

Healthcare in Focus 2015

How does NSW compare?



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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

This is the sixth edition of *Healthcare in Focus*, the Bureau of Health Information's annual publication that draws on a range of data sources to build a broad picture of healthcare performance in New South Wales (NSW). As in previous editions, it puts the state in an international context, providing a broad range of measures to assess various aspects of performance.

This year, more than 130 measures are pooled together to assess how care in NSW is provided and how it responds to the needs of the population. The report looks at the patients' perspective, assessing if patients receive healthcare when and where it is needed, if healthcare is responsive to their needs and expectations, and if it makes a difference to their lives. The report also looks at a system perspective in terms of understanding if it provides good value for money in a fair and sustainable way.

Healthcare systems are complex and providing complementary perspectives is necessary to assess how they are working in real life. Just like patients, general practitioners and other providers are well-placed to reflect on key aspects such as coordination of care and integration of services between different providers of care. It is well-known that healthcare delivered with good coordination between primary healthcare and more specialised or hospital settings will achieve better performance. This is why we again partnered with The Commonwealth Fund, a US-based not-for-profit organisation, to ensure a representative sample from NSW in their International Health Policy Survey, conducted in 11 comparable healthcare systems around the world. In 2015, the focus of the survey was on primary healthcare providers, aiming to understand their views of their respective systems and reflect on the way the system works together to respond to people's needs.

Described alongside measures coming from hospital records and other administrative datasets, survey data can reveal variations or gaps that are key to the performance of healthcare systems.

This year the report is published alongside an *At a Glance* document which provides an overview of key findings and summaries of results on six key dimensions of performance – accessibility, appropriateness, effectiveness, efficiency, sustainability and equity.

While this report reaffirms that overall, the NSW healthcare system performs well, there are improvements that could be made. The equity chapter of the report provides a more comprehensive view than in previous years and reveals important disparities for lower socioeconomic groups across NSW.

This edition provides new added-value analysis, looking across various measures in a more integrated way. While the presentation of multiple measures is necessary to ensure a broad perspective on performance, providing a more synthetic assessment enables us to better understand salient aspects that suggest excellent performance and areas to improve.

We hope that this report will fulfil its objectives of providing a compendium of healthcare measures for those who want to better understand aspects of performance and an overview of how NSW compares to other healthcare systems.

Dr Jean-Frédéric Lévesque

Chief Executive, Bureau of Health Information

Summary

The NSW healthcare system performs well overall. Set alongside 11 countries with developed healthcare systems, none spend less than NSW and have better outcomes in premature mortality. However, while there are areas of excellence in specific aspects of care, NSW does not sit at the forefront in any dimension of performance. There is room to improve.

Accessibility: Healthcare, when and where needed

Most people in NSW have access to healthcare – almost everyone has a regular GP or clinic, and public hospitals are open to all. However, services are not always provided when and where needed – among NSW people who needed to see a GP in 2014, 15% said they did not do so.

Care is not always timely. Although 97% of elective surgical procedures in public hospitals were performed within clinically recommended timeframes in 2014, median waiting times for cataract extractions and hip and knee replacements were substantially longer in NSW than in comparator countries.

There are barriers to care – 25% of GPs in NSW said their patients ‘often’ have difficulty paying for medications or other out-of-pocket costs.

Appropriateness: The right healthcare, the right way

NSW is consistently a high achiever in interpersonal elements of patient care, such as communication and respect. However, for measures of coordination of care, NSW is outperformed by many comparator countries.

The right care is provided to many patients but there is scope for better performance. Fewer one-year-old children (91%) were fully vaccinated against diphtheria, tetanus and whooping cough, than in any other comparator country. A lower percentage of NSW people were screened for various types of cancer than in other countries and Australian states.

Only 60% of pregnant women in NSW had their first antenatal care appointment in the initial 14 weeks of their pregnancy – a lower percentage than in other Australian states except Victoria. Almost all pregnant women in NSW (96%) did however receive antenatal

care five or more times during their pregnancy – a higher percentage than most other Australian states.

More than a quarter of NSW patients who underwent hip fracture surgery (27%) did not have their operation within the recommended two days of hospital admission.

Effectiveness: Making a difference for patients

Healthcare in NSW makes a difference – 76% of admitted patients said the care and treatment they received ‘definitely’ helped them.

Five-year relative survival among people with colorectal cancer in NSW (68%) is higher than in comparator countries; while for people with breast and cervical cancer in NSW, five-year relative survival is similar to most other countries (88% for breast cancer and 65% for cervical cancer).

Relative to comparator countries, NSW has high hospitalisation rates for diabetes and chronic obstructive pulmonary disease (COPD), pointing to opportunities to improve ambulatory chronic disease care and reduce the need for hospitalisation.

A small proportion of NSW surgical patients experience post-operative complications. For example, about 2% of patients undergoing hip and knee replacements suffer a venous thromboembolism; and 2% of abdominal surgery patients develop sepsis. These rates are however higher in NSW than in comparator countries.

Efficiency: Value for money

The healthcare system in NSW provides value for money. Total expenditure on health in NSW – from all sources – equates to \$5,944 per person. The United States spends over twice as much (\$13,070), and the United Kingdom 20% less (\$4,852) per person. The average length of stay in NSW hospitals (public and private) is 5.8 days – shorter than in most comparator countries.

However, treatments of low value continue to be provided to patients. Knee arthroscopy – now recognised as providing no net benefit to people aged 50+ years – was performed on 11,377 NSW patients

aged 50+ years in 2013. Between 2004 and 2014, the number of arthroscopies performed on people in this age group increased by 10% (a 5% decrease in public hospitals and a 14% increase in private hospitals).

Matching staff with tasks suited to their skills and experience is also an indicator of efficiency. Among NSW GPs, 21% said the time they spend on administrative tasks relating to claiming payments is a 'major problem'.

Equity: Health for all, healthcare that's fair

Considering equity in terms of socioeconomic status (SES), important disparities are revealed. While 16% of NSW people aged 16+ years said they had difficulty accessing healthcare when needed, this ranged from 10% for people living in quintile 5 areas (highest SES) to 24% in quintile 2 areas (second lowest SES).

Among patients who received non-urgent elective surgery in public hospitals, those from low SES areas were more likely to be treated in hospitals with longer median waiting times. Overall, the median waiting time for patients living in low SES areas was almost 100 days longer than for patients living in high SES areas. Five-year relative survival for a range of cancers in NSW was higher among people from high SES areas. There were however no significant differences across SES groups in patients' responses to survey questions about respectfulness and patient involvement in decisions about discharge.

Sustainability: Caring for the future

Among NSW GPs, 22% said their patients receive 'too much' healthcare (from all sources of care).

Most GPs (87%) said their practice is 'well prepared' to manage care for patients with multiple chronic conditions, but less than half said it is 'well prepared' to manage patients with dementia (46%), severe mental health problems (33%) or substance abuse issues (16%). The percentage of NSW GPs who said their practice 'routinely' uses methods to share information electronically (other than test orders) was low compared to other countries.

Key findings

The NSW healthcare system performs well.

A range of value for money indicators reflect positively on NSW – potential years of life lost at a system level; average length of stay in hospitals; and sustainability in primary care are all areas of strong performance.

Over time, there have been improvements – in emergency department (ED) timeliness measures, use of ED for primary care, and cancer survival.

Patient engagement is good in international terms – yet only 36% of NSW GPs said they 'routinely' give chronic disease patients written instructions about how to manage their care.

Maternity care varies across performance dimensions – mixed results in antenatal care, relatively high rates of caesarean section and mid-range results for low birthweight babies and obstetric trauma.

Less positive performance in surgery – relatively long waiting times for elective procedures, high complication rates, and low levels of timely hip fracture surgery.

Care is not always well integrated – NSW GPs were less positive than those from other systems about coordination of care with social services, specialists and hospitals. Levels of test duplication are relatively high.

Primary care performs relatively well – of 25 primary care measures, NSW was highly ranked for seven – and mid-range for 15.

There are barriers to access – NSW is in the lower quartile of comparator countries for skipped care due to cost, and 32% of people had unmet needs for out-of-hours GP care.

Results are poorer for low SES groups – in terms of waiting times for elective surgery; five-year relative survival for prostate and colorectal cancer; and potentially avoidable hospitalisations.

Setting the scene

About this report

Healthcare in Focus is an annual publication that reports on the performance of the healthcare system in NSW. This year, it features about 130 measures, drawing on information from the Organisation for Economic Cooperation and Development (OECD), the 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, the Australian Bureau of Statistics, Australian Institute of Health and Welfare, NSW Patient Survey Program and NSW Ministry of Health datasets.

Each year the set of measures included in the report is reconfigured slightly. This provides an opportunity to cover different sub-populations, clinical conditions and topics. It means, however, that in any one year, a particular group or topic may appear to be under-represented. For example, this year's report capitalised on the availability of international survey data comparing the views of primary healthcare providers (GPs). This has meant that there are fewer measures based on international patient survey data. Measures of antenatal and maternity care are featured but the report contains less information about other important groups, such as patients in rural areas or those with mental health issues.

Structure of the report

Following a summary and introductory section, detailed results are provided in six chapters that focus on the main dimensions of performance. NSW results for each chapter are placed in an international context with a summary graph based on interquartile ranges – identifying measures for which NSW is in the top 25% or bottom 25% of all countries with available data. The report concludes with a brief synthesis of 10 key findings that emerge from looking across the six main chapters. A companion *At a Glance* document provides a stand-alone summary to this report.

Different perspectives and types of data

- Administrative data and medical records, when analysed using valid and consistent methods, form the foundation for many measurement efforts. These data are amenable to comprehensive and standardised measurement approaches that support fair comparisons within and between jurisdictions.
- Patients provide unique insights into performance, principally through surveys that ask about their experiences of care. Patients, the central participants in healthcare, can describe the services they received, the way in which those services were delivered and the outcomes of care.
- Professionals who work in healthcare can also act as key informants about performance. Insights gathered through staff and healthcare provider surveys capture how well the system functions from an organisational perspective, and also allow providers to respond in their role as agent and advocate for their patients.

Further information

- Appendix A and the Technical Supplement provide further detail on data definitions and methods
- Appendix B provides information on how to interpret data and graphs
- Appendix C summarises NSW hospital level results
- Excel worksheets with the underlying data for all figures are available at bhi.nsw.gov.au

Making comparisons

For most measures, NSW performance is compared with Australia and 10 other high-performing systems that participate in The Commonwealth Fund survey and provide data to the OECD. International comparisons are increasingly seen as an essential part of performance measurement, helping to:

“...pinpoint specific areas where the health system is not performing as well as it could, identify countries that appear to be performing better, and prompt a search for ways to improve.”⁵

While each healthcare system has a unique set of structural, financial and regulatory arrangements to deliver care, meaningful comparisons of system performance are possible – particularly when those comparisons adopt a patient perspective. Measuring how well patients’ needs and expectations were met – whether the right care was provided, at the right time, delivered in the right way, and resulted in improvements in patients’ health and wellbeing – can highlight relative strengths and weaknesses in system performance.

Here in NSW, the healthcare system is complex. Responsibilities for funding, management, delivery and regulation of care are shared across different layers of government; between public, private and not-for-profit sectors; and in community and hospital-based settings. The Commonwealth government’s main responsibilities cover Medicare (the national scheme that provides free or subsidised access to services, including general practitioner (GP) services) and the pharmaceutical benefits scheme (which subsidises access to prescription medicines). The state government’s responsibilities cover the administration of public hospitals, community and mental health services, delivery of public health, ambulance and emergency services, patient transport and public dental clinics.

Purpose and role – catalysing change

While compendia-type reports such as *Healthcare in Focus* provide accountability and can identify opportunities to improve, they cannot provide sufficient detail to guide local practice change. Their contribution is to highlight areas where more detailed analysis and investigation should be targeted.

For example, *Healthcare in Focus 2012* compared NSW results with four comparator countries on 30-day mortality following hospitalisation for heart attack (acute myocardial infarction) and stroke, alongside de-identified results for each NSW public hospital. The level of variation seen across NSW hospitals prompted more detailed analysis and the development of a measure of risk-standardised mortality ratio for five conditions.

Published in 2013, and reporting hospital results on a nominal basis, the work catalysed by *Healthcare in Focus*, pointed to unwarranted clinical variation. Public release of these data, alongside improvement initiatives led by other NSW organisations, such as the Agency for Clinical Innovation, galvanised and guided efforts to improve care.

In order to make fair and meaningful comparisons across systems, the full scope of healthcare services is included in this assessment. Comparisons do however need to note differences in data timeliness, coverage and collection protocols. In recent years, greater use of international comparisons has resulted in significant harmonisation of data definitions, measurement, analysis and reporting approaches.^{7,8,9,10,11} Nevertheless, as with all statistics, interpretation requires care.

Applying a framework

To know where NSW stands; and guide where to look

Healthcare in Focus contributes to two important functions of the Bureau of Health Information (BHI).

First, it informs the people of NSW about the healthcare performance in the state. It addresses the question where does NSW stand? – contextualising performance by providing information about how other systems perform, relative to NSW.

Second, it addresses the question where to look? – identifying opportunities to improve care. Here, international comparisons quantify potential gains – how far is NSW from the best?

The report also examines, for a selection of measures, the extent of variation within NSW – across hospitals or regions. Here too, it can inform improvement – identifying areas where there is significant variation across the state and potential for future improvements in performance.

How to assess performance?

Healthcare services are shaped, directly and indirectly, by a wide array of organisations and professionals working with patients. Together, they perform a huge variety and volume of tasks to diagnose, deliver, support, guide, and assure provision of care that improves peoples' health.

Because healthcare is complex, performance measurement requires a systematic and balanced approach; one that includes sufficient measures to reflect the diversity of the system while not succumbing to the 'indicator chaos' of too many measures. If it is to be coherent, comprehensive and concise, healthcare performance assessment must be guided by a clear framework, one structured around key dimensions of performance.^{1,2,3}

The BHI framework is an analytical tool that guides assessment, by describing key dimensions of performance and organising them into a logical structure. It was developed following a review of performance assessment approaches, models and frameworks in use across different jurisdictions, nationally and internationally.⁴

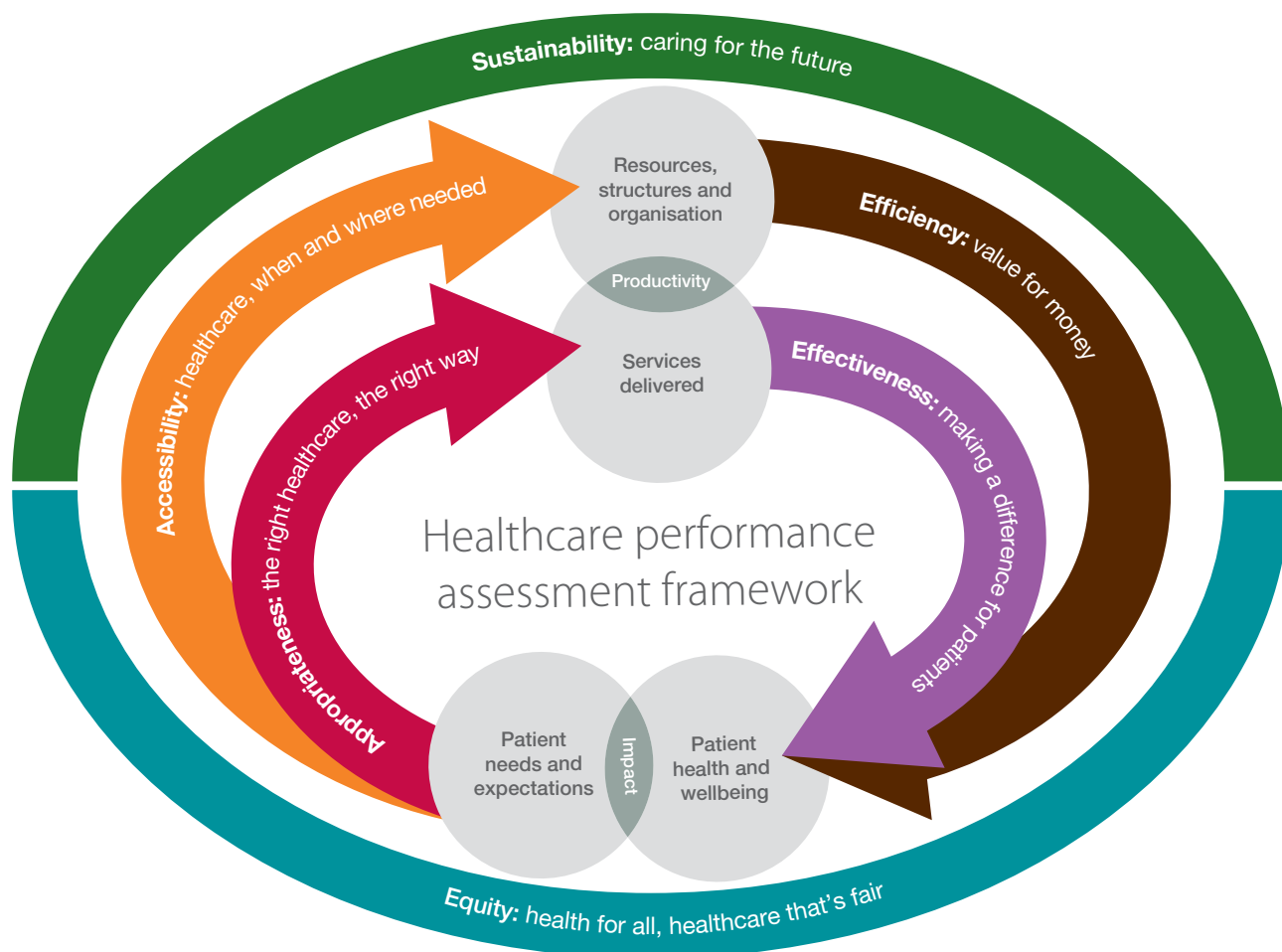
The framework uses counts, or measures of inputs, outputs and outcomes, as a starting point for assessment – providing an account of what was done. These counts are clustered into four categories: patient needs and expectations; services delivered; resources, structures and organisation of the system; and health and wellbeing of the population.

Comprehensive assessment goes beyond consideration of what was done, to focus on questions of how well it was done. Performance – achieving goals, adding value, balancing priorities, responding to context – is captured in constructs that link healthcare inputs, outputs and outcomes. These constructs, or dimensions of performance – accessibility, appropriateness, effectiveness, efficiency, equity and sustainability – are explored through a series of questions, and form the themes for the report (Figure 1).

Six dimensions of performance

1. **Accessibility: Healthcare, when and where needed.** Are patients' and populations' needs met? How easy is it to obtain healthcare?
2. **Appropriateness: The right healthcare, the right way.** Are evidence-based and guideline-compliant services provided in a technically proficient way? Are the services provided responsive to patients' expectations and needs?
3. **Effectiveness: Making a difference for patients.** Are healthcare services addressing patients' problems and improving their health?
4. **Efficiency: Value for money.** Are healthcare services providing good value for the resources invested? Are there areas of duplication or waste?
5. **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?
6. **Sustainability: Caring for the future.** Is the system adapting to changing needs and expectations of patients, and to changing circumstances?

BHI healthcare performance assessment framework



Overview of measures included in this report

Overall views of performance	
How does NSW perform overall?	Extent of change needed in healthcare system, GP and patient perspectives
Chapter 1: Accessibility – Healthcare, when and where needed	
Getting timely appointments for primary care	Availability of same- or next-day appointments Waited longer than acceptable to get appointment, services not available when needed
Accessing primary care out-of-hours	GPs who said that their practice makes home visits Access to primary care out-of-hours
Starting treatment in the emergency department	ED patients who said they were triaged within 15 minutes of arrival Treatment started within recommended time (states and territories), median time to treatment
Time spent in emergency department	Visits for which patients spent four hours or less in the ED, by admission status ED patients who said they were delayed when leaving the ED and reasons for delay
Waiting for specialist care	Waiting times to see specialist, GPs perceptions about patients' waiting times to treatment Patients who said the time they waited to be admitted to hospital was 'about right'
Waiting for elective surgery	Median waiting time for selected common elective surgical procedures Elective surgical procedures performed on time and number of procedures performed
Difficulties accessing healthcare	GPs who said their patients had difficulty getting specialised diagnostic tests People who reported unmet need for GP, specialist and dental services
Delaying or skipping care due to cost	GPs who said patients experienced difficulty paying for medications or other out-of-pocket costs Difficulty paying or foregoing care due to cost
Chapter 2: Appropriateness – The right healthcare, the right way	
Preventive care: Vaccination and cancer screening	Uptake of selected vaccinations, provision of reminders for delivery of preventive care Breast, cervical and colorectal cancer screening
Maternity care: Antenatal care and births	Duration of pregnancy at first antenatal visit, five or more antenatal visits Mothers who had a caesarean section, type of birth
Surgical care: Hip fracture surgery	Hip fracture surgical procedures that were performed within two days of hospital admission
Stroke rehabilitation care: Organisational capacity	Organisational audit, adherence to essential elements of stroke services
End of life care	Conversations about end of life care ED visits and hospitalisations in the last 30, 180 and 365 days of life
Engaging patients: Managing care at home	Written plan to support patients with chronic conditions Information provision about hospital discharge, patient engagement
Coordinating care for patients: Using systems to link services	Coordination of care following discharge from hospital GP measures of care coordination
Keeping patients safe: Hand hygiene	Staff complying with hand hygiene, patients who saw nurses clean their hands
Keeping patients safe: Medication management	GPs use of electronic alerts about a potential problem with drug dose or drug interaction Patients reporting a medical mistake was made in their care, told about medication side effects
Chapter 3: Effectiveness – Making a difference for patients	
Outcomes for patients with diabetes	Diabetics with controlled blood sugar levels Age-sex standardised rates for diabetes-related lower extremity amputation
Outcomes for patients with CHF or COPD	Risk-standardised rate of readmission within 30 days Risk-standardised rate of 30-day mortality
Outcomes for patients with cancer	Potential years of life lost due to malignant neoplasms Five-year relative survival for breast, colorectal and cervical cancer

Outcomes and adverse events in maternity care	Babies with low birthweight Rates of obstetric trauma
Adverse events post-surgery	Post-operative rates of: sepsis, deep vein thrombosis and pulmonary embolism Rates of foreign body left in during surgical procedure
Patient-reported outcomes of care	Patients said care 'definitely' helped them, ED and hospital Patients said the problem they went to hospital for was 'much better'
Patient-reported complications of care	Patients reporting any complication and impact of complication, ED and hospital
Chapter 4: Efficiency – Value for money	
Value for money	Healthcare expenditure per capita, by potential years of life lost
Cost of hospitalisations and ED visits	Average cost of an ED visit by admission status Recurrent cost per hospitalisation and per maternity separation
Average length of stay (ALOS)	ALOS, ALOS per birth, relative stay index
Providing care in the right setting	Bed days for: Maintenance patients, hospital-in-the-home ED visits classified as 'GP-type' visits
Optimising the use of resources	GP/clinic did not use personnel to manage care for patients that need regular follow-up GP/clinic had major problems with amount of time spent on administrative tasks
Duplication and waste	Tests had been repeated, results were not available at the time of the patient's visit Number of knee arthroscopy procedures
Chapter 5: Equity – Health for all, healthcare that's fair	
Disparities in accessibility: Unmet need	People who said they had: difficulty accessing healthcare, unmet needs for care Hospitalisations in children related to removal and restoration of teeth
Disparities in accessibility: Timeliness	Timeliness in elective surgery and ED
Disparities in appropriateness	Patients receiving hip fracture surgery within two days, patient experience measures
Disparities in effectiveness: Avoiding hospitalisations for chronic conditions	People with three or more ED visits or hospitalisations in a year, asthma hospitalisations, hospitalisations for select chronic and vaccine-preventable conditions
Disparities in effectiveness: Readmissions, mortality and survival	Risk standardised readmission/mortality rate for COPD, CHF and AMI Five-year relative survival, by type of cancer
Disparities effectiveness: Complications	Rates of post-operative complications, obstetric trauma Adult admitted patients experiencing a complication and impact of the complication
Chapter 6: Sustainability – Caring for the future	
GP views on overall quality and quantity of care	GPs perceived changes in quality of care their patients receive, need for complete system rebuild GP views on volume of care their patients receive from all providers
An increasing demand for healthcare	ED visits and hospitalisations by age group, hospitalisations by disease group
Patients with high levels of healthcare service use	Frequency of ED visits, hospital admissions and bed days Providers who said their place of care is well-prepared to manage care
Literacy and patient engagement	Mean literacy score, adults by literacy skill level Admitted patients' involvement in decisions about their care
Healthcare resourcing	Total healthcare expenditure as a percentage of Gross Domestic Product Nurses and doctors per 100,000 population Providers who consider costs to healthcare system when making treatment decisions
Electronic and technology support	GPs who said they are satisfied with electronic medical record system GPs who said their practice has the ability to generate information electronically
Staff engagement	NSW Health employees views on meeting future challenges (NSW)

Overall views of performance

How does NSW perform overall?

One way to assess system performance is to ask patients and providers about their overall views. The Commonwealth Fund International Health Policy Survey each year asks respondents about their healthcare system, and the extent of change required. In NSW since 2010, there has been a marked decrease in the proportion of respondents with negative views (Figure 1).

The two most recent surveys have sought the views of patients (2014) and general practitioners (GPs) (2015). Around half of all respondents in NSW said the healthcare system works well. Internationally, this placed NSW fifth out of 12 jurisdictions from a GP perspective and fourth out of 12 jurisdictions from a patient perspective (Figure 2).

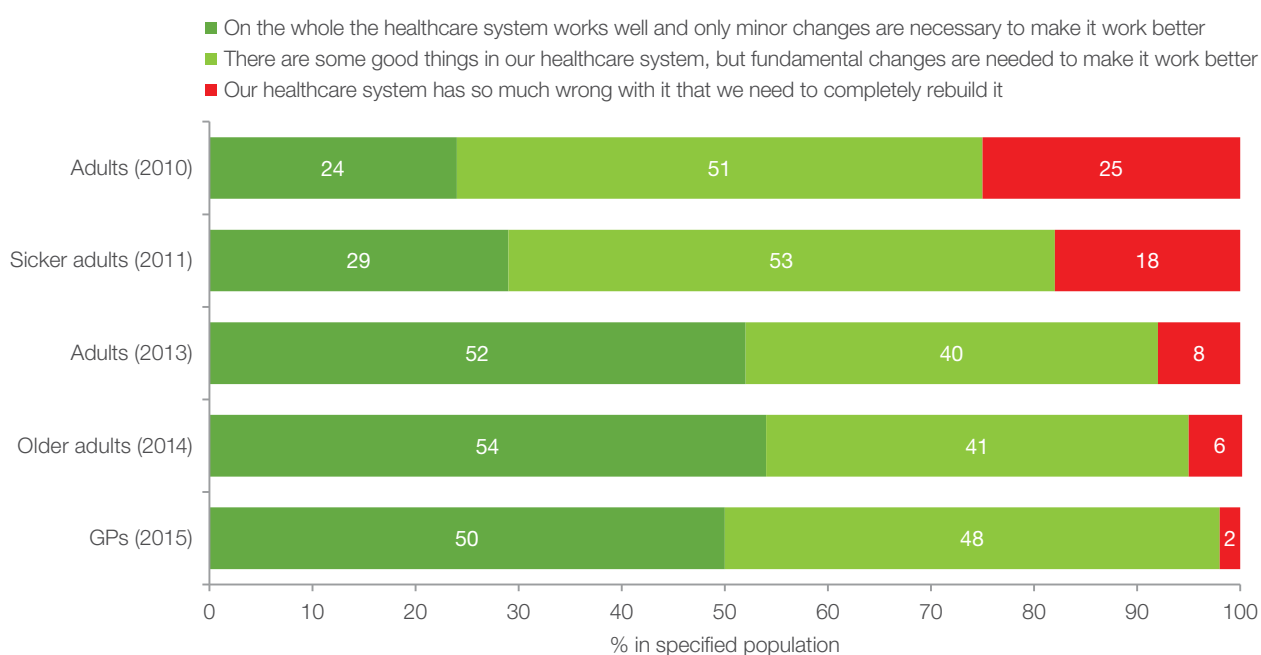
As well as international survey data that reflects on the system as a whole, more detailed information about NSW public hospitals is collected through the NSW Patient Survey Program. This program elicits views from patients who have had direct and recent experience of different types of care, and reports

at a hospital or facility level. Among NSW adults admitted to hospital in 2014, 63% said overall, the care they received was 'very good'. Across hospitals, this ranged from 45% to 85% (Figure 3).

An overall perspective is important, but not enough to assess performance

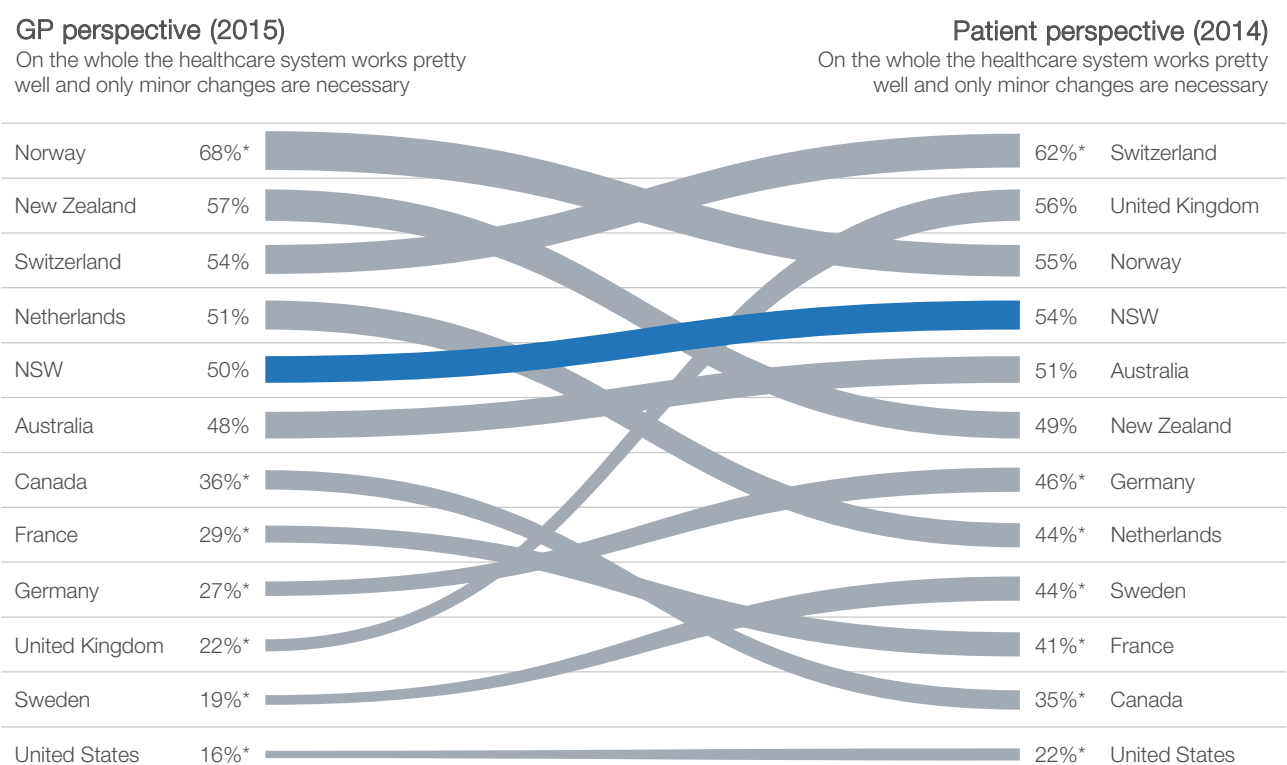
While patients' and providers' overall views provide important information about performance, they cannot identify relative strengths and weaknesses in system or organisational performance, nor can they guide efforts to improve. Meaningful assessment requires a systematic and balanced approach that draws on a range of indicators to cover different perspectives and dimensions of performance. *Healthcare in Focus 2015* uses some 130 measures to explore performance in NSW.

Figure 1 NSW results, Commonwealth Fund International Health Policy Survey, different population groups, 2010–15



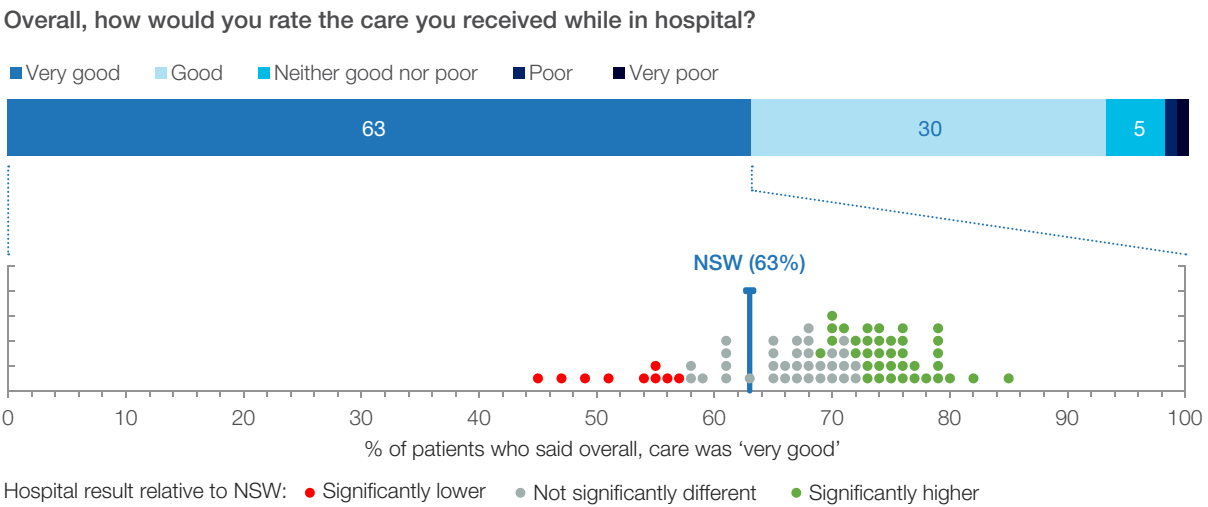
Source: Commonwealth Fund International Health Policy surveys.

Figure 2 Provider and patient perspectives: Percentage who said healthcare system works pretty well, NSW and comparator countries, 2014 and 2015



Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2014 Commonwealth Fund International Health Policy Survey of Older Adults.
* Estimate is statistically significantly different to NSW.

Figure 3 Percentage of adult admitted patients by overall ratings of care in hospital, NSW and NSW public hospital variation, 2014



Source: BHI, Adult Admitted Patient Survey, 2014.

Accessibility



Healthcare, when and where needed

Accessibility

Healthcare when and where needed

Accessibility refers to the degree to which patients can obtain healthcare services when and where they need them. It reflects the availability and approachability of healthcare services, along with consideration of whether the costs to patients in terms of time, effort or money are onerous or unreasonable.¹

This means that measurement focuses on utilisation of services or unmet needs, and on perceived barriers that disrupt or prevent access to healthcare.

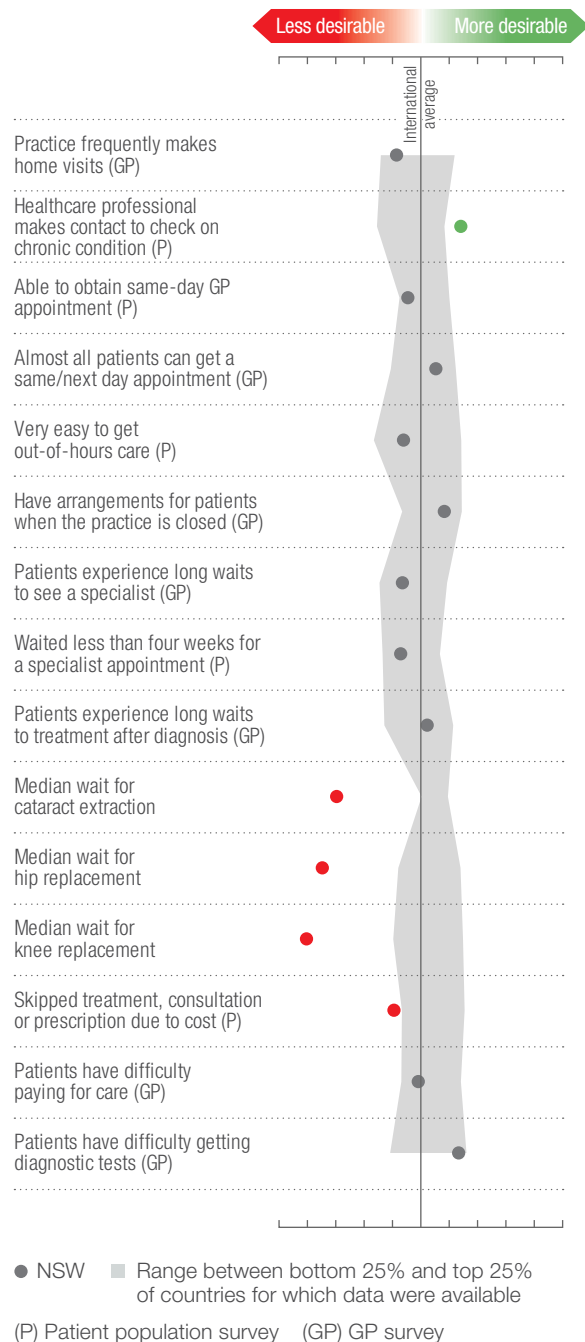
On accessibility measures, NSW does well with respect to:

- GPs making contact to check on their patients with chronic diseases
- Measures of timeliness in emergency departments (time to treatment and total time spent in the ED) for which NSW outperformed other Australian states and territories.

NSW has room to improve in:

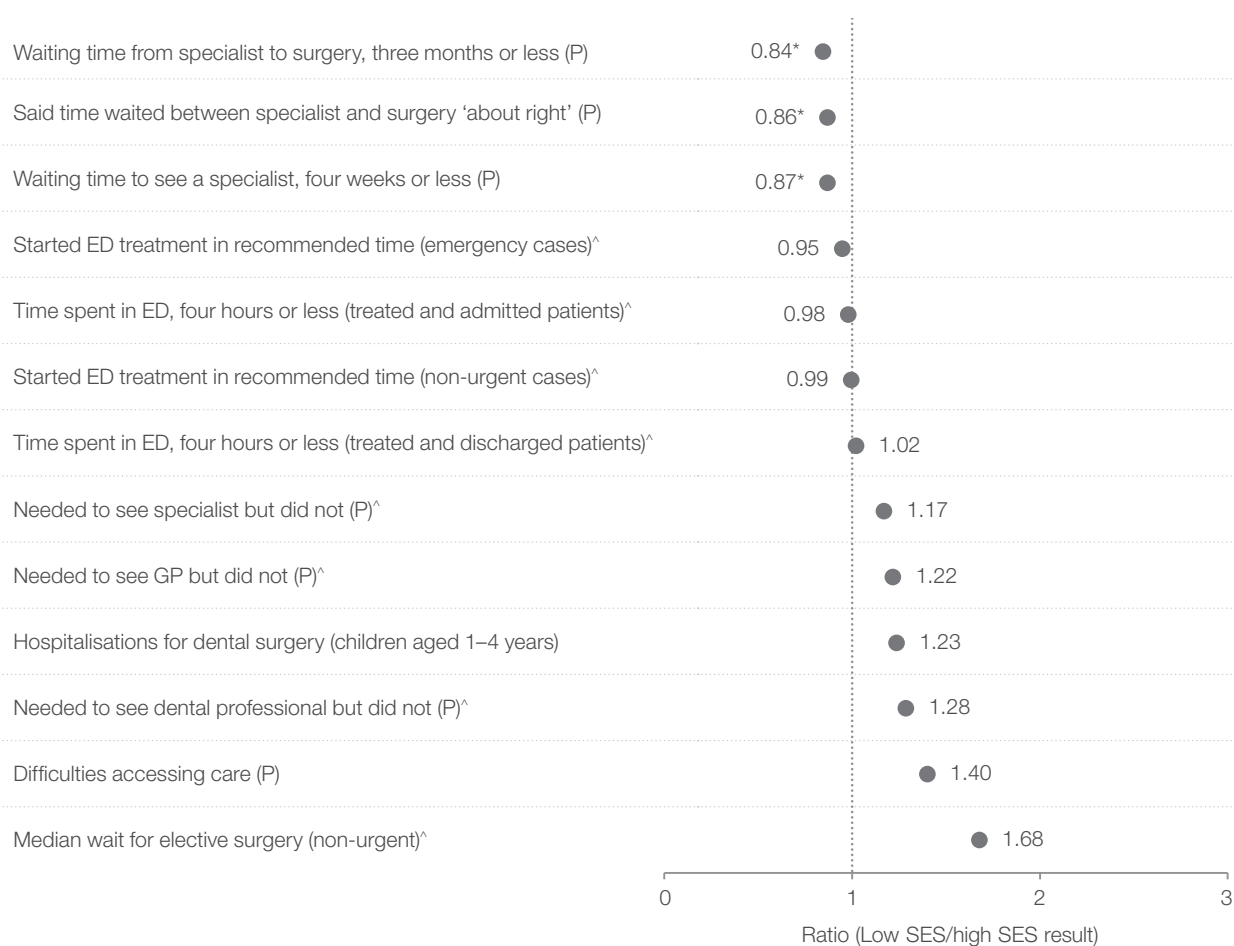
- Median waiting times for common elective surgical procedures (cataract, hip and knee replacements)
- Patients skipping treatments, consultations or prescriptions, due to cost concerns.

Accessibility measures NSW compared



Accessibility

Ratios of low to high socioeconomic status groups within NSW



(P) Refers to results from patient or population surveys, other measures are based on administrative data sources.

* Estimate for low socioeconomic status (SES) group was significantly different from high SES group.

^ For some measures data or confirmed methods for statistical testing were unavailable.

Notes: A ratio less than one indicates the measure was less likely in the low SES group than in the high SES group; and a ratio greater than one indicates the measure was more likely in the low SES group than in the high SES group.

Availability and approachability of primary care

Half of NSW GPs said almost all patients can get a same- or next-day appointment

Availability refers to the extent to which patients can reach healthcare services in a timeframe that meets their needs.¹

Comparing across provider and patient perspectives, 50% of GPs in NSW said that among their patients who request a same- or next-day appointment, almost all (defined as more than 80%) can get one; while 66% of patients said they could get a same- or next-day appointment when needed. Viewed together, the two sets of survey results reveal a consistency in rankings for NSW and for many comparator countries (Figure 1.1).

A minority of NSW people aged 15+ years said they were unable to access primary healthcare services when needed. For people who needed to see a GP, 15% said they did not do so at least once in the

previous year. Of those who said they needed to see a GP out-of-hours, 32% did not access care, while among people who did visit a GP in 2014–15, 22% said they waited longer than acceptable for an appointment. (Figure 1.2).

Accessibility of care can also be shaped by service ‘approachability’ – as for some people, seeking out advice or treatment is daunting and can result in unmet needs. Use of active case management and efforts to proactively contact patients in outreach programs can, in these circumstances, enhance accessibility.

In 2014, among NSW adults aged 55+ years who had a chronic condition, 29% said there is a healthcare professional who contacted them between visits to see how things were going. NSW performs better than most comparator countries on this measure (Figure 1.3).

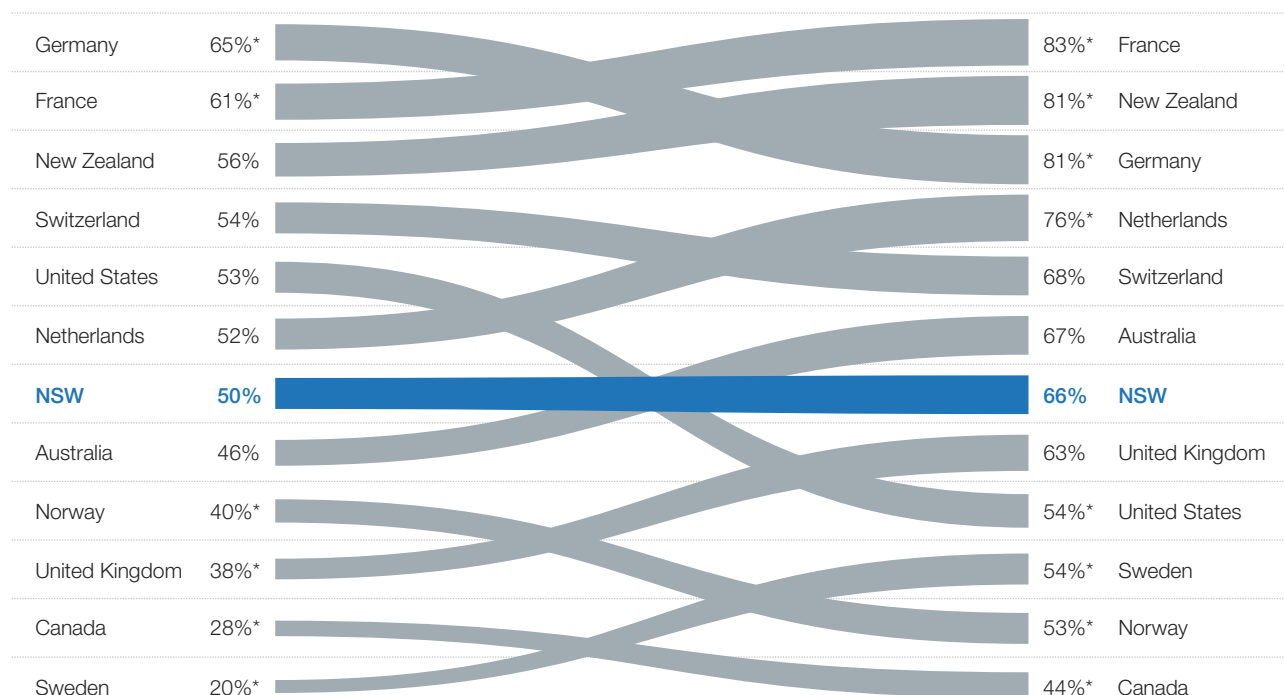
Figure 1.1 Provider and patient perspectives: Availability of same- or next-day appointments, NSW and comparator countries, 2014 and 2015

GP perspective (2015)

Almost all (more than 80%) patients who request a same- or next-day appointment can get one

Patient perspective (2014)

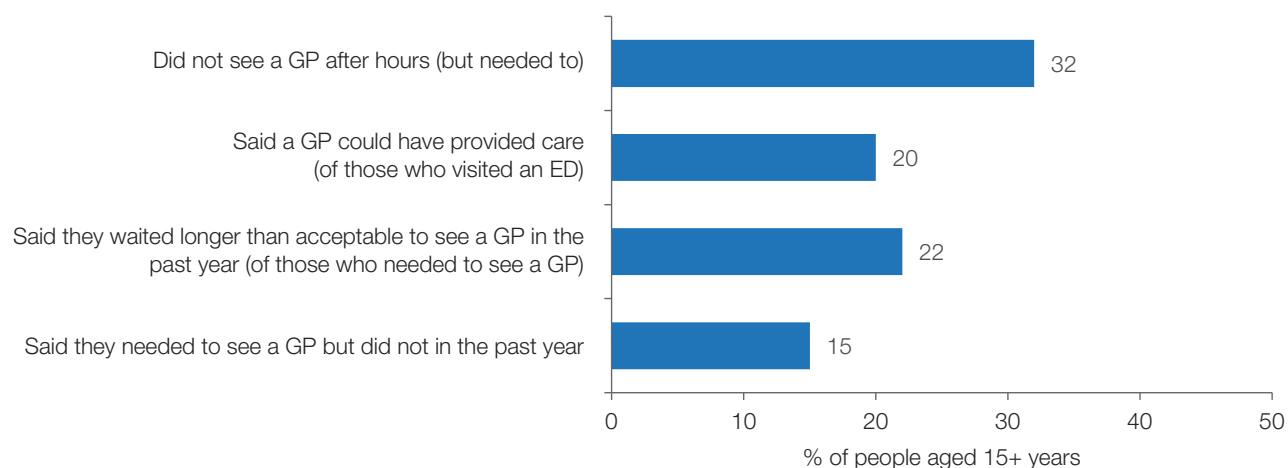
Patient could get a same- or next-day appointment to see GP or a nurse the last time they needed medical attention



Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

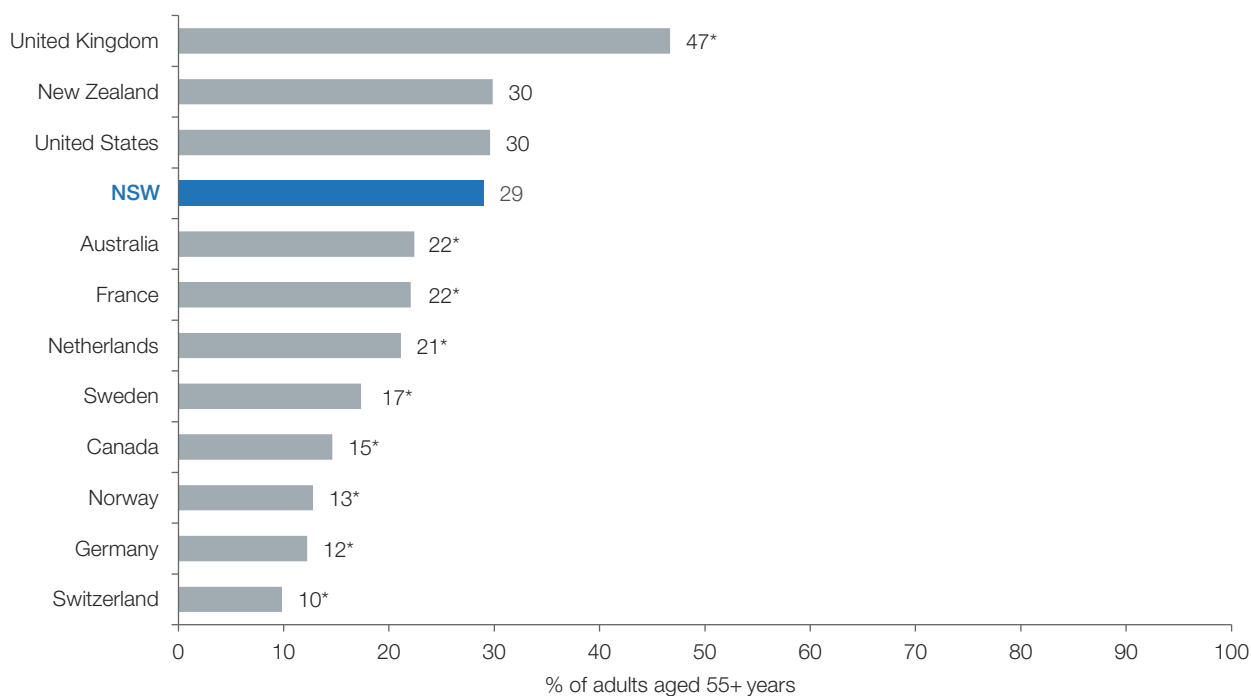
* Estimate is statistically significantly different to NSW.

Figure 1.2 Percentage of people aged 15+ years who said primary care services were not available when needed, NSW, 2014–15



Source: ABS, Patient Experience Survey 2014–15 (customised request).

Figure 1.3 Percentage of adults aged 55+ years who said a healthcare professional makes contact to check on their chronic condition, NSW and comparator countries, 2014



Source: 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

* Estimate is statistically significantly different to NSW.

Accessing primary care out-of-hours

Most GP practices in NSW have arrangements for out-of-hours care but only two in 10 patients said it is very easy to get primary care out-of-hours

High-performing primary care services accommodate differences in patients' abilities to reach services, putting in place organisational arrangements such as flexible appointment systems, extended hours of operation, and walk-in clinics.²

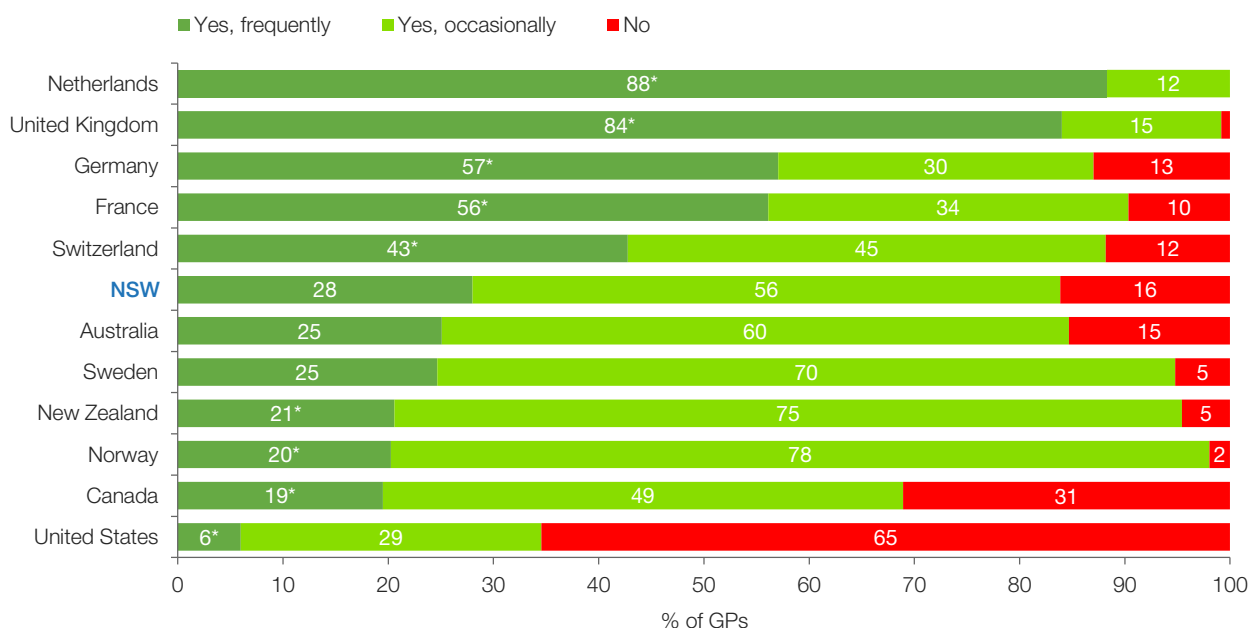
An important component of this accommodation is the provision of out-of-hours care. In NSW, there are five main models of out-of-hours care provision:

1. Practice-based arrangements with GPs providing care for their own patients
2. Cooperatives with GPs from different practices forming a not-for-profit group to provide care for their own patients
3. Deputising services with commercial companies contracted to provide care to patients from different practices
4. GP services based in a hospital emergency department (ED)
5. Telephone triage and advice services.³

Traditional models of out-of-hours care encompass home visits. Almost three in 10 NSW GPs (28%) said their practice 'frequently' makes home visits. Across comparator countries, this percentage ranged from 6% to 88% of GPs (or primary care providers), with NSW placed mid-range (Figure 1.4).

Comparing provider and patient perspectives about out-of-hours care more generally, 79% of NSW GPs said their practice had arrangements in place for patients to see a doctor or nurse when the practice was closed; while among NSW patients only 21% said it was 'very easy' to access out-of-hours primary care services. Despite these differences, ranking country results from the two surveys shows the relative NSW position to be similar (Figure 1.5).

Figure 1.4 GPs who said their practice makes home visits, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

* Estimate is statistically significantly different to NSW.

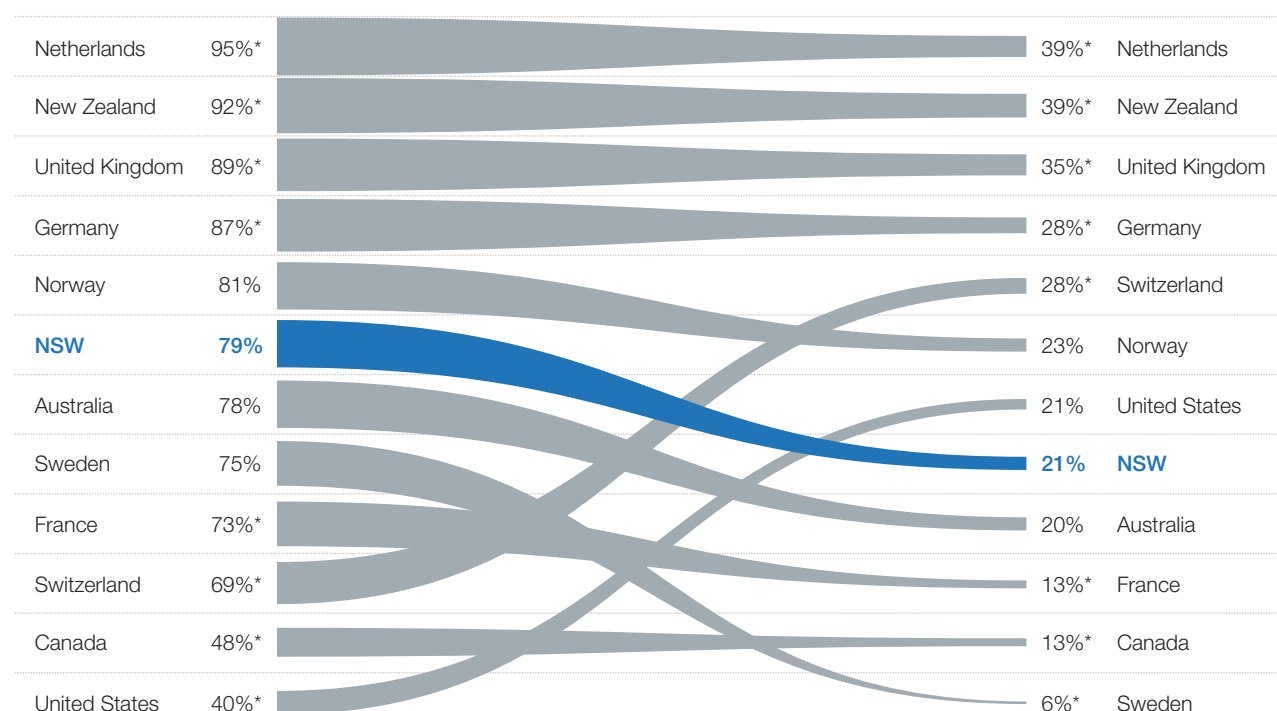
Figure 1.5 Provider and patient perspectives: Access to out-of-hours primary care, NSW and comparator countries, 2014 and 2015

GP perspective (2015)

Practice has an arrangement where patients can see a doctor or nurse if needed when the practice is closed without going to the ED

Patient perspective (2014)

'Very easy' to get medical care in the evenings, on weekends, or holidays without going to the ED



Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2014 Commonwealth Fund International Health Policy Survey of Older Adults.
* Estimate is statistically significantly different to NSW.

Starting treatment in the emergency department

Compared with other Australian states, ED patients in NSW were most likely to start receiving treatment within recommended times

NSW public hospital EDs are open to everyone and provide specialised assessment and life-saving care for acutely unwell patients, and often act as an entry point to inpatient services.

Upon arrival at an ED, patients are allocated to one of five urgency (or triage) categories. Each category has a nationally defined recommended timeframe within which patients should start to receive care:

- T1: Resuscitation (within two minutes)
- T2: Emergency (within 10 minutes)
- T3: Urgent (within 30 minutes)
- T4: Semi-urgent (within 60 minutes)
- T5: Non-urgent (within 120 minutes).

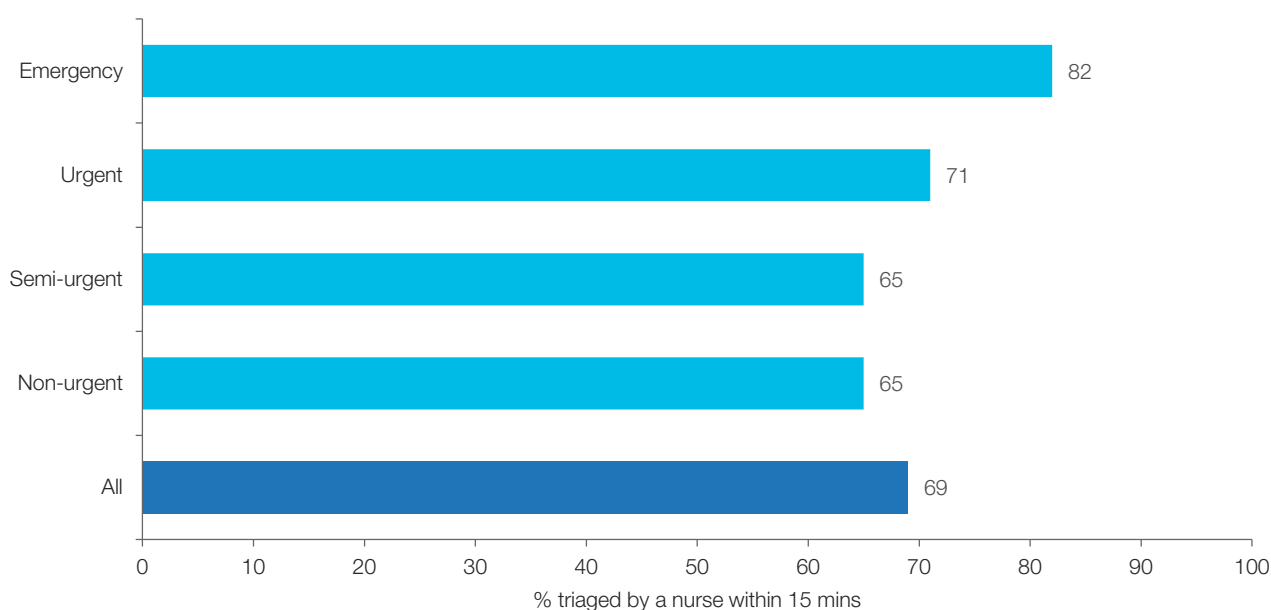
NSW patient survey data for 2014–15 show that among ED patients, 69% said they waited less than 15 minutes to be triaged.

This proportion differed across urgency categories from 65% of non-urgent cases to 82% of emergency cases (Figure 1.6).

In 2014–15 in NSW, 81% of ED patients started to receive treatment within recommended timeframes – a higher percentage than all other Australian states (Figure 1.7).⁴

Timeliness is often measured in terms of median waiting times. For a particular group of patients, this is the length of time the ‘middle’ patient waited, i.e. half had a shorter wait and half had a longer wait. Median waiting times to start treatment in NSW EDs differ across urgency categories, reflecting clinical priorities. In all urgency categories, the median time to start treatment has decreased over the past five years – despite increasing patient volumes – representing a general improvement in timely access to ED care in NSW (Figure 1.8).

