after your hospital stay?



Source: Bureau of Health Information Adult Admitted Patient Survey 2016.
Note: Includes patients who did not provide an answer.

Figure 3.11 Adult admitted patients who said they were readmitted to any hospital because of complications related to their care, NSW public hospital variation, 2016

In the month following your discharge, were you re-admitted to any hospital because of complications related to the care you received?

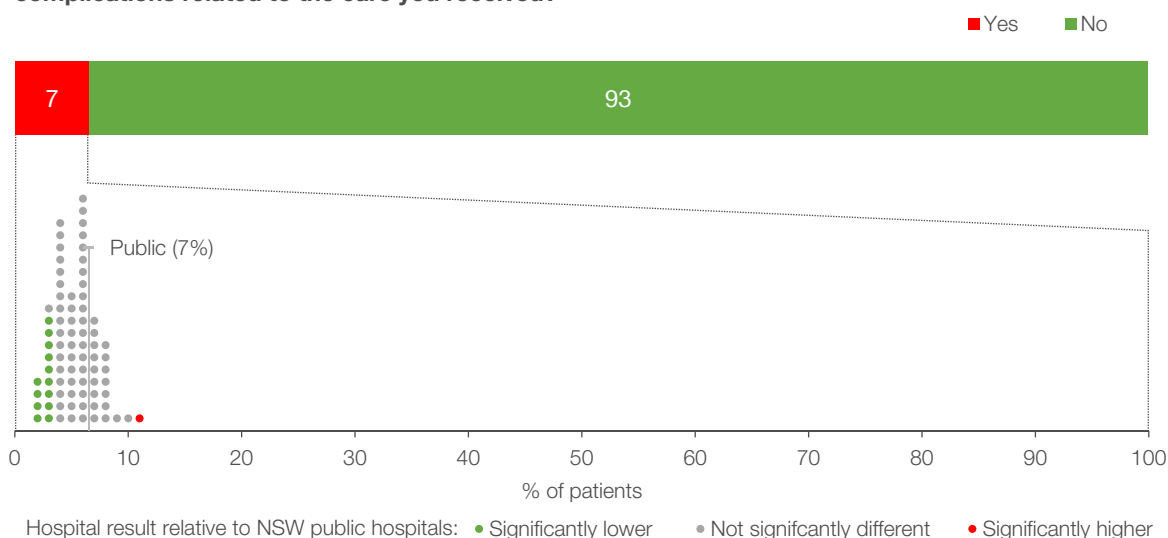


Source: Bureau of Health Information Adult Admitted Patient Survey 2016.

Note: Includes patients who did not provide an answer.

Figure 3.12 Adult admitted patients who said they went to an emergency department after discharge because of complications related to their care, NSW public hospital variation, 2016

In the month following your discharge, did you go to an emergency department because of complications related to the care you received?



Source: Bureau of Health Information Adult Admitted Patient Survey 2016.

Note: Includes patients who did not provide an answer.

Equity lens: Diabetes care

Diabetes hospitalisation rates were five times higher among Aboriginal people

Aboriginal people are disproportionately affected by diabetes, both in terms of prevalence and hospitalisation.

