bureau of health information

The Insights Series

Healthcare in rural, regional and remote NSW

BUREAU OF HEALTH INFORMATION

Level 11, Sage Building, 67 Albert Avenue
Chatswood NSW 2067
Australia
Telephone: +61 2 9464 4444
Email: BHI-enq@health.nsw.gov.au
bhi.nsw.gov.au

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Table of contents

Foreword i

Key Findings 2

Summary 3

Setting the scene 5

Overall views of healthcare 23

Healthcare performance

- Accessibility 27
- Appropriateness 59
- Effectiveness 91

Appendices 113

References 122

Acknowledgements 126

Foreword

People in rural, regional and remote areas of NSW are familiar with the challenges posed by geography and isolation. Healthcare systems are similarly challenged. Low population density, long travelling times, limited opportunities to harness economies of scale, difficulties recruiting a skilled workforce and an ageing population all place significant pressure upon healthcare services.

Capturing, in a meaningful way, how the healthcare system and the organisations within that system, respond to these challenges is the main aim of this report. It describes the diversity and responsiveness that are hallmarks of healthcare in NSW and compares performance across the rural–urban continuum, identifying areas of achievement and highlighting areas for potential improvement. The report focuses on issues that are known to affect rural areas but in doing so, creates a mirroring effect, also providing insights into urban challenges.

Assessing healthcare in rural, regional and remote NSW presents some 100 indicators, organised in line with our performance measurement framework. It reflects the extent to which the healthcare sector in rural and remote areas provides services when and where needed, whether patients receive the right care in the right way, and how healthcare makes a difference for people.

For many of the measures included, performance is strong in rural, regional and remote areas of NSW. Rural healthcare organisations often provide accessible, coordinated and integrated care. Linkages between providers and with community organisations are strong. Founded upon interpersonal relationships that define rural communities, much of the coordination is informal yet effective.

However, rural healthcare organisations can be vulnerable to unforeseen changes in staffing and local availability of resources. Overall, the report suggests that rural NSW does well but for some measures, the disparities between rural and urban areas are significant.

The report also presents comparisons with Canada and Sweden, drawing on international survey results. These two countries share key characteristics with NSW with regards to rurality – both have highly urbanised areas with densely populated cities, a range of smaller regional centres, and vast areas that are sparsely populated.

Assessment of healthcare is always a challenge. Performance is often nuanced, and almost always multifaceted, dynamic and strongly influenced by local and regional contexts. Assessment therefore has to include various dimensions and perspectives in order to be fair and balanced.

We hope that this report will provide a foundation to understand current issues in healthcare in rural, regional and remote areas and to monitor its evolution in the future.

Dr Jean-Frédéric Lévesque
Chief Executive, Bureau of Health Information

Key findings

10 key findings

1. **Overall, healthcare in rural, regional and remote NSW is good.**

2. **In international terms, healthcare in rural areas is rated comparatively well in NSW** – particularly in terms of access to primary care, confidence in managing health problems and patient engagement.

3. **In emergency departments (EDs), care is more timely in rural hospitals** – ED treatment started within recommended timeframes for a higher proportion of patients in regional and remote EDs than in major city EDs. Patients who visited smaller hospitals spent less time overall in the ED.

4. **Over 97% of elective surgery was performed within clinically recommended timeframes, regardless of remoteness** – although patients in inner regional hospitals generally had longer waiting times than those in major city and outer regional and remote hospitals.

5. **Among hospitalised patients, those in rural NSW were more likely to say they were involved, as much as they wanted to be, in decisions** about their care and treatment, about their discharge and about medications. In general, patients in rural hospitals reported better experiences of care.

6. **In terms of safety, patients in rural hospitals reported fewer complications** – patients living in outer regional and remote areas were most likely to say potential side effects of medication were explained to them, and that they recently had a medication review. There was however consistency in identification checks – nine in 10 patients hospitalised in major city, regional and remote areas said their identification band was always checked before they were given medication or treatment.

7. **There were bigger gaps in experiences of hospital care between Aboriginal and non-Aboriginal patients in rural areas compared with urban areas** – most notably for questions on communication, respect, patient engagement and patient reported outcomes.

8. **Travel times of over 30 minutes for antenatal care occurred in rural and urban areas** and most women accessed postnatal care in the two weeks following the birth of their baby – in both rural and urban areas.

9. **In 2014–15, in most rural local health districts (LHDs), there were fewer residents who had to travel outside the district for cancer hospitalisations**, compared to 2004–05. A survey of cancer outpatients highlighted rural clinics as among the best performers in the state.

10. **Hospitals with higher than expected 30-day mortality and readmission rates were located in both rural and urban areas.**

Summary

Overall, the report shows that the healthcare provided to people in rural, regional and remote NSW is good.

Healthcare in rural, regional and remote NSW uses a range of information sources to assess healthcare services provided to patients in urban and rural areas of NSW. It is based on information from hospital records, ED datasets, patient surveys and a qualitative data gathering exercise. Altogether, the report features some 100 measures that assess accessibility, appropriateness and effectiveness of healthcare.

Throughout the report, comparisons are made on the basis of 'remoteness', a term used to classify geographical areas in terms of distance from large population centres and associated amenities. Variation is assessed across three remoteness categories: major cities, inner regional areas, and outer regional, remote and very remote areas. The more generic term 'rural' is used to refer to areas outside major cities.

Accessibility: Healthcare, when and where needed

Across NSW, in both rural and urban areas, more than nine in 10 adults aged 55+ years said they have a regular doctor or GP clinic. However, healthcare is not always accessible – 33% of people in outer regional and remote areas and 19% in inner regional areas said they have difficulties accessing healthcare. In particular, there were unmet needs for primary care:

- 14% of adults in outer regional and remote areas, 15% in inner regional areas, and 12% in major cities said there was a time in the previous year when they needed primary care but did not receive it
- About four in 10 people said they were able to get a same day primary care appointment when they needed medical attention – regardless of whether they lived in rural or urban areas. However, 39% of people in outer regional and remote NSW said it is very difficult to get out-of-hours medical care, compared with 33% of people in inner regional areas and 17% in major cities.

Within NSW public hospital EDs, the time patients had to wait to start treatment was shortest in outer regional and remote hospitals. Compared with major city EDs, a smaller proportion of patients in rural EDs did not wait for care or left at their own risk.

Over 97% of all elective surgical procedures were performed within clinically recommended timeframes – regardless of the remoteness of the hospital. However, patients treated in hospitals in inner regional areas generally had longer waiting times than those treated in hospitals in major city and in outer regional and remote areas.

Across rural and urban areas:

- A higher percentage of women had travel times of over 30 minutes for antenatal care in rural areas
- However there were few differences in the percentage of women who received postnatal care in the two weeks following birth.

Among patients admitted to a public hospital in 2014–15, the percentage who were admitted in their LHD of residence ranged across rural LHDs from 65.8% in Far West to 91.6% in Hunter New England. More specifically for cancer care, in 2014–15, in most rural LHDs, there were fewer patients who had to travel outside the district to be hospitalised, compared with 2004–05.

Appropriateness: The right healthcare, the right way

While the 'right' healthcare is provided to most patients, there is room to improve:

- Despite higher patient-reported prevalence of hypertension (high blood pressure) and diabetes in rural areas, there were no significant differences in patient-reported rates of blood pressure and cholesterol checks, or influenza vaccinations
- For hospital care, the proportion of patients in rural hospitals who underwent hip fracture surgery within the recommended two days of admission was higher than in major city hospitals

- While 93% of pregnant women in outer regional and remote areas had five or more antenatal visits, this was a lower percentage than in major city or inner regional areas (both 96%). However, there were no meaningful differences in the proportion of births that were elective caesarean sections by hospital remoteness
- For many measures, there was variation within hospital remoteness categories. For example, across rural hospitals, between 84% and 95% of patients said their identification band or name was 'always' checked before they were given medication or treatment.

Information from patient surveys shows that most patients in NSW are treated in the 'right way':

- In both rural and urban areas, seven in 10 patients said their GP 'always' explained things in an understandable way and spent enough time with them
- Among admitted patients, those in rural NSW were more likely to say they were involved – as much as they wanted to be – in decisions about their care and treatment; about discharge; and about medications
- However, differences in experiences of hospital care between Aboriginal and non-Aboriginal patients were more pronounced in hospitals in rural areas than those in urban areas.

Effectiveness: Making a difference for patients

Healthcare makes a difference in NSW. Survey results show that a higher proportion of people living in outer regional and remote areas were 'very confident' or 'confident' in managing their health problems; and patients treated in inner regional hospitals were most likely to say they had confidence and trust in healthcare professionals. Other outcome measures showed:

- ED re-presentations within 48 hours were more common in rural hospitals
- Hospitals with higher than expected mortality and readmission rates were located in both rural and urban areas
- Patients hospitalised in rural hospitals were less likely to say they experienced a complication or adverse event
- A survey of cancer outpatients highlighted rural clinics as among the best performers in the state
- Across NSW, Aboriginal patients were less positive than non-Aboriginal patients regarding self-reported outcomes of hospital care. However, the disparity was similar in scale for hospitals in rural and urban areas.

About information sources

Healthcare in rural, regional and remote NSW draws on a range of data sources, each one making a contribution to assessment.

Administrative datasets generally capture information on all patients. Measures based on administrative data usually have sufficient power to detect small levels of variation and provide confidence that the variation is not artefactual. They are however limited by the number of variables captured in the datasets, and are dependent upon the accuracy of note-taking, recording and coding.

Survey data are based on a subset of all patients – and in some cases, small sample size limits the ability to draw broad conclusions. Differences that do not reach statistical significance should be interpreted with care. Survey data do however provide direct evidence of patient experiences and reflect on elements of care not captured in administrative datasets.

Qualitative data are often based on small samples with limited generalisability but they provide insights into context and experiences.

Setting the scene

Introduction

What is rurality?

Rurality is often used as a generic term to describe a way of life characterised by close links with the land and agriculture. Rurality is not synonymous with remoteness – which is a more precisely defined concept used to measure isolation and distance from large population centres. The Australian Bureau of Statistics (ABS) classification of remoteness differentiates between major cities, inner regional, outer regional, remote and very remote areas. In this report, variation is assessed across three remoteness categories: major cities, inner regional areas, and outer regional, remote and very remote areas. The more generic term 'rural' is used to refer to geographic areas outside major cities.

Two types of measures featured in the report use remoteness categories: the first type differentiates on the basis of where patients live (NSW by remoteness of residence); and the second type differentiates on hospital locations (NSW public hospitals by remoteness). Other measures compare LHDs, using the NSW Ministry of Health designation of rural and metropolitan LHDs. The classification of LHDs is not clear-cut however with considerable variation in LHD remoteness profiles (Figure 1.1).

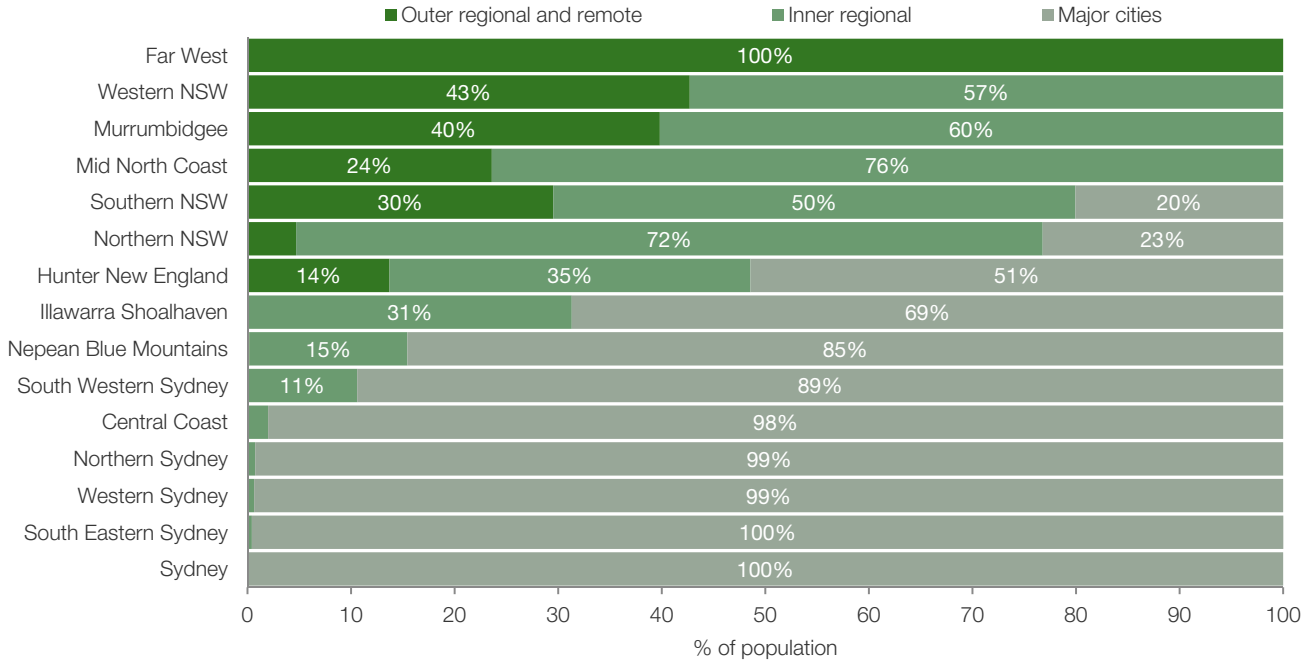
Rural NSW

Rural NSW covers around 99% of the state's land mass. One in four people in NSW live in rural, regional or remote parts of the state. Generally speaking, people in rural areas have poorer health.[1] On average, they have shorter lives and more illness than people living in major cities. Employment opportunities are often limited within remote and rural communities, and household incomes are generally lower than in urban areas (Figure 1.2).[1]

At the same time, there are important social benefits associated with rural life. There are higher levels of cohesiveness, higher rates of community engagement and participation in volunteer work and a stronger sense of security across rural NSW.[2]

This report focuses mainly on care provided by the public healthcare system in NSW. To properly capture patients' healthcare experiences however, it also includes some information about other types of services such as primary care.

Figure 1.1 Population distribution, by LHD and remoteness category of residence, NSW, 2011



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

Figure 1.2 Socioeconomic characteristics by LHD and remoteness category, NSW

		Life expectancy (years)		Persons aged 65+ years		% aged 15–64 years with weekly income <$600	% of population who are Aboriginal people
		MALE	FEMALE	Number	% of population		
Remoteness	Major cities	81.7	85.8	784,088	14.0	41.2	1.8
	Inner regional	79.5	84.1	280,750	19.5	47.2	4.7
	Outer regional	78.9	84.3	92,097	20.4	51.5	8.3
	Remote	70.3	71.9	5,074	16.4	47.7	26.2
	Very remote	–	–	1,075	12.8	49.1	39.3
Rural local health districts	Far West	76.4	81.0	5,997	19.3	50.1	11.7
	Hunter New England	79.0	84.0	164,853	18.2	46.3	5.4
	Mid North Coast	79.7	84.1	48,182	22.7	53.2	5.8
	Murrumbidgee	79.8	84.5	44,727	18.6	46.1	4.8
	Northern NSW	78.9	84.3	61,469	20.9	52.8	4.8
	Southern NSW	79.8	84.4	38,518	19.1	42.3	3.5
	Western NSW	78.3	83.2	48,215	17.3	45.9	11.1
Urban local health districts	Central Coast	79.9	84.3	65,852	19.9	46.1	3.4
	Illawarra Shoalhaven	80.5	84.4	74,519	18.8	48.1	3.4
	Nepean Blue Mountains	80.4	84.0	47,822	13.3	41.3	3.2
	Northern Sydney	83.7	87.5	137,362	15.4	34.7	0.3
	South Eastern Sydney	83.0	87.0	125,908	14.3	35.4	0.9
	South Western Sydney	81.1	85.1	115,492	12.5	48.4	1.8
	Sydney	81.7	86.4	74,627	12.1	37.7	1.1
	Western Sydney	81.0	85.1	101,130	11.2	43.6	1.7

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

A note about Aboriginality

Aboriginal health is an important issue to be considered in assessing healthcare in rural, regional and remote NSW. A large proportion of Aboriginal people live in metropolitan LHDs, and over 90% live in major cities or inner regional areas. In outer regional and remote areas however, Aboriginal people represent a higher proportion of the population. For example, 11.7% of the population is Aboriginal in Far West, and 11.1% in Western NSW.

Background

Geographical areas vary in their resident populations' health and healthcare needs, the range of services available, and the resources used to deliver care. The extent of variation is important context for any assessment of healthcare performance.

Health and healthcare needs

Life expectancy in NSW is among the longest in the world. Within NSW however, increasing rurality is associated with decreasing life expectancy. For example, a baby girl born in a remote or very remote area in 2012 can expect to live for 72 years while a baby girl born in a major city can expect to live for 86 years (Figure 1.2).

Similarly, while there was an overall decline in mortality rates in NSW between 2001 and 2013, improvements did not occur uniformly across the state – with steeper falls among populations living in major cities (-21%), compared with those living in inner regional areas (-17%), and outer regional areas (-17%).[1]

In terms of healthcare needs, most people in NSW require healthcare in the course of a year. In 2014–15, more than eight in 10 NSW adults (84%) needed to see a GP, and this did not differ substantially by remoteness. Almost six in 10 adults said they needed to see a dentist; and four in 10 needed to see a medical specialist – although perceived need for these healthcare professionals was lower in outer regional and remote areas (Figure 1.3).

Healthcare needs tend to increase with age. Older people often have multiple health conditions and are more more likely to be frequent users of healthcare services.

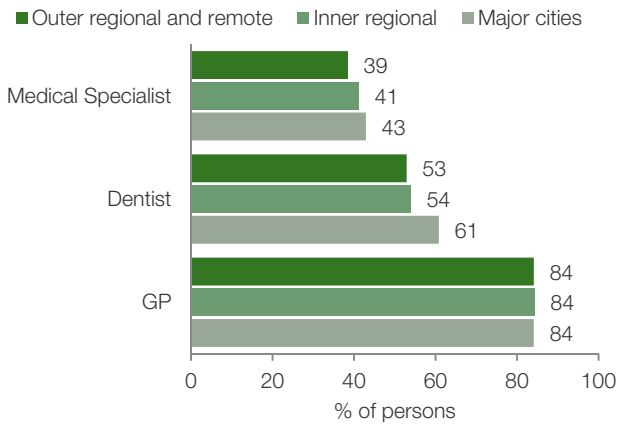
In 2014, the concentration of people aged 65+ years was greater in outer regional and remote areas (20% of residents) and inner regional areas (19%) than in major cities (14%) (Figure 1.2). Across the state's LHDs, there was a twofold difference in the percentage of the resident population aged 65+ years, and rural LHDs generally had a higher proportion of older residents (Figure 1.4).

Aboriginal people also have greater health needs. They are known to have lower life expectancy, higher rates of cardiovascular disease and chronic disease. About 60% of the NSW Aboriginal population lives in a rural LHD.[1]

There are a number of important health issues known to affect rural populations[1,3] including:

- Higher mortality rates and lower life expectancy
- Higher road injury and fatality rates
- Higher reported rates of high blood pressure, diabetes, and obesity
- Higher death rates from chronic disease
- Higher prevalence of mental health problems
- Higher rates of alcohol abuse and smoking
- Poorer dental health.

Figure 1.3 Percentage of persons aged 16+ years who said they needed to see a medical professional at least once in the preceding year, by remoteness of residence, NSW, 2014–15

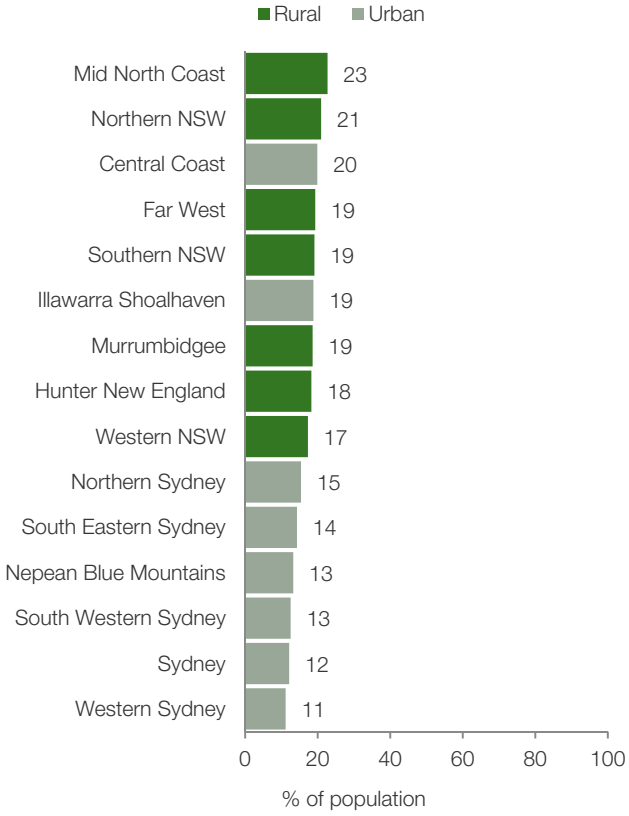


Source: ABS, Patient Experience Survey 2014–15 (customised request).

There are also important differences in health behaviours. For example, tobacco smoking is a major risk factor for heart disease, stroke, cancer and chronic obstructive pulmonary disease (COPD) and high smoking rates are associated with increased healthcare needs. In 2015, people living in outer regional and remote areas were more likely to be current smokers (20% of adults) than those living in major cities (13%) (Figure 1.5).

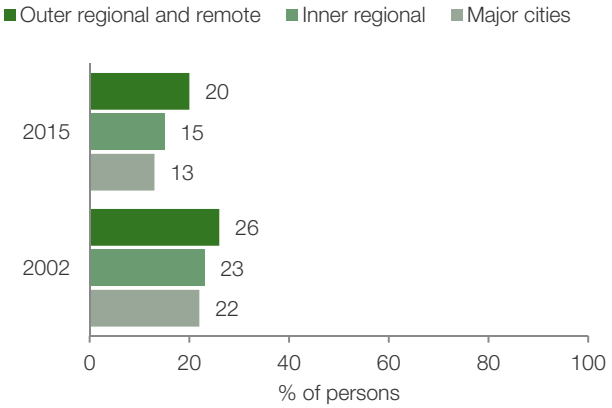
It is not currently possible to ascertain, with any certainty, the extent to which poorer health seen among residents in more rural areas of NSW is caused by remoteness, socioeconomic status or Aboriginality. Most likely all three factors intersect and play a role. Difficulties in establishing causality however, do not preclude meaningful measurement of healthcare accessibility, appropriateness and effectiveness provided to people living in rural areas.

Figure 1.4 Percentage of the population aged 65+ years, by LHD of residence, NSW, 2014



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

Figure 1.5 Current smoking rates among persons aged 16+ years, by remoteness of residence, NSW, 2015



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

Views from the qualitative consultation

Rural areas tend to have lower levels of education and higher levels of socio-economic disadvantage than urban areas. Inequities in service delivery and health outcomes for rural people extend across mental health, aged populations, disability and culturally and linguistically diverse (CALD) groups.

The shift from traditional self-contained hospitals to hub and spoke models of networked providers and other alternative service models allows rural healthcare to respond effectively to changing demographics.

Healthcare services in NSW

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

Responsibilities

The Commonwealth government funds 44% of total health expenditure in NSW.[4] Responsibilities include most primary care services, Medicare and subsidies for most prescription drugs through the Pharmaceutical Benefits Scheme (PBS).

The NSW government funds 24% of total health expenditure.[4] Responsibilities include management and administration of public hospitals, community health services, mental health services, public dental clinics, public health, ambulance and emergency services and patient transport.

Individuals fund 17% of total health expenditure.[4] Out-of-pocket spending includes direct payment for services not covered by insurance, as well as insurance excess payments, gap payments and co-payments. Other private sources (e.g. health insurers) fund 15% of total health expenditure.[4]

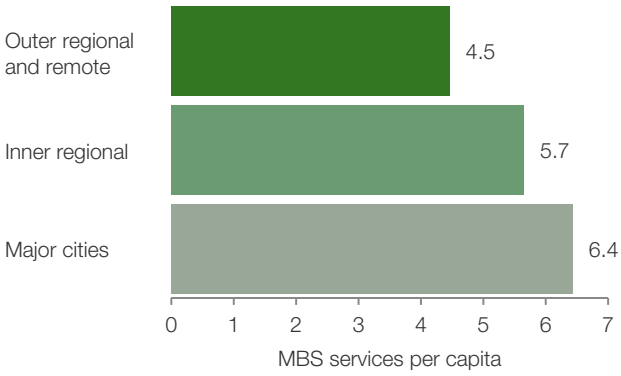
Types of services

Three main types of healthcare services are used by NSW residents: primary care, emergency department care and hospital-based services.

Primary care offers front-line services for a wide range of acute and chronic health problems, helping prevent illness and acting as an entry point to the wider healthcare system. In 2014–15, in major cities, there were 36 million GP services provided; compared to eight million in inner regional areas and two million in outer regional and remote areas. Per capita, there were far more GP services provided in major cities compared with rural NSW (Figure 1.6).

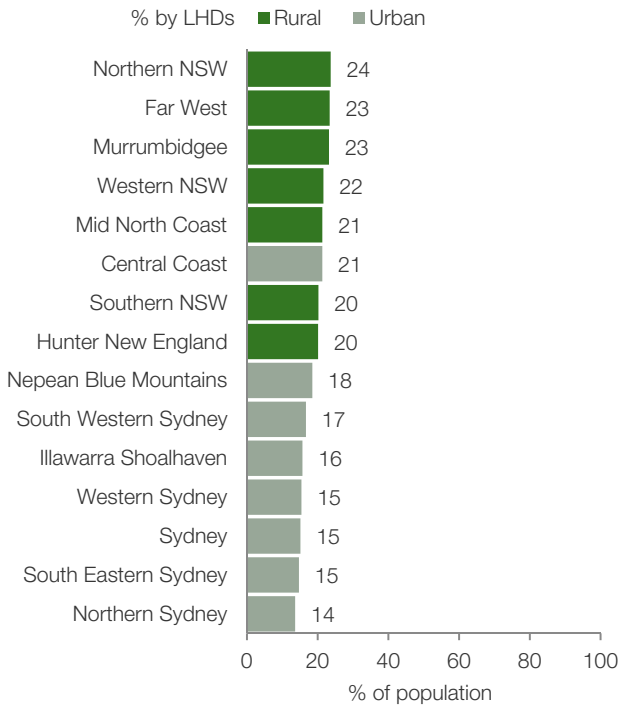
Emergency departments (EDs) range from Level 1 (able to provide first aid) to Level 6 (major trauma centres).[5] They provide specialised assessment and life-saving care and are often the gateway to inpatient services for acutely unwell patients. In 2015, there were 2.6 million ED visits across the state.

Figure 1.6 GP services provided per capita, by remoteness of residence, NSW, 2014–15



Source: Australian Government Department of Health, General Practice Statistics.

Figure 1.7 Percentage of persons aged 16+ years reporting ED use in the previous year by LHD of residence, NSW, 2014



Source: NSW Population Health Survey (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health.

In 2014, almost two in 10 NSW adults (17%) said they visited an ED in the preceding 12 months. The proportion of residents who visited an ED varied by remoteness and across LHDs. People living in Northern NSW were almost twice as likely to visit an ED as those living in Northern Sydney (Figure 1.7).

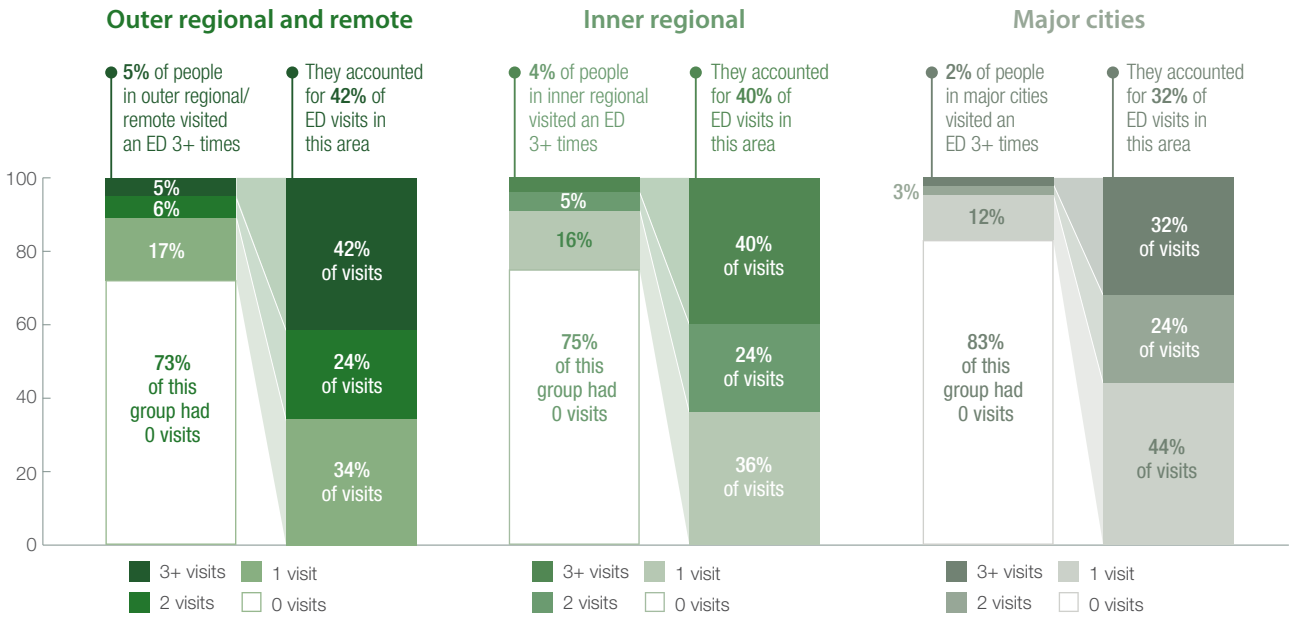
By remoteness, residents in outer regional and remote areas of NSW were most likely to visit an ED and 27% visited an ED at least once during the year 2014–15. A subset of that group, 5% of outer regional and remote residents, visited an ED three or more times during the year. In comparison, 25% of residents in inner regional areas and 17% of residents in major cities visited an ED at least once (Figure 1.8).

There are more than 220 public hospitals in NSW and they range in size and the complexity of services offered. While the largest – principal referral hospitals – are only found in major cities, other types are distributed across areas of remoteness (Appendix 1).

Smaller facilities that focus on providing flexible and integrated care are prevalent in regional and remote areas (See Appendix 1). Multipurpose services (MPS), in particular, integrate a range of health services, including acute care, subacute care (such as palliative care), emergency, allied health, oral health, primary health and community services.

Across the state, only 6% of hospital admissions occur in small hospitals (that is, other than principal referral, major, or district hospitals) and this proportion is similar in all urban LHDs. However in rural LHDs, a varying proportion of admissions occur in smaller hospitals – ranging from 4% in Northern NSW to 22% in Western NSW and 32% in Murrumbidgee (Appendix 1).