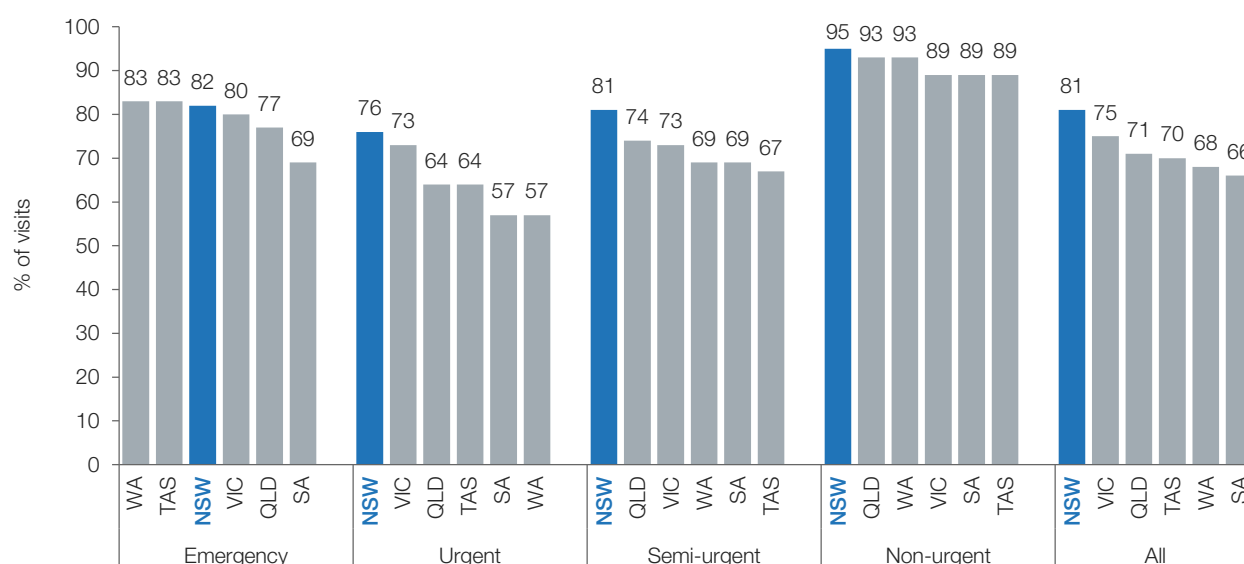
Figure 1.6 Percentage of ED patients who said they were triaged within 15 minutes of arrival, by triage category, public hospitals, NSW, 2014–15



Source: BHI, Emergency Department Patient Survey, 2014–15.

Note: Results for triage category 1 patients are not shown, due to small numbers and because the ability to recall timeliness may be compromised in patients who arrive at the ED either very unwell or unconscious.

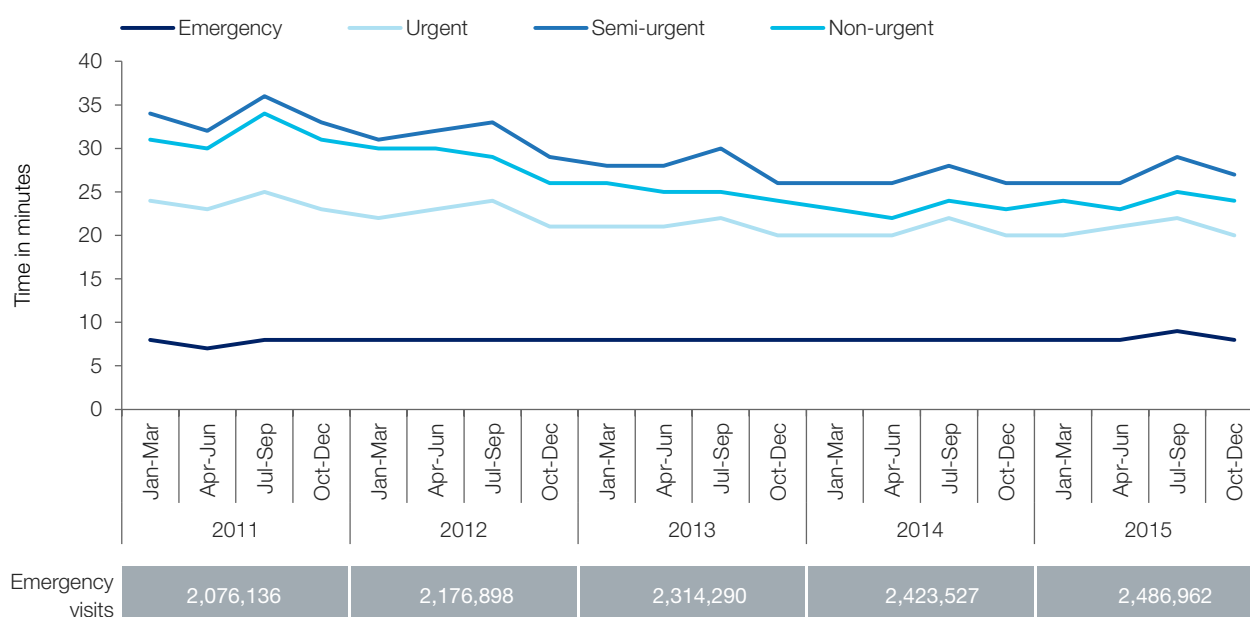
Figure 1.7 Percentage of ED visits for which treatment started within recommended timeframe, by triage category, public hospitals, Australian states, 2014–15



Source: AIHW, Hospital Statistics 2014–15: emergency department care 2015.

Note: Time to start treatment is calculated as the difference between the visit time (the time of first recorded contact with an ED staff member, this may be at the commencement of clerical registration or of the triage process) and the commencement of clinical care (the time at which care commenced by a doctor, nurse, mental health practitioner or other health professional). Triage 1 patients are the most urgent and are almost all treated within two minutes. Clinicians treating them are focused on providing immediate and essential care, rather than recording times, therefore times to start treatment are generally not reported.

Figure 1.8 Median time to starting treatment, by quarter, public hospital EDs, NSW, 2011–15



Source: NSW Health, Emergency Department Data Collection (extracted February 2016).

Time spent in the emergency department

Among patients treated and discharged, almost nine in 10 spent less than four hours in the ED

Following assessment, stabilisation and treatment in the ED, patients are either discharged home, admitted to a short term Medical Assessment Unit or Emergency Medical Unit, admitted to a hospital ward, or transferred to another facility. A small percentage of patients choose not to wait for treatment.

Patients who require admission to hospital from the ED usually have more complex health needs than those who are treated in the ED and discharged. Patients whose ED visit ends in admission to hospital therefore often spend longer periods in the ED.

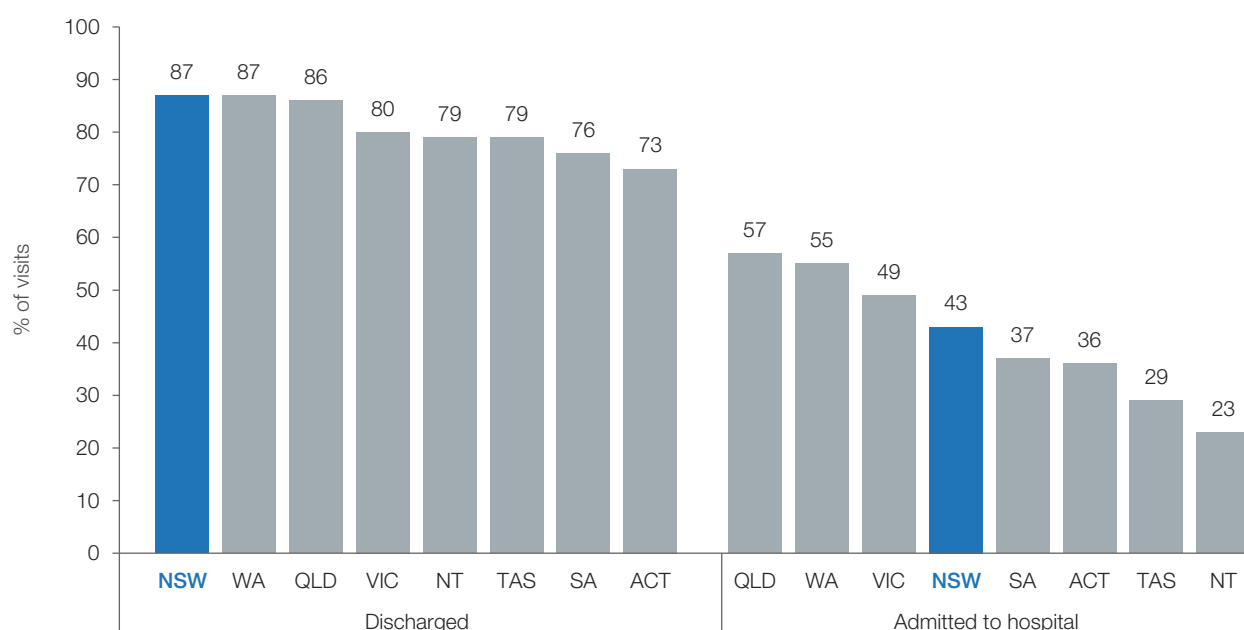
In 2014–15, for 75% of all ED visits in NSW, patients spent four hours or less in the ED. This represents a 15 percentage point improvement over the 2011–12 result.⁴

For those visits that ended in discharge home, 87% of patients had to spend less than four hours in the ED – NSW outperformed all other states and territories on this measure. In contrast, for visits that ended in patients' admission or transfer, only 43% of patients spent less than four hours in the ED (Figure 1.9).

Over time, the percentage of visits for which patients spent four hours or less in the ED has increased across all visit types. For those that ended in patient discharge, the percentage increased from 73% in 2011 to 86% in 2015 (Figure 1.10).

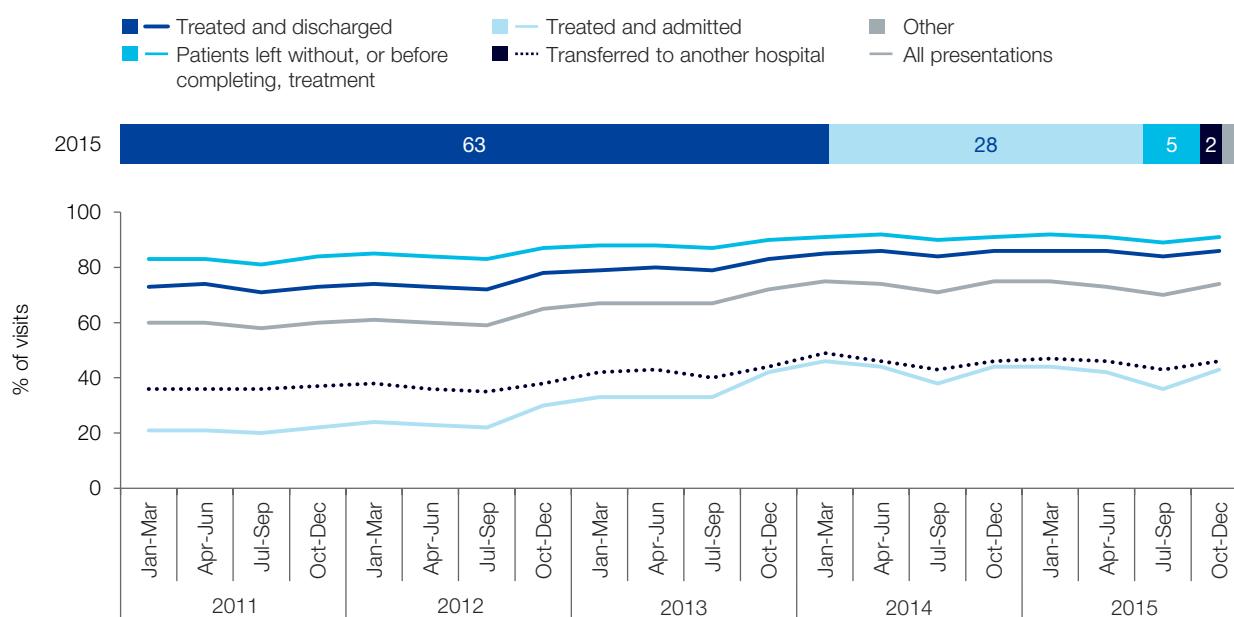
According to patient survey data, 19% of NSW patients said they were delayed when leaving the ED. The most commonly reported reason for delay was waiting for a bed on a ward (Figure 1.11).

Figure 1.9 Percentage of visits for which patients spent four hours or less in ED, by admission status, states and territories, 2014–15



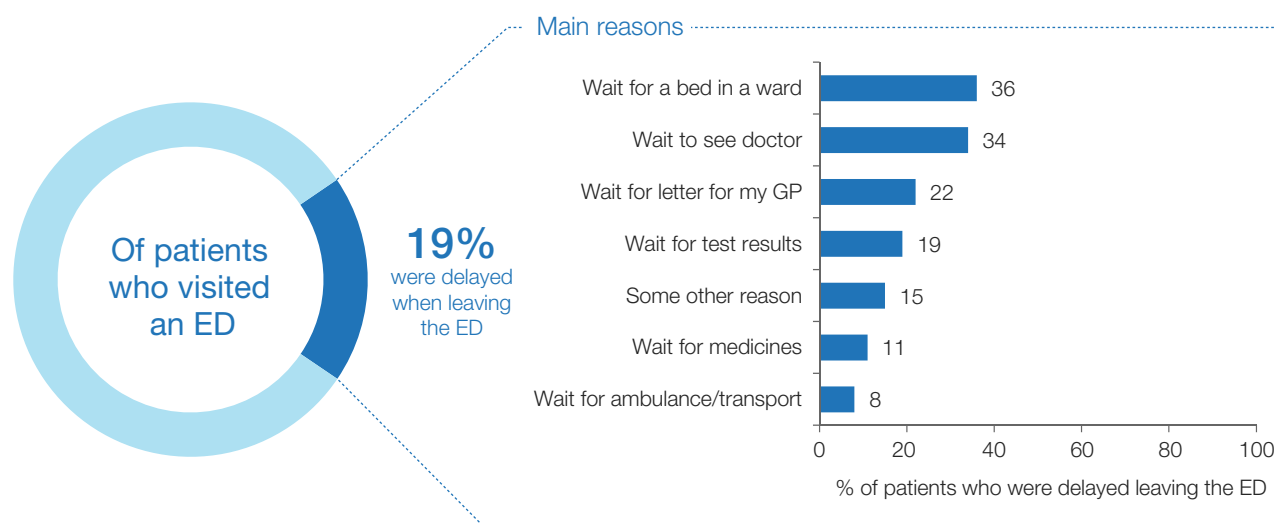
Source: AIHW, Emergency department care 2014–15: Australian hospital statistics.

Figure 1.10 Percentage of ED visits by mode of separation, 2015; and percentage of ED visits for which patients spent less than four hours in the ED, by mode of separation, NSW, public hospitals, 2011–15



Source: NSW Health, Emergency Department Data Collection (extracted February 2016).

Figure 1.11 Percentage of ED patients who said they were delayed when leaving the ED and reasons for delay, public hospitals, NSW, 2014–15



Source: BHI, Emergency Department Patient Survey, 2014–15.

Note: Multiple responses were allowed. Therefore the sum of responses does not total 100%.

Waiting for specialist care

Over half of GPs said their patients often have long waiting times to see a specialist

Patients visit specialists for a range of reasons including diagnosis, treatment and monitoring of significant illnesses. In NSW, patient pathways to access specialist care vary and span across public and private healthcare sectors.

In 2015, 55% of NSW GPs said their patients 'often' experience long waits to see a specialist. In comparison, 13% of NSW adults aged 55+ years said they waited 'two months or longer' to see a specialist. Despite these differences in absolute terms, when set in an international context the NSW ranking is similar across provider and patient perspectives (Figure 1.12).

When asked about the period between diagnosis and receiving treatment, 18% of NSW GPs said their patients 'often' experience long waiting times, a higher percentage than in three comparator countries, and lower than in four (Figure 1.13).

Among NSW patients who were admitted to a public hospital, 62% said the total time between first trying to book an appointment with the specialist and being admitted to hospital was 'about right'. At a hospital level, this percentage ranged from 44% to 94% of patients (Figure 1.14).

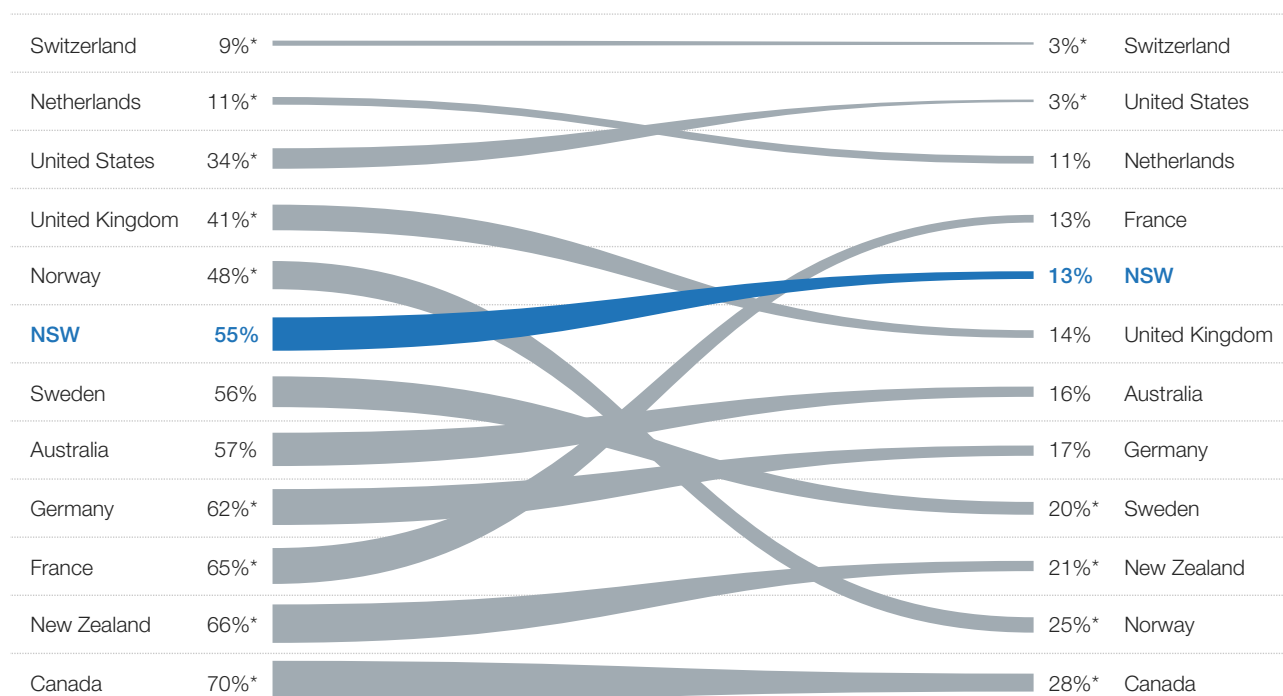
Figure 1.12 Provider and patient perspectives: Percentage who reported long waiting times to see a specialist, NSW and comparator countries, 2014 and 2015

GP perspective (2015)

Patients 'often' experience long waiting times to see a specialist

Patient perspective (2014)

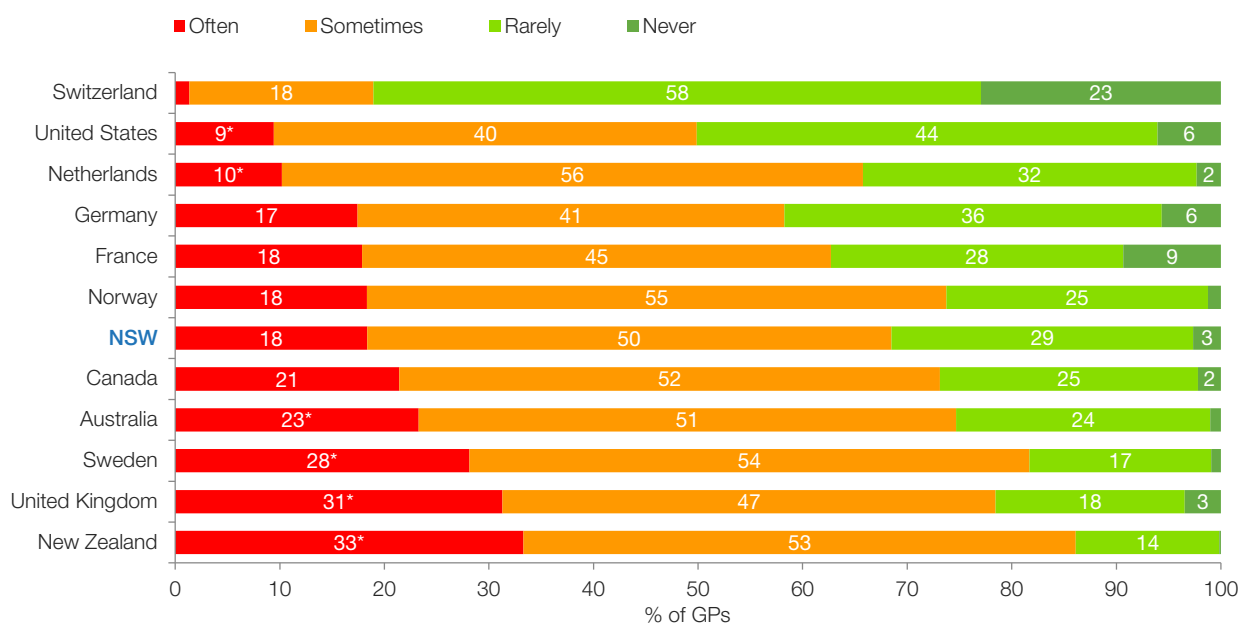
After being advised to see (or deciding to see) a specialist, waited 'two months or longer' for an appointment



Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

* Estimate is statistically significantly different to NSW.

Figure 1.13 GP perspectives on how often their patients experience long waits to receive treatment after diagnosis, NSW and comparator countries, 2015

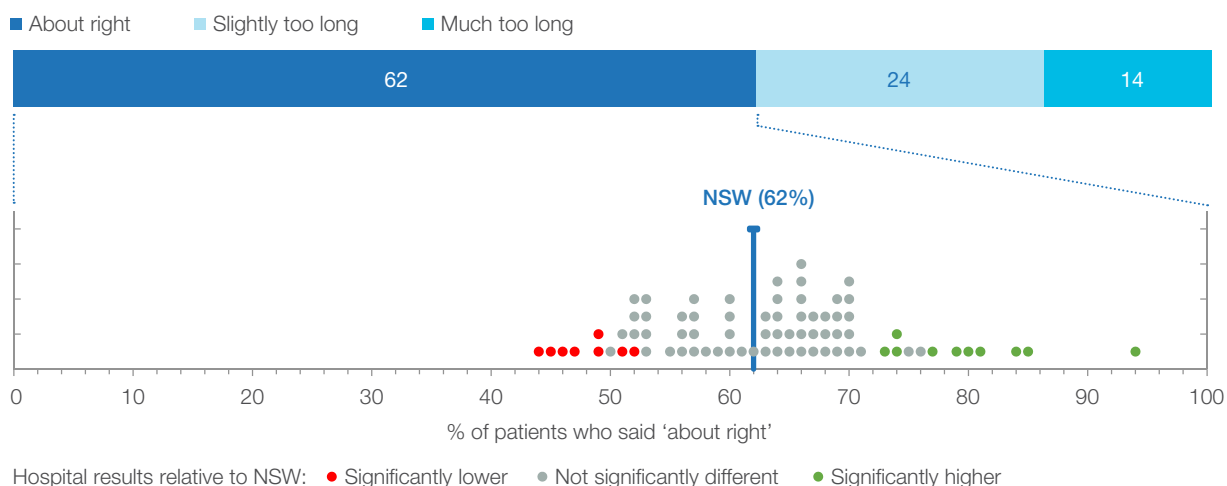


Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

* Estimate is statistically significantly different to NSW.

Figure 1.14 Adult admitted patients' perceptions about waiting to be admitted, and percentage who said time waited was 'about right', public hospitals, NSW, 2014

Do you think the total time between when you first tried to book an appointment with a specialist and when you were admitted to hospital was...?



Source: BHI, Adult Admitted Patient Survey, 2014.

Waiting for elective surgery

Median waiting times for common surgical procedures in NSW were longer than in comparator countries and most other states

Elective surgical procedures performed in public hospitals are classified in three urgency categories, each with a clinically recommended maximum time by which procedures should be performed:

- Urgent (30 days)
- Semi-urgent (90 days)
- Non-urgent (365 days).

In 2015, 97% of elective surgical procedures in NSW public hospitals were performed within these timeframes.

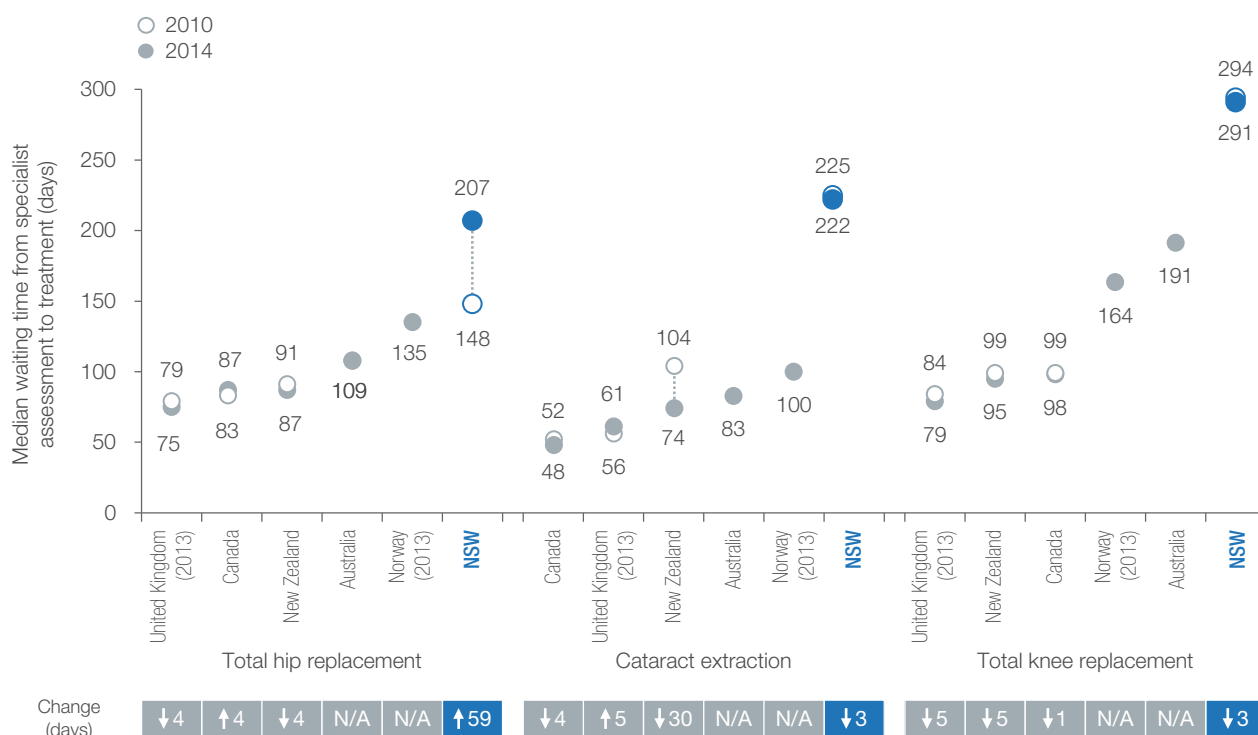
Long waiting times for elective surgical procedures – such as cataract extractions and hip and knee replacements – can impact patients, particularly their quality of life and ability to carry out everyday tasks.

International comparisons of timeliness of elective surgery are usually reported in median waiting times. In 2014, median waiting times for cataract extraction and hip and knee replacements were substantially longer in NSW than in comparator countries (Figure 1.15).

Similarly, among Australian states in 2014, NSW had relatively long median waiting times for a range of surgical procedures (Figure 1.16).

Within NSW, between 2011 and 2015 the volume of elective surgical procedures performed in public hospitals increased by 4%. Over that time, the percentage of procedures performed within clinically recommended timeframes increased in all urgency categories, with the greatest improvement seen in the semi-urgent category – from 87% to 97% (Figure 1.17).⁵

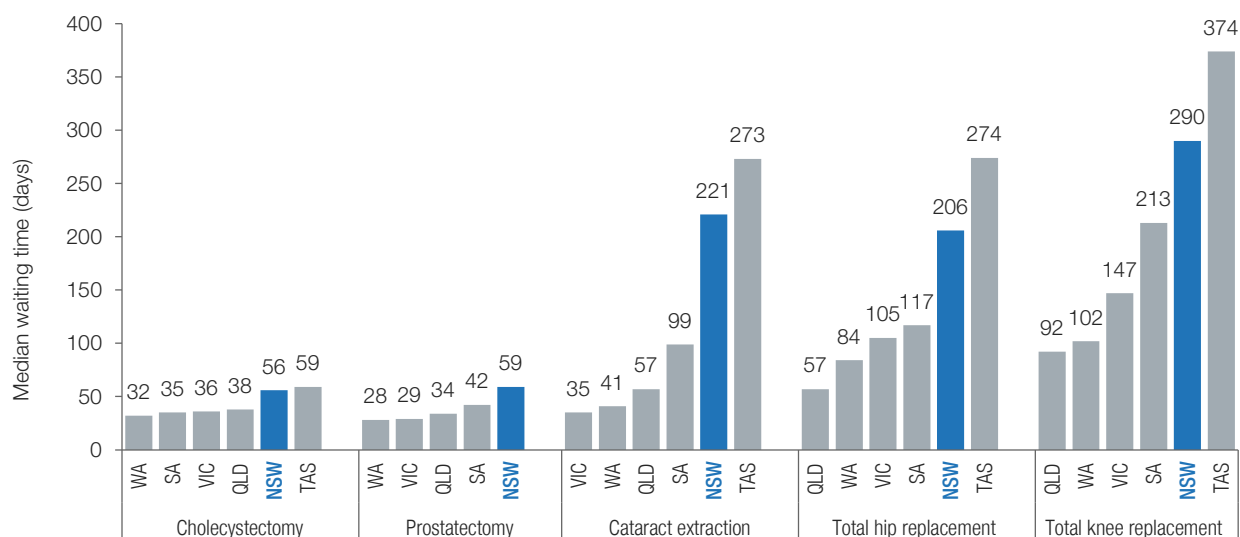
Figure 1.15 Median waiting time for selected elective surgical procedures, public hospitals, NSW and comparator countries, 2010 and 2014 (or nearest year)



Sources: OECD, Health Statistics 2015. NSW Health, Waiting List Collection On-line System (Extracted January 2015).

Note: Only one year of data was available for Norway and Australia.

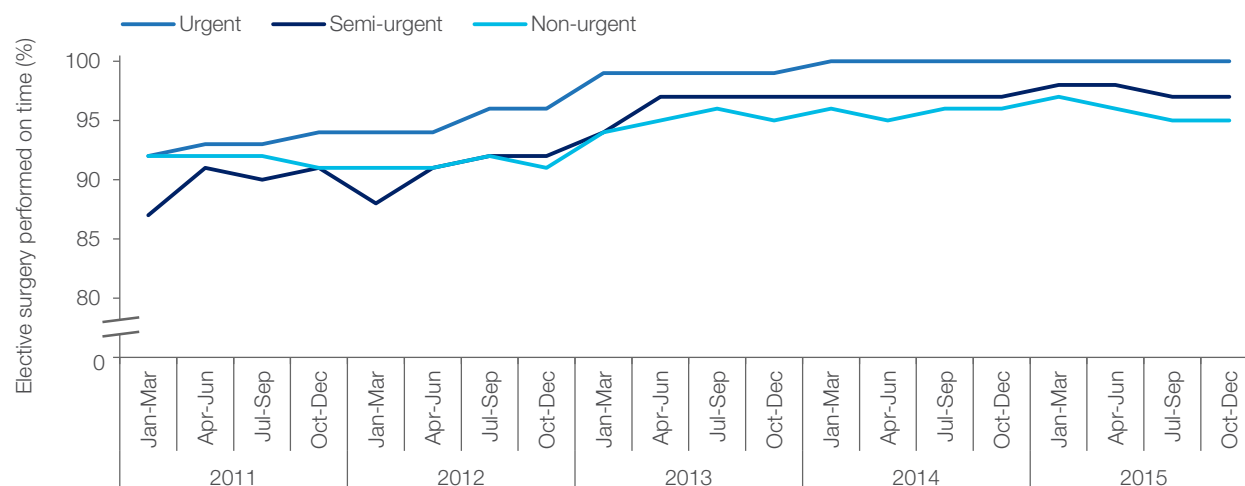
Figure 1.16 Median waiting times for selected procedures, Australian states, 2014–15



Source: AIHW, Elective surgery 2014–15: Australian hospital statistics.

Note: AIHW calculations for hip replacement, knee replacement and cataract extraction differ by one day from BHI analysis in Figure 1.15.

Figure 1.17 Percentage of elective surgical procedures performed on time and number of procedures performed, by urgency category, public hospitals, NSW, 2011–15



Urgent	51,023	51,185	49,898	47,695	47,074
Semi-urgent	63,954	66,574	69,043	69,743	68,917
Non-urgent	77,117	79,343	82,956	85,760	87,076
Staged	14,780	13,503	13,281	13,430	11,262
Total procedures performed	206,874	210,605	215,178	216,628	214,329

Source: NSW Health, Waiting List Collection On-line System (extracted January 2015).

Difficulties accessing healthcare

More than one in 10 NSW people said they had unmet needs for GP services

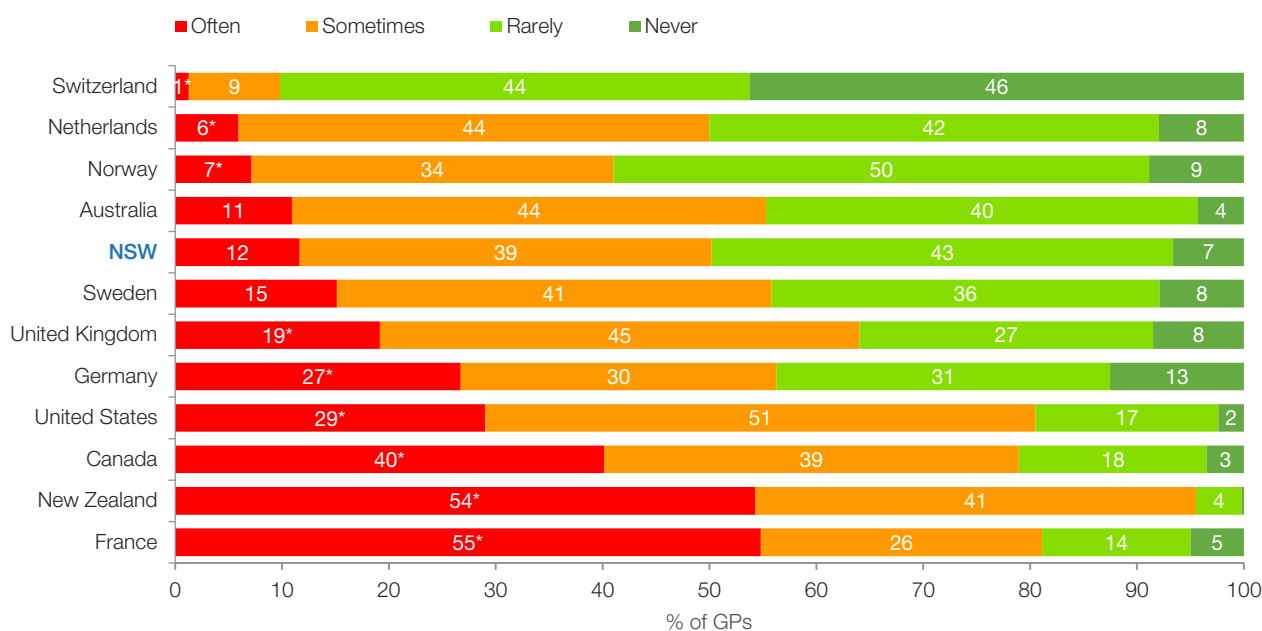
Accessibility can be assessed using measures of unmet need – where patients require healthcare but do not receive, or forego, it.⁶ Unmet healthcare needs may be caused by a range of factors that limit the extent to which patients can:

- Perceive that a potential source of treatment, advice and help, relevant to their healthcare need, exists
- Seek socially and culturally acceptable services
- Reach and interact with healthcare services either physically or virtually, in a timely way
- Pay both direct costs, such as co-payments, gap payments or consultation fees and indirect costs such as transportation or loss of income
- Engage in their care.¹

In 2015, 12% of NSW GPs said their patients ‘often’ have difficulty getting a specialised diagnostic test – a higher percentage than in three comparator countries, and a lower percentage than in six (Figure 1.18).

The 2014–15 Australian Bureau of Statistics Patient Experience Survey reported on various elements of unmet need among people aged 15+ years in NSW. Regarding primary care services, 13% of people said they needed to see a GP but were not able to on at least one occasion in the preceding year. Of those reporting an unmet need for GP care, 17% cited long waiting times and 11% cited a lack of availability as an underlying barrier to access. For specialist care and dental care, 8% and 15% of people reported unmet needs respectively, with cost being the most cited barrier (Figure 1.19).

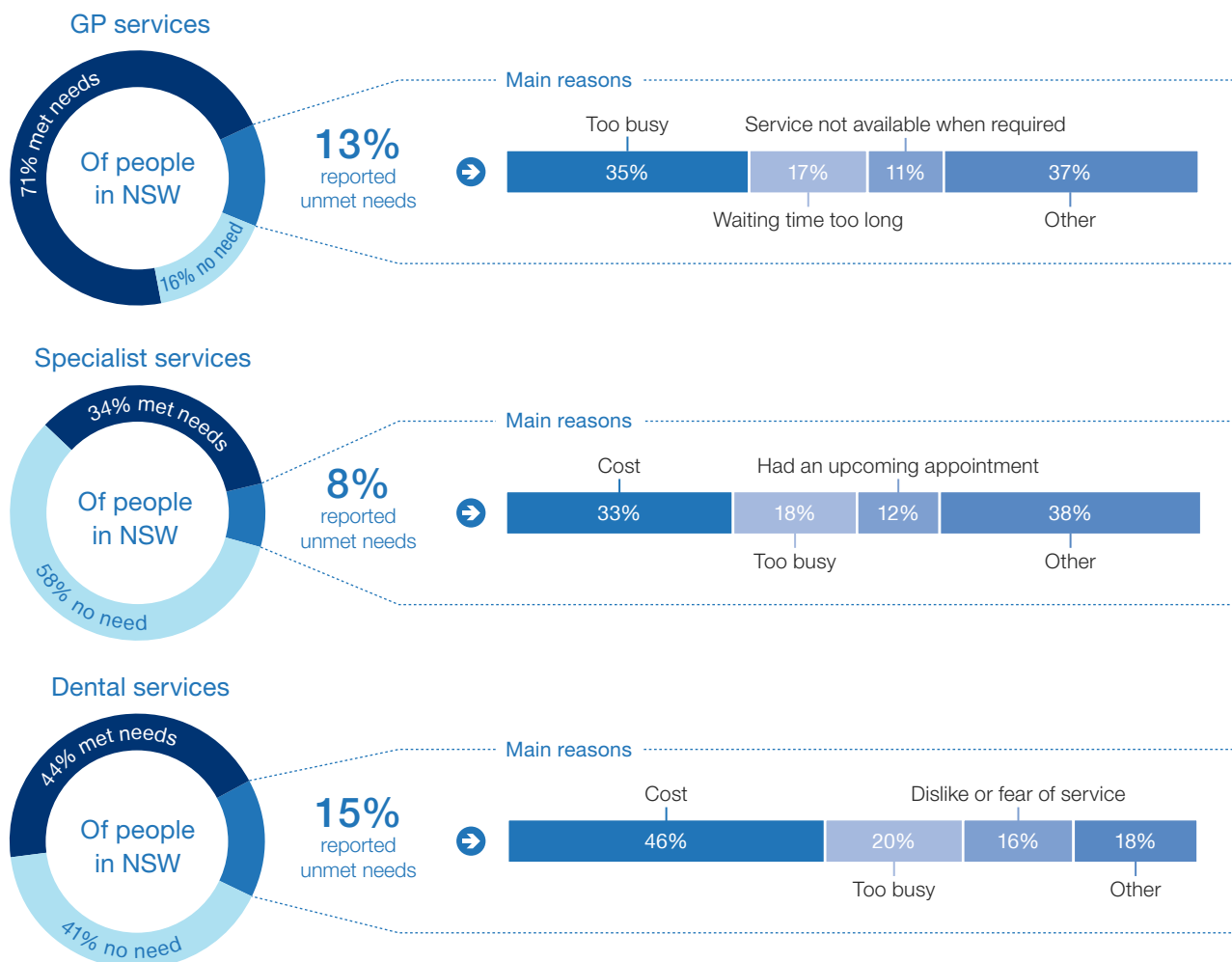
Figure 1.18 GP perspectives on how often their patients had difficulty getting specialised diagnostic tests, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

* Estimate is statistically significantly different to NSW.

Figure 1.19 Percentage of people aged 15+ years who reported unmet need for GP, specialist or dental services, NSW, 2014–15



Source: ABS, Patient Experience Survey 2014–15 (customised request).

Delaying or skipping care due to cost

One in 10 NSW people said they skipped dental care due to cost

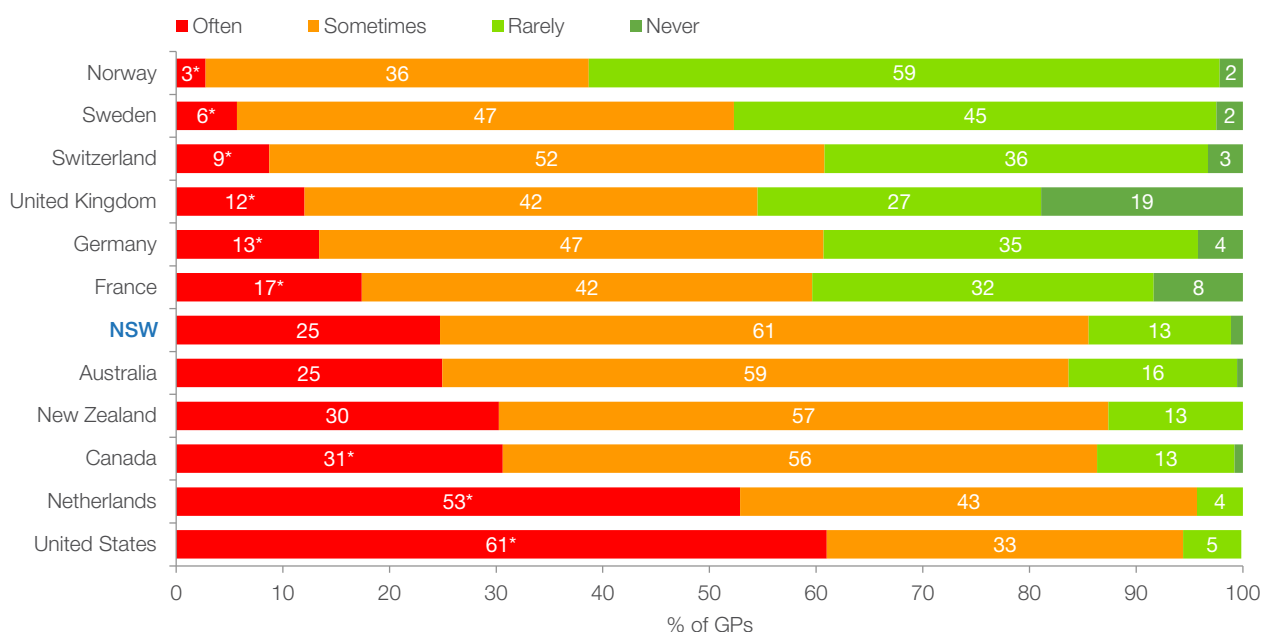
Gaps in financial coverage for healthcare can have important consequences for accessibility. In Australia, financial coverage for healthcare is provided by a mix of publicly-funded Medicare and private health insurance. Gaps are bridged by out-of-pocket spending by individuals. These out-of-pocket costs can be a financial burden and result in patients delaying or skipping needed healthcare.

In 2015, 25% of NSW GPs said their patients 'often' had difficulty paying for medications or other out-of-pocket costs. NSW results were mid-range internationally (Figure 1.20).

In 2014, 12% of NSW adults aged 55+ years said that, due to cost, they skipped care, or treatment or medication in the previous 12 months. The percentage of people reporting they skipped care due to cost was higher in NSW than in seven comparator countries (Figure 1.21).

More specifically in 2014–15, 11% of NSW people said cost concerns led them either to delay or forego seeing a dentist; 5% said cost concerns led them to delay getting, or to skip, prescribed medication; and 4% said cost concerns led them to delay or forego seeing a medical specialist (Figure 1.22).

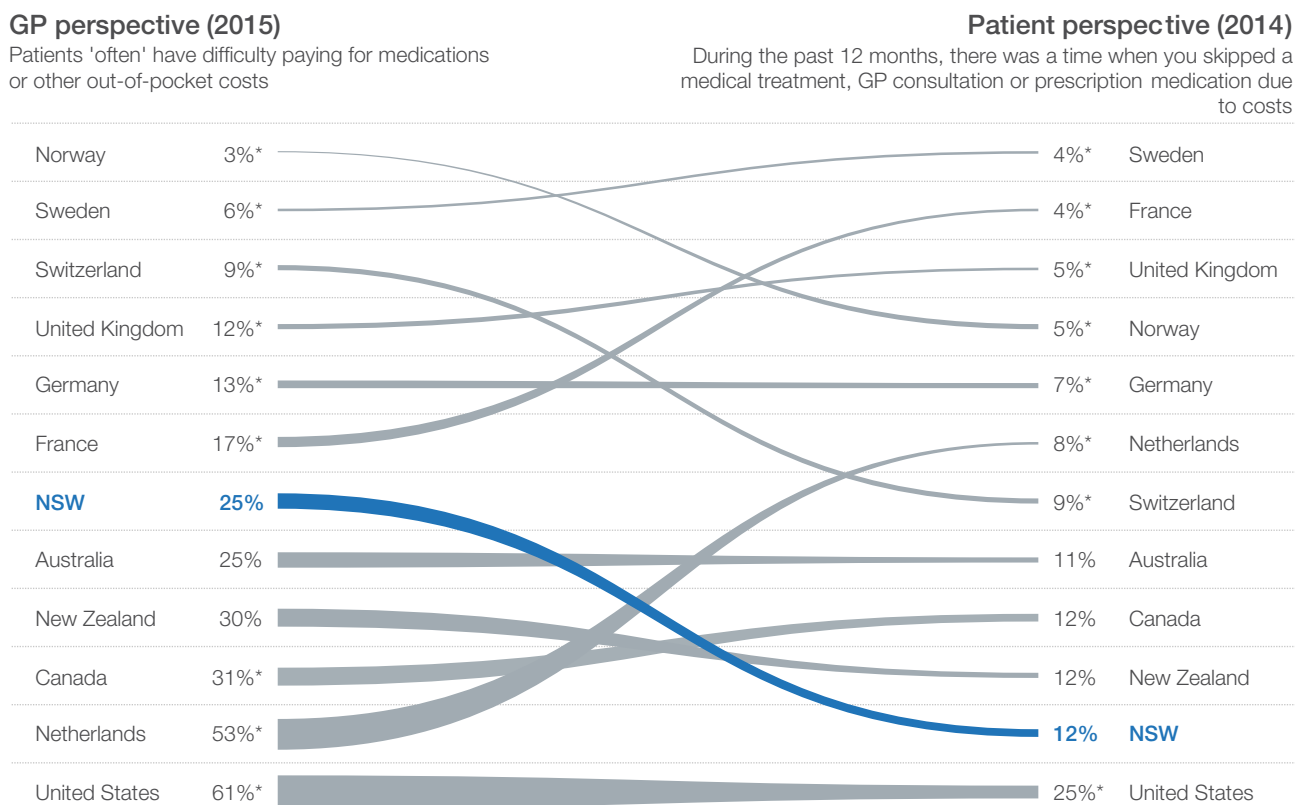
Figure 1.20 GP perspectives on how often their patients have difficulty paying for medications or other out-of-pocket costs, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

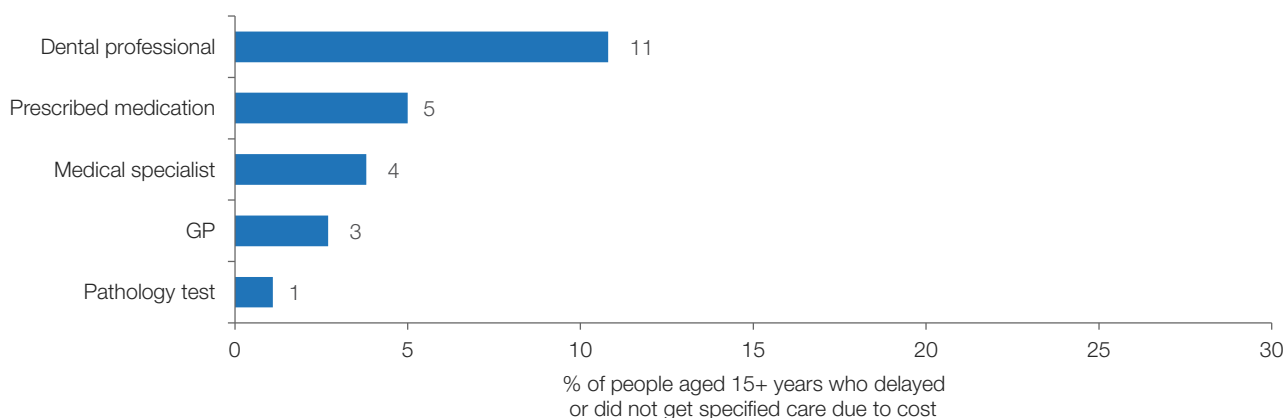
* Estimate is statistically significantly different to NSW.

Figure 1.21 Provider and patient perspectives: Percentage who reported difficulty paying or foregoing care due to cost, NSW and comparator countries, 2014 and 2015



Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2014 Commonwealth Fund International Health Policy Survey of Older Adults.
* Estimate is statistically significantly different to NSW.

Figure 1.22 Percentage of people who said they delayed or skipped care due to cost concerns, by type of care or care provider, NSW, 2014–15



Source: ABS, Patient Experience Survey 2014–15 (customised request).

Paying for healthcare, out-of-pocket

NSW has relatively high levels of out-of-pocket spending on healthcare

Healthcare systems vary in the degree to which they are publicly funded. In Australia, Medicare is the universal system of health insurance for government, that covers medical care for Australian citizens and most permanent residents.

Medicare allows patients to be treated in public hospitals as public patients with no out-of-pocket costs. Medicare also covers 100% of the Medicare Benefits Schedule (MBS) fee for a GP visit and 85% of the MBS fee for a specialist visit.

The Pharmaceutical Benefits Scheme subsidises prescription medicines, although there are some out-of-pocket costs with patients generally required to pay a contribution (co-payment).

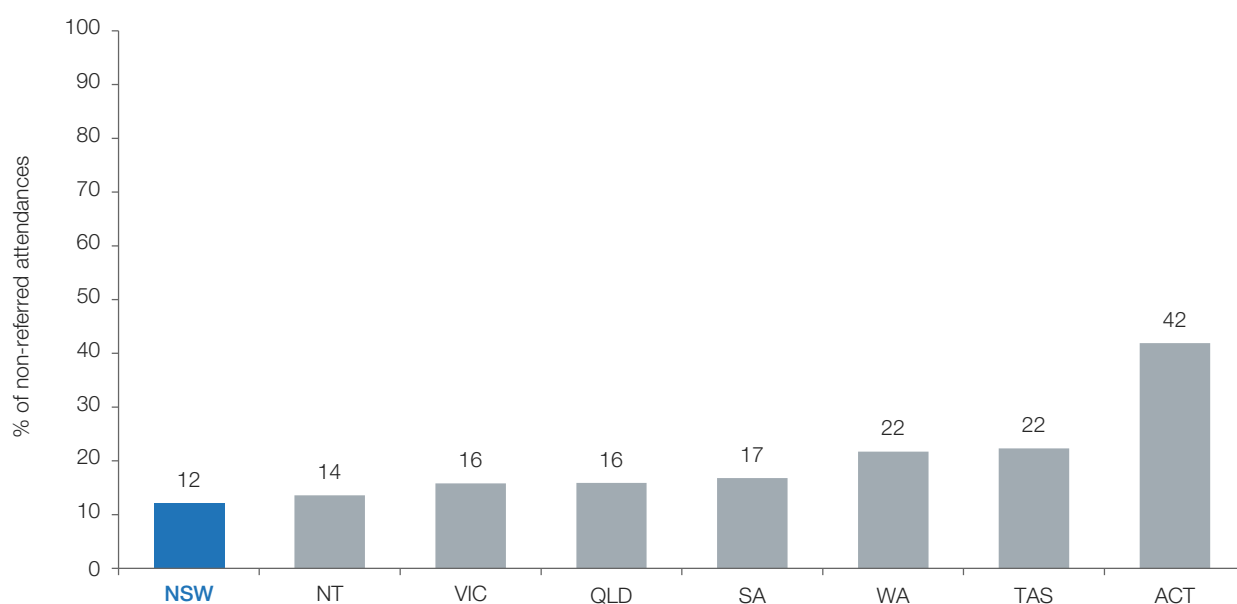
For primary care services, bulk-billing is an optional organisational arrangement between the government and primary care providers that results in no co-payments or out-of-pocket costs to patients. Where bulk-billing is not used, out-of-pocket costs

are a potential barrier to access.⁷ In 2013–14, 12% of attendances were not bulk-billed in NSW – the lowest percentage across states and territories (Figure 1.23).

In 2013, the level of out-of-pocket spending per person in NSW was \$1,110 – a level that was, after adjusting for differences in prices and exchange rates, higher than in seven comparator countries (Figure 1.24).

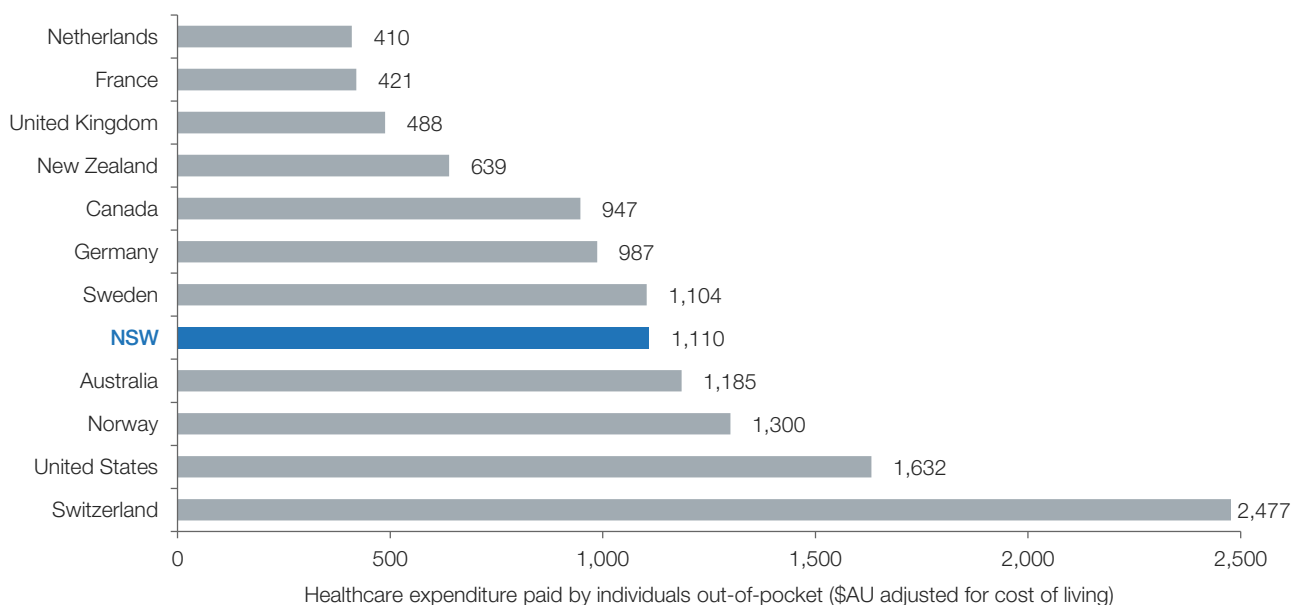
In 2013, pharmaceuticals accounted for 43% of out-of-pocket costs in NSW – a relatively high proportion among comparator countries (Figure 1.25).

Figure 1.23 Percentage of non-referred attendances that were not bulk-billed, Australian states and territories, 2013–14



Source: Productivity Commission, Report on Government Services 2016.

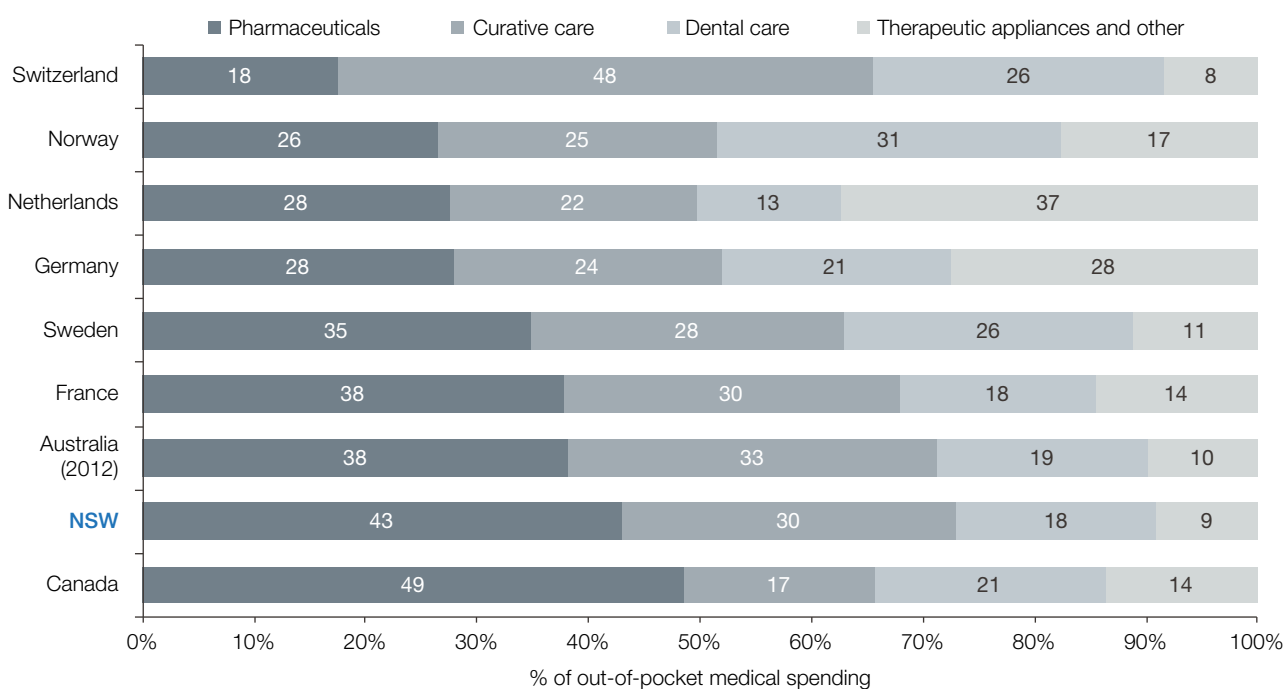
Figure 1.24 Healthcare expenditure paid by individuals out-of-pocket, \$AU, NSW and comparator countries, 2013



Sources: OECD, Health Statistics 2015. AIHW health expenditures (customised request).

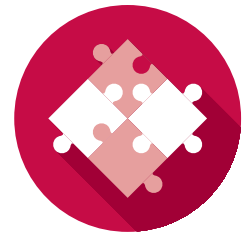
Note: Out-of-pocket expenditures are defined as expenditures borne directly by a patient where neither public nor private insurance cover the full cost of the health good or service (OECD 2015).

Figure 1.25 Percentage of out-of-pocket medical spending by services and goods, NSW and comparator countries, 2013 (or nearest year)



Source: OECD, Health Statistics 2015. AIHW health expenditures (customised request).

Appropriateness



The right healthcare, the right way

Appropriateness

The right healthcare, the right way

Appropriateness refers to the extent to which patients receive services that respond to their health needs, social circumstances and their reasonable expectations regarding how they want to be treated and cared for.

There are two main types of appropriateness measures. The first type focuses on whether healthcare services provided to patients were in line with best-practice models of care – was ‘the right care’ delivered? The second type focuses on patient experiences – was healthcare provided in ‘the right way’?

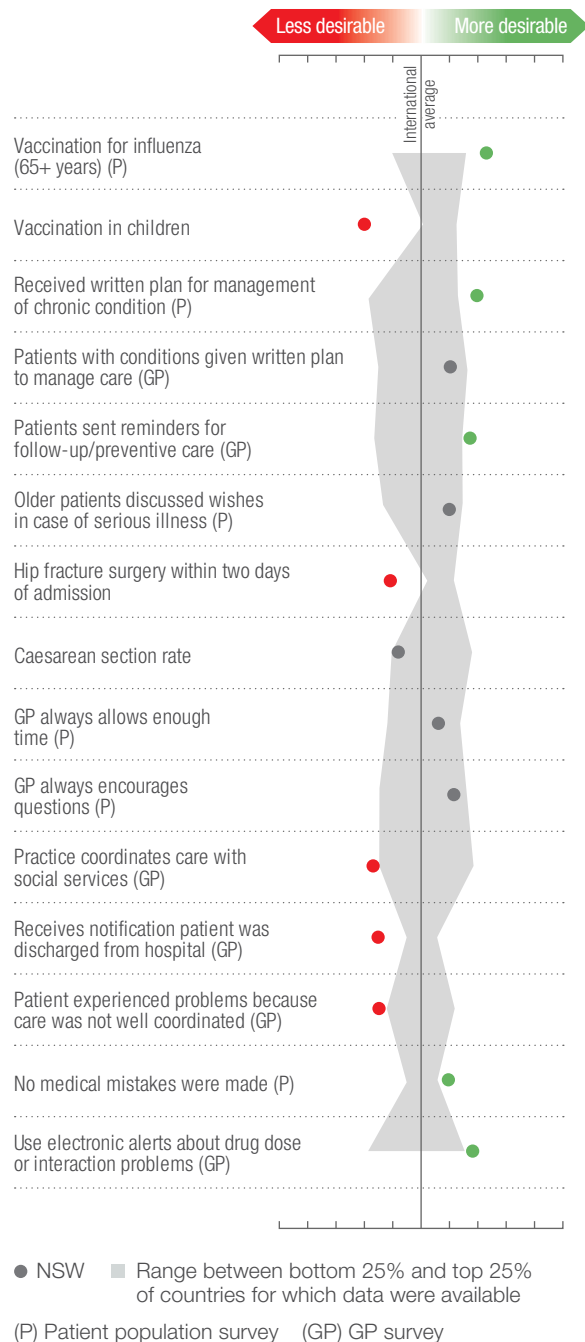
On appropriateness measures, NSW does well with respect to:

- Influenza vaccination for patients aged 65+ years
- GP systems for patient reminders for preventive care, and for electronic alerts about medication risks
- GP provision of a written plan to help their chronic disease patients to manage their care at home
- Fewer patient-reported medical mistakes.