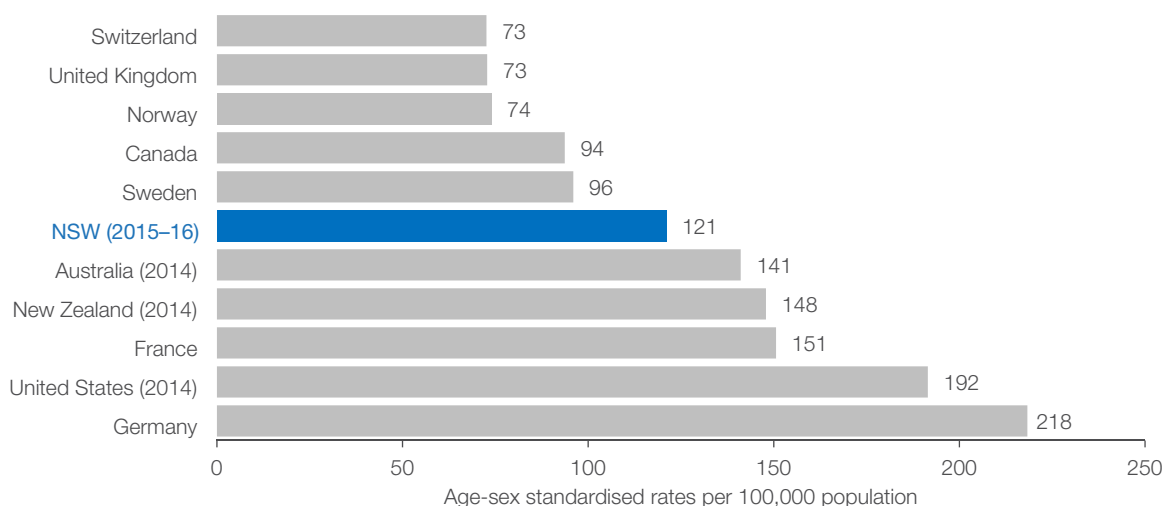
The prevalence of diabetes or high blood glucose among Aboriginal people aged 16+ years in NSW more than doubled over ten years, from 10% in 2006 to 22% in 2016. Among non-Aboriginal people, the prevalence grew from 7% to 9% during the same period.⁹

Type 1 diabetes is not associated with lifestyle factors and cannot be prevented. However, type 2 diabetes, the most common form of the disease, is associated with lifestyle risk factors such as obesity, physical inactivity and high blood pressure. Poor management of diabetes can increase the risk of serious complications such as heart attack, stroke, kidney failure and amputation.¹⁰

While diabetes-related hospitalisations cannot always be avoided, effective primary care and good coordination between primary and acute care can reduce the risk of hospitalisation.

In 2015–16, the age-sex standardised rate for diabetes-related admissions to public and private hospitals in NSW was 121 per 100,000 population. This placed NSW similar to Australia's national rate and mid-range among comparator countries (Figure 3.13).

Figure 3.13 Diabetes-related adult admissions to public and private hospitals, NSW and comparator countries, 2015 (or nearest year)



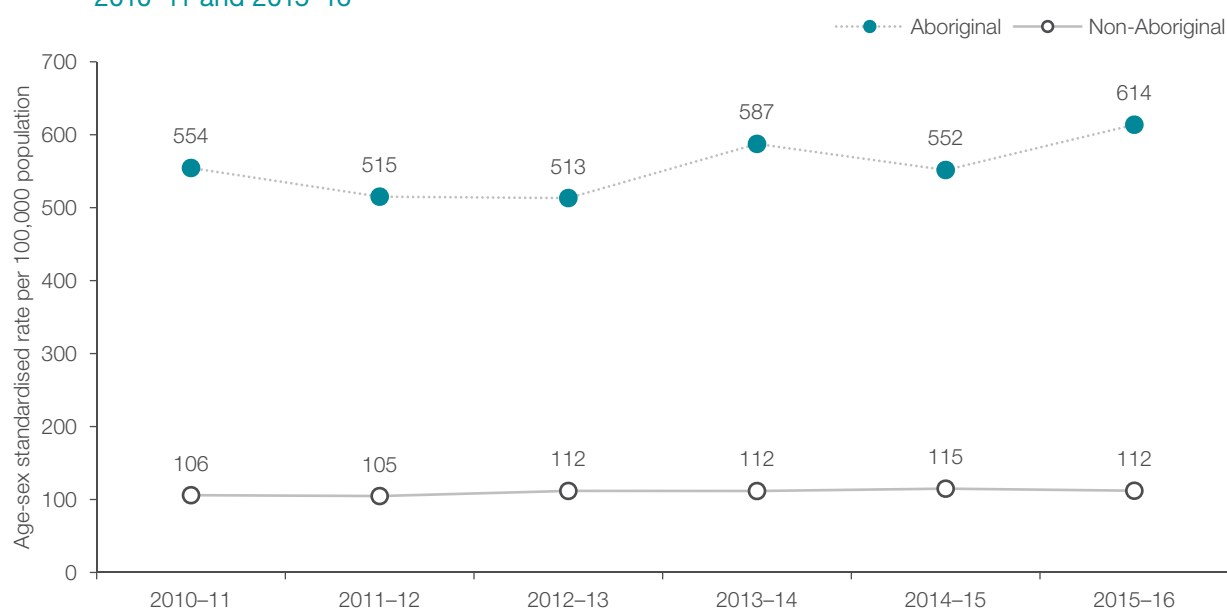
Source: OECD Health Statistics 2017. BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 7 March 2018.