Figure 1.8 Percentage of the population who frequently visited an emergency department, by remoteness of residence, NSW, 2014–15



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

In terms of utilisation, in 2014 across NSW there were 793,619 people who were hospitalised at least once, and there was a total of 1,245,324 overnight hospitalisations. Among outer regional and remote residents, 12% were hospitalised at least once during the year. A subset of that group, 2% of residents, were hospitalised three or more times. In comparison 11% of residents in inner regional areas and 10% of residents in major cities were hospitalised at least once [data not shown].

Structure and resources

Within NSW, healthcare delivery is administered through geographically-based LHDs. The main way that funds are distributed to LHDs is through a fee-for-service mechanism known as activity-based funding (ABF). Altogether about 90% of LHD budgets are allocated via ABF. However, because of their remoteness and low population density, small and rural hospitals cannot operate at the same levels of activity as larger urban hospitals. While in absolute terms they have lower levels of productivity, they provide access to appropriate and effective healthcare services.

This means that while most of the urban hospitals' funding is allocated on a fee-for-service basis or ABF using the National Efficient Price, small and rural hospitals have a greater proportion of their budgets allocated via block funding. Across LHDs the use of block funding varies considerably. In 2015–16, block funding comprised 1% of the budget in Western Sydney and 41% in Murrumbidgee.[6]

Access to rural health services can be compromised by workforce shortages related to problems recruiting and retaining healthcare professionals. While this has been a challenge historically, the medical workforce in rural NSW has increased significantly in recent years (Figure 1.9).[7]

Figure 1.9 Full time equivalent registered medical practitioners by remoteness, NSW, 2011–14

	2011	2012	2013	2014	% change (2011–14)
Major cities	405.8	398.2	413.1	419.8	3.4
Inner regional	273.0	270.3	283.7	290.9	6.6
Outer regional	172.8	177.6	171.7	186.2	7.8
Remote/ very remote	147.9	105.2	167.9	183.2	23.9

Source: AIHW, Medical Practitioner Workforce, 2014.

Views from the qualitative consultation

The commissioned research identified workforce issues as the biggest challenge for rural healthcare. Service adaptation and transformation are seen as essential if rural health services are to meet contemporary challenges of sustainability, and safety and quality in rural healthcare.

Rural areas use a range of innovative and responsive strategies to enhance recruitment and retention of health professionals and develop a skilled and stable workforce. These include working with universities to support rural placements through undergraduate medical programs, targeted scholarship programs and support for international medical graduates.

Rural and remote healthcare is characterised by a lack of economies of scale and staffing issues. However, efficiencies are created by using flexible and adaptive models of service delivery such as the use of networking and hub and spoke models.

All of the small hospitals visited had undergone significant transformation and adaptations to service models. Rural hospitals had transformed into MPS, Urgent Care Centres with palliative or rehabilitation beds, Health Ones* or primary health services (without beds). Many rural services have used MPS as a transformative device to provide aged care beds; in one rural LHD, the number of MPS had grown from zero to 14 in a period of 15 years. In another LHD, a large number of faith-based and private organisations provide aged care accommodation.

"Workforce issues are the biggest challenge for rural healthcare performance... The biggest challenge many face is a lack of a specialist medical workforce resulting in a heavy reliance on visiting locums... [which can be] extremely costly and in some cases contribute to inconsistencies in care." **(Qualitative consultation respondent)**

"The biggest challenges faced by rural areas in terms of workforce include an ageing workforce, attracting new graduates, recruitment and retention of mid-career professionals, training and ensuring an appropriate skill mix." **(Qualitative consultation respondent)**

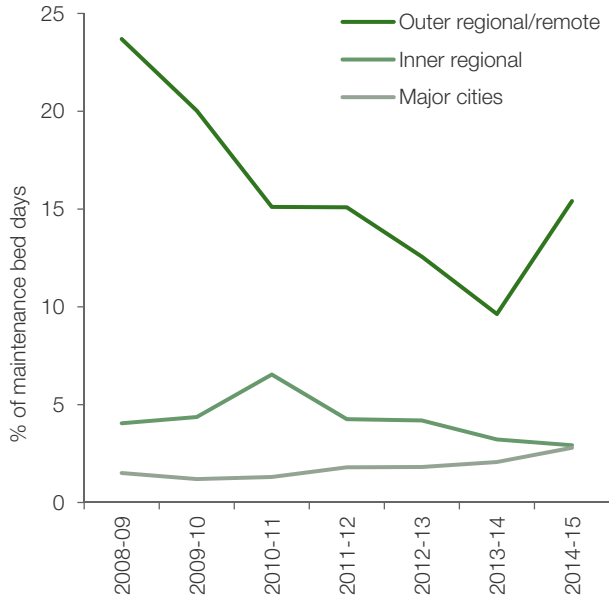
* Health One NSW services provide integrated care across general practice and community health services, see page 33 for details.

Utilisation of resources

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.

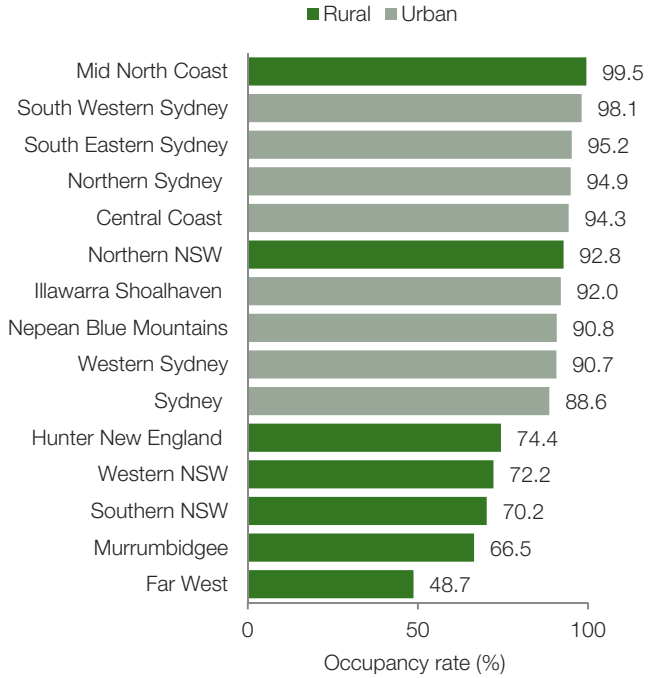
Between 2008–09 and 2014–15, the percentage of total bed days that were used for maintenance care in NSW overall was stable (3.2% to 3.4%), however the use of acute beds for maintenance care in rural areas decreased and was steepest in outer regional and remote hospitals (from 24% to 15%) (Figure 1.10).

Figure 1.10 Percentage of total bed days that were maintenance bed days, by remoteness of hospital, NSW, 2008–09 to 2014–15



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).
Note: Multi-purpose services moved to Residential Aged care during this period.

Figure 1.11 Bed occupancy rate, public hospitals, by LHD, NSW, June 2016



Source: NSW Ministry of Health, provided by Health System Information and Performance Reporting Branch.

Note: Bed occupancy rate is based on June data only. The following bed types are excluded from all occupancy rate calculations: emergency departments, delivery suites, operating theatres, hospital in the home, recovery wards, residential aged care, community residential and respite activity.

Hospital bed occupancy rates provide an indication of the extent to which use of hospital bed resources are maximised, while ensuring there are available beds for admitting new patients in a timely manner and preventing bed shortages. Optimum bed occupancy is context specific. High bed occupancy has been associated with increased rates of adverse events or longer waiting times in the ED. Low occupancy can indicate idle capacity.[8]

Overall in 2011, NSW had a bed occupancy rate of 87% – within three percentage points of the UK, Canada and Switzerland.[9] In June 2016, the bed occupancy rate in public hospitals varied across LHDs from 48.7% in Far West to 99.5% in Mid North Coast (Figure 1.11).

Bed occupancy is not a direct reflection of system or organisational efficiency. A bed is part of the 'production process' of treatment. While it may be in use for 85% of the time and considered 'efficient', a care model that relies on hospital beds rather than community care or hospital-in-the-home for example, may not represent efficient use of overall organisational or system resources.

Views from the qualitative consultation

The adaptation of rural healthcare services to meet the changing demographics of rural populations was one of the key features of our research. The shift from traditional self-contained hospitals to hub and spokes models of networked services and other alternative service models is allowing rural communities to respond effectively to changing demographics. Many small rural hospitals have converted to alternative service models including multipurpose services which often combine aged or palliative care facilities with emergency services or inpatient beds.

Significant reforms to rural health service organisation have occurred over the past two decades to meet the unique challenges of rural and remote healthcare including ageing and shrinking populations, rising levels of chronic disease, high costs of service delivery, recruitment and retention challenges and technology developments.[3] The National Strategic Framework for Rural and Remote Health identifies the need to continue to develop flexible, responsive, integrated and innovative service models and models of care to meet rural healthcare needs into the future.[3]

"People always feel that not having the beds full is a threat. They fear that if the beds are seen to be empty, the service will be closed. I explain to my staff that it's not about how many people are in the beds; it's about providing an effective and streamlined service."
(Qualitative consultation respondent)

"There is a networking and infrastructure issue to consider when managing rural networks: how do you coordinate efficient services when rural communities are incredibly passionate and protective of their own communities and hospitals. You are fighting the problem of inefficiencies but at the same time you can't underestimate the importance of small hospitals to a small community in terms of its social role."
(Qualitative consultation respondent)

"Our hospital has an occupancy rate of about 60% but is kept open for accessibility reasons... this ties into people's expectations of reasonable healthcare and reasonable distance. We run as efficiently as we can given these constraints – if it means we run at 25%, we run at 25%."
(Qualitative consultation respondent)

Selected policies relevant to rural healthcare in NSW

NSW Health Rural Plan Towards 2012[10] – Enhancing the rural health workforce is a key strategy of the NSW Rural Health Plan.

- More clinical nurse/midwife specialists and educators, including community health and community mental health nurses, in rural LHDs
- Continued investment in the Aboriginal health workforce through scholarships and cadetships, including Aboriginal cadetships for nursing, midwifery and allied health
- Training opportunities and attracting trainees to rural areas, including through the Rural Preferential Recruitment Program.

Relating to the rural workforce (Progress Report, December 2015):

- The NSW Health rural health workforce increased significantly between 2012 and 2015 with an additional: 18.6% medical professionals, 4.5% nursing professionals and 10.5% allied health professionals
- New training opportunities in 2015 for medical practitioners in rural areas
- Nurse Delegated Emergency Care more than doubled to 14 in the seven rural LHDs.

NSW Health Professionals Workforce Plan 2012–2022[11] – Strategies to ensure NSW trains, recruits and retains doctors, nurses and midwives, oral health practitioners, paramedics and allied health professionals to meet the future needs of the community.

Outreach Services – The Rural Doctors Network Outreach Program works in partnership with health organisations to implement services locally. These include Aboriginal Community Controlled Health Services, LHDs, Primary Health Networks and hospitals. Programs include the:

- Rural Health Outreach Fund
- Medical Outreach Indigenous Chronic Disease Program
- Healthy Ears, Better Hearing, Better Listening
- Visiting Optometrist Scheme.

In April 2016, there were 1,267 active outreach services provided across NSW regional, rural and remote locations through the program.

Incentives – There are several grants available to GPs to encourage them to take up practice in rural areas. These include transition grants for relocation, continuing professional development vouchers and clinical orientation (training) grants. Other grants include:

- Rural Procedural Grants Program for continuing professional development for doctors working in surgery, anaesthetics, obstetrics and/or emergency medicine
- General Practice Rural Incentives Program – promotes careers in rural medicine as well as increases, recognises and retains medical practitioners in rural and remote Australia.

Selected improvement initiatives implemented in NSW

Isolated Patients Travel and Accommodation Assistance Scheme provides transport and travel assistance to people who cannot use or have difficulty using public and/or private transport or who are disadvantaged by distance.

The NSW Rural Doctors Network (RDN) has worked closely with Hunter New England LHD, Western NSW LHD, Pius X Aboriginal Health Service, and South West Hospital & Health Service to establish a GP-obstetrician and midwife service for Aboriginal women and babies in Collarenebri and Mungindi. The service is funded through the Medical Outreach Indigenous Chronic Disease Program, which is an Australian Government initiative administered in NSW by RDN. The service allows Aboriginal women to access comprehensive antenatal care on country and closer to home, and to receive timely referrals to specialised perinatal services.

Western NSW Patient Flow Unit – Western NSW is the second most sparsely populated LHD in NSW, with just over one person per sq km (271,000 people; 250,000 sq km). Patients frequently require supported transport to maximise the utilisation of available beds and to access an appropriate level of service. The LHD spends in excess of $26 million in transporting patients and specialists throughout the district. In response, the LHD's Patient Flow Unit supports the delivery of care at the right place and right time.

Aboriginal Maternal and Infant Health Service (AMIHS) and Building Strong Foundations (BSF) for Aboriginal Children Families and Communities programs provide support to the workforce in the provision of culturally appropriate maternity and child and family healthcare in rural and regional NSW.

About this report

Data and methods

Determining remoteness

This report uses the Australian Bureau of Statistics (ABS) classification of remoteness area (RA). Patients admitted to hospital have been assigned to a 'mesh block' of residence in the data made available to BHI by the NSW Ministry of Health. An RA category has been assigned to each mesh block in NSW, so summary statistics by three-categories (major cities; inner regional; and outer regional, remote and very remote) can be computed simply. Indicators that report hospital level measures use the facility's geographical location to define remoteness. They are assigned to an RA on the basis of Statistical area, level 1, which is part of the Australian Statistical Geography Standard (ASGS).

Administrative data sources

Admitted Patient Data Collection (APDC) – All NSW public hospitals, public psychiatric hospitals, public multipurpose services, private hospitals and private day procedure centres in NSW provide data to the NSW Ministry of Health on patients admitted for care. The collection also includes data relating to NSW residents hospitalised interstate in public hospitals.

Emergency Department Data Collection (EDDC) – The EDDC is derived from computer databases used for managing patients in EDs in public hospitals in NSW. Statewide, approximately 95% of all ED attendances (around 2 million visits per year) are included in the EDDC.

Secure Analytics for Population Health Research and Intelligence (SAPHaRI) is a data warehouse administered by the Centre for Epidemiology and Evidence (CEE) at the NSW Ministry of Health. It provides administrative data linked by the Centre of Health Record Linkage (CHeReL) using probabilistic record linkage methods.

Clinical Services Planning Analytics (CaSPA) tools were used to examine patient flows.

Patient surveys

International, national and state surveys were used.

The 2014 Commonwealth Fund International Health Policy Survey – Reflected the experiences of 25,530 adults aged 55+ years in 11 countries: Australia, Canada, Germany, France, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom and the United States. In NSW, 2,800 adults were surveyed between March and May 2014. Where questions of interest were not available in 2014, information was sourced from the 2013 Commonwealth Fund International Health Policy Survey. It reflected the experiences of 20,045 adults aged 18+ years in the same 11 countries. In NSW, 1,524 adults were surveyed between March and June 2013.

Respondents were grouped as either living in or very close to an urban centre, or living in small town/inner regional areas or a non-urban area. Definitions differed by jurisdiction (Figure 1.12).

Results were weighted to represent the age, sex, education and regional distribution of each country's population in the survey year, with targets based on country census data. Results for comparisons based on fewer than 30 responses have been suppressed. Differences between the remote or inner regional values with major cities were tested at a 5% significance level and marked (*) when differences were significant ($p<0.05$). For details see Technical Supplement of *Healthcare in Focus* at **bhi.nsw.gov.au**

The Australian Bureau of Statistics (ABS) Patient Experience Survey – Conducted annually, the ABS Patient Experience Survey collects data on accessibility of a range of healthcare services. Nationally, information was collected from 30,749 fully responding households in 2012–13. A customised report with NSW data was provided by the ABS.

NSW Adult Population Health Survey – This is a telephone survey of NSW people who live in private households, focused on their health status and

health behaviours. From 2012 onwards mobile-only phone users were included. The target sample is approximately 1,000 persons in each health administrative area. Total sample size (completed interviews) was 15,442 in 2002 and 15,149 in 2012.

NSW Patient Survey Program

Adult Admitted Patient Survey – An ongoing postal survey, sent out monthly, focused on patients' experiences of care in public hospitals. Survey responses were collected from 28,391 patients admitted to a public hospital in NSW in 2015.

Targeted oversampling of adult admitted patients sought to boost the number of completed surveys received from two patient groups: for cancer patients admitted to hospital in 2013 and 2014, this resulted in 6,457 completed questionnaires; and for Aboriginal patients admitted to hospital in 2014 it resulted in 2,714 completed questionnaires.

Maternity Care Survey – An ongoing postal survey, sent out monthly, every second year. Survey responses were collected from 4,739 new mothers who gave birth in NSW public hospitals in 2015.

Small and Rural Hospital Survey – An ongoing postal survey, sent out monthly, focused on patients' experiences of care in small public hospitals across NSW. Survey responses were collected from 6,808 patients admitted to these small public hospitals in 2015.

International comparators

International context is provided by data from Sweden and Canada. These countries were selected as comparators because of their similarities in terms of a modest total population, large land masses (>400,000 km^2), and extensive areas that are sparsely populated. Spending per capita on healthcare overall in 2013 was $5,755 in NSW; $6,614 in Canada and $7,454 in Sweden (AU$, purchase price parity).[12] Comparative data from these countries help interpret the impact that rurality has on healthcare performance across different healthcare systems and jurisdictions.

Outpatient Cancer Clinics Survey – A postal survey collecting the responses of people attending an outpatient cancer clinic during February or March 2015. Survey responses were collected from 3,706 outpatients.

Figure 1.12 Definition of remoteness categories and number of respondents, NSW, Sweden and Canada, 2013–14

	Major city (1)	Inner Regional (2)	Remote (3)	2013	2014
NSW	Major cities	Inner regional	Outer regional, remote or very remote	1=988 2=360 3=176 N=1,524	1=2,294 2=369 3=137 N=2,800
Sweden	City/large town or suburbs of a city/large town	Small town	Village or rural location	1=1,063 2=507 3=823 N=2,393	1=3,106 2=1,342 3=2,739 N=7,187
Canada	Living in an area with 100,000 residents or more	5,000-99,999 residents	Under 5,000 residents	1=2,343 2=1,204 3=849 N=4,396	1=2,760 2=1,462 3=1,047 N=5,269

Source: Commonwealth Fund International Health Policy Survey.

Note: Missing values: For Canada in 2013, 1,016 records were not assigned to a size of area of residence and excluded from analysis. For Sweden 19 records were excluded in 2013.

Appendix 2 provides a summary of patient survey results by LHD.

Qualitative data

BHI commissioned the University Centre for Rural Health (UCRH) to gather qualitative data that would complement available quantitative data and enhance interpretation of any comparative results. The UCRH project gathered reflections from key informants in regional and remote health districts, collected contextual information on a series of site visits to rural areas and convened a deliberative forum with key stakeholders.

Quotes and reflections collected by the UCRH team are used throughout the report in 'Views from the qualitative consultation' boxes. These provide context and insights from providers of healthcare in rural, regional and remote areas of NSW.

Patient flows

The report examines changes over time in the number and proportion of patients who were hospitalised in a public hospital in their LHD of residence; in a public hospital in another LHD or state (outflows); or in a private hospital. These data should be interpreted with care. Certain types of care can only be provided in a small number of specialist settings and providing the most appropriate and safe care can mean patients have to travel outside of their LHD of residence. Additional complexity comes with trying to track changes over time where there have been significant shifts in patient need and demand for services; in models of care; as well as in local capacity and resources.

Report structure

This introductory section outlined the report's purpose, providing background information about rural health; and summarising data sources and methods used. The main body of the report comprises four chapters, which explore differences in healthcare in NSW by remoteness.

Chapter 1 describes patients' overall views about, and experiences of, healthcare

Chapter 2 focuses on accessibility measures

Chapter 3 focuses on appropriateness measures

Chapter 4 focuses on effectiveness measures.

While a variety of measures are included, particular attention is given to thematic areas of importance in rural areas: antenatal and maternity care; cancer care; experiences of Aboriginal patients, and patients' experiences in smaller rural hospitals.

Assessing healthcare

BHI reports are based on a framework that identifies key dimensions of healthcare performance.[13] *Healthcare in rural, regional and remote NSW* explores:

Accessibility: Healthcare, when and where needed – Are patients' and populations' health needs met? How easy is it for them to obtain healthcare?

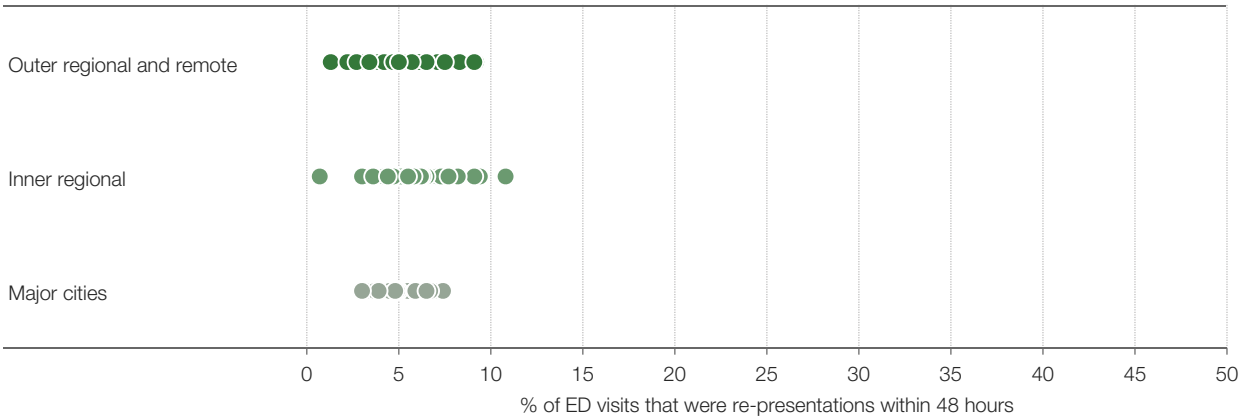
Appropriateness: The right healthcare, the right way – Are evidence-based services provided in a technically proficient way? Are services delivered in ways that are responsive to patients' expectations?

Effectiveness: Making a difference for patients – Do healthcare services address patients' problems and improve their health?

How to interpret

Example 1: A 'string of pearls' graph is used to show a distribution of results (in this case hospitals) and highlight differences across the three remoteness categories. This example shows the percentage of re-presentations to ED in outer regional and remote, inner regional and major city areas.

Emergency department re-presentations, percentage of ED visits for which patients had been to an ED within the preceding 48 hours, NSW public hospitals by remoteness, 2015–16



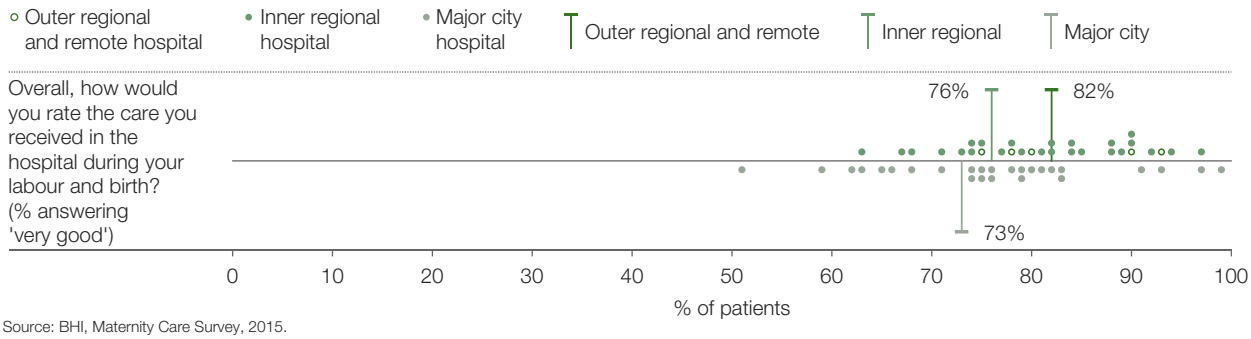
Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).

Example 2: 'Dot plots' show the distribution of results for hospitals and highlight differences from the result for the remoteness category as a whole.

This example shows dot plots for a survey question, by remoteness of hospital. Each plot shows the number of hospitals, by the percentage of their patients who gave the response (usually this is the most positive response category).

Rural hospitals are shown above the central horizontal line and urban hospitals, below. Hospitals are coloured coded to indicate remoteness. All hospital results are available at **bhi.nsw.gov**

Overall experience, percentage of patients who selected the most positive response category, maternity patients, NSW public hospitals by remoteness, 2015



Source: BHI, Maternity Care Survey, 2015.

Overall views of healthcare

Overall views of healthcare

Rural hospitals were rated highly by patients

One important way to assess healthcare is to ask patients about their overall views of the healthcare system and their experiences of care.

Asked to reflect on the effectiveness of the healthcare system, 58% of adults aged 55+ years in outer regional and remote NSW said the system works 'pretty well', compared with 51% in inner regional areas and 54% in major cities (Figure 1.13).

Across NSW, Canada and Sweden, there were no significant differences by remoteness in the proportion of people who said that their healthcare system works 'pretty well' (Figure 1.15).

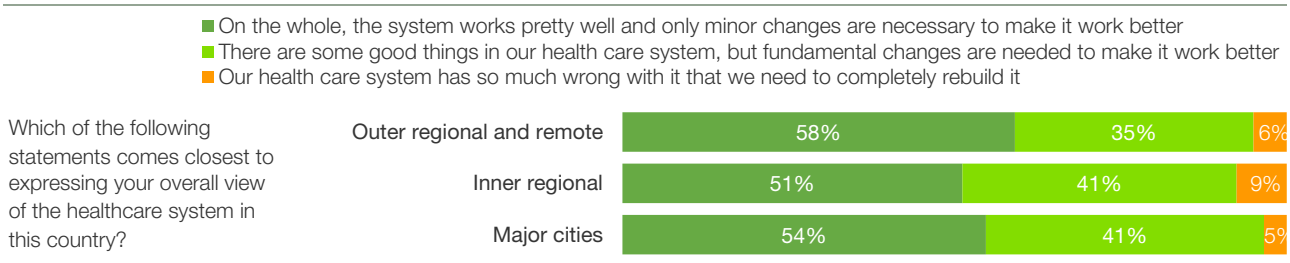
Within NSW, the Patient Survey Program each year distributes more than 200,000 questionnaires. Questionnaires are tailored to different groups but each one asks patients for an assessment of their overall experience of care – whether they would rate it to be 'very good', 'good', 'adequate', 'poor' or 'very poor'.

The survey of adult patients who in 2015 were admitted to a public hospital showed that 71% of patients in outer regional and remote hospitals rated their care to be 'very good', compared with 72% in inner regional hospitals and 63% in major city hospitals. At a hospital level, greatest variation was seen in the major city category – with results ranging from 52% to 83% (Figure 1.14).

Results from NSW surveys of maternity patients and cancer outpatients also found patients in rural hospitals rated their experiences positively. For example, among women who gave birth in public hospitals, 82% of those in outer regional and remote hospitals said their care was 'very good' compared with 73% of those in major city hospitals (Figure 1.14).

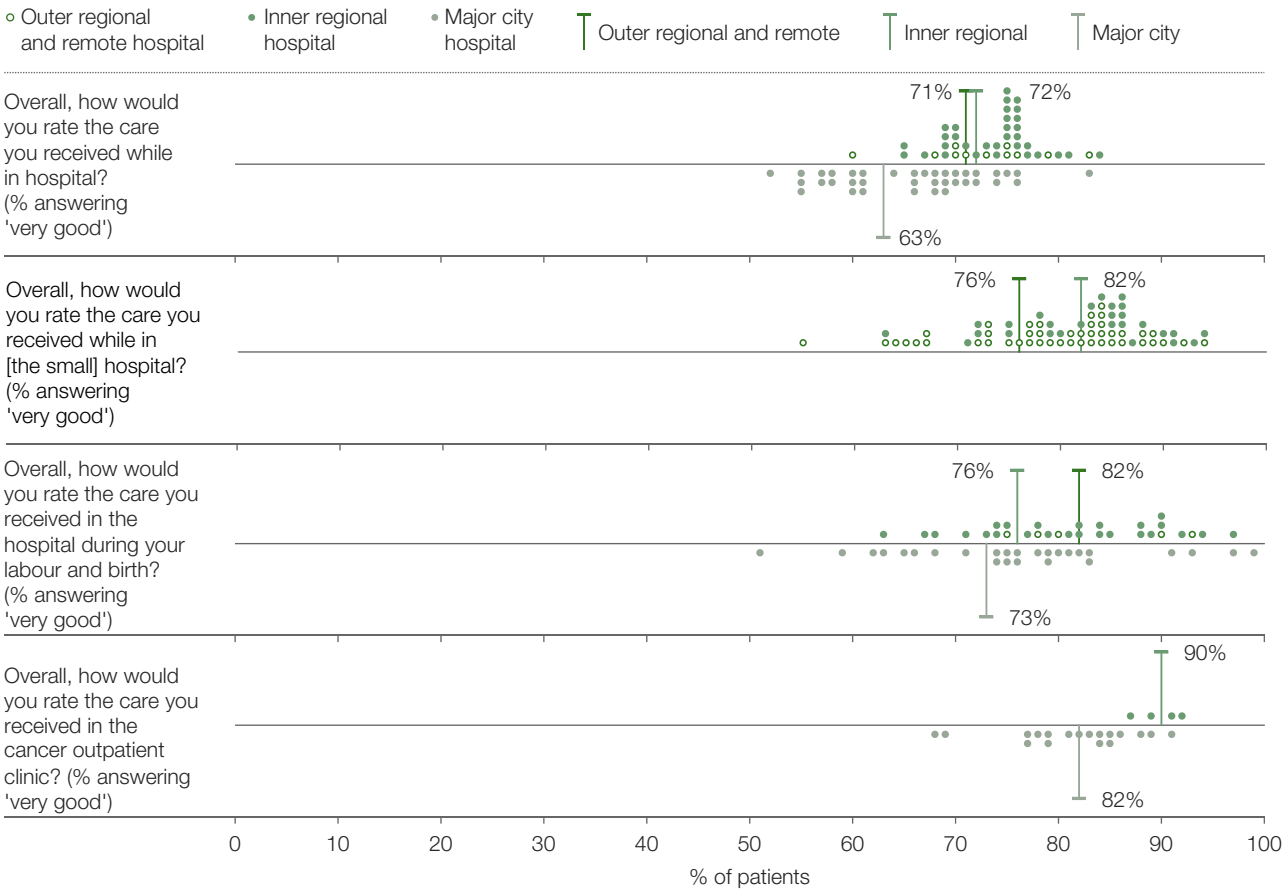
For cancer outpatients, 90% of patients who visited a clinic in an inner regional hospital said their care was 'very good' while 82% of patients who visited a clinic in a major city hospital did so (Figure 1.14).