NSW has room to improve in:

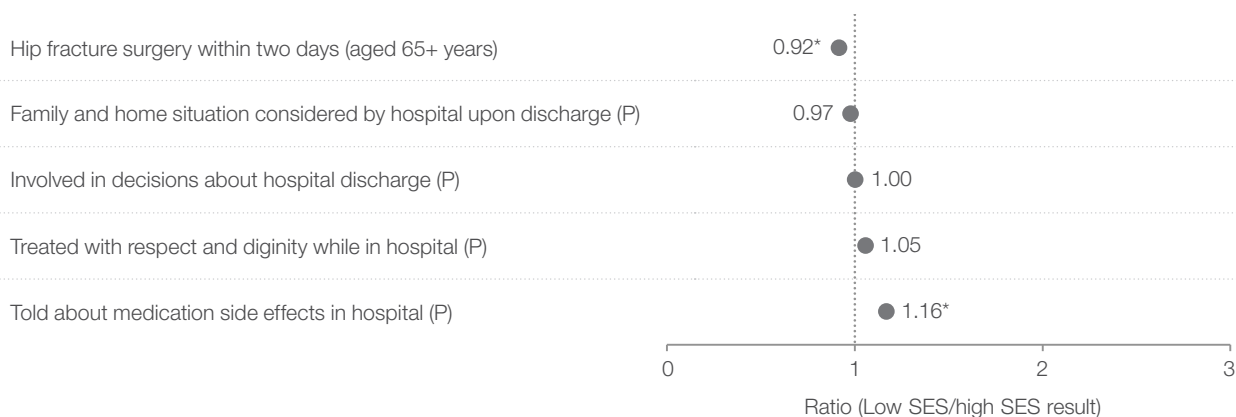
- Vaccination in children
- Provision of hip fracture surgery within the recommended two days of hospital admission
- Coordination of care between healthcare sectors
- Provision of first antenatal appointment before the 14th week of pregnancy (for which NSW was outperformed by almost all other Australian states).

Appropriateness measures NSW compared



Appropriateness

Ratios of low to high socioeconomic status groups within NSW



(P) refers to results from patient or population surveys, other measures are based on administrative data sources.

* Estimate for the low socioeconomic status (SES) group was statistically significantly different from the high SES group. For more information on the measures and data sources see the Equity chapter.

Note: A ratio less than one indicates the measure was less likely in the low SES group than in the high SES group; and a ratio greater than one indicates the measure was more likely in the low SES group than in the high SES group.

Receiving preventive care: Vaccination

NSW has lower vaccination rates than comparator countries

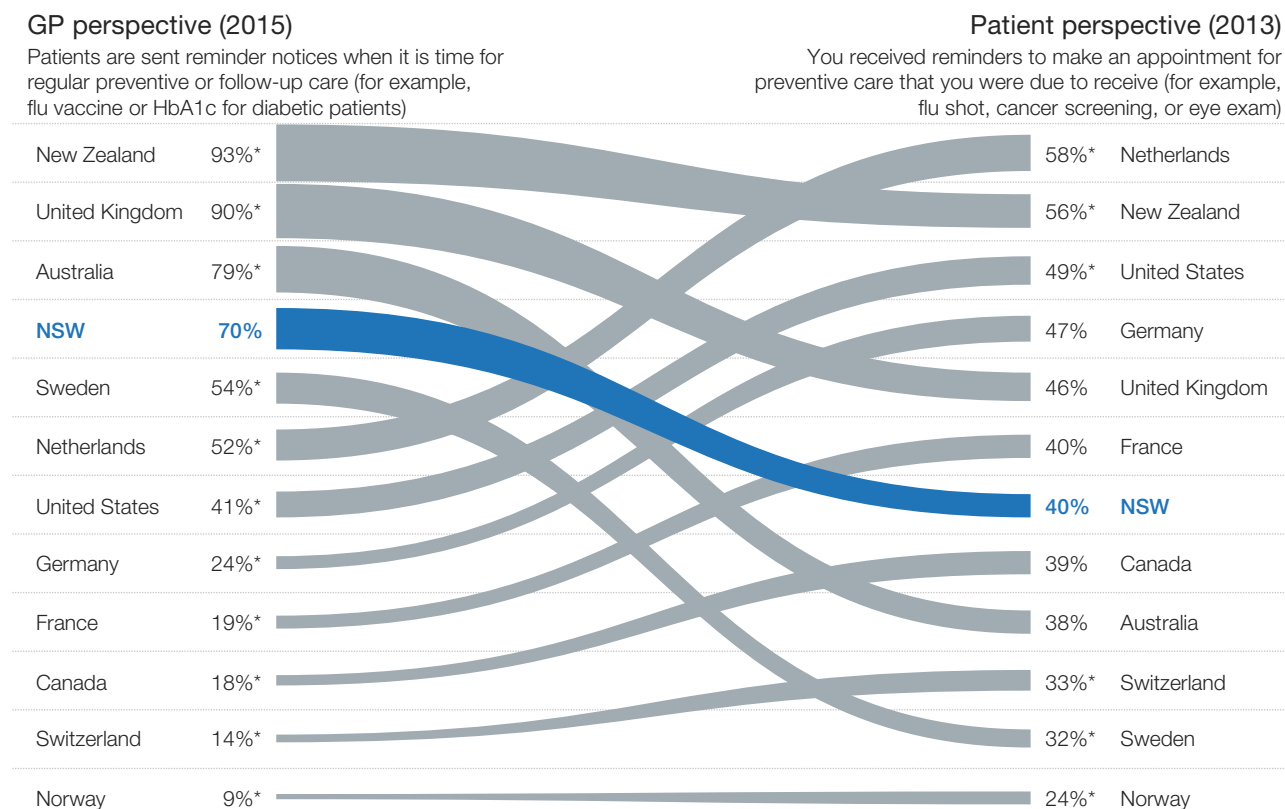
Comparing provider and patient perspectives about preventive services in primary care, 70% of NSW GPs said their patients are 'routinely' sent reminder notices for vaccinations and tests; while among NSW patients, 40% said they receive reminders to make an appointment for preventive care. Despite these differences in absolute terms, ranking shows the relative NSW position to be fairly consistent across provider and patient perspectives (Figure 2.1).

Vaccines are a key element in preventive care, providing high levels of protection against disease, disability and death. There is a wide range of vaccines available and guidelines provide detailed information about at-risk populations and recommended vaccination schedules.

By their first birthday, children should have received three doses of the diphtheria, tetanus and pertussis (DTP) vaccine.ⁱ In 2013, 91% of NSW children aged one year were fully vaccinated against DTP, the lowest rate among comparator countries (Figure 2.2).

An annual influenza (flu) vaccination is generally recommended for older adults, and has been shown to reduce significantly the incidence of disease and associated mortality. In 2013, 73% of NSW adults aged 65+ years were vaccinated against influenza – a higher rate than in most comparator countries (Figure 2.3).

Figure 2.1 Provider and patient perspectives: Percentage who said reminders for delivery of appropriate preventive care were provided, NSW and comparator countries, 2013 and 2015

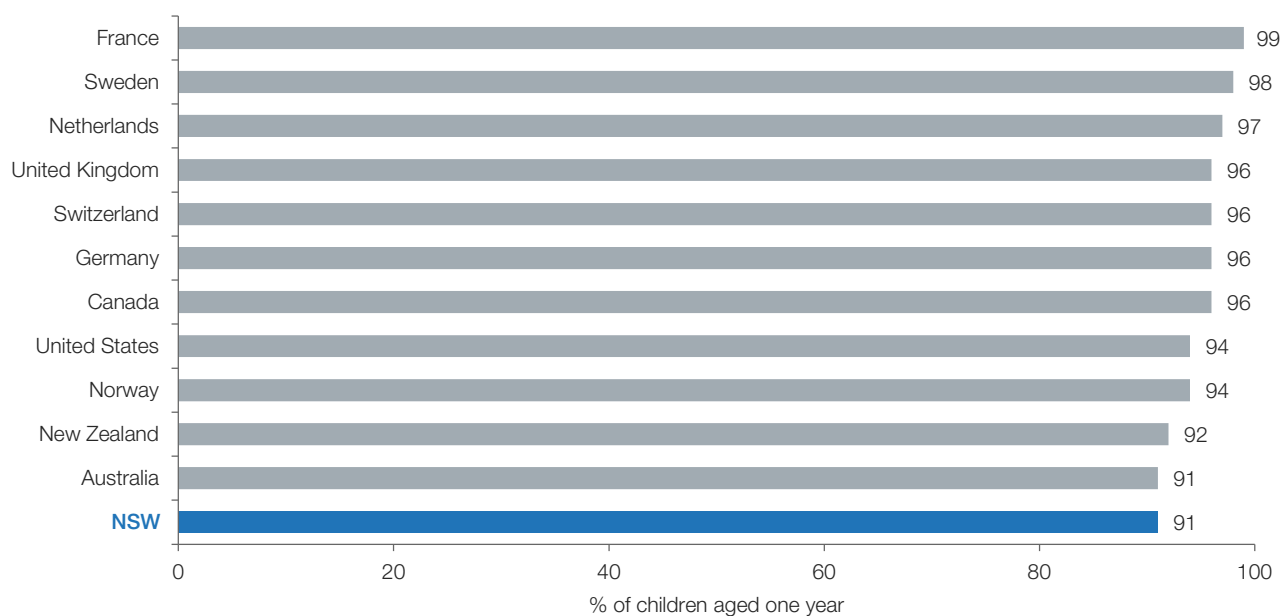


Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2013 Commonwealth Fund International Health Policy Survey of Adults.

* Estimate is statistically significantly different to NSW.

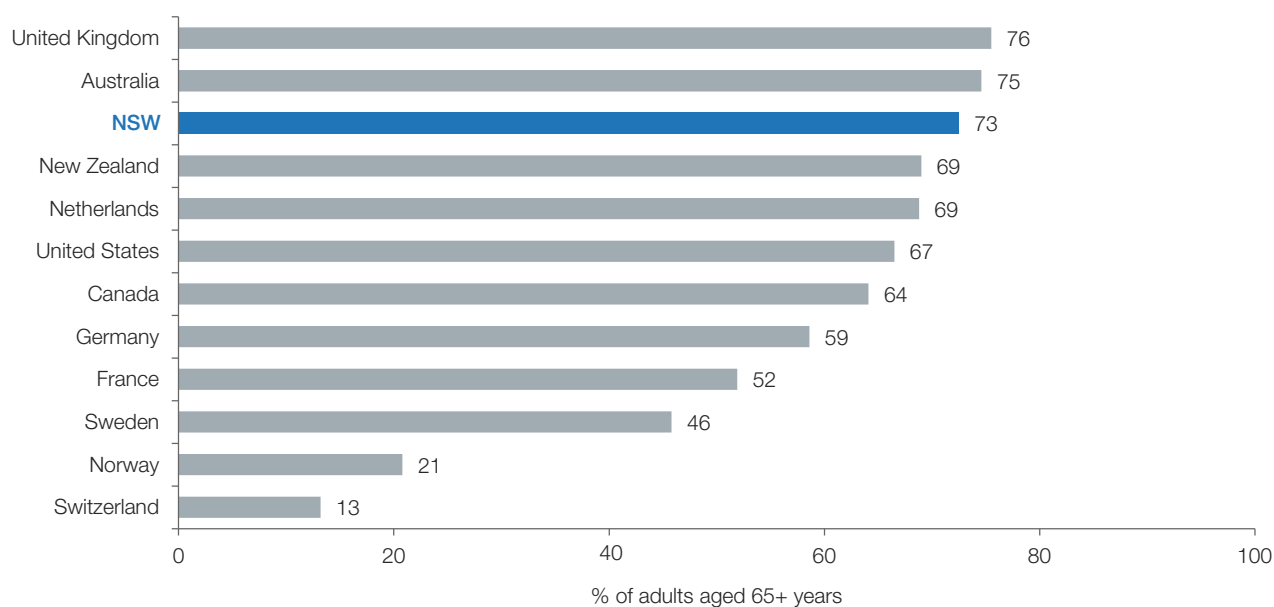
i. Pertussis (*Bordetella pertussis*) causes whooping cough.

Figure 2.2 Percentage of children aged one year who received three doses of the combined diphtheria-tetanus-pertussis vaccine, NSW and comparator countries, 2013



Sources: Health Protection NSW, Australian Childhood Immunisation Register. OECD, Health Statistics 2015.

Figure 2.3 Percentage of adults aged 65+ years who received an influenza vaccination, NSW and comparator countries, 2013



Sources: OECD, Health Statistics 2015. NSW Population Health Survey (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health.

Receiving preventive care: Cancer screening

NSW has lower uptake of cancer screening than comparator countries

For certain cancers, screening tests can detect disease in its early stages, increasing treatment options and improving outcomes.¹

Current national guidelines that are implemented in NSW recommend that every two years:

- Females aged 50–74 years should be screened for breast cancer by mammogram
- Females aged 18–70 years should be screened for cervical cancer by pap test
- Males and females aged 50+ years should be screened for colorectal cancer by faecal occult blood test (FOBT).²

For breast and cervical screening, a lower percentage of eligible women in NSW received a mammogram or pap test than in comparator countries (Figures 2.4 and 2.5).

For colorectal cancer screening, 33% of the eligible population (those aged 50+ years) participated in the

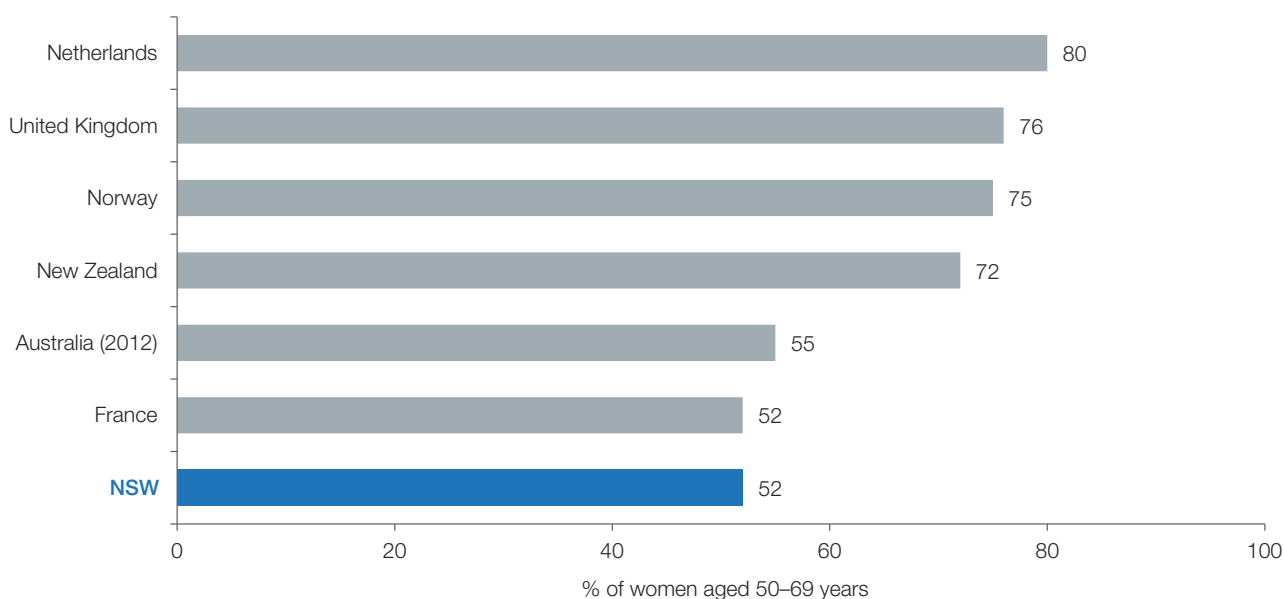
program – a lower participation rate than recorded in other countries and Australian states (Figure 2.6).³

Interpreting NSW results

Data presented here are drawn from jurisdictional cancer screening programs which vary with respect to target age groups and screening intervals. Comparisons should be made with care. In NSW approximately 8.5% of mammograms are provided in settings outside the BreastScreen program and are not reflected in the program coverage results.

Similarly, national guidelines state that people who have undergone a colonoscopy in the previous five years do not require additional FOBT screening.⁴ Colonoscopy patients are not captured in the program data and this may result in under-reporting of coverage.

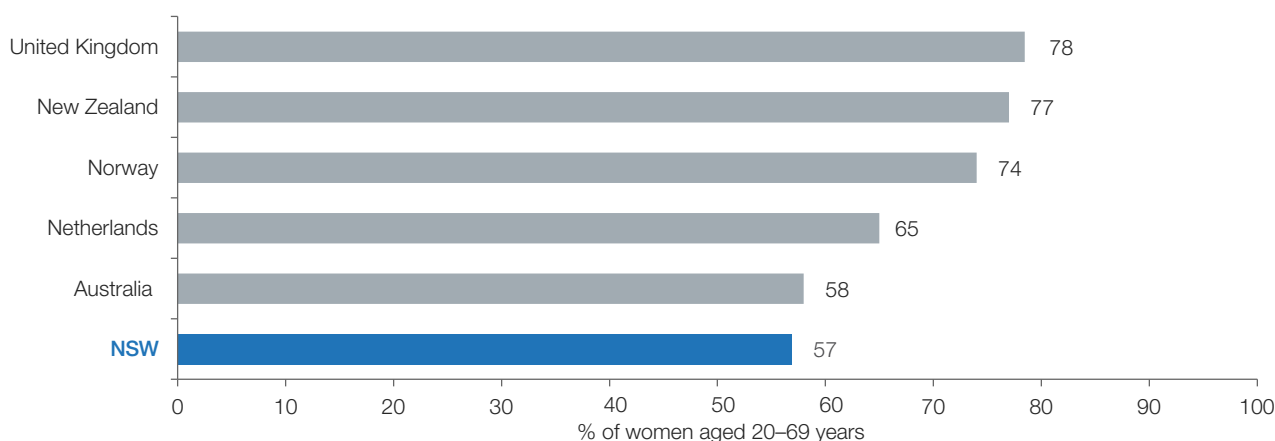
Figure 2.4 Percentage of females aged 50–69 years screened for breast cancer within the past two years, NSW and comparator countries, 2013 (or nearest year)



Sources: OECD, Health Statistics 2015. AIHW, BreastScreen Australia monitoring report 2012–13, 2015.

Note: Only countries with program based data are included. Survey-based estimates are excluded.

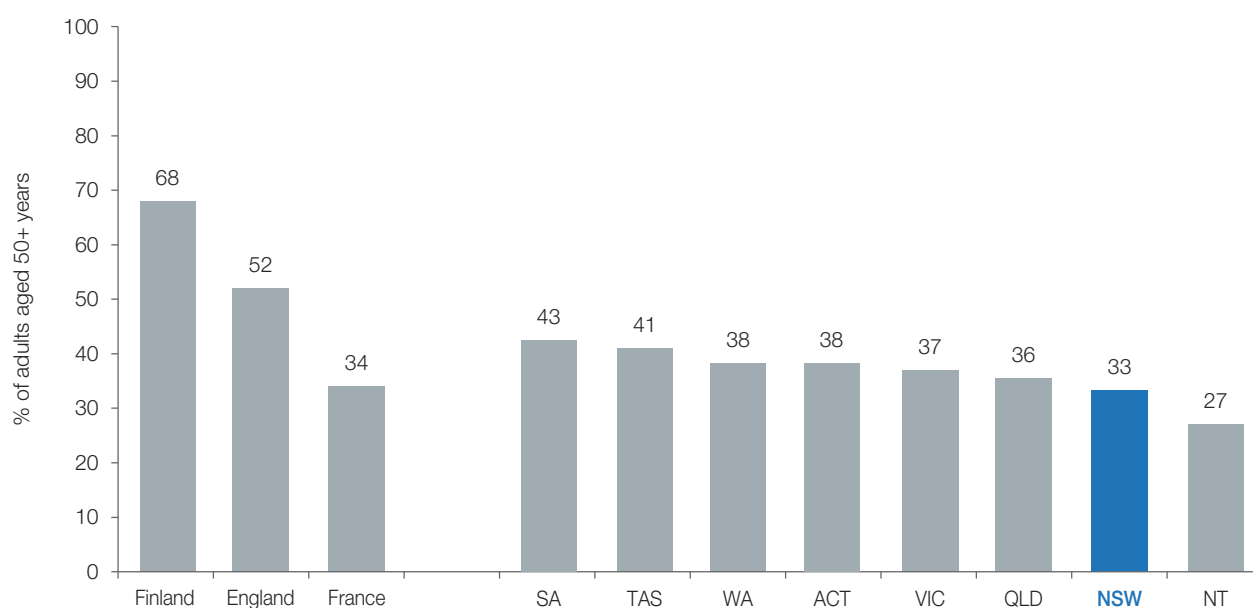
Figure 2.5 Percentage of females aged 20–69 years screened for cervical cancer within the past two years, NSW and comparator countries, 2013 (or nearest year)



Sources: OECD, Health Statistics 2015. AIHW, Cervical cancer screening in Australia 2012–13.

Note: Only countries with program-based data are included. Survey-based estimates are excluded.

Figure 2.6 Percentage of eligible population (people aged 50+ years) who participated in a colorectal cancer screening program, available countries, Australian states and territories, 2014



Sources: Klabunde C., et al.⁵ AIHW, National Bowel Cancer Screening Program: monitoring report 2013–14, 2015.

Receiving maternity care: Antenatal visits

Six in 10 NSW women started receiving antenatal care before the 14th week of their pregnancy

Starting antenatal care before the 14th week of pregnancy is associated with better maternal health, fewer interventions in late pregnancy and positive child health outcomes.⁶ In NSW, 60% of women who gave birth in 2013 had their first antenatal visit before the 14th week of pregnancy, a lower percentage than in other Australian states, except Victoria (53%) (Figure 2.7).

Regular monitoring of the progression of pregnancy is also important. The World Health Organization recommends that women receive antenatal care at least four times during pregnancy.⁷ In 2013, 96% of NSW women who gave birth had at least five antenatal visits. Pregnant women in NSW were more likely to have five or more antenatal visits than those in any other state, except South Australia (Figure 2.8).

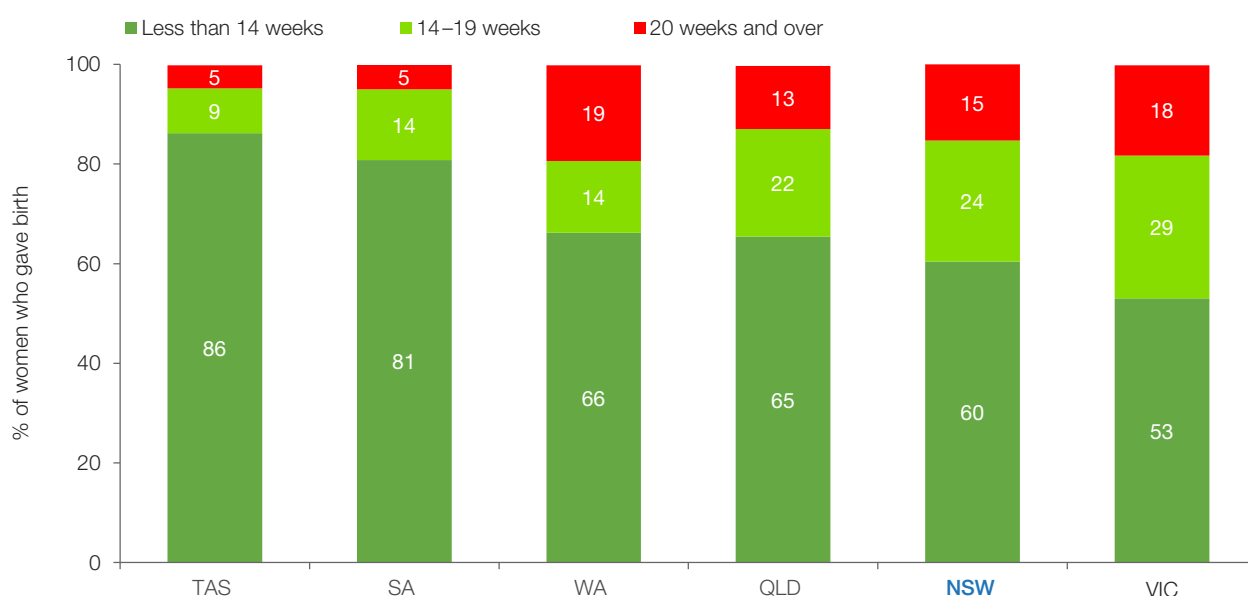
The 2015 NSW Maternity Care Patient Survey asked women who gave birth in a public hospital about their experiences of care.

Data from the first six months of the survey show that NSW women did not always receive appropriate advice about risks and behaviours. While 90% of women said they were asked how they were feeling emotionally during their pregnancy, only 60% of those with worries or fears said a health professional 'completely' discussed them. Similarly, among smokers, only 49% said they were told about programs they could join to stop smoking (Figure 2.9).

Interpreting NSW results

Caution should be used when making comparisons across jurisdictions about the timing of the first antenatal visit. Some report the first hospital visit for this measure; regardless of whether women received earlier antenatal care from GPs.

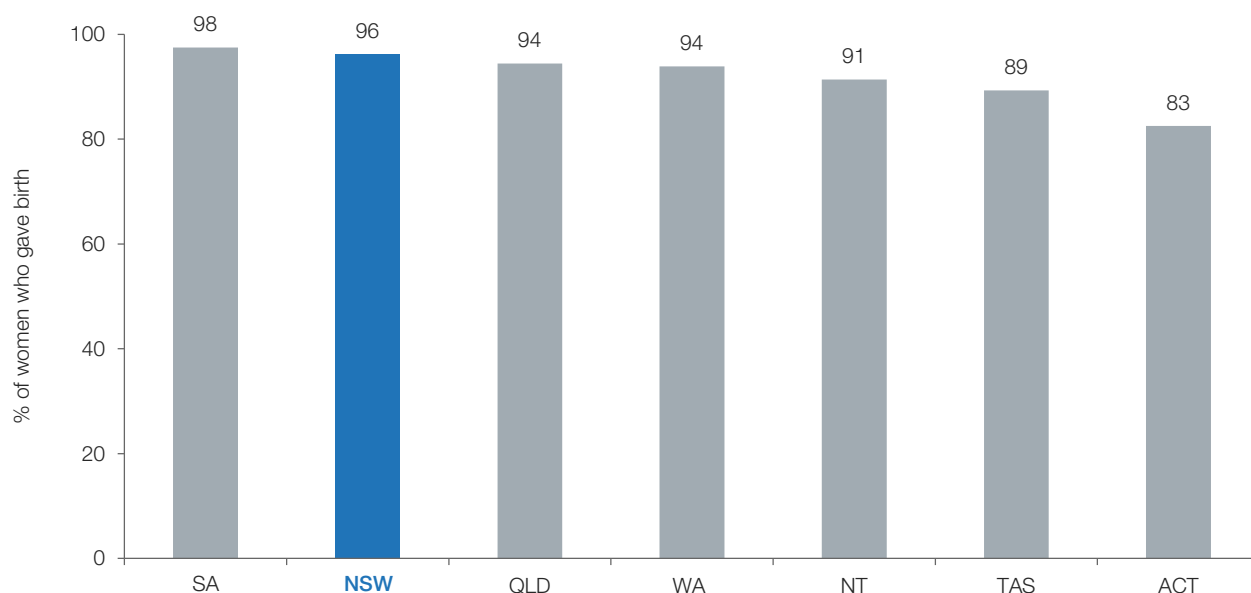
Figure 2.7 Duration of pregnancy at the first antenatal visit, Australian states, 2013



Source: AIHW analysis of National Perinatal Data Collection.

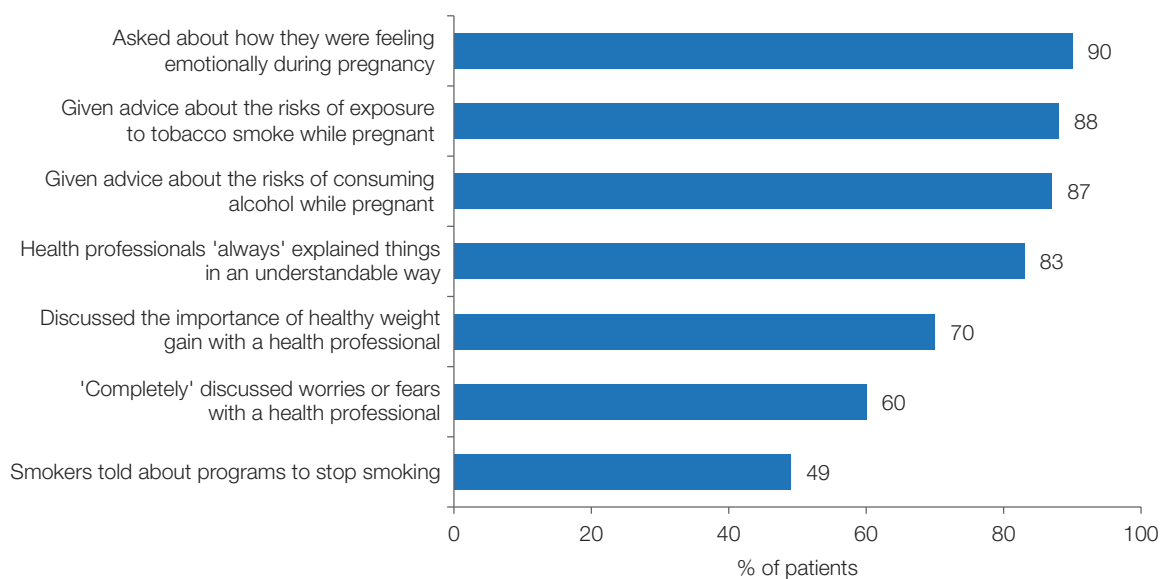
Note: Results do not add up to 100 as a small percentage were denoted as 'not applicable'.

Figure 2.8 Percentage of mothers who had five or more antenatal visits, Australian states, 2013



Source: AIHW analysis of National Perinatal Data Collection.

Figure 2.9 Maternity Care Survey: Antenatal care, public hospitals, NSW, January to June 2015



Source: BHI, Maternity Care Survey, January to June 2015.

Receiving maternity care: Births

Rates of elective caesarean sections are increasing in NSW

Caesarean section rates are a controversial issue. While caesarean section deliveries are the best option for some women, high rates have been linked with increased maternal morbidity and mortality, and neonatal intensive care unit admission.⁶ National caesarean section rates of up to 19% of live births are associated with lower maternal or neonatal mortality.^{8,9}

In 2013, 32% of live births in NSW hospitals were caesarean sections (30,915 deliveries) – a relatively high rate internationally (Figure 2.10).

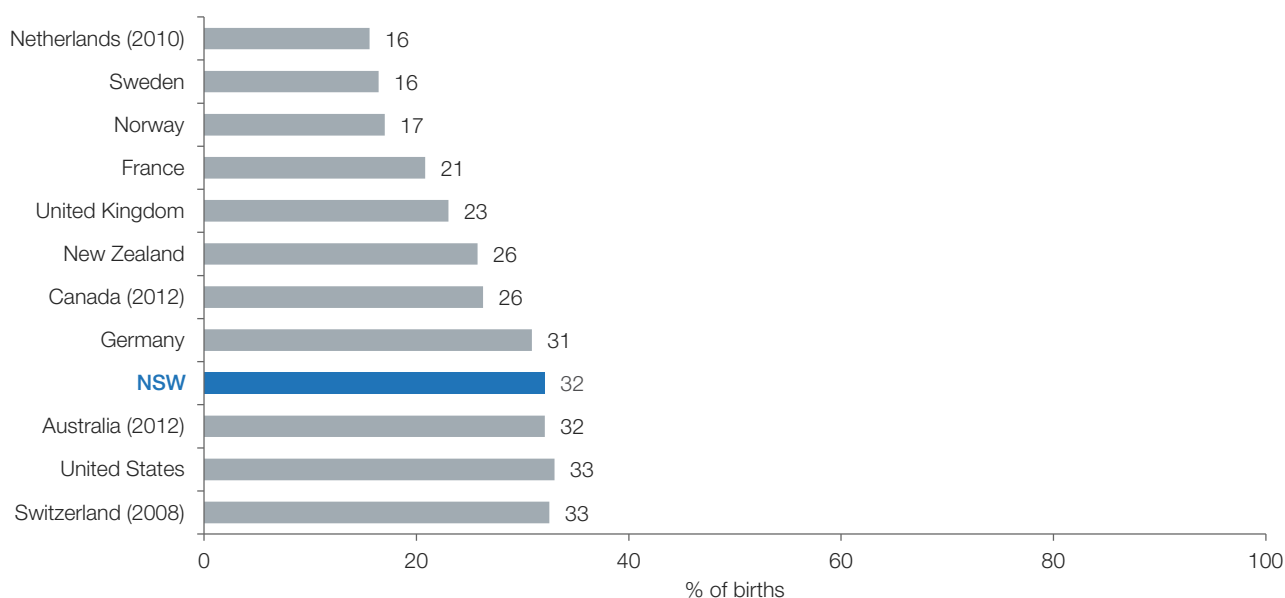
Such increases in caesarean section rates have been attributed to a range of factors including maternal age, number of previous pregnancies, birthweight, patient choice, and changes in obstetric practices.^{7,10}

Elective caesarean sections are the type of delivery for which there is an element of discretionary

care. There are no published recommendations to guide the appropriate level for elective procedures. Between 1998 and 2014, elective caesarean section rates increased from 10% to 20% of all deliveries in NSW. This increase, together with clear differences between rates in the public and private sectors point to a significant amount of practice variation unexplained by patient-level risk factors (Figure 2.11).

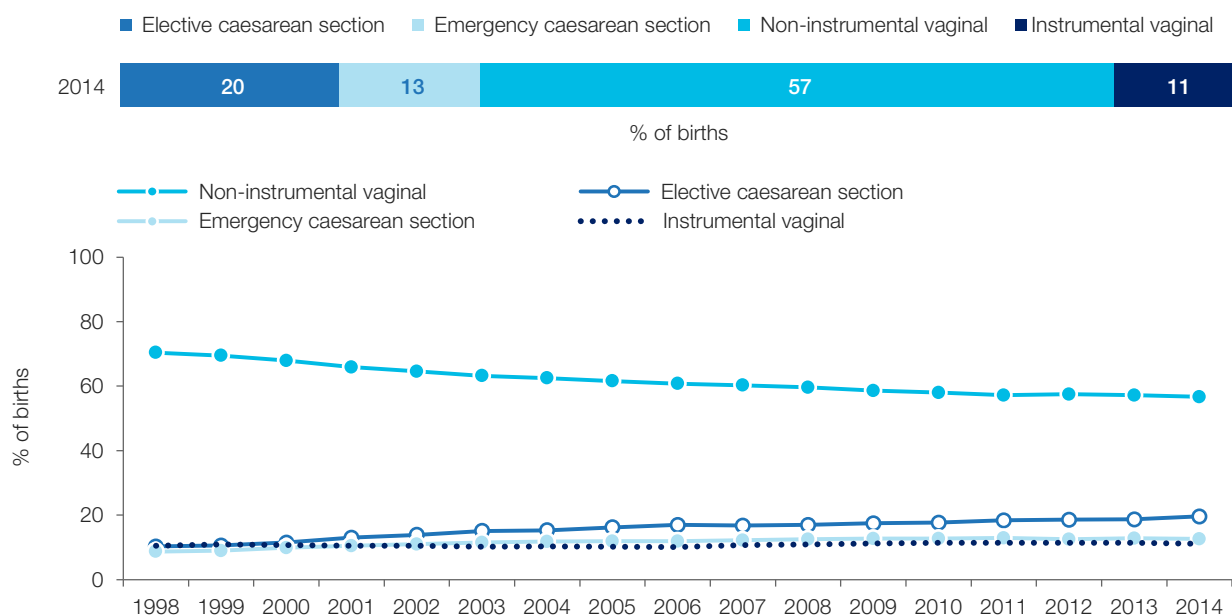
In 2014, elective caesarean sections comprised 16% of all deliveries in public hospitals and 32% of all deliveries in private hospitals. Across NSW public hospitals in 2014, the percentage of births that were elective caesarean sections ranged from 9% to 27% of births. In contrast, there is much greater homogeneity in emergency caesarean rates, accounting for 13% of all births in both public and private hospitals (Figure 2.12 and Figure 2.13).

Figure 2.10 Percentage of births that were by caesarean section, public and private hospitals, NSW and comparator countries, 2013 (or nearest year)



Source: OECD, Health Statistics 2015. NSW Perinatal Data Collection (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health (BHI analysis).

Figure 2.11 Type of birth, public and private hospitals, NSW, 1998–2014



Source: Centre for Epidemiology and Evidence, Health Statistics New South Wales Sydney: NSW Ministry of Health. Available at: healthstats.nsw.gov.au

Note: Of the 95,794 deliveries in NSW, 32% were in private hospitals.

Figure 2.12 Percentage of births that were by elective caesarean section, NSW hospital variation, 2014

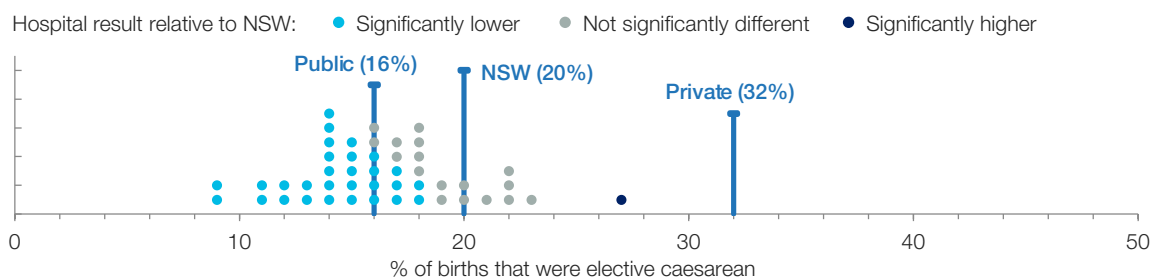
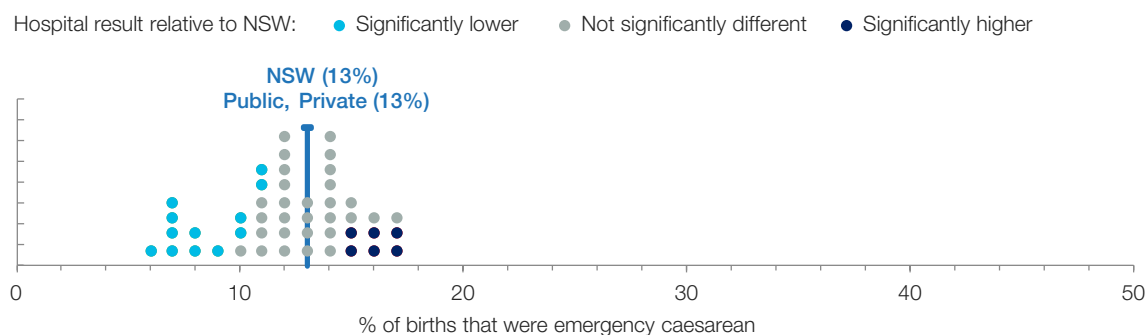


Figure 2.13 Percentage of births that were by emergency caesarean section, NSW hospital variation, 2014



Source: Centre for Epidemiology and Evidence, Health Statistics New South Wales, Sydney: NSW Ministry of Health. Available at: healthstats.nsw.gov.au

Note: Hospitals with more than 50 births are included. Data include all mothers who gave birth (stillbirth or live birth) in NSW regardless of place of permanent residence.

Receiving surgical care: Hip fracture surgery

Only seven in 10 patients who received surgery for hip fracture had the operation within the recommended two days of admission

Evidence-based guidelines recommend that patients hospitalised with a hip fracture should undergo surgery within 48 hours of admission. Delays to surgery beyond 48 hours can result in prolonged pain and discomfort for patients and have been shown to be associated with more than twice the number of major post-operative complications.^{11,12}

In 2013, there were 5,350 patients aged 65+ years who received surgery for hip fracture in NSW. Of these, 70% underwent surgery within two days of admission to hospital. NSW was outperformed on this measure by all comparator countries (Figure 2.14).

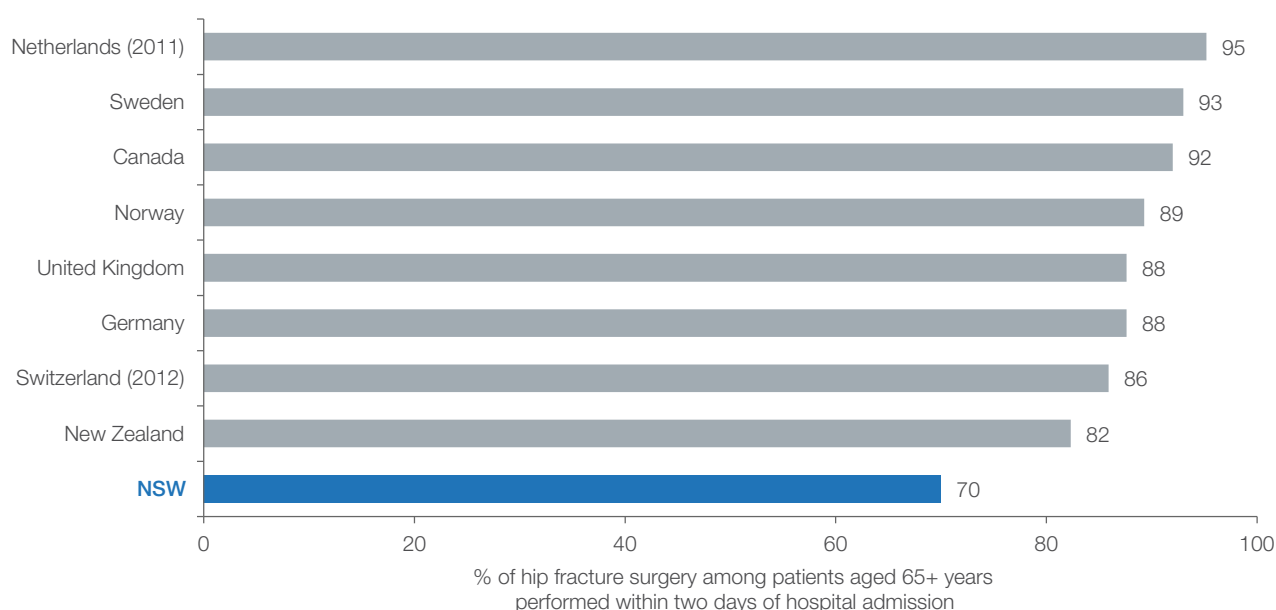
NSW results have however been improving. In 2014, 73% of hip fracture surgical procedures were performed within two days of admission to hospital – a nine percentage point improvement over the 2004 result. Over the same period, the volume of hip fracture surgery performed in NSW hospitals has increased by 9% (Figure 2.15).

Across public hospitals in NSW, the percentage of hip fracture surgical procedures that were initiated within two days of admission ranged from 37% to 100% (Figure 2.16).

Interpreting NSW results

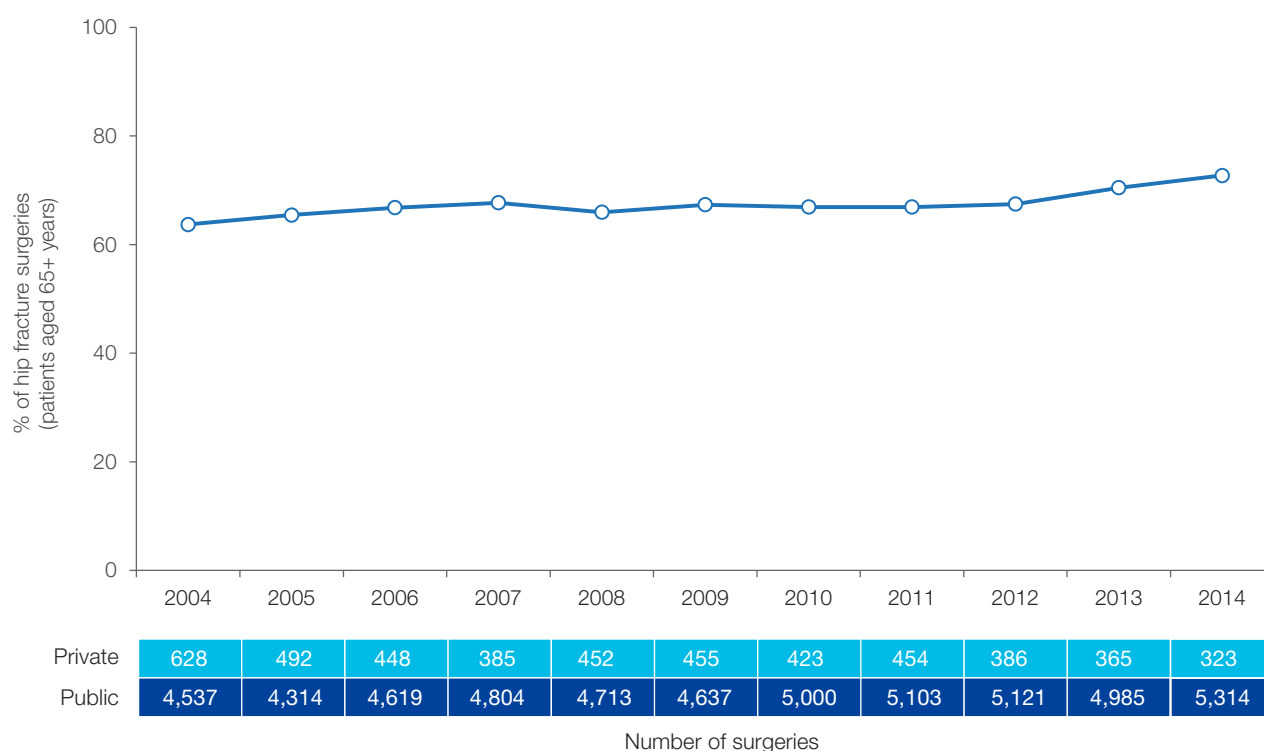
NSW data do not capture precise timing of surgery therefore these indicators are based on a time period of two days. Comparator countries use similar data definitions to those used here. The recommendation that patients hospitalised with a hip fracture should undergo surgery within 48 hours of admission is one of the minimum standards developed by the NSW Agency for Clinical Innovation. The Minimum Standards for the Management of Hip Fracture were released in 2014.

Figure 2.14 Percentage of hip fracture surgery performed within two days of hospital admission, patients aged 65+ years, public and private hospitals, NSW and comparator countries, 2013 (or nearest year)



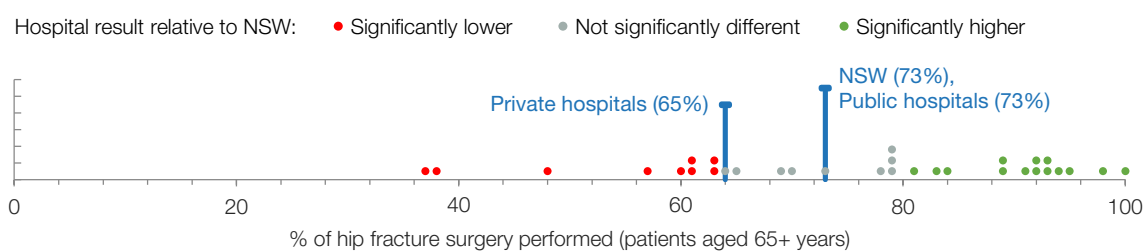
Sources: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis). OECD, Health Statistics 2015.

Figure 2.15 Percentage of hip fracture surgery performed within two days of hospital admission, patients aged 65+ years, public and private hospitals, NSW, 2004–2014



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis)

Figure 2.16 Percentage of hip fracture surgery performed within two days of hospital admission, patients aged 65+ years, NSW hospital variation, 2014



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

Note: Only hospitals with more than 50 cases are included.

Stroke rehabilitation care: Organisational capacity

Stroke rehabilitation services in NSW provide more of the right healthcare than those in other states, but some essential elements of care were lacking

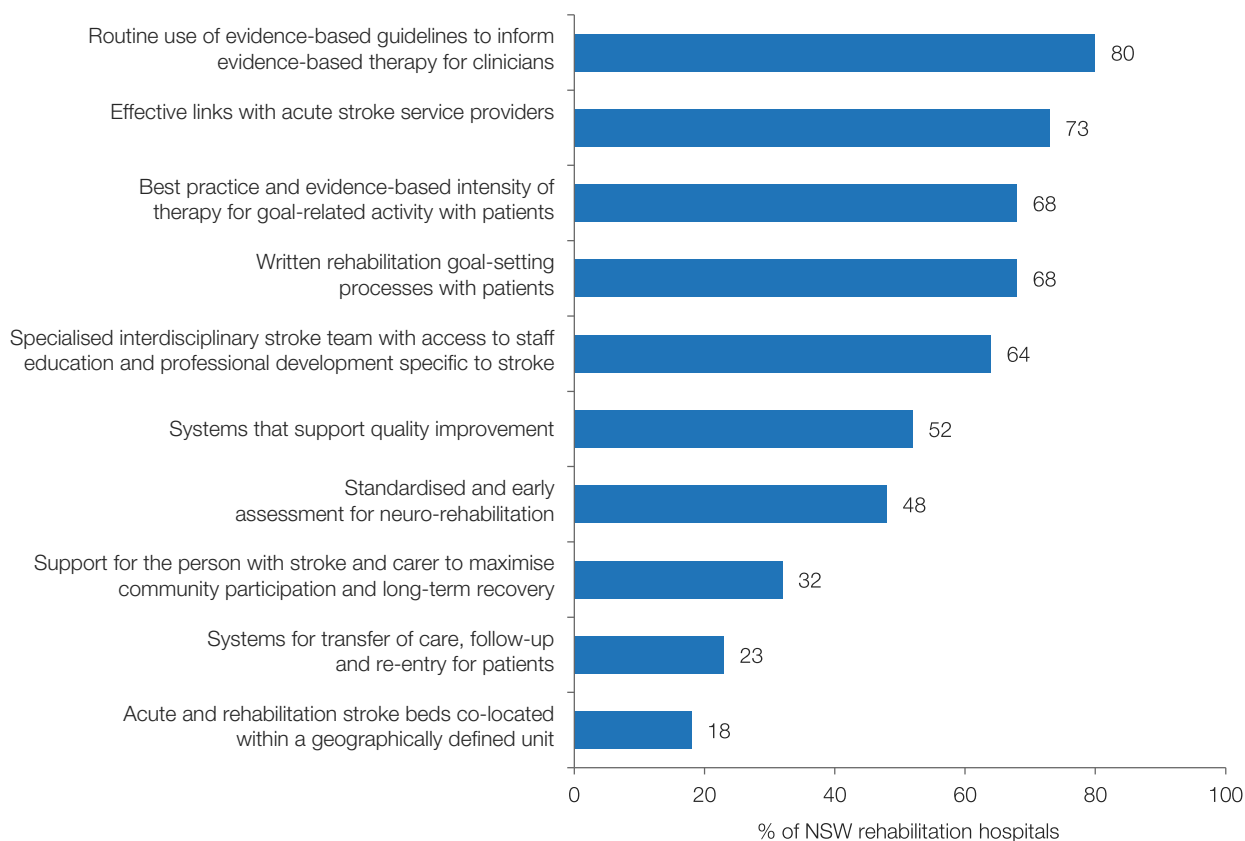
During the year 2013–14, there were 10,196 acute hospitalisations for stroke in NSW (95% of these were in public hospitals). Most stroke patients benefit from rehabilitation and in the same year there were 9,401 hospitalisations for stroke rehabilitation (42% in public hospitals).ⁱⁱ

The National Stroke Foundation specifies 10 elements which should be present in rehabilitation hospitals for patient outcomes to be optimised. These elements do not equate to high performance – units may have limited capacity and some patients who could benefit may not be able to access appropriate care.

For NSW, levels of compliance with the required elements of stroke rehabilitation care ranged from, at best, 80% of hospitals that routinely used evidence-based guidelines to, at worst, 23% that had established systems for transfer of care and follow-up and 18% that had rehabilitation beds co-located with acute care beds (Figure 2.17).

Compared to hospitals in other states, NSW/ACT hospitals had higher levels of compliance with recommended elements of stroke rehabilitation care (defined as greater than 67% of hospitals with the relevant organisational system or factor in place) (Figure 2.18).

Figure 2.17 Percentage of hospitals adhering to the essential elements of stroke services, rehabilitation facilities, NSW/ACT, 2014



Source: National Stroke Foundation, National Stroke Audit: Rehabilitation Services Report 2014.

ii. Hospitalisation here refers to separations; acute hospitalisations with stroke as a principal diagnosis only; and rehabilitation hospitalisations with stroke in any diagnosis field.

Figure 2.18 Organisational audit, consistency of adherence to essential elements of stroke services, rehabilitation hospitals, 2014

	NSW/ACT	QLD	SA	TAS	VIC	WA
Routine use of evidence-based guidelines to inform evidence-based therapy for clinicians	●	●	●	○		
Effective links with acute stroke service providers	●	●	●			
Best practice and evidence-based intensity of therapy for goal-related activity with patients	●			○		
Written rehabilitation goal-setting processes with patients	●	●		●	●	●
Specialised interdisciplinary stroke team with access to staff education and professional development specific to stroke		●		○		●
Systems that support quality improvement				○		
Standardised and early assessment for neuro-rehabilitation				○		○
Support for the person with stroke and carer to maximise community participation and long-term recovery	○			○		
Systems for transfer of care, follow-up and re-entry for patients	○	○		○	○	
Acute and rehabilitation stroke beds co-located within a geographically defined unit	○			○	○	

● More than two-thirds of rehabilitation hospitals surveyed achieved compliance with the framework element

○ Less than one-third of rehabilitation hospitals surveyed achieved compliance with the framework element

Source: Stroke Foundation, National Stroke Audit: Rehabilitation Services Report 2014.

Notes: Result criteria defined by BHI. For complete details, see source. Data needs to be assessed with caution. The audit is a voluntary self-reported process, and does not include all stroke or rehabilitation services.

Receiving end of life care

Among NSW people hospitalised in their last year of life, two in 10 received palliative care

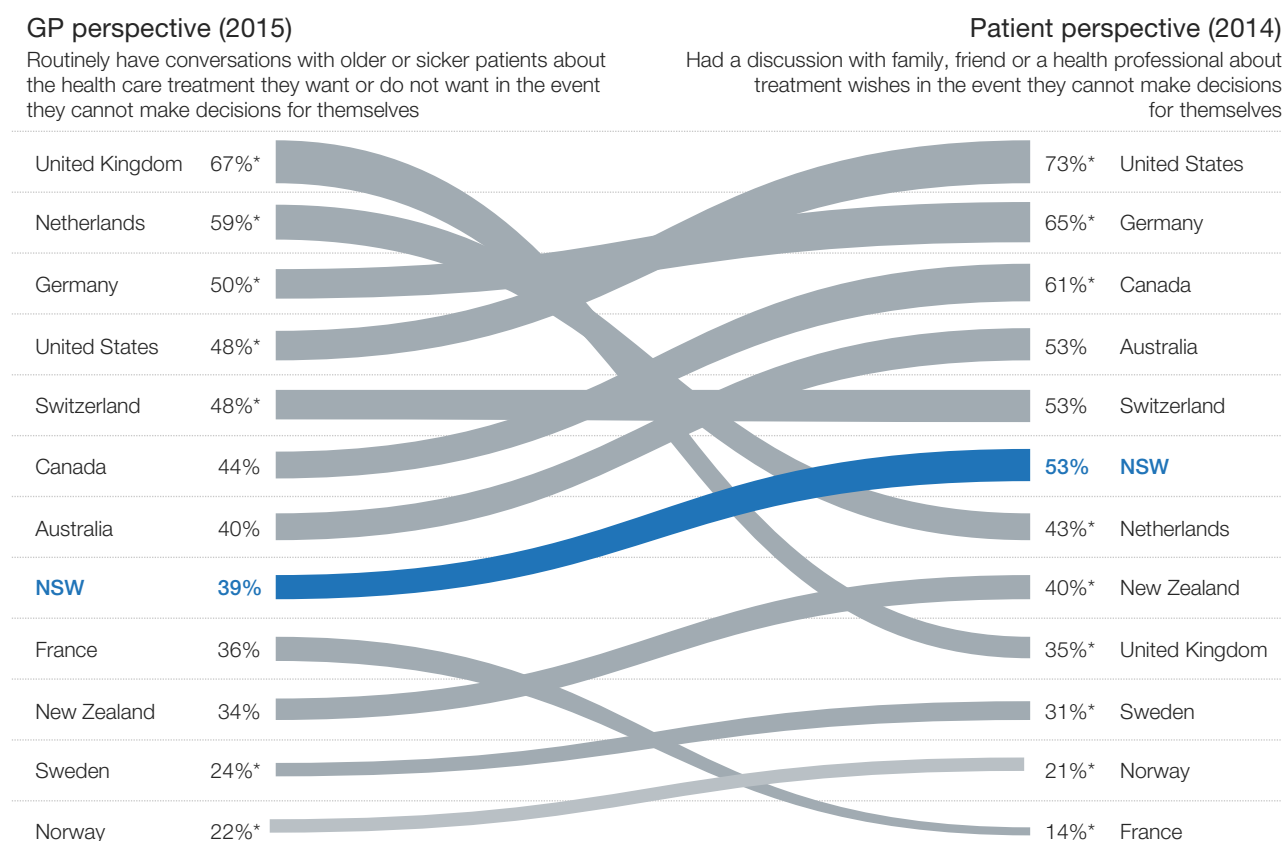
End of life care is a key concern for older people. The capacity to make important decisions can be compromised as patients approach death. Timely and appropriate decision-making about end of life care is more likely when healthcare professionals, patients and their families and carers are engaged in discussions and planning.

In NSW, 39% of primary care physicians said they ‘routinely’ have conversations with older or sicker patients about the healthcare treatment they want or do not want in the event they become very ill, injured, or cannot make decisions for themselves – a lower percentage than in five comparator countries.

In contrast, among NSW people aged 55+ years, 53% said they have discussed end of life care with family, a friend or a health professional (Figure 2.19).

Appropriate end of life care includes minimising discomfort, invasive procedures and stressful visits to an emergency department (ED) or hospital. Over 70% of Australians say they want to be cared for and die at home.¹³ In 2013, a total of 50,389 people from NSW died. In the 30 days preceding their death, 48% of people visited an ED, 64% were hospitalised, and 53% died in hospital (Figure 2.20).

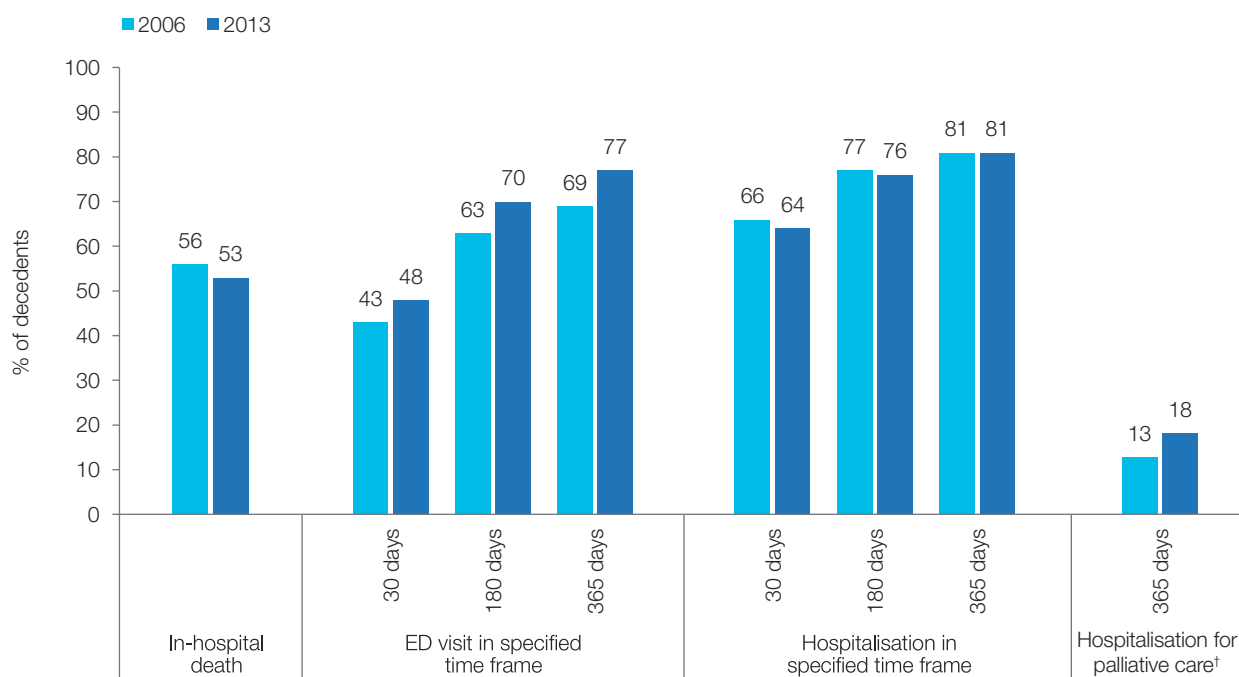
Figure 2.19 Provider and patient perspectives: Percentage who said they had conversations about end of life care, NSW and comparator countries, 2014 and 2015



Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

* Estimate is statistically significantly different to NSW.

Figure 2.20 Percentage of decedents who visited the emergency department or were hospitalised in the 30, 180, and 365 days preceding their death, NSW, 2006 and 2013



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

† Includes all patients who had at least one hospitalisation for palliative care in the last year of life.

Engaging patients: Managing care at home

NSW patients with chronic conditions were more likely than those in comparator countries to receive a written plan to help manage their condition

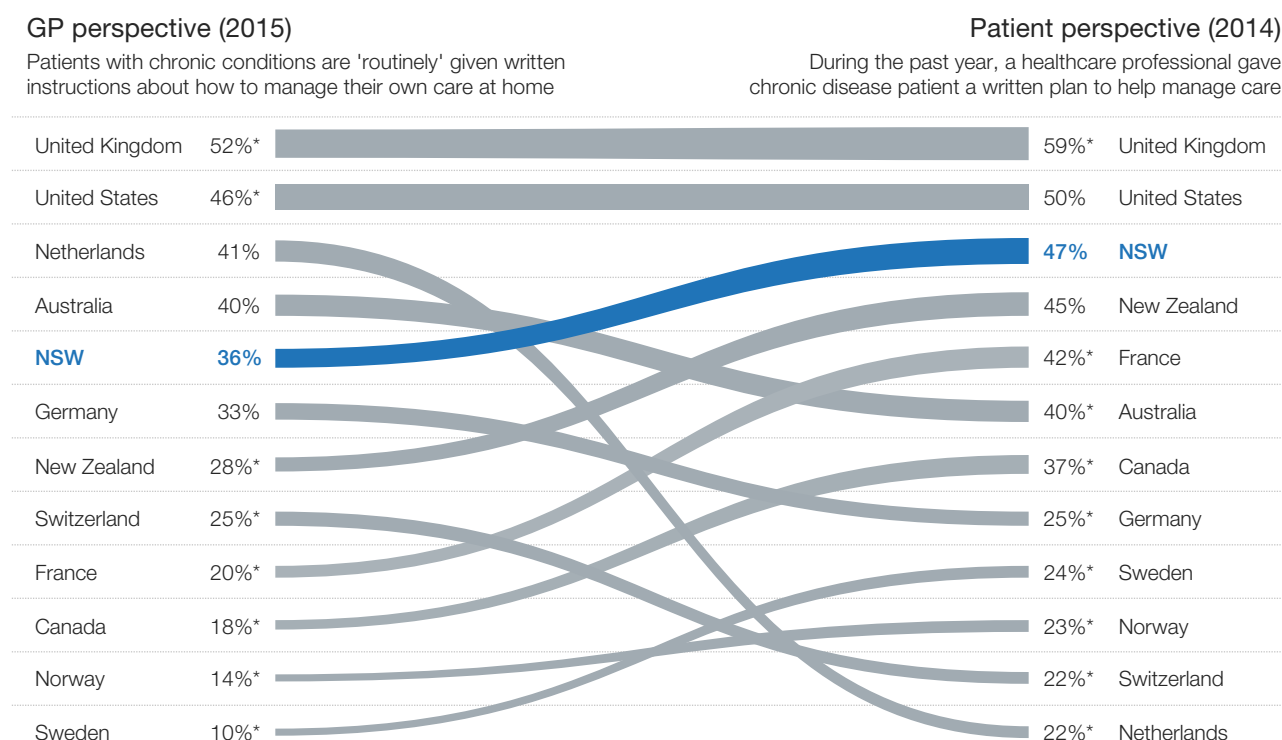
Engaging patients in their own healthcare is associated with better quality care, fewer errors and more positive attitudes towards the healthcare system.¹⁴ Patients who are involved in decision-making and engaged in managing their health experience better outcomes and incur lower costs.