Note: The data are age-sex standardised to the 2010 OECD standard population aged 15+ years.

The rate of diabetes-related admissions to public and private hospitals among Aboriginal people has been increasing and is about five times higher than the rate among non-Aboriginal people. Between 2010–11 and 2015–16, the age-sex standardised rate grew from 554 to 614 per 100,000 population among Aboriginal people. Among non-Aboriginal people, the rate did not substantially change during that period (Figure 3.14).

The Australian Government's National Diabetes Strategy 2016–2020 includes the goal of reducing the impact of diabetes among Aboriginal people. The strategy includes education to raise awareness of diabetes prevention; improved availability and affordability of healthy foods; access to primary healthcare in culturally safe services to detect and manage diabetes; and the use of specialists to treat the serious complications of diabetes through regional networks of care and telehealth.

Figure 3.14 Diabetes-related adult admissions to public and private hospitals by Aboriginality, NSW, 2010–11 and 2015–16



Source: BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 7 March 2018.

Note: The data are age-sex standardised to the 2010 OECD standard population aged 15+ years.

Equity lens: Mental health readmissions

Aboriginal patients in NSW had among the highest rates of psychiatric readmissions

The need for mental health services is higher among Aboriginal people, who are almost twice as likely as non-Aboriginal people to report high levels of psychological distress. For example, in 2015, 22% of Aboriginal people aged 16+ years reported experiencing high psychological distress, compared with 12% of non-Aboriginal people.¹¹

The grief and trauma experienced as a consequence of the loss of family members, removal of children and dispossession of land, as well as continuing racism and discrimination, are important factors contributing to the higher rates of psychological distress among Aboriginal people.¹²

Most people with mental health conditions can be treated in the community and through primary care services. Mental health services in hospitals aim to provide treatment that enables patients with more serious mental health conditions to return to the community as soon as possible.

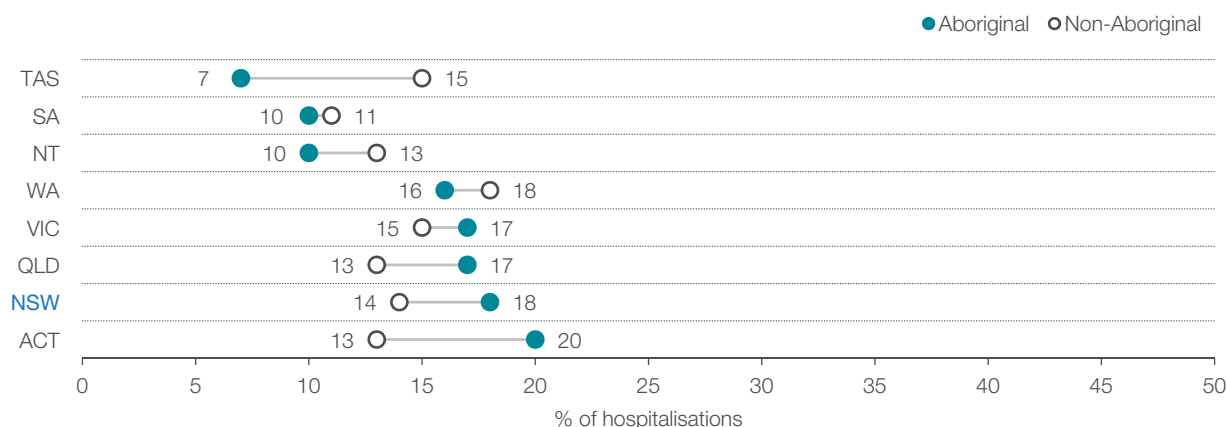
Unplanned readmissions following a mental health hospitalisation may reflect ineffective or incomplete inpatient care or inadequate community care. However, readmissions to hospital are not always avoidable. They may also reflect the episodic nature of some illnesses.