Figure 1.13 Overall view of healthcare system, all response categories, adults aged 55+ years, NSW by remoteness of residence, 2014



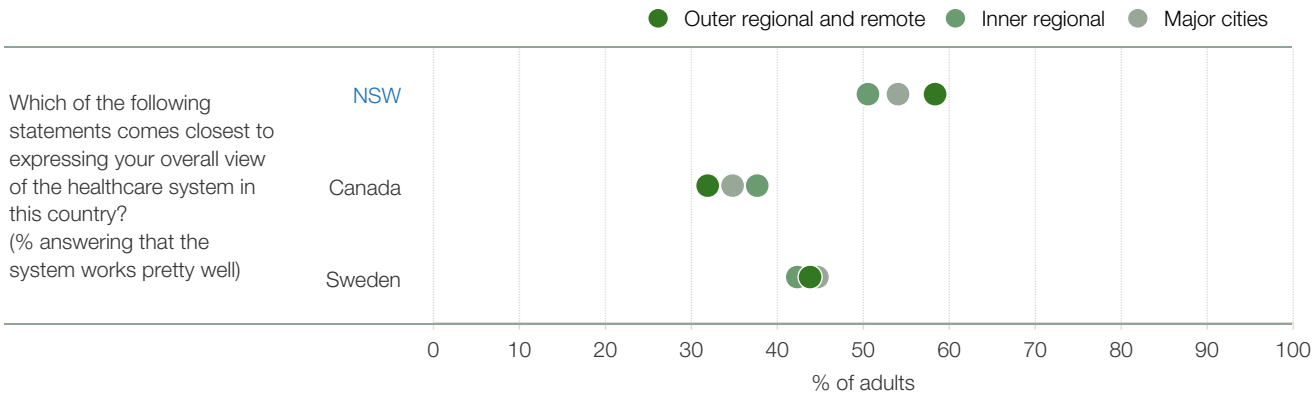
Source: 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

Figure 1.14 Overall experience, percentage of patients who selected the most positive response category, adult admitted patients, rural hospital patients, maternity patients and cancer outpatients, NSW public hospitals by remoteness, 2015



Sources: BHI, Adult Admitted Patient Survey, 2015; BHI, Small and Rural Facilities Survey, 2015; BHI, Maternity Care Survey, 2015; BHI, Outpatient Cancer Clinics Survey, 2015.

Figure 1.15 Overall view of healthcare system, percentage of adults aged 55+ years who selected the most positive response category, NSW, Canada and Sweden by remoteness of residence, 2014



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

Accessibility

Healthcare, when and where needed

Accessibility

Healthcare, when and where needed

Accessibility depends upon healthcare services being provided to patients when and where they need them. Patients vary in the extent to which they are able: to recognise and identify their healthcare needs; to seek care; to reach providers; to pay for care and; to receive care that is proportionate and matched to their needs. High performing healthcare organisations and systems adapt their offer of services to respond to these relative abilities to access them.[1]

This means that the measurement of accessibility focuses on utilisation of services or unmet needs, timeliness and punctuality, and on perceived barriers that disrupt or prevent receipt of healthcare. Measures reflect the availability and approachability of healthcare services, and assess whether costs to patients in terms of time, effort or money are onerous or unreasonable.

Summary of findings

- More than nine in 10 adults aged 55+ years in NSW have a regular doctor or GP clinic and this did not differ by remoteness
- 33% of patients in outer regional and remote areas and 19% of those in inner regional areas said they had difficulties accessing healthcare
- In particular, there were unmet needs for primary care – 14% of adults in outer regional and remote areas and 15% in inner regional areas said there was an occasion in the preceding year when they needed primary care but did not receive it
- About four in 10 people said they were able to get a same day primary care appointment when needed and this proportion was similar across remoteness categories. However, 39% of people who live in outer regional and remote areas said it was very difficult to get out-of-hours medical care, compared with 33% of people in inner regional areas and 17% in major cities
- Within NSW public hospital emergency departments (EDs), median waiting times to start treatment were shortest in outer regional and remote hospitals
- Waiting times to see a specialist or for non-urgent elective surgery were longer in rural areas. While over 97% of all elective surgery was completed within clinically recommended timeframes – regardless of the remoteness of the hospital – patients treated in inner regional hospitals generally had longer waiting times than those treated in major city or in outer regional and remote hospitals
- Travel times of over 30 minutes for antenatal care occurred in both rural and urban areas. Most women accessed postnatal care in the two weeks following the birth of their baby, and this did not differ by remoteness
- In 2014–15 in most rural local health districts (LHDs), there were fewer patients who had to travel outside the district for cancer care, compared to 2004–05
- Among patients admitted to a public hospital in 2014–15, the percentage who were admitted in their LHD of residence ranged across rural LHDs from 65.8% in Far West to 91.6% in Hunter New England.

Insights from the peer reviewed literature

- Adults and children living outside major cities have poorer oral health and are less likely to have visited a dentist in the preceding 12 months [2,3]
- People in outer regional and remote areas use EDs for primary care more than urban populations, and are more likely to be hospitalised for conditions considered to be potentially preventable [4]
- Rural populations have inequitable access to mental health services and are more likely to consult a GP for a mental health problem rather than a mental health professional [5]
- Evaluation of the Mental Health Emergency Care–Rural Access Program (telehealth) found that providing reliable remote access to specialist mental health assessment and advice while supporting providers in rural communities resulted in better outcomes for patients and services [6]
- Aboriginal people presenting to rural hospitals with acute ischaemic heart disease were less likely than non-Aboriginal people to be transferred to metropolitan hospitals and if transferred were also less likely to receive coronary angiography[7]
- Across Australia, the highest rates of patients waiting for residential aged care were reported for those living in remote areas and for those living in areas classified to the two most disadvantaged socioeconomic status groups.[8]

Accessibility in a pluralist system

For most people in NSW, primary care acts as the first — and the main — source of healthcare. It is pivotal in the provision of integrated and coordinated services and plays an essential role in healthcare systems. Being able to access primary care when and where needed is an important issue for people in rural areas. NSW has a pluralist healthcare system — with responsibility for primary care services largely borne by the Commonwealth government; while the state government takes responsibility for most public hospital, mental health, community health and ambulance services. The measures in this chapter reflect on the different types of services — considering access from a patient perspective rather than from an administrative or organisational perspective focused only on state-funded care.

Healthcare when needed: Difficulties accessing care

Adults in rural LHDs were more likely to report difficulties with access

Accessibility depends upon services being provided when and where patients need them. When asked about their ability to access healthcare, 33% of adults in outer regional and remote areas said they had difficulties getting care when needed, compared with 19% in inner regional areas and 12% in major cities (Figure 2.2).

At a health district level, adults living in rural LHDs were more likely to say they had difficulties getting care when needed – with a threefold difference in results between Western Sydney (9%) and Far West (29%) (Figure 2.2).

One important reason for unmet healthcare needs is lack of affordability. While financial coverage for most healthcare in Australia is delivered through publicly-funded Medicare and private health insurance, there are gaps or charges that are bridged by individuals. These out-of-pocket costs – both for care and for associated outlays such as parking or travel – can be a financial burden and result in patients delaying or skipping needed healthcare.

Across NSW, about one in 10 people aged 55+ years (12%), said they have skipped care due to cost – a relatively high proportion in international comparisons.[9] While this proportion differed by remoteness – ranging from 9% among outer regional and remote residents to 14% among inner regional residents – differences did not reach statistical significance (Figure 2.1).

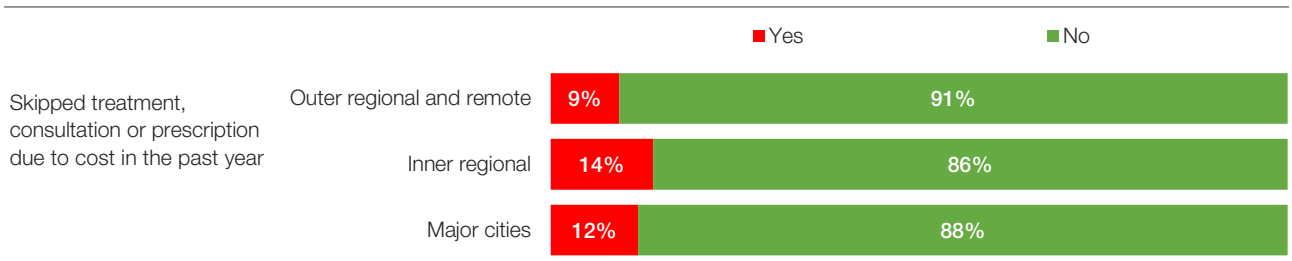
Similarly, in Sweden and Canada the proportion of people reporting cost barriers did not differ by remoteness (Figure 2.3).

Views from the qualitative consultation

"Cost is a barrier to some people all the time, and this is exacerbated in rural areas."
(Qualitative consultation respondent)

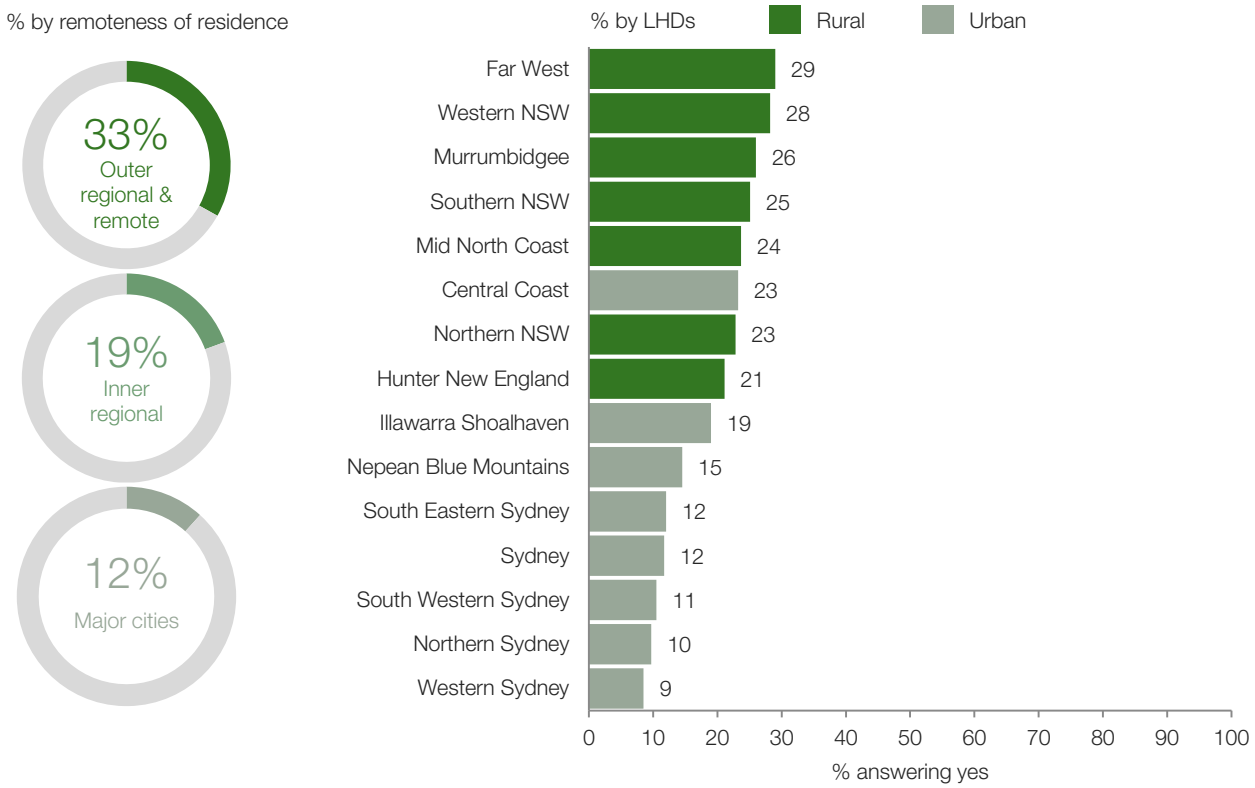
"In some areas there are cost barriers because people can't pay the 'gap' – in others, it is related to indirect costs. Costs of travel and accommodation for remote people may be prohibitive."
(Qualitative consultation respondent)

Figure 2.1 Foregone care due to cost, all response categories, adults aged 55+ years, NSW by remoteness of residence, 2014



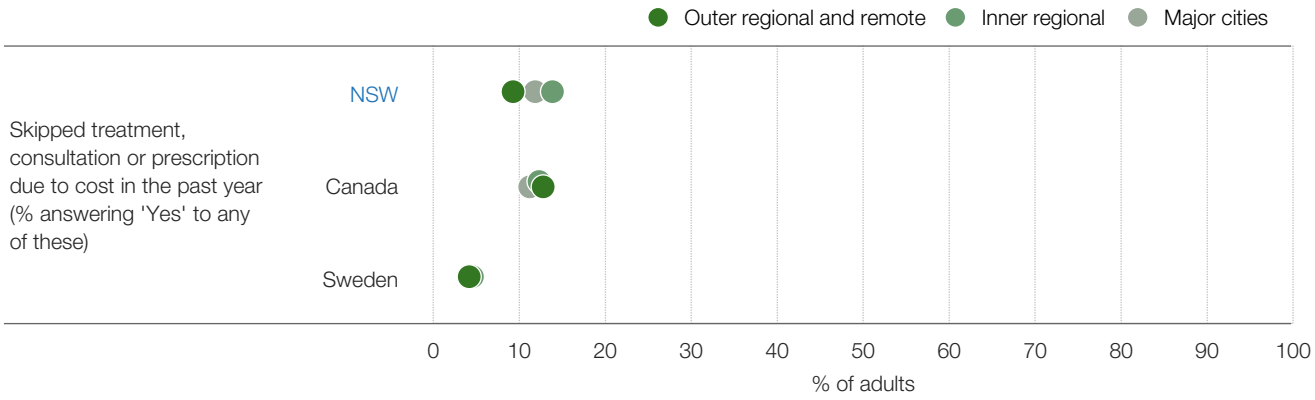
Source: 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

Figure 2.2 Healthcare when needed, percentage of people aged 16+ years who said they had difficulty getting care, NSW by remoteness of residence and LHD, 2012



Source: NSW Population Health Survey (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health.
Note: Data exclude people who said they did not need healthcare.

Figure 2.3 Foregone care due to cost, percentage of adults aged 55+ years who skipped care, NSW, Canada and Sweden by remoteness of residence, 2014



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

Coverage for primary care

'No difference' by remoteness in unmet needs for primary care

Coverage – the potential to access services should they be needed, is key to accessibility. Unmet healthcare needs often reflect a lack of coverage, such as shortfalls in insurance entitlements or a lack of affiliation with a primary care provider.

Primary care coverage is important because of the essential role played by GP practices and clinics – delivering preventive care, providing front line services for acute and chronic health problems, and acting as a gateway to the wider healthcare system. In 2014 across NSW, most adults aged 55+ years (95%) had a regular GP or clinic and patients in outer regional and remote areas were most likely to do so (98%) (Figure 2.4).

While coverage is key, it is also important to consider other characteristics of the care provided. Research has shown that primary care practices that act as a 'medical home' – that is, those that consistently provide continuity of care, coordinate wider healthcare services for their patients, and make care available at the time patients need it – achieve higher ratings of care, better patient engagement and improved outcomes.[10]

Affiliation with a medical home is measured by a score that combines patient responses to questions about the availability, continuity and coordination of care. Patients who answer positively to all of these questions are considered to have a medical home. Around six in 10 NSW patients are affiliated with a GP practice that has the hallmarks of a medical home, and this proportion did not differ with remoteness (Figure 2.4).

There is unmet need for GP services however. For example, 15% of people in inner regional areas said that on at least one occasion in the preceding year they needed to see a GP but did not do so (Figure 2.5).

Views from the qualitative consultation

"We are better off here [for primary care] than in the city – we are working toward continuity of care all the time. We don't really have wait times. We just have a list and people are reminded to come in."
(Qualitative consultation respondent)

Improvement initiatives in NSW

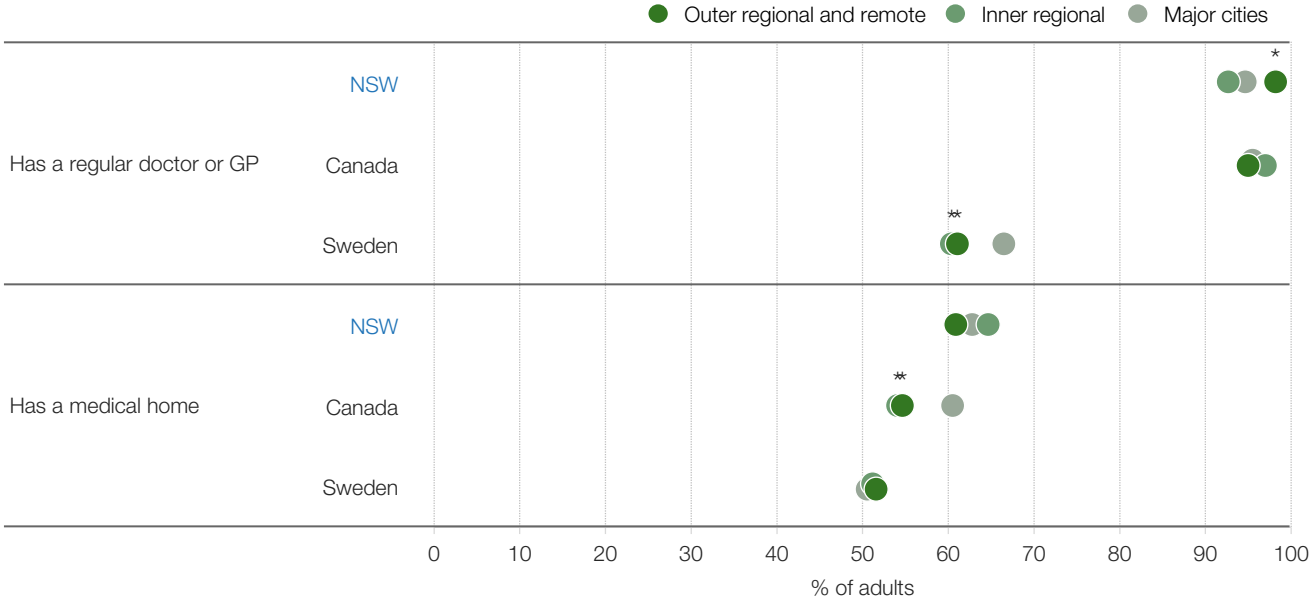
HealthOne NSW Service Models provide integrated care across general practice and community health services – particularly in rural areas. The models have three key principles: multidisciplinary team care; provision of care spanning prevention to continuing care and; client and community involvement.

There are three main types of models in use across the state:

- Co-location – services located in close physical proximity
- Hub and spoke models – a core central base providing support for satellite services
- Virtual integration – providers linked by communication technologies.

Primary healthcare researchers have found that multidisciplinary integrated primary healthcare centres can improve access and integration.[11] Co-location, in particular, was found to make informal communication and information sharing easier for professionals of different disciplines.

Figure 2.4 Percentage of adults aged 55+ years who have a regular GP or place of care, or 'medical home', NSW, Canada and Sweden by remoteness of residence, 2014



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

Note: Adults have a 'medical home' if: they have a regular doctor or GP practice; and their regular doctor always/often knows about their medical history; and they are able to get a same-day/next-day appointment or the GP practice always/often gives a same-day response to telephoned medical questions; and one person is responsible for all care they receive from other doctors for a chronic condition or the GP practice always/often helps coordinate care received from other doctors or places.

* Estimate is significantly different to major cities.

Figure 2.5 Use of GP services, percentage of people aged 15+ years who said they had unmet need, NSW by remoteness of residence, 2014–15

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

Estimate has a relative standard error between 25% and 50% and should be used with caution.

Other categories for Outer regional and remote include 'Too busy' and 'Cost'; for Inner regional include 'Dislike or fear of service' and 'Cost'; for Major cities include 'Dislike or fear of service', 'Cost' and 'Had an upcoming appointment'.

Healthcare when needed: Primary care accessibility

Same-day access to primary care did not differ according to remoteness

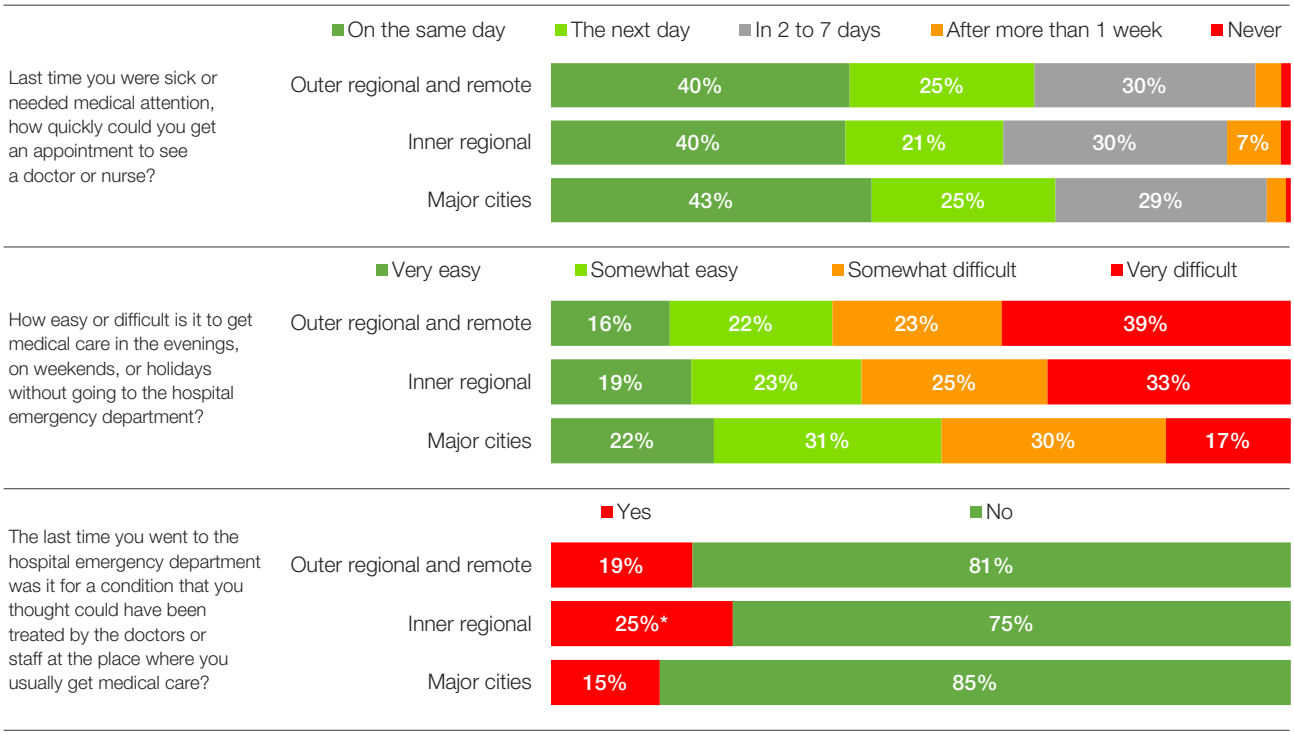
Availability refers to the extent to which patients can reach healthcare services in a timeframe that meets their needs.

In 2014, four in 10 adults aged 55+ years in NSW were able to access same-day care when needed and this proportion did not differ significantly by remoteness (Figure 2.6).

The proportion of adults aged 55+ years who said it was 'very difficult' to access out-of-hours primary care increased in conjunction with remoteness (17% in major cities, 33% in inner regional, 39% in outer regional and remote). There was a significant difference in the proportion of adults who said that they had used the ED for primary care, with people in inner regional areas most likely to do so (25%) (Figure 2.6).

In comparison with the NSW results, those from Canada show significant differences in primary care accessibility in terms of timeliness and after hours access to care. Use of ED for primary care did show a remoteness-associated gap in all jurisdictions and this was more pronounced in Canada (Figure 2.7).

Figure 2.6 Access to primary care, all response categories, adults aged 55+ years, NSW by remoteness, 2014



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

* Estimate is significantly different to major cities.

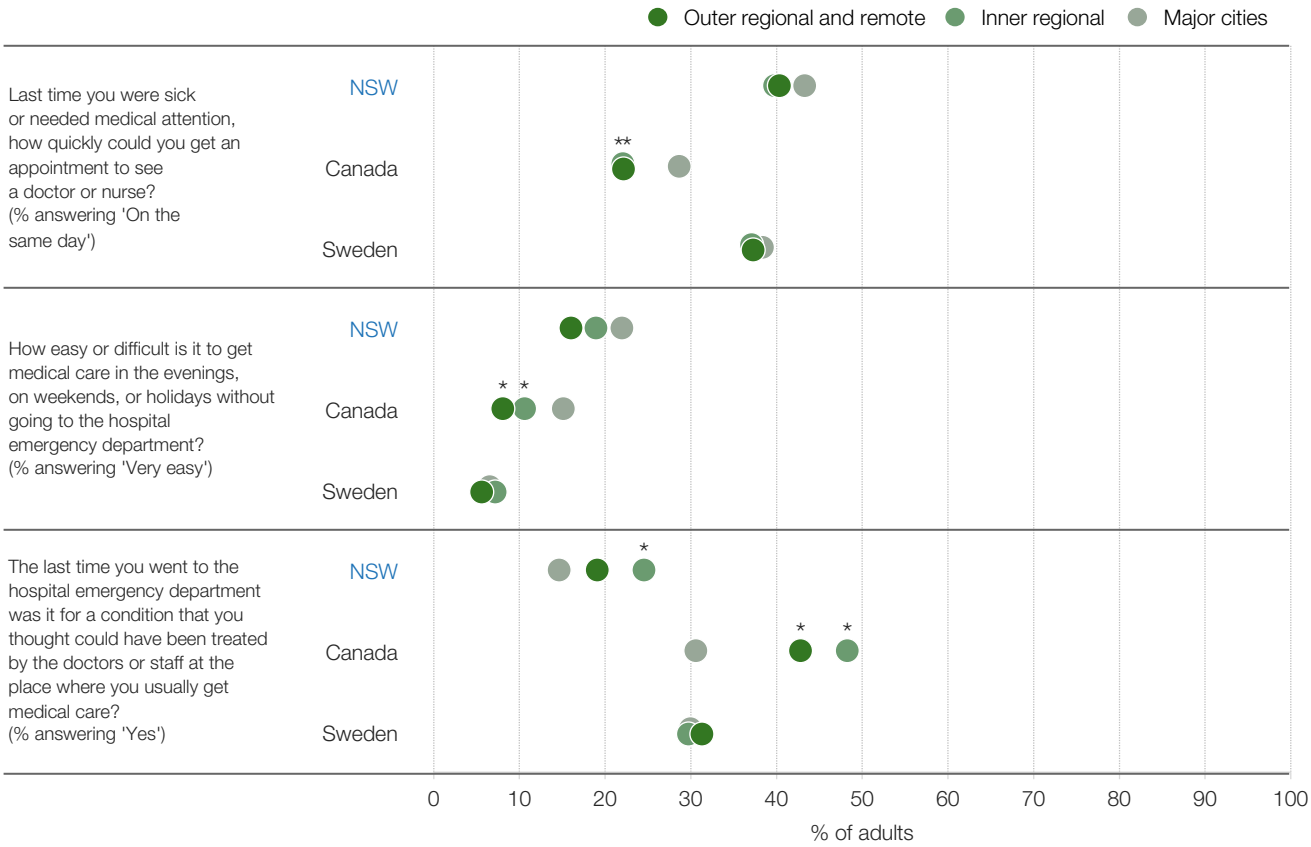
Views from the qualitative consultation

Rural EDs are more frequently used for primary care purposes than urban EDs.

In remote areas, a health service rather than a GP may be the 'medical home'. Health services include outreach services offered by LHDs supplemented by royal flying doctors services and Aboriginal Community Controlled Health Services.

"Rural EDs are completely different – we need to tell the story behind the numbers... in rural towns, GPs are also the ED doctor and there are a range of financial incentives that exist around this."
(Qualitative consultation respondent)

Figure 2.7 Access to primary care, percentage of adults aged 55+ years who selected the most positive response category, NSW, Canada and Sweden by remoteness, 2014



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

* Estimate is significantly different to major cities.

Managing access to hospital care

Most patients are treated in their LHD of residence for public hospital care

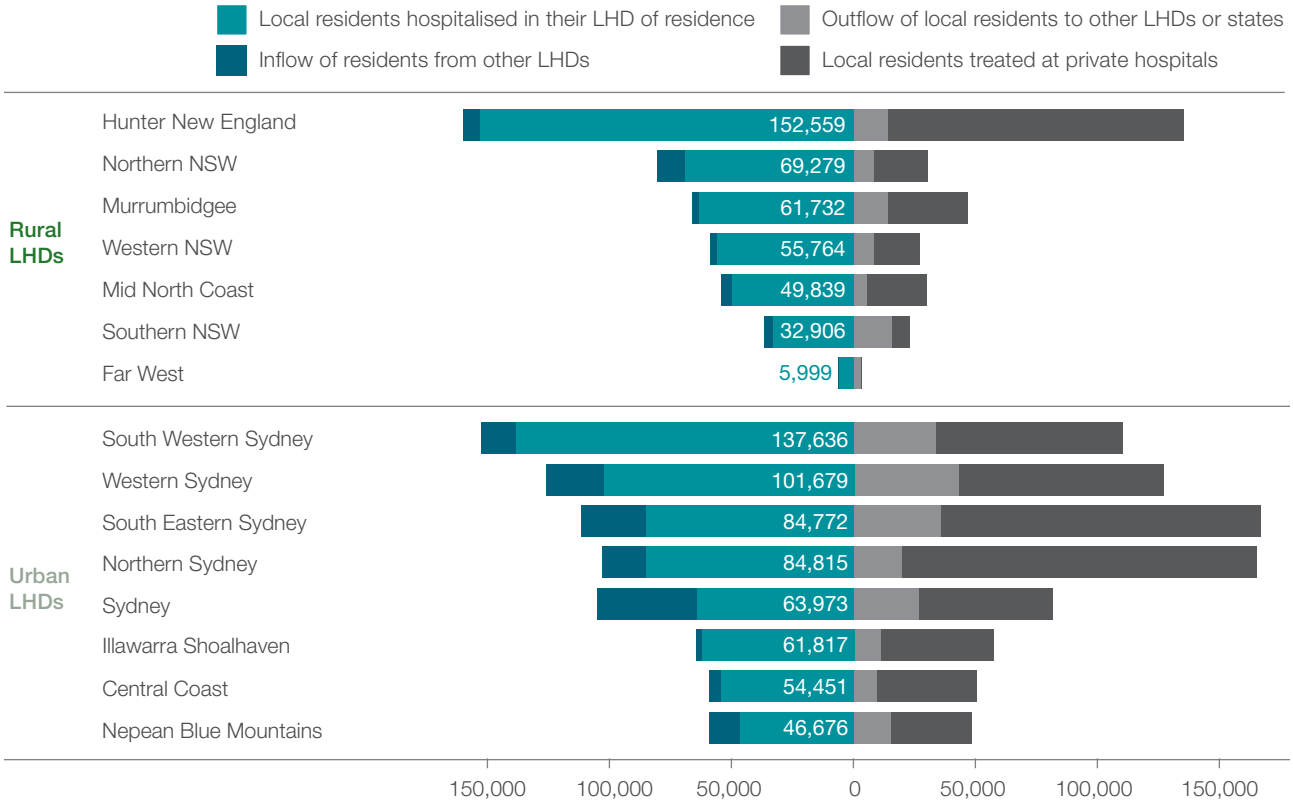
Healthcare systems consist of interconnected organisations – each with a different set of services. Patients prefer it when care is provided close to home and in recent years a number of initiatives have sought to bring specialist care to patients, through telehealth, mobile clinics, fly-in–fly-out consultant visits and additional investment in local capacity for some services.