Comparing provider and patient perspectives regarding patient engagement in chronic disease care, 36% of NSW GPs said they 'routinely' give their patients written instructions about how to manage their own care at home; while 47% of patients said they had been given a written plan to help manage their own care at home (Figure 2.21).

Following hospitalisation, if well supported, patients can play an important role in managing their recovery. Among adults admitted to a NSW public hospital in 2014, 73% said they were 'completely' given enough information about how to manage their care at home. At a hospital level, this ranged from 56% to 89% of patients (Figure 2.22).

Results from various surveys in the NSW Patient Survey Program provide a range of viewpoints on patient engagement. Across five different surveys conducted in 2014 and 2015, the percentage of respondents who said they were 'definitely' engaged in decisions about their care and treatment ranged from 60% among adult admitted patients to 74% among cancer outpatients (Figure 2.23).

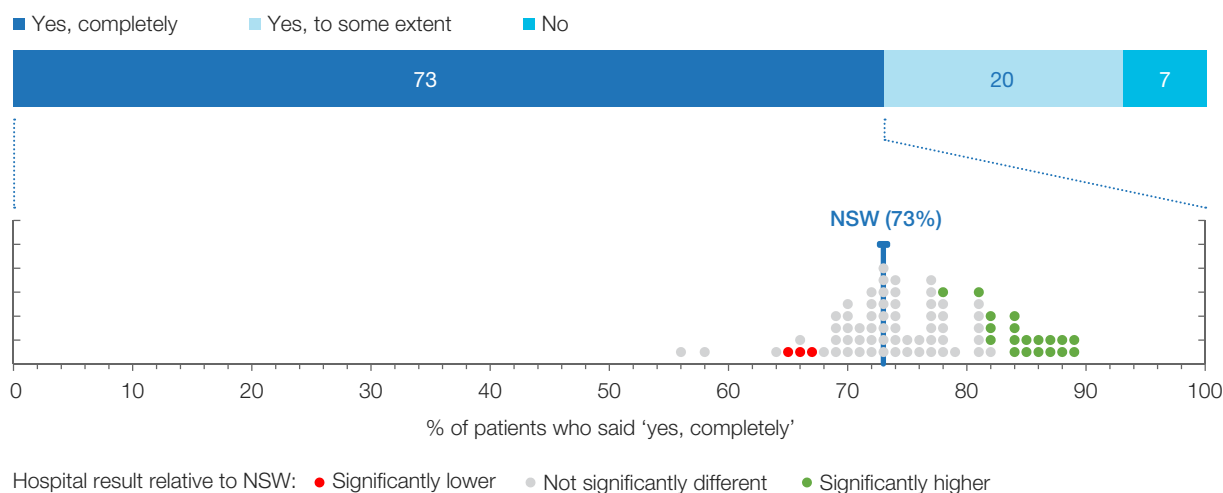
Figure 2.21 Provider and patient perspectives: Percentage who said there is a written plan to support patient engagement, NSW and comparator countries, 2014 and 2015



Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2014 Commonwealth Fund International Health Policy Survey of Older Adults.
* Estimate is statistically significantly different to NSW.

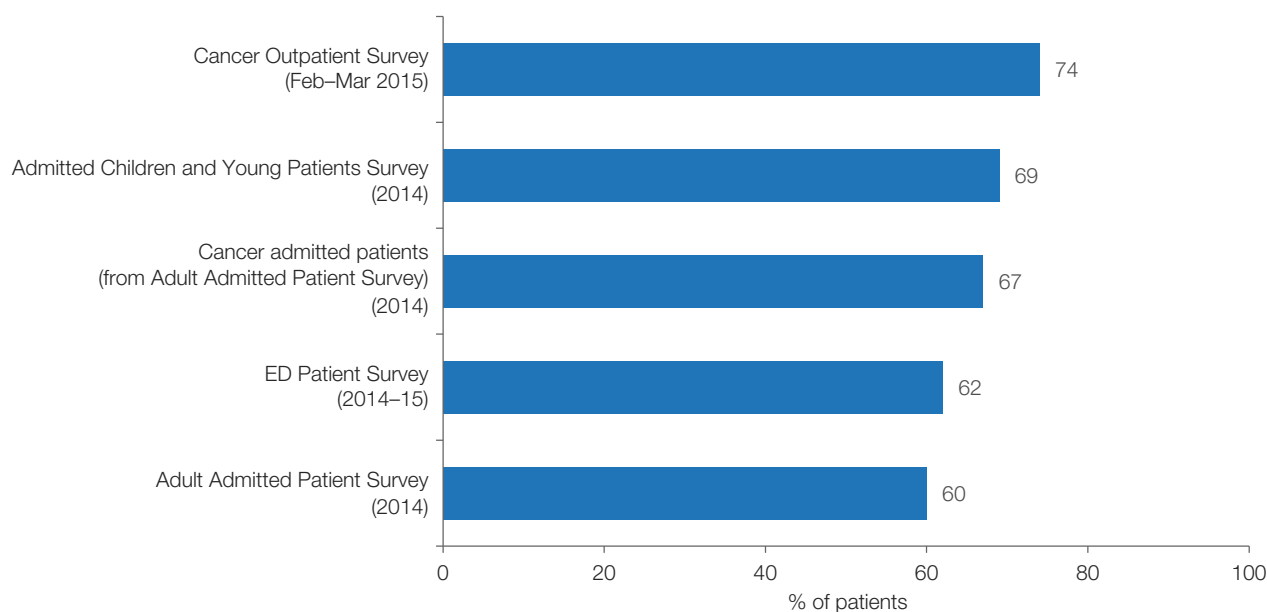
Figure 2.22 Percentage of patients who said they were 'completely' given enough information when they left the hospital about how to manage their care at home, public hospitals, NSW, 2014

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



Source: BHI, Adult Admitted Patient Survey, 2014.

Figure 2.23 Percentage of patients who were 'definitely' engaged in decisions about their care and treatment, by patient survey, public hospitals, NSW, (various time periods)



Source: BHI NSW Patient Survey Program.

Coordinating care for patients

GPs in NSW were less positive about coordination than those in comparator countries

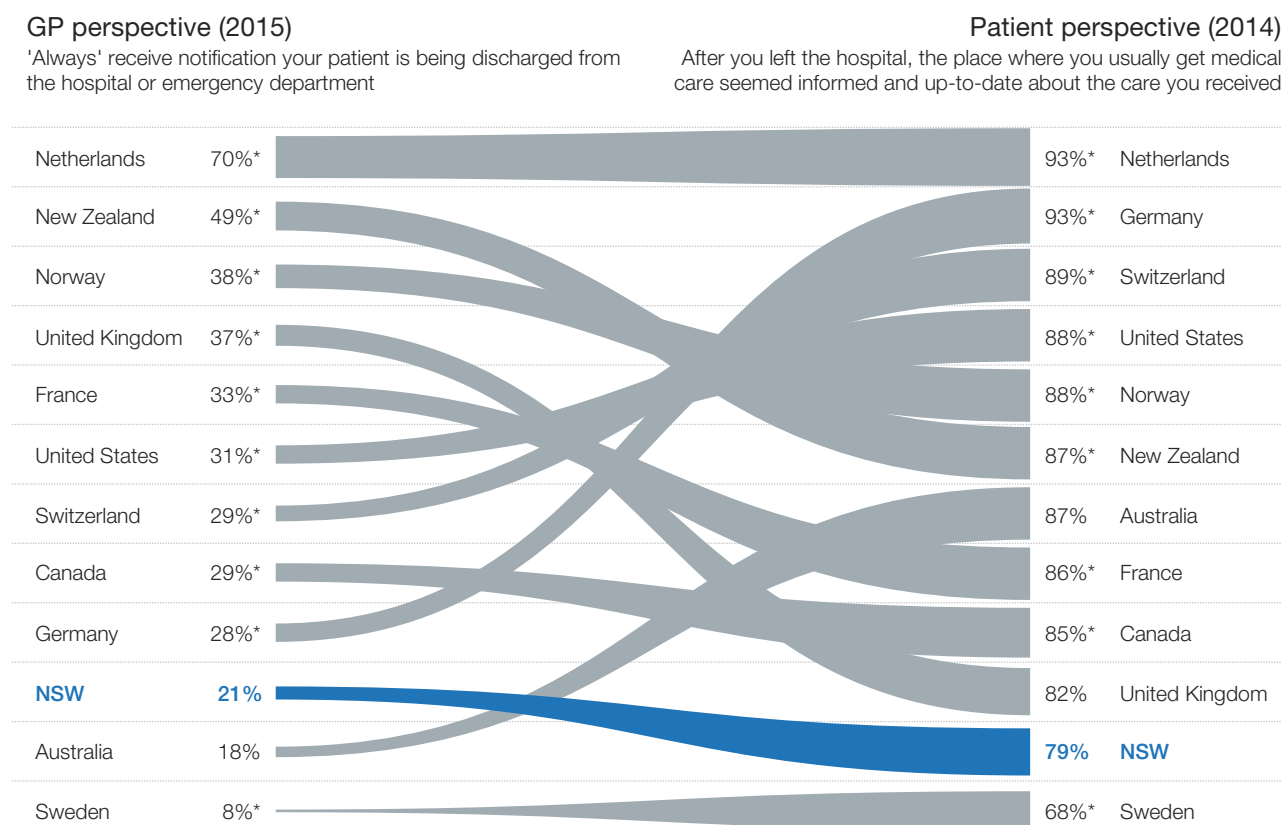
Coordinating patient care is the deliberate organisation of two or more actors working together to provide seamless care for patients.¹⁵

Comparing provider and patient perspectives regarding coordination of care following discharge from hospital, 21% of NSW GPs said they 'always' receive notification that their patient is being discharged from hospital or ED, while 79% of hospitalised adults aged 55+ years said after discharge, their regular GP seemed informed and up-to-date about the care they received.

Despite these absolute differences in results, ranking shows the relative NSW position to be fairly consistent – and in the lower quartile of comparators – for both provider and patient perspectives (Figure 2.24).

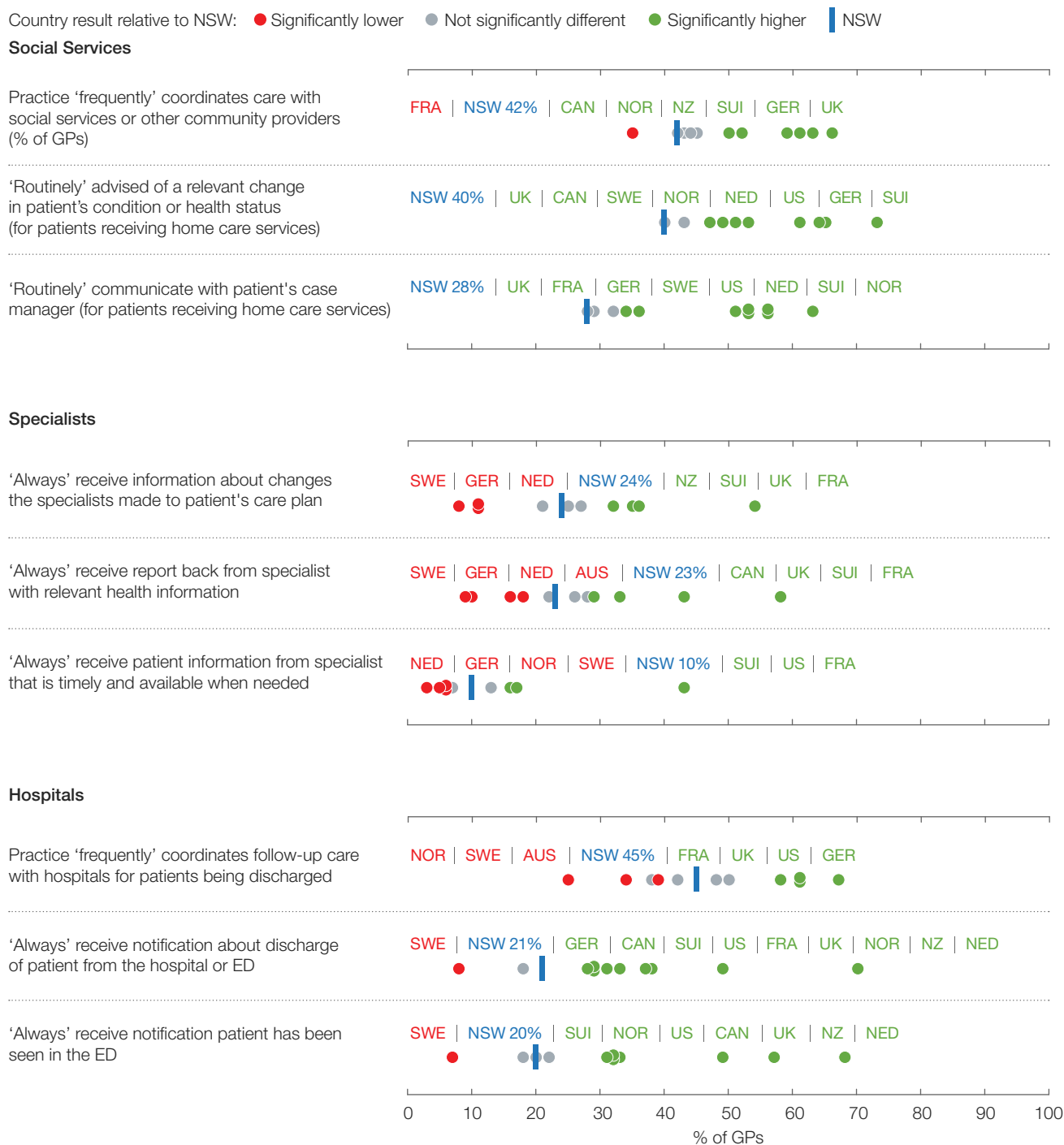
In 2015, NSW GPs were generally less positive than those from other systems regarding coordination of care with social services, specialists and hospitals. For example, only 45% of NSW GPs said their practice 'frequently' coordinates follow-up care with hospitals for patients upon discharge (Figure 2.25).

Figure 2.24 Provider and patient perspectives: Percentage reporting coordination of care following discharge from hospital, NSW and comparator countries, 2014 and 2015



Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2014 Commonwealth Fund International Health Policy Survey of Older Adults.
* Estimate is statistically significantly different to NSW.

Figure 2.25 GPs' assessment of coordination of care, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians

Keeping patients safe: Hand hygiene

Hand hygiene audits reveal progress, but patient perspectives show there is still room for improvement

Hand hygiene is important in preventing and reducing the spread of healthcare-associated infections, making a major contribution to keeping patients safe.¹⁶ The Australian Commission on Safety and Quality in Health Care is responsible for the National Hand Hygiene Initiative (NHHI), and trends for NSW are reported by the Clinical Excellence Commission.¹⁷

The NHHI adopts the principles of Five Moments for Hand Hygiene – which state hand hygiene should be performed:

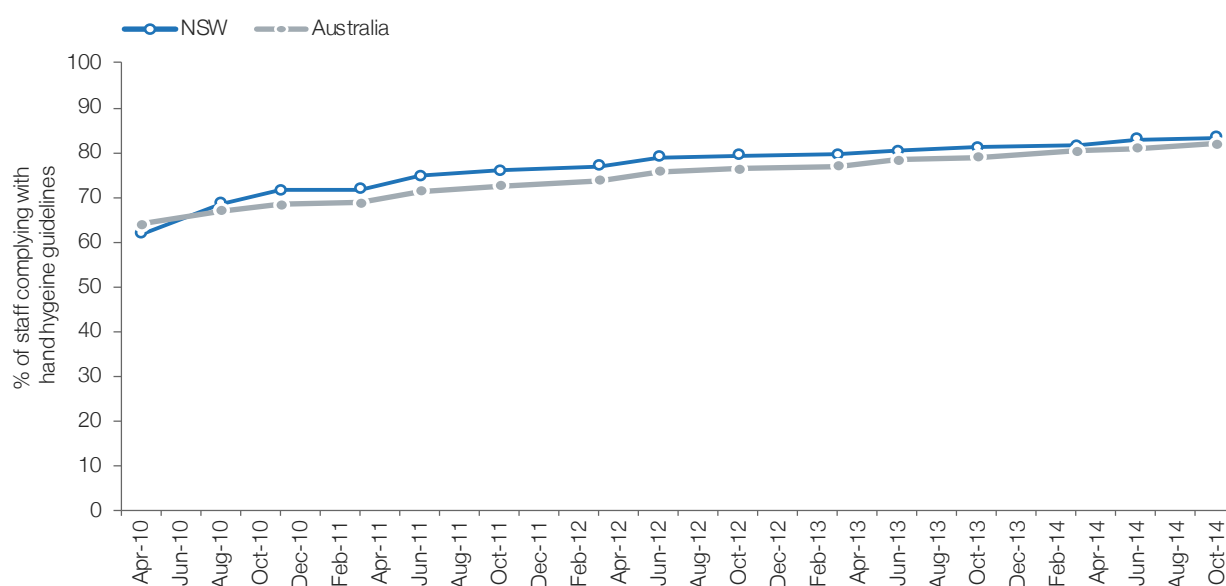
- Before touching a patient
- Before a procedure
- After a procedure or body fluid exposure risk
- After touching a patient
- After touching a patient's surroundings.

Between April 2010 and October 2014, rates of hand hygiene compliance (as recorded by validated observers) increased by 22 percentage points (Figure 2.26).

Results from various surveys managed by BHI within the NSW Patient Survey Program provide patient perspectives related to the 'first moment' of hand hygiene – that is before touching a patient. Across four different surveys conducted in 2014, the percentage of patients who said they 'always' saw various health professionals wash or clean their hands before touching them ranged from 54% for ED patients to 68% for cancer outpatients (Figure 2.27).

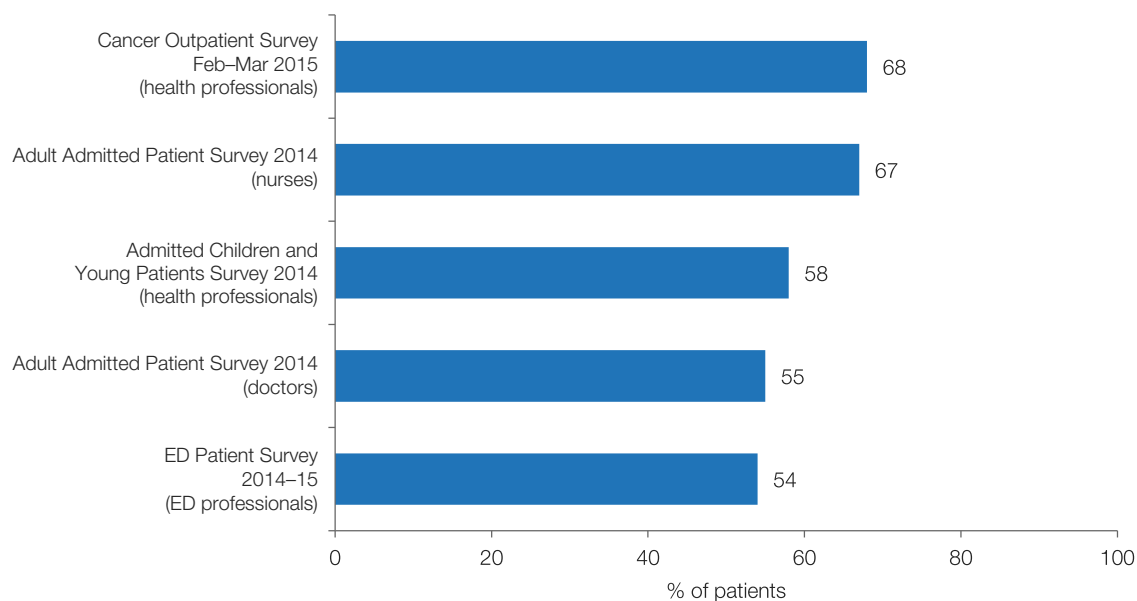
Among NSW adult admitted patients, the percentage who said they 'always' saw doctors wash their hands, use hand gel or clean gloves before touching them ranged across hospitals from 44% to 71% (data not shown) and the percentage who said they 'always' saw nurses do so ranged from 57% to 81% (Figure 2.28).

Figure 2.26 Percentage of staff complying with hand hygiene guidelines, NSW and Australia, April 2010 to October 2014



Source: Hand Hygiene Australia, Clinical Excellence Commission.

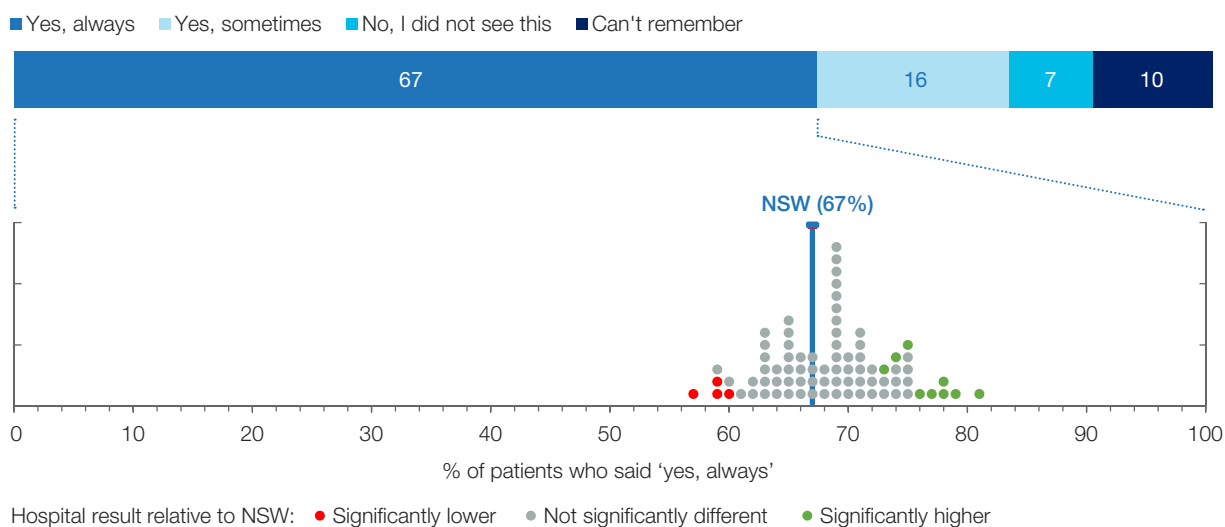
Figure 2.27 Percentage of patients who 'always' saw staff wash or clean their hands before touching them, by patient survey and type of provider, NSW, (various time periods)



Source: BHI, NSW Patient Survey Program.

Figure 2.28 Percentage of patients who saw nurses wash or clean their hands before touching them, public hospitals, NSW, 2014

Did you see nurses wash their hands, use hand gel to clean their hands, or put on clean gloves before touching you?



Source: BHI, Adult Admitted Patient Survey, 2014.

Note: Patients may not remember whether or not they saw healthcare workers clean their hands or put on clean gloves. In addition, auditors will mark a moment as missed as part of hand hygiene compliance checking if clinicians put on gloves without performing hand hygiene. As such the patient's observation does not reflect the hospital's hand hygiene compliance according to guidelines.

Keeping patients safe: Medication management

NSW GPs are more likely than GPs in comparator countries to use automated alert systems

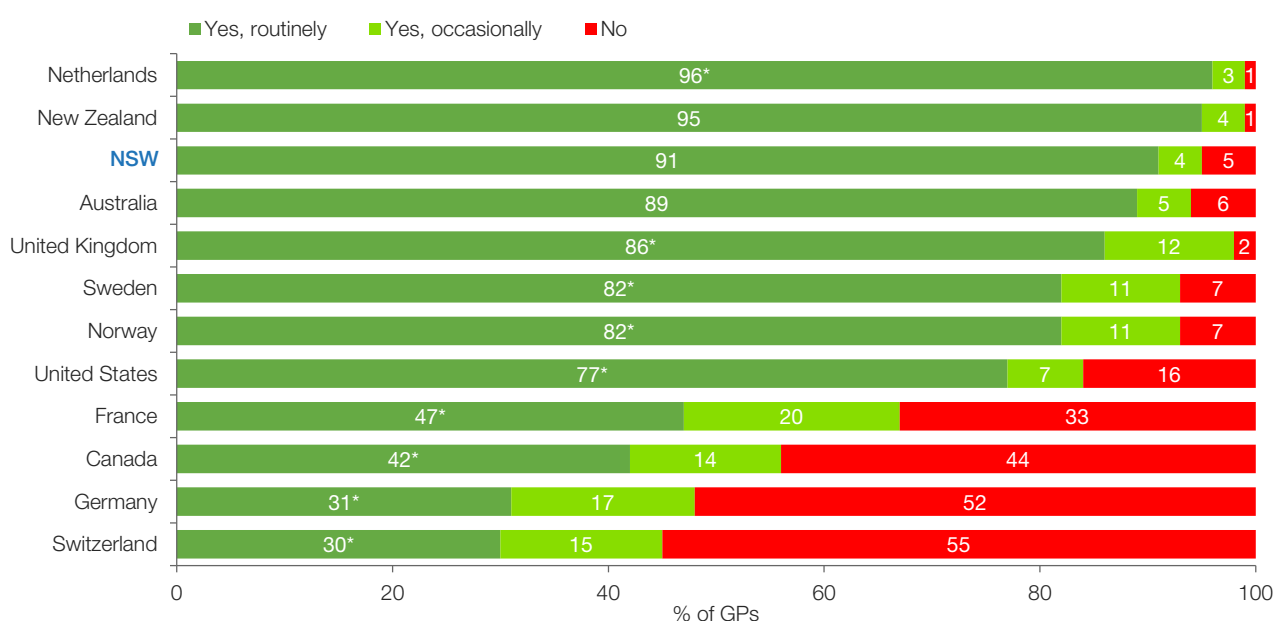
Medication-related errors pose a significant risk to patients. Their incidence can be reduced through the use of automated alert systems at the point of prescription, provision of information to patients and regular medication reviews.¹⁸

In NSW, 91% of GPs said their practice ‘routinely’ uses electronic alerts or prompts about a potential problem with drug dose or drug interactions. This is a higher percentage than reported in eight comparator countries (Figure 2.29).

In 2014, people aged 55+ years were asked whether they had experienced a medical mistake (including being given the wrong medication or the wrong result from a medical test) in the preceding year. In NSW, 7% of patients said there was a medical mistake in their care – a lower percentage than in Sweden, the United States and Germany (Figure 2.30).

Within NSW public hospitals, 53% of patients said that a health professional ‘completely’ told them about medication side effects to watch for. This percentage varied across NSW hospitals from 39% to 72% (Figure 2.31).

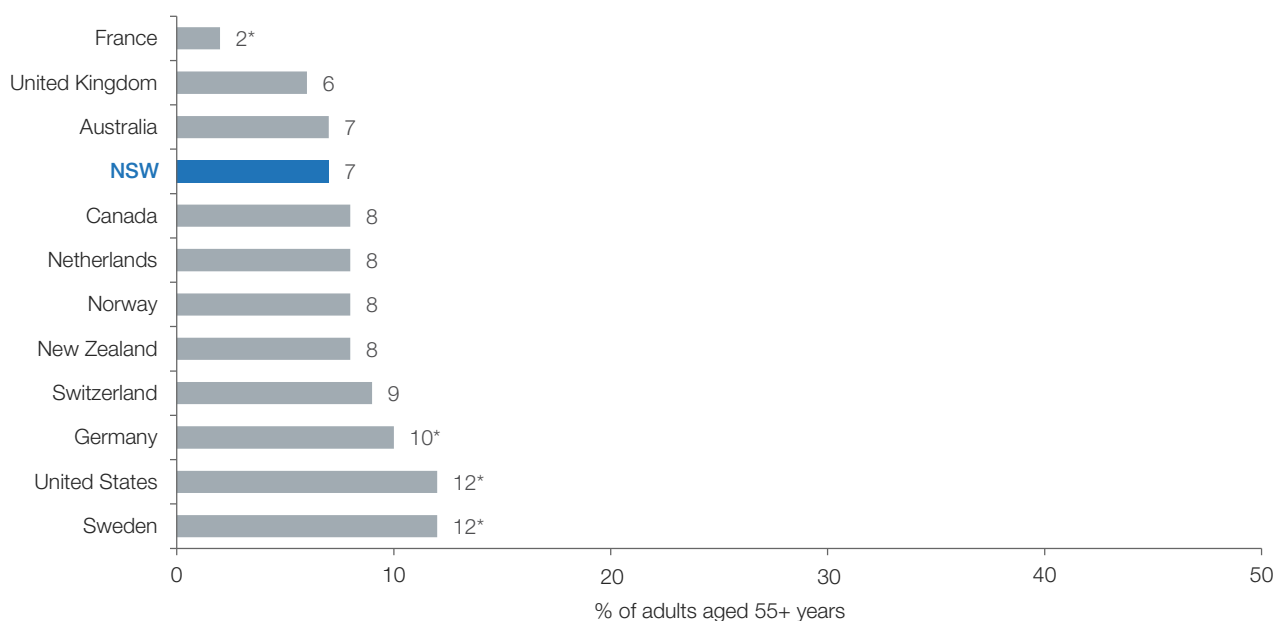
Figure 2.29 GP practice use of electronic alerts or prompts about a potential problem with drug dose or drug interactions, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

* Estimate is statistically significantly different to NSW.

Figure 2.30 Percentage of adults aged 55+ years who said a medical mistake was made in their treatment or care (including being given wrong medication and wrong result), public and private hospitals, NSW and comparator countries, 2014



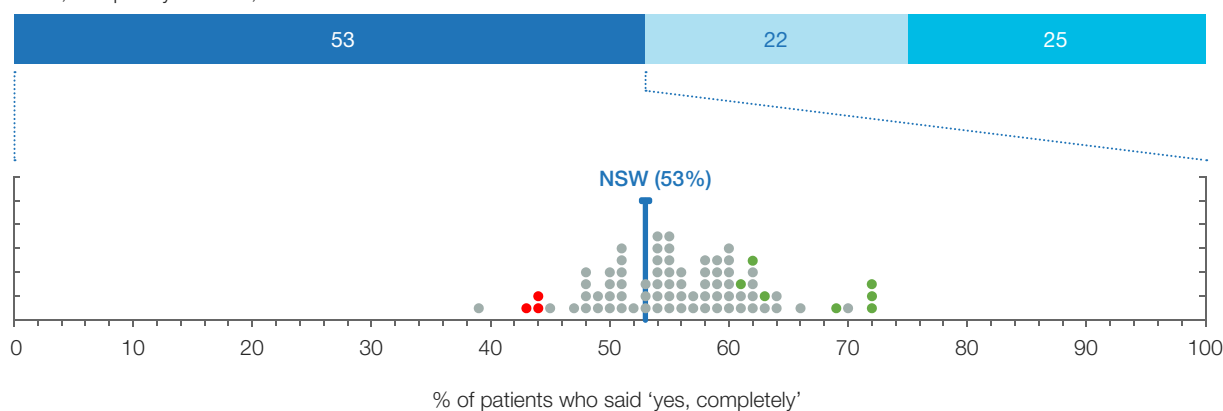
Source: 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

* Estimate is statistically significantly different to NSW.

Figure 2.31 Percentage of patients who said health professionals in the hospital told them about medication side effects to watch for, public hospitals, NSW, 2014

Did a health professional in the hospital tell you about medication side effects to watch for?

■ Yes, completely ■ Yes, to some extent ■ No



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

Source: BHI, Adult Admitted Patient Survey, 2014.

Effectiveness



Making a difference for 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?

Effectiveness is closely aligned to the broader concept of impact which considers the extent to which a patient's overall health and wellbeing are affected by the care received.

Effectiveness measures focus on the outcomes of treatment – such as mortality, unplanned readmissions, changes in functional status, and quality of life – as well as patients' ability to realise the potential benefits of treatment, through increased health literacy and self-efficacy at managing their health problems.

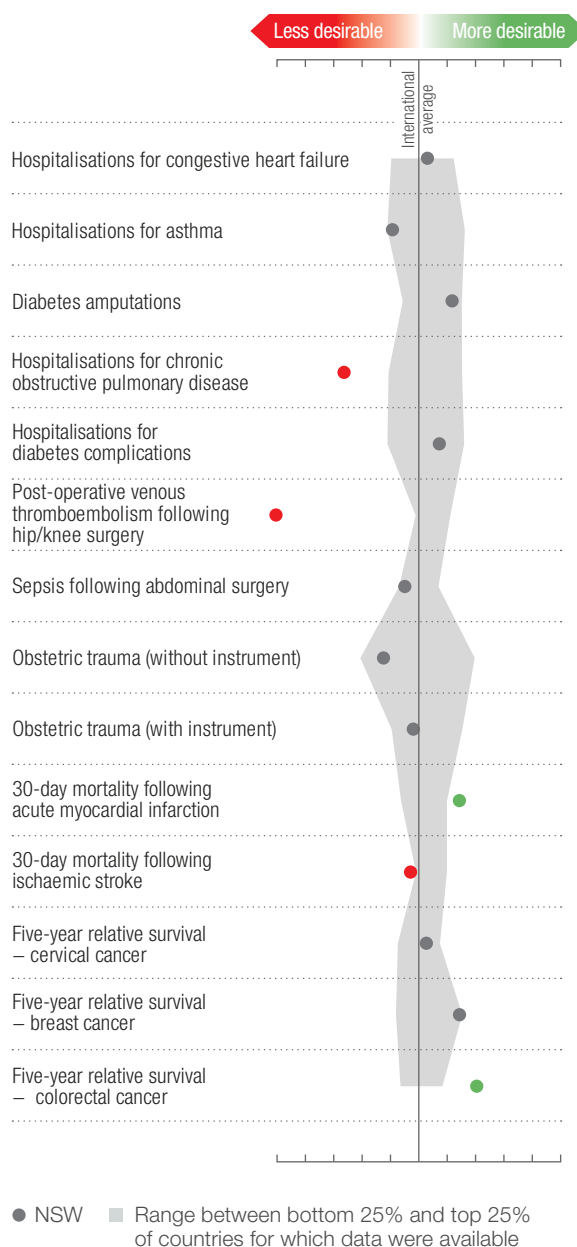
On effectiveness measures, NSW does well with respect to:

- Five-year relative survival following a diagnosis of colorectal cancer.
- 30-day mortality following acute myocardial infarction

NSW has room to improve in:

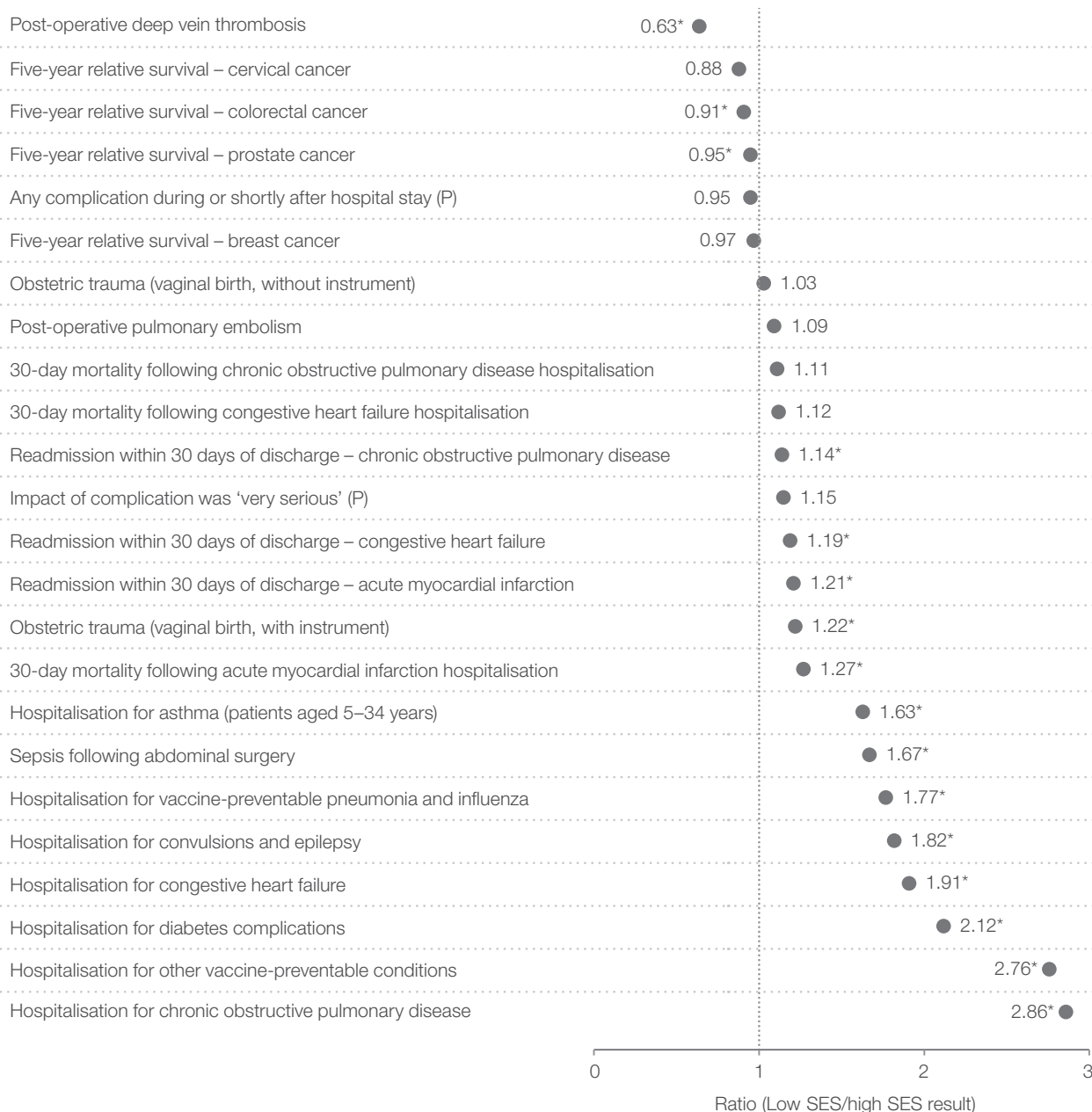
- Hospitalisations for chronic obstructive pulmonary disease (COPD)
- Rates of post-operative pulmonary embolism following hip and knee surgery
- 30-day mortality following hospitalisation for ischaemic stroke.

Effectiveness measures NSW compared



Effectiveness

Ratios of low to high socioeconomic status groups within NSW



(P) refers to results from patient surveys, other measures are based on administrative data sources. (COPD) refers to chronic obstructive pulmonary disease, (CHF) congestive heart failure, (DVT) deep vein thrombosis, (AMI) acute myocardial infarction.

* Estimate for low socioeconomic status (SES) group was statistically significantly different from high SES group. For more information on the measures and data sources see the Equity chapter.

Notes: A ratio less than one indicates the outcome was less likely in the low SES group than in the high SES group; and a ratio greater than one indicates the outcome was more likely in the low SES group than in the high SES group.

Outcomes for patients with diabetes

Various measures suggest blood sugar is not always well controlled

Diabetes mellitus is a group of metabolic diseases characterised by high blood sugar (hyperglycaemia), caused by reduced insulin secretion, resistance to insulin, or both.¹

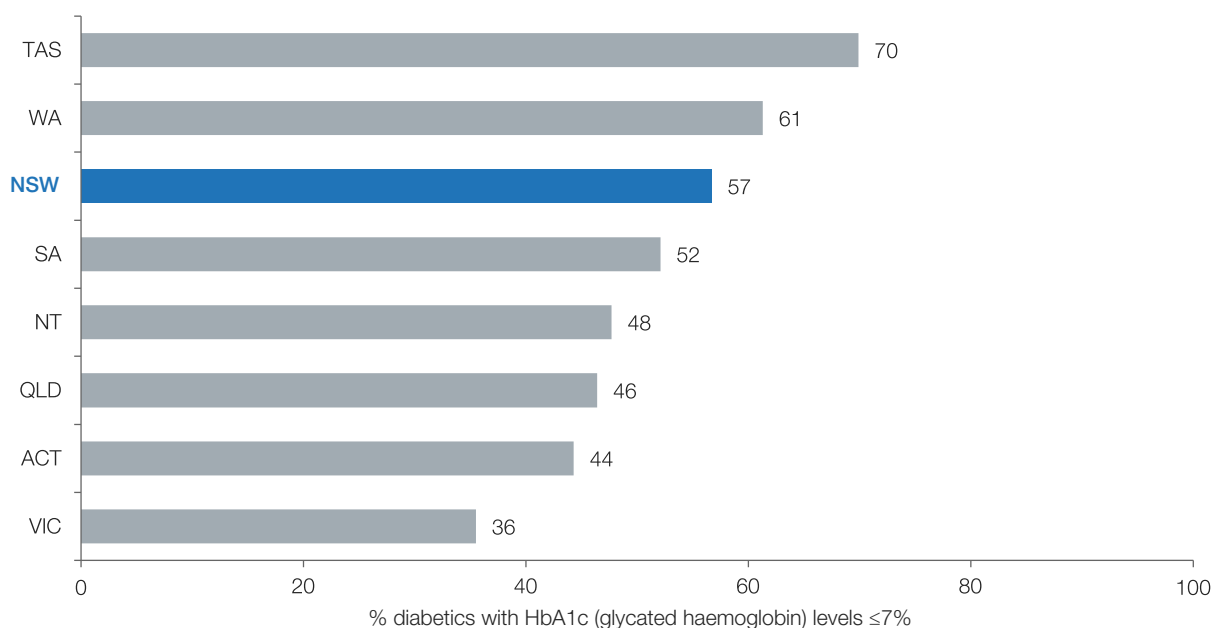
Poorly controlled diabetes places patients at increased risk of damage to, and dysfunction or failure of, various organs – particularly the eyes, kidneys, nerves, heart, and blood vessels. Effective control of blood sugar levels (as measured by HbA1cⁱ), and of cholesterol, blood pressure and weight can help prevent the development of these complications.

In 2011–12, an Australian Bureau of Statistics (ABS)² survey collected biomedical samples from a range of patient groups nationwide. Among diabetes patients in NSW, 57% had good blood sugar control (Figure 3.1).

Diabetes is generally considered to be an ambulatory care-sensitive condition – one that can be successfully managed in the community. Hospitalisation rates can therefore provide an indication of problems in short- and medium-term effectiveness of care. However, hospitalisation rates are reflective of comparative performance only when examined alongside measures of disease prevalence – indicating whether a high number of hospitalisations may be the result of effectiveness issues or a greater number of patients at risk. NSW diabetes hospitalisation and prevalence rates are mid-range internationally (Figure 3.2).

In the longer term, effectiveness can be measured by the incidence of serious diabetes complications such as lower limb amputation or end stage renal disease. The age-sex standardised rates for diabetes-related amputations in NSW for 2013 was relatively low among international comparators (Figure 3.3).

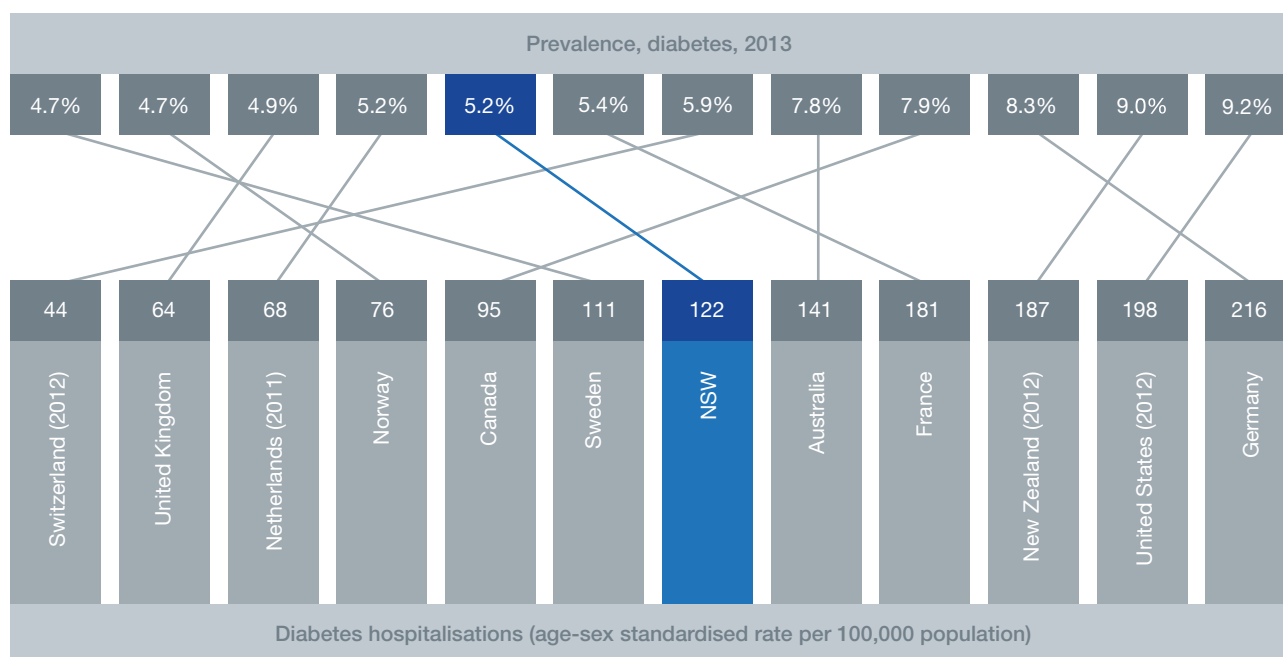
Figure 3.1 Percentage of diagnosed diabetics with controlled blood sugar levels (HbA1c $\leq 7\%$), states and territories, 2011–12



Source: Australian Productivity Commission, Report on Government Services 2015, Volume E: Health.

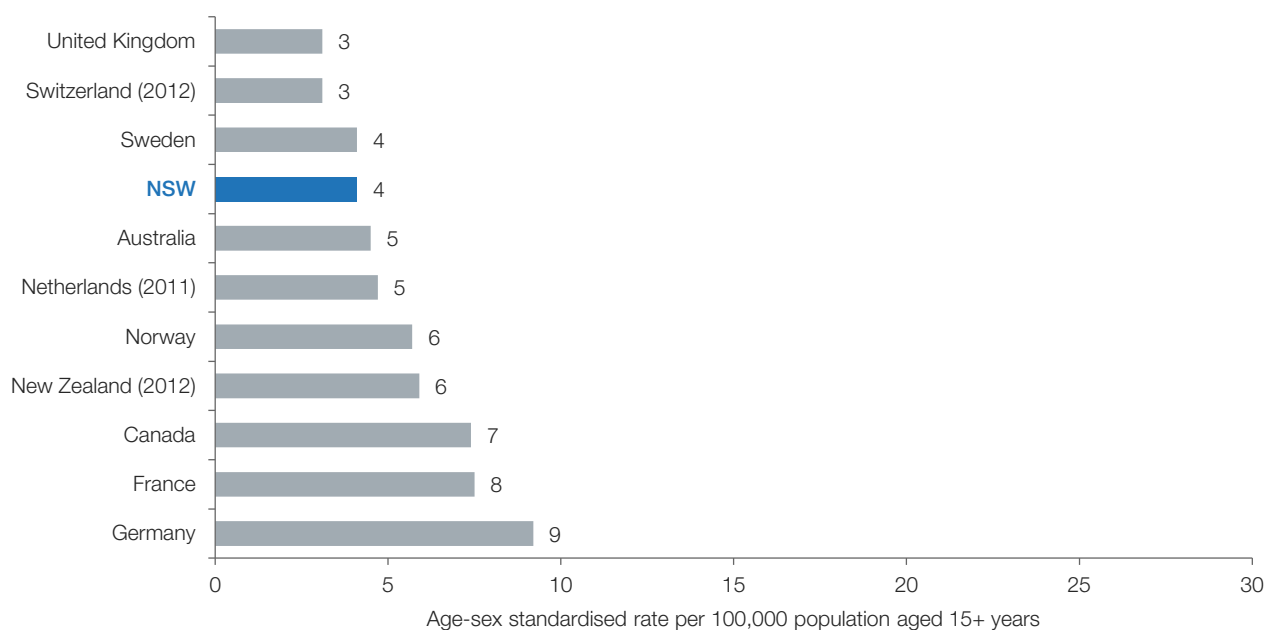
i. HbA1c (glycated haemoglobin) is a test that reflects average blood sugar levels in the preceding 10–12 weeks. For most patients with diabetes, an HbA1c result of $\leq 7\%$ indicates good control. International standards for measurement of glycaemic control have changed from % to mmol/mol; data are reported in the units used in the source document.

Figure 3.2 Age-sex standardised hospitalisation rates (public and private hospitals) and prevalence, diabetes, NSW and comparator countries, 2013 (or nearest year)



Sources: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis). OECD, Health Statistics 2015. International Diabetes Federation, International Diabetes Atlas.

Figure 3.3 Age-sex standardised rates for diabetes-related lower extremity amputation, public and private hospitals, NSW and comparator countries, 2013 (or nearest year)



Sources: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis). OECD, Health Statistics 2015.

Outcomes for patients with chronic respiratory disease

NSW has a high hospitalisation rate for chronic obstructive pulmonary disease

Chronic obstructive pulmonary disease (COPD) is a long-term lung disease, associated with prolonged exposure to tobacco smoke. While no existing treatment can cure COPD, it can be effectively managed outside the hospital setting with appropriate and timely care. In 2013, COPD accounted for 1,907 deaths in NSW (4% of deaths).

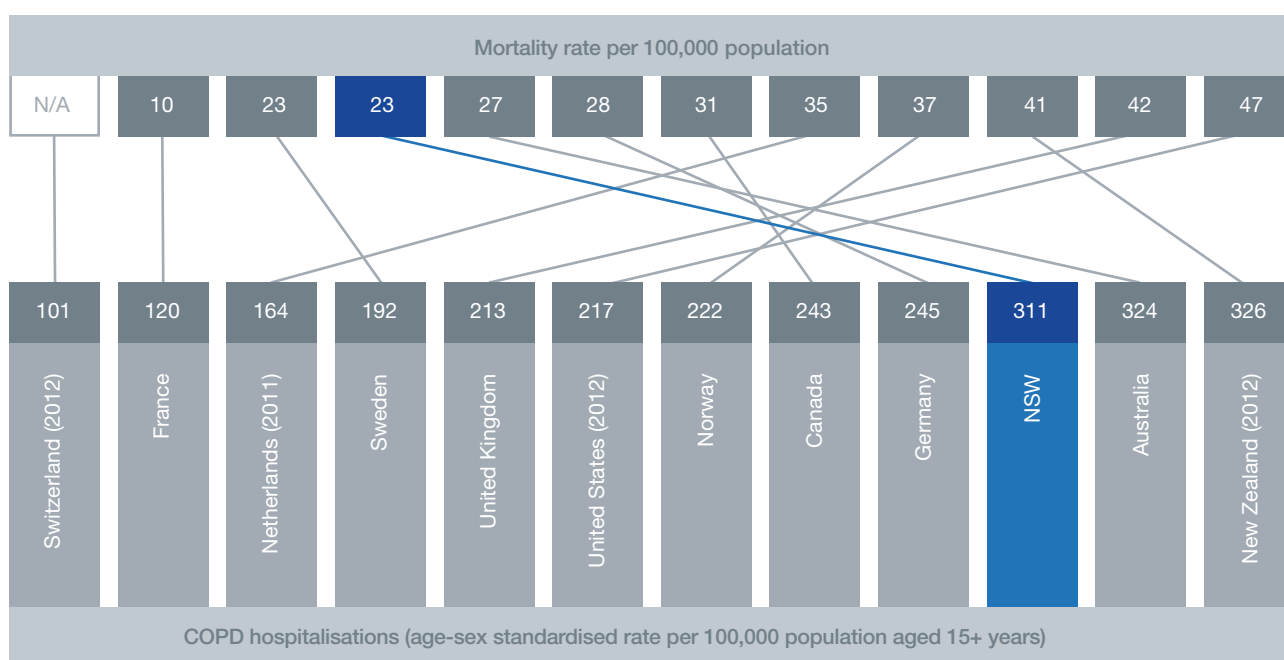
In 2013, the age-sex standardised rate of hospitalisation for COPD in NSW was higher than in many comparator countries. NSW has relatively low COPD mortality rates, suggesting the high hospitalisation rates are not solely the result of greater prevalence (Figure 3.4).

While effective primary and community care can minimise hospitalisations, COPD is a progressive disease and acute exacerbations do require hospitalisation. Following hospital stays, effectiveness of care can be measured by the rate of unplanned returns to acute care (or readmissions) within 30 days of discharge.

Between July 2009 and June 2012 there were 44,363 hospitalisations with a principal diagnosis of COPD in NSW. Of these, 9,404 (22%) were followed by an unplanned readmission within 30 days of discharge. To assess hospital-level variation in readmissions, statistical models were used to take account of each hospital's case mix (or risk profile of patients).³ The resulting risk-standardised readmission rate ranged across NSW public hospitals from 14 to 33 per 100 hospitalisations (Figure 3.5).

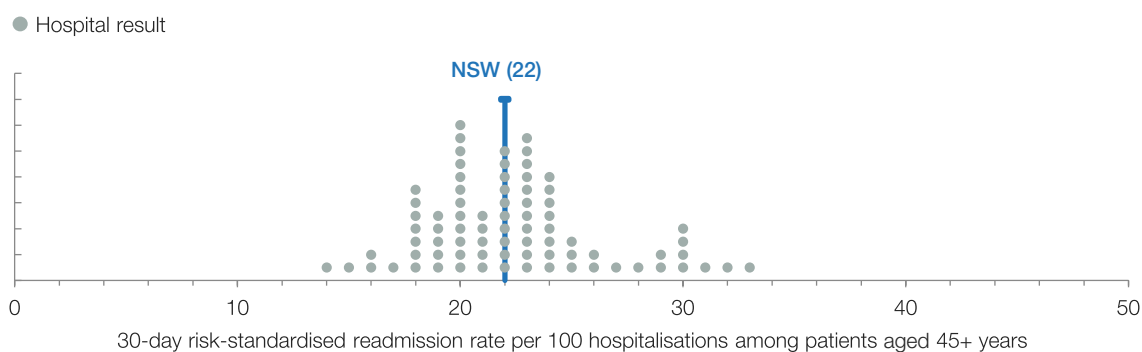
Effectiveness can also be assessed in terms of deaths within 30 days of hospital admission, using a similar method to develop a risk-standardised mortality rate. In the period July 2009 to June 2012, there were 28,700 patients hospitalised for COPD one or more times. Of these, 3,029 (11%) died within 30 days of their last admission. Across NSW public hospitals, the risk standardised mortality rate ranged from four to 19 per 100 patients hospitalised for COPD (Figure 3.6).

Figure 3.4 Chronic obstructive pulmonary disease hospitalisation and mortality rates, public and private hospitals, NSW and comparator countries, 2013 (or nearest year)



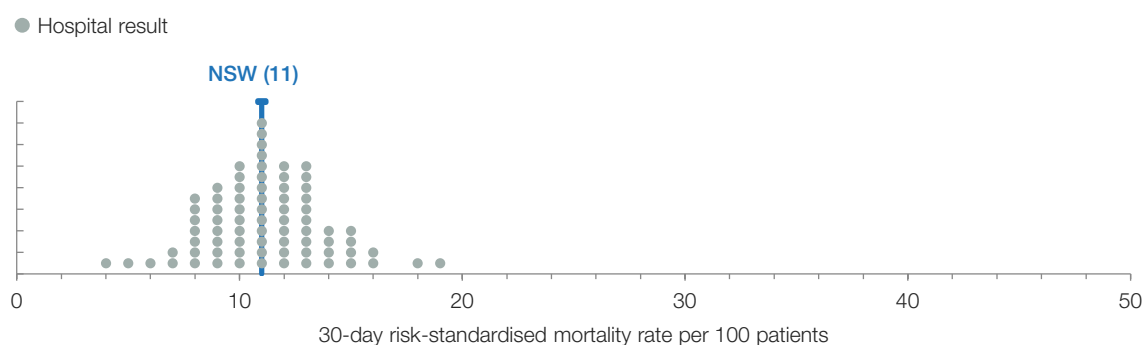
Sources: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis). OECD, Health Statistics 2015.

Figure 3.5 Risk-standardised 30-day readmission rate, chronic obstructive pulmonary disease, NSW public hospital variation, July 2009 to June 2012



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

Figure 3.6 Risk-standardised 30-day mortality rate, chronic obstructive pulmonary disease, NSW public hospital variation, July 2009 to June 2012



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

Outcomes for patients with congestive heart failure

NSW hospitals vary in readmission and mortality following CHF hospitalisations

Congestive heart failure (CHF) occurs when the heart is unable to keep up with the demands of, or provide adequate blood flow to, other organs. It often develops as a result of hypertension, diabetes or other coronary diseases. In 2013, CHF accounted for 1,104 deaths in NSW (2% of deaths).

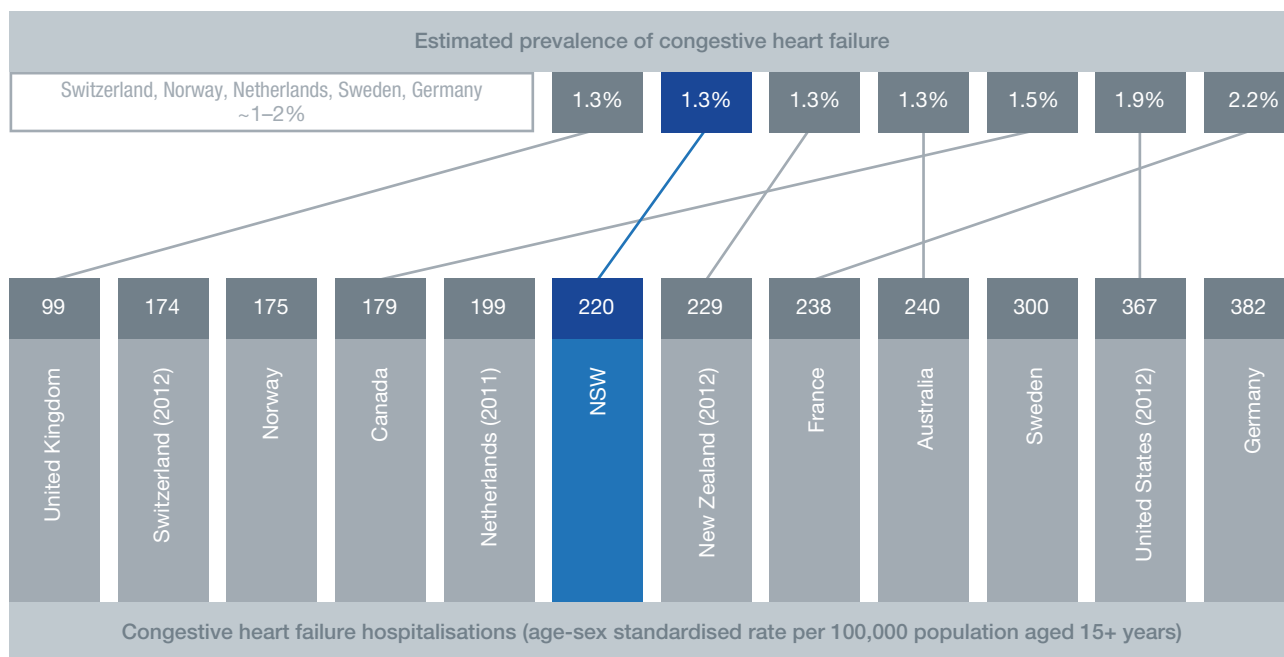
Evidence-based care provided by multidisciplinary teams to CHF patients has been associated with better outcomes and fewer hospitalisations.⁴ In 2013, the age-sex standardised rate of CHF hospitalisations in NSW was 220 per 100,000 population (aged 15+ years). Among comparator countries, the NSW hospitalisation rate for CHF was mid-range.

Hospitalisation rates are reflective of performance only when examined alongside measures of disease prevalence – indicating whether a high number of hospitalisations may be the result of effectiveness issues or a greater number of patients at risk.

CHF prevalence estimates for NSW are relatively low (Figure 3.7).

CHF is an incurable and progressive disease that does require hospitalisation. Following hospital stays, effectiveness can be measured by the rate of unplanned returns to acute care (or readmissions) within 30 days of discharge.

Figure 3.7 Congestive heart failure hospitalisation and prevalence rates, public and private hospitals, NSW and comparator countries, 2013 (or nearest year)



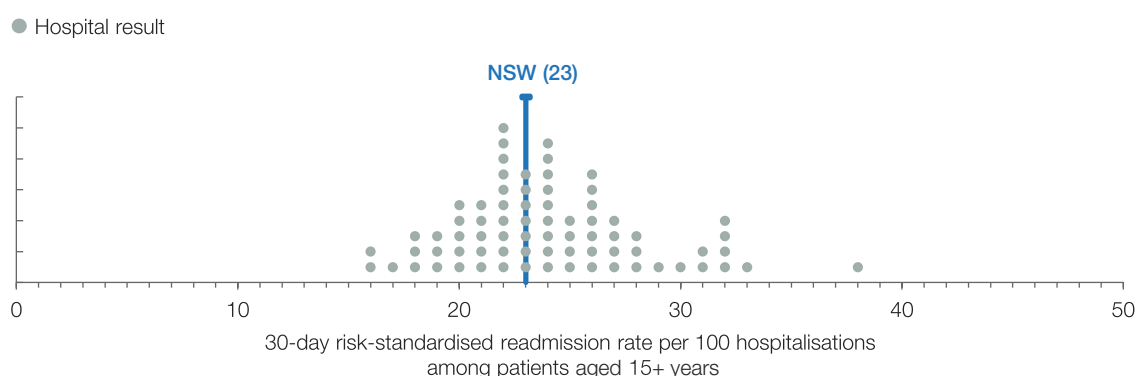
Sources: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis). OECD, Health Statistics 2015.