A lack of appropriate support for patients when they are discharged from psychiatric units can put them at risk of homelessness, illicit substance use, violence and suicide.¹³

For all patients who are discharged from mental health inpatient services, risk factors associated with psychiatric readmission include a diagnosis of schizophrenia, history of alcohol abuse, previous psychiatric hospitalisations and homelessness.¹⁴

In half of Australian jurisdictions in 2015–16, including NSW, Aboriginal patients had higher rates of readmission to psychiatric inpatient services within 28 days of discharge compared with non-Aboriginal patients. Aboriginal patients in NSW had one of the higher rates in Australia (Figure 3.15).

Figure 3.15 Overnight hospitalisations in acute psychiatric inpatient services that were followed by a readmission within 28 days of discharge, by Aboriginality, Australian states and territories, 2015–16



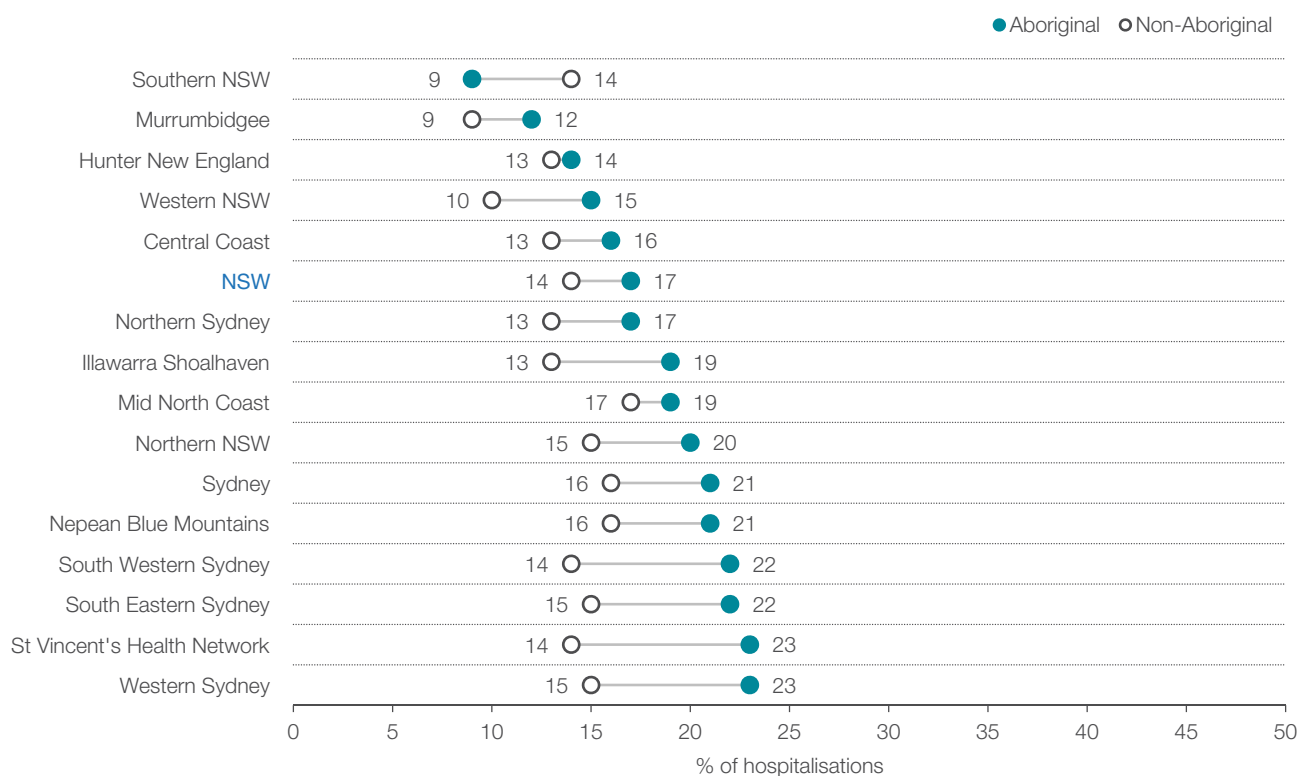
Source: Productivity Commission Report on Government Services 2018, Part E: Health, based on Australian Institute of Health and Welfare (unpublished), from data provided by state and territory governments.