Areas cannot and in many cases, should not, strive to provide the full range of care for residents. Certain types of care can only be provided in a limited number of locations. In order to provide a full complement of services to a population, the system works together in a coordinated way, sometimes sending patients outside their LHD of residence (both in rural and urban locations) to receive the services they need.

Across LHDs in the year 2014–15, the number of public hospitalisations for which patients travelled outside their LHD of residence ranged from 3,115 in Far West to 42,393 in Western Sydney. The proportion of public hospitalisations that were performed locally – that is within the patients' LHD of residence – ranged from 65.8% in Far West to 91.6% in Hunter New England (Figure 2.8).

Between 2004 and 2014, the number of patients who had to travel outside their LHD of residence for public hospital care increased in all LHDs, except in Far West where there was a small decrease (Figure 2.9).

Figure 2.8 LHD resident hospitalisations and where they occurred, public and private hospitals, 2014–15



Source: NSW Ministry of Health, extracted from Clinical Services Planning Analytics (CaSPA) FlowInfo v15.0, Health System Planning and Investment Branch (BHI Analysis).

Notes: St Vincent's Hospital is located within South Eastern Sydney LHD; The Children's Hospital at Westmead is located in Western Sydney LHD; Sydney Children's Hospital, Randwick is located in South Eastern Sydney LHD. For the purposes of flow analyses, these hospitals are considered as separate destinations, outside the LHD within which they are geographically located. While Albury Hospital falls under the governance of the Victorian Albury-Wodonga Health service, residents of Murrumbidgee LHD hospitalised at Albury Hospital have been considered as 'Local residents hospitalised in their LHD of residence'.

Includes acute hospitalisations only. Patients admitted to private facilities as public patients under a contractual arrangement have been included in 'Local residents hospitalised in their LHD of residence'.

Excludes hospital in the home, unqualified neonates, chemotherapy and renal dialysis hospitalisations.

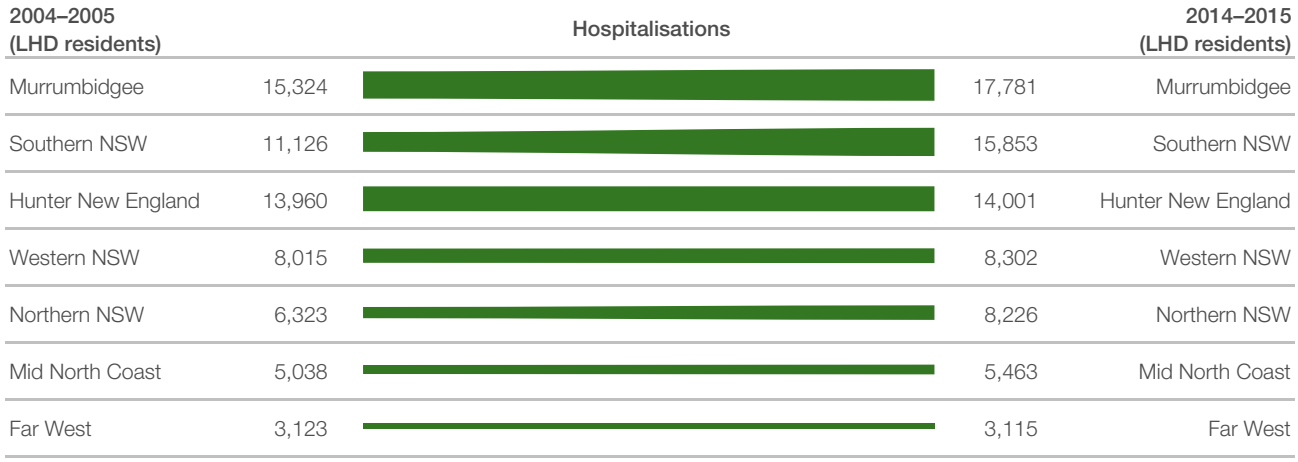
Views from the qualitative consultation

Rural health services network between LHDs, across state borders, and with regional or metropolitan referral hospitals as appropriate to provide patient care. This is especially characteristic of remote services or LHDs that traverse both rural and remote areas.

The process of networking was described as being based on relationships and systems. In some cases, relationships are formalised through agreements and pathways, in other cases they happen in a more organic manner. When networks function effectively, then healthcare performance is optimised, but when they operate poorly, this impacts on service performance.

"There is a networking and infrastructure issue to consider when managing rural networks: how do you coordinate efficient services when rural communities are incredibly passionate and protective of their own communities and hospitals? You are fighting the problem of inefficiencies but at the same time you can't underestimate the importance of a small hospital to a small community in terms of its social role. So one way to manage this is to make small hospitals part of a network."
(Qualitative consultation respondent)

Figure 2.9 Hospitalisations, number that occurred outside the patients' LHD of residence, NSW public hospitals, 2004–05 and 2014–15



Source: NSW Ministry of Health, extracted from Clinical Services Planning Analytics (CaSPA) FlowInfo v15.0, Health System Planning and Investment Branch (BHI Analysis).

Note: The NSW Health system includes non-geographical specialty networks (e.g. St Vincent's, Children's Hospital Westmead). Patients admitted to a hospital in these networks are shown as outflows from their LHD of residence, despite the fact that for some patients, the network hospital is situated in their local area.

Timeliness in the emergency department

Patients in rural areas had shorter waiting times to start treatment in the ED

Emergency departments (EDs) provide specialised assessment and life-saving care and are an entry point to inpatient services for acutely unwell patients. They are open to all with no coverage restrictions.

In 2013, of the NSW adults who said they visited an ED in the preceding two years, 46% waited less than 30 minutes to be treated – and this did not differ by remoteness. Results in Canada were much lower overall and Canadian patients in most rural areas were significantly more likely to report short waits than those in major cities (Figure 2.10).

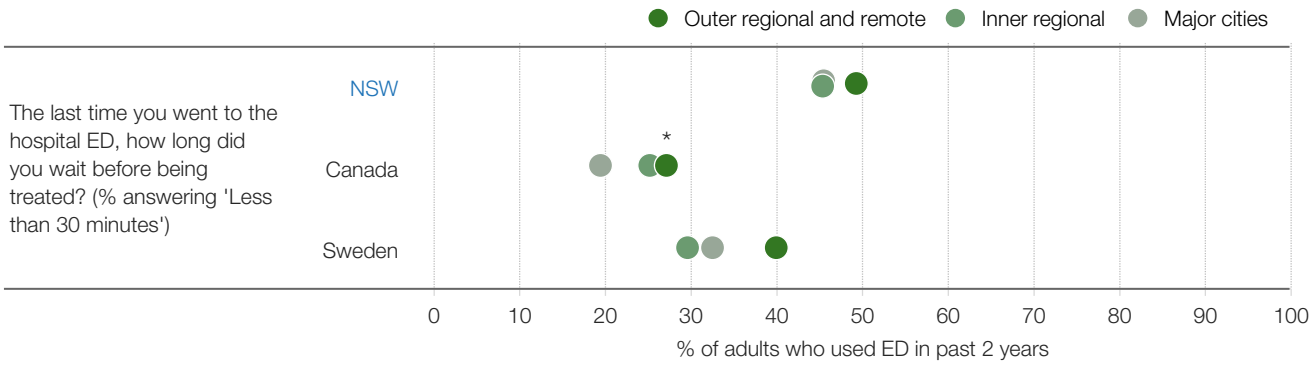
While patient survey results provide information on experiences of care, they are based on a subset of all patients. Administrative data also measure timeliness, and are based on information about all ED visits. In administrative datasets, ED patients are allocated to one of five urgency (triage) categories. Each category has a defined maximum recommended time within which patients should start to receive treatment: resuscitation (within seconds); emergency (within 10 minutes); urgent (within 30 minutes); semi-urgent (within 60 minutes); and non-urgent (within 120 minutes). Hospitals with the shortest waiting times are seen in rural areas (Figures 2.11 and 2.12).

Views from the qualitative consultation

Timeliness of service provision in rural EDs reflects their successful adaptation of existing service models to community needs.

The need to operate efficiently while still providing the best possible level of service to patients emerged as a central tension in rural health practice. Rural and remote healthcare providers are characterised by a lack of economies of scale and an absence of systems such as a 'pool' of emergency staff to call on if necessary. A certain number of resources are required to provide a minimum level of service, even when this appears to be inefficient. Rural health services demonstrate incredible flexibility and adaptation in models of service to meet the needs of rural communities such as the use of networking, hub and spokes models, service adaptations and compensatory mechanisms. This means at times refashioning the services they provide to create efficiency that is broader than the small population they might service geographically.

Figure 2.10 Waiting in the emergency department, percentage of adults who said they waited less than 30 minutes before being treated, NSW, Canada and Sweden by remoteness of residence, 2013

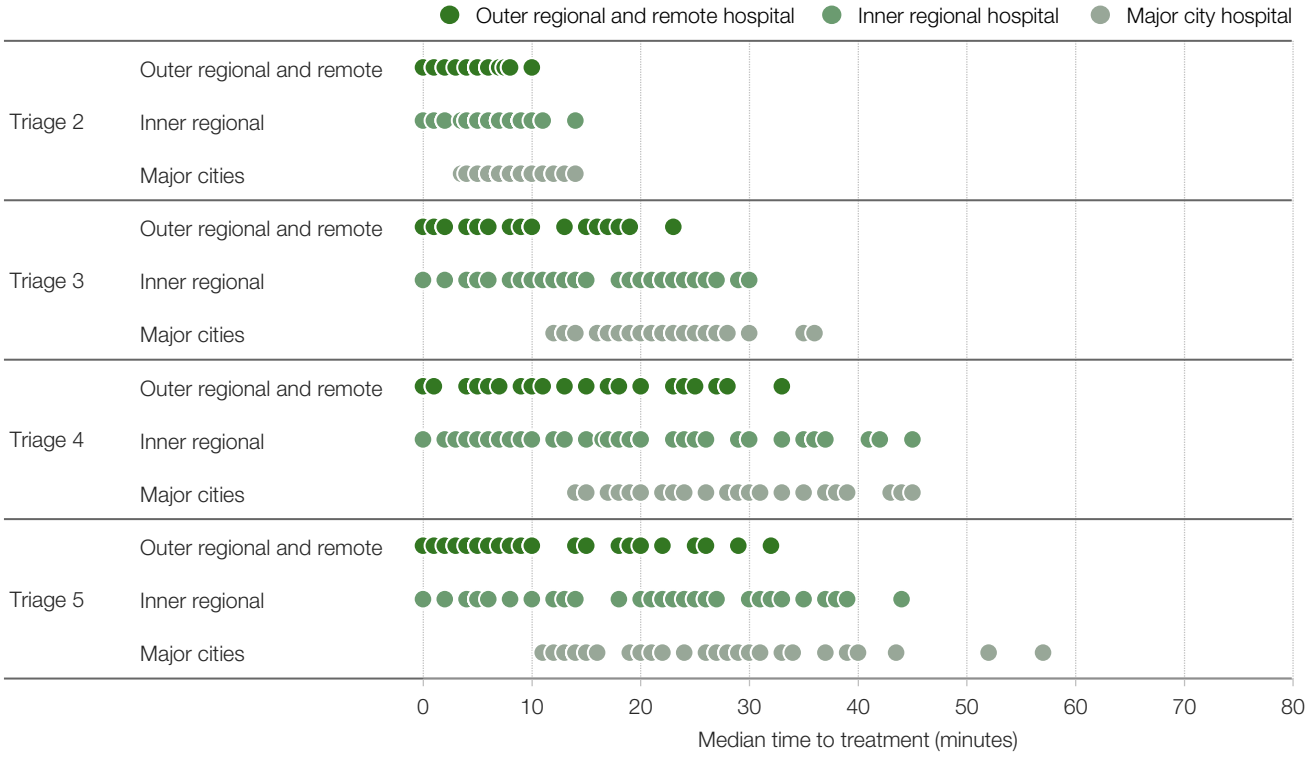


Source: 2013 Commonwealth Fund International Health Policy Survey.

Note: Acuity patterns of ED visits vary by rurality. In 2015, 23% of visits to outer regional and remote EDs were triage 5, compared with 15% in inner regional and 10% in major city EDs.

* Estimate is significantly different to major cities.

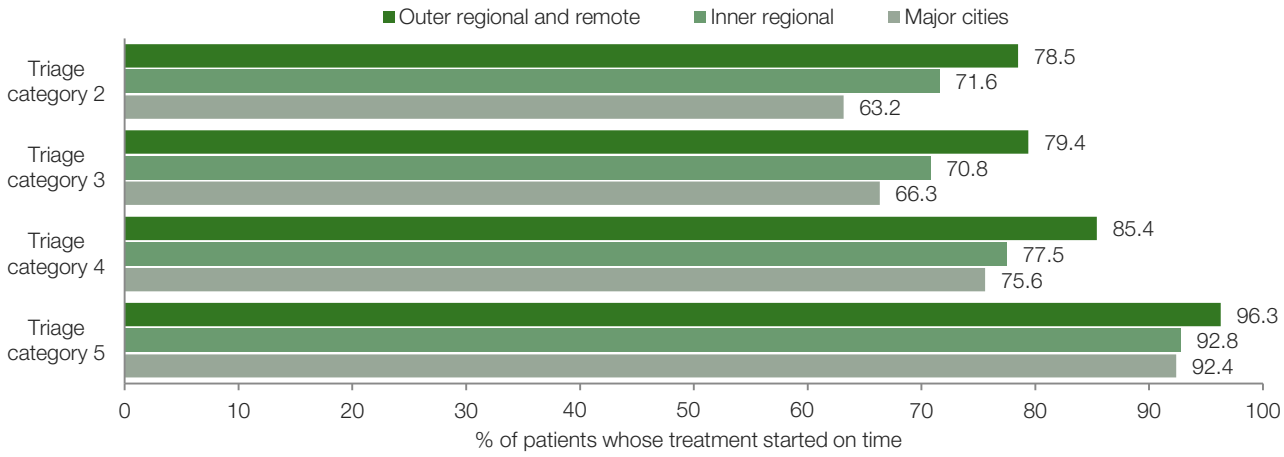
Figure 2.11 Emergency department treatment, median waiting time for treatment to start by urgency, NSW public hospitals by remoteness, 2015



Source: NSW Ministry of Health, Emergency Department Data Collection.

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 2.12 Waiting in the emergency department, percentage of patients whose treatment started on time, by triage category, NSW public hospitals by remoteness, 2015



Source: NSW Ministry of Health, Emergency Department Data Collection.

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.

Time spent in the emergency department

A higher proportion of patients in rural areas 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.

In recent years, there has been a concerted effort to ensure that the time patients have to spend in the ED is less than four hours.

Patients who require admission to hospital from the ED generally have more complex health needs than those who are treated in the ED and leave. Time spent in the ED for these patients is affected not only by the efficiency of the ED but also by this complexity and by bed availability in the wider hospital. In general, patients who are admitted from the ED are less likely to leave within four hours of presentation.

Performance comparisons are therefore fairer when separated into two groups: treated and discharged; treated and admitted or transferred. EDs in outer regional and remote locations have a lower proportion of urgent cases and fewer patients requiring admission (Figure 2.13).

Over the past five years the proportion of NSW patients who left the ED within four hours has gradually increased, reaching 73.9% in April–June 2016.[12] Across public hospitals in 2015, the proportion of patients who were treated and discharged within four hours ranged from 64.8% to 99.8%; while for patients who were treated and admitted the range was from 15.4% to 100%. Rural hospitals generally outperformed urban hospitals (Figure 2.14).

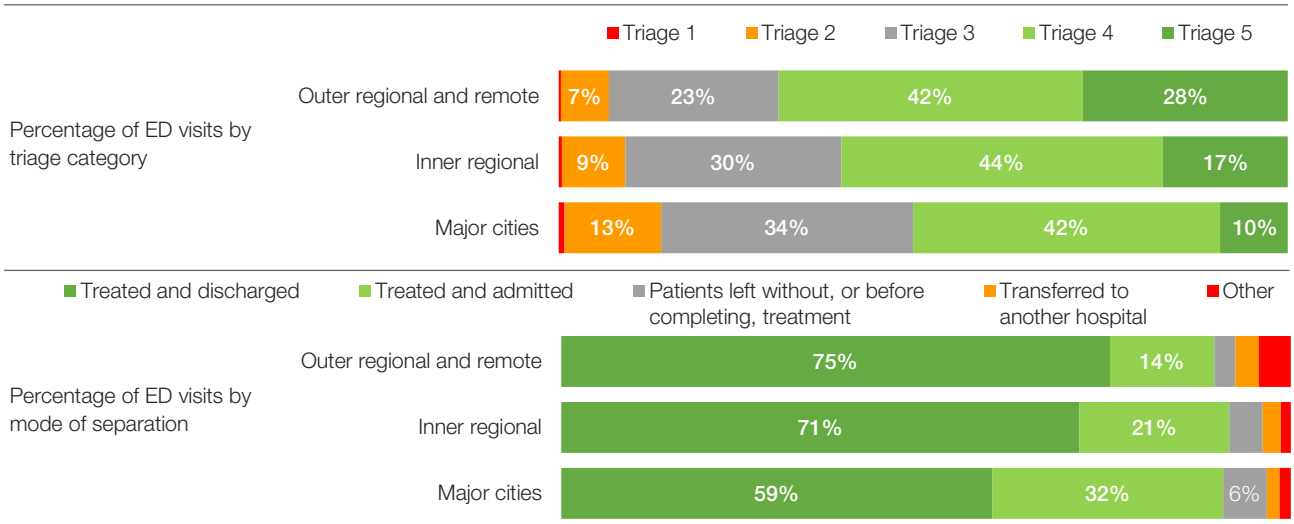
However, performance appears to be more closely related to the size of the ED than remoteness. Patients who visited smaller hospitals, regardless of their setting were more likely to spend less than four hours in the ED.

Percentage of ED visits for which patients spent less than four hours in the ED, NSW public hospitals by remoteness, 2015

	Outer regional and remote	Inner regional	Major cities	NSW
Treated and discharged	95%	90%	82%	86%
Treated and admitted	69%	41%	40%	41%
All visits	90%	79%	69%	73%

Source: NSW Ministry of Health, Emergency Department Data Collection.

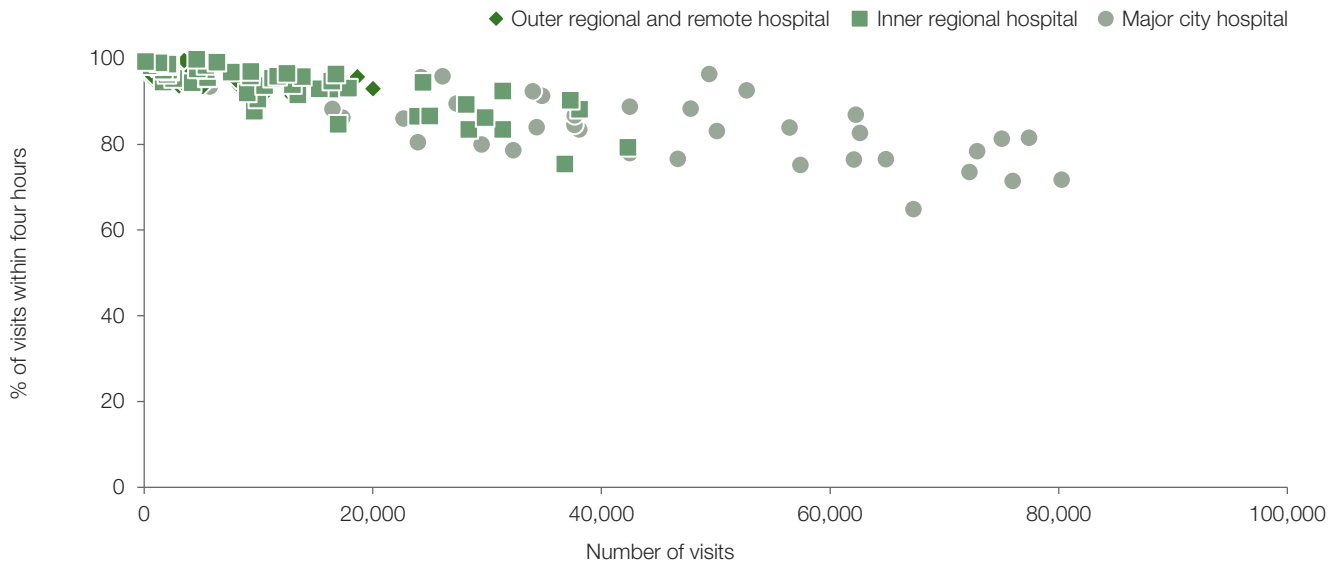
Figure 2.13 Percentage of ED visits by urgency and mode of separation, NSW public hospitals by remoteness, 2015



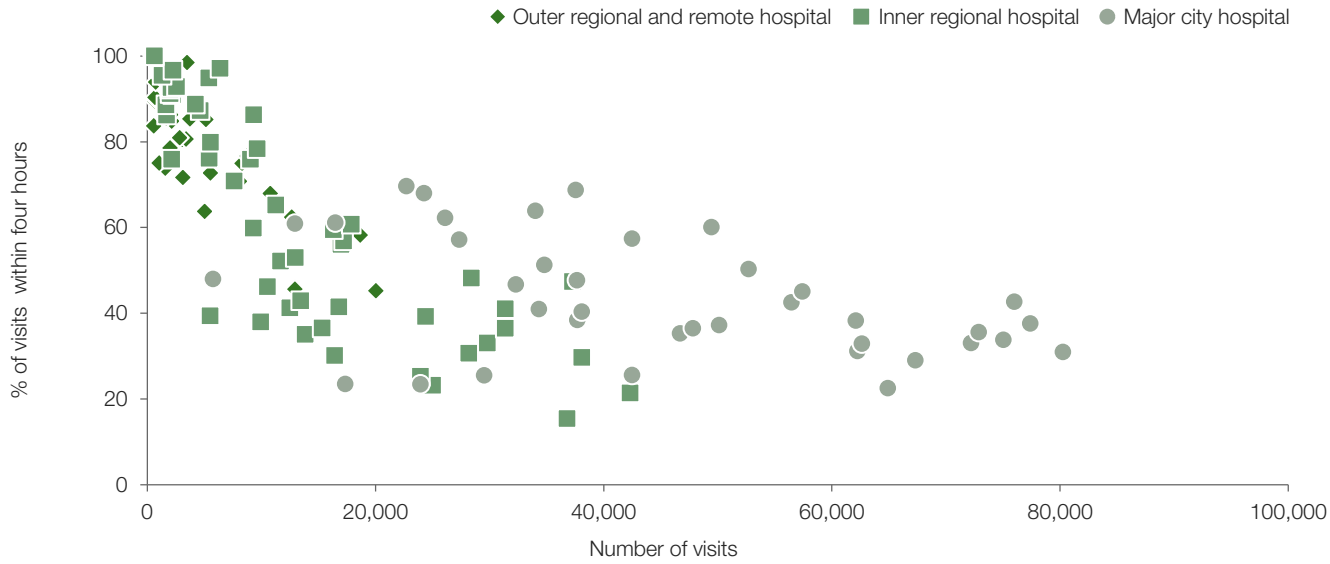
Source: NSW Ministry of Health, Emergency Department Data Collection.

Figure 2.14 Percentage of ED visits for which patients spent less than four hours in the ED, patients who were treated and discharged and patients who were treated and admitted, NSW public hospitals by remoteness, 2015

A. ED visits for which patients were treated and discharged



B. ED visits for which patients were treated and admitted to hospital



Source: NSW Ministry of Health, Emergency Department Data Collection.

Patients who left the ED before treatment

Patients in rural EDs had shorter waits; fewer leave before receiving treatment

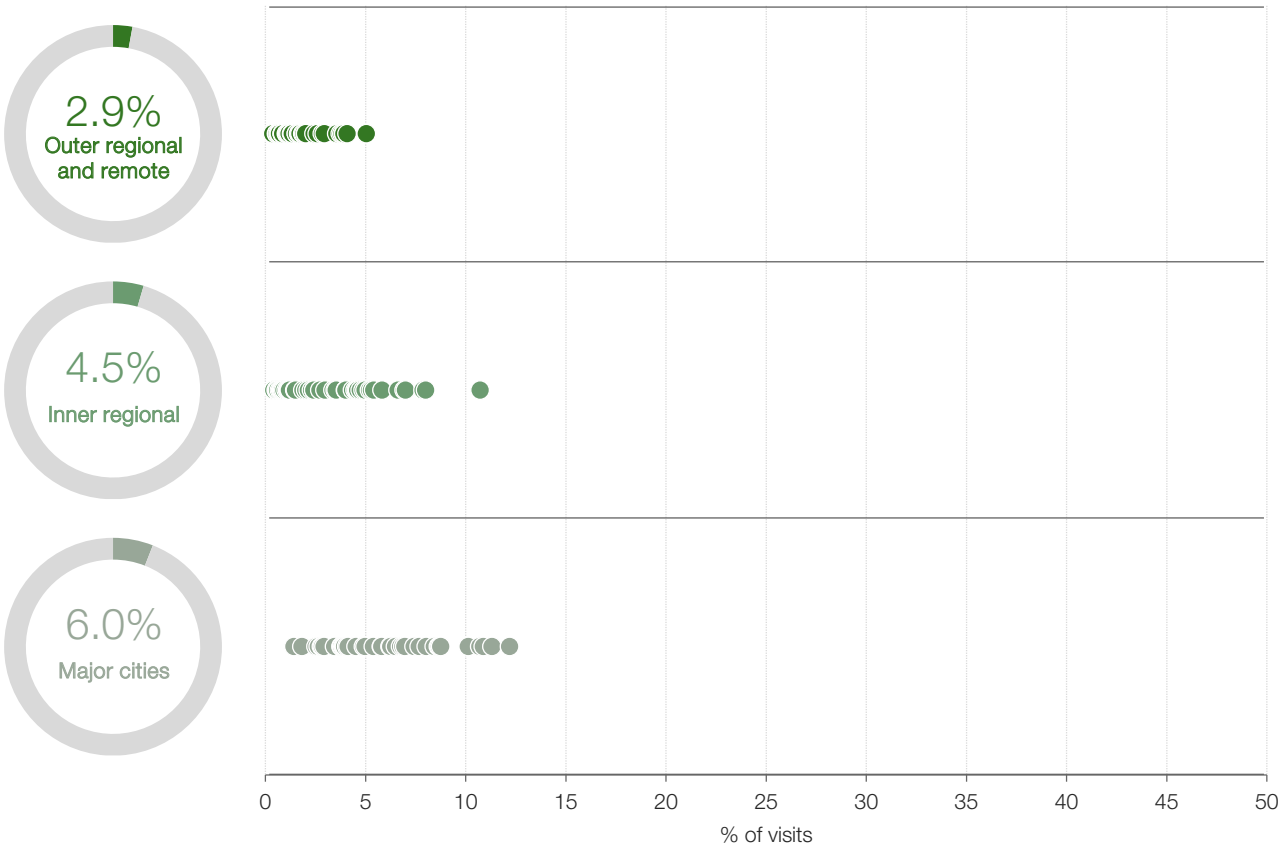
Leaving the ED without treatment may be a reflection of individual factors (resolution of the presenting problem, personal circumstances) or hospital factors (wait was too long, lack of cultural sensitivity). Leaving the ED without treatment could also be an accessibility issue.

Of the last 2.5 million ED visits in NSW in 2015, about 139,000 patients left before they received treatment (5% of visits).[12]

ED visits in metropolitan hospitals were more likely to result in patients leaving before treatment than those in inner regional and in outer regional and remote hospitals. Across metropolitan hospitals, the percentage of ED visits for which patients left at their own risk or did not wait ranged from 1.4% to 12.2%. The range was much tighter in outer regional and remote hospitals – from 0.4% to 5.0% (Figure 2.15).

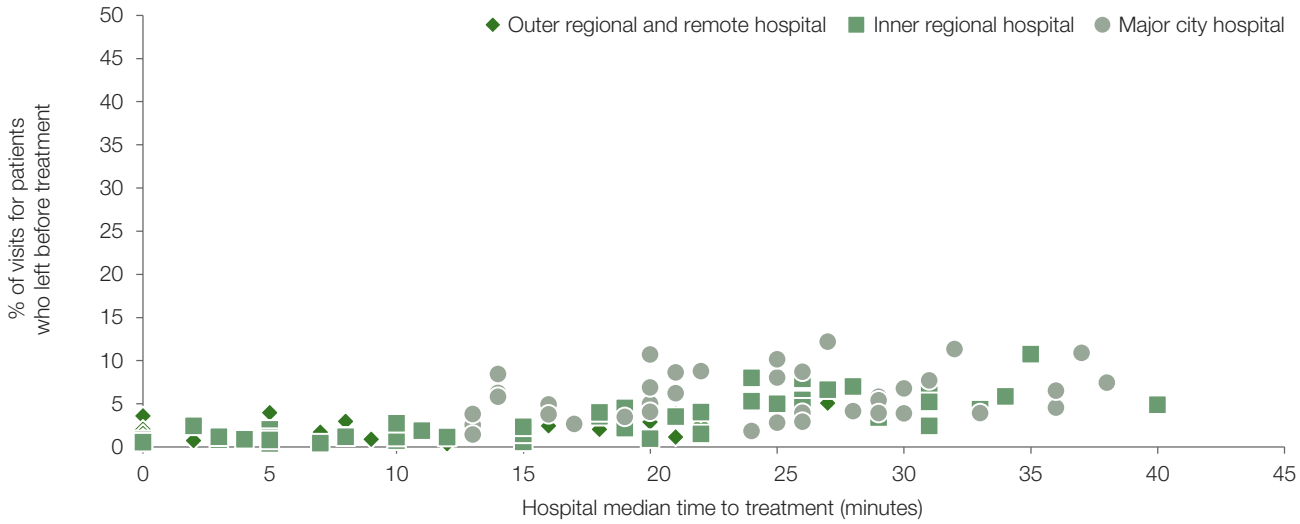
There is a general association between increasing ED waiting times and the percentage of patients who left without treatment (Figure 2.16).

Figure 2.15 Percentage of ED visits for which the patient did not wait for care or left at their own risk, NSW public hospitals by remoteness, 2015



Source: NSW Ministry of Health, Emergency Department Data Collection.