Note: Source of prevalence estimates: Piotr Ponikowski (et al), Heart failure: preventing disease and death worldwide, European Society of Cardiology, Volume 1, Issue 1, pages 4–25, September 2014. Estimates for Australia and New Zealand are combined, as are those for Europe. AIHW reports for 2003 estimate 4% of adults aged 45+ years have congestive heart failure.

Across NSW public hospitals in the period July 2009 to June 2012, there were 28,877 hospitalisations with a principal diagnosis of CHF. Of these, 6,751 (23%) were followed by an unplanned readmission within 30 days of discharge. To assess hospital-level variation in readmissions, statistical models were used to take account of each hospital's case mix (or risk profile of patients).³ The resulting risk-standardised readmission rate ranged across NSW public hospitals from 16 to 38 per 100 hospitalisations (Figure 3.8).

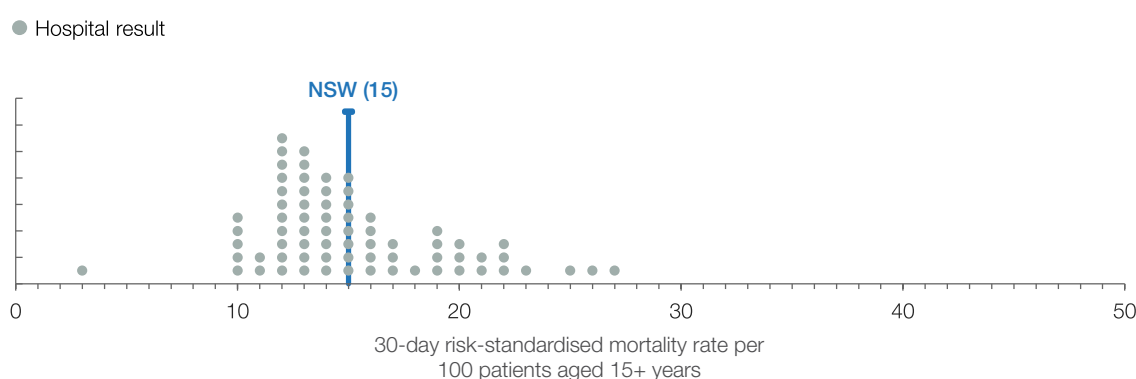
Effectiveness can also be assessed in terms of deaths within 30 days of hospital admission, using a similar method to develop a risk standardised mortality rate. In the period July 2009 to June 2012, there were 25,437 patients hospitalised for CHF one or more times. Of these, 3,770 (15%) died within 30 days of their last admission. Across NSW public hospitals, the risk-standardised mortality rate ranged from 3 to 27 per 100 patients (Figure 3.9)

Figure 3.8 Risk-standardised 30-day readmission rate, congestive heart failure, NSW public hospital variation, July 2009 to June 2012



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

Figure 3.9 Risk-standardised 30-day mortality rate, congestive heart failure, NSW public hospital variation, July 2009 to June 2012



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

Outcomes for patients with cancer

A higher proportion of patients diagnosed with colorectal cancer survive at least five years in NSW than in any comparator country

Cancer is characterised by uncontrolled growth and spread of abnormal cells. In 2013, there were 14,688 cancer deaths (malignant neoplasms) in NSW.⁵

Potential years of life lost (PYLL) is a summary measure of premature mortality (deaths before the age of 70 years). It is a measure of impact and effectiveness, although one that is difficult to attribute clearly to any healthcare organisation or professional. In NSW in 2013, the PYLL to cancer was 763 per 100,000 population. Between 2003 and 2013, all comparator countries recorded a decrease in the PYLL to cancer. In NSW the rate decreased by 14% (Figure 3.10).

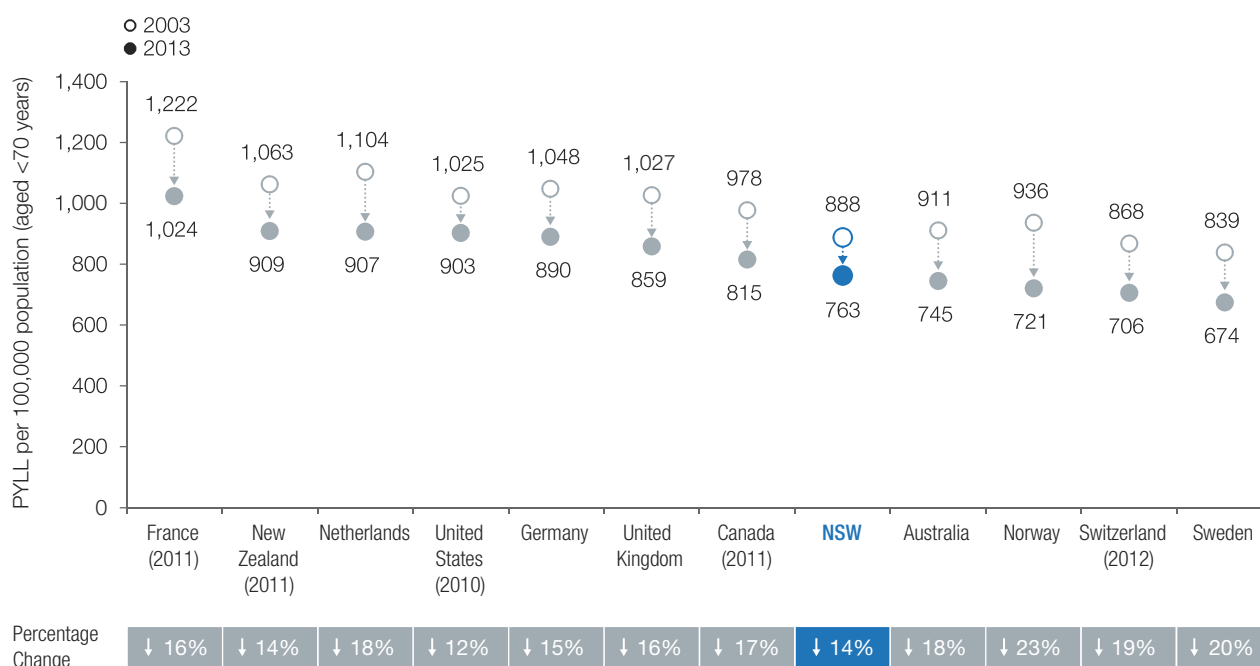
Five-year relative survival data for breast cancer show that 88% of patients diagnosed in 2005–09 were alive

five years following diagnosis (after taking into account other causes of death). The NSW result was within one percentage point of the best among international comparators.

Relative survival for NSW patients diagnosed with colorectal cancer during 2005–09 was 68%. A higher proportion of colorectal cancer patients survive for at least five years in NSW and Australia than in any comparator country.

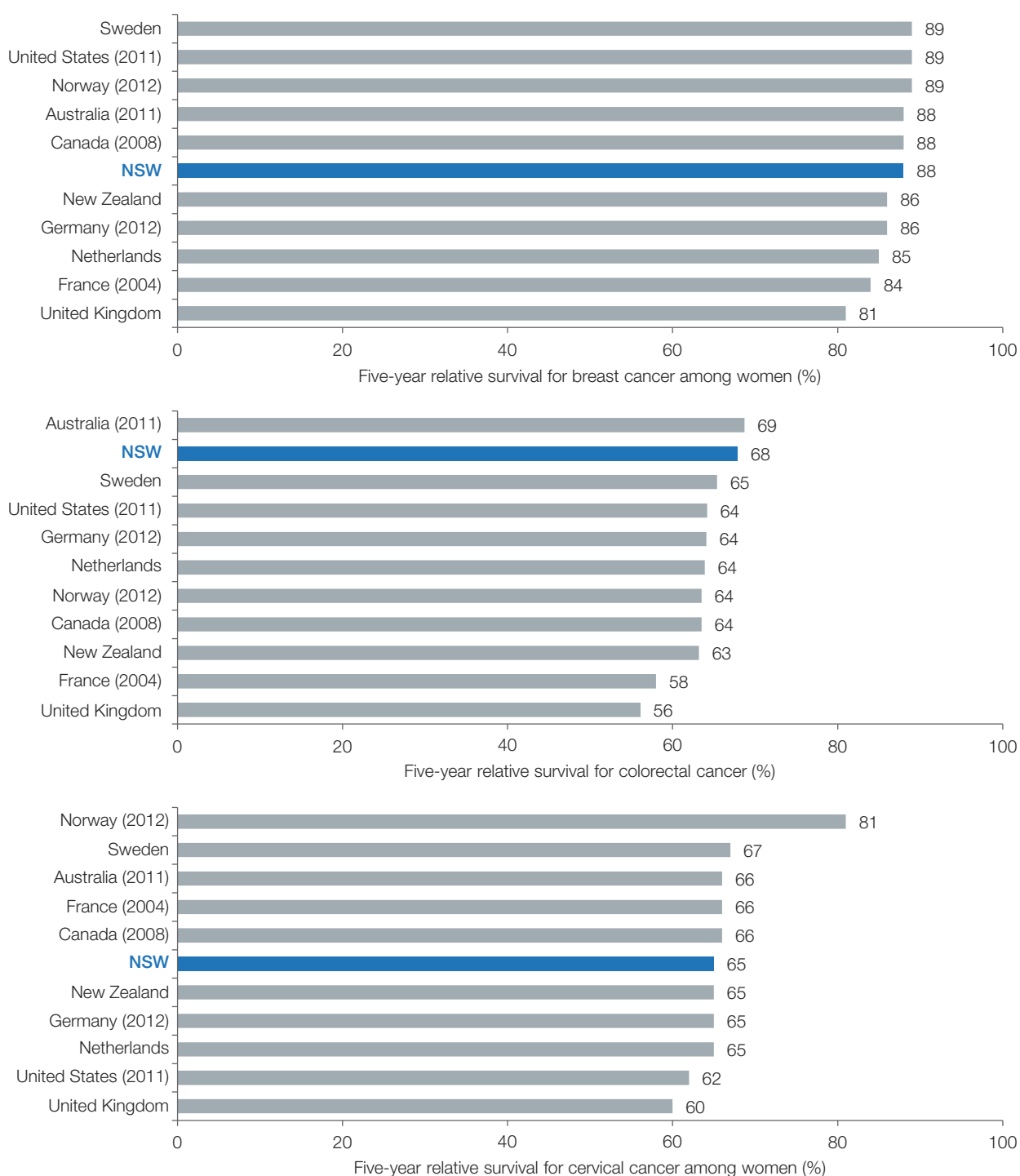
For cervical cancer patients diagnosed in the period 2005–09, the five-year relative survival was 65% – a result similar to many comparator countries, with the exception of Norway which has a relative survival 16 percentage points higher than NSW (Figure 3.11).

Figure 3.10 Potential years of life lost per 100,000 population (aged <70 years) due to cancer, NSW and comparator countries, 2003 and 2013 (or nearest year)



Sources: ABS customised request. OECD, Health Statistics 2015.

Figure 3.11 Five-year relative survival, breast, colorectal, and cervical cancer, NSW and comparator countries, follow-up until 2013 (or nearest year)



Sources: Cancer Institute NSW. OECD, Health Statistics 2015.

Outcomes and adverse events in maternity care

NSW rates of obstetric trauma are mid-range internationally

Measures of the effectiveness of maternity care focus on outcomes for babies or mothers.

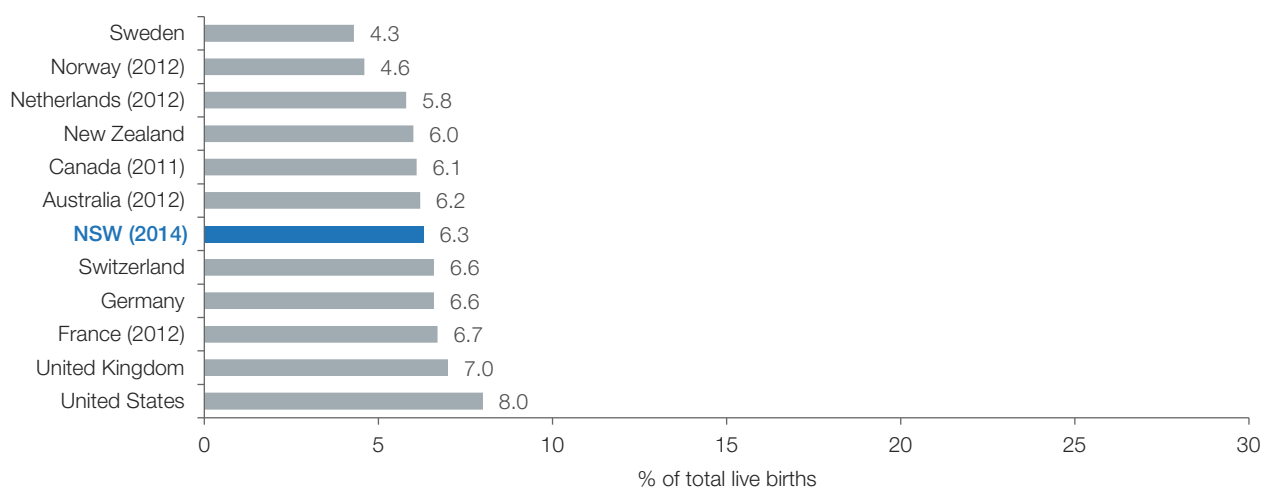
Birthweight is a measure that reflects the health and wellbeing of mothers during their pregnancy. It is a key determinant of a baby's future health, development and wellbeing. Babies are considered to be of low birthweight if they weigh less than 2.5 kilograms at birth. In 2014 in NSW, 6.3% of babies were of low birthweight, a percentage that is mid-range internationally (Figure 3.12).

During childbirth, potentially avoidable complications can occur for the mother, including laceration or tears of the perineum. Serious tears (categorised as third- or fourth-degree tears, and referred to as obstetric trauma) require surgical repair and can have long term consequences for mothers, such as ongoing pain and incontinence.

In 2013 in NSW, 7.6 of 100 vaginal births that were instrument-assisted (e.g. using forceps or vacuum) and 2.6 of 100 unassisted vaginal births resulted in obstetric trauma. Across comparator countries for both measures, NSW was placed mid-range (Figure 3.13).

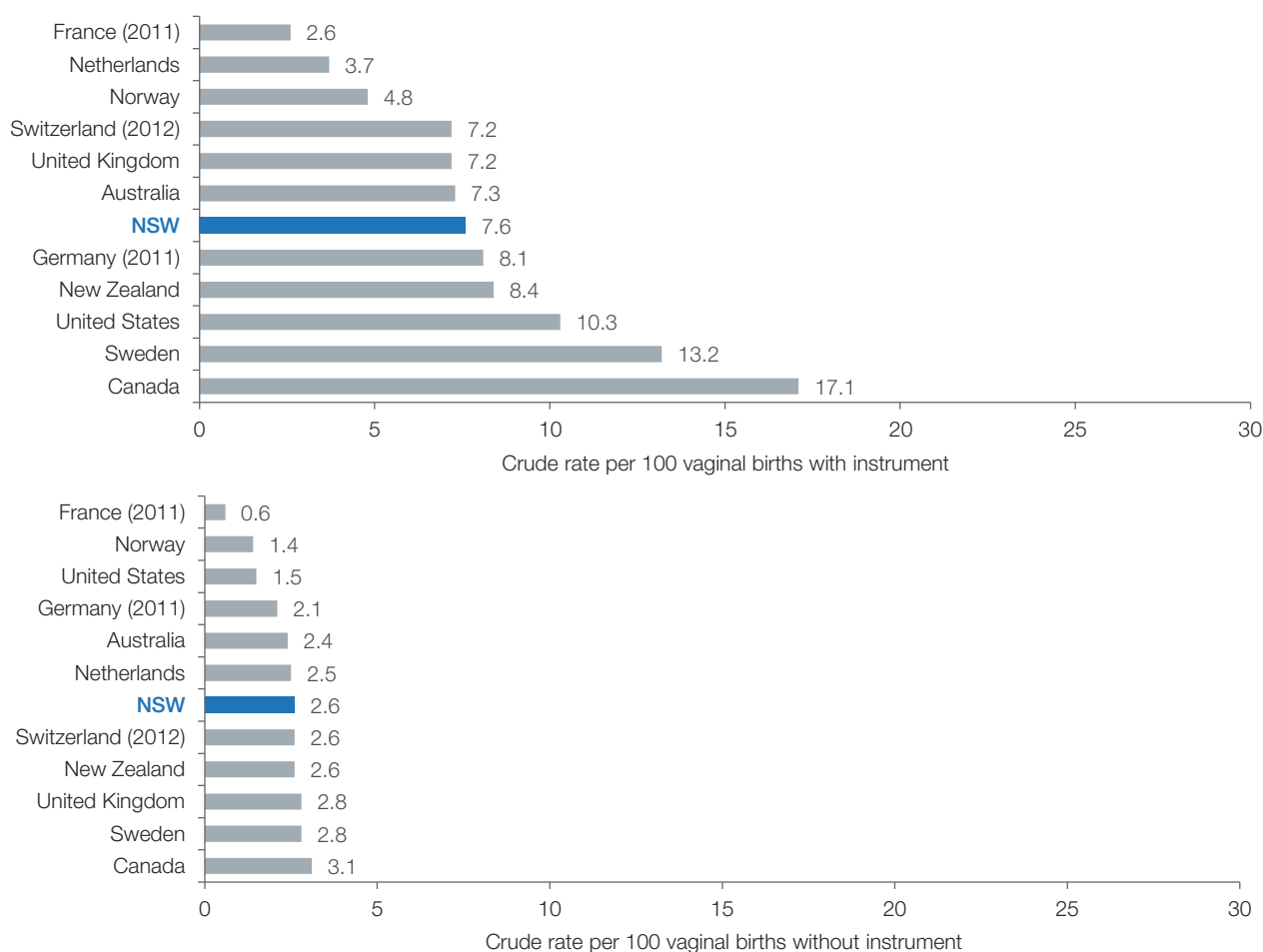
Among public hospitals in NSW in 2014, the rate of obstetric trauma for all vaginal births (instrument assisted and non-assisted) was 3.4 per 100 births (1.7 in private hospitals and 3.9 in public hospitals). Across individual hospitals, the rate ranged from 0 to 11 per 100 vaginal births (Figure 3.14).

Figure 3.12 Percentage of babies with low birthweight, NSW and comparator countries, 2013 (or nearest year)



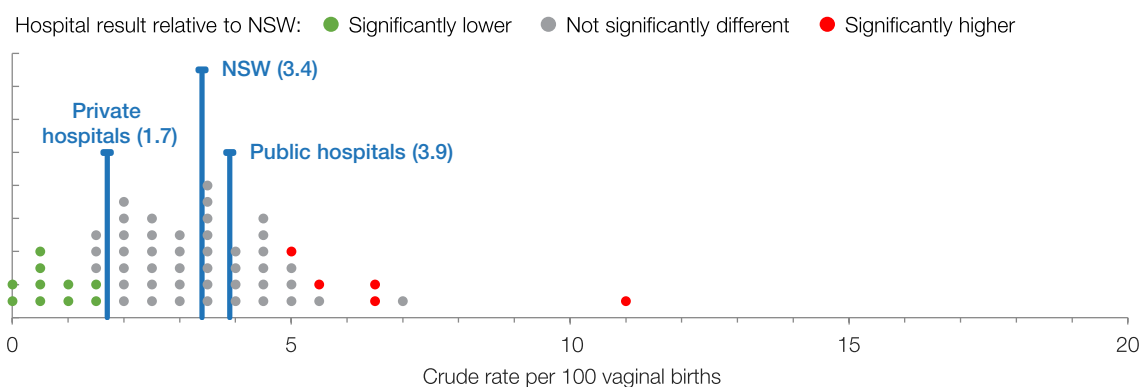
Sources: NSW Perinatal Data Collection (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health (BHI analysis). OECD, Health Statistics 2015.

Figure 3.13 Rates of obstetric trauma, vaginal delivery with and without instrument, public and private hospitals, NSW and comparator countries, 2013 (or nearest year)



Sources: NSW Perinatal Data Collection (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health (BHI analysis). OECD, Health Statistics 2015.
Note: OECD definition includes third and fourth degree vaginal tears, see Technical Supplement for exclusions and more information.

Figure 3.14 Rates of obstetric trauma, NSW hospital variation, public and private, 2013–14



Source: NSW Perinatal Data Collection (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health (BHI analysis).

Adverse events post-surgery

NSW has high rates of venous thromboembolism following hip and knee surgery

As well as alleviating patients' health problems, effective care causes no undue harm. Effectiveness measures based on the occurrence of adverse events – incidents in which harm results to patients receiving healthcare⁶ – can include infections, venous thromboembolism (VTE), falls, and medication errors.

A VTE, commonly referred to as a blood clot, occurs when blood pools and thickens inside veins – blocking the flow of blood through the body. When the clot forms in a deep vein, which most often occurs in the leg or pelvis, it is known as a deep vein thrombosis (DVT). If that clot breaks loose and lodges in the lung, it causes a pulmonary embolism (PE) and can result in serious morbidity or death.

Effective prevention of VTE among hospitalised patients is achieved through assessment of risk factors and the provision of appropriate prophylaxis.⁷ In NSW, the rates of DVT and PE following hip and knee surgery were 1,893 and 480 cases per 100,000 surgical episode discharges, respectively – higher than recorded in other comparator countries (Figure 3.15).

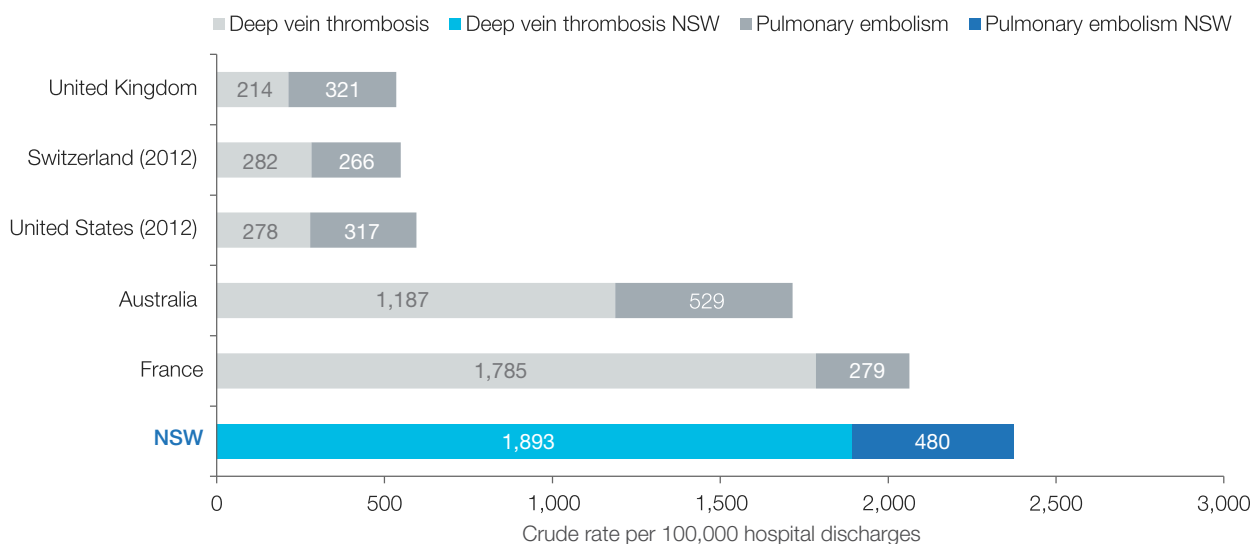
Sepsis (or bloodstream infection) is a life-threatening condition. For surgical patients its incidence can be minimised by appropriate use of antibiotics, sterile surgical techniques and good post-operative care.⁶ In 2013, among patients who underwent an abdominal surgical procedure, there were 698 cases of sepsis recorded in NSW. This corresponds to a rate of 2,167 per 100,000 surgical episodes – almost twice that reported in Switzerland (Figure 3.16).

In most healthcare systems, a retained foreign object is regarded to be a surgical 'never event' – one where a rate of zero is both a feasible and fundamental objective. Among countries with comparable data, NSW performed best on this indicator, with a crude rate of seven per 100,000 surgical discharges (Figure 3.17).

Interpreting NSW results

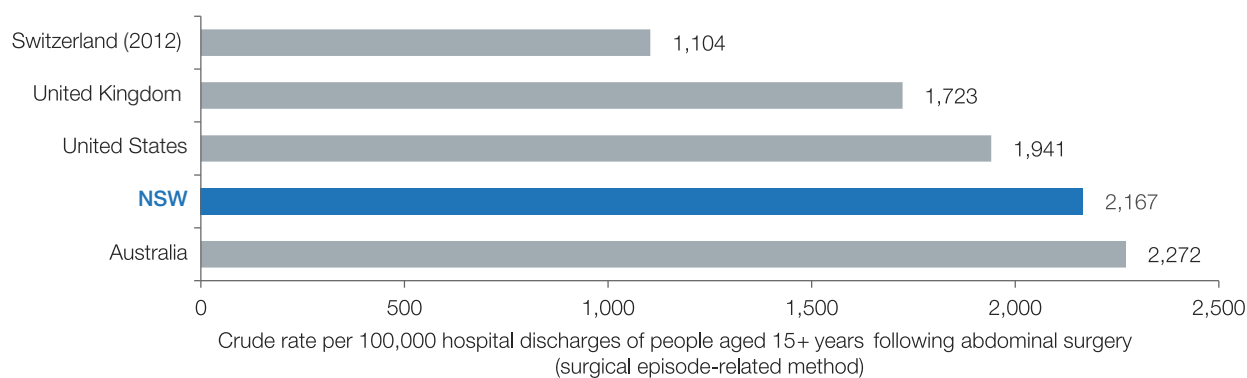
International variation in adverse events may be influenced by coding practices. Higher adverse event rates may result from more complete patient safety monitoring systems rather than worse care. All adverse events are based on episode-level data. Hospitalisations of less than two days for VTE and less than three days for sepsis are excluded. See the Technical Supplement for more information.

Figure 3.15 Post-operative deep vein thrombosis and pulmonary embolism following hip and knee surgical procedures, public and private hospitals, NSW and comparator countries, 2013 (or nearest year)



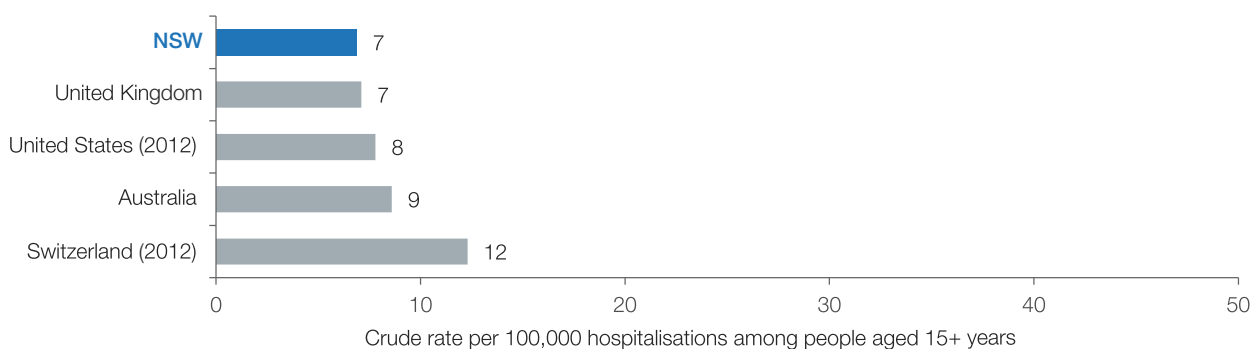
Sources: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis). OECD, Health Statistics 2015.

Figure 3.16 Post-operative sepsis rates following abdominal surgical procedures, public and private hospitals, NSW and comparator countries, 2013 (or nearest year)



Sources: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis). OECD, Health Statistics 2015.

Figure 3.17 Post-operative retained foreign body, public and private hospitals, NSW and comparator countries, 2013 (or nearest year)



Sources: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis). OECD, Health Statistics 2015.

Patient-reported outcomes of care

Almost eight in 10 NSW public hospital patients said care definitely helped them

Healthcare outcomes are most commonly measured in terms of mortality, readmission rates and survival. In recent years however there has been an increasing emphasis placed on developing patient-reported outcome measures that help assess effectiveness more broadly – including the impact healthcare has on patients' quality of life, sense of wellbeing and ability to carry out everyday tasks.⁸

The NSW Patient Survey Program includes a suite of questions on patient outcomes. In 2014, among adults admitted to hospital, 76% said that the care and treatment they received in hospital 'definitely' helped them.

Across hospitals this percentage ranged from 62% to 86% of patients (Figure 3.18).

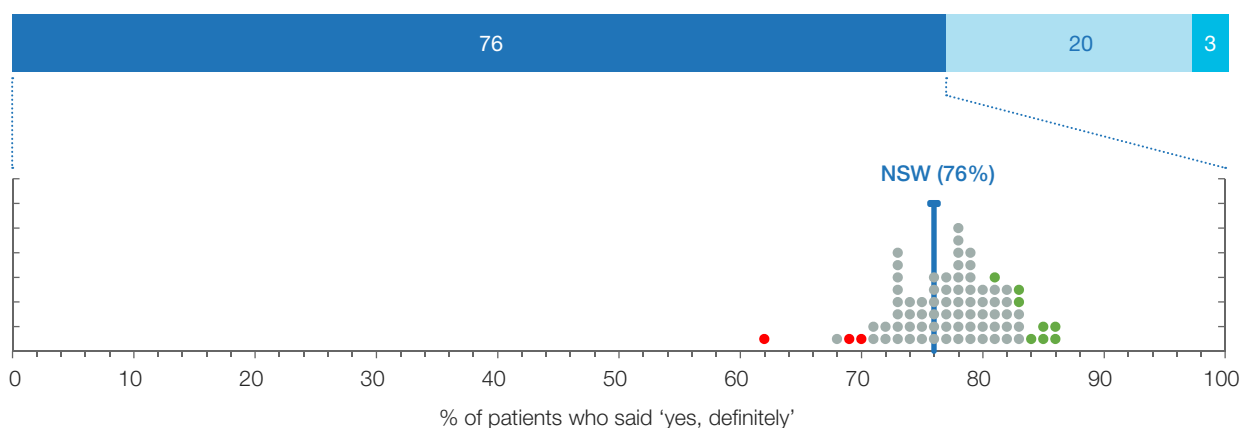
Among patients who visited a NSW emergency department (ED) in 2014–15, 66% said they were 'definitely' helped by the care they received. Across NSW public hospitals this percentage ranged from 50% to 86% of patients (Figure 3.19).

Seven in 10 adult admitted patients (72%) said the problem they went to hospital for was 'much better' at the time of completing the survey questionnaire (approximately three months after discharge). Across NSW hospitals, this percentage ranged from 55% to 80% of patients (Figure 3.20).

Figure 3.18 Percentage of adult admitted patients who said care 'definitely' helped them, public hospitals, NSW, 2014

Did the care and treatment received in hospital help you?

■ Yes, definitely ■ Yes, to some extent ■ No, not at all



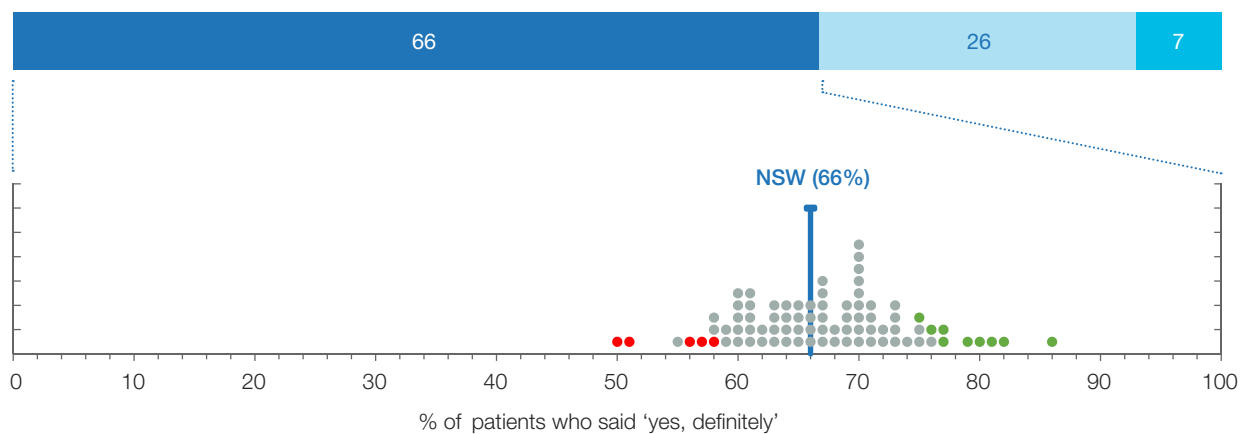
Hospital results relative to NSW: ● Significantly lower ● Not significantly different ● Significantly higher

Source: BHI, Adult Admitted Patient Survey, 2014.

Figure 3.19 Percentage of emergency department patients who said care ‘definitely’ helped them, public hospitals, NSW, 2014–15

Did the care and treatment received in the ED help you?

■ Yes, definitely ■ Yes, to some extent ■ No, not at all



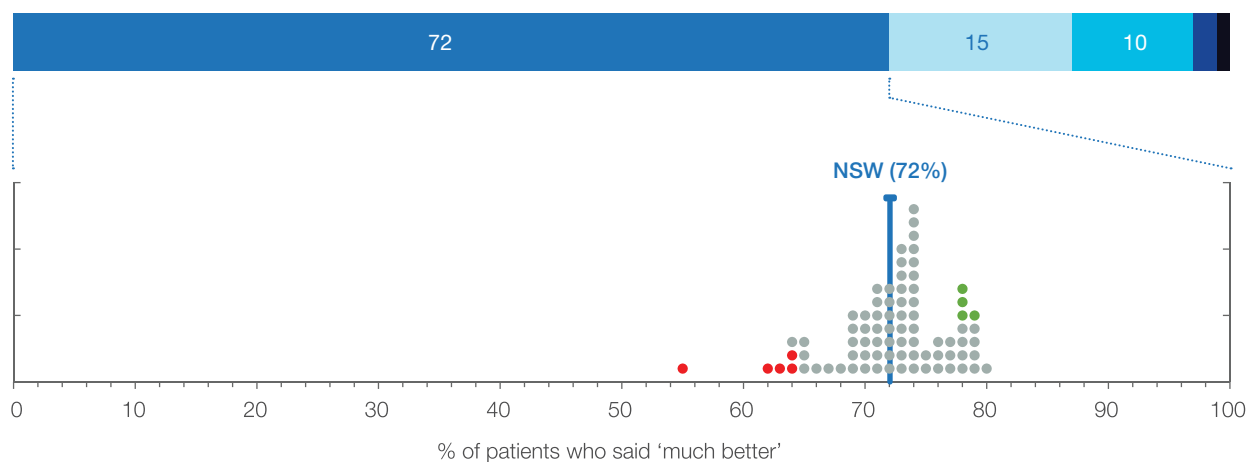
Hospital results relative to NSW: ● Significantly lower ● Not significantly different ● Significantly higher

Source: BHI, Emergency Department Patient Survey, 2014–15.

Figure 3.20 Percentage of adult admitted patients who said the problem they went to hospital for was ‘much better’, public hospitals, NSW, 2014

Is the problem you went to hospital for...?

■ Much better ■ A little better ■ About the same ■ A little worse ■ Much worse



Hospital results relative to NSW: ● Significantly lower ● Not significantly different ● Significantly higher

Source: BHI, Adult Admitted Patient Survey, 2014.

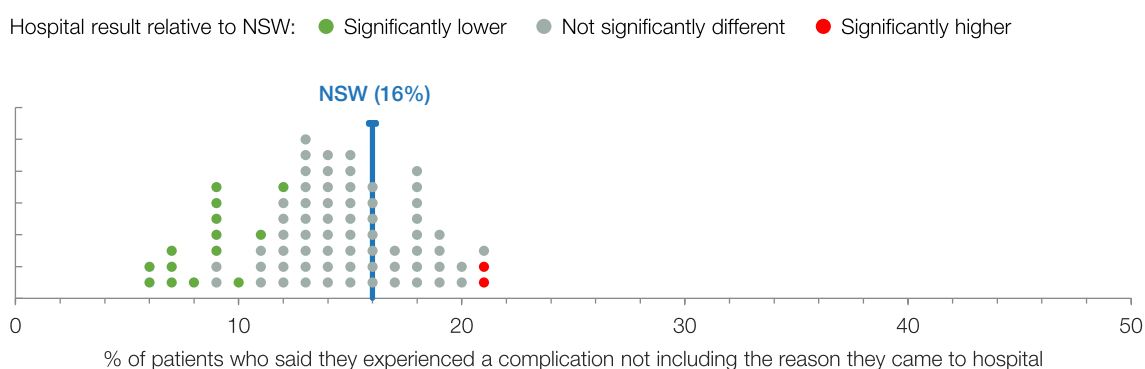
Patient-reported complications of care

One in 20 hospitalised patients said they experienced an infection during or shortly after their hospital stay

Patients can give first-hand accounts of any adverse events or complications of care which occur during a hospital stay or in the period following discharge. Patient survey data therefore can supplement administrative records and incident reporting schemes to provide additional information both on incidence and impact of complications of care.⁹

Data from the NSW Patient Survey Program show that among adults admitted to NSW public hospitals in 2014, 16% said they had a complication during or shortly after their hospital stay. Most commonly noted were infections (6%), medication reactions (3%) and surgical complications (2%) (data not shown). Across NSW hospitals, the percentage of admitted patients who said they experienced a complication ranged from 6% to 21% (Figure 3.21).

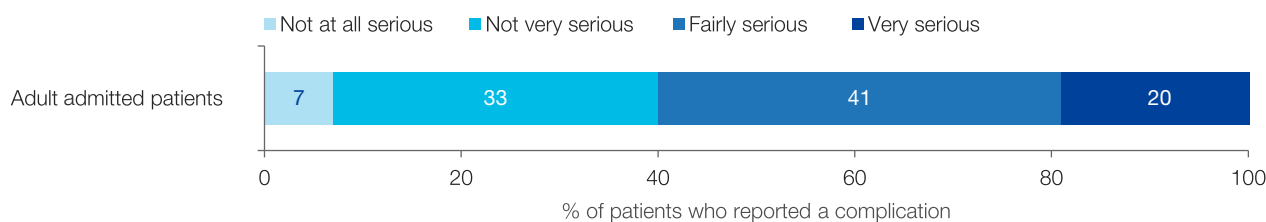
Figure 3.21 Percentage of adult admitted patients reporting any complication, NSW public hospital variation, 2014



Source: BHI, Adult Admitted Patient Survey, 2014.

Figure 3.22 Percentage of adult admitted patients, by the impact of the complication, NSW public hospitals, 2014

Was the impact of this complication or problem...?



Source: BHI, Adult Admitted Patient Survey, 2014.

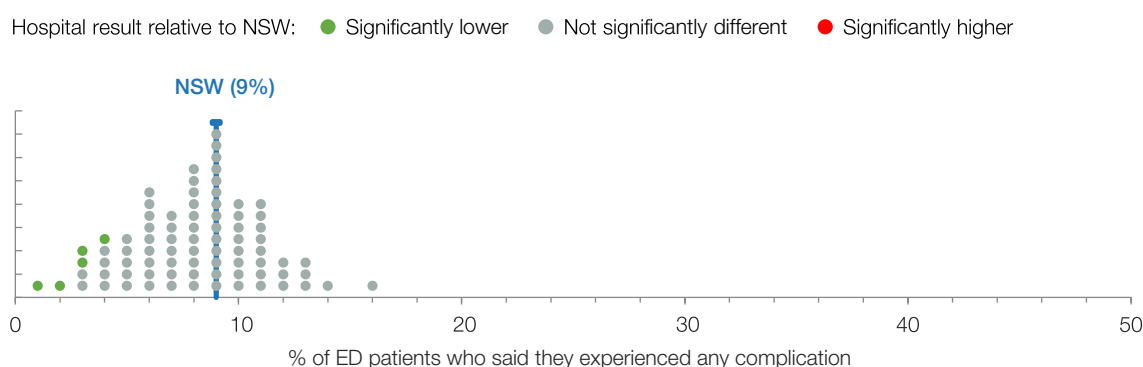
For those patients who said they experienced a complication, 20% described the impact as 'very serious' while 40% said it was either 'not at all' or 'not very' serious. (Figure 3.22).

Data from the NSW survey of ED patients show that in 2014–15, 9% of patients said they experienced a complication during or shortly after their ED visit (Figure 3.23).

The most frequently reported type of complication was infection (3%) (data not shown).

For those patients who said they experienced a complication following their ED visit, 23% described the impact as 'very serious', and 35% said it was either 'not at all serious' or 'not very serious' (Figure 3.24).

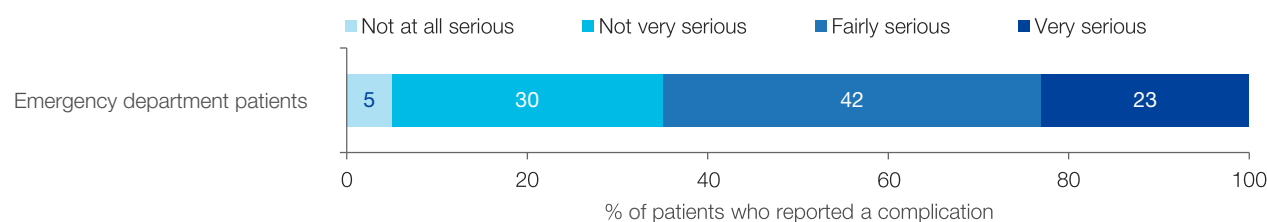
Figure 3.23 Percentage of emergency department patients reporting any complication, NSW public hospital variation, 2014–15



Source: BHI, Emergency Department Patient Survey, 2014–15

Figure 3.24 Percentage of emergency department patients, by impact of the complication, NSW public hospitals, 2014–15

Was the impact of this complication or problem...?



Source: BHI, Emergency Department Patient Survey, 2014–15.

Efficiency



Value for money

Efficiency

Value for money

Efficiency refers to the extent to which healthcare makes the best use of available resources. It also relates to productivity, which is a measure of goods and services delivered per unit of resource. This acknowledges that a system or organisation that achieves more valued outcomes for each dollar or human resource invested is performing better, but that more services in isolation are not necessarily desirable.

Efficiency can be assessed by measuring volumes of outputs or services delivered, relative to the resources invested. It can also be captured by measures of duplication or waste. At a system level, efficiency reflects health outcomes by the resources invested.

On efficiency measures, NSW does well with respect to:

- Average length of hospital stay
- Relatively low proportion of GPs who said the time they spent getting their patients needed treatments that have coverage restrictions was a 'major problem'
- Relatively low patient-reported use of emergency departments for conditions that could have been treated in primary care
- Relatively low public hospital-based average cost per emergency department visit and per caesarean section (among Australian states and territories).

NSW has room to improve in:

- Unnecessary duplication of tests.

International perspective on efficiency

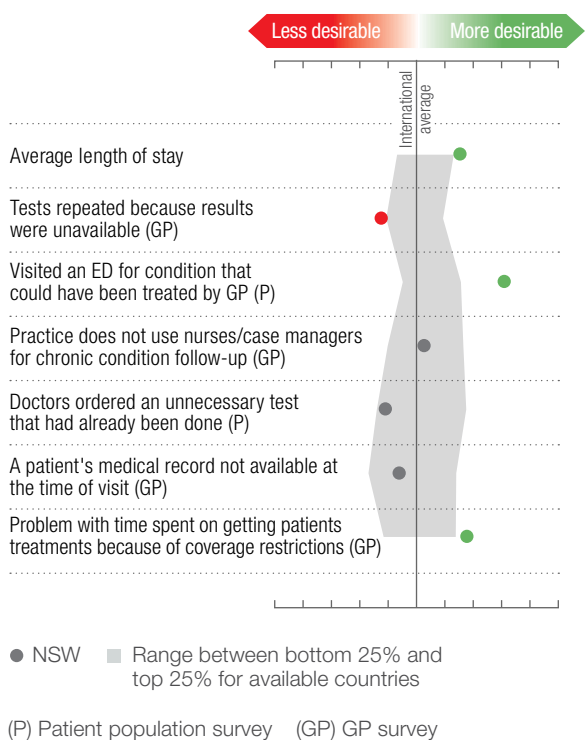
Among developed healthcare systems, the most expensive consume four times the resources of the most frugal, without achieving commensurate levels of better population health. When it comes to the effectiveness of healthcare, not all countries get what they pay for.

While the NSW healthcare system does well at broad brush measures of value for money, a closer look reveals it could do even better.

Across all systems, evidence increasingly points to five key factors that promote efficiency and value for money; placing hospitals at the centre of health systems; standardisation of services; concern for social care; payment mechanisms; and integration of care.

Internationally, there is evidence that a single dominant healthcare system payer is more efficient than multiple payers. Financial coverage for healthcare in NSW is provided by a mix of publicly-funded Medicare and private health insurance. Gaps in coverage are bridged by 'out-of-pocket' spending by individuals. In 2013, the people of NSW paid \$1,110 per person 'out-of-pocket' – a level that was, after adjusting for differences in prices and exchange rates, higher than in seven comparator countries.

Efficiency measures NSW compared



Value for money

No country has lower spending and better health than NSW

Total current health expenditure refers to the sum of expenditures on all health goods and services (except for capital investment). In NSW in 2013–14, total current expenditure on health was estimated at \$44.4 billion. This equates to \$5,944 per person.

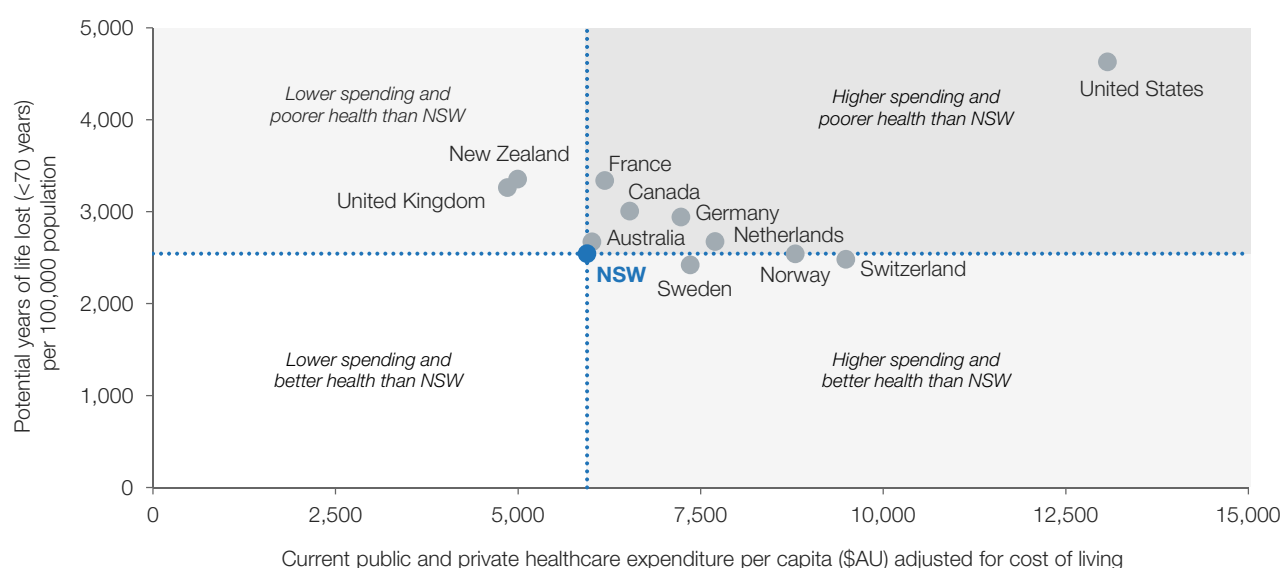
Potential years of life lost (PYLL) is an outcome measure that broadly reflects how a healthcare system performs, capturing mortality that occurs before 70 years of age. When viewed in relation to input measures such as health expenditure per capita, PYLL measures provide insight into overall healthcare system efficiency.

Across comparator countries in 2013, only New Zealand and the UK spent less per person on health. Compared with NSW, no comparator country spent less per person and had a lower level of PYLL (Figure 4.1).

In 2013–14, 16% of total health expenditure in NSW went to offices of physicians (ambulatory care, including primary healthcare services) – a lower percentage than in the United States, Switzerland and Canada (Figure 4.2).

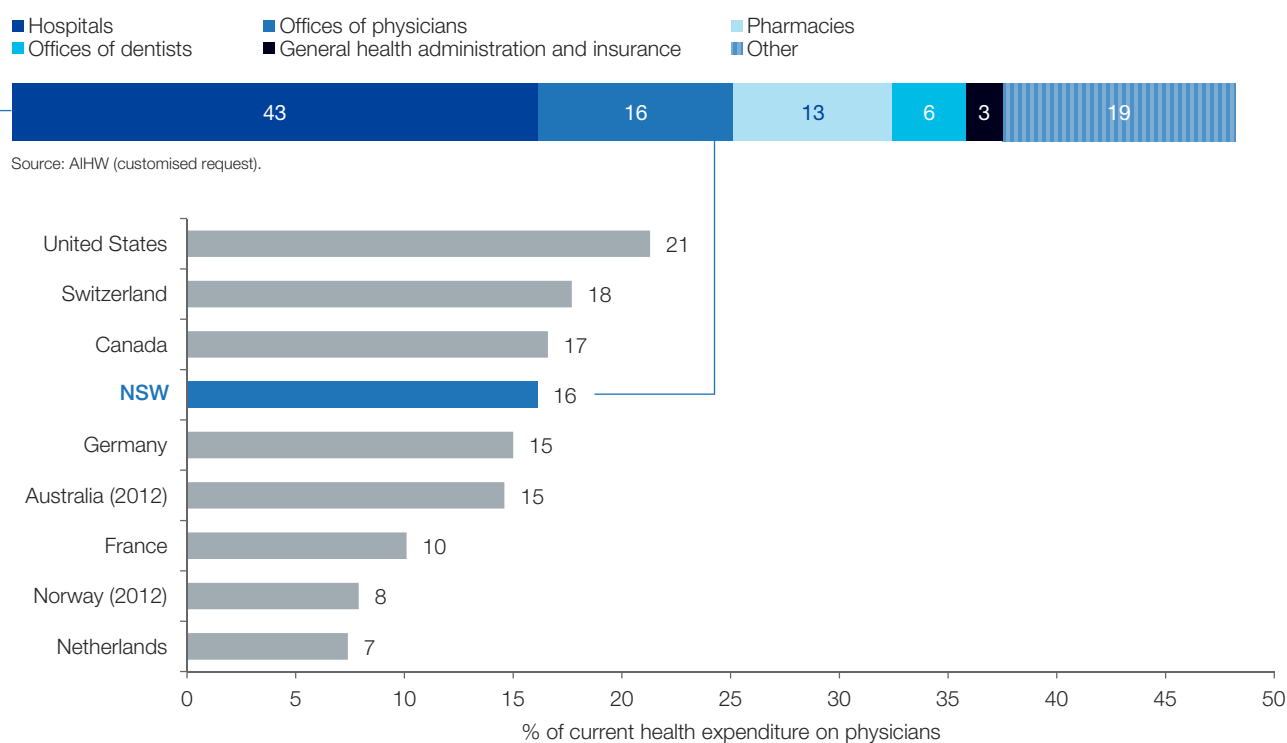
In NSW, 43% of total health expenditure was dedicated to the hospital sector. NSW spends a larger percentage of its total health dollars on hospitals than any comparator country (Figure 4.3).

Figure 4.1 Total current public and private health spending per person adjusted for cost of living, by potential years of life lost, NSW and comparator countries, 2013 (or nearest year)



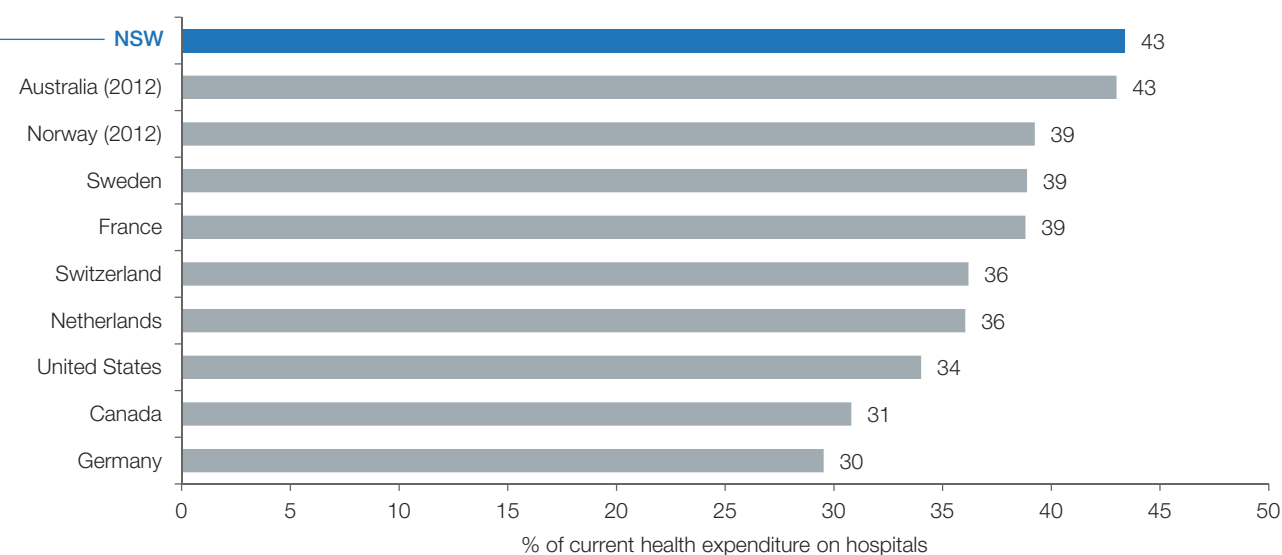
Sources: OECD, Health Statistics 2015. ABS, Cause of Death 2013 (customised request). AIHW, Health expenditures 2013–14 (customised request).

Figure 4.2 Percentage of total current health expenditure by provider organisation, NSW, 2013–14 and percentage of current health expenditure accounted for by offices of physicians (ambulatory care), NSW and comparator countries, 2013 (or nearest year)



Sources: OECD, Health Statistics 2015. Australian Productivity Commission, Report on Government Services 2016, Volume E: Health.
Note: Values for the United Kingdom and New Zealand were unavailable.

Figure 4.3 Percentage of total current health expenditure accounted for by hospitals (public and private), NSW and comparator countries, 2013 (or nearest year)



Sources: OECD, Health Statistics 2015. Australian Productivity Commission, Report on Government Services 2016, Volume E: Health.

Average cost of hospitalisations and emergency department visits

Average cost of a non-admitted ED visit is \$385 in NSW; \$4,788 per hospitalisation

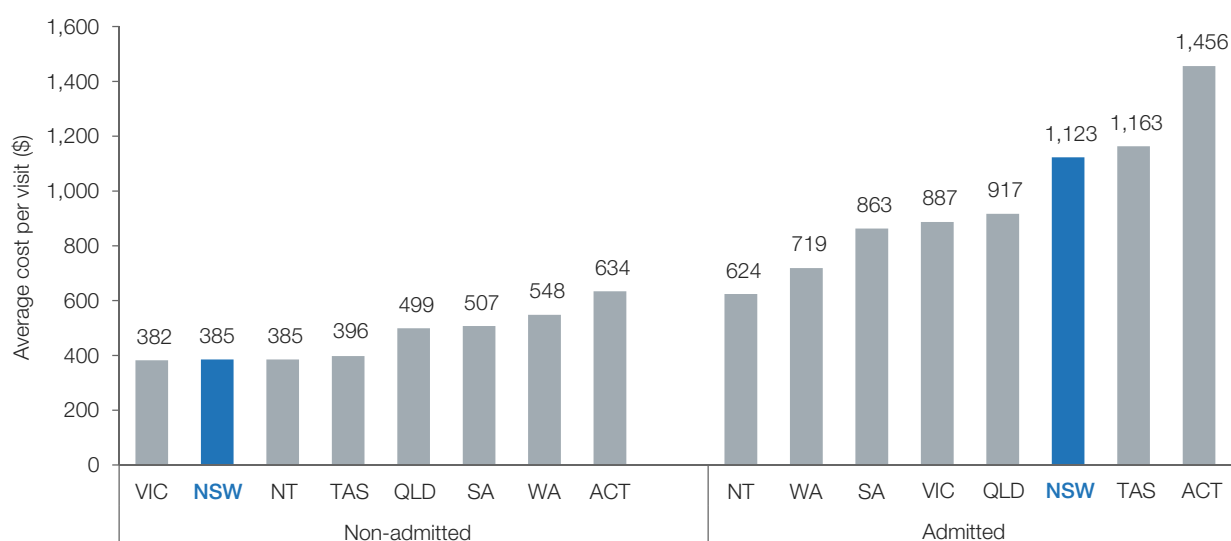
Within Australia, state-level comparisons of average costs in hospitals can be adjusted to take account of patient case mix.

In 2013–14, an emergency department (ED) visit in NSW for which patients were treated and discharged cost an average of \$385, while those for which patients were treated and subsequently admitted to hospital cost an average of \$1,123. Across Australian states and territories, there was a two-fold variation in costs for both types of ED visits, with NSW at the lower end of the cost range for non-admitted ED visits and at the higher end of the cost range for admitted visits (Figure 4.4).

In 2013–14, the adjusted average cost of an acute hospitalisation in NSW public hospitals (excluding psychiatric and drug and alcohol services) was \$4,788. Across Australia, average costs ranged from \$4,228 in Victoria to \$6,840 in the Northern Territory (Figure 4.5).

Focusing on hospitalisations for childbirth, the average cost of a vaginal delivery in NSW public hospitals in 2013 was \$4,288, while the average cost per caesarean section birth was \$8,279. Among Australian states and territories, NSW had the lowest average cost for caesarean sections and only Western Australia and Northern Territory had lower average costs for vaginal births (Figure 4.6).

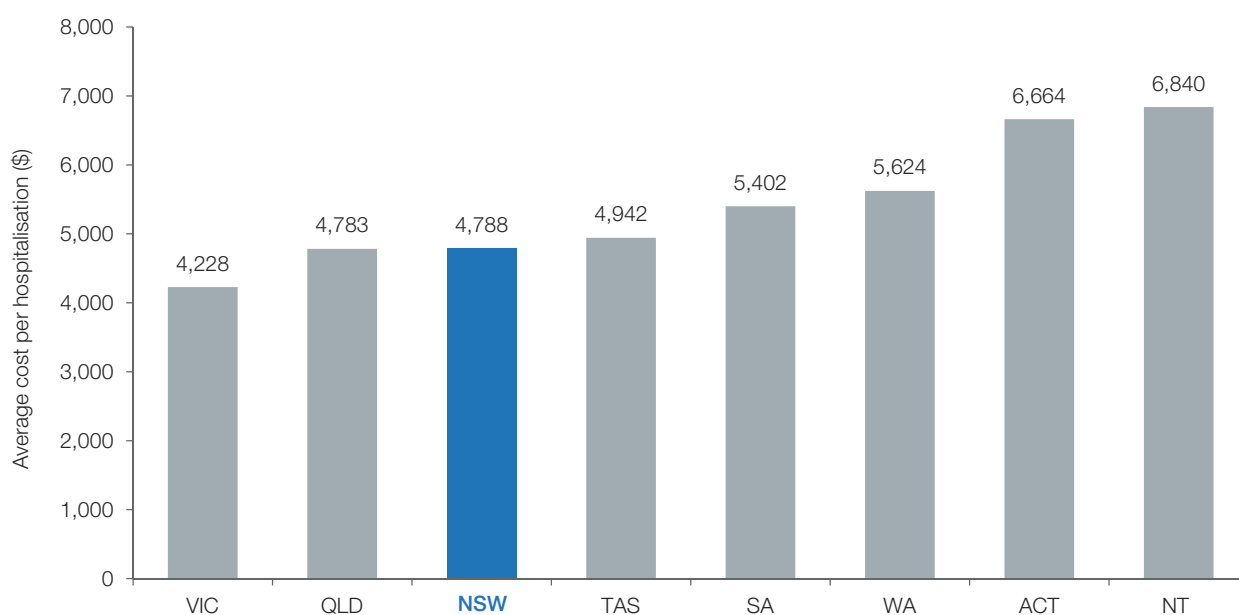
Figure 4.4 Average cost of an emergency department visit, by admission status, public hospitals, Australian states and territories, 2013–14



Source: Independent Hospitals Pricing Authority, National Hospital Cost Data Collection, Australian Public Hospitals Cost Report 2013–14 Round 18.

Note: Independent Hospitals Pricing Authority terminology differs from that used by NSW Health organisations. IHPA uses two categories to describe ED visits based on whether patients were admitted or not at the end of their visit. BHI and other NSW organisations use four patient categories: treated and admitted, treated and discharged, transferred and left without treatment.

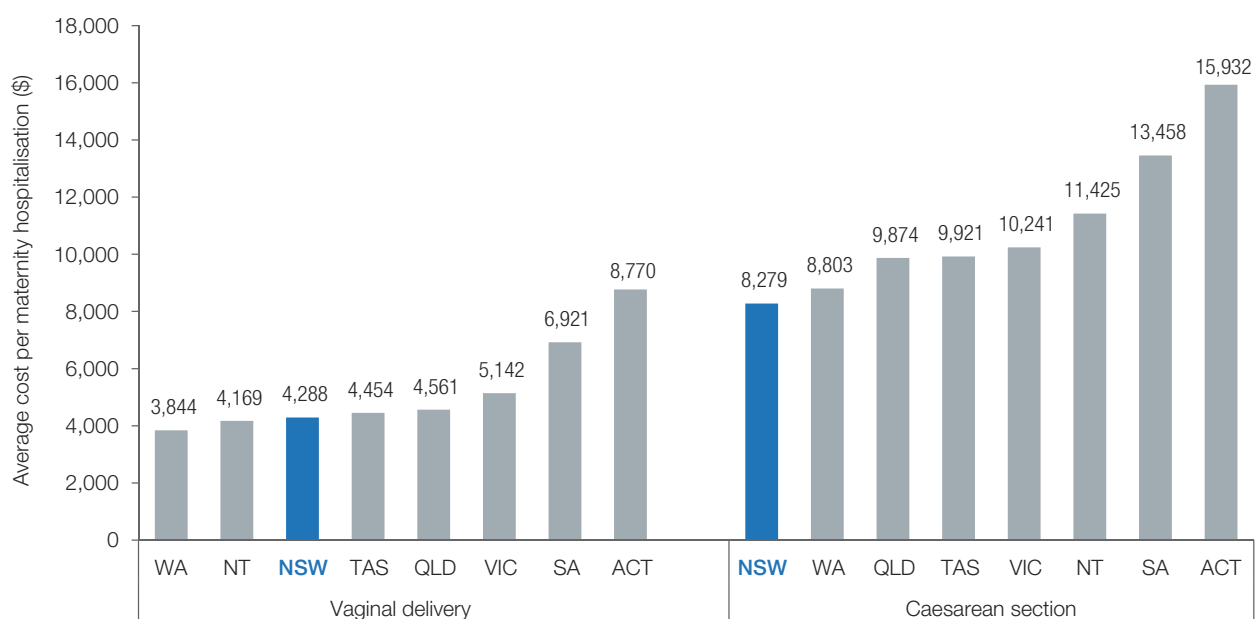
Figure 4.5 Total recurrent cost per case mix adjusted hospitalisation, selected acute public hospitals, Australian states and territories, 2013–14



Source: Australian Productivity Commission, Report on Government Services 2015, Volume E: Health.