In 2016–17, the 28-day readmission rate in NSW was 17% for Aboriginal patients and 14% for non-Aboriginal patients (Figure 3.16).

Within NSW, mental health readmission rates for Aboriginal patients were higher than readmission rates for non-Aboriginal patients in almost every local health district (LHD). Readmission rates varied across LHDs, from 9% to 23% for Aboriginal patients and from 9% to 17% for non-Aboriginal patients (Figure 3.16).

NSW Health has a policy that promotes the safe and effective transition of mental health patients from hospital to the community. It outlines specific requirements for Aboriginal patients, including that staff liaise with specialist Aboriginal health staff to ensure transfer of care starts early and is consistent with the needs of the patient.

Figure 3.16 Overnight hospitalisations in acute psychiatric inpatient services that were followed by a readmission within 28 days of discharge, by Aboriginality, NSW local health districts, 2016–17



Source: NSW Ministry of Health, System Information and Analytics Branch, InforMH.

Note: Local health districts with at least 50 hospitalisations each for Aboriginal and non-Aboriginal patients are presented.

Equity lens: Emergency departments

Aboriginal patients have higher rates of returns to EDs

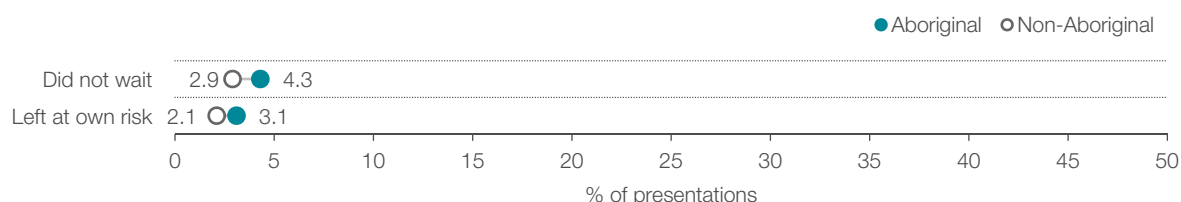
Aboriginal patients, younger patients, and those from a non-English speaking background are more likely to leave emergency departments (EDs) before treatment has commenced or been completed.¹⁵

Factors associated with patients choosing to leave the ED before their treatment has been initiated or completed include prolonged waiting times, feeling better while waiting, seeking healthcare elsewhere, and deciding the ED was not the appropriate place for them.¹⁶

For all patients in NSW in 2016–17, more than 140,000 ED visits ended with patients who did not wait and left the ED before treatment had commenced, or left at their own risk against medical advice after treatment had been initiated (data not shown).

In NSW in 2016–17, 4.3% of visits by Aboriginal patients and 2.9% of visits by non-Aboriginal patients ended with patients not waiting for treatment to commence. In the same year, 3.1% of ED visits by Aboriginal patients and 2.1% of visits by non-Aboriginal patients ended with patients leaving at their own risk after treatment had commenced (Figure 3.17).

Figure 3.17 Emergency presentations to emergency departments that ended with patients who did not wait or left at their own risk, by Aboriginality, NSW, 2016–17



Source: BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 9 February 2018.