Figure 2.16 Percentage of ED visits for which the patient did not wait for care or left at their own risk by median time to start treatment, triage 3 to 5, NSW public hospitals by remoteness, 2015



Source: NSW Ministry of Health, Emergency Department Data Collection.

Timeliness of specialist appointments and surgery

Wait times for rural patients were longer to see a specialist and for surgery in public hospitals

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

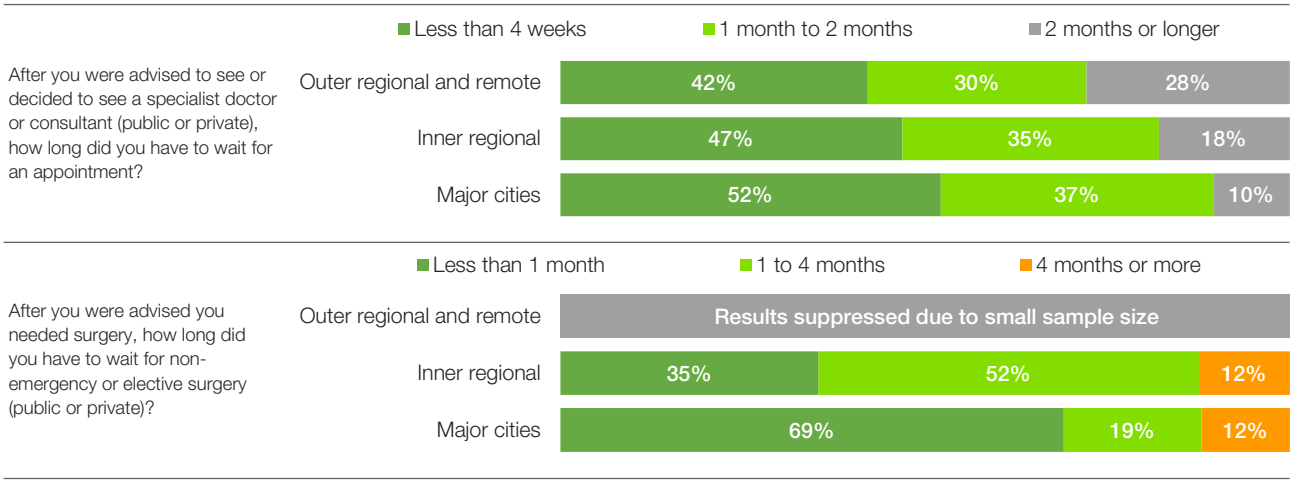
International survey results show that patients living in rural areas of NSW tend to have longer waits for specialist services. Among surveyed patients in outer regional and remote areas, 42% said they waited less than four weeks for an appointment (Figure 2.17).

The tendency for patients who live in outer regional and remote areas to have longer waits for a specialist appointment was also seen in Canada, although the effect associated with remoteness was smaller than that seen in NSW (Figure 2.19).

NSW also had the most marked difference by remoteness in the proportion of patients who said they waited less than one month for elective surgery. These survey results include public and private hospital patients and do not take account of differences in case mix or urgency. In the NSW public hospital system, almost all elective surgery occurs within clinically recommended times (see page 47).

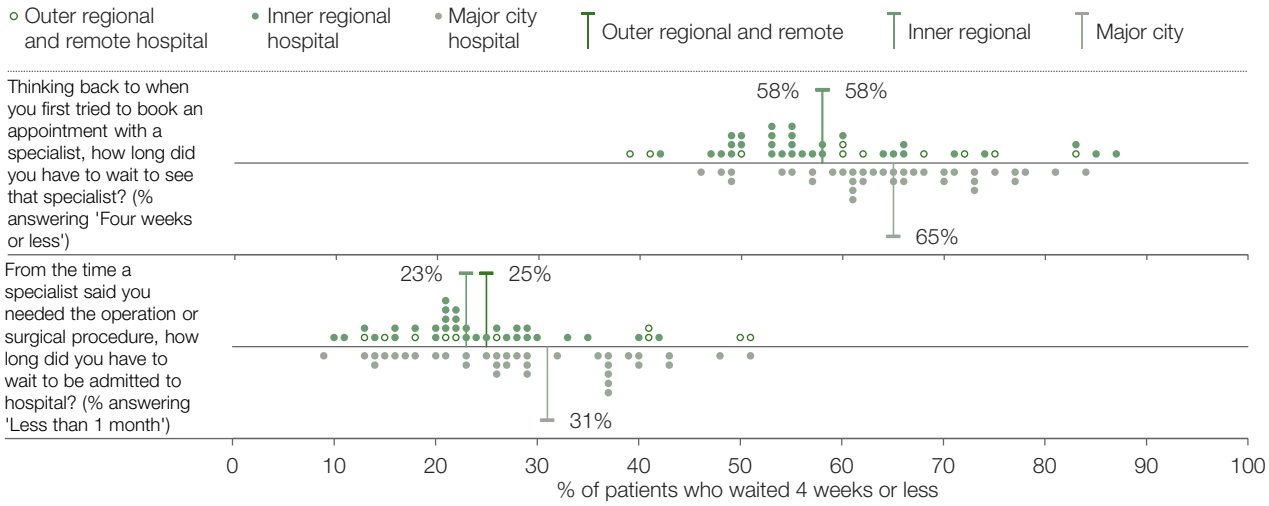
Results from the NSW Patient Survey Program show that the percentage of patients who said they waited four weeks or less for a specialist appointment for surgery ranged across hospitals from 39% to 87%; and the percentage who waited less than one month for surgery ranged from 9% to 51%. Waiting times for specialist appointments and surgery tend to be longer in rural hospitals than in urban hospitals (Figure 2.18).

Figure 2.17 Waiting for specialist appointments and for surgery, all response categories, NSW adults by remoteness of residence, 2013



Source: 2013 Commonwealth Fund International Health Policy Survey.

Figure 2.18 Waiting for specialist appointment before surgery, and for admission to hospital, percentage of patients who said they waited less than four weeks, NSW public hospitals by remoteness, 2015



Source: BHI, Adult Admitted Patient Survey, 2015.

Note: These questions were only completed by patients who had a planned operation or surgical procedure.

Figure 2.19 Waiting for specialist appointments and for surgery, percentage of adults who selected the most positive response category, NSW, Canada and Sweden by remoteness of residence, 2013

Source: 2013 Commonwealth Fund International Health Policy Survey.

Note: Results for NSW outer regional and remote are suppressed due to small sample size.

* Estimate is significantly different to major cities.

Timeliness in elective surgery

Elective surgery is performed within recommended times in NSW rural hospitals

Elective surgical procedures performed in NSW public hospitals are assigned an urgency category, with different recommended maximum waiting times:

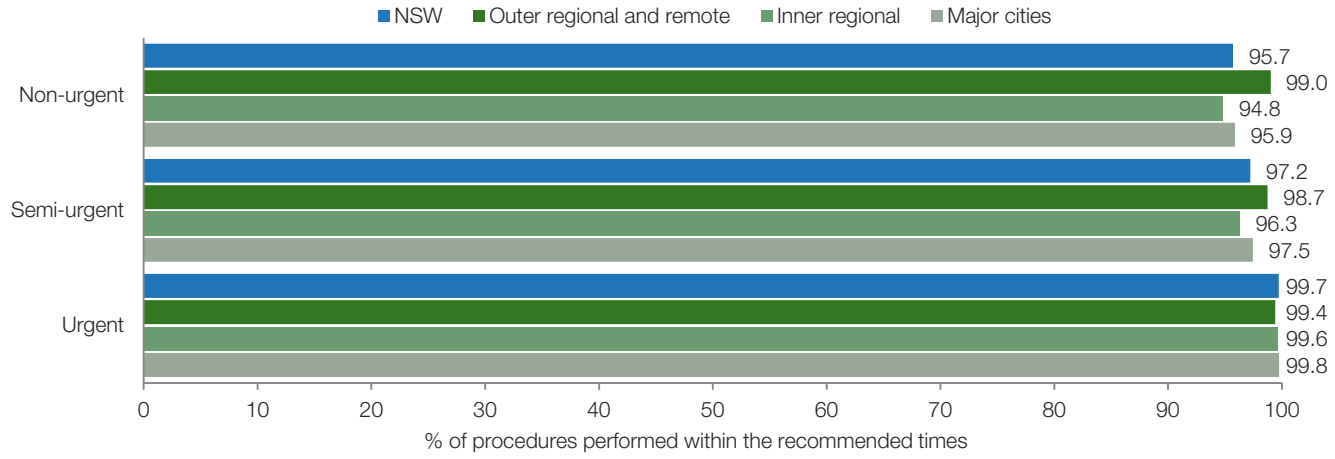
- Category 1 (urgent): within 30 days
- Category 2 (semi-urgent): within 90 days
- Category 3 (non-urgent): within 365 days.

Almost all (97.2%) elective surgical procedures were performed within the recommended times, regardless of the remoteness of the hospital (Figure 2.20).

Within NSW in 2015, median waiting times did not differ with remoteness for urgent and semi-urgent surgery. There was however, a sizeable difference in median waiting times for non-urgent surgery – ranging from 194 days in major city hospitals to 287 days in inner regional hospitals (Figure 2.21).

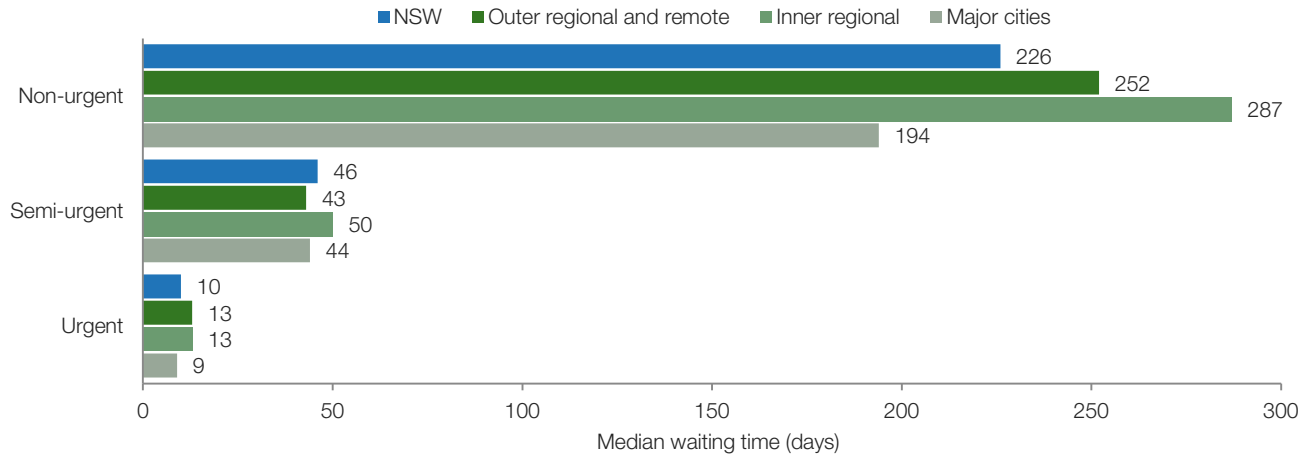
The waiting time profiles for non-urgent surgery differs by remoteness. The pattern seen in outer regional and remote hospitals is one of a fairly steady rate. In inner regional and major city hospitals, there is a clear concentration of patients who waited around 15 weeks and 52 weeks (Figure 2.22).

Figure 2.20 Elective surgery, percentage performed within recommended times by urgency, NSW public hospitals by remoteness, 2015



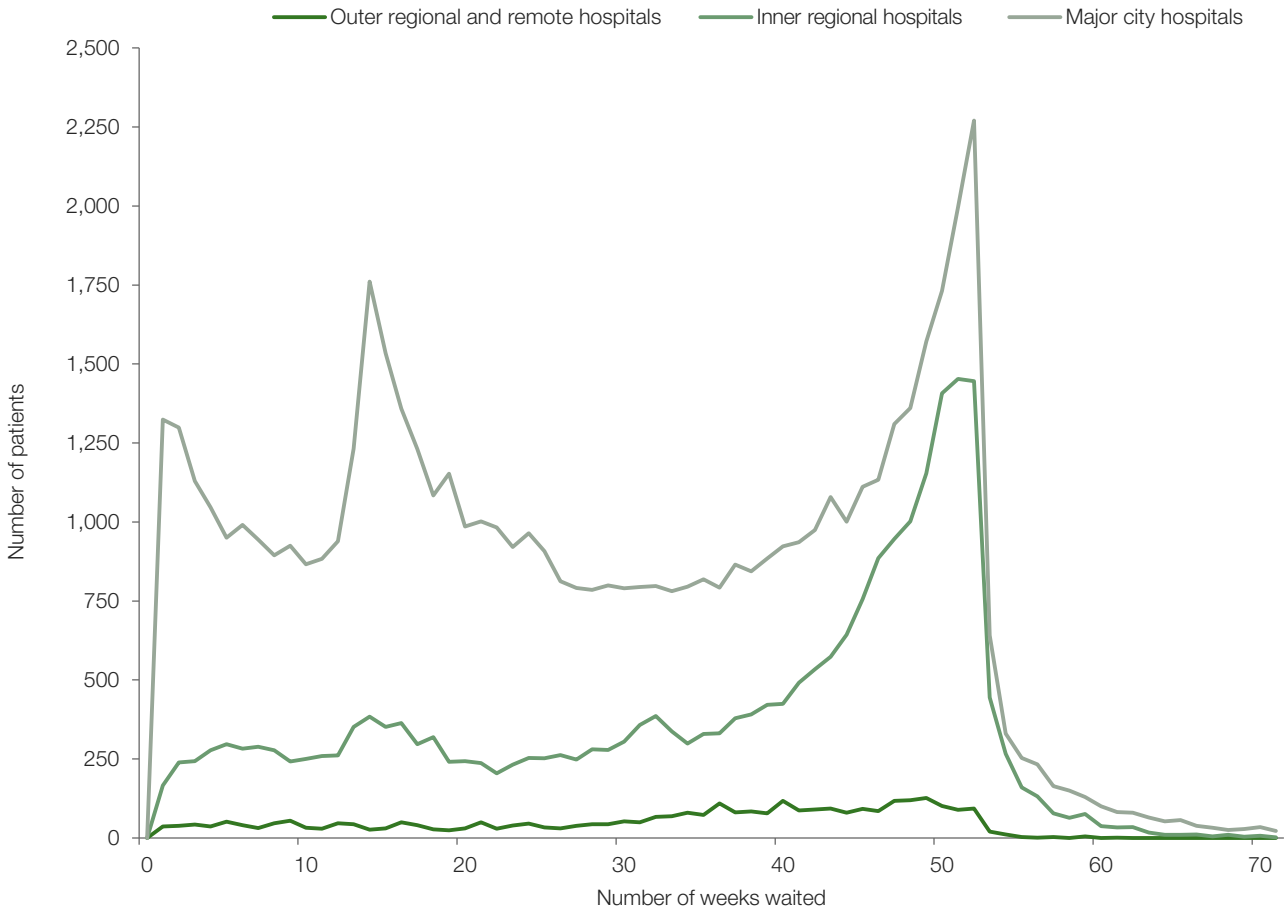
Source: NSW Ministry of Health, Waiting List Collection On-line System.

Figure 2.21 Elective surgery, median waiting times by urgency, NSW public hospitals by remoteness, 2015



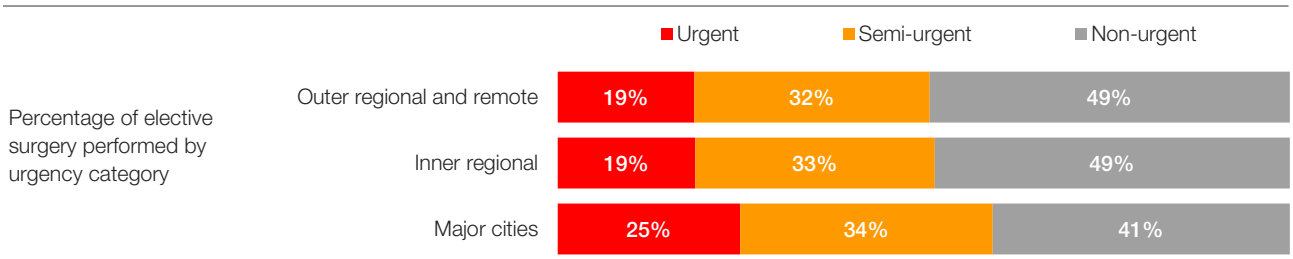
Source: NSW Ministry of Health, Waiting List Collection On-line System.

Figure 2.22 Non-urgent surgery, number of patients who underwent surgery by number or weeks waited, NSW public hospitals by remoteness, 2015



Source: NSW Ministry of Health, Waiting List Collection On-line System.

Figure 2.23 Elective surgery, distribution of urgency categories, NSW public hospitals by remoteness, 2015



Source: NSW Ministry of Health, Waiting List Collection On-line System.

Accessibility of maternity services

Most mothers access postnatal care, regardless of remoteness

Maternity services vary by remoteness. Many rural centres use models of care that rely on a mix of obstetrician and GP/obstetrician-led services, midwifery group practices, and planned caesarean section services.

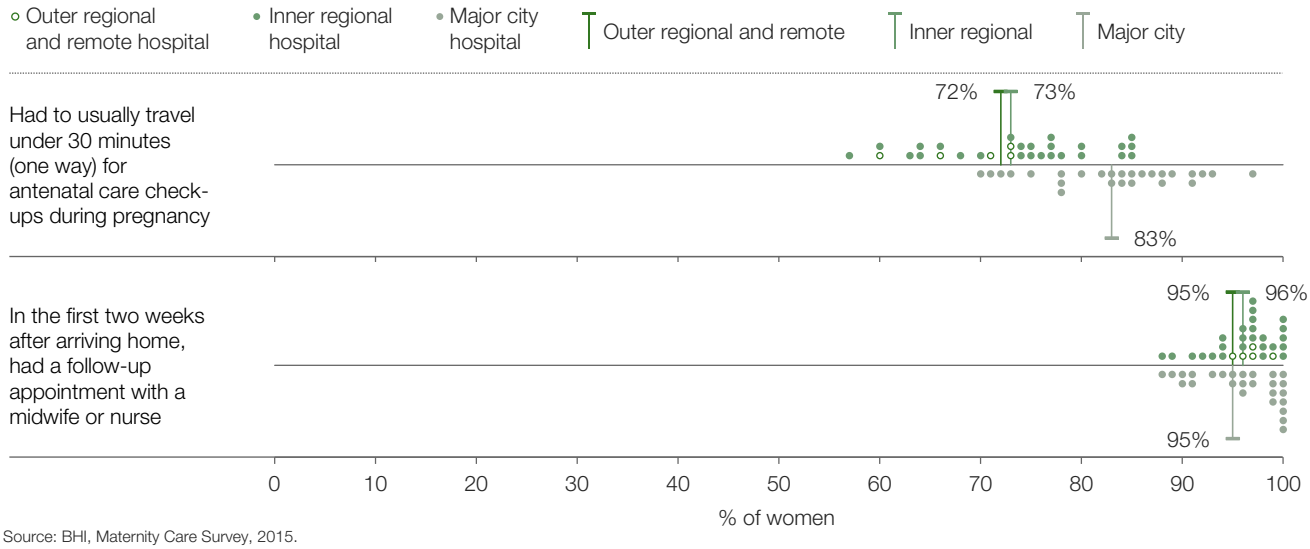
Towards Normal Birth [13] states that all women in NSW should be able to access comprehensive public antenatal care close to their home; and to receive midwifery support for at least two weeks after their baby is born (target 100% for urban and 80% for rural services by 2015).

Patient survey data show that in terms of accessibility of antenatal services, just over 70% of women in rural areas had travel times of less than 30 minutes for antenatal care. Across rural hospitals, this proportion ranged from 55% to 85% (Figure 2.24).

On questions regarding access to postnatal care, most mothers had a follow-up appointment with a midwife or nurse, regardless of the remoteness of the hospital in which they gave birth.

Providing safe care, close to home is an important objective for maternity services. In the 10-year period between 2004–05 and 2014–15, the number of patients who had to travel outside their LHD of residence to receive maternity services in a public hospital decreased in Hunter New England, Mid North Coast, Murrumbidgee and Far West LHDs (Figure 2.25).

Figure 2.24 Access to maternity services, percentage of women who selected the most positive response category, NSW public hospitals by remoteness, 2015



Source: BHI, Maternity Care Survey, 2015.

Figure 2.25 Maternity hospitalisations, number that occurred outside the patients' LHD of residence, NSW public hospitals, 2004–05 and 2014–15

Source: NSW Ministry of Health, extracted from Clinical Services Planning Analytics (CaSPA) FlowInfo v15.0, Health System Planning and Investment Branch (BHI Analysis).

Notes: St Vincent's Hospital is located within South Eastern Sydney LHD; The Children's Hospital at Westmead is located in Western Sydney LHD; Sydney Children's Hospital, Randwick is located in South Eastern Sydney LHD. For the purposes of flow analyses, these hospitals are considered as separate destinations, outside the LHD within which they are geographically located. While Albury Hospital falls under the governance of the Victorian Albury-Wodonga Health service, residents of Murrumbidgee LHD hospitalised at Albury Hospital have been considered as 'Local residents hospitalised in their LHD of residence'.
Includes public acute hospitalisations with ARDRG code 7.0: Pregnancy, Childbirth and Puerperium. Excludes hospital in the home, unqualified neonates, chemotherapy and renal dialysis hospitalisations.

Policies implemented in NSW

Mullumbimby Community Birthing Service in Northern NSW is a publicly-funded homebirth model of care that offers women a safe option to birth at home supported by skilled midwives. It also supports their right to choose where they will give birth.

High Risk Maternal Fetal Outreach Clinic in Moree delivers care to a high risk obstetric population. A visiting team from Newcastle (John Hunter Hospital) comprises:

- Maternal Fetal Medicine Specialist
- Obstetrics and Gynaecology (O&G) Senior Registrar
- Clinical Midwifery Consultant – High Risk
- Neonatal ICU Nurse Specialist
- Aboriginal Maternal and Infant Health Service (AMIHS) Manager
- Supported by the local team members including midwife, Aboriginal Health Worker, ultrasound sonographer (private), social worker.

Travel savings for the women and their families were estimated to be 90,100 km (1,000 km round trip to and from Newcastle from Moree; and 550 km round trip to and from Tamworth from Moree).

Accessibility of cancer services

Fewer patients have to travel outside their LHD of residence to receive cancer care

For almost 20 years, poorer cancer survival in rural areas has been well documented. There are disparities between rural and urban patients in cancer outcomes, in particular in oesophageal cancer and melanoma mortality rates – although no differences in breast cancer mortality rates.[14]

Historically, rural and remote cancer patients have been more likely to experience diagnostic delays and lower rates of early detection. This has been attributed to a lack of diagnostic facilities such as computed tomography scanning and tissue biopsy services. As a result, there has been a concerted effort to improve cancer services for people living in rural and remote areas of NSW.

Compared with 2004–05, the number of patients who in 2014–15 had to travel outside their LHD of residence to receive cancer services in a public hospital decreased in Northern NSW, Southern NSW, Hunter New England, Mid North Coast and Western LHDs. In contrast, this number increased in Murrumbidgee and Far West LHDs (Figure 2.26).

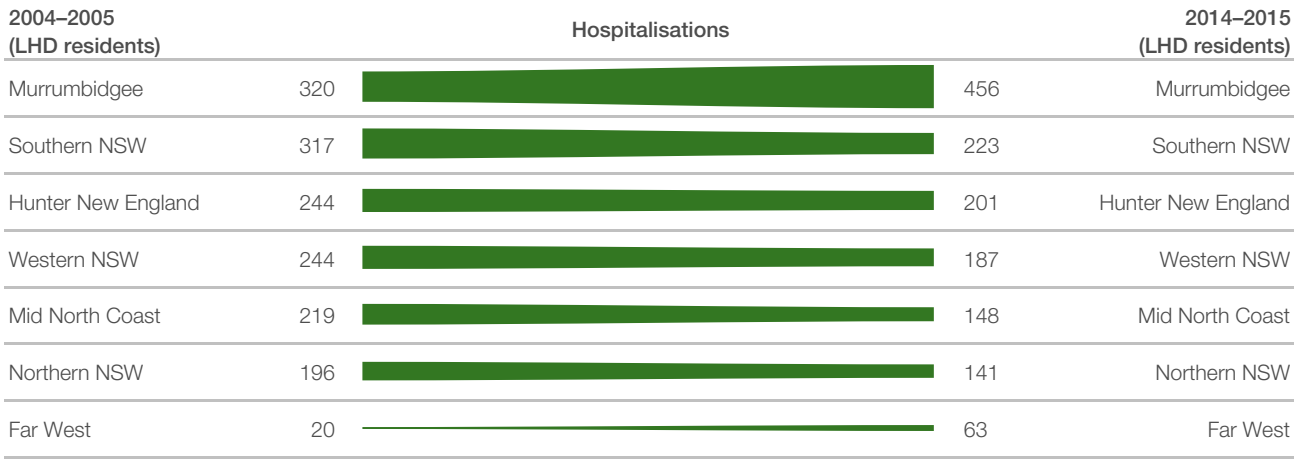
A significant proportion of cancer care is provided in outpatient clinics. Patient survey data show that accessibility and timeliness of care varies across NSW (Figure 2.27).

Views from the qualitative consultation

"This has been a 'golden period' for replacing numerous outdated hospital buildings and the introduction of new services such as medical oncology, haematology, radiation oncology, ...and some types of diagnostic imaging services. This investment [can be measured] by the changes in patient flows in a 10-15 year period."

(Qualitative consultation respondent)

Figure 2.26 Cancer hospitalisations, number that occurred outside the patients' LHD of residence, NSW public hospitals, 2004–05 and 2014–15



Source: NSW Ministry of Health, extracted from Clinical Services Planning Analytics (CaSPA) FlowInfo v15.0, Health System Planning and Investment Branch (BHI Analysis).

Note: St Vincent's Hospital is located within South Eastern Sydney LHD; The Children's Hospital at Westmead is located in Western Sydney LHD; Sydney Children's Hospital, Randwick is located in South Eastern Sydney LHD. For the purposes of flow analyses, these hospitals are considered as separate destinations, outside the LHD within which they are geographically located. While Albury Hospital falls under the governance of the Victorian Albury-Wodonga Health service, residents of Murrumbidgee LHD hospitalised at Albury Hospital have been considered as 'Local residents hospitalised in their LHD of residence'.
Includes public acute hospitalisations with ARDRG code 7.0: Neoplastic disorder. Excludes hospital in the home, unqualified neonates, chemotherapy and renal dialysis hospitalisations.

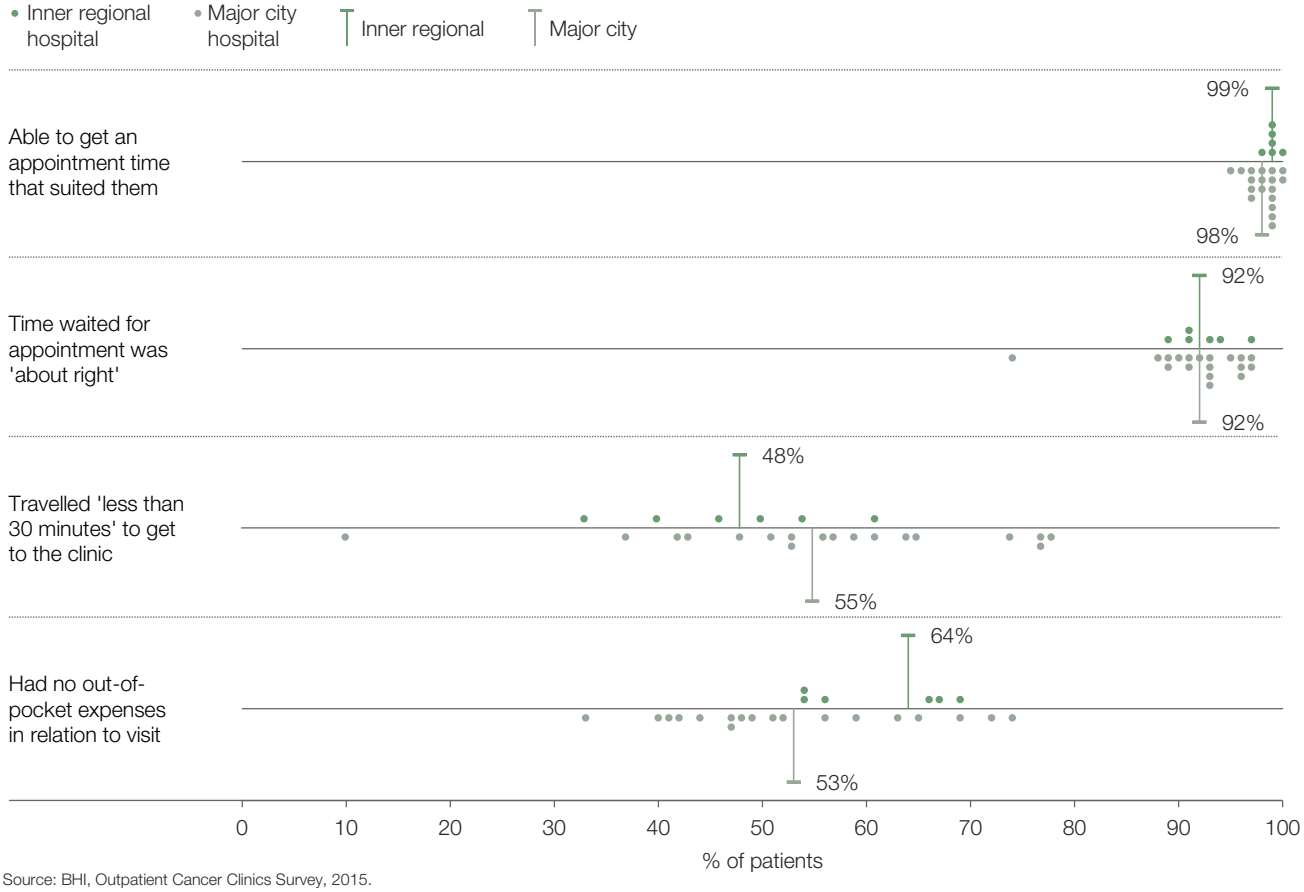
Policies implemented in NSW

The NSW Cancer Plan (2016)[15] seeks to improve cancer outcomes across the community, but focuses particularly on communities at higher risk of cancers and those who experience poorer outcomes. It reiterates initiatives developed under the NSW Rural Health Plan: Towards 2021[16], including:

- Cancer prevention and health promotion initiatives in rural communities such as the Get Healthy Information and Coaching Service, NSW Quitline and iCanQuit
- Get Healthy at Work in rural settings, with a focus on physical inactivity, poor nutrition, obesity, tobacco use, harmful consumption of alcohol and ultraviolet radiation exposure
- Ensure at-risk populations in rural communities have access to prevention programs such as the Needle and Syringe Program, vaccination for Hepatitis B and community education campaigns
- Support for those in rural communities facing critical end-of-life decisions
- Ensure statewide research initiatives consider the research needs of rural areas, including those focused on growing research assets, infrastructure and investment.