Note: Results include admitted emergency department costs, but exclude depreciation.

Figure 4.6 Recurrent cost per maternity separation, for vaginal and caesarean section births (without catastrophic or severe complications and comorbidities), public hospitals, Australian states and territories, 2013–14



Source: Australian Productivity Commission, Report on Government Services 2016, Volume E: Health.

Average length of stay

Average length of stay in NSW hospitals was 5.8 days – shorter than in most comparator countries

The average length of stay (ALOS) can be used as a measure of efficiency in hospitals, and more broadly in healthcare systems. Shorter hospital stays generally reduce the cost per hospitalisation by shifting care from inpatient to less expensive post-acute care settings. However, short stays can be more service intensive and more costly per day, and if stays are too short, patients are at greater risk of readmission.^{1,2,3}

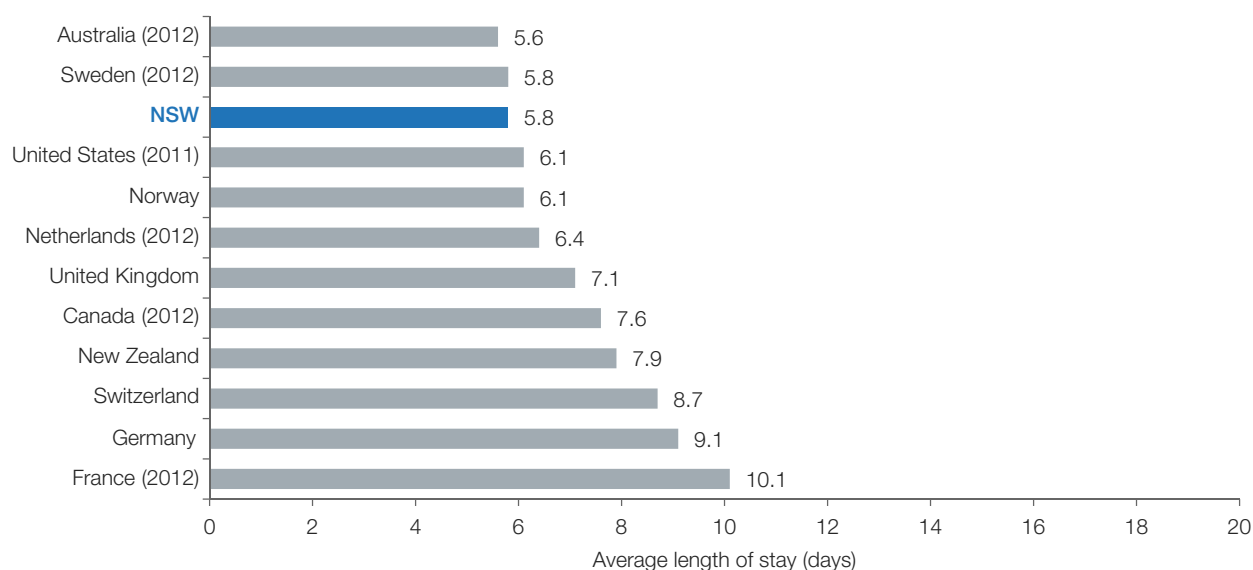
In 2013–14, the ALOS in NSW hospitals was 5.8 days (5.9 days for public hospitals and 5.5 days for private hospitals), shorter than in most international comparators (Figure 4.7).

Total ALOS measures generally do not take account of patient case mix, limiting the extent to which detailed and meaningful comparisons can be made. A related measure, the relative stay index (RSI), makes some adjustment for patient characteristics and is used to compare public hospitals in Australia. The statewide RSI uses national data to determine an expected length of stay for NSW, given its patient

mix, which is compared to the actual NSW length of stay. Assuming service quality and outcomes are not negatively affected, RSIs less than 1.0 are desirable. In 2014–15 the RSI for medical separations in NSW was similar to the national result, while the RSI for surgical separations indicate that stays were longer in NSW than expected (Figure 4.8).

Focusing on ALOS for specific patient groups is another way of limiting the confounding effect of case mix on comparisons. In obstetrics in 2013, the ALOS for a vaginal birth was 2.5 days (2.2 days for public hospitals and 3.8 days for private hospitals); while for a caesarean birth, it was 4.1 days (3.7 days for public hospitals and five days for private hospitals). Across NSW public hospitals, the ALOS for a vaginal birth ranged from 1.5 to 2.9 days; while for a caesarean birth, it ranged from 2.8 to 4.5 days (Figure 4.9).

Figure 4.7 Average length of stay, public and private hospitals, NSW and comparator countries, 2013 (or nearest year)



Sources: OECD, Health Statistics 2015. AIHW, Australian Hospital Statistics 2013–14.

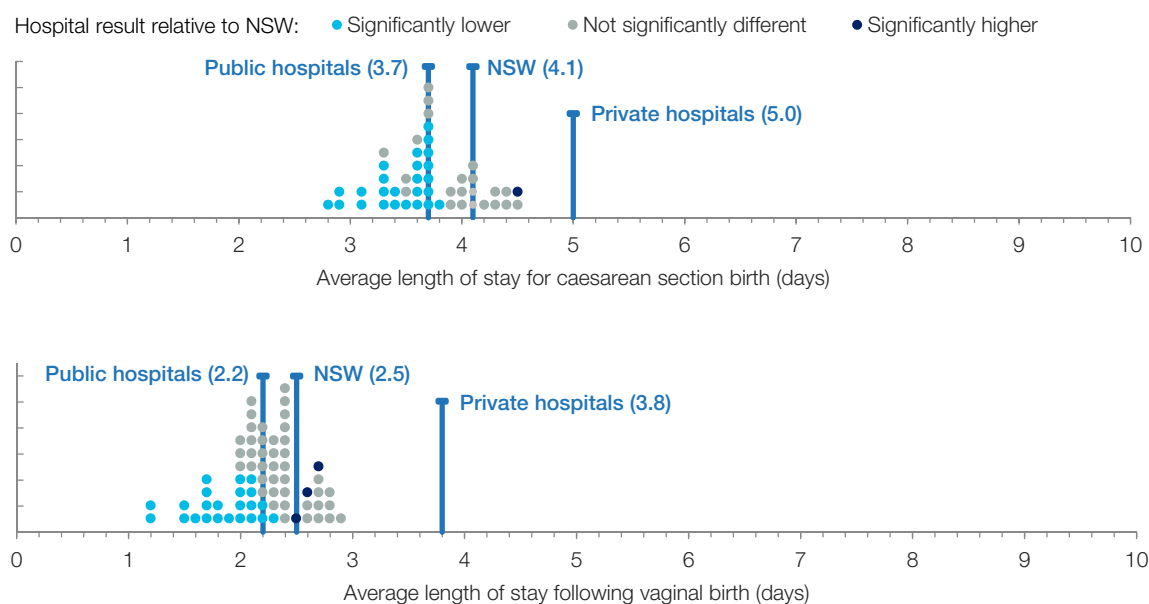
Notes: Excludes same-day separations. NSW value is based on 2013–14. The results for Canada and the Netherlands refer to average length of stay for curative (acute) care, resulting in an under-estimation.

Figure 4.8 Relative stay index, by medical or surgical hospitalisation, public hospitals, Australian states and territories, 2014–15



Source: AIHW, Admitted patient care 2014–15: Australian hospital statistics.

Figure 4.9 Average length of stay for vaginal and caesarean section deliveries, NSW hospital variation, 2013



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

Notes: All private hospitals are combined. Significance testing used the Kruskal-Wallis test, with correction of ties, significance level adjusted for multiple comparisons.

Providing care in the right setting

Hospital-in-the-home is an efficient substitute for almost 2% of bed days in NSW public hospitals

Achieving good value for money in healthcare depends on using finite resources in ways that are sufficient to meet patients' needs and expectations but do not significantly exceed them. For example, acute hospital beds that are used for 'maintenance care' – used for patients who are medically well enough to be discharged to a nursing home setting but for whom a suitable placement is not available – represents an inefficient use of acute care resources.

In 2014–15 in NSW, there were eight hospital bed days per 1,000 used by patients on maintenance care, waiting for aged care placement. This was lower than all other states and territories, except Victoria (Figure 4.10).

As in many other jurisdictions, there are concerns in NSW that hospital EDs are used to provide primary care services, contributing to overcrowding and long waiting times and representing inefficient use of resources. In NSW in 2013–14, among people who visited an ED, 27% cited a lack of GP availability as the reason they sought ED care (Figure 4.11).

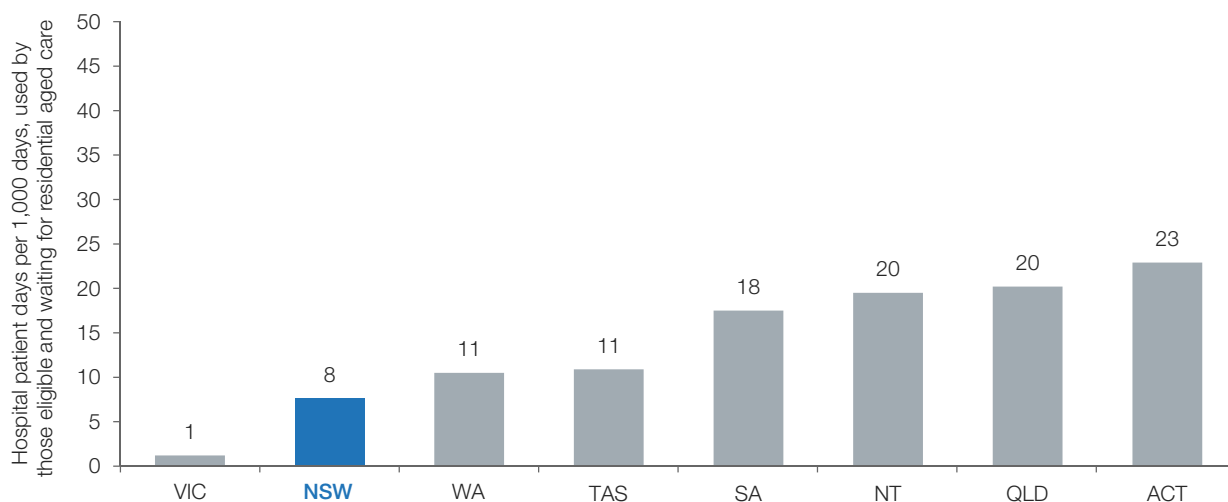
Administrative data sources have been used to classify 'GP-type' visits as those for which satisfy all the following criteria:

- Patients did not arrive by ambulance or by police or other correctional vehicle
- The triage category was 4 (semi-urgent) or 5 (non-urgent)
- Patients were not subsequently admitted to the hospital, referred to another hospital, or deceased.⁴

In NSW, 26% of ED visits met these criteria. Across Australian states and territories, this percentage ranged from 24% to 41% (Figure 4.12).

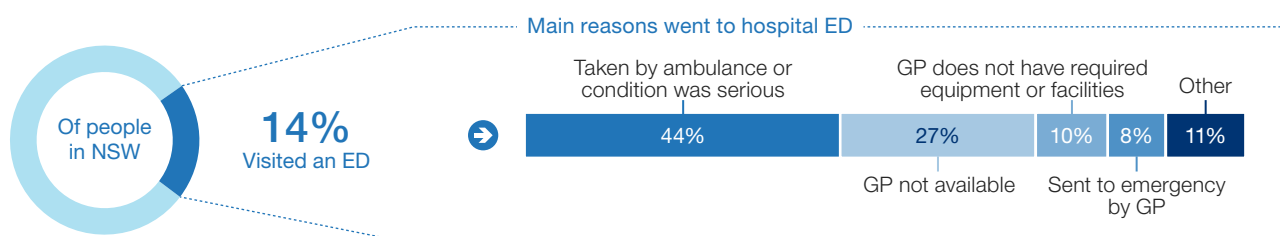
Substitution of service resources can be used to achieve greater efficiency, for example through the use of 'hospital-in-the-home' (HITH) schemes. HITH patients are visited by staff and cared for in their place of residence, rather than in an acute hospital bed. In 2014–15, 2% of total acute bed days in NSW public hospitals were HITH (Figure 4.13).

Figure 4.10 Rate of maintenance bed days for patients eligible and waiting for residential aged care, Australian states and territories, 2014–15



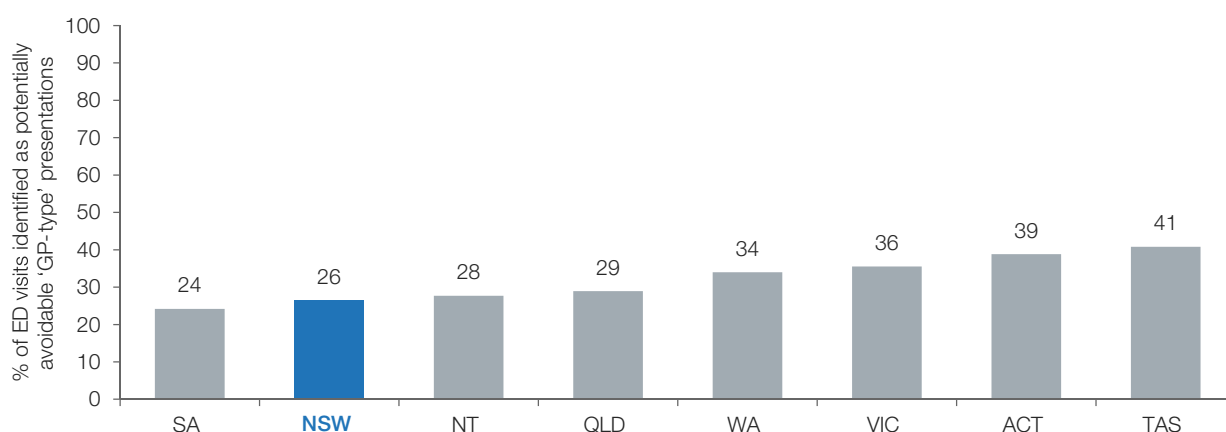
Source: AIHW, Admitted patient care 2014–15: Australian hospital statistics.

Figure 4.11 Percentage of people aged 15+ years who went to the ED, by reasons for the visit, NSW, 2013–14



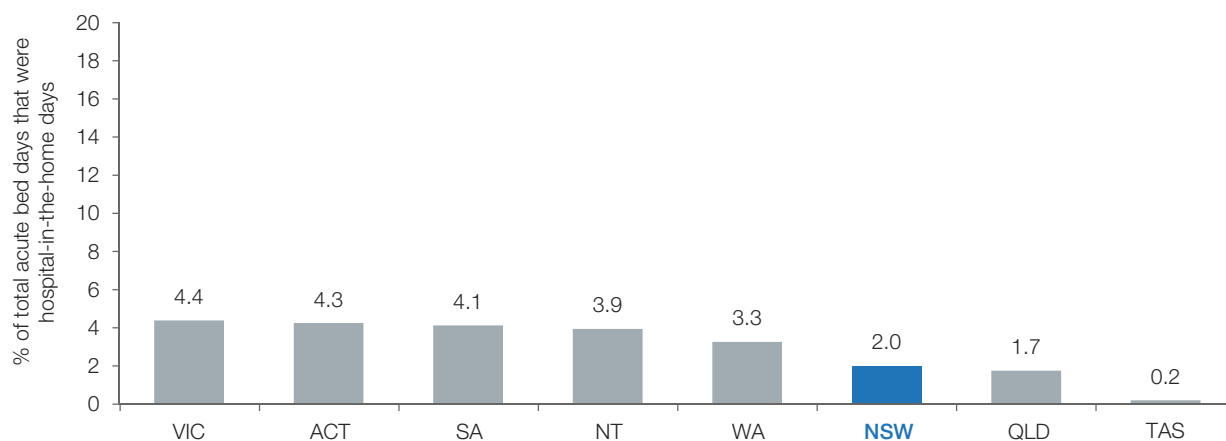
Source: ABS, Patient Experience Survey 2014–15 (customised request).

Figure 4.12 Percentage of ED visits classified as 'GP-type' visits, Australian states and territories, 2013–14



Sources: Australian Productivity Commission, Report on Government Services 2015, Volume E: Health. AIHW, Emergency department care 2014–15: Australian hospital statistics.

Figure 4.13 Percentage of total bed days that were hospital-in-the-home days, public acute hospitals, Australian states and territories, 2014–15



Source: AIHW, Admitted patient care 2014–15: Australian hospital statistics.

Note: Includes acute hospitals only, i.e. does not include psychiatric hospitals.

Optimising the use of resources

Administrative tasks are a major burden for two in 10 NSW GPs

According to the Royal Australian College of General Practice⁵, time wasting in general practice can be:

- Doctor-generated – doing things for which there is evidence of futility. The doctor is either unaware of, or chooses not to cease, activities of proven futility.
- Role-generated – doctors not delegating to nurses, nurses not delegating to administrative staff, the practice team not using appropriate IT software maximally to improve efficiency.
- Medicare/government-generated – some Medicare Benefit Schedule item numbers create incentives for practices to perform tasks with no evidence of benefit.

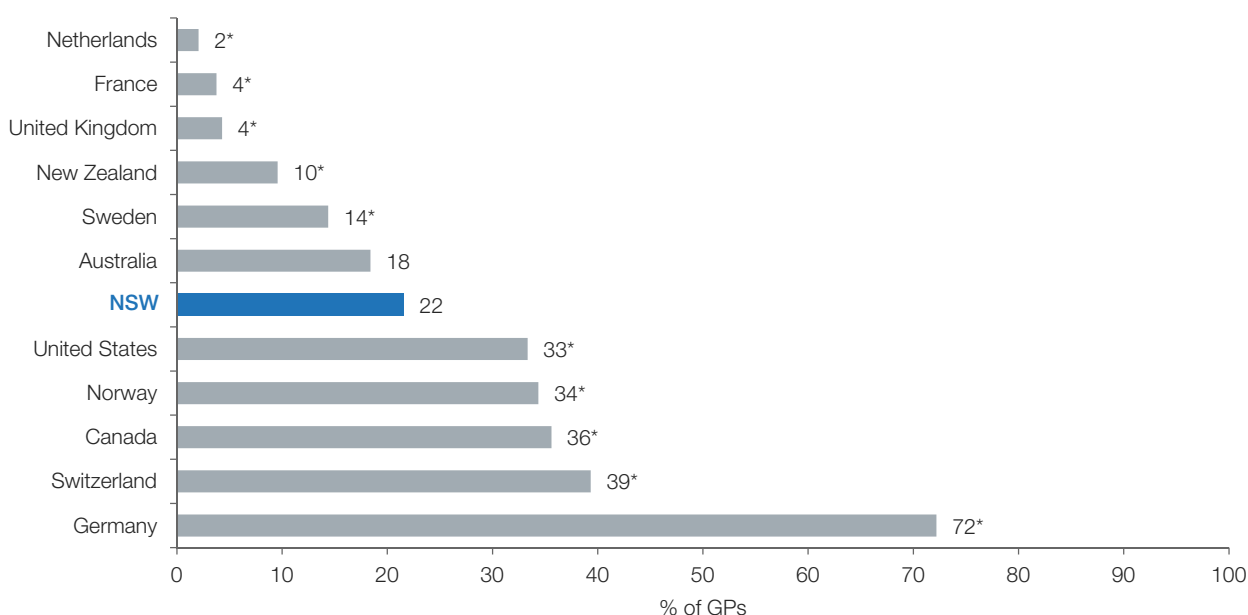
Across and within healthcare systems, there are different processes in place to help manage care for patients with chronic conditions.

In 2015, 22% of NSW GPs said they did not use personnel such as nurses or case managers to provide care for patients who need regular follow-up (Figure 4.14).

In 2015, 21% of NSW GPs said they had a 'major problem' with the amount of time they spent on administrative tasks related to insurance or claiming payments, a lower percentage than in six comparator countries (Figure 4.15).

In some jurisdictions, GPs reported a 'major problem' with the amount of time spent on getting their patients needed medication or treatments which are affected by coverage restrictions. In NSW, 9% of GPs report major problems with this – a lower percentage than in seven comparator countries (Figure 4.16).

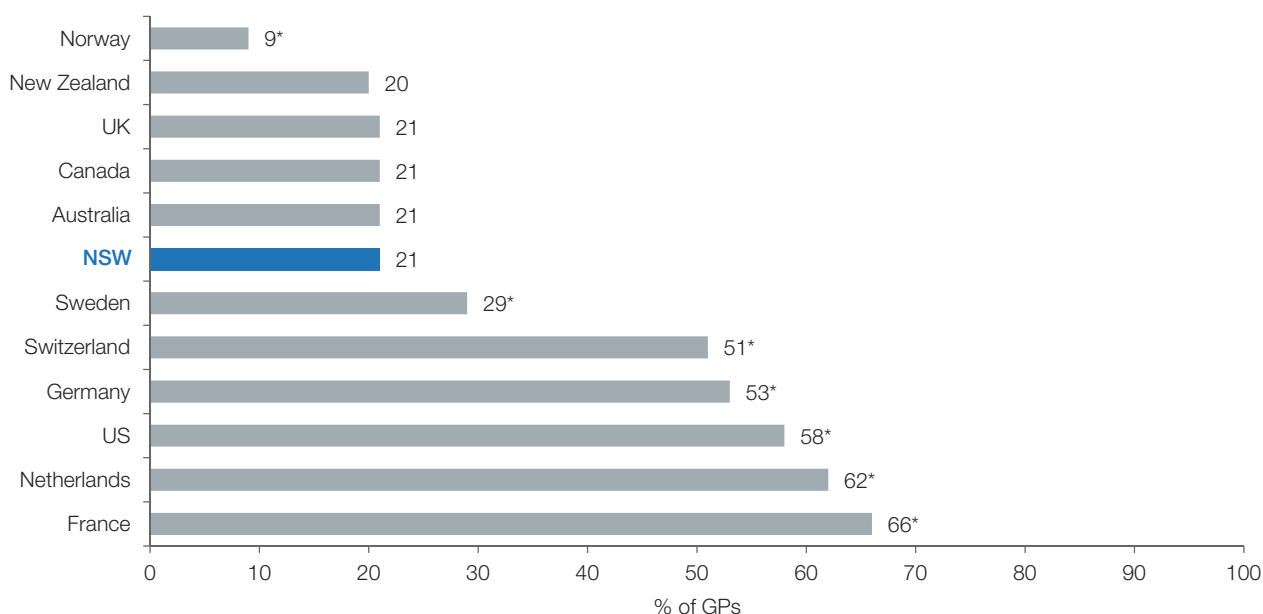
Figure 4.14 Percentage of providers who said their practice did not use personnel (nurses or case managers) to manage care for patients that need regular follow-up, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

* Estimate is statistically significantly different to NSW.

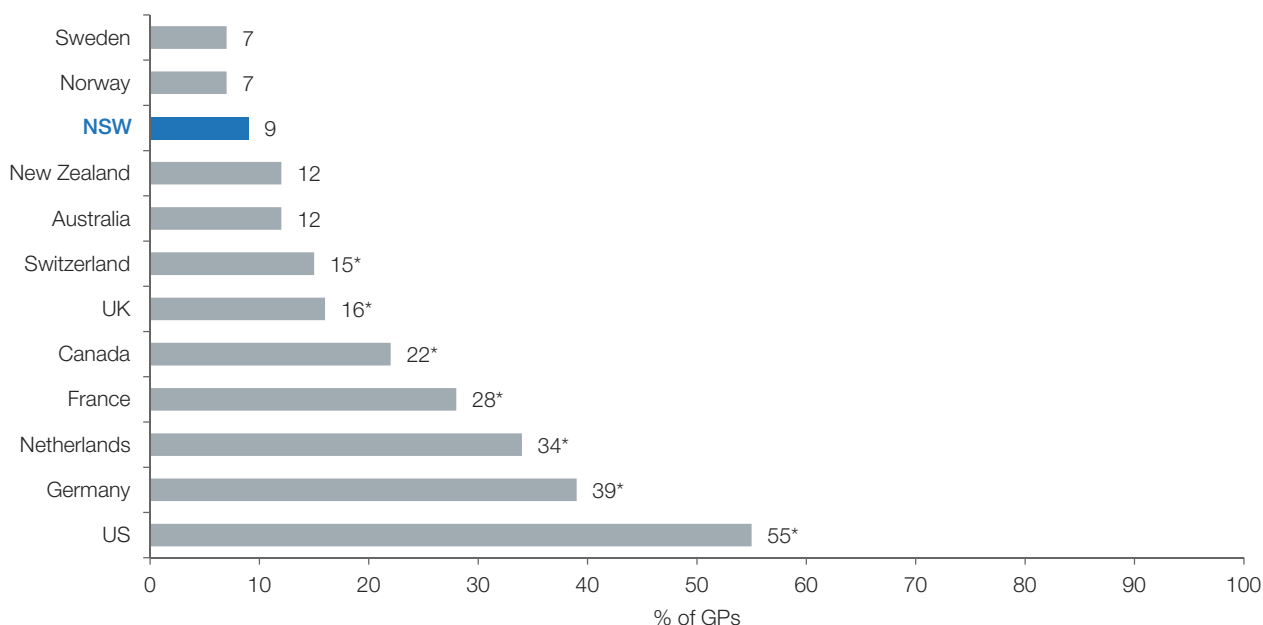
Figure 4.15 Percentage of providers who said they had a 'major problem' with amount of time spent on administrative issues related to claiming payments, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

* Estimate is statistically significantly different to NSW.

Figure 4.16 Percentage of providers who said they had a 'major problem' with time spent on getting patients needed medications or treatments because of coverage restrictions, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

* Estimate is statistically significantly different to NSW.

Duplication and waste

More than three in 10 NSW GPs said there is unnecessary duplication of tests

Inefficiencies can be measured in terms of waste and duplication.

In 2015, among GPs in NSW, 35% said their patients had to have a test or procedure repeated in the past month because results were unavailable. This was a higher percentage than in seven comparator countries. Similarly, in 2014, 9% of NSW adults aged 55+ years said doctors ordered a medical test they felt was unnecessary because it had already been done. This was higher than in eight comparator countries (Figure 4.17).

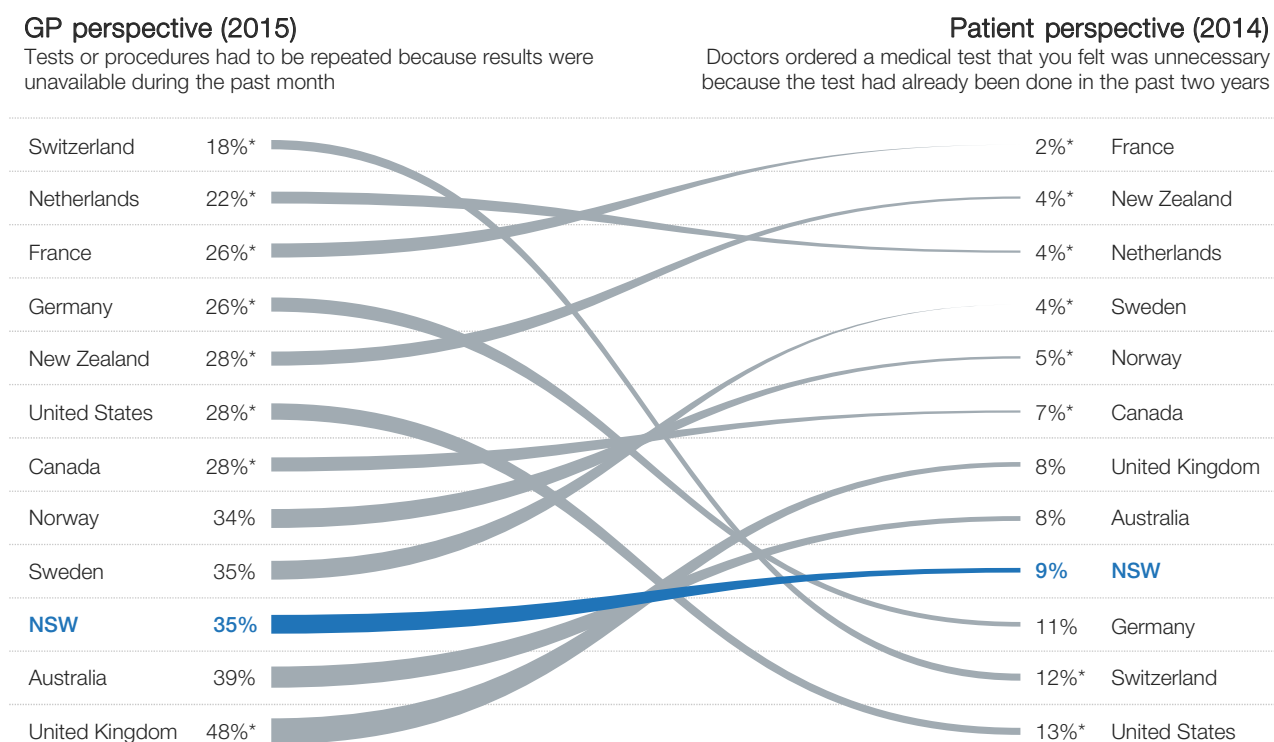
Problems with coordination inconvenience patients and increase the risk of errors and oversights in care. They also compromise efficiency – missing notes or test results can result in delays or repeat visits. In NSW, 67% of GPs said that on at least one occasion in the previous month a patient's medical

record or other relevant clinical information was not available at the time of their appointment (Figure 4.18).

More broadly and at a system level, there are currently concerted efforts to improve value in healthcare.^{1,2,3,6,7} A number of diagnostic tests, treatments, and procedures have been shown to be of marginal or no benefit to patients. For example, knee arthroscopy has been shown to have no benefit for people aged 50+ years.⁸

In NSW, the number of arthroscopies among people aged 50+ years increased by 10% (5% decrease in public hospitals and 14% increase in private hospitals) between 2004 and 2013. In 2013 there were 11,377 patients aged 50+ years who underwent a knee arthroscopy. Of these, 2,399 (21%) were treated in public hospitals (Figure 4.19).

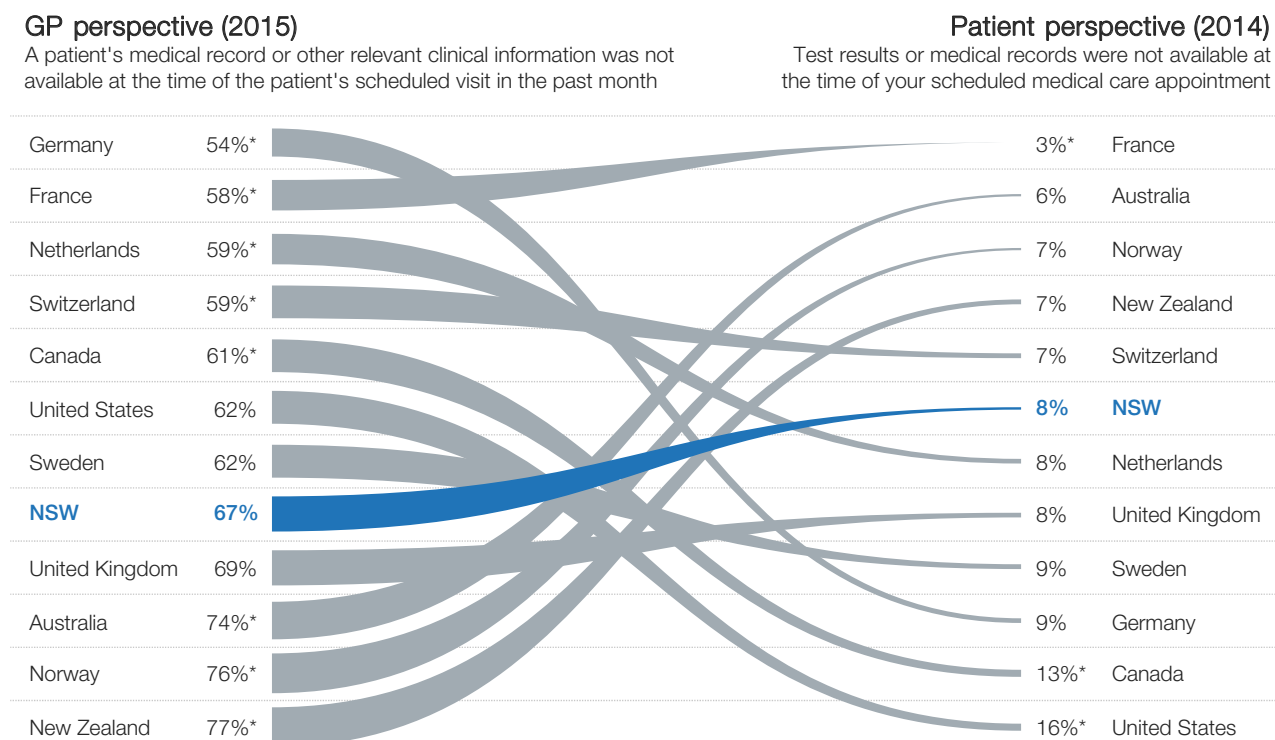
Figure 4.17 Provider and patient perspectives: Percentage who said tests had been repeated, NSW and comparator countries, 2014 and 2015



Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

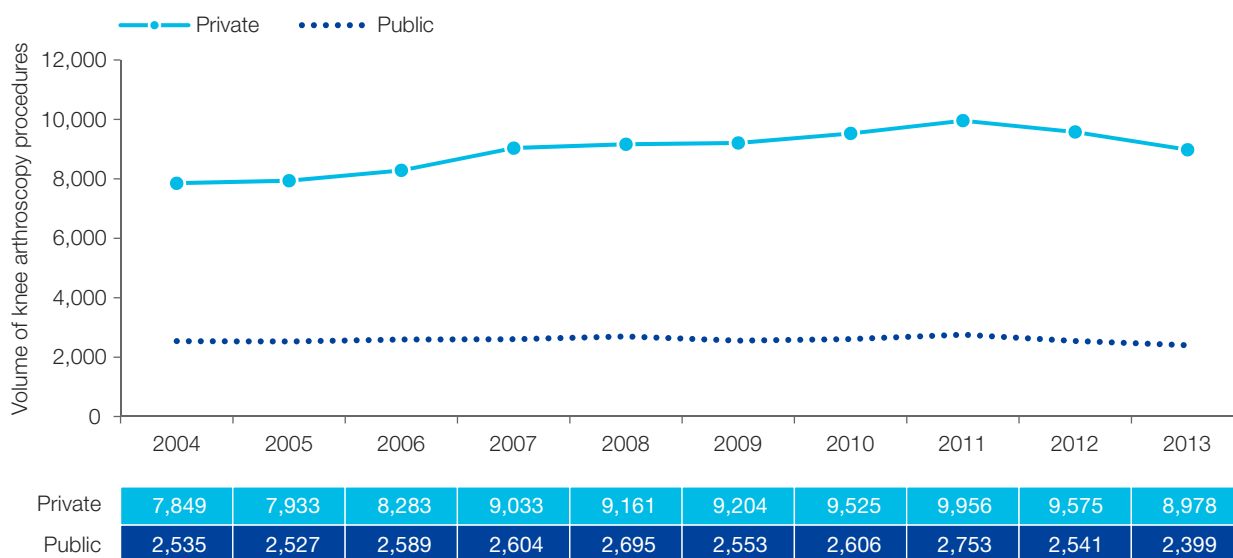
* Estimate is statistically significantly different to NSW.

Figure 4.18 Provider and patient perspectives: Percentage who said results were not available at the time of the patient's visit, NSW and comparator countries, 2014 and 2015



Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2014 Commonwealth Fund International Health Policy Survey of Older Adults.
* Estimate is statistically significantly different to NSW.

Figure 4.19 Number of knee arthroscopy procedures, people aged 50+ years, NSW 2004–13



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

Notes: Only hospitals with over 30 deliveries are shown. All private hospitals are combined. Kruskal-Wallis test used with correction of ties, and significance level adjusted for multiple comparisons.



Health for all, healthcare that's fair

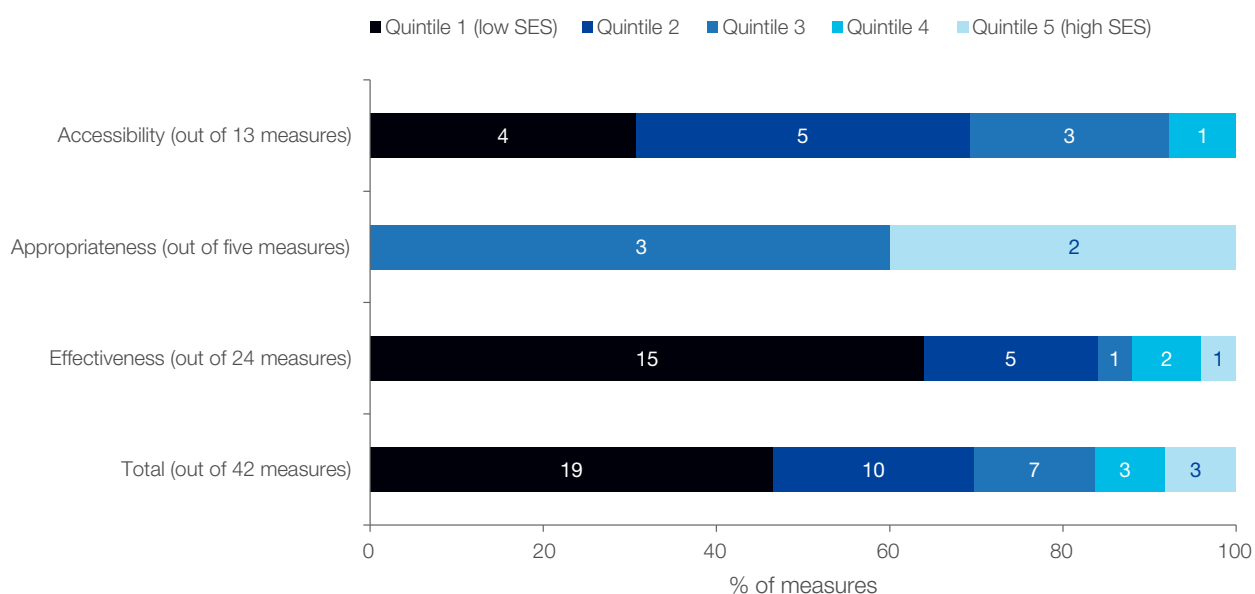
Equity

Health for all, healthcare that's fair

Equity refers to the extent to which health and healthcare is distributed fairly across society.^{1,2} Because fairness is difficult to quantify, equity is often defined and measured in terms of systematic differences, or disparities, between population groups.³

Disparities can be measured in terms of health status and wellbeing; or in terms of differences in the performance dimensions of accessibility, appropriateness and effectiveness of healthcare services. This chapter focuses on disparities on the basis of patients' socioeconomic status (SES), as measured by the level of disadvantage in their postcode of residence.

Equity – summary of the number of times each socioeconomic status group had the least desirable results, by performance dimension



Low SES was least likely to be associated with poor performance in appropriateness measures; and most likely to be associated with poor performance in effectiveness measures.

In terms of individual indicators, greatest disparity was seen in measures of:

- Hospitalisations for ambulatory care-sensitive conditions
- Median waiting times for elective surgical procedures.

There were no significant disparities in measures of:

- Respectfulness for patients
- Timeliness in emergency departments (EDs).

Equity

Ratios of low to high socioeconomic status groups within NSW



* Estimate for low SES group was statistically significantly different to the high SES group.

^ Not tested.

Note: A ratio less than one indicates the measure was less likely in the low SES group than in the high SES group; and a ratio greater than one indicates the measure was more likely in the low SES group than in the high SES group. Results shown include ratios of approximately 1.2 or higher.

Disparities in accessibility: Unmet need

People from lower SES areas were more likely to report difficulties accessing care

Overall, the people of NSW have high levels of health. There are, however, differences within NSW between population sub-groups' opportunities for health and access to healthcare. People who live in areas of relative socioeconomic disadvantage have shorter life expectancy, higher levels of disease, and lower use of preventive health services than those who live in less disadvantaged areas.^{4,5}

In 2012 across NSW, 16% of people aged 16+ years said they had difficulty accessing healthcare when needed. Across SES groups, this percentage ranged from 10% for people living in quintile 5 areas (highest SES) to 24% in quintile 2 areas (second lowest SES) (Figure 5.1).

The 2014–15 Australian Bureau of Statistics (ABS) Patient Experience Survey results show unmet needs occur across the SES spectrum. Compared to other SES groups, a higher percentage of people in quintile 2 said they needed to see a GP or a dental professional but did not do so on at least one occasion in the previous year. However, people in quintile 4 were most likely to say they needed to see a medical specialist but did not (Figure 5.2).

Hospitalisations for dental treatment under general anaesthetic are a proxy measure of poor access to routine dental care. Rates of hospitalisation for dental

caries in children show substantial variation across SES groups. Among children aged 1–4 years, those living in quintile 1 areas (low SES) were hospitalised at a rate of 483 per 100,000 children, compared to 346 per 100,000 children for those living in quintile 3 areas (Figure 5.3).

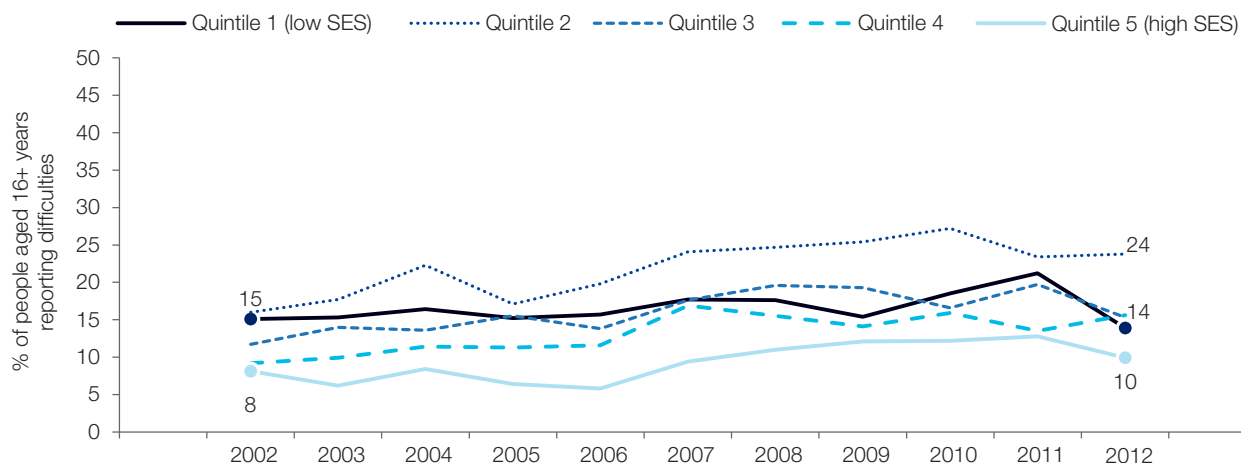
About SES quintiles

The ABS defines socioeconomic disadvantage in terms of people's access to material and social resources as well as their ability to participate in society.⁶

This chapter compares healthcare performance across quintile groups based on the Index of Relative Socioeconomic Disadvantage of residence.

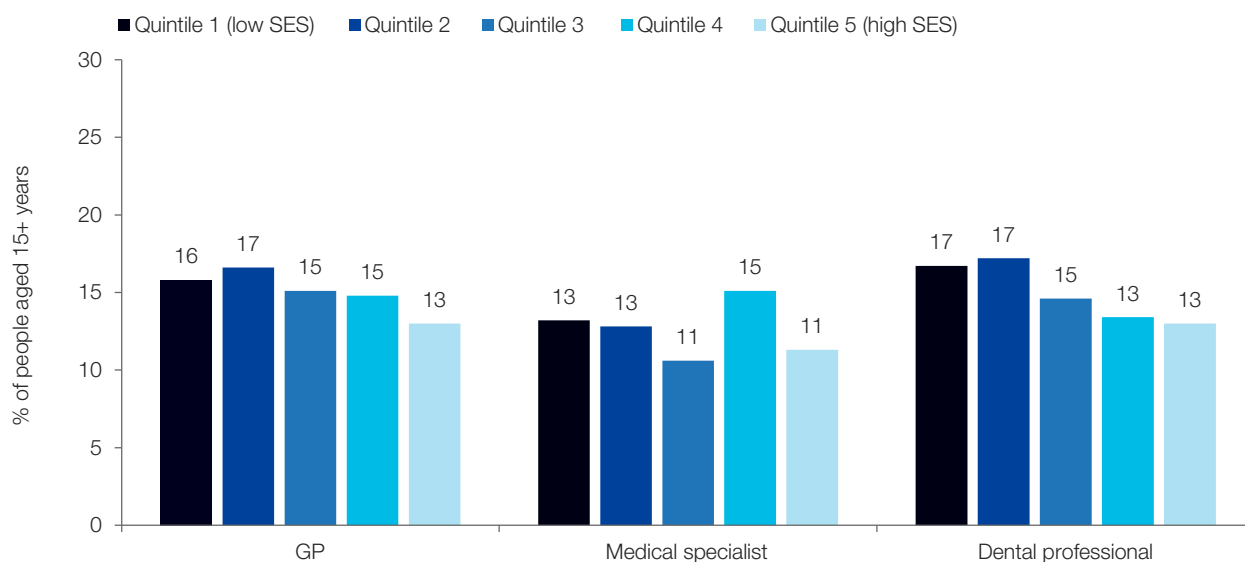
Each of the five quintiles comprises 20% of the population, by geographic area ranked in terms of SES from the most disadvantaged (lowest SES quintile) to least disadvantaged (highest SES quintile). In this chapter, low SES refers to the 20% of the population living in the most disadvantaged areas according to this index.

Figure 5.1 Percentage of people who said they had difficulty accessing healthcare, by SES, NSW, 2002–12



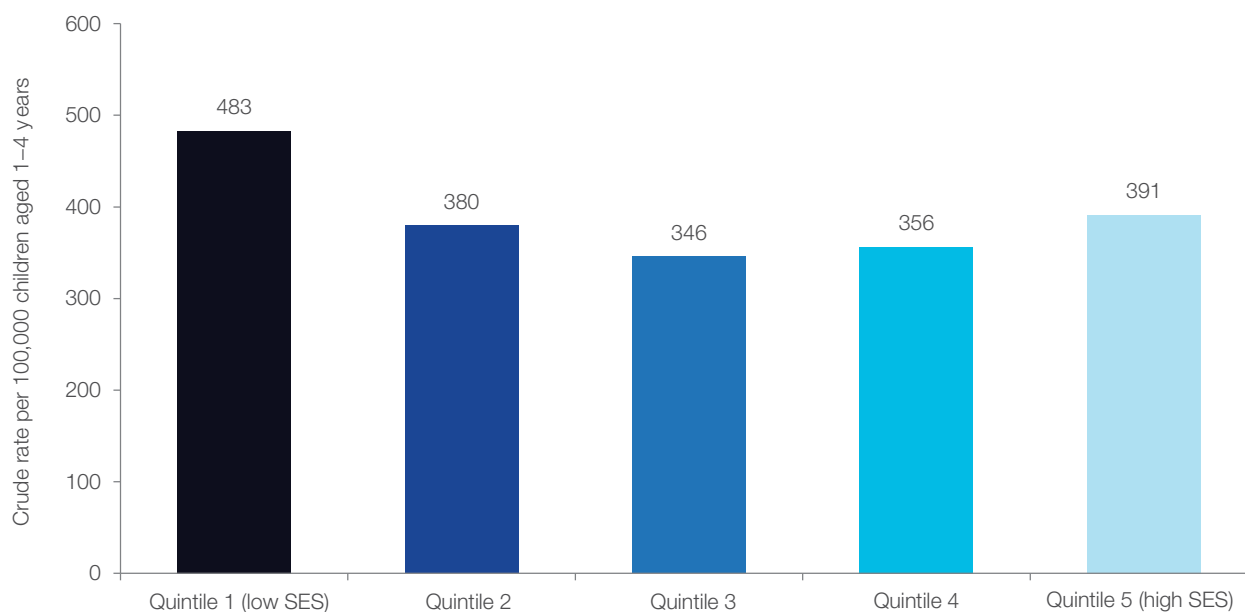
Source: Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au

Figure 5.2 Percentage of people who said they needed to see health professional but did not in the last year, by type of health professional and SES, NSW, 2014–15



Source: Australian Bureau of Statistics, based on ABS Patient Experience Survey 2014–15 (customised request).

Figure 5.3 Hospitalisations for removal and restoration of teeth, per 100,000 children aged 1–4 years, by SES, public and private hospitals, NSW 2013–14



Source: NSW Ministry of health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

Disparities in accessibility: Timeliness

Lower SES is associated with longer waiting times for elective surgery

Elective surgical procedures performed in NSW public hospitals are classified into three urgency categories, each with a clinically recommended maximum time by which the procedure should be performed:

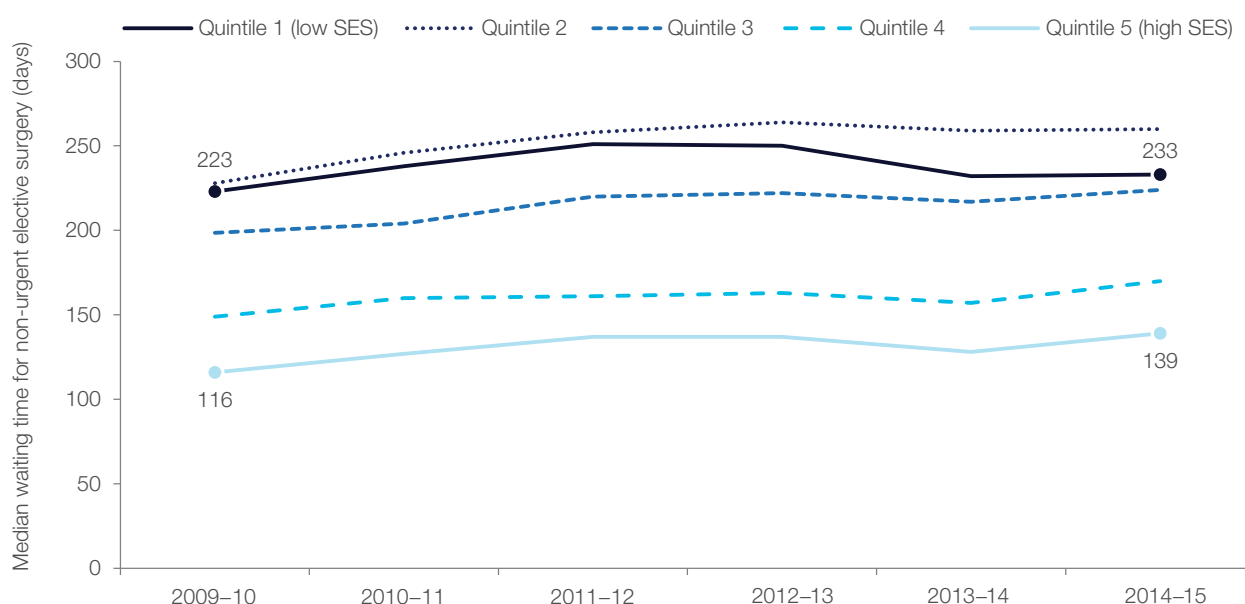
- Urgent (within 30 days)
- Semi-urgent (90 days)
- Non-urgent (365 days).

In 2014–15, among patients waiting for non-urgent surgery in public hospitals, those from low SES areas had median waiting times that were almost 100 days longer than patients from high SES areas (Figure 5.4).

A similar result was seen in patient survey data – with patients from low SES areas less likely than those from high SES areas to say: they waited less than four weeks between booking an appointment and seeing a specialist; they waited less than three months from the time a specialist said they needed an operation to being admitted to hospital; the time they waited for admission was ‘about right’ (Figure 5.5).

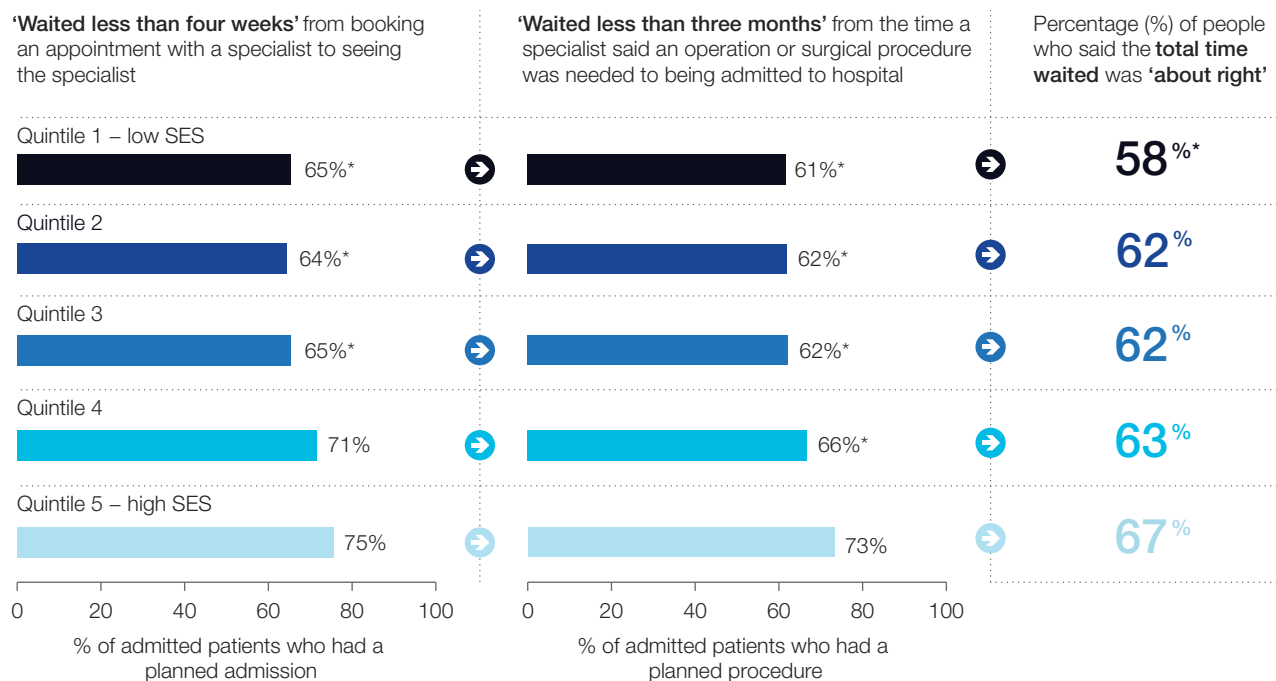
In contrast, differences across SES groups were modest for ED performance measures of time to treatment and total time spent in the ED (Figure 5.6).

Figure 5.4 Median waiting times for non-urgent elective surgical procedures, by SES, public hospitals, NSW, 2009–10



Source: NSW Ministry of Health, Waiting List Collection On-line System (extracted November 2015).

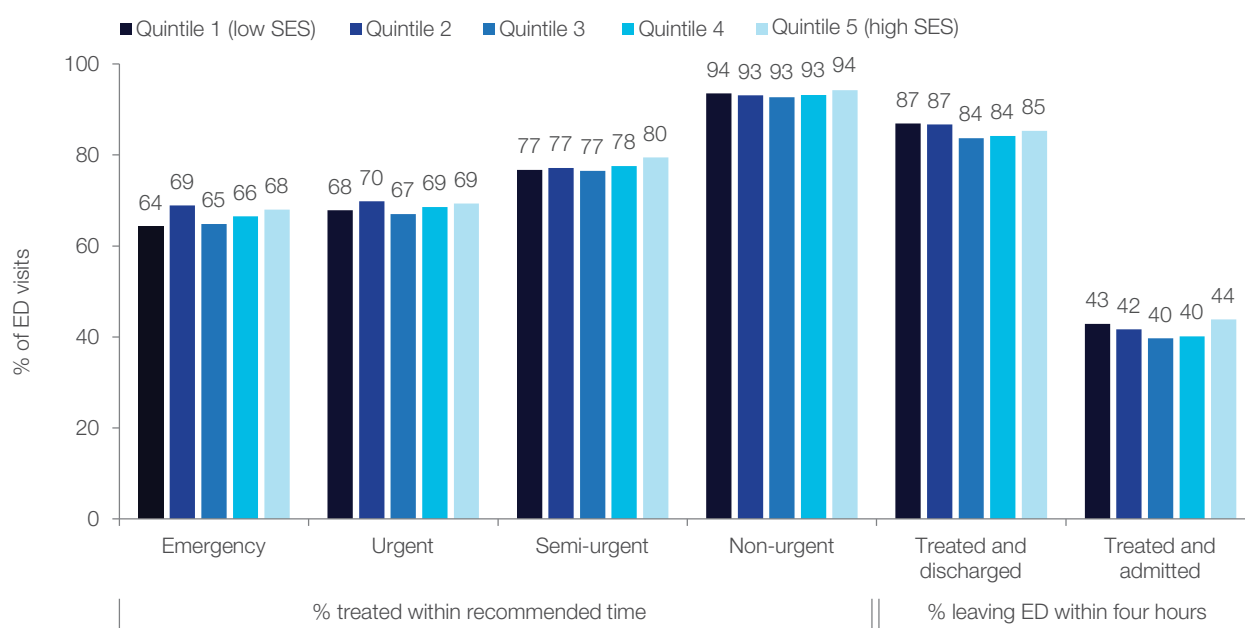
Figure 5.5 Percentage of adult admitted patients reporting short wait times, by SES, public hospitals, NSW, 2014–15



Source: BHI, Adult Admitted Patient Survey 2014.

* Estimate is statistically significantly different to quintile 5 (high SES).

Figure 5.6 Percentage of ED visits: Time to start treatment within recommended times; patients spent less than four hours in the ED, by triage, separation mode and SES, public hospitals, NSW, 2014–15



Source: NSW Health, Emergency Department Data Collection (extracted October 2015).

Note: Upon arrival at an ED, patients are allocated to one of five urgency (triage) categories, each with a recommended time within treatment should start: resuscitation (two minutes), emergency (10 minutes), urgent (30 minutes), semi-urgent (60 minutes), non-urgent (120 minutes). Clinicians treating resuscitation patients are focused on providing immediate and essential care, rather than recording times, and times to start treatment are generally not reported.

Disparities in appropriateness

Patients from lower SES areas were more likely to undergo hip fracture surgery within the recommended two days of hospitalisation

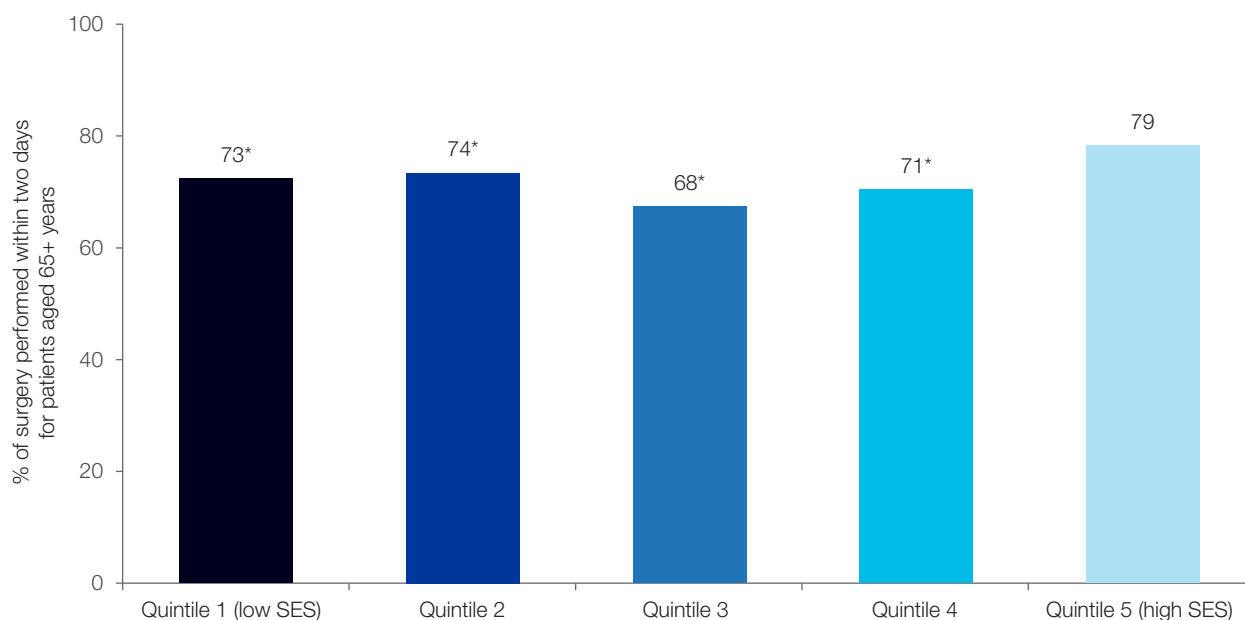
Measures of appropriateness assess whether healthcare services are: delivered in ways that are in accordance with evidence-based guidelines; technically proficient; and responsive to patients' needs and expectations.

Evidence-based guidelines recommend that patients who suffer a fractured hip should undergo surgery within two days of admission to hospital. In 2014 in NSW, 73% of hip fracture procedures for people aged 65+ years were performed within two days. Across SES groups, this percentage ranged from 68% to 79% – with the highest percentage among the high SES group (Figure 5.7).

There is limited international data available for this measure however a Canadian study in 2013 found that 84% to 85% of hip fracture patients in all SES groups received surgery within two days of admission to hospital.⁷

Appropriate care engages patients as active partners in their own care. There were no significant differences across SES groups in patients' responses to survey questions about whether they: were treated with respect; were involved in decisions about their discharge; had their home situation taken into account when planning their discharge. Patients from lower SES areas were however, more likely to say they had 'completely' been told about side effects of medications than those from higher SES areas (57% and 49%) (Figure 5.8).