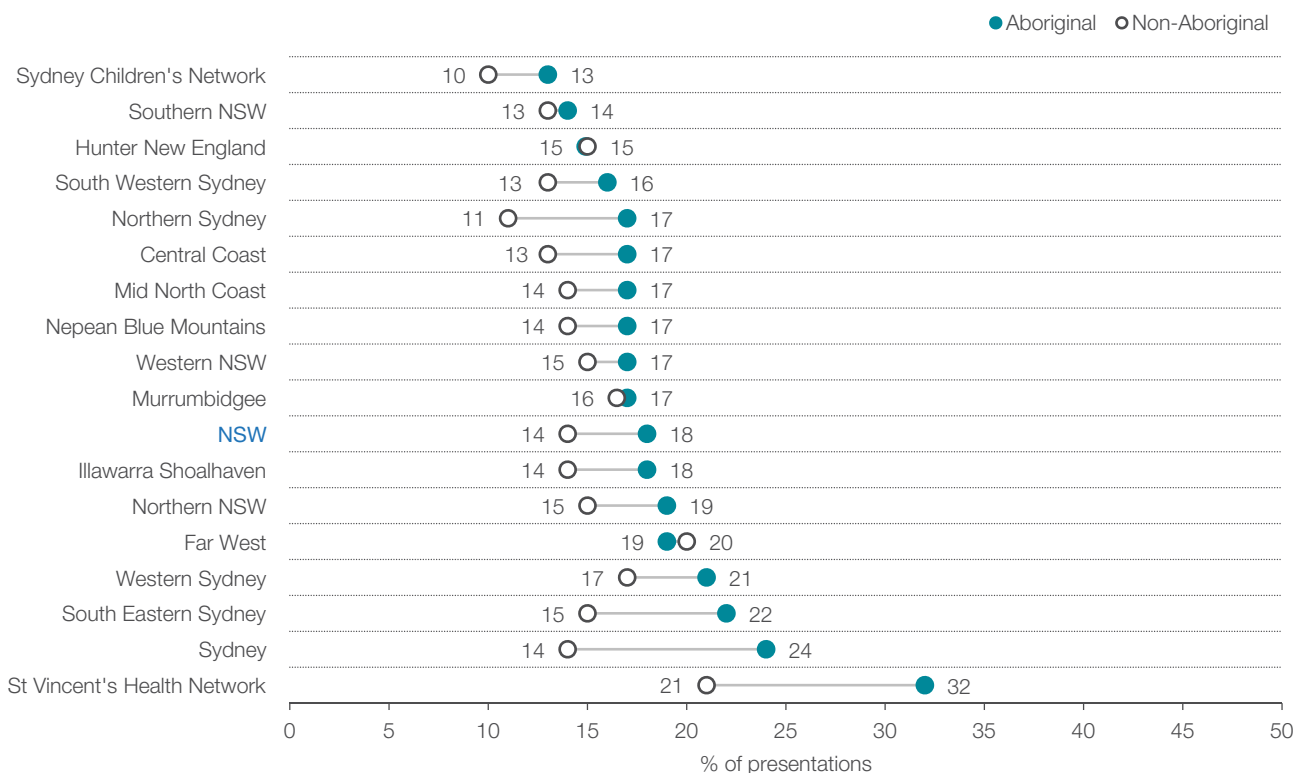
Barriers to completing care in EDs for Aboriginal patients may include either real or perceived racism, poor literacy, different constructs of health and sickness, and a lack of culturally appropriate staff and information.¹⁷

Among the possible consequences of patients leaving EDs without treatment is re-presenting to the ED within a short time. Aboriginal patients who leave the ED without initiating or completing treatment have a higher rate of re-presentation in NSW, and in almost all local health districts.

In NSW in 2016–17, 18% of Aboriginal patients who left the ED without initiating or completing treatment returned to the ED within 48 hours. By contrast, the rate was 14% for non-Aboriginal patients.

Within NSW, the rate varied across LHDs from 13% to 32% among Aboriginal patients, and 10% to 21% among non-Aboriginal patients (Figure 3.18).

Figure 3.18 Emergency presentations to emergency departments among patients who did not wait or left at their own risk that were followed by a re-presentation to any hospital within 48 hours, by Aboriginality, NSW local health districts, 2016–17



Source: BHI analysis of Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence, data accessed 6 March 2018.