Since 2010, there have been significant investments in radiotherapy services in Orange, Port Macquarie and Lismore. New regional cancer centres have been established at Tamworth, Nowra and Gosford.[17]

Figure 2.27 Accessibility of cancer services, percentage of patients who selected the most positive response category, NSW public hospitals by remoteness, 2015



Source: BHI, Outpatient Cancer Clinics Survey, 2015.

Listening to patients hospitalised in small facilities

Small hospitals provide timely care and fewer patients incur out-of-pocket costs

Small hospitals play a vital role in providing healthcare to people in rural and regional NSW. Across the state about 6% of hospitalisations occur in facilities that have fewer than 2,000 acute hospitalisations per year. In some rural LHDs, small hospitals deliver a much bigger proportion of hospitalisations – for example 32% in Murrumbidgee and 22% in Western NSW (Appendix 1).

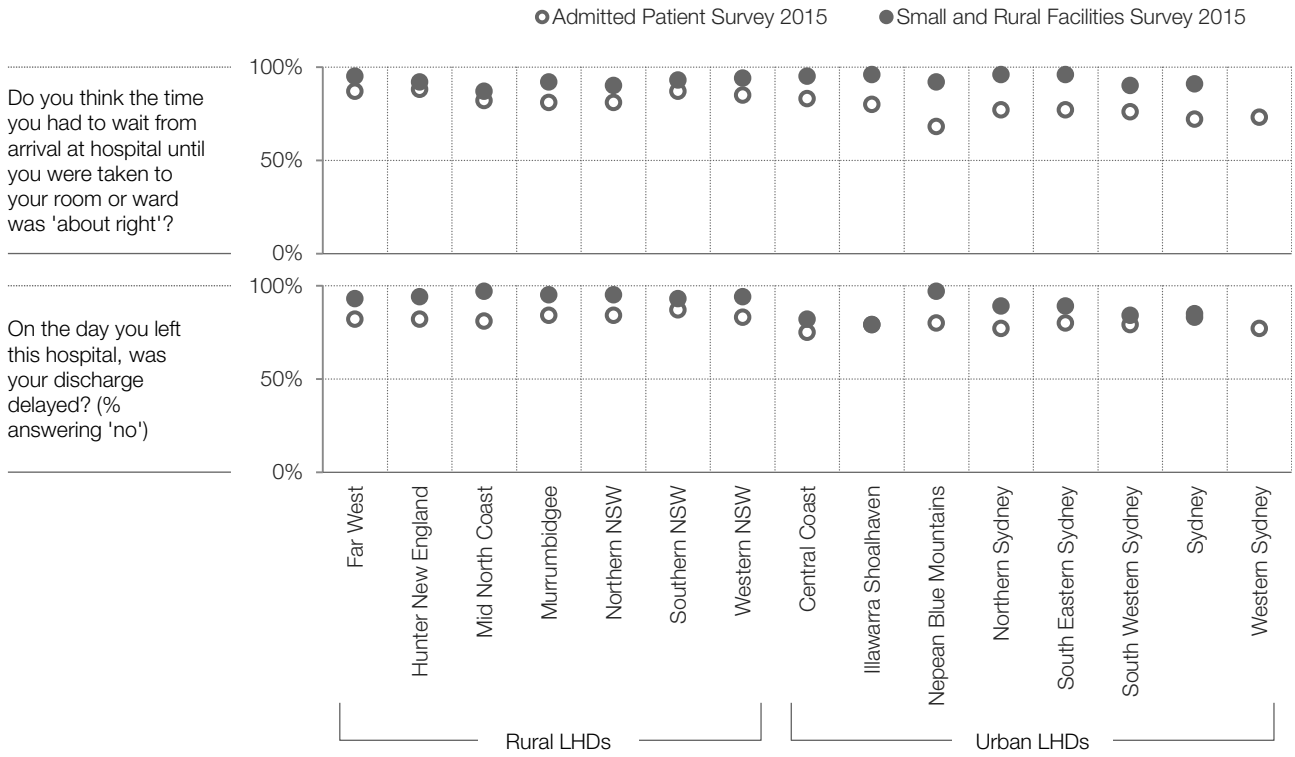
In 2015, BHI conducted a survey of patients who were hospitalised in small hospitals (defined as hospitals not in peer groups A, B or C*). As a result, for the first time, it is possible to compare patient experiences in small and large hospitals by remoteness.

In terms of accessibility measures, in rural LHDs there was only a slight difference between small and large hospitals in the proportion of patients who said the time they waited to be taken to their room or ward was 'about right'. Differences were more marked in patient responses about delays in discharge, with patients in small rural facilities more likely to report no delay (Figure 2.28).

Within the small hospital survey, results varied – with the proportion of patients who reported no delays in discharge ranging between 88% and 100% of patients in small outer regional and remote hospitals (Figure 2.30).

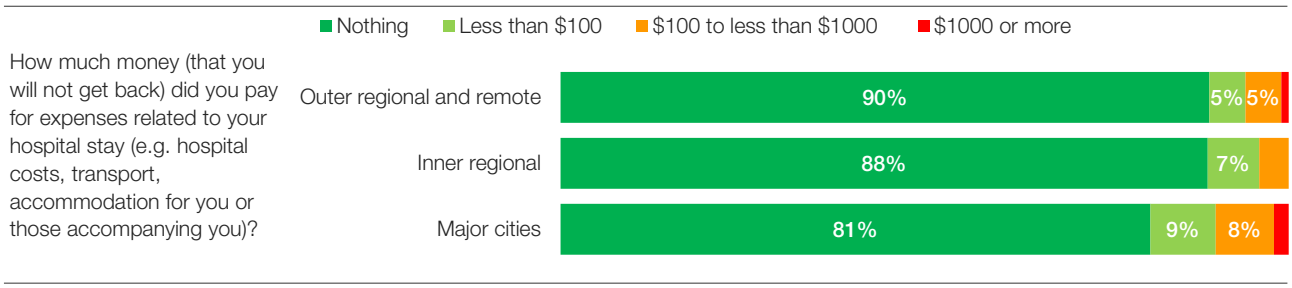
A question about out-of-pocket costs incurred by patients as a result of their hospital stay was included only in the small hospital survey. Results show that the majority of patients said they had no out-of-pocket costs – ranging from 81% in small hospitals in major cities to 90% in small hospitals in outer regional and remote areas (Figure 2.29).

Figure 2.28 Timeliness of care, percentage of patients who selected the most positive response category, adult admitted and small and rural hospital surveys, LHDs, NSW, 2015



Sources: BHI, Adult Admitted Patient Survey, 2015. BHI, Small and Rural Facilities Survey, 2015.
* Peer group A includes principal referral and specialist hospitals; peer group B includes major hospitals and peer group C includes district hospitals.

Figure 2.29 Out-of-pocket costs, all response categories, NSW small public hospitals by remoteness, 2015



Source: BHI, Small and Rural Facilities Survey, 2015.

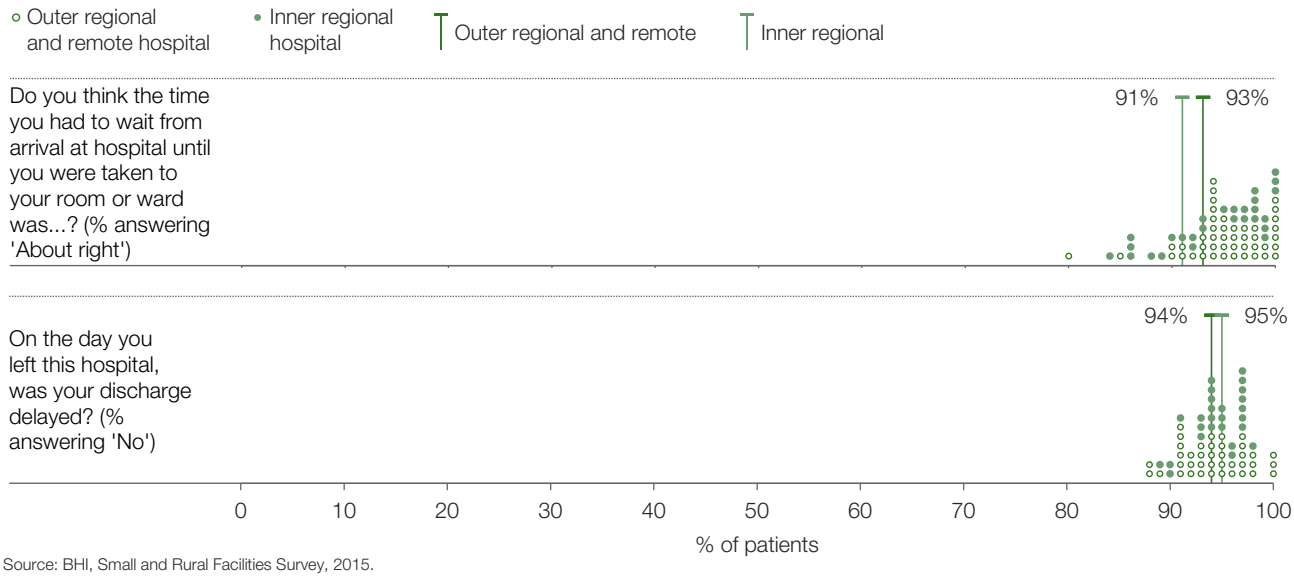
Surveys of hospitalised patients

Altogether there are more than 220 public hospitals in NSW – ranging in size and in the breadth and complexity of services they offer. One important way to assess hospital performance is through patient surveys.

BHI manages the NSW Patient Survey Program and every year sends out around 200,000 questionnaires to different patient groups. Until now, surveys of adult admitted patients have been limited to principal referral, major and district hospitals (referred to as peer groups A, B and C). In 2015, patients in smaller hospitals and MPS were surveyed and so it is possible to assess patients' experiences of care in many more rural hospitals.

For more information and results from the Small and Rural Facilities Survey, go to BHI's interactive data portal, Healthcare Observer: **bhi.nsw.gov.au/healthcare_observer**

Figure 2.30 Timeliness of care, percentage of patients who selected the most positive response category, NSW small rural public hospitals by remoteness, 2015



Source: BHI, Small and Rural Facilities Survey, 2015.

Accessibility and Aboriginality

Seven in 10 Aboriginal patients said the time they waited before being admitted was about right

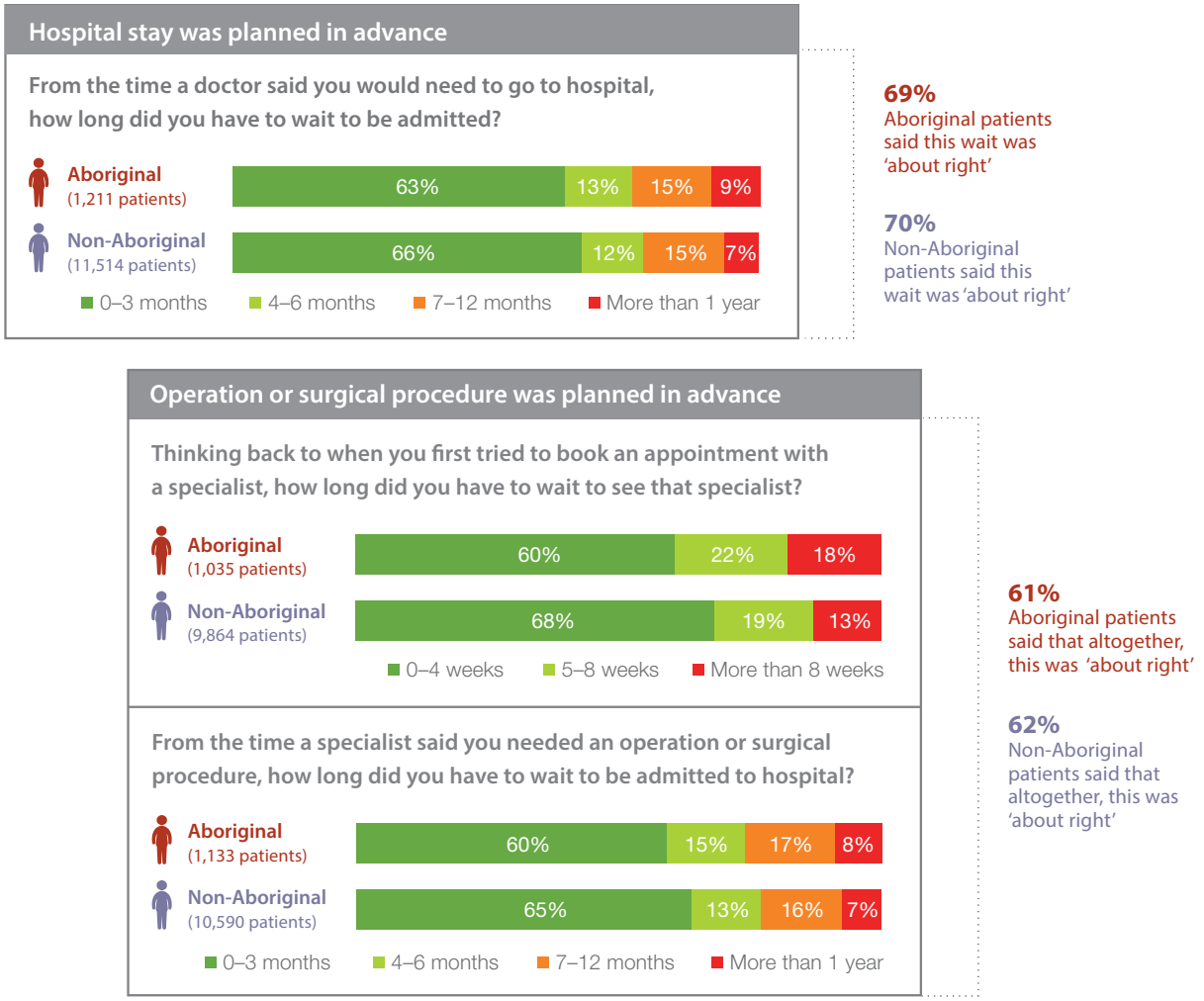
Health disparities between Aboriginal and non-Aboriginal patients in Australia are often linked to issues of accessibility.[18] While surveys can provide important information about accessibility, timeliness and punctuality of care, a survey of admitted patients cannot completely capture healthcare access issues, for example where there is unmet need or an inability to access care at all.

In terms of timeliness of care, Aboriginal and non-Aboriginal patients reported similar waiting times for various stages of care, however 60% of Aboriginal patients said they were able to get an appointment with a specialist within four weeks, compared with 68% of non-Aboriginal patients (Figure 2.31).

In general, responses from Aboriginal and non-Aboriginal patients were similar in urban and rural hospitals. Responses did, however, differ for the question regarding time spent in the ED. In rural hospitals, 63% of Aboriginal patients said the amount of time they spent in the ED was 'about right', compared with 74% of non-Aboriginal patients (Figure 2.32).

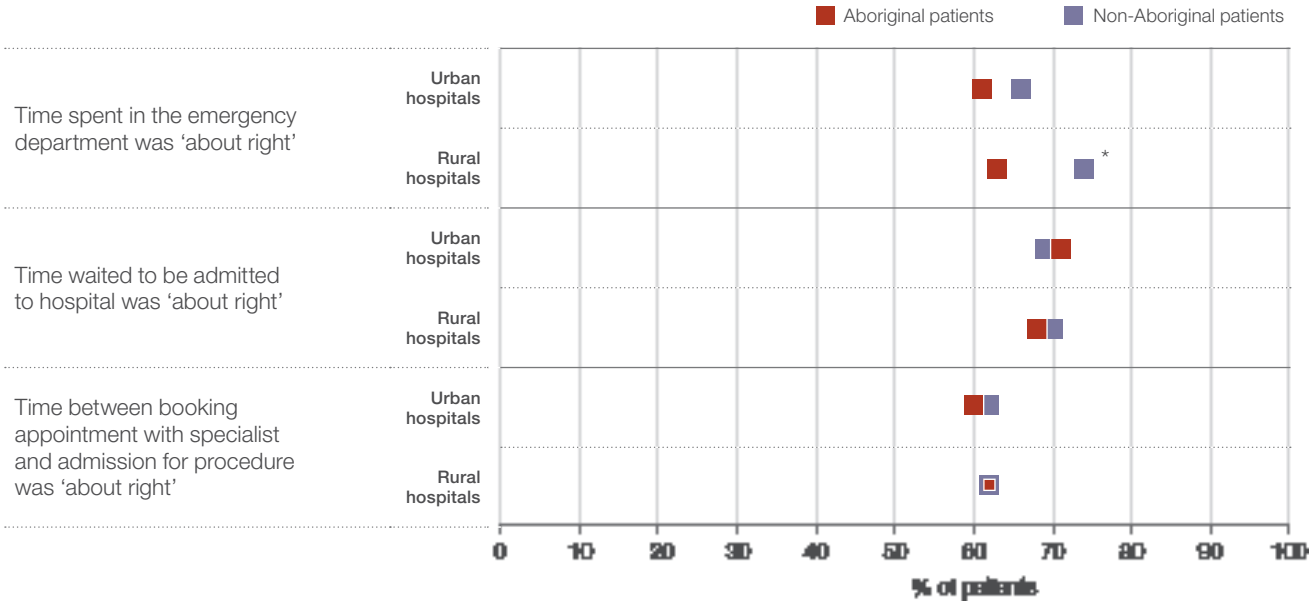
Comparing Aboriginal patients' responses across LHDs, the widest variation was found in the proportion who said the time they spent in the ED was 'about right' (38% to 76%) (Figure 2.33).

Figure 2.31 Patient-reported waiting times, all response categories, Aboriginal and non-Aboriginal patients, NSW public hospitals, 2014



Source: Bureau of Health Information. Patient Perspectives. Hospital Care for Aboriginal People. Sydney (NSW); BHI; 2016.

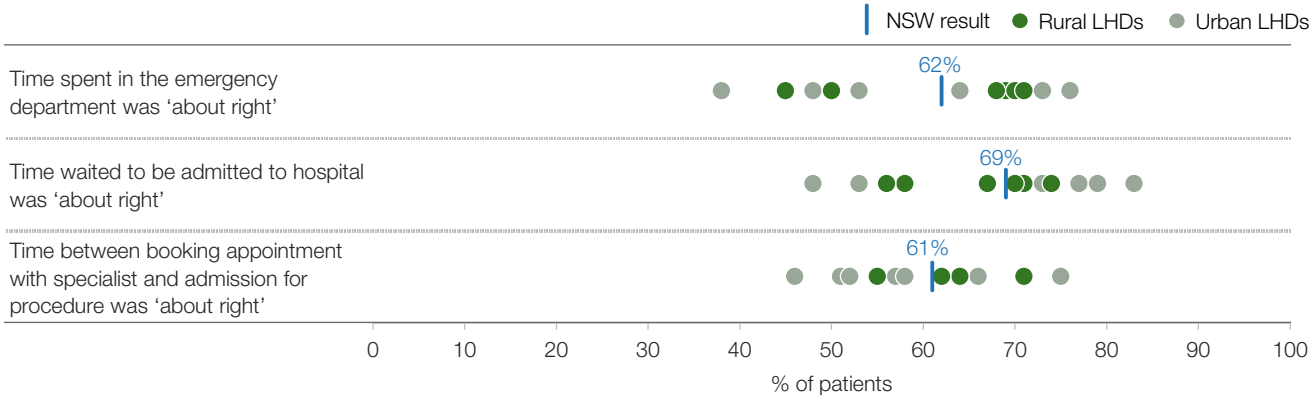
Figure 2.32 Access and timeliness, percentage of patients who selected the most positive response category, Aboriginal and non-Aboriginal patients, urban and rural NSW public hospitals, 2014



Source: Bureau of Health Information. Patient Perspectives. Hospital Care for Aboriginal People. Sydney (NSW); BHI; 2016.

* There was a significant difference in the proportion of Aboriginal and non-Aboriginal patients who selected the most positive response category.

Figure 2.33 Access and timeliness, percentage of patients who selected the most positive response category, Aboriginal patients by LHD, NSW, 2014



Source: Bureau of Health Information. Patient Perspectives. Hospital Care for Aboriginal People. Sydney (NSW); BHI; 2016.

Views from the qualitative consultation

Strong leadership in Aboriginal Community Controlled Health Services and public health are essential to the provision of effective healthcare services to Aboriginal people.

"Our 'did not waits' are quite large – for Indigenous patients they are among the highest in the state. We have done a clinical redesign project to look into this. There is a theory that local Indigenous people just don't pay attention to staff but I don't think that's true. I think we just don't have a lot of Indigenous-friendly features – signage, simple language, etc. and we are working on this. Personally, I think people have often been to the Aboriginal Medical Service and then been referred – so we think they haven't bothered to wait but actually they have probably been waiting all day."
(Qualitative consultation respondent)

Resource use and context: Telehealth

Telehealth use is increasing across NSW

Telehealth – the delivery of healthcare at a distance, through the use of information and communications technology[19] – provides a range of benefits for patients, their families and carers, healthcare workers and the broader health system.

Telehealth services can:

- Deliver health services into remote communities, reducing the need for travel
- Provide timely access to services and specialists, providing the ability to diagnose and monitor health remotely
- Help educate, train and support isolated healthcare workers on location
- Support people with chronic conditions to manage their health.

Nationally, Medicare Benefits Schedule (MBS) items have been introduced to provide rebates for telehealth consultations with medical specialists in other locations. MBS items have also been introduced for GPs, other medical practitioners, nurse practitioners, midwives, Aboriginal health workers and practice nurses to provide face-to-face clinical services to a patient during a consultation with a specialist.

The number of MBS claims for telehealth consultations has been increasing across the state fairly steadily since July 2011. Between July 2011 and May 2016, there was a 27-fold increase in claims (Figure 2.34).

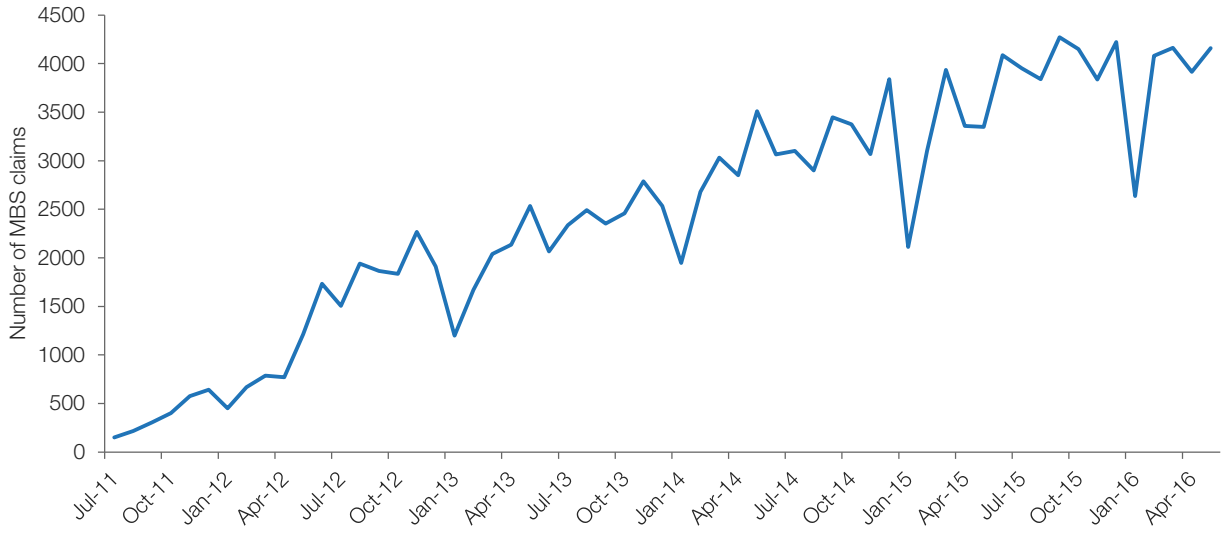
Geographic distribution of claims is concentrated in rural areas. Across Australia, the number of claims per 1,000 population is significantly higher in regional and remote areas than in major cities (Figure 2.35).

Figure 2.35 Telehealth services, by remoteness of residence, Australia (claims processed as at 31 March 2014)

	Services	Claims per 1,000 population
Major cities	21,752	1.3
Inner regional	74,178	17.6
Outer regional	62,125	30.1
Remote	8,539	26.5
Very remote	2,950	14.1
Unallocated	57	–
Total	169,602	–

Source: Medicare Benefits Schedule database

Figure 2.34 MBS claims for telehealth consultations, NSW, July 2011–May 2016



Source: Medicare Benefits Schedule database.

Note: There is a substantial number of telehealth consultations in NSW that are not claimed for under MBS however these data are not routinely collected or reported.

Selected policies in NSW

NSW Health's Telehealth Framework and Implementation Strategy 2016–2021[20] outlines the role that telehealth can play in delivering patient-centred care and is aligned with other key NSW Health strategies such as the NSW State Health Plan – Towards 2021,[21] the NSW Rural Health Plan – Towards 2021,[16] eHealth's A Blueprint for eHealth in NSW[22] and the NSW Health Integrated Care Strategy 2014–2017.[23]

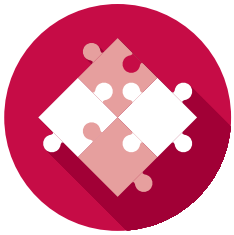
Telehealth usage in NSW commenced in the mid-1990s and sought to improve access, appropriateness and effectiveness of health services, particularly for rural and remote communities.

NSW Health has made considerable investments in telehealth initiatives, particularly in infrastructure and tools needed to support integrated care, the establishment of a videoconferencing system, an increase in available bandwidth, and the capacity to share medical information.

A recent review identified Hunter New England LHD (HNELHD) as a leader in the use of telehealth-enabled services.[24] HNELHD uses telehealth for clinical education, training and workforce support and to deliver patient services across a range of clinical specialties. In orthopaedics, for example, the use of telehealth in HNE has been estimated to:

- Deliver 316 outpatient appointments
- Save 72,324 km of travel, and 38 nights away from home
- Represent an estimated $81,014 patient and carer costs saved and 20.4 tonnes of carbon dioxide.

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'?

Appropriateness measures include:

- Assessments of whether services provided to patients are evidence-based or in line with current best practice
- Assessments of whether services are responsive to how people want to be treated when seeking healthcare, the environment in which they are treated and the extent to which services are tailored to their circumstances, values and expectations
- Assessments of technical proficiency and competence focus on error rates.

Summary of findings

- Over three quarters of women, aged 50 to 69 years, in inner regional NSW said they have recently had a mammogram – a higher proportion than in major cities or outer regional remote areas
- No association was seen between remoteness and the receipt of blood pressure and cholesterol checks, or influenza vaccinations – despite higher patient-reported prevalence of hypertension (high blood pressure) and diabetes in outer regional and remote areas
- In recent years, an increasing proportion of patients in rural hospitals underwent hip fracture surgery within two days of admission
- Across rural hospitals, between 84% and 96% of patients said their identification band or name was always checked before they were given medications or treatments
- Around seven in 10 patients said their GP always explains things in an understandable way and spends enough time with them – and this did not differ by remoteness
- A survey of patients admitted to principal referral, major and district hospitals found that those in rural hospitals were more likely to say they were as involved as they wanted to be in decisions about their care and treatment; about discharge and about medications
- A different survey of patients admitted to smaller hospitals found that rural patients were even more positive about engagement in their care than those hospitalised in larger hospitals
- Across NSW public hospitals, the proportion of births that were elective caesarean sections did not differ by remoteness
- Differences in experiences of hospital care between Aboriginal and non-Aboriginal patients were generally greater in hospitals in rural areas than those in urban areas.

Insights from the peer reviewed literature

- A study of diabetes monitoring in regional and rural Australia found that regular and follow up testing of HbA1c and blood lipids did not meet clinically recommended guidelines[1]
- A population based study of NSW cancer registry records found that people with early stage small cell lung cancer who lived more than 100 km from the nearest hospital with a specialty thoracic surgery service were more likely to have no potentially curative surgery and were more likely to be admitted to general hospitals for their care than those living within 39 km of a specialist hospital[2]
- Nurse-led models of care can improve self-management and continuity of care for people living with chronic diseases in rural areas[3,4]
- Patients living with chronic disease in rural and remote areas need more support from clinicians and ancillary services for effective self-management tailored to local needs and community contexts[5]
- Empowering indigenous healthcare workers through education and resourcing, collaboration with a specialist medical service and culturally appropriate care are important elements of an effective chilhood asthma management model for Indigenous populations[6]
- Time to hip fracture surgery was significantly longer for patients transferred to a rural orthopedic hospital compared with those who presented directly[7]
- People living in rural areas are less likely to receive brain imaging within 24 hours, stroke unit care, or stroke unit rehabilitation compared with people living in urban areas[8]
- Targeted education, quality improvement activities and an appropriately prepared and supported workforce can improve the quality of cardiovascular disease prevention in rural primary care in Australia, especially for high-risk patients[9]
- Embedding pharmacists within Aboriginal Health Services may enhance medication knowledge and adherence among Aboriginal patients[10]
- Prevalence of dementia in remote Aboriginal communities has been found to be far greater than for the wider community, however, there are limited specialist medical services available, poor coordination of existing services and a lack of education related to dementia for health and community workers.[11]

Receiving preventive services

More people in rural NSW are overweight, but no more likely to discuss diet with GP

Rural and remote health services offer a number of preventive services but these may be limited by resources or have limited effectiveness given the complex health needs of rural populations.

Preventive care has two important types of benefits – for patients it helps avoid unnecessary pain and suffering; for healthcare systems it is cost effective, delivering better health for relatively low expense. Encouraging and supporting behaviour change is a key element of preventive care.