Figure 5.7 Percentage of patients receiving hip fracture surgery within two days, by SES, public and private hospitals, NSW, 2014

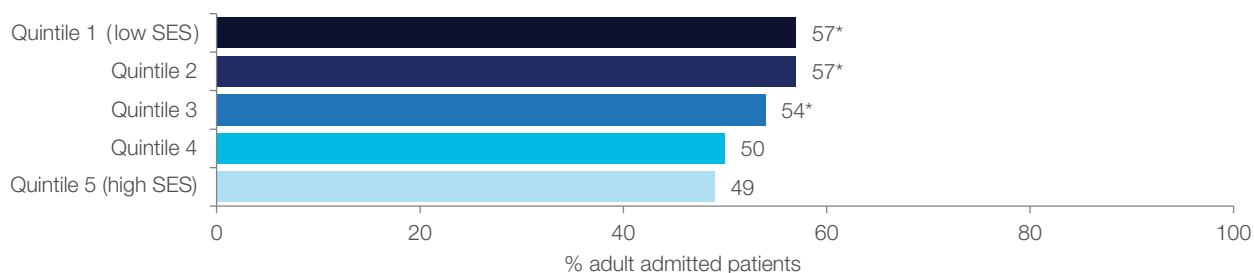


Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

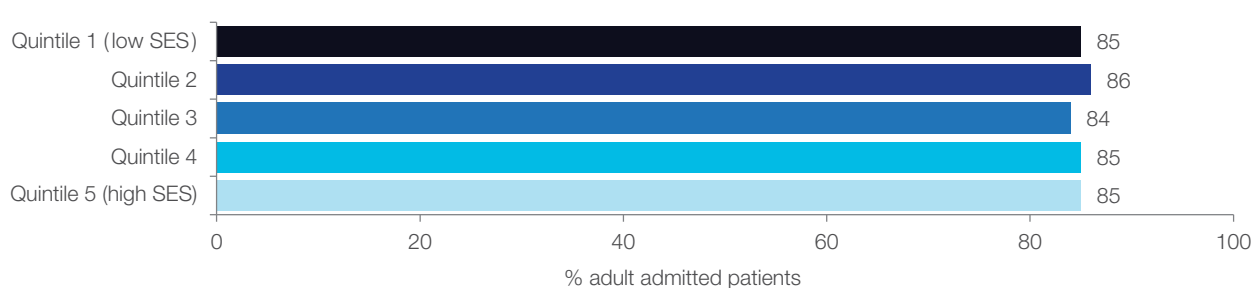
* Estimate is statistically significantly different to quintile 5 (high SES).

Figure 5.8 Percentage of adult admitted patients, by patient experience measure and SES, public hospitals, NSW, 2014

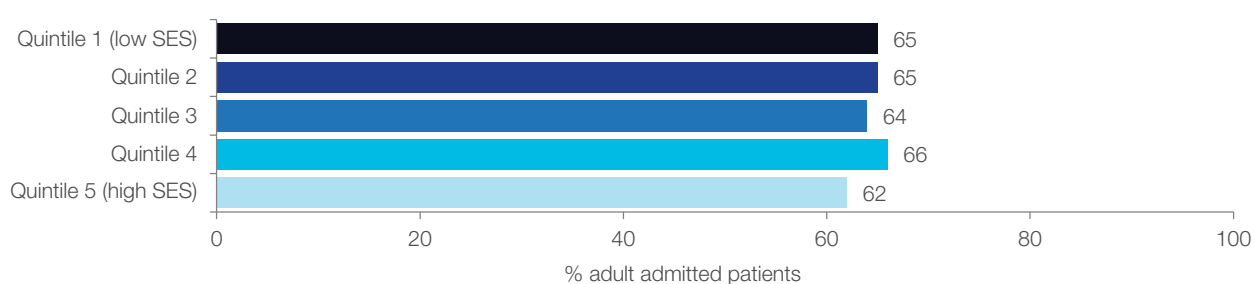
Did a health professional in the hospital tell you about medication side effects to watch for? (Yes, completely)



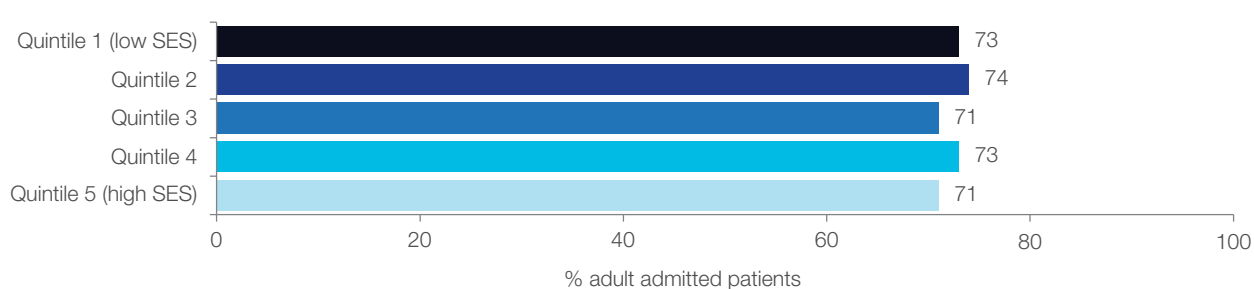
Did you feel you were treated with respect and dignity while you were in the hospital? (Yes, always)



Did you feel involved in decisions about your discharge from hospital? (Yes, definitely)



Did hospital staff take your family and home situation into account when planning your discharge? (Yes, always)



Source: BHI, Adult Admitted Patient Survey, 2014.

* Estimate is statistically significantly different to quintile 5 (high SES).

Disparities in effectiveness: Avoiding hospitalisations for chronic conditions

Disparities in rates of hospitalisation for chronic conditions have increased

Frequent use of ED and hospital services can be a reflection of poor control of chronic health conditions.

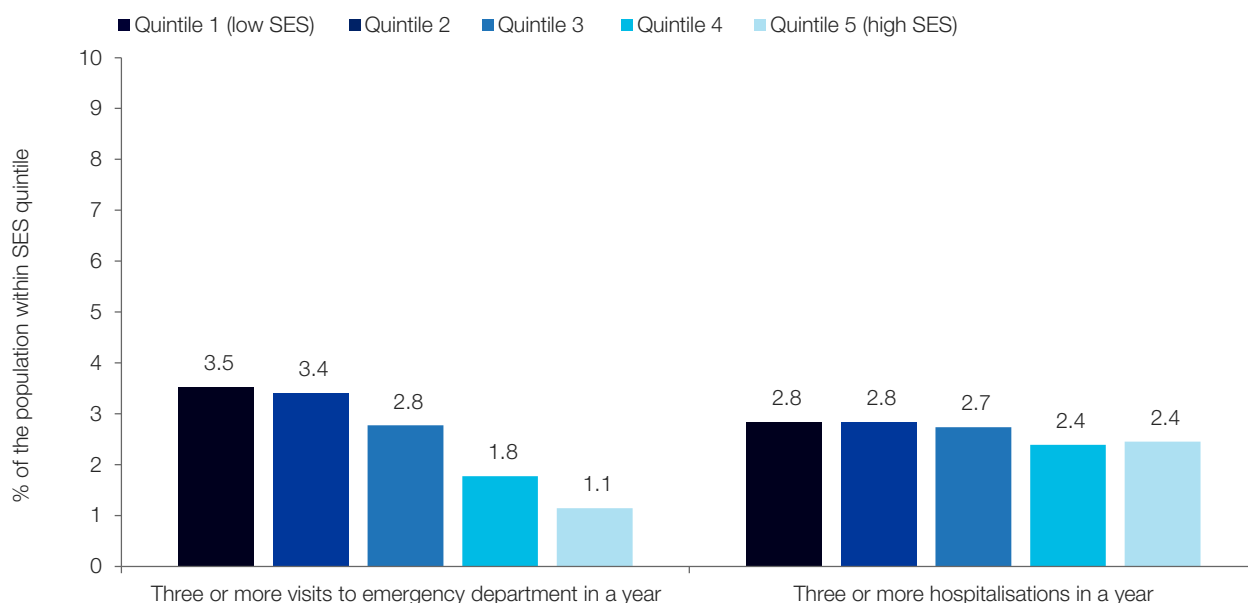
Among people living in low SES areas, 3.5% visited an ED three or more times during 2011–12. In contrast, among people living in high SES areas, 1.1% visited an ED three or more times. Socioeconomic differences in frequent hospitalisations were less pronounced (Figure 5.9).

Focusing particularly on asthma, over the time period 2003–04 to 2013–14, there were persistent disparities in asthma hospitalisation rates for people aged 5–34 years. In 2013–14, rates were 1.6 times greater among people from the lowest SES areas compared to those living in the highest SES areas (Figure 5.10). This difference may be due, in part, to

differences in asthma prevalence which is 19 per 100 children in low SES areas and 14 per 100 children in high SES areas.⁸

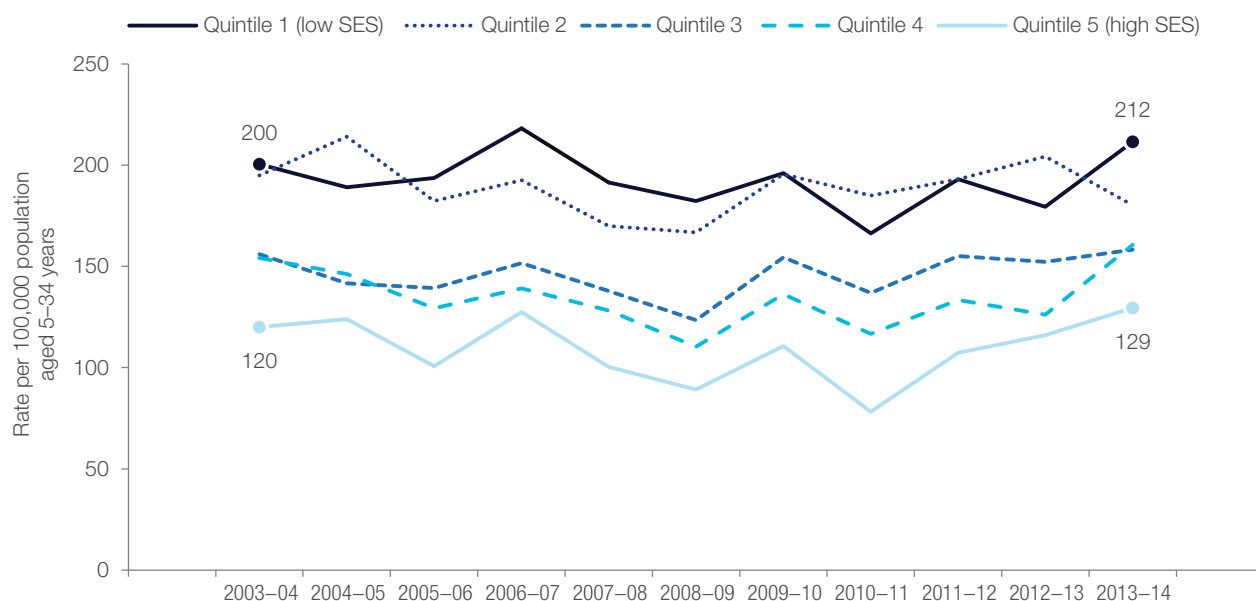
For a range of chronic diseases and vaccine-preventable conditions, hospitalisation rates were higher among people living in low SES areas. In 2013–14, hospitalisations for chronic obstructive pulmonary disease (COPD) ranged from 117 to 334 per 100,000 people from high and low SES areas, respectively (Figure 5.11).

Figure 5.9 Percentage of people with three or more ED visits or hospitalisations in a year, by SES, public and private hospitals, NSW, 2011–12



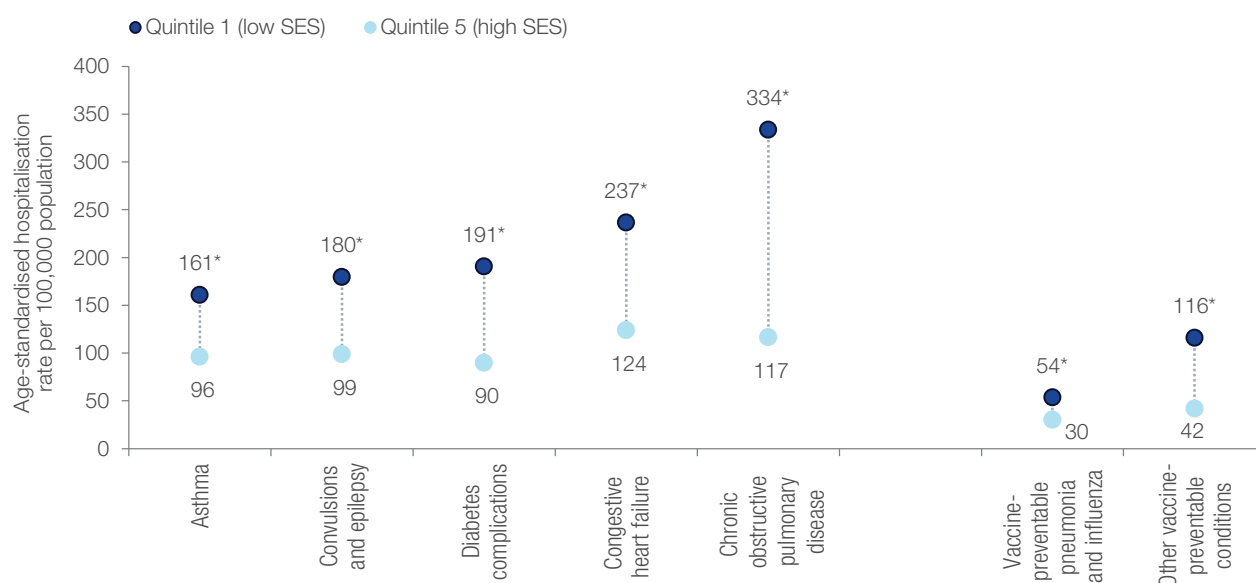
Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

Figure 5.10 Hospitalisations for asthma, per 100,000 persons aged 5–34 years, by SES, NSW, 2003–04 to 2013–14



Source: Centre for Epidemiology and Evidence, Health Statistics New South Wales, Sydney: NSW Ministry of Health. Available at: healthstats.nsw.gov.au

Figure 5.11 Hospitalisation rates for select chronic and vaccine-preventable conditions, high SES and low SES groups, NSW, 2013–14



Source: NSW Combined Admitted Patient Epidemiology Data and ABS population estimates (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health.

Note: Rates are age-adjusted using the 2001 Australian population.

* Estimate is statistically significantly different to quintile 5 (high SES).

Disparities in effectiveness: Readmissions, mortality and survival

Patients from high SES areas have higher rates of cancer survival

Measures of effectiveness include medium-term outcomes such as 30-day readmissions and mortality, and longer-term outcomes such as five-year survival.

High rates of unplanned readmission may indicate problems with care both within the hospital and in the community following discharge. In the period July 2009 to June 2012, the percentage of hospitalisations followed by an unplanned readmission in the 30 days following discharge were 17% for acute myocardial infarction (AMI), 22% for chronic obstructive pulmonary disease (COPD), and 23% for congestive heart failure (CHF). Readmission rates were significantly greater for patients from lower SES areas both before and after adjusting for patient characteristics such as age, sex and comorbidities (Figure 5.12).⁹

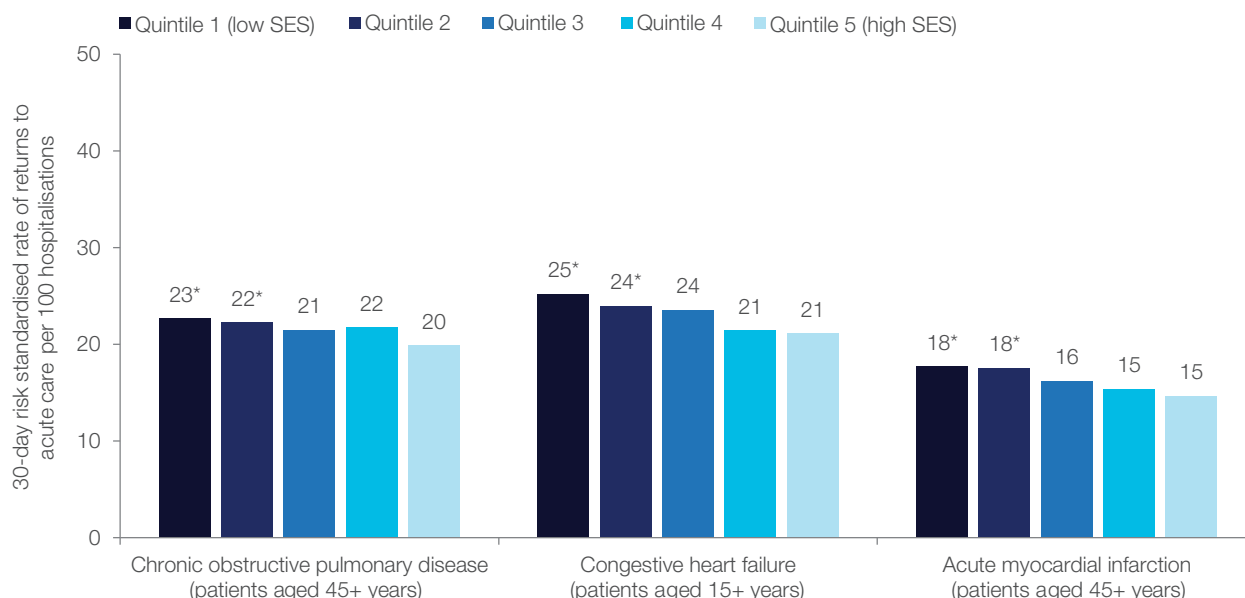
Patients from lower SES areas also had higher 30-day mortality following hospitalisation for AMI than the

highest SES group. Differences in mortality following hospitalisation for COPD and CHF were not significant (Figure 5.14).

Cancer survival reflects performance in early diagnosis and effective treatments for cancer. Five-year relative survival for a range of cancers in NSW was higher among people from high SES areas (Figure 5.14).

While five-year relative survival has improved over time, socioeconomic differences in survival persist (data not shown).¹⁰

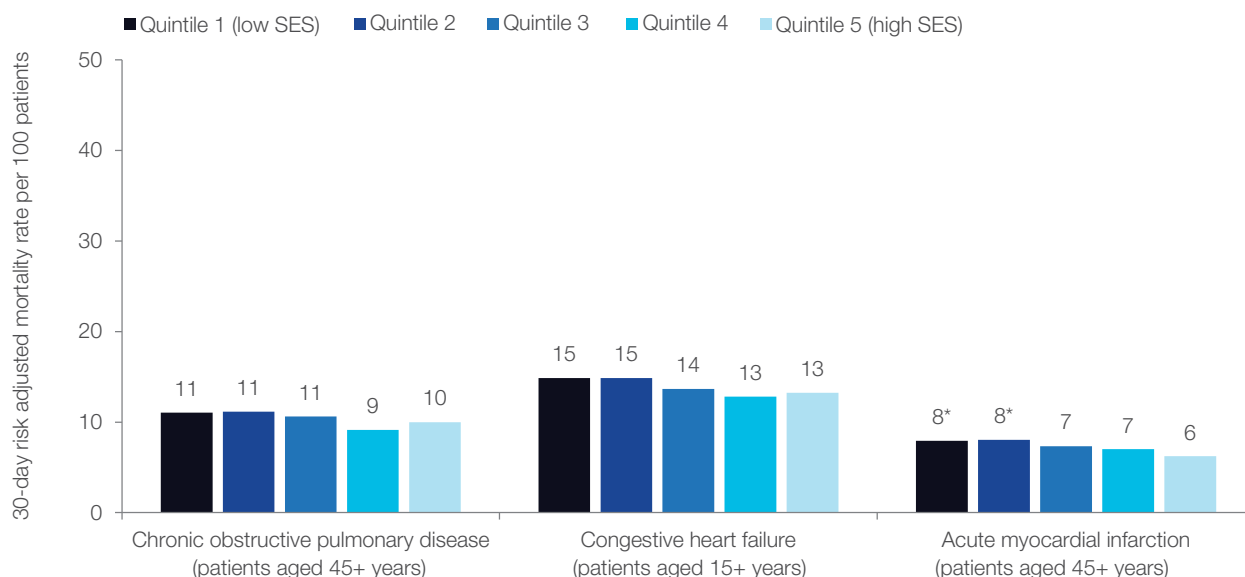
Figure 5.12 Risk standardised readmission rate within 30 days of discharge from public hospital for COPD, CHF, AMI, by SES, NSW, 2009–12



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

* Estimate is statistically significantly different to quintile 5 (high SES).

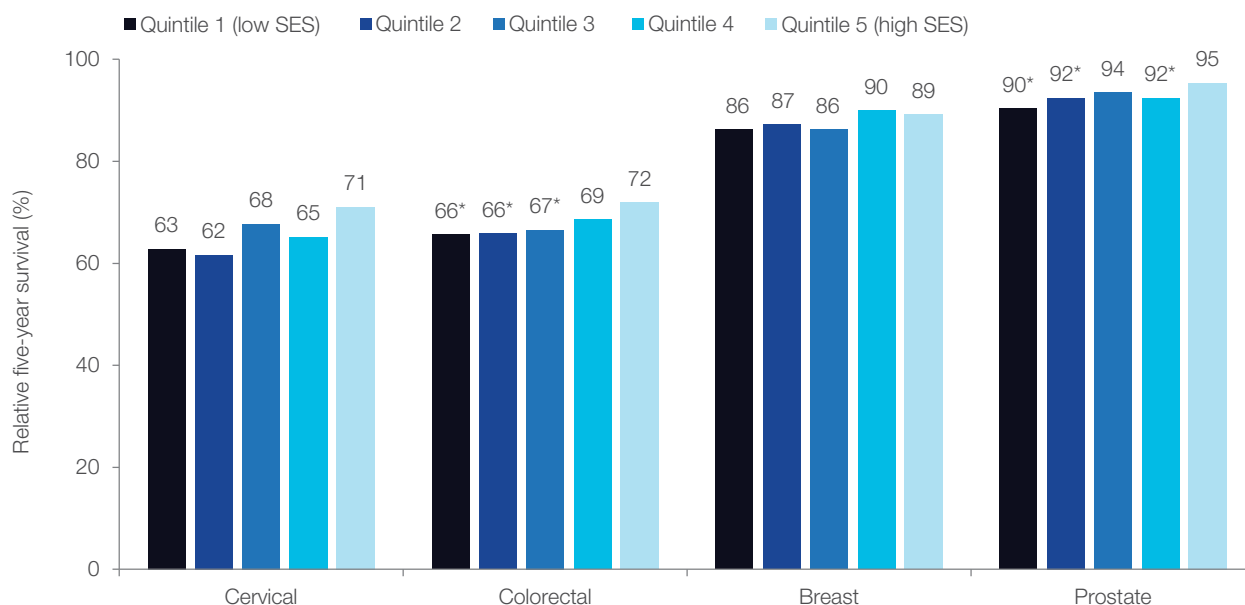
Figure 5.13 Risk standardised mortality rate within 30 days of hospitalisation for COPD, CHF, AMI, by SES, public and private hospitals, NSW, 2009–12



Source: NSW Ministry of health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

* Estimate is statistically significantly different to quintile 5 (high SES).

Figure 5.14 Five-year relative survival, by type of cancer and SES, NSW, 2005–09



Source: NSW Central Cancer Registry Data linked to AIHW National Death Index. NSW Ministry of Health, (SAPHaRI) cause of death, population and concordance files.

Note: The Cause of Death Unit Record File (COD URF) is provided by the Australian Coordinating Registry for COD URF on behalf of Australian Registries of Births, Deaths and Marriages, Australian Coroners and the National Coronal Information System. The linkage of the NSW Cancer Registry and National Death Index (NDI) was performed by the AIHW.

* Estimate is statistically significantly different to quintile 5 (high SES).

Disparities in effectiveness: Complications of care

Low SES is associated with higher rates of sepsis, but lower rates of deep vein thrombosis and pulmonary embolism

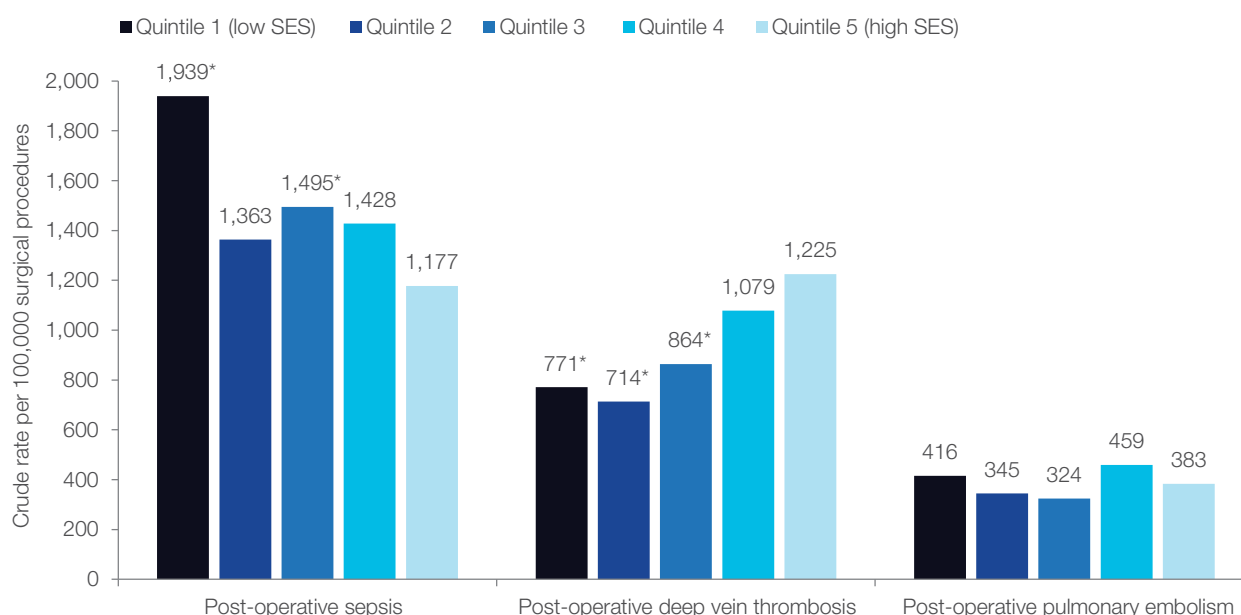
Effective care is care that does not subject patients to undue harm.

Rates of complications vary by the SES of patients' postcode of residence. Compared to high SES areas, hospitalised patients from low SES areas were less likely to suffer a deep vein thrombosis (DVT), but more likely to develop sepsis following surgical procedures (Figure 5.15).

In 2013–14, there were no significant disparities in rates of obstetric trauma in vaginal deliveries 'with instrument' (deliveries that use forceps, vacuum, etc.). For vaginal deliveries 'without instrument', there were differences in rates of obstetric trauma however they were less than three per 100 births across all quintiles (Figure 5.16).

Patient survey data show that among adults admitted to a NSW public hospital in 2014, 16% said they experienced a complication during or soon after their hospital stay. Results did not differ significantly by SES. However, when asked about the impact of any complication that occurred, people from low SES areas were more likely to report the impact was 'very serious' (23%) compared to the highest SES group (20%) (Figure 5.17).

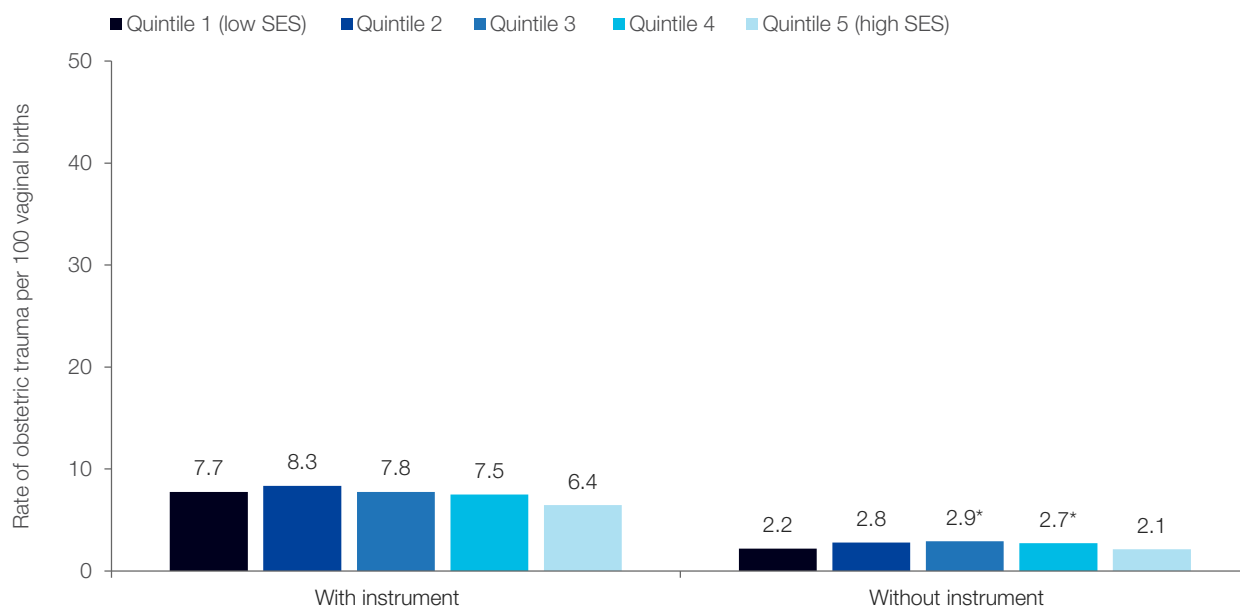
Figure 5.15 Rates of post-operative complications, by type and SES, public and private hospitals, NSW, 2013–14



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

* Estimate is statistically significantly different to quintile 5 (high SES).

Figure 5.16 Rates of obstetric trauma, by SES, public and private hospitals, NSW, 2013–14

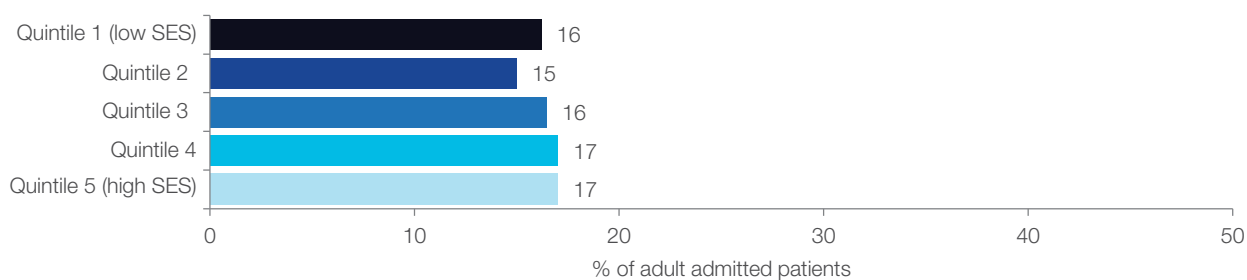


Source: NSW Ministry of health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

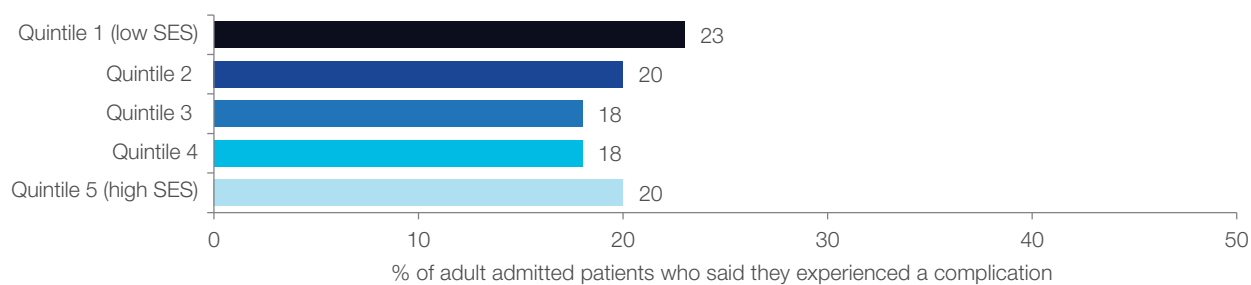
* Estimate is statistically significantly different to quintile 5 (high SES).

Figure 5.17 Percentage of adult admitted patients experiencing a complication and impact of the complication, by SES, public hospitals, NSW, 2014

Experienced: an infection, pressure wound, negative reaction to medication, fall, blood clot or any other complication during hospital stay or soon afterwards



The impact of this complication or problem was 'very serious'



Source: BHI, Adult Admitted Patient Survey, 2014.

Sustainability



Caring for the future

Sustainability

Caring for the future

Sustainability refers to the extent to which healthcare systems function in ways that meet patients' current health and healthcare needs without compromising the ability to meet needs in the future.¹ Sustainable systems adapt to changing circumstances, constraints, opportunities and demands.

There are very few direct measures of sustainability, and so assessment often focuses on process measures, particularly those that quantify interventions that have been proven to improve efficiency, impact and productivity.

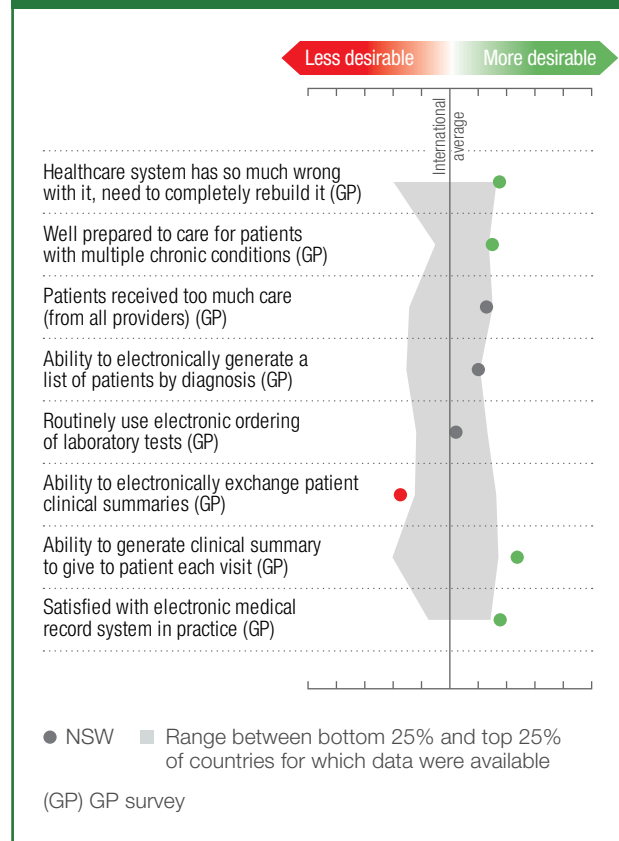
On sustainability measures, NSW does well with respect to:

- Very few GPs said the healthcare system has so much wrong with it, that it needs to be rebuilt
- GPs said they are 'well prepared' to care for patients with multiple chronic conditions
- GPs' satisfaction with the electronic medical record system they have chosen to use in their practice
- GPs' ability to generate clinical summaries for patients
- The staff engagement index improved across all NSW local health districts (LHDs) between 2011 and 2015.

NSW has room to improve in:

- GPs' ability to electronically exchange patient summaries.

Sustainability measures NSW compared



The 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians included a suite of 23 questions that canvassed issues related to sustainability in GP practices. There were 14 questions for which NSW GPs were significantly more positive than GPs in four or more comparator countries; and 10 questions for which NSW GPs were significantly less positive than GPs in four or more comparator countries (opposite page).

Overview of results

NSW compared with comparator countries

Country result relative to NSW: ■ Significantly better ■ Not significantly different □ Significantly worse

	NSW	Australia	Canada	France	Germany	Netherlands	New Zealand	Norway	Sweden	Switzerland	United Kingdom	United States
System functioning												
Healthcare system needs to be completely rebuilt	2	2	3	13	12	2	1	1	11	2	6	14
Quality of medical care patients receive has gotten worse	18	18	22	52	29	35	16	8	37	21	36	33
Patients receive too much care (all providers)	23	21	19	34	64	52	4	33	27	53	19	40
'Often' consider the cost to the system in treatment decisions	53	54	43	65	68	44	50	29	37	58	50	54
'Satisfied' with electronic medical record system	81	79	61	80	77	76	69	64	37	67	86	51

Clinic is 'well prepared' to manage patients with:

Dementia	46	46	42	29	58	66	42	69	58	45	64	39
Multiple chronic conditions	87	86	71	46	88	89	83	86	66	80	79	77
Severe mental health issues	33	34	24	14	32	45	24	57	14	26	43	16
Substance-use related issues	16	20	15	16	13	16	20	36	6	24	40	16

Clinic is 'well prepared' to manage care for patients in need of:

Home care services	45	47	39	40	67	81	55	78	51	62	60	44
Palliative care, including for cancer	45	48	42	33	56	94	63	54	25	46	81	38
Social services in the community (e.g. housing, meals)	38	41	28	21	70	25	48	42	44	53	44	31
Language translation	26	33	12	12	21	11	24	49	60	21	33	36

Clinic can electronically:

Exchange laboratory results	39	41	29	52	29	73	80	77	80	61	66	47
Exchange patient clinical summaries	36	39	20	50	23	79	84	84	71	60	64	45
Transfer prescriptions to a pharmacy	16	13	18	28	6	99	5	99	100	25	60	87
Order of laboratory tests	61	59	38	35	73	34	55	63	97	57	70	71

Ability to electronically generate:

Clinical summary for each visit to give to the patient	84	84	47	44	60	79	84	47	62	43	79	78
List of patients by diagnosis (e.g. diabetes or cancer)	89	90	64	57	86	100	99	75	85	32	99	78
List of all laboratory results for an individual patient	77	77	63	37	58	70	86	60	74	40	90	64
List of all medications taken by an individual patient	77	78	56	35	69	93	86	82	70	48	96	74
List of all patients taking a particular medication	81	82	46	49	76	98	95	45	58	34	98	61
List of patients due or overdue for tests/preventive care	89	90	49	43	75	99	99	17	40	29	97	67

Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

GP views on overall quality and quantity of care, and the need for system change

More than two in 10 NSW GPs said their patients get too much care

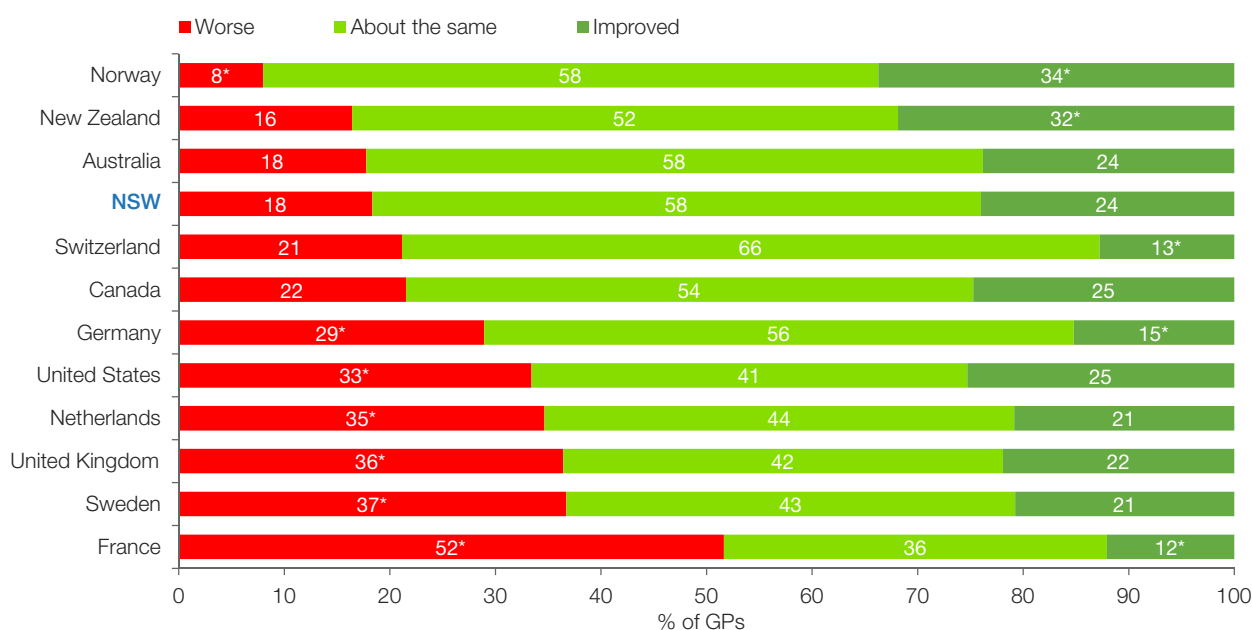
Sustainability depends upon assuring quality of care, securing better value for healthcare dollars, and only providing care that is of proven benefit to patients.

In 2015, 24% of NSW GPs said that the quality of care provided to their patients improved over the preceding three years, while 18% said that quality of care deteriorated. Across comparator countries, only Norway had significantly fewer GPs reporting deterioration in quality of care (Figure 6.1).

When asked to reflect on their overall view of the healthcare system, 2% of NSW GPs said the system has so much wrong with it that it needs a complete rebuild. This was a significantly smaller proportion than in the United Kingdom, France, Sweden, Germany and the United States. The same question was asked in 2014, and 6% of NSW adults aged 55+ years said a complete rebuild was needed (Figure 6.2).

In NSW, 23% of GPs said their patients receive too much care, a lower percentage than in six comparator countries – suggesting relatively low levels of discretionary care. However, 20% of GPs said their patients receive too little care – raising the question of whether the reported overuse is fundamentally a distributive issue (where the overused resources should be redirected to those in greater need), rather than a sustainability issue (where there is a systemic overuse of resources and an absolute reduction is warranted) (Figure 6.3).

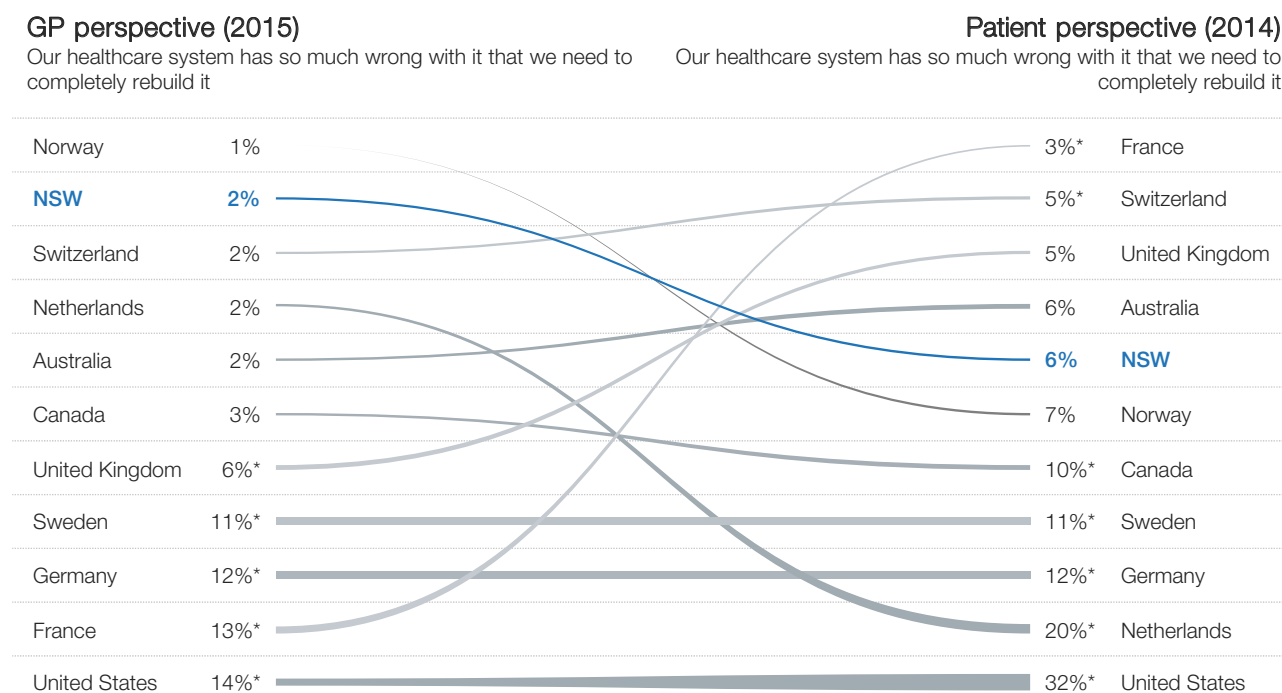
Figure 6.1 GP perspectives on changes in the quality of care their patients receive compared to three years ago, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

* Estimate is statistically significantly different to NSW.

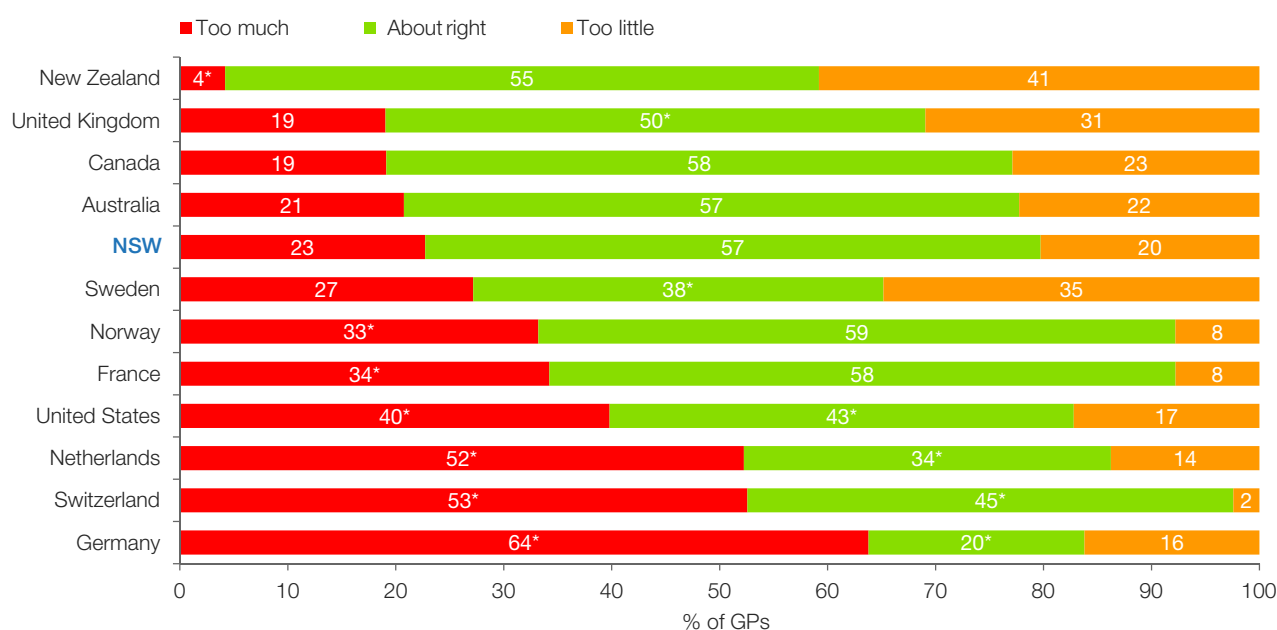
Figure 6.2 Provider and patient perspectives: Percentage who said their healthcare system needs a complete rebuild, NSW and comparator countries, 2014 and 2015



Sources: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

* Estimate is statistically significantly different to NSW.

Figure 6.3 GP perspectives on amount of healthcare their patients receive from all providers, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

* Estimate is statistically significantly different to NSW.

An increasing demand for healthcare

NSW is ageing and healthcare needs are increasing

The drive to improve sustainability in healthcare systems is fuelled by, on one hand, constrained growth in the resources available to deliver healthcare; and on the other hand, increasing demand for services – to provide more care, and more expensive care, for more patients.^{2,3}

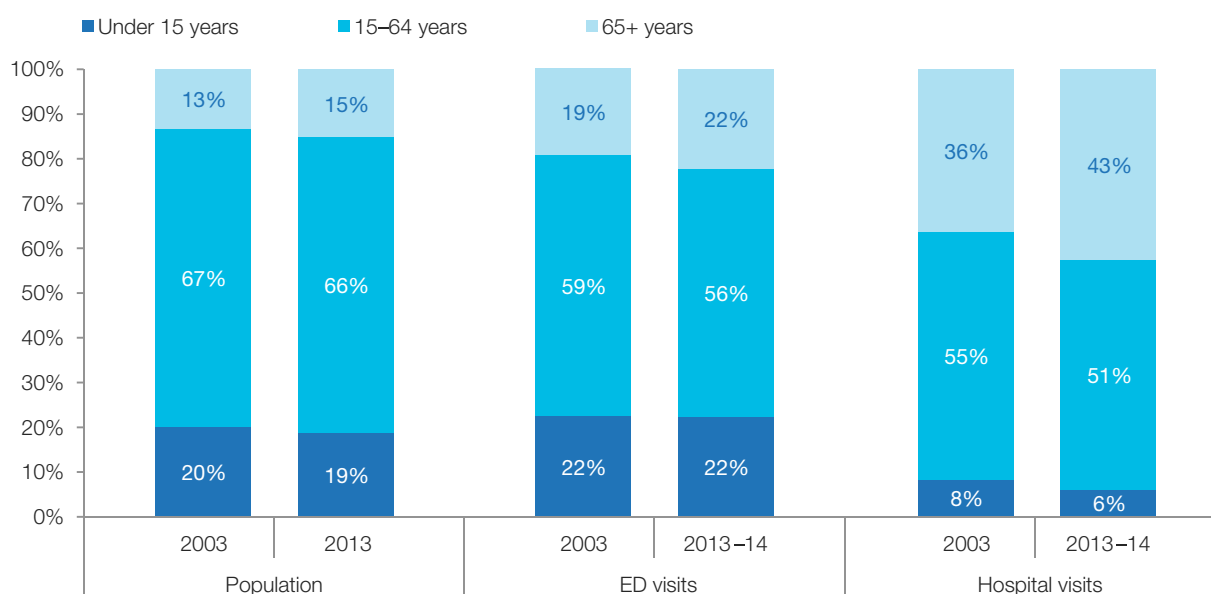
NSW is ageing – the 65+ year age group is the fastest growing in NSW.⁴ Population ageing is often cited as an important sustainability issue because healthcare expenditure is generally higher in older people. In 2008–09, expenditure in Australia for adults aged 85+ years was almost 20 times higher per person than expenditure on children aged 5–14 years.⁵

There are, however, a number of studies that show population ageing, on its own, is a modest driver of increasing healthcare expenditure.⁶

In NSW between 2003–04 and 2013–14, the percentage of the population aged 65+ years increased from 13% (876,033 people) to 15% (1,124,124 people). In the same period, the share of emergency department (ED) visits made by this population increased from 19% to 22% and the share of hospitalisations increased from 36% to 43% (Figure 6.4).

The rate of hospitalisations per 100,000 population is increasing – both in general terms and for almost all disease groups. Categorising the reasons for hospitalisation using the International Classification of Disease scheme, hospitalisations for most chapters increased over the period 2003–04 to 2013–14. Only for three chapters – cancer (neoplasms); circulatory diseases; and maternal, neonatal and congenital conditions was a decrease recorded. At a more specific diagnosis level, the steepest increase was seen in dialysis hospitalisations (Figure 6.5).

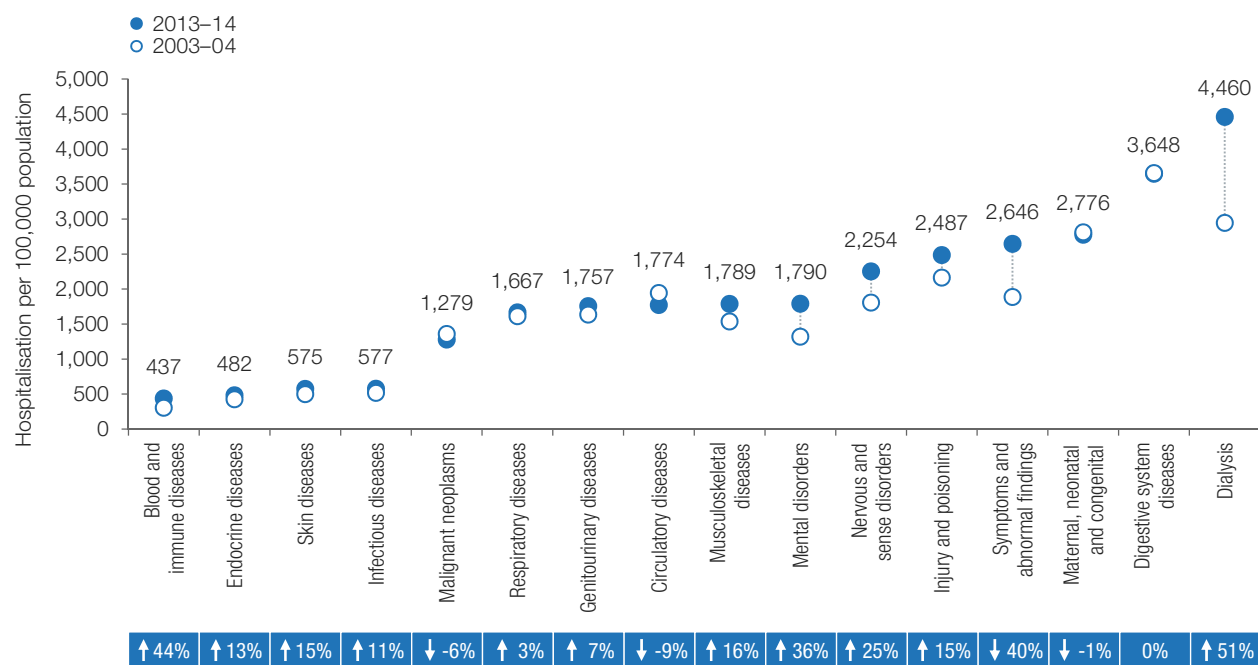
Figure 6.4 Percentage of population, ED visits and hospitalisations by age group, NSW, 2003 and 2013–14



Source: Centre for Epidemiology and Evidence, NSW Ministry of Health, accessed 5 January 2016. NSW Ministry of Health, Admitted Patient Data Collection and Emergency Department Data Collection.

Note: ED distributions are for 2014–15, hospitalisations are for 2013–14, the most recently available complete year at the time of analysis.

Figure 6.5 Hospitalisation rates by disease group, NSW, 2003–04 and 2013–14



Source: NSW Combined Admitted Patient Epidemiology Data and ABS population estimates (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health.

Patients with high levels of healthcare service use

In 2013 in NSW, 1% of the population used 47% of hospital bed days

In most healthcare systems there is an increasing number of people with complex health needs. The prevalence of multimorbidity – defined as the presence of two or more chronic medical conditions in an individual – is rising and is associated with increasing healthcare utilisation.⁷

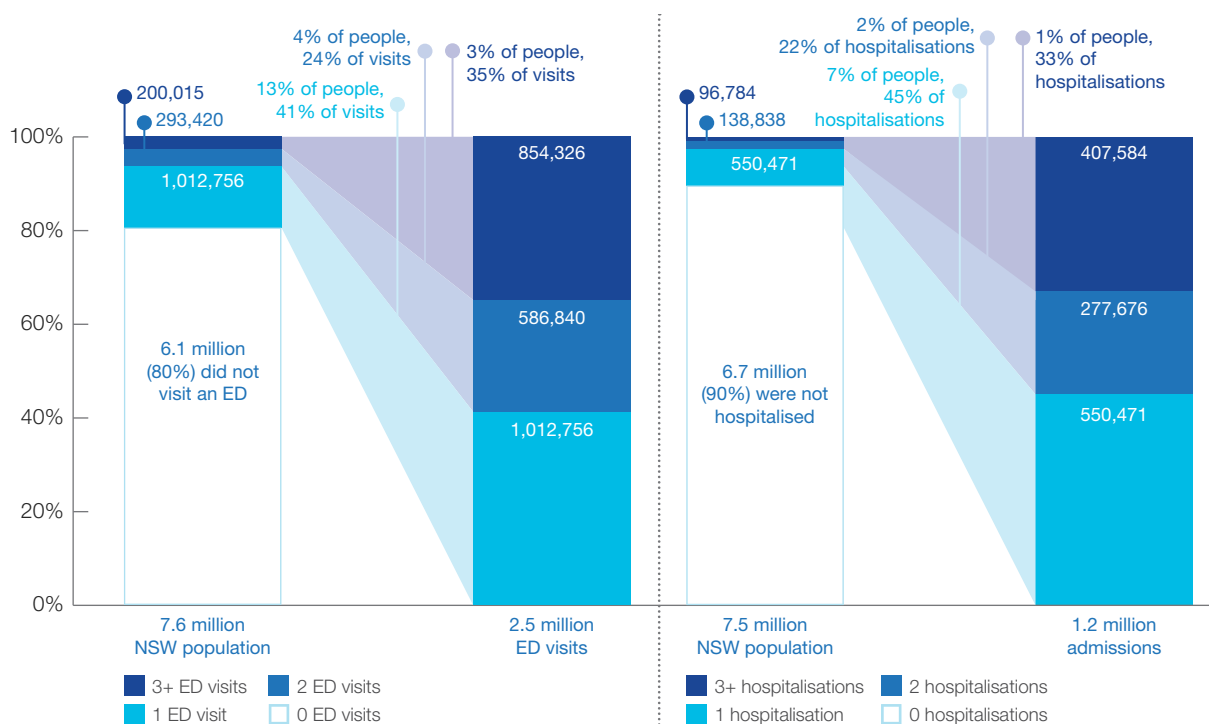
In NSW there are patterns of more intensive utilisation, with a marked concentration of ED visits and hospital use among a relatively small number of people. In 2014–15, there were 200,015 people (3% of the population) who visited an ED three or more times, and they accounted for 35% of all visits during the year (Figure 6.6).

For hospitalisations, there were 96,784 people (1% of the population) who were hospitalised overnight three or more times during the year 2013–14, and they accounted for 407,584 hospitalisations (33% of all hospitalisations) and 3.2 million bed days (47% of total bed days, data not shown) (Figure 6.6).

Studies have shown that very intensive utilisation is a pronounced, but often temporary, phenomenon.⁷ However, the prevalence of such ‘super-utilisation’ in NSW is increasing. Between 2003 and 2013, the number of people with three or more hospitalisations in a year increased from 71,430 to 96,784 (a 35% increase); and the number of patients with three or more ED visits between 2010 and 2014 increased from 161,791 to 200,015 (a 24% increase) (data not shown).

In 2015, 87% of GPs said their practice was ‘well prepared’ to manage care for patients with multiple chronic conditions. However, less than half said they were ‘well prepared’ to manage patients with dementia (46%), severe mental health problems (33%) or substance abuse issues (16%) (Figure 6.7).

Figure 6.6 Frequency of ED visits (2014–15) and hospitalisations (2013–14) NSW public hospitals



Sources: NSW Ministry of Health, Emergency Department Data Collection 2014–15; Admitted Patient Data Collection 2013–14 (includes overnight hospitalisations in public and private hospitals).

Figure 6.7 Percentage of primary care providers who said their practice is 'well prepared' to manage care, by type of care and patient condition, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

Literacy and patient engagement

More than four in 10 adults in NSW have low levels of literacy

Sustainability measures often focus on the extent to which the services supplied represent efficient and cost-effective healthcare. Sustainability can also be assessed in terms of processes to reduce demand for services, for example through more effective preventive services and the provision of support for patients to allow them to successfully manage their own care.

Health literacy is of particular importance in influencing demand, and there is a clear relationship between health literacy and physical and mental health.⁹ Low levels of health literacy also prevent people from engaging effectively in decisions about their health and healthcare.

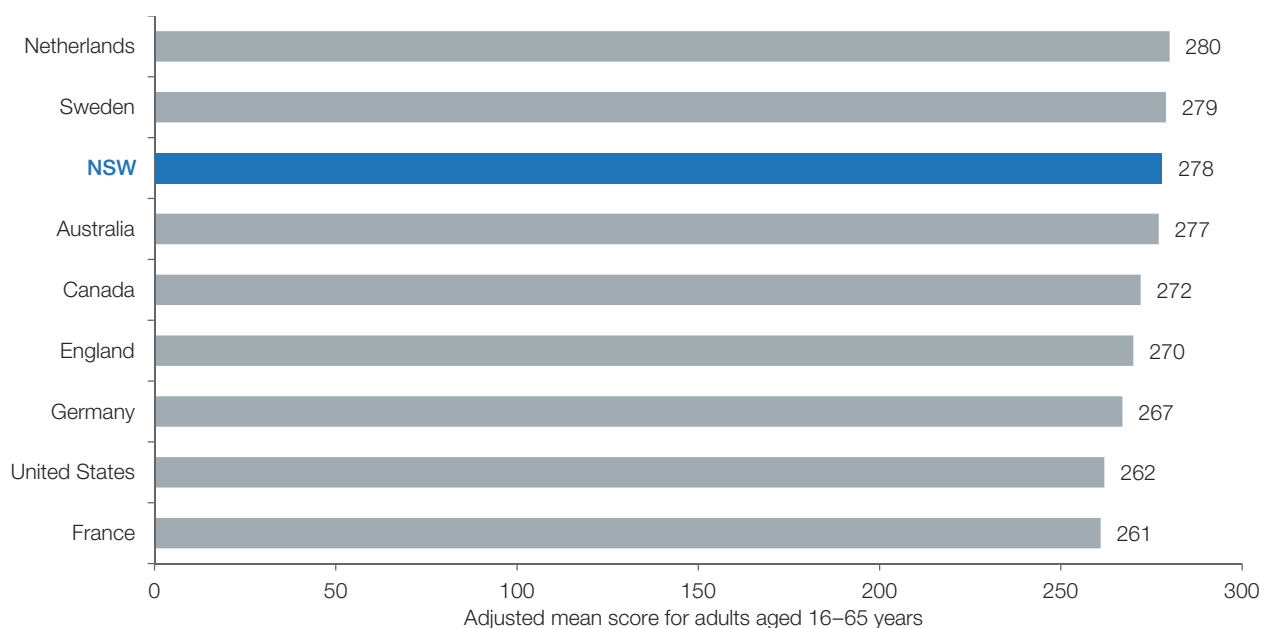
The Organisation for Economic Cooperation and Development (OECD) Programme for the International Assessment of Adult Competencies is an international survey of adult skills based on face to face interviews with adults aged 16–65 years. It assesses literacy,

numeracy and problem solving skills in technology-rich environments. The mean literacy score among NSW people aged 16+ years was 278, a higher score than in many comparator countries (Figure 6.8).

National studies have shown that 43% of NSW adults have literacy skills at or below level 2.ⁱ This, in practical terms, means that written health information is of limited use and healthcare providers must find different ways of engaging with these patients (Figure 6.9).

Levels of patient engagement in care can be assessed by patient surveys. In 2014, 60% of NSW public hospital patients said they were ‘definitely’ involved as much as they wanted to be in decisions about their care. Among jurisdictions with comparable patient survey questions only South Australian patients reported more positively on engagement in care (Figure 6.10).