Appendices

Appendix 1: Data sources and methods

Healthcare in Focus 2017 draws upon a range of data sources. In addition to healthcare performance data already published by governments or journal articles (as referenced in figures and text), the primary sources of data used in the report include:

- The Organisation for Economic Cooperation and Development's Health Statistics online database
- The Commonwealth Fund International Health Policy Survey 2017
- Australian Bureau of Statistics Patient Experience Survey 2016–17
- Australia and New Zealand Dialysis and Transplant Registry
- Productivity Commission Report on Government Services 2018
- Bureau of Health Information NSW Patient Survey Program 2015–2017
- Hospital Performance Dataset - linked admitted patient, emergency department presentation and fact of death data, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence
- NSW Perinatal Data Collection, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence
- NSW Ambulance Computer Aided Dispatch System
- NSW Health Emergency Department Data Collection, accessed via the Health Information Exchange
- NSW Health Transfer of Care Reporting System
- NSW Health Waiting List Collection On-line System
- NSW Ministry of Health, System Information and Analytics Branch, InforMH

Statistical Reporting

For OECD comparisons, 2015–16 NSW results are used as they more closely align with comparator countries.

Unless otherwise specified, crude results are presented, they are not risk-adjusted. Statistically significant differences in results (i.e. 5% or less likelihood that the differences are due to chance) are denoted in graphs by an asterisk (*) or the use of colour as noted.

For international survey data analyses, logistic regression was used to compare the performance of all other countries (and the 'rest of Australia') with NSW. While significance testing compared NSW results with the 'rest of Australia', the results for 'Australia' shown in figures and referred to in text are the national results.

For patient survey analyses, hospitals or subgroups with fewer than 30 respondents are suppressed. Statistically significant differences between a hospital and the NSW public hospital result or between two subgroups are noted if the 95% confidence intervals of the two estimates do not overlap.

For other analyses, hospitals with fewer than 50 episodes (100 for obstetric trauma) are suppressed, and statistically significant differences between a hospital and the NSW result are noted if the 95% confidence intervals of the two estimates do not overlap.

Statistical significance is affected by sample size and so there may be some hospital results that appear to differ from the NSW result yet are not highlighted; this is a consequence of limited statistical power to detect differences in small samples.

Results are rounded to the nearest whole number, except where rounding would mask meaningful differences. Data are the most recent available.

Further information

The *Technical Supplement*, available at **bhi.nsw.gov.au**, provides further details on data sources and methods

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Acknowledgements

The Bureau of Health Information (BHI) is the main source of information for the people of NSW about the performance of their public healthcare system. A board-governed organisation, BHI is led by Chairperson Professor Carol Pollock and Chief Executive Dr Diane Watson.

We would like to thank our expert advisors, colleagues at the Ministry of Health, pillar and other organisations within New South Wales including the Aboriginal Health and Medical Research Council of NSW.

We also acknowledge BHI's dedicated teams of analytics, research, corporate, design and communications professionals whose expertise made this report possible.

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About the Bureau of Health Information

The Bureau of Health Information (BHI) is a board-governed organisation that provides independent information about the performance of the NSW healthcare system.

BHI was established in 2009 and supports the accountability of the healthcare system by providing regular and detailed information to the community, government and healthcare professionals. This in turn supports quality improvement by highlighting how well the healthcare system is functioning and where there are opportunities to improve.

BHI manages the NSW Patient Survey Program, gathering information from patients about their experiences and outcomes of care in public hospitals and other healthcare facilities.

BHI publishes a range of reports and information products, including interactive tools, that provide objective, accurate and meaningful information about how the health system is performing.

BHI's work relies on the efforts of a wide range of healthcare, data and policy experts. All of our assessment efforts leverage the work of hospital coders, analysts, technicians and healthcare providers who gather, codify and supply data. Our public reporting of performance information is enabled and enhanced by the infrastructure, expertise and stewardship provided by colleagues from NSW Health and its pillar organisations.

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