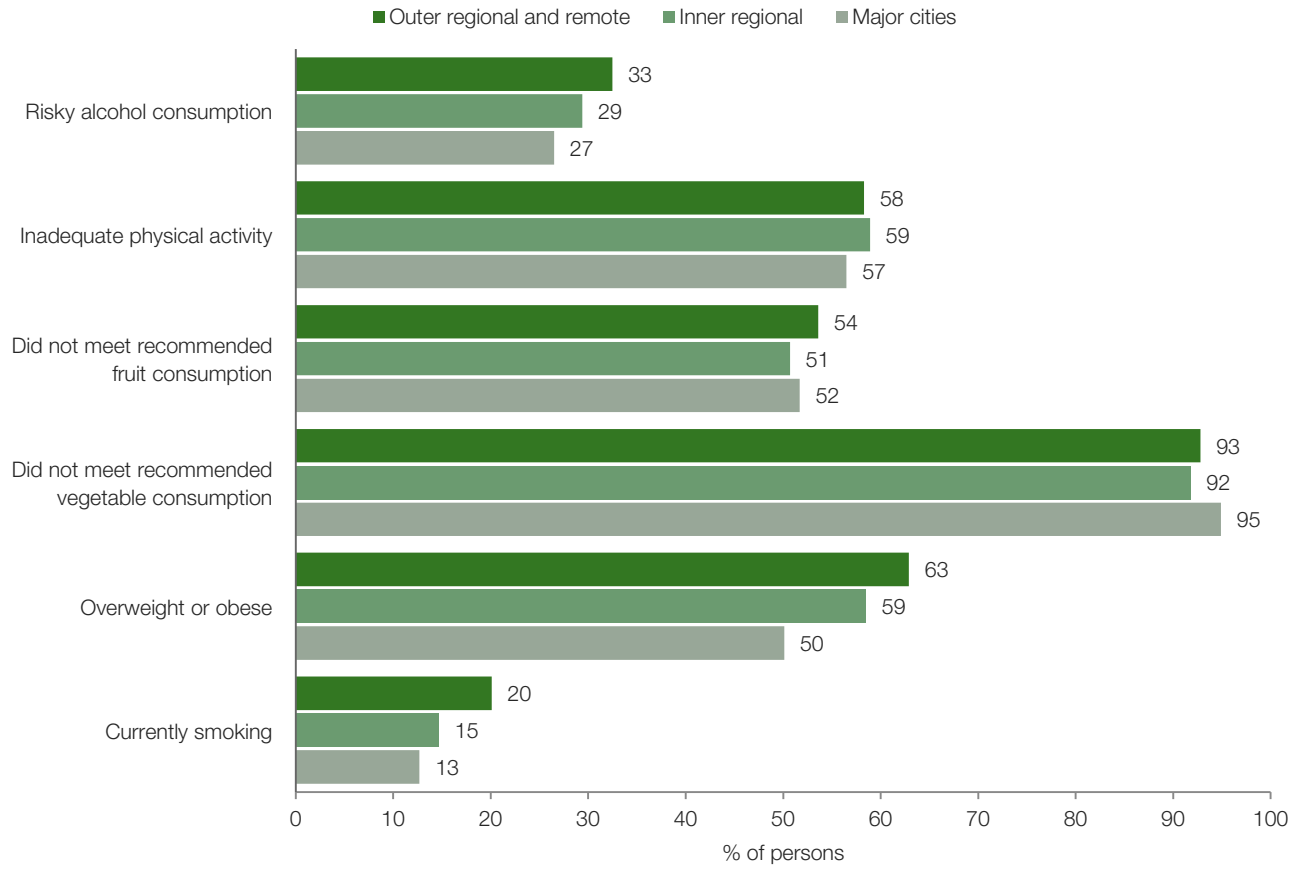
In 2015, around half of NSW people 16+ years were either overweight or obese; one in 10 were current smokers; nine in 10 did not achieve the recommended daily intake for vegetables; and three in 10 consumed alcohol at levels that pose a lifetime risk to health.[12]

Adults living in outer regional and remote areas were most likely to smoke, to be overweight or obese and engage in risky drinking (Figure 3.1).

In 2014, more than half of NSW adults aged 55+ years said that in the preceding two years a healthcare professional discussed with them diet (52%) or exercise (54%), although a smaller proportion said they had a discussion about worries or stress (32%).[13]

At a jurisdiction level, results about worry or stress counselling differed by remoteness only in NSW – with the lowest proportion in inner regional areas. In Canada and Sweden however, a lower proportion of adults in inner regional areas said a health professional had discussed exercise with them, and in Sweden, a higher proportion in outer regional and remote areas said they received dietary counselling (Figure 3.2).

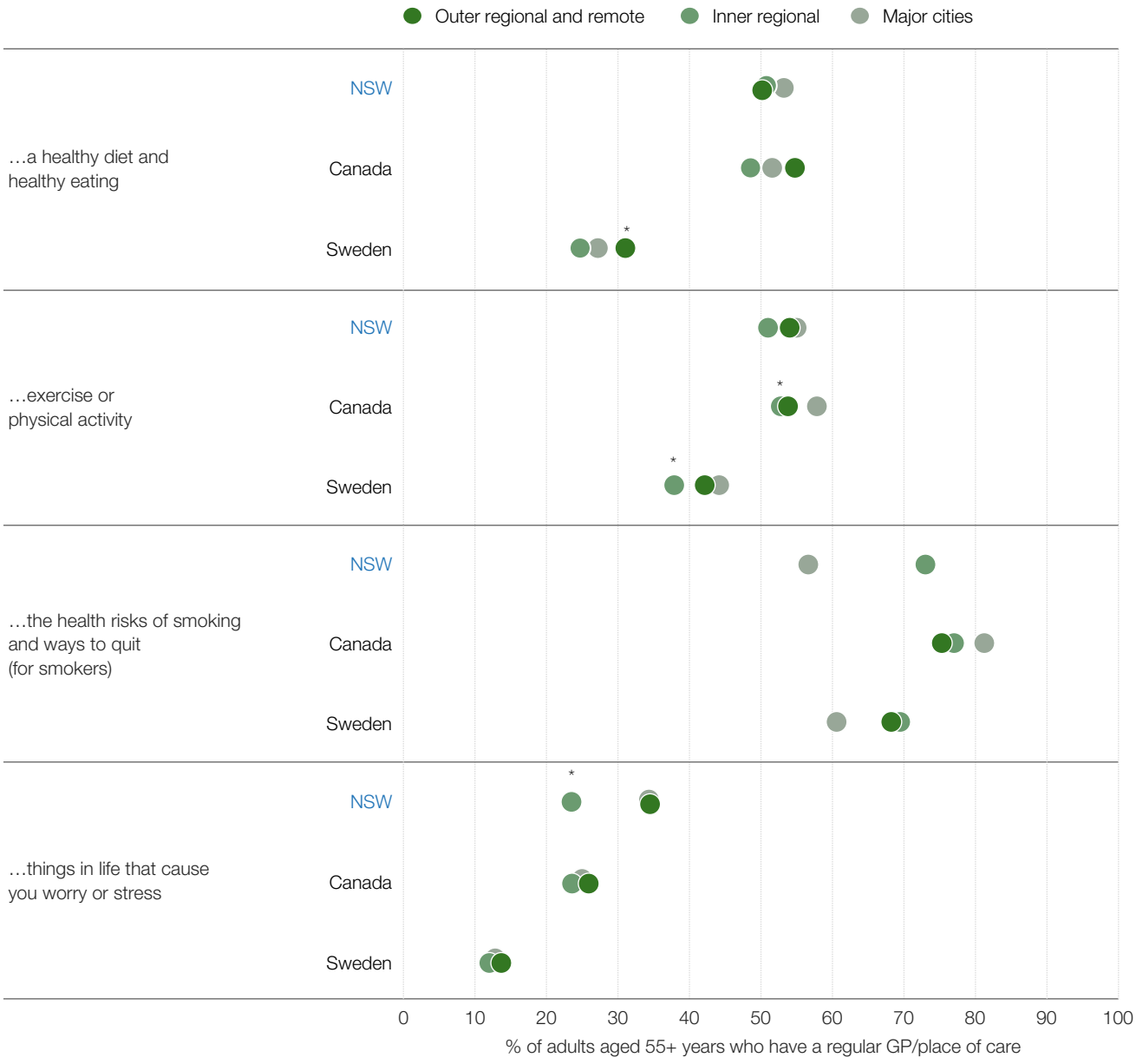
Figure 3.1 Health behaviours, percentage of NSW persons aged 16+ years, by remoteness of residence, 2015 (or nearest year)



Source: NSW Population Health Survey (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health.

Note: Alcohol data are for 2014.

Figure 3.2 Healthy behaviours, percentage of adults aged 55+ years with a regular doctor or place who said they discussed healthy behaviours with a health professional in preceding two years, NSW, Canada and Sweden by remoteness of residence, 2014



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

Note: Smoking cessation results for NSW outer regional and remote are suppressed due to small sample size.

* Result is significantly different to major cities.

Cancer screening

There were few differences in patient-reported cancer screening rates by remoteness

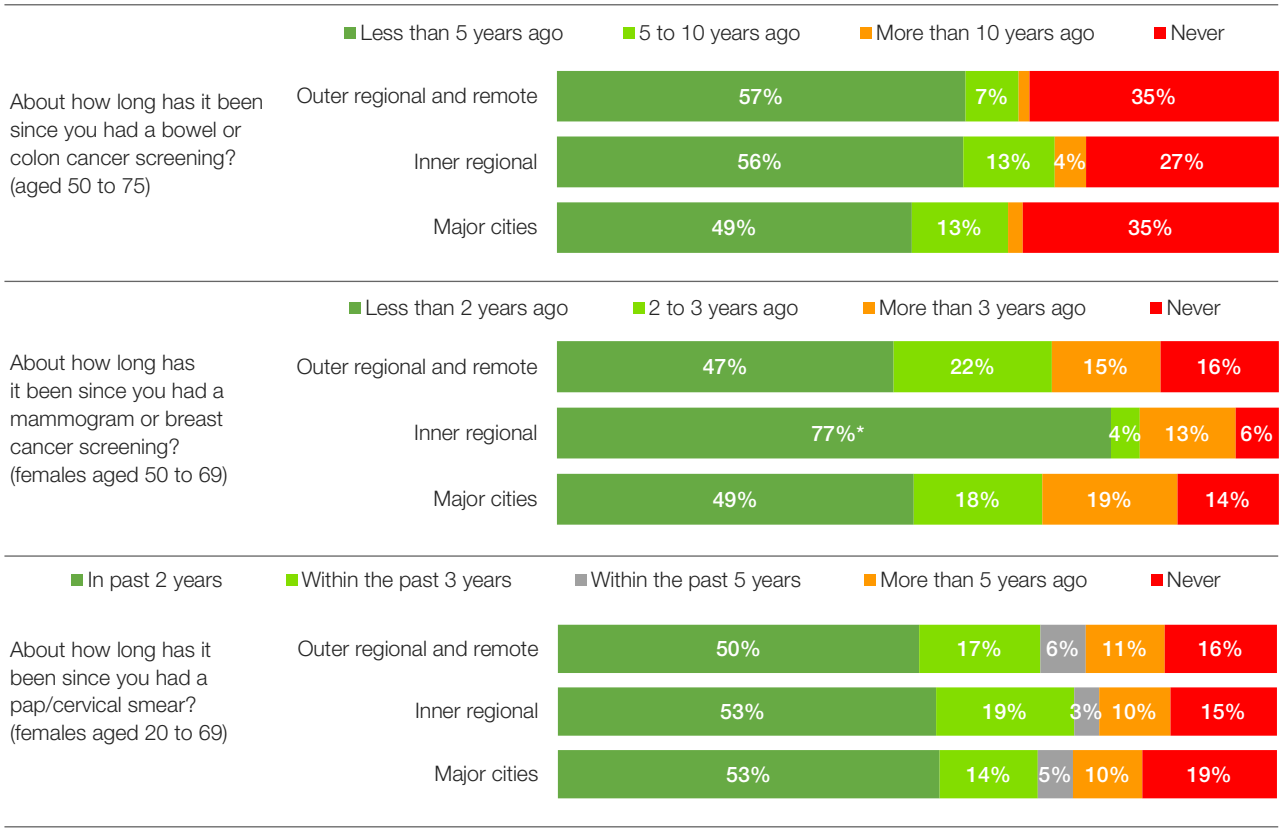
For certain cancers, screening tests can detect disease in its early stages, increasing treatment options and improving outcomes. Current guidelines in NSW recommend that every two years:

- Males and females aged 50+ years should be screened for colorectal cancer by faecal occult blood test (FOBT)
- 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.

Patient-reported cancer screening uptake was lowest for colorectal cancer screening. About a third of all NSW adults aged 50–75 years who live in outer regional and remote areas (35%) said they had never undergone colorectal cancer screening – the same proportion as among major city residents (Figure 3.3).

Supplementary data [not shown] from the NSW cancer screening programs show that in 2013–14, 35% of people (aged 50–74 years) were screened for colorectal cancer in the preceding two years; while in 2014–15, 51% of women (aged 50–69 years)

Figure 3.3 Patient-reported cancer screening, all response categories, NSW by remoteness of residence, 2013



Source: 2013 Commonwealth Fund International Health Policy Survey.

* Estimate is significantly different to major cities.

underwent a mammogram in the preceding two years; and 56% of women (aged 20–69 years) had a pap test in the preceding two years.[14,15,16]

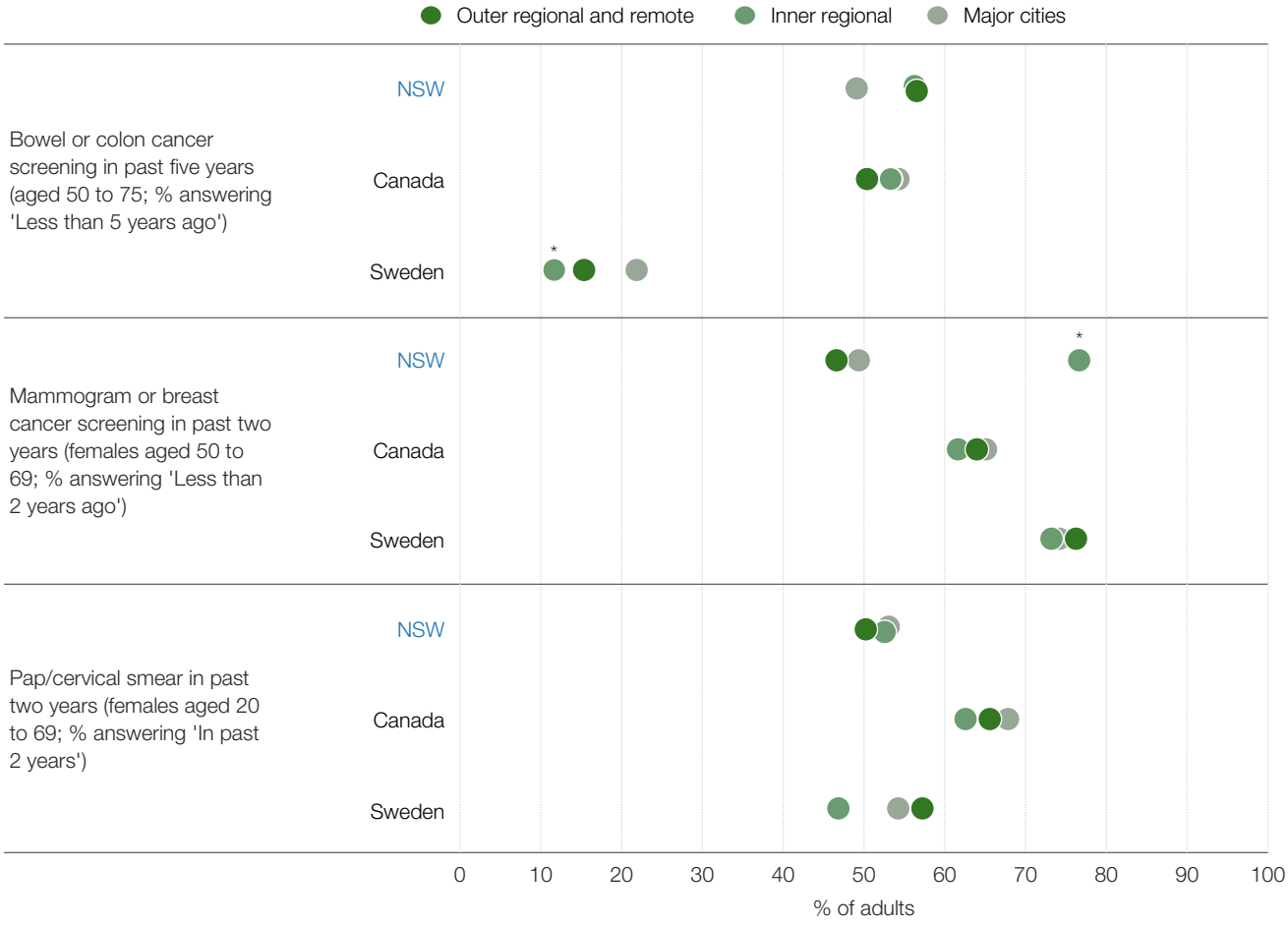
Internationally, recommendations for cancer screening differ in terms of target age groups and testing intervals and so comparisons should be made with care.

The NSW finding that women in inner regional areas were most likely to say they had a mammogram was not reflected in Canada and Sweden, where there were no significant differences by remoteness (Figure 3.4).

Note: In NSW, approximately 8.5% of mammograms are provided in settings outside the BreastScreen program and are not reflected in 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. Colonoscopy patients are not captured in the program data and this may result in under-reporting of coverage in NSW.

Figure 3.4 Patient-reported cancer screening, percentage of adults who selected the most timely response category, NSW, Canada and Sweden by remoteness of residence, 2013



Source: 2013 Commonwealth Fund International Health Policy Survey.

* Estimate is significantly different to major cities.

Monitoring and managing chronic disease

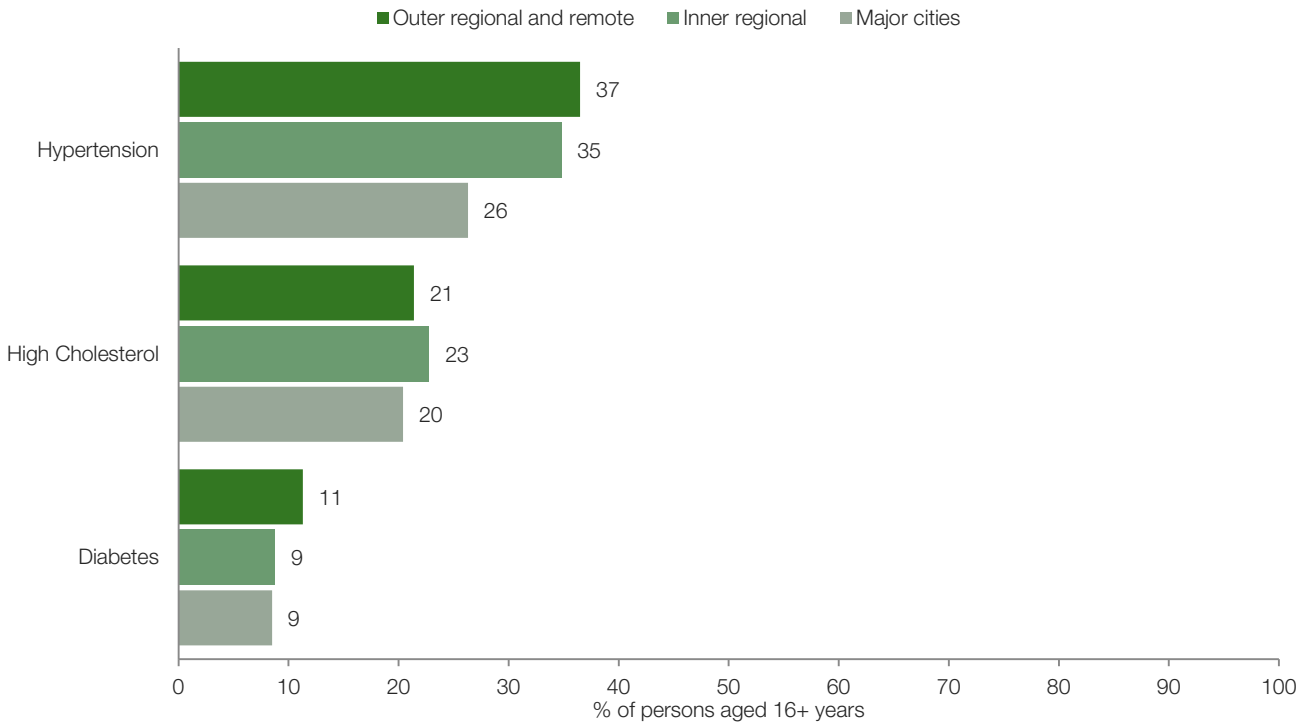
Outer regional and remote areas have higher prevalence of disease, but this is not matched by more monitoring

Active management and monitoring of patients with chronic diseases – for example through the use of routine blood pressure and cholesterol checks – can identify patient risk factors and early signs of ill health and; inform treatment options in order to slow or reverse disease progression.

Appropriate care matches patient needs with required services. For example, patients with high blood pressure or cholesterol require regular monitoring; and physically vulnerable patients need an annual influenza vaccination. In terms of needs, patient-reported prevalence of high blood pressure and diabetes, was more pronounced in outer regional and remote NSW than in inner regional areas or major cities (Figure 3.5).

In outer regional and remote NSW – despite the greater prevalence of high blood pressure – patients were no more likely to report receipt of blood pressure checks. Looking across jurisdictions, only the results for seasonal influenza vaccinations in Canada and Sweden showed any significant rurality-associated gap (Figure 3.6).

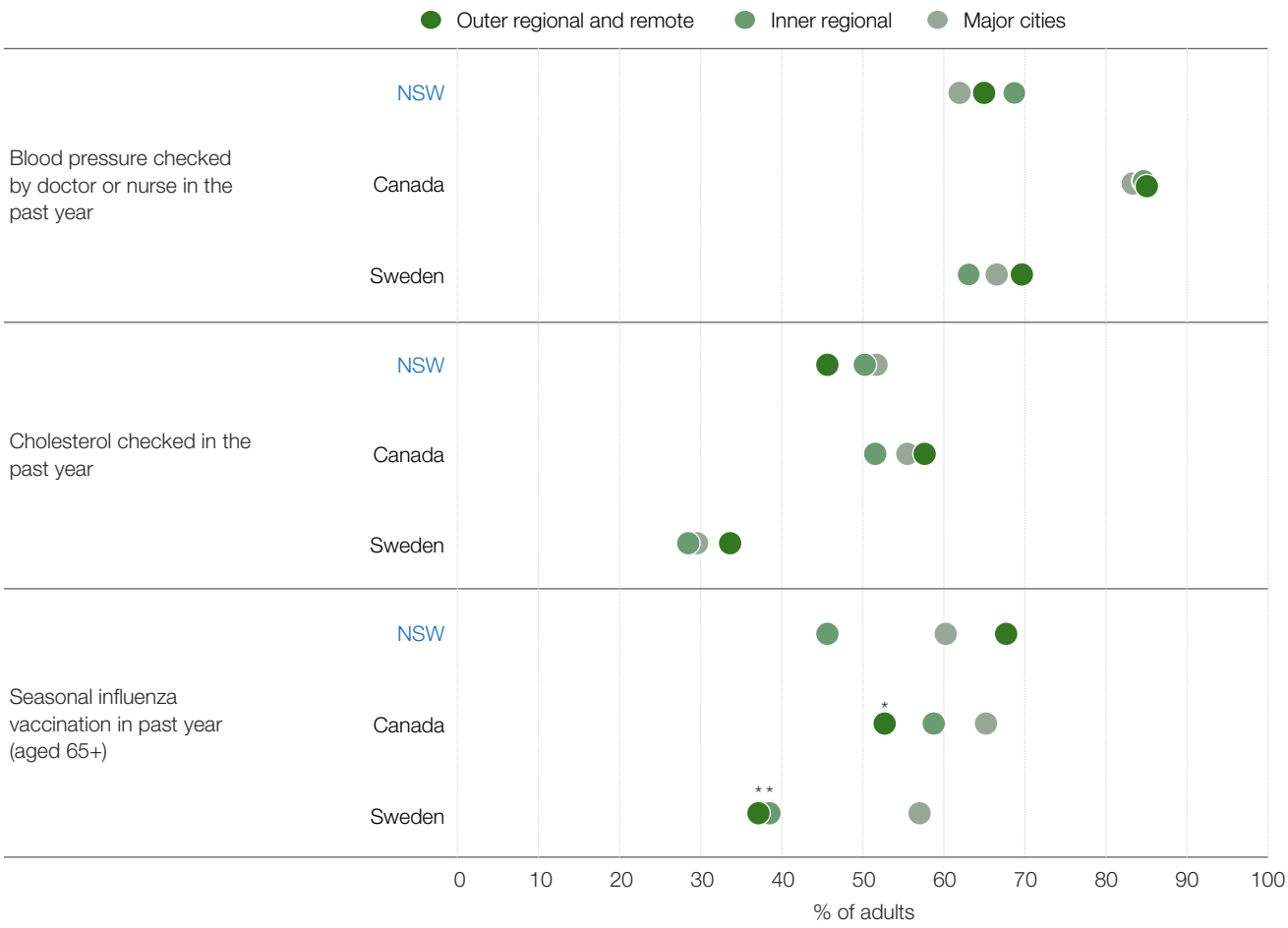
Figure 3.5 Patient-reported prevalence of hypertension, high cholesterol and diabetes, by remoteness, NSW, 2015 (or nearest year)



Source: NSW Population Health Survey (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health.

Note: Hypertension and cholesterol data are for 2013 and diabetes data are for 2015.

Figure 3.6 Managing chronic conditions, percentage of adults who said they received checks and vaccination, NSW, Canada and Sweden by remoteness of residence, 2013



Source: 2013 Commonwealth Fund International Health Policy Survey.

* Estimate is significantly different to major cities.

Selected improvement initiatives

The Western NSW Integrated Care team in Molong has focused on local health providers joining forces to tackle chronic disease such as diabetes, COPD and cardiovascular disease in the community. The ultimate aim is to keep people well, at home and reduce preventable hospital admissions. The results of the assessments help the Integrated Care team formulate individual shared care plans that address all of the patient's health requirements. To date, nearly 800 patients have consented to share their health records in the Molong district and the integrated team is currently developing shared care plans for high risk patients that are managed by the Care Navigators and regularly reviewed by the Integrated Care team.

Receiving surgical care: Hip fracture surgery

Patients admitted to rural hospitals were more likely to receive surgery for hip fracture 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 this time 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.[17,18]

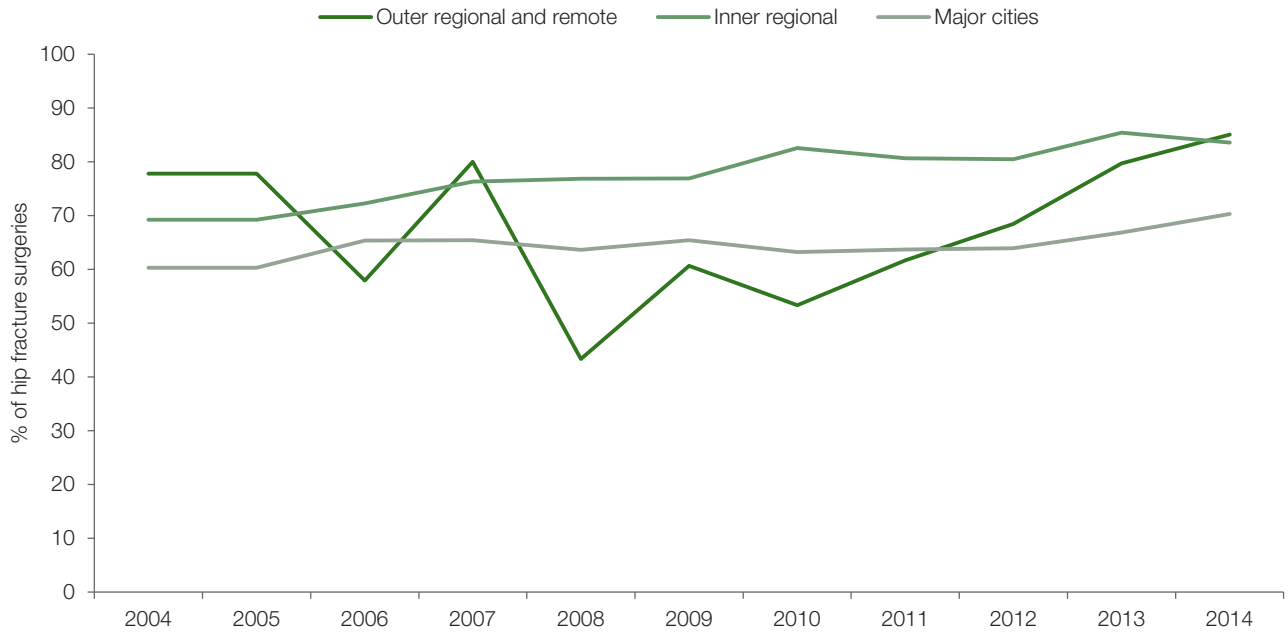
In 2013, there were 5,350 patients aged 65+ years who received surgery for hip fracture in NSW. Of these, 70% underwent surgery within two days of admission to hospital. While this is lower than results achieved in many other jurisdictions, NSW results overall have been improving in recent years.[13]

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 public hospitals has increased by 9%.[13]

The most recent data, for 2014, show that the proportion of hip fracture surgery patients who underwent their operation within two days of admission was higher in rural hospitals (79% in inner regional hospitals and 80% in outer regional and remote hospitals) than in major city hospitals (68%) (Figure 3.7).

Across hospitals, results ranged from 37% to 100%, with the lowest percentage recorded in a major city hospital and the highest in a rural hospital (Figure 3.8).

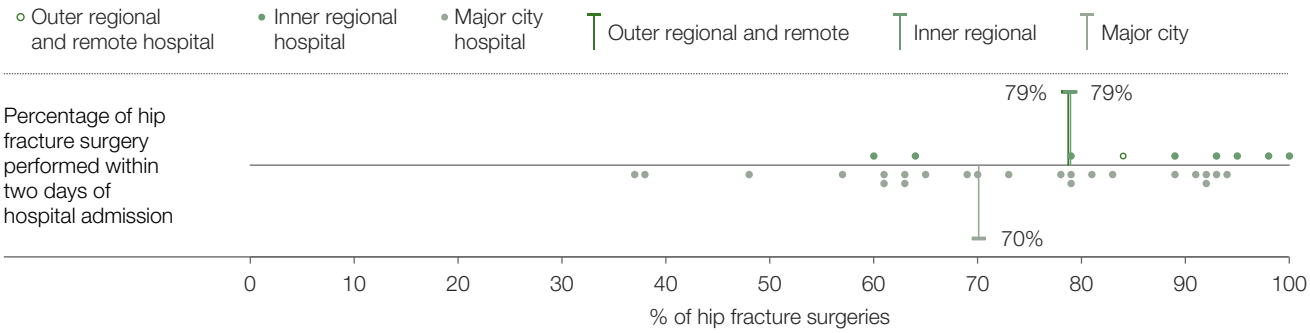
Figure 3.7 Surgery performed within two days of hospital admission, percentage of all hip fracture surgery in public hospitals, patients aged 65+years, NSW by remoteness, 2004–2014



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

Note: Includes episodes with a principal diagnosis ICD-10-AM code of S72.0, S72.1 or S72.2 with a procedure performed (denominator) and where the difference between admission date and procedure date is less than or equal to two days (numerator). Outer regional and remote had less than 50 admissions in 2004, 2006, 2007, 2008 and 2010.

Figure 3.8 Surgery performed within two days of hospital admission, percentage of all hip fracture surgery, NSW public hospitals by remoteness, 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.

Interpreting these results

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.[13]

NSW data do not capture precise timing of surgery and these indicators are therefore based on a time period of two days.

Keeping patients safe

No significant differences in medication safety processes by remoteness

Medication-related errors pose a risk to patients. Their incidence can be reduced through identification checks, provision of information to patients and regular medication reviews.