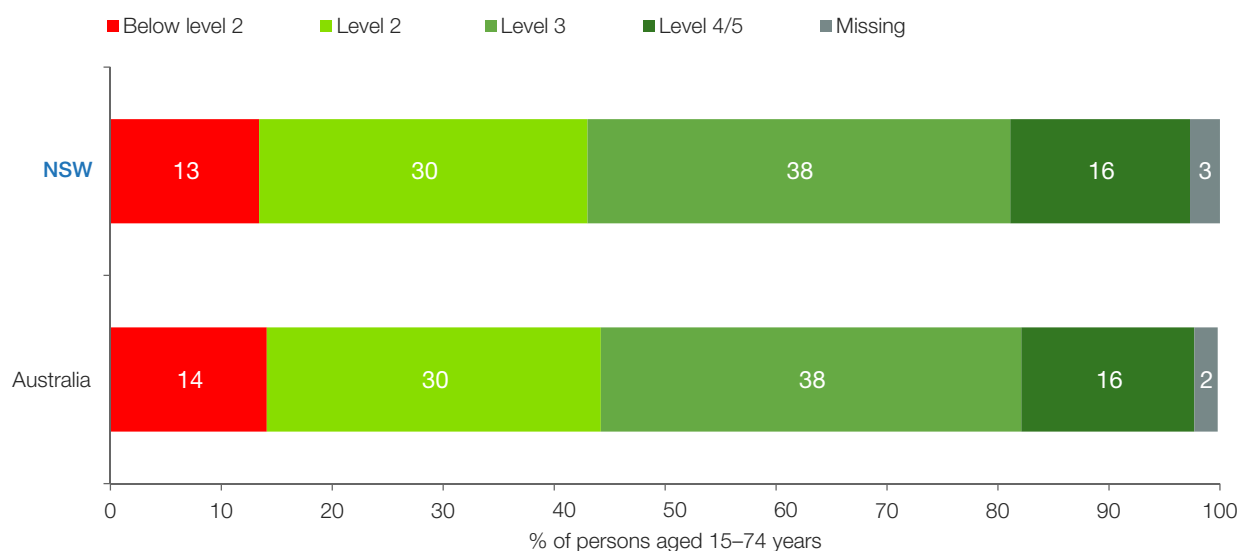
Figure 6.8 Mean literacy score, adults aged 16–65, NSW and comparator countries, 2011–12



Source: OECD Skills Outlook 2015, ABS Programme for the International Assessment of Adult Competencies 2011–12.

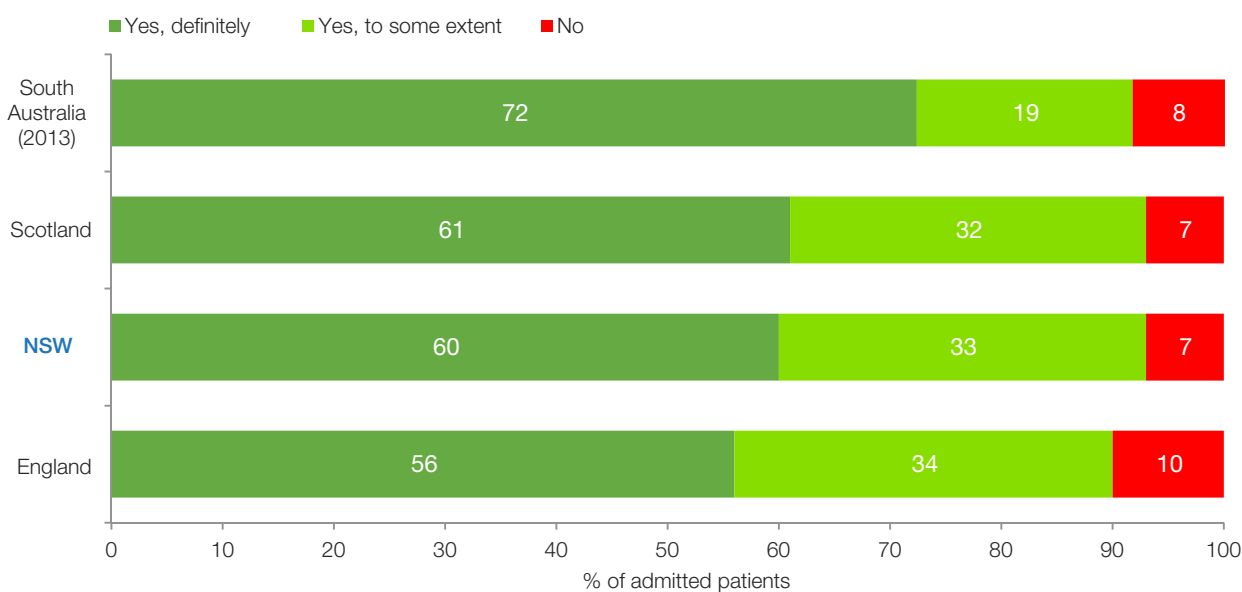
i. For health literacy in particular, the ABS 2006 Adult Literacy and Life Skills Survey reported that approximately 59% of Australians aged 15–74 years achieved scores at or below level 2 for the health domain.

Figure 6.9 Percentage of adults by literacy skill level, NSW and Australia, 2011–12



Source: ABS, Programme for the International Assessment of Adult Competencies 2011–12.

Figure 6.10 Percentage of admitted patients, by involvement in decisions about their care, public hospitals, NSW and available comparators, 2014 (or nearest year)



Sources: BHI, Adult Admitted Patient Survey, 2014. Measuring Consumer Experience, SA Public Hospital Inpatient Annual Report September 2014. Scottish Inpatient Patient Experience Survey 2014 Volume 1: National Results. NHS National results from the 2014 Inpatient Survey May 2015.

Healthcare resourcing

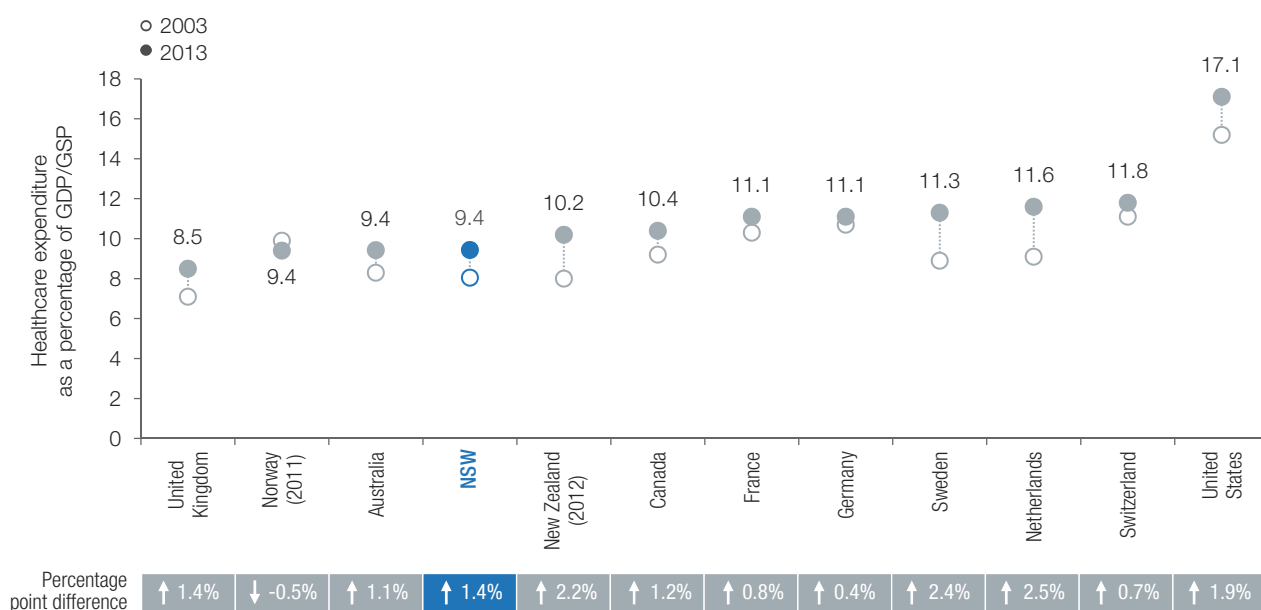
About half of NSW GPs said they consider the costs to the healthcare system when making treatment decisions

In 2013 there was \$5,944 spent on healthcare for every person in NSW. The proportion of the gross state product (GSP)* dedicated to healthcare spending increased between 2003 and 2013 from 8.1% to 9.4%. This increase is similar to that seen in gross domestic product (GDP)* in other developed healthcare systems (Figure 6.11).

Over the same period, the number of full-time equivalent (FTE) practising doctors per capita in NSW increased by 22% while the number of FTE practising nurses per capita remained relatively constant (Figure 6.12).

Much of the expenditure of the healthcare system is affected by clinicians' decision-making. In 2015, 53% of NSW GPs said they 'often' consider the cost to the healthcare system when making treatment decisions. Internationally, this percentage ranged from 29% in Norway to 68% in Germany (Figure 6.13).

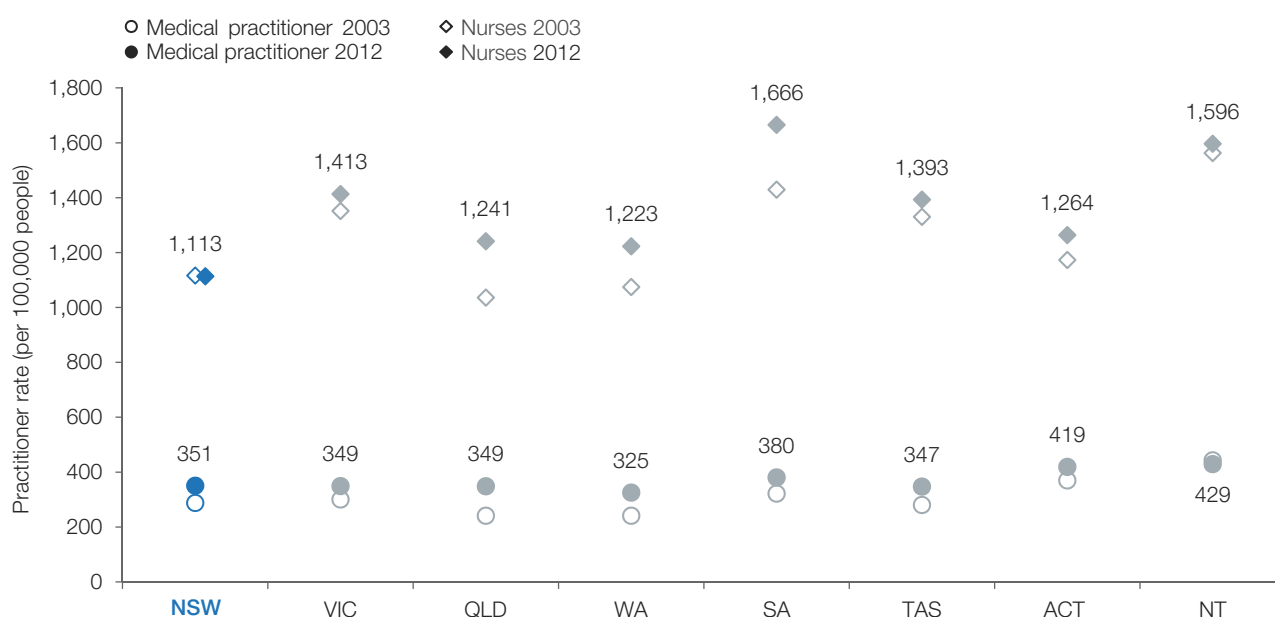
Figure 6.11 Total healthcare expenditure as a percentage of gross domestic (or state) product, NSW and comparator countries, 2003 and 2013 (or nearest year)



Sources: OECD, Health Statistics 2015. AIHW customised request 2015.

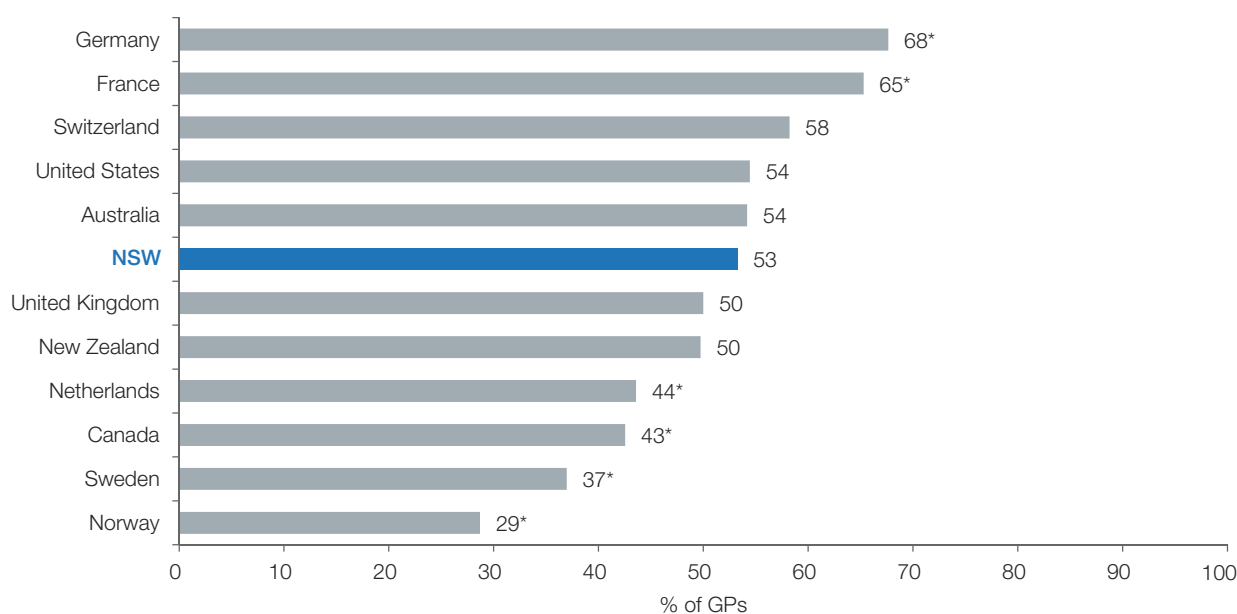
* Gross domestic product (and gross state product) measure national (or state) income. They refer to the total market value of goods and services produced in the country (or state) after deducting the cost of goods and services used in the process of production but before deducting allowances for the consumption of fixed capital.

Figure 6.12 Nurses and medical professionals per 100,000 population, Australian states and territories, 2003 and 2012



Sources: Productivity Commission, Report on Government Services 2015: Volume E: Health. AIHW (unpublished), National Health Workforce Data Set. ABS (unpublished), Estimated Resident Population (based on the 2011 ABS Census of Population and Housing).

Figure 6.14 Percentage of providers who said they 'often' consider the costs to the healthcare system when making treatment decisions, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

* Estimate is statistically significantly different from NSW.

Electronic and technology support

Most NSW GPs are satisfied with electronic medical record system in their practice

Technology both contributes to the increasing demands on healthcare systems with constant releases of innovations, equipment and diagnostic tools, and at the same time, offers potential to improve value for money, productivity and efficiency. Electronic medical records have been associated with a range of benefits to sustainability, including reducing duplication of administrative data, provision of appropriate information to guide clinical decision-making and a reduction in complications of care.¹⁰

GPs in NSW are responsible for their own electronic medical record systems. In 2015, 81% of them said they were 'satisfied' with the system in use in their practice – a higher percentage than in most comparator countries (Figure 6.15).

NSW GPs also reported a relatively high capacity for generating information electronically (Figure 6.16). Conversely, the percentage of NSW GPs who said their practice 'routinely' uses methods to share information electronically (other than test orders) was low compared to GPs in most other countries (Figure 6.17).

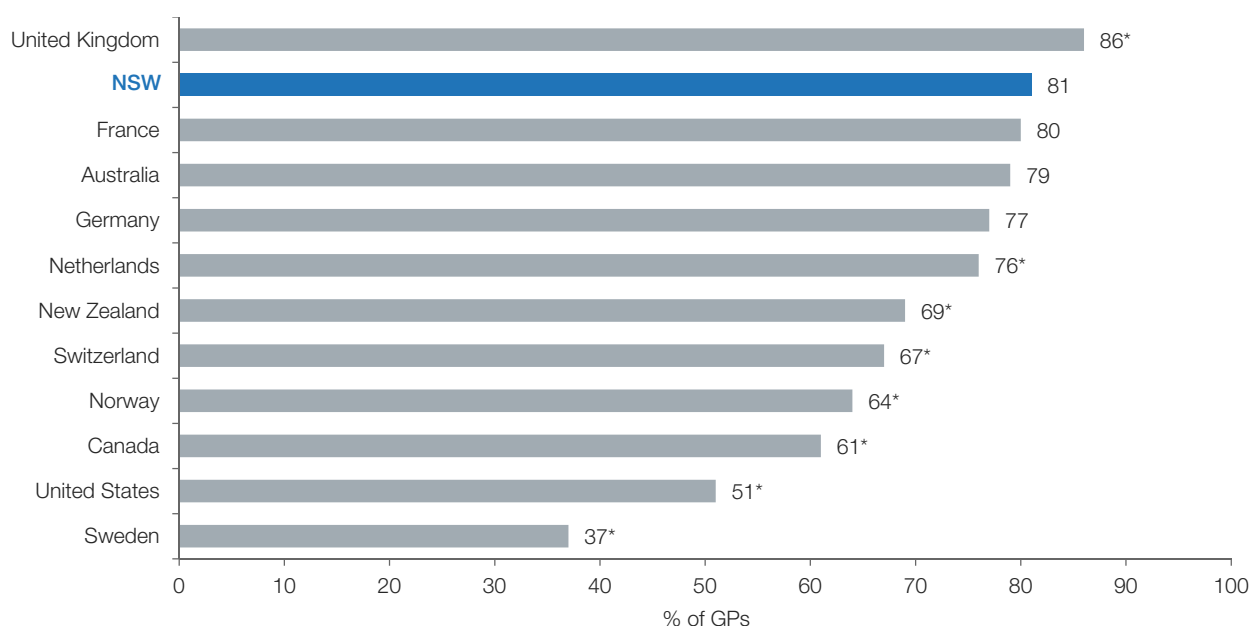
Interpreting NSW results

There are a number of different electronic medical record systems operating in NSW, including:

- The Commonwealth's My Health Record, an online summary of an individual's health information, controlled by the patient
- NSW Health electronic medical records, containing patients' medical information related to their care within hospital, outpatient clinics or community health
- GPs' electronic medical records, consisting of electronic information about a patient recorded in an individual practice.

GPs do not have direct access to the NSW Health electronic medical records, but do receive electronic discharge summaries from public hospitals.

Figure 6.15 Percentage of GPs who said they are 'satisfied' with electronic medical record system, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

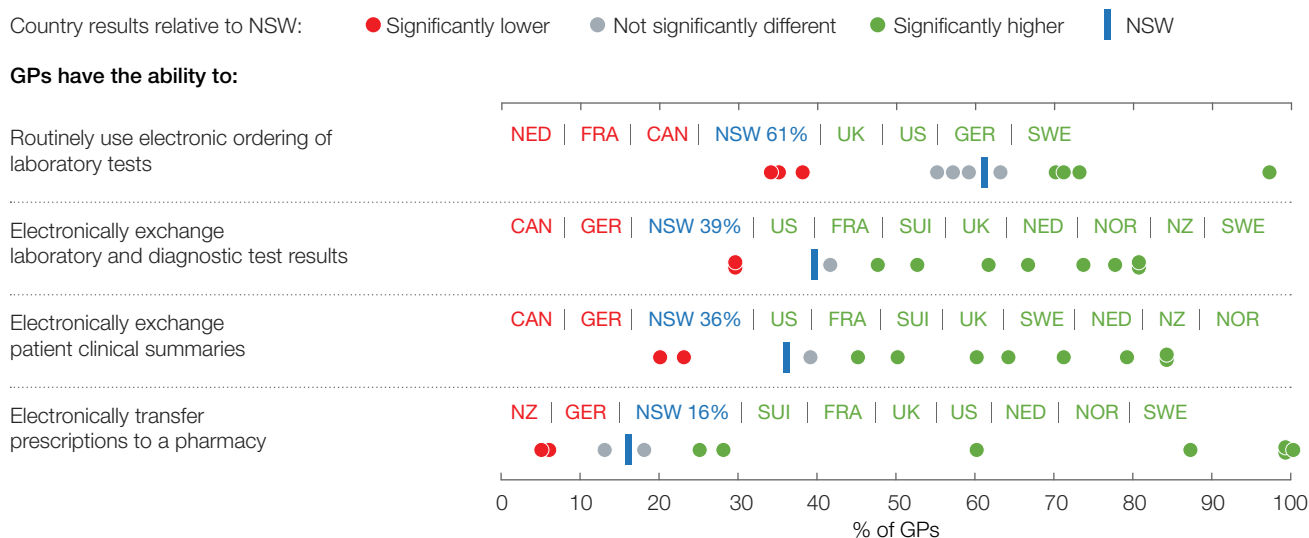
* Estimate is statistically significantly different to NSW.

Figure 6.16 Percentage of GPs who said their practice has the ability to generate information electronically, by type of information, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

Figure 6.17 Percentage of GPs who said their practice uses the following methods of electronic information sharing, NSW and comparator countries, 2015



Source: 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

Staff engagement

The staff engagement index improved in all NSW local health districts

Sustainability is dependent on retaining a committed and engaged workforce.

In NSW, a public healthcare system-wide staff survey has been conducted since 2011. In 2015, 41% of NSW Health's workforce (56,000 staff and volunteers) responded to the survey. The survey includes a wide range of questions about roles, staff development, management, work-life balance, and organisational culture.

Across LHDs, the percentage of staff who said in 2015, their organisation is making the necessary decisions to meet future challenges ranged from 28% in Northern NSW to 52% in Southern NSW (Figure 6.18).

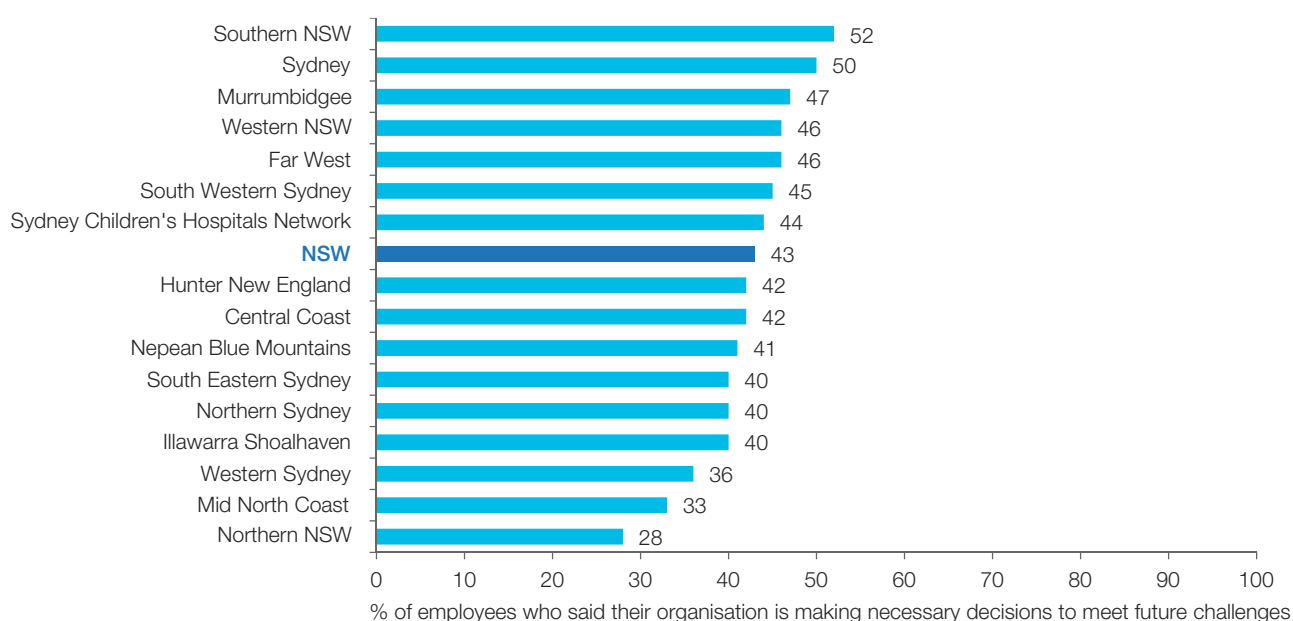
The survey results include a staff engagement index. The index measures organisational commitment,

defined as 'employees' willingness to invest their personal effort in the success of the organisation'. The index encompasses three themes – 'say' (pride in the workplace and willingness to recommend it as a good place to work); 'stay' (sense of belonging and satisfaction with work); and 'strive' (motivation).

Across NSW there was an increase in the index between 2011 and 2015. Increases were reported across all LHDs, with the largest increase (13 percentage points) in Southern NSW (Figure 6.19).

Similarly, the percentage of staff in NSW who said they received appropriate training increased between 2011 and 2015. There was variation in the extent of change across LHDs – from no increase in three LHDs to a 12% increase in Southern NSW (Figure 6.20).

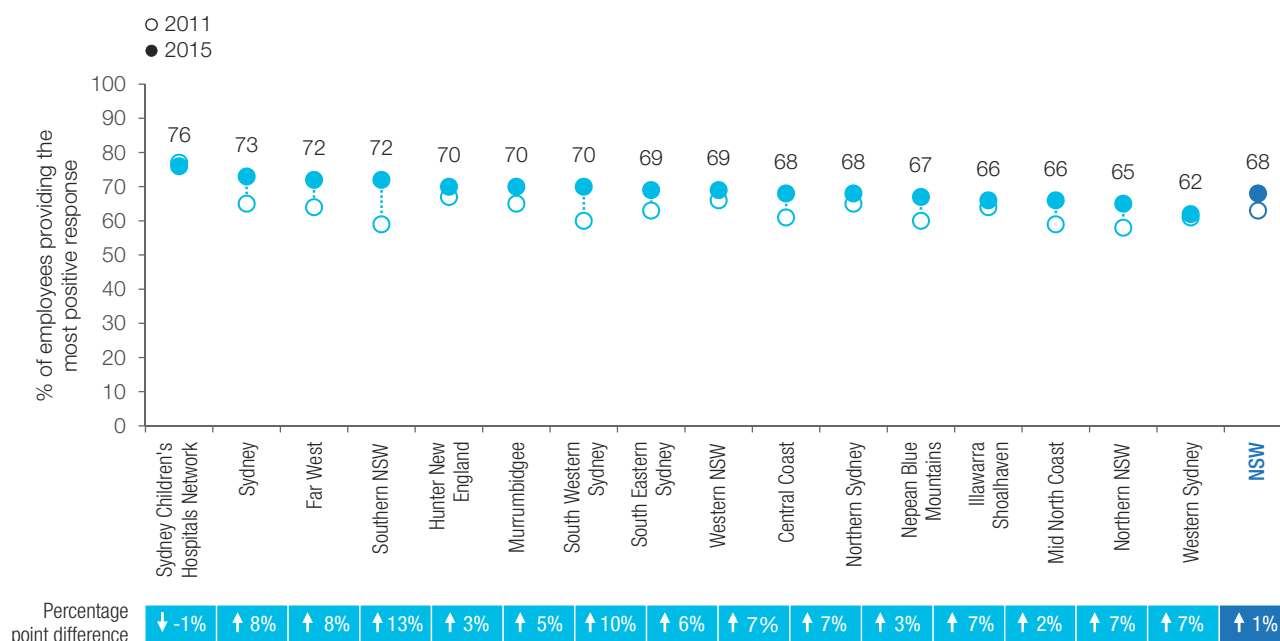
Figure 6.18 Percentage of NSW Health employees who said their organisation is making necessary decisions to meet future challenges, by local health district, NSW, 2015



Source: NSW Ministry of Health, YourSay Survey 2015.

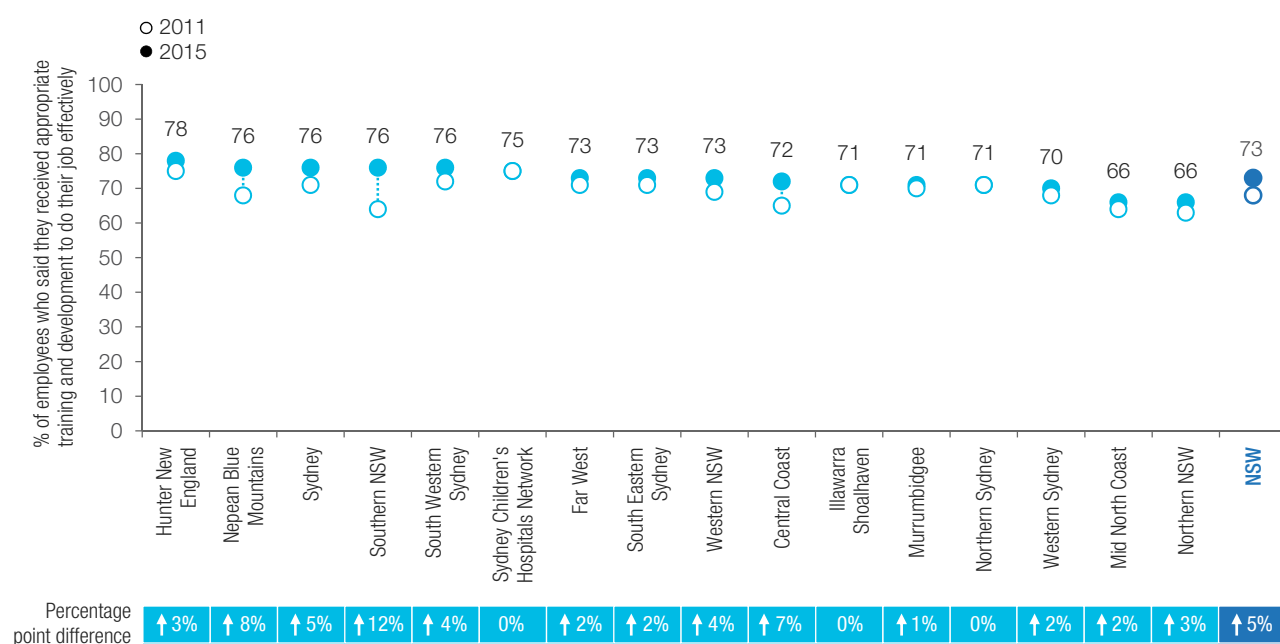
Note: Question not asked in 2011.

Figure 6.19 Percentage of NSW Health employees who gave the most positive response on the employee engagement index, by local health district, NSW, 2011 and 2015



Source: NSW Ministry of Health, YourSay Survey, 2011 and 2015.

Figure 6.20 Percentage of NSW Health employees who said they received appropriate training to be effective, by local health district, NSW, 2011 and 2015



Source: NSW Ministry of Health, YourSay Survey, 2011 and 2015.

10 key findings

- 1 The NSW healthcare system performs well.**
- 2 A range of value for money indicators reflect positively on NSW** – potential years of life lost at a system level; average length of stay in hospitals; and sustainability in primary care are all areas of strong performance.
- 3 Over time, there have been improvements** – in emergency department (ED) timeliness measures, use of ED for primary care, and cancer survival.
- 4 Patient engagement is good in international terms** – yet only 36% of NSW GPs said they ‘routinely’ give chronic disease patients written instructions about how to manage their care.
- 5 Maternity care varies across performance dimensions** – mixed results in antenatal care, relatively high rates of caesarean section and mid-range results for low birthweight babies and obstetric trauma.
- 6 Less positive performance in surgery** – relatively long waiting times for elective procedures, high complication rates, and low levels of timely hip fracture surgery.
- 7 Care is not always well integrated** – NSW GPs were less positive than those from other systems about coordination of care with social services, specialists and hospitals. Levels of test duplication are relatively high.
- 8 Primary care performs relatively well** – of 25 primary care measures, NSW was highly ranked for seven – and mid-range for 15.
- 9 There are barriers to access** – NSW is in the lower quartile of comparator countries for skipped care due to cost, and 32% of people had unmet needs for out-of-hours GP care.
- 10 Results are poorer for low SES groups** – in terms of waiting times for elective surgery; five-year relative survival for prostate and colorectal cancer and potentially avoidable hospitalisations.

10 key findings expanded

1 The NSW healthcare system performs well...

Set alongside Australia and 10 other countries with high performing healthcare systems, NSW is no laggard in overall performance.

Of the 59 measures for which there are comparative data available, NSW is positioned in the upper quartile of comparator countries for 15 measures, is in the lower quartile of comparator countries for 14 measures and is within the middle two quartiles for 30 measures.

However, NSW does not sit at the forefront in any dimension of performance nor does it excel in any particular healthcare sector or clinical area. There is room to improve.

2 A range of value for money indicators are positive...

NSW performs strongly in achieving good overall outcomes for the amount of money invested in healthcare. Relative to comparator countries, NSW has lower levels of potential years of life lost, shorter average lengths of hospital stays, low levels of unnecessary diagnostic test duplication, and a low administrative burden placed on GPs.

3 Over time, performance has improved...

Over the past five years, healthcare performance in NSW has improved in emergency department (ED) timeliness measures, such as the time to start treatment and total time patients spent in the ED. There has been a decrease in the use of EDs for primary care, and improvements in cancer survival.

4 Patient engagement is relatively good but there is room to improve...

NSW is placed in the upper quartile with regards to GPs routinely giving their chronic disease patients a written plan about how to manage their own care at home. While this is a strong relative result, in absolute terms, only 36% of NSW GPs said they routinely gave written plans and 47% of patients said they had been given a written plan. Within NSW, results from five different hospital-based surveys conducted in 2013 and 2014, showed the percentage of patients who said they were 'definitely' engaged in decisions about their care and treatment ranged from 60% among adult admitted patients to 74% among cancer outpatients.

5 Performance in maternity care varies across performance dimensions...

For antenatal care, only 60% of pregnant women had their first antenatal care appointment in the initial 14 weeks of their pregnancy, almost all (96%) did however receive antenatal care five or more times during their pregnancy. Most (90%) were asked during antenatal care how they were feeling but only 60% said a health professional completely discussed their worries and fears with them. Among pregnant smokers, only 49% said they were offered programs to help them quit. Overall 32% of births were via caesarean section – a relatively high rate internationally. Within NSW, rates of elective caesarean rates are highest in private hospitals. For outcomes, NSW is mid-range internationally for low birthweight babies and obstetric trauma rates.

6 Less positive performance in surgery...

A number of indicators related to surgical care indicate a less positive position for NSW relative to other countries. NSW has longer median waiting times for common elective procedures than most other countries. It is placed in the lower quartile of comparator countries for post-surgical complication rates; and for timely provision of hip fracture surgery – despite significant improvement over the past decade.

7 Care is not always well integrated...

NSW GPs were less positive than those from other systems regarding coordination of care with social services, specialists and hospitals. NSW was in the lower quartile among comparator countries regarding duplication and waste. Among NSW GPs, 35% said their patients had to have a test or procedure repeated because results were unavailable – and 9% of patients said that doctors ordered a medical test that they felt was unnecessary because it had already been done.

8 Primary care performs relatively well...

Of the 25 measures of primary care, NSW is in the upper quartile of comparator countries for seven, mid-range for 15, and in the lower quartile for three. Lower quartile results focused on childhood vaccinations, coordination with social services, and chronic obstructive pulmonary disease hospitalisations.

Appropriateness measures featured areas of strong performance. For four out of 10 primary care appropriateness measures, NSW was highly ranked.

Most NSW GPs reflected positively on their practice – 87% said it is well prepared to manage care for patients with multiple chronic conditions. However less than half said they are well prepared to manage

patients with dementia (46%), severe mental health problems (33%) or substance abuse issues (16%). GPs in NSW were less likely to say their practice routinely uses methods to share information electronically (other than test orders).

9 There are barriers to accessing healthcare...

NSW tends to perform better than certain countries such as Canada, France and the United States on access but is consistently outperformed by the Netherlands and the United Kingdom. There are barriers to access – NSW is placed in the lower quartile for skipped care due to cost and a NSW survey showed that 32% of adults said they had unmet need for out-of-hours primary care.

10 Results are poorer for low SES groups...

Among patients who received non-urgent elective surgery in public hospitals, those from low socioeconomic status (SES) areas were more likely to be treated in hospitals with longer median waiting times. Overall, the median waiting time for patients living in low SES areas was almost 100 days longer than for patients living in high SES areas. Five-year relative survival for a range of cancers in NSW was higher among people from high SES areas. While five-year relative survival has improved over time, socioeconomic differences in survival persist. There were however no significant differences across SES groups in patients' responses to survey questions on: whether they were treated with respect, were involved in decisions about their discharge, and had their home situation taken into account when planning their discharge.

Appendices

Appendix A

Data sources and methods

Healthcare in Focus 2015 draws on 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 following.

2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians

Samples of practising physicians were drawn from government or private lists of primary care doctors in Australia, Canada, Germany, France, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom and the United States. General practice or family physicians were surveyed in all countries, as well as internists and paediatricians in the United States, Germany, and Switzerland. Throughout this report primary care physicians are referred to as GPs. National sample sizes ranged from 503 to 2,905.

In NSW, 401 interviews were completed between March and June 2015. The response rate of the survey was 25% in Australia and ranged from 8% in France to 65% in Sweden. Results were weighted so they were representative of the age, gender, and regional distribution of primary care physicians in each country.

Full results for all questions used in the report are available as a supplementary product. For information on sample sizes and responses rates for The Commonwealth Fund's surveys, see the Technical Supplement.

2014 Commonwealth Fund International Health Policy Survey of older adults

The survey reflected the experiences of 25,530 adults aged 55+ years in the same 11 countries as the 2015 survey. The response rate was 31% for Australia. In NSW, 2,800 adults were surveyed between March and May 2014. NSW results were weighted to represent the age, sex, education, and regional distribution of the state.

Organisation for Economic Cooperation and Development (OECD)

The OECD Health Database provided indicator definitions and international data for mortality, hospitalisation, procedure and expenditure indicators. Figures included in report chapters draw on available data from the cohort of 11 countries that participate in the Commonwealth Fund International Policy Survey. Summary synthesis graphs, based on interquartile ranges, include available data from the 34 OECD countries. For more information on the synthesis and standardised score methods for OECD and The Commonwealth Fund survey data see the Technical Supplement.

Australian Institute for Health and Welfare (AIHW)

AIHW provided a customised report upon request containing healthcare expenditures in NSW and Australia based on definitions that allow fair comparisons with OECD countries. AIHW reports were the source for Australian hospital statistics on emergency department, elective surgery and overall hospital statistics.

Australian Bureau of Statistics (ABS)

ABS provided a customised report on NSW results from their 2014–15 Patient Experience Survey. The sample of 27,341 people aged 15+ years is weighted to represent the estimated population in private dwellings in each state and territory.

NSW Ministry of Health

Four key data sources included: the NSW Admitted Patient Data Collection (APDC) (a count of all admitted patient services provided by public and private hospitals in the state); the Emergency Department Data Collection (EDDC) (a count of all emergency department services provided by public hospitals with electronic data collection); and the Waiting List Collection On-line System (a count of patients waiting for planned treatment; it covers public patients, either at public hospitals or contracted to private hospitals); NSW Adult Population Health Survey (in place since 1997; sample size ranges from 8,000–16,000).

NSW Patient Survey Program

The latest Adult Admitted Patient Survey includes responses from 27,000 patients admitted to a NSW public hospital between January and December 2014 (adjusted response rate 43%). Emergency Department Patient Survey includes 18,301 patients who visited an emergency department in a NSW public hospital between April 2014 and March 2015 (adjusted response rate 27%). For more information on the NSW Patient Survey Program see: bhi.nsw.gov.au/nsw_patient_survey_program

Statistical Reporting

Differences are generally only discussed when they are statistically significant (i.e. 5% or less likelihood that the results are due to chance). In graphical representations statistically significant differences are denoted with an asterisk * or shading as noted.

For international survey data analysis, logistic regression was used to compare the performance of all other countries (and the 'rest of Australia') with NSW. While significance testing compared results of NSW with the 'rest of Australia', the results for 'Australia' shown in figures and referred to in text are the national results. For patient survey analysis, results were denoted as significantly different from NSW, where confidence intervals did not overlap.

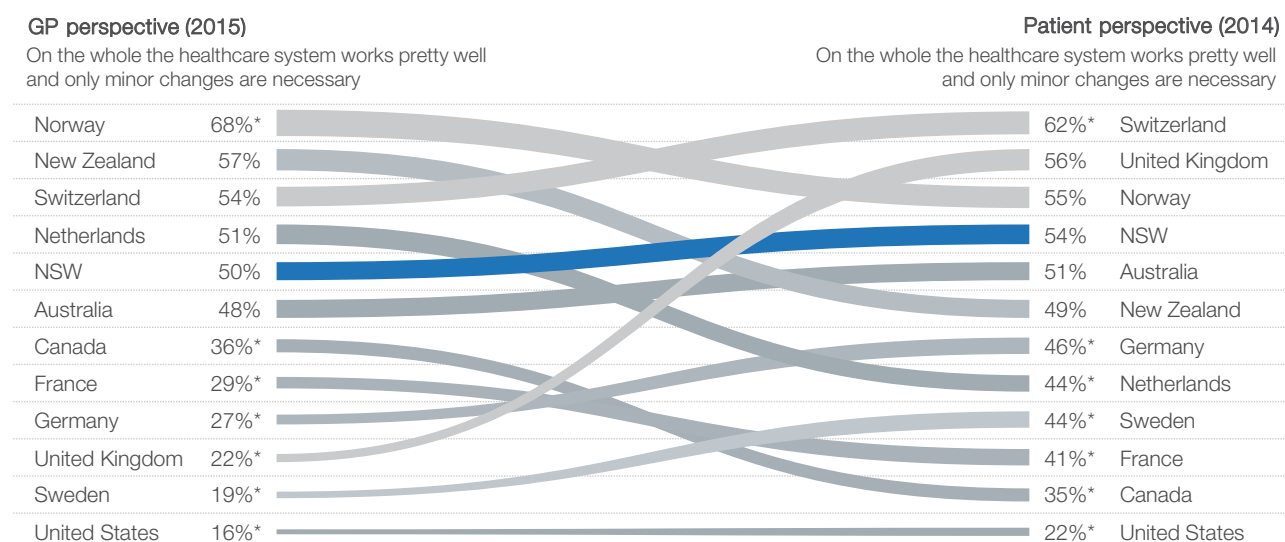
When hospital variation is provided, highlighted hospitals differ from the NSW result based on statistical testing. Statistical significance is affected by sample size and so there may be some hospital results that appear to differ from the NSW result yet are not highlighted; this is a consequence of limited statistical power to detect differences in small samples. Appendix C provides values for hospital-level results used in the report for public hospitals, and all private hospitals combined, where available.

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

Appendix B

Interpreting selected graphs

Example 1 Comparing provider and patient perspectives graphs



The graph displays the percentage of primary care providers giving a selected response in the first column, and the percentage of patients or population who responded to a similar question in the second column. In this case, in NSW, 50% of GPs and 54% of people aged 55+ years said that overall the healthcare system works pretty well.

The aim is to show the position of NSW relative to comparator countries from each perspective. Among 12 jurisdictions, NSW is positioned fifth from the GP perspective and fourth from the population perspective. The asterisks next to the percentage shows which countries are statistically significantly different from NSW to highlight meaningful differences.

The 'ribbon' connecting the columns shows how the position of each jurisdiction compares across patient and provider perspectives. In this case the US is ranked last from both perspectives.

While comparing relative position is the main goal, the absolute values or levels are also of interest. The size of the ribbon on each side reflects the percentage for each surveyed population reporting the selected measure. In this case, the NSW ribbon stayed about the same size with a relative width of 50 on one side and 54 on the patient/population side.

Limitations

Different years: Surveys are based on 2015 for provider perspectives and 2014 for perspectives of adults aged 55+ years. Responses are subject to media and policy changes at the time of interviews.

Relative position versus level: The NSW position on one perspective might be higher relative to other countries on one perspective, while the value is lower compared to the other perspective (provider, patient).

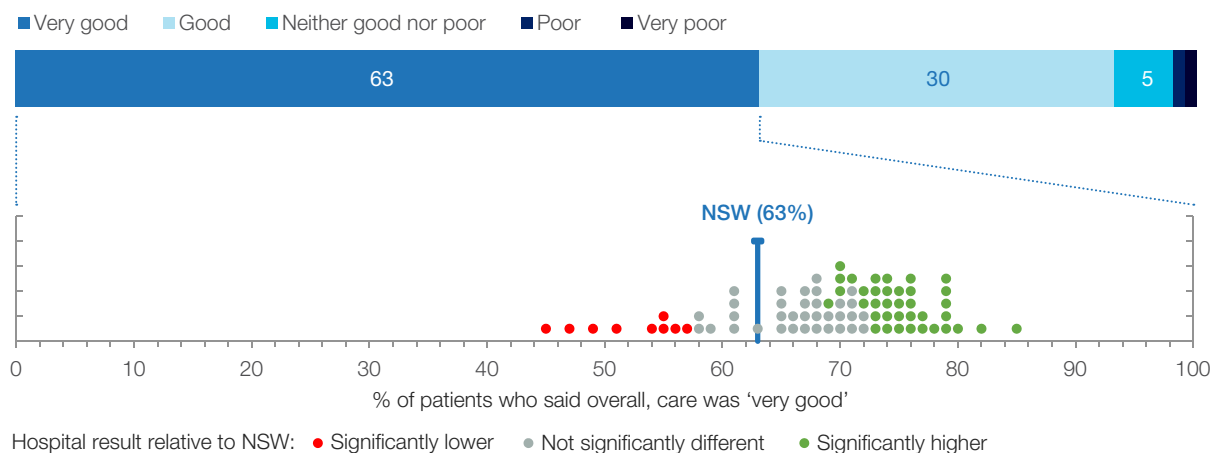
Relative position/ranking masks absolute differences:

This approach can mask the wide variation in one perspective compared to the other, or between countries. The statistical testing, asterisks note is one way of addressing this for comparisons to NSW.

Question alignment: In some cases providers are asked to respond based on their views of patient experiences (do they find their patients have difficulty paying for medication) or about their practice (such as after-hours arrangements), in these cases comparing the percentages or size of the 'ribbon' is not as clear. Further, providers have many patients and they are responding about 'average' experiences, and these cases percentages are not expected to align.

Example 2 Distribution of survey question responses, with hospital variation on main category

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



For a selected patient survey question, this graph displays two types of results: the percentage of patients giving each possible answer, followed by the range of hospital results for the selected 'main' response category.

In the example, 63% of adult admitted patients rated the care they received in hospital as 'very good', 30% said it was 'good', 5% said 'neither good nor poor' and the remaining 2% said 'poor' or 'very poor'.

The second part of the graph shows the hospital variation, where each dot represents the percentage of patients who said 'very good', the main answer of interest here, for a public hospitals with 30 or more respondents. In the example, hospital results range from 45% to 85% saying 'very good'. Where there are several hospitals at the same level, dots are stacked up, for example the four dots at 61% represent the hospitals with that result.

Hospitals that are shaded as red or green to denote the results are statistically significantly lower or higher than NSW. All hospital results, and those highlighted as higher than, or lower than, the NSW estimate are provided in Appendix C.

The goal of this graph is to provide the full range of responses for NSW, with a focus on the variation across hospitals in the percentage reporting the selected main category with shading to highlight statistically significant differences. Questions with several significant differences may point to variation that is due to modifiable factors.

Appendix C

Hospital-level results (part I)

Table 1 Hospital results from accessibility and appropriateness chapters

Hospital result relative to NSW:

- Significantly better
- Not significantly different
- Significantly worse

	Time waited from specialist to admission was 'about right' (%)	Hip fracture surgery within two days (%)	Nurses cleaned hands or used gloves before touching hospital patients (%)	Professional discussed medication side effects in hospital (%)	Patient 'completely' given enough information about managing condition at home (%)
NSW	62	73	67	53	73
Private hospitals		65			
Armidale and New England Hospital	61		73	39	78
Auburn Hospital	57		67	61	72
Ballina District Hospital	66		69	69	81
Bankstown/Lidcombe Hospital	49	65	74	57	70
Bateman's Bay District Hospital	51		69	55	78
Bathurst Base Hospital	64		75	72	75
Bega District Hospital	56	84	70	59	79
Bellinger River District Hospital	76		79	62	85
Belmont Hospital	53		63	60	76
Blacktown Hospital	57	61	64	47	65
Blue Mountains District ANZAC Memorial Hospital	70		62	51	82
Bowral and District Hospital	69		60	45	82
Broken Hill Base Hospital	52		65	54	70
Bulli District Hospital	44		66	62	84
Calvary Mater Newcastle	77		70	62	75
Camden Hospital			78	48	78
Campbelltown Hospital	45	38	65	43	69
Canterbury Hospital	53	92	70	50	71
Casino and District Memorial Hospital	56		65	64	82
Cessnock District Hospital	70		68	58	76
Coffs Harbour Base Hospital	66	89	69	63	77
Concord Hospital	64	83	69	54	73
Cooma Health Service	64		65	60	72
Cowra District Hospital	66		66	55	73
Deniliquin Health Service	71		74	60	84
Dubbo Base Hospital	57	100	65	48	70
Fairfield Hospital	53		63	54	69
Forbes District Hospital	75		71	54	84
Gosford Hospital	52	81	63	53	77
Goulburn Base Hospital	68		74	63	81
Grafton Base Hospital	63		76	60	88
Griffith Base Hospital	55		72	58	78
Gunnedah District Hospital	85		71	59	89
Hornsby and Ku-Ring-Gai Hospital	68	91	59	49	74
Inverell District Hospital	50		72	54	86
John Hunter Hospital	65	69	67	54	71
Kempsey Hospital	46		71	60	86
Kurri Kurri District Hospital	51		75	62	87

Hospital result relative to NSW:

- Significantly better
- Not significantly different
- Significantly worse

	Time waited from specialist to admission was 'about right' (%)	Hip fracture surgery within two days (%)	Nurses cleaned hands or used gloves before touching hospital patients (%)	Professional discussed medication side effects in hospital (%)	Patient 'completely' given enough information about managing condition at home (%)
Lismore Base Hospital	69	98	71	60	74
Lithgow Health Service	66		66	64	78
Liverpool Hospital	53	61	67	51	69
Macksville District Hospital	52		78	57	89
Maclean District Hospital	79		81	58	84
Maitland Hospital	60	79	68	54	72
Manly District Hospital	74	78	63	52	74
Manning Base Hospital	64	79	70	55	73
Milton and Ulladulla Hospital			75	62	73
Mona Vale and District Hospital	67	89	60	51	73
Moree District Hospital	81		69	58	81
Moruya District Hospital	60		61	51	70
Mount Druitt Hospital	69		72	56	77
Mudgee District Hospital	69		77	59	85
Murwillumbah District Hospital	60		74	66	81
Muswellbrook District Hospital	80		75	70	82
Narrabri District Hospital	94		62	56	77
Nepean Hospital	63	48	64	50	67
Orange Health Service	67	93	69	51	74
Parkes District Hospital	84		59	53	72
Port Macquarie Base Hospital	49	95	71	56	73
Prince of Wales Hospital	65	63	69	55	74
Queanbeyan Health Service	66		63	55	77
Royal Hospital for Women	74		67	59	74
Royal North Shore Hospital	68	93	57	51	66
Royal Prince Alfred Hospital	73	79	68	56	73
Ryde Hospital	70	92	69	50	66
Shellharbour Hospital	47		73	53	81
Shoalhaven District Memorial Hospital	52		73	49	74
Singleton District Hospital	70		71	61	77
St George Hospital	70	57	65	48	72
St Vincent's Hospital, Darlinghurst	67	73	66	55	70
Sutherland Hospital	59	63	59	44	69
Sydney/Sydney Eye Hospital	58		69	61	87
Tamworth Base Hospital	64	60	69	48	77
The Tweed Hospital	63	94	63	58	72
Tumut Health Service			75	72	81
Wagga Wagga Base Hospital	60	64	69	59	78
Westmead Hospital	66	70	64	55	68
Wollongong Hospital	57	37	65	44	71
Wyong Hospital	62		69	50	73
Young Health Service	56		69	72	88

Sources: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence, (BHI analysis), BHI Adult Admitted Patient Survey, 2014.

Note: Hospitals with fewer than 30 respondents for survey data, and fewer than 50 cases for hip fracture surgery are suppressed. Private hospitals not available for survey measures. Where available, private hospital results are combined.

Appendix C

Hospital-level results (part II)

Table 2 Hospital results from effectiveness chapter

Hospital result relative to NSW:						
<div> <div></div> Significantly better <div></div> Not significantly different <div></div> Significantly worse </div>						
	Obstetric trauma rate per 100 births (without instrument)	Hospital patient-reported complications (%)	ED patient-reported complications (%)	ED care helped (%)	Hospital care helped (%)	Problem better following hospitalisation (%)
NSW	2.6	16	9	66	76	72
Armidale and New England Hospital	1.8	13	9	59	82	76
Auburn Hospital	2.0	13	10	72	73	70
Ballina District Hospital		16	8	70	77	74
Bankstown/Lidcombe Hospital	2.2	18	9	64	72	69
Bateman's Bay District Hospital		9	9	62	71	63
Bathurst Base Hospital	2.4	14	7	61	81	78
Bega District Hospital	2.6	15	6	71	78	74
Bellinger River District Hospital		14	11	73	79	80
Belmont Hospital		19	7	71	80	74
Blacktown Hospital	3.9	16	14	56	69	69
Blue Mountains District ANZAC Memorial Hospital	1.4	15	11	66	83	70
Bowral and District Hospital	2.7	14	3	63	82	78
Broken Hill Base Hospital	0.0	17	8	58	62	62
Bulli District Hospital		15	8	86	76	65
Calvary Mater Newcastle		13	8	67	76	74
Camden Hospital		14	6	60	82	65
Campbelltown Hospital		15	8	58	73	72
Canterbury Hospital	3.5	18	12	64	77	72
Casino and District Memorial Hospital		13	10	60	79	71
Cessnock District Hospital		13	4	63	73	74
Coffs Harbour Base Hospital	2.6	14	9	65	78	70
Concord Hospital		15	9	70	79	64
Cooma Health Service	1.7	9	6	69	85	71
Cowra District Hospital		12	11	55	74	67
Deniliquin Health Service		16	2	70	68	55
Dubbo Base Hospital	1.3	18	8	70	73	71
Fairfield Hospital	3.7	19	13	61	71	66
Forbes District Hospital	0.8	11	5	69	83	79
Gosford Hospital	4.0	15	10	71	78	74
Goulburn Base Hospital		12	8	51	81	73
Grafton Base Hospital	1.1	9	3	71	82	79
Griffith Base Hospital		7	6	58	75	69
Gunnedah District Hospital		7	5	67	79	68
Hawkesbury District Health Service			10	59		
Hornsby and Ku-Ring-Gai Hospital	3.4	15	7	75	78	74
Inverell District Hospital	0.0	8	12	60	77	79
John Hunter Hospital	3.6	19	10	65	76	72
Kempsey Hospital	1.1	11	7	75	79	77
Kurri Kurri District Hospital		10	1	81	82	75
Lismore Base Hospital	1.2	18	11	66	78	73

Hospital result relative to NSW:	Obstetric trauma rate per 100 births (without instrument)	Hospital patient-reported complications (%)	ED patient-reported complications (%)	ED care helped (%)	Hospital care helped (%)	Problem better following hospitalisation (%)
Significantly better						
Not significantly different						
Significantly worse						
Lithgow Health Service	0.0	14	6	67	78	73
Liverpool Hospital	2.8	20	13	61	70	64
Macksville District Hospital		7	6	73	86	72
Macleay District Hospital		11	4	82	81	74
Maitland Hospital		17	9	64	79	74
Manly District Hospital	3.5	13	6	79	83	77
Manning Base Hospital		14	9	68	74	71
Milton and Ulladulla Hospital		6	4	76	75	70
Mona Vale and District Hospital		13	9	70	78	78
Moree District Hospital		9	6	75	80	70
Moruya District Hospital		12	5	70	81	78
Mount Druitt Hospital		9	9	50	83	74
Mudgee District Hospital		12	11	60	78	69
Murwillumbah District Hospital		14	9	70	80	73
Muswellbrook District Hospital	2.3	6	3	72	77	72
Narrabri District Hospital		12	5	74	78	78
Nepean Hospital		18	8	61	74	71
Orange Health Service	2.5	13	7	67	80	72
Parkes District Hospital		14	7	68	73	64
Port Macquarie Base Hospital	4.7	16	10	73	75	73
Prince of Wales Hospital		16	11	70	83	76
Queanbeyan Health Service	1.5	13	5	61	81	73
Royal Hospital for Women	2.9	21			84	78
Royal North Shore Hospital		16	8	76	77	79
Royal Prince Alfred Hospital		20	14	69	81	73
Ryde Hospital	0.8	21	16	65	72	65
Shellharbour Hospital		16	8	67	73	74
Shoalhaven District Memorial Hospital	1.9	18	9	63	77	73
Singleton District Hospital		9	3	66	75	77
St George Hospital	5.4	15	12	63	76	74
St Vincent's Hospital, Darlinghurst		19	10	69	79	73
Sutherland Hospital	4.5	18	8	66	76	78
Sydney Children's Hospital			4	77		
Sydney/Sydney Eye Hospital		11	9	77	85	76
Tamworth Base Hospital	1.7	12	11	65	80	74
The Children's Hospital at Westmead			7	70		
The Tweed Hospital		13	6	73	76	71
Tumut Health Service		12	4	80	78	72
Wagga Wagga Base Hospital	2.3	15	10	64	73	69
Westmead Hospital		21	13	57	73	71
Wollongong Hospital	2.0	17	9	60	74	73
Wyong Hospital	2.5	18	9	67	79	75
Young Health Service		9	11	62	86	79

Sources: NSW Perinatal Data Collection (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health (BHI analysis for obstetric trauma), BHI, Adult Admitted Patient Survey 2014, Emergency Department Patient Survey, 2014–15.

Note: Hospitals with fewer than 30 respondents for survey data, and fewer than 100 births for obstetric trauma are suppressed.

Appendix C

Hospital-level results (part III)

Table 3 Hospital results for maternity care measures

Hospital result relative to NSW:

- Significantly higher
- Not significantly different
- Significantly lower

	Caesarean section Average Length of Stay (days)	Vaginal birth – Average Length of Stay (days)	Elective c-sections as % of births	Emergency c-section as % of births
NSW	4.1	2.5	20	13
Private hospitals	5.0	3.8	32	13
Armidale and New England Hospital	3.6	2.2	20	17
Auburn Hospital	2.9	1.5	12	10
Bankstown / Lidcombe Hospital	3.6	2.1	14	8
Bathurst Base Hospital	3.4	2.2	20	12
Bega District Hospital	3.3	1.9	11	15
Belmont Hospital				
Blacktown Hospital	3.3	1.8	16	16
Blue Mountains District ANZAC Memorial Hospital	3.5	2.0	23	7
Bowral and District Hospital	3.9	2.4	17	13
Broken Hill Base Hospital	3.6	2.1	19	7
Campbelltown Hospital	3.7	1.8	15	11
Canterbury Hospital	4.0	2.2	14	14
Coffs Harbour Base Hospital	3.7	2.5	22	13
Cooma Health Service		2.8		
Cowra District Hospital		2.3		
Deniliquin Health Service		2.4		
Dubbo Base Hospital	4.4	2.6	17	11
Fairfield Hospital	3.9	2.0	15	7
Forbes District Hospital		2.7		
Glen Innes District Hospital		2.4		
Gosford Hospital	3.3	1.7	15	14
Goulburn Base Hospital	4.4	2.2	18	7
Grafton Base Hospital	4.1	2.7	14	11
Griffith Base Hospital	3.7	2.3	14	17
Gunnedah District Hospital	4.1	2.9		
Hawkesbury District Health Service			22	15
Hornsby and Ku-Ring-Gai Hospital	3.1	1.7	14	12
Inverell District Hospital	3.7	2.4	27	8
John Hunter Hospital	4.1	2.0	16	14
Kempsey Hospital	4.2	2.4	9	11
Leeton Health Service		2.8		
Lismore Base Hospital	4.3	2.0	14	12
Lithgow Health Service	3.5	2.4	16	16
Liverpool Hospital	4.5	2.4	18	9
Macksville District Hospital		2.8		
Maitland Hospital	3.5	2.0	14	13
Manly District Hospital	3.4	2.1	11	15

Hospital result relative to NSW:

- Significantly higher
- Not significantly different
- Significantly lower

	Caesarean section Average Length of Stay (days)	Vaginal birth – Average Length of Stay (days)	Elective c-sections as % of births	Emergency c-section as % of births
Manning Base Hospital	4.0	2.4	17	6
Milton and Ulladulla Hospital		2.0		
Mona Vale and District Hospital	3.6	2.1	17	12
Moree District Hospital		2.6		
Moruya District Hospital	3.3	2.2	18	11
Mudgee District Hospital	3.3	2.4	16	10
Mullumbimby & District War Memorial Hospital		1.5		
Murwillumbah District Hospital	3.7	2.1		
Muswellbrook District Hospital		2.4		
Narrabri District Hospital		2.2		
Nepean Hospital	2.8	1.6	21	16
Orange Health Service	3.6	2.1	22	12
Parkes District Hospital		2.6		
Port Macquarie Base Hospital	3.7	2.3	18	13
Queanbeyan Health Service	4.0	2.1	12	12
Royal Hospital for Women	4.5	2.2	16	14
Royal North Shore Hospital	3.7	2.3	18	14
Royal Prince Alfred Hospital	4.3	2.3	19	13
Ryde Hospital		1.2		
Scott Memorial Hospital, Scone		2.7		
Shoalhaven District Memorial Hospital	3.1	1.7	15	14
Singleton District Hospital		2.0		
St George Hospital	3.7	2.1	13	14
Sutherland Hospital	3.7	2.3	13	10
Tamworth Base Hospital	3.6	2.2	18	11
Temora Health Service		2.7		
The Tweed Hospital	4.1	2.3	9	14
Tumut Health Service		2.4		
Wagga Wagga Base Hospital	3.7	2.1	17	17
Westmead Hospital	2.9	1.7	16	14
Wollongong Hospital	3.8	2.1	15	15
Wyong Hospital		1.2		
Young Health Service		2.7		

Sources: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence, (BHI analysis for length of stay). Centre for Epidemiology and Evidence, Health Statistics New South Wales, Sydney: NSW Ministry of Health. Available at: healthstats.nsw.gov.au

Note: Hospital results suppressed if fewer than 50 births. Results for all private hospitals are combined.

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Acronyms

ABS – Australian Bureau of Statistics

ALOS – Average Length of Stay

APDC – Admitted Patient Data Collection

EDDC – Emergency Department Data Collection

AIHW – Australian Institute of Health and Welfare

COPD – Chronic Obstructive Pulmonary Disease

DVT – Deep vein thrombosis

ED – Emergency department

GP – General practitioner

GSP – Gross State Product

MBS – Medicare Benefits Schedule

NSW – New South Wales

OECD – Organisation for Economic Cooperation and Development

PBS – Pharmaceutical Benefits Scheme

PE – Post-operative pulmonary embolism

PROM – Patient reported outcome measures

PYLL – Potential years of life lost

SAPHaRI – Secure Analytics for Population Health Research and Intelligence

UK – United Kingdom

US – United States

WLCOS – Waiting List Collection On-line System

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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 public healthcare system.

BHI was established in 2009 to provide system-wide support through transparent reporting.

BHI 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 in public hospitals and other healthcare facilities.

BHI publishes a range of reports and tools that provide relevant, accurate and impartial information about how the health system is measuring up in terms of:

- Accessibility – healthcare when and where needed
- Appropriateness – the right healthcare, the right way
- Effectiveness – making a difference for patients
- Efficiency – value for money
- Equity – health for all, healthcare that's fair
- Sustainability – caring for the future

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 report 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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