Patients who lived in outer regional and remote areas were most likely to say their doctor explained the potential side effects of medications and; their doctor reviewed their medications with them (Figure 3.9).

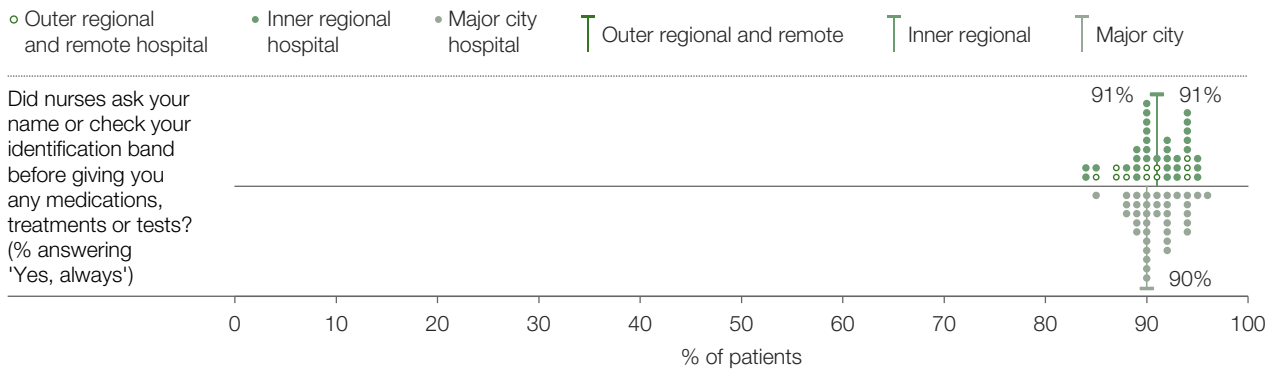
There were no significant differences by remoteness in NSW or Canada (Figure 3.11).

In the 2015 survey of NSW adult admitted patients (principal referral, major and district hospitals), 91% said their identification band or name was 'always' checked prior to being given medications, treatments or tests. There was some variation between hospitals however. For example, the proportion of patients in rural hospitals who said their identification was always checked ranged from 84% to 95% (Figure 3.10).

Figure 3.9 Patient-reported safety processes, all response categories, NSW adults aged 55+ years and on two or more medications, by remoteness of residence, 2014

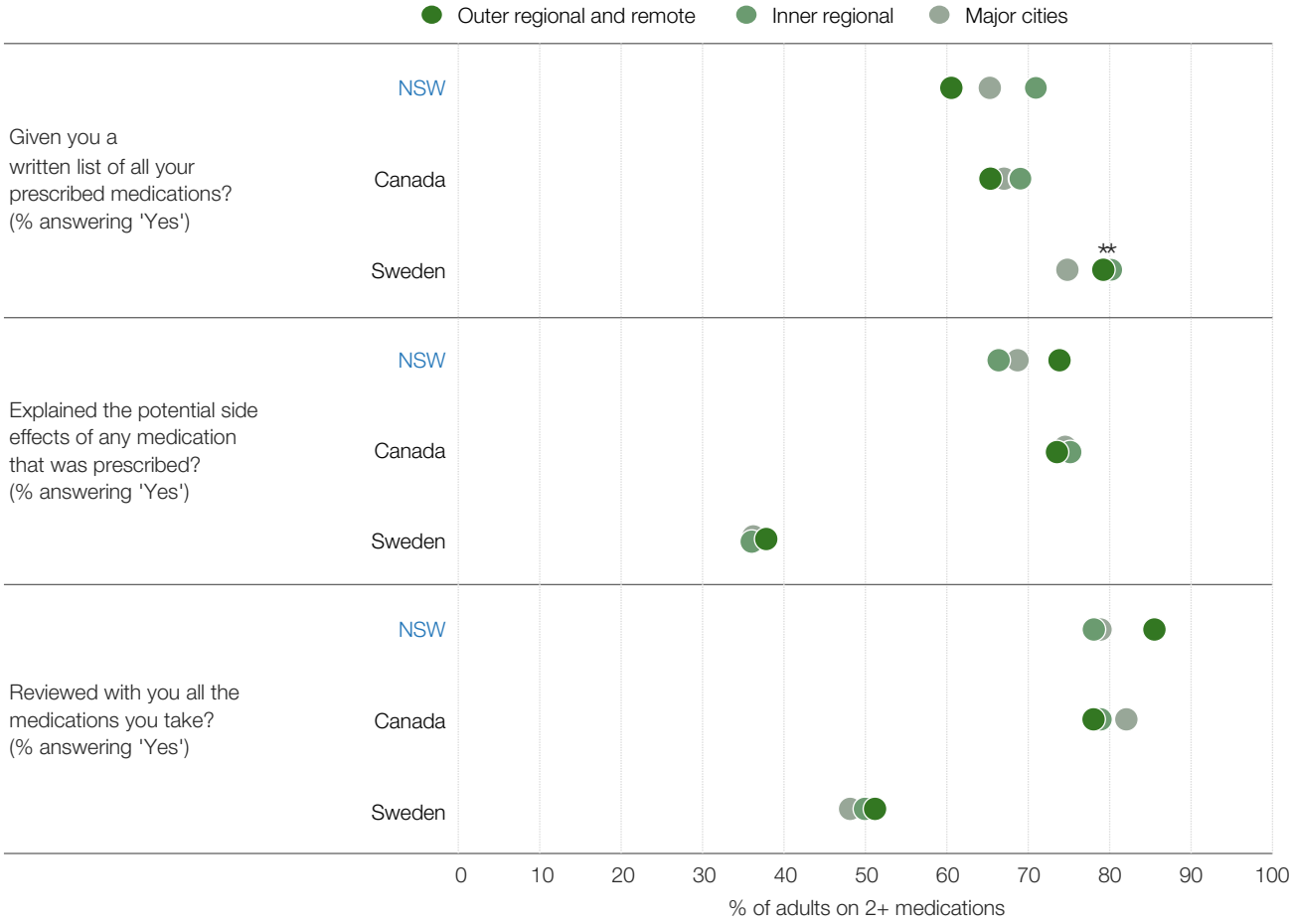
Source: 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

Figure 3.10 Patient-reported identification checks, percentage of patients who selected the most positive response category, NSW public hospitals by remoteness, 2015



Source: BHI, Adult Admitted Patient Survey, 2015.

Figure 3.11 Patient-reported safety processes, percentage of adults aged 55+ years and on two or more medications who selected the most positive response category, NSW, Canada and Sweden by remoteness, 2014



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

* Estimate is significantly different to major cities.

Responsiveness and communication

A higher proportion of patients in rural hospitals had important questions answered in an understandable way

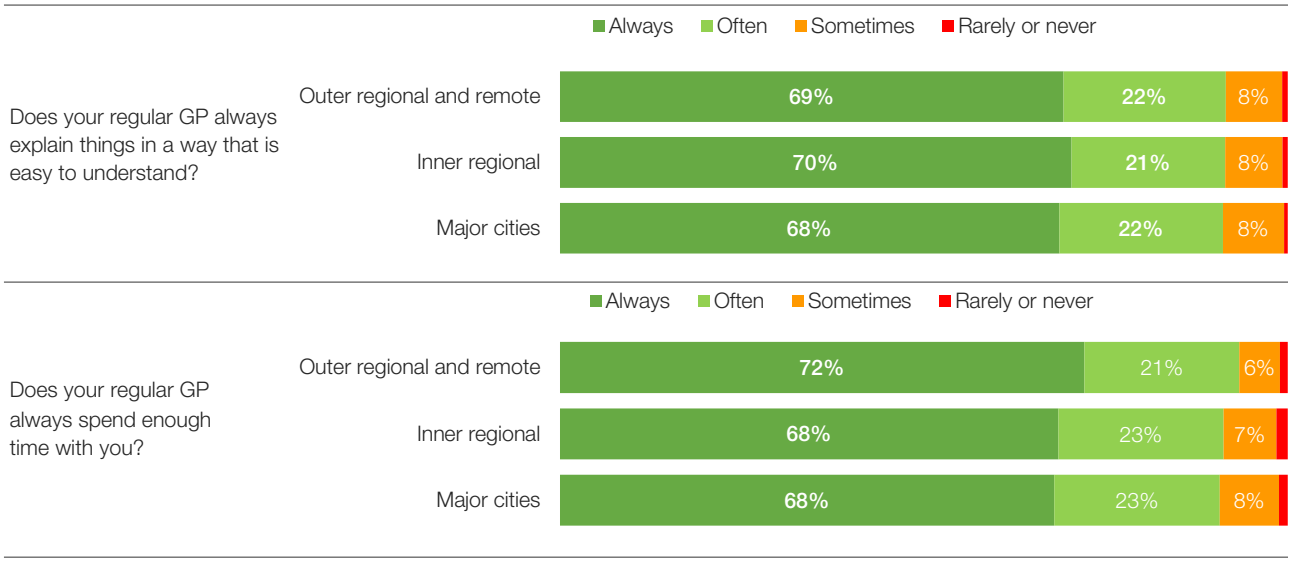
Measures of responsiveness gauge the degree to which patient expectations are met. They can cover different elements of care including being treated with respect and dignity, communication, privacy and family support.

Across NSW, approximately seven in 10 people said that their regular GP 'always' explains things in a way they can understand and that their GP 'always' spends enough time with them. This proportion did not differ by remoteness (Figure 3.12).

While overall results for these two questions varied between NSW, Canada and Sweden, results did not differ by remoteness in any of the three jurisdictions (Figure 3.14).

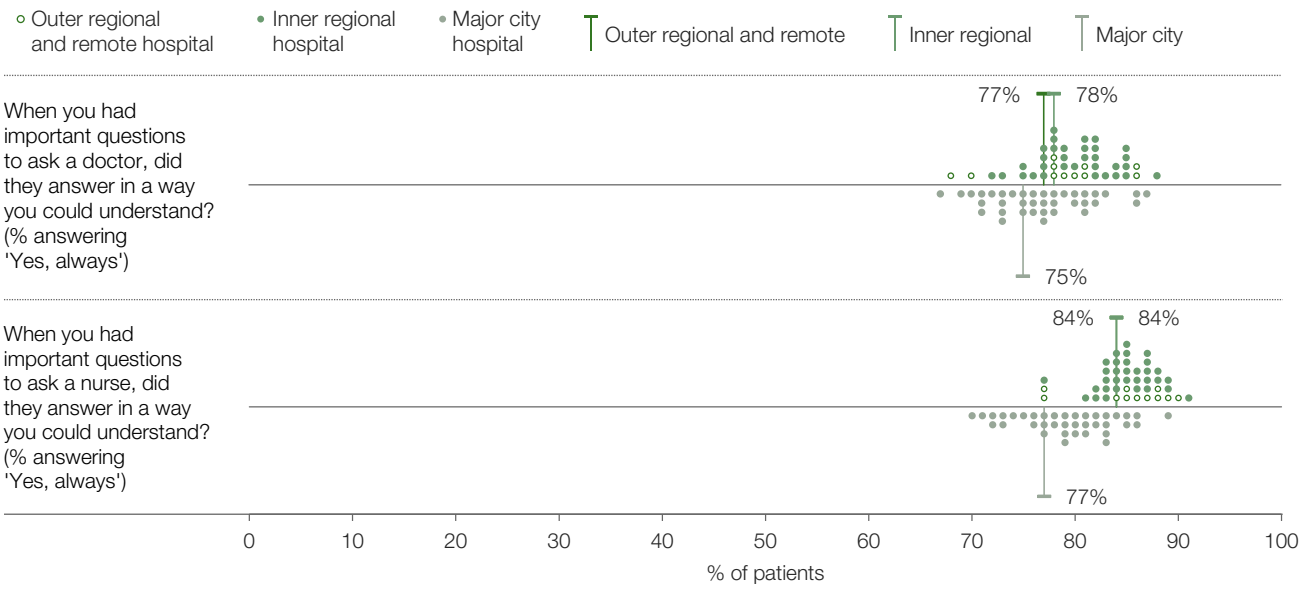
In the NSW adult admitted patients survey, responses to questions about communication varied by remoteness. For example, a higher proportion of patients in rural hospitals said that when they had important questions to ask a doctor or nurse, those questions were always answered in an understandable way (Figure 3.13).

Figure 3.12 Communication in primary care, all response categories, NSW adults aged 55+ years with a regular GP or place of careby remoteness of residence, NSW, 2014



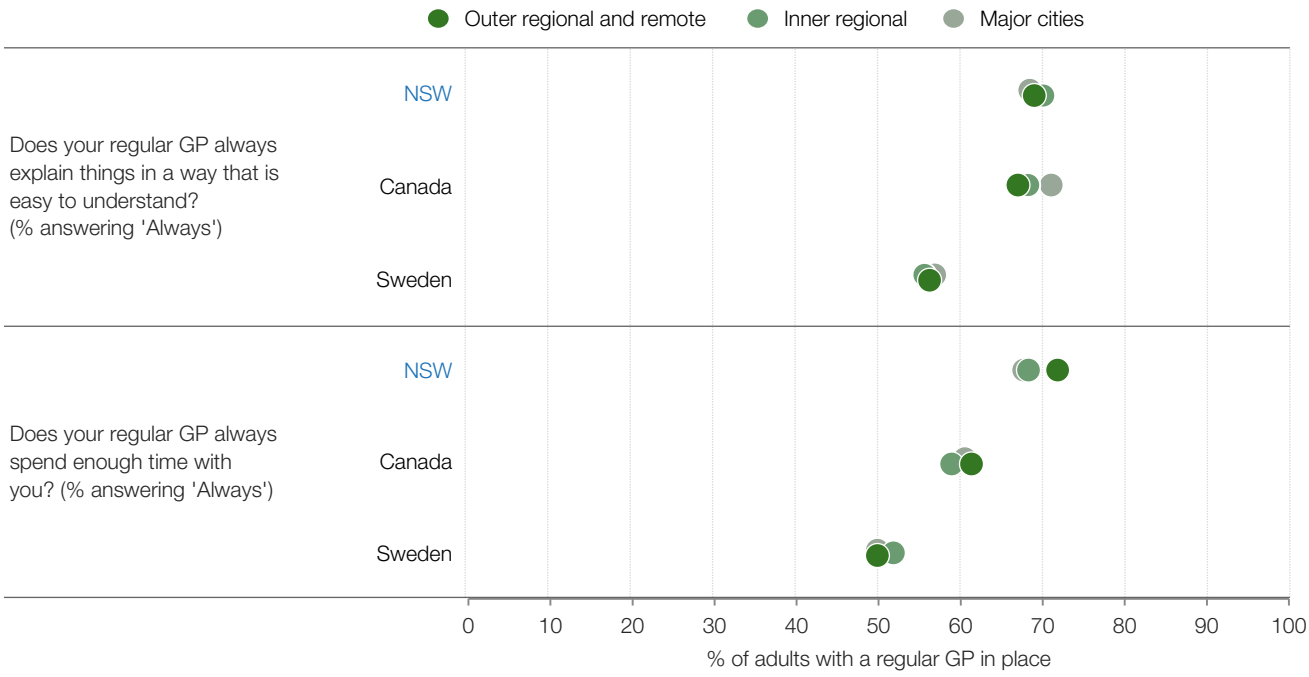
Source: 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

Figure 3.13 Communication in hospital, percentage of patients who selected the most positive response category, NSW public hospitals by remoteness, 2015



Source: BHI, Adult Admitted Patient Survey, 2015.

Figure 3.14 Communication in primary care, percentage of adults aged 55+ years with a GP or place of care who selected the most positive response category, NSW, Canada and Sweden by remoteness of residence, 2014



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

Patient engagement and involvement

Patients in rural hospitals were more likely to be engaged in decisions about their care

Engaging patients in their healthcare helps to ensure better outcomes, fewer errors and more positive attitudes towards the healthcare system.[16]

Focusing on specialist care, international survey data show that among people living in inner regional areas, 62% said their doctor 'always' involved them, as much as they wanted to be, in decisions about their treatment compared with 68% of people living in outer regional and remote areas (Figure 3.15).

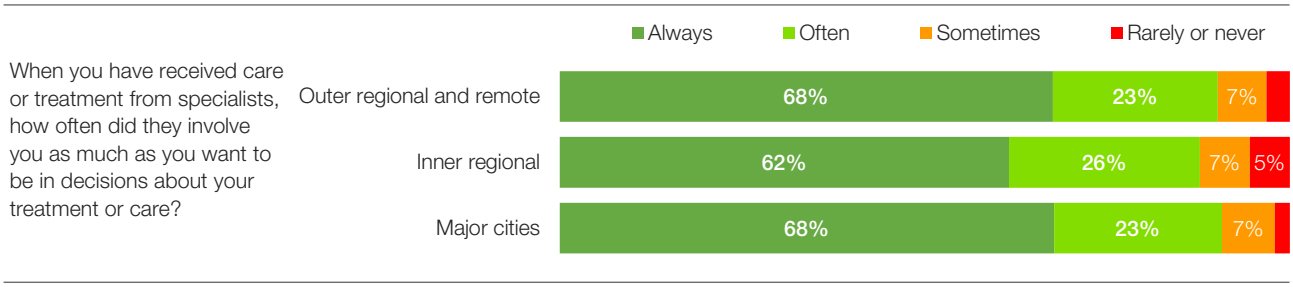
There were no significant differences associated with remoteness in NSW or Canada (Figure 3.17).

Among patients hospitalised in NSW public hospitals, there was variation in levels of patient involvement. Patients hospitalised in rural hospitals were more likely to say they were 'definitely' involved as much as they wanted to be, in decisions about their care and treatment; in decisions about discharge; and in decisions to use medications (Figure 3.16).

Views from the qualitative consultation

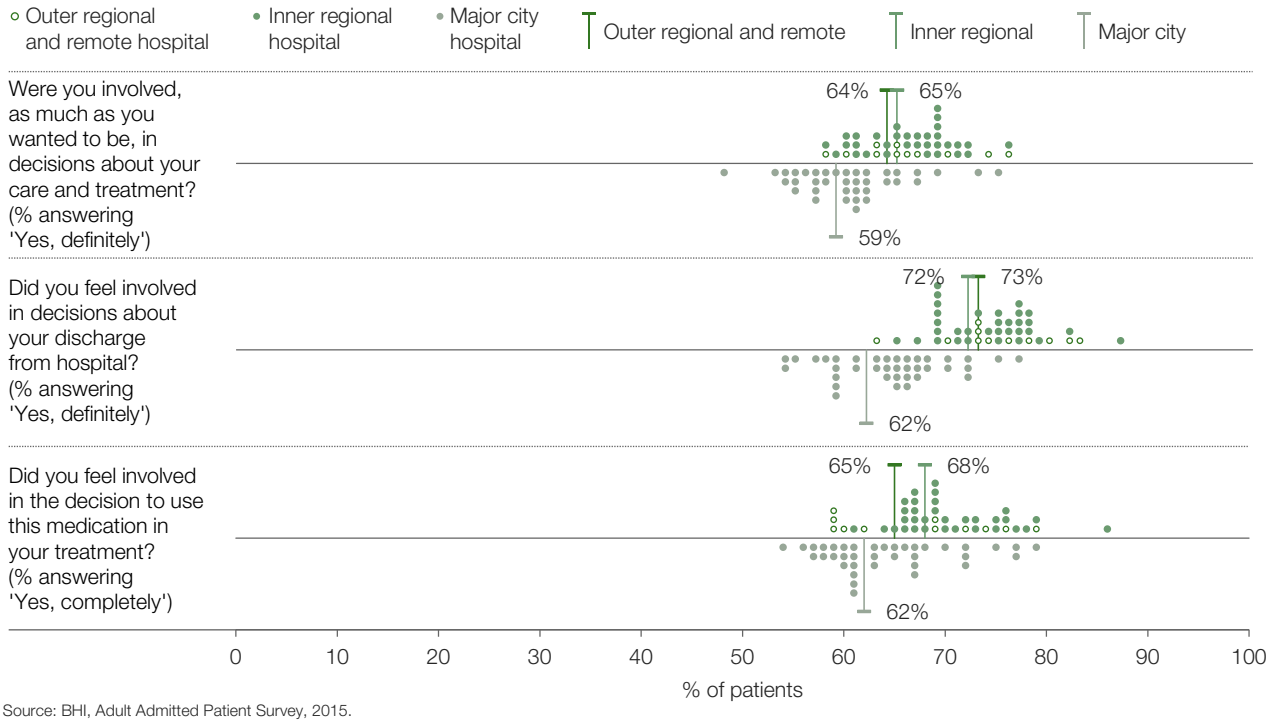
Staff interviewed said that patients in rural and remote communities tend to have closer relationships with healthcare providers than those in urban areas and that this is likely to contribute to a higher level of patient engagement in their care. Qualitative data yielded examples of close longitudinal relationships between patients and healthcare providers that supported patient engagement.

Figure 3.15 Patient involvement, all response categories, adults aged 55+ years, NSW by remoteness of residence, 2014



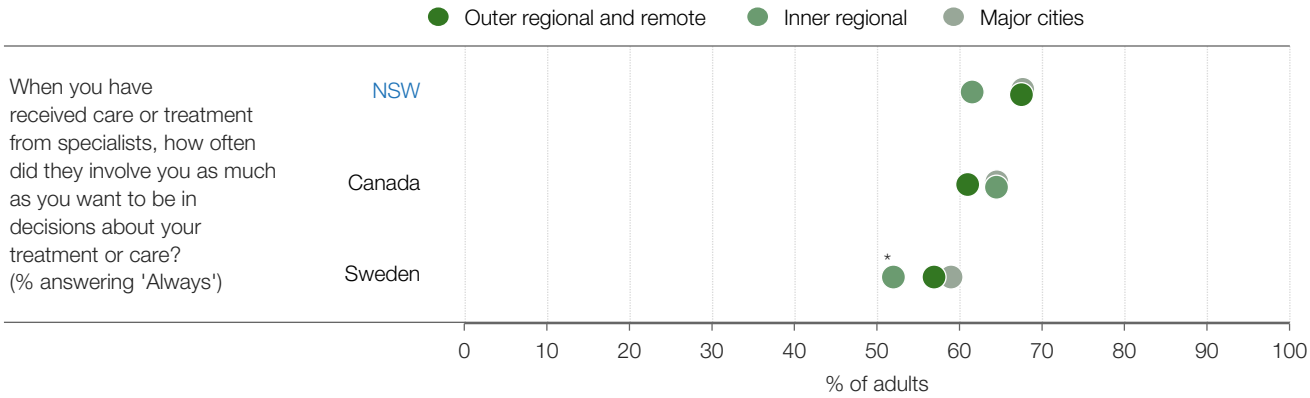
Source: 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

Figure 3.16 Patient involvement, percentage of patients who selected the most positive response category, NSW public hospitals by remoteness, 2015



Source: BHI, Adult Admitted Patient Survey, 2015.

Figure 3.17 Patient involvement, percentage of adults aged 55+ years who selected the most positive response category, NSW, Canada and Sweden by remoteness of residence, 2014



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

* Estimate is significantly different to major cities.

Patient-reported problems with care coordination

A higher proportion of patients in inner regional areas of NSW said they received conflicting information

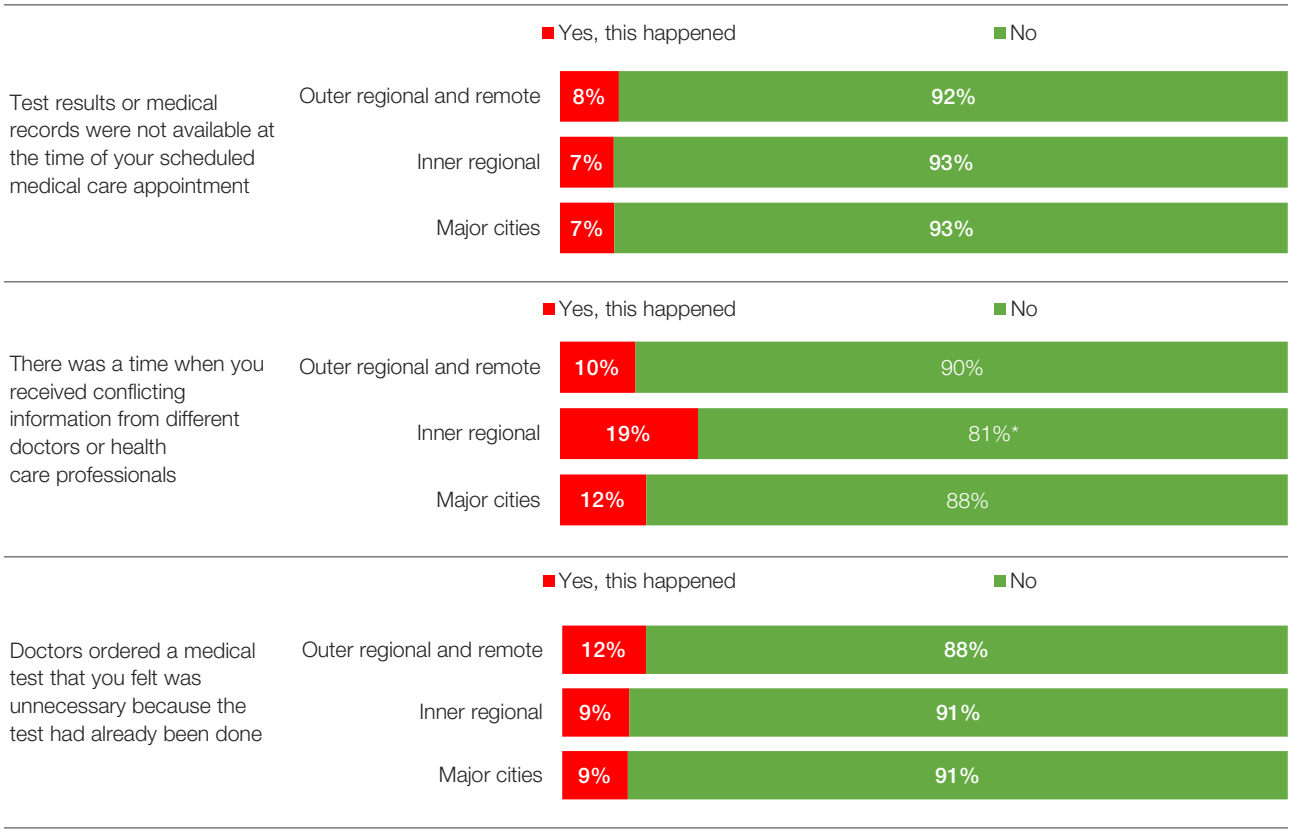
Coordinating patient care is the deliberate organisation of two or more actors working together to provide seamless care for patients.[20]

In 2014, one in 10 NSW adults aged 55+ years (13%) said there was a time in the previous two years when they received conflicting information from different doctors or healthcare professionals (public and private healthcare).

Within NSW, patients in inner regional NSW were most likely to report that they received conflicting advice (19%) (Figure 3.18).

International results show that there were also differences by remoteness in Canada for two questions on coordination of care (Figure 3.19).

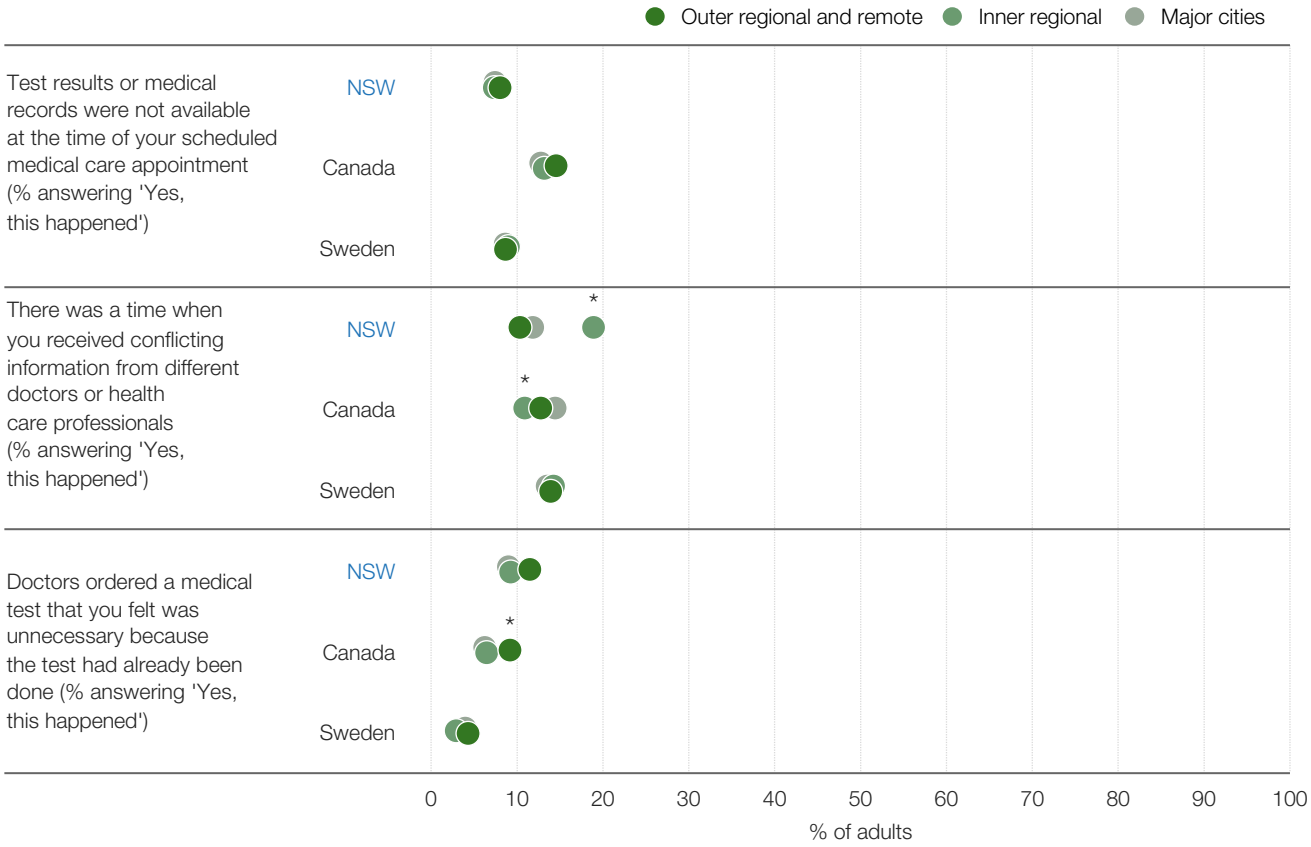
Figure 3.18 Coordination of care, all response categories, adults aged 55+ years, NSW by remoteness of residence, 2014



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

* Estimate is significantly different to major cities.

Figure 3.19 Coordination of care, percentage of adults aged 55+ years who experienced problems with coordination, NSW, Canada and Sweden by remoteness of residence, 2014



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

* Estimate is significantly different to major cities.

Receiving maternity services: Antenatal care

No significant differences by remoteness in receipt of antenatal care

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.[21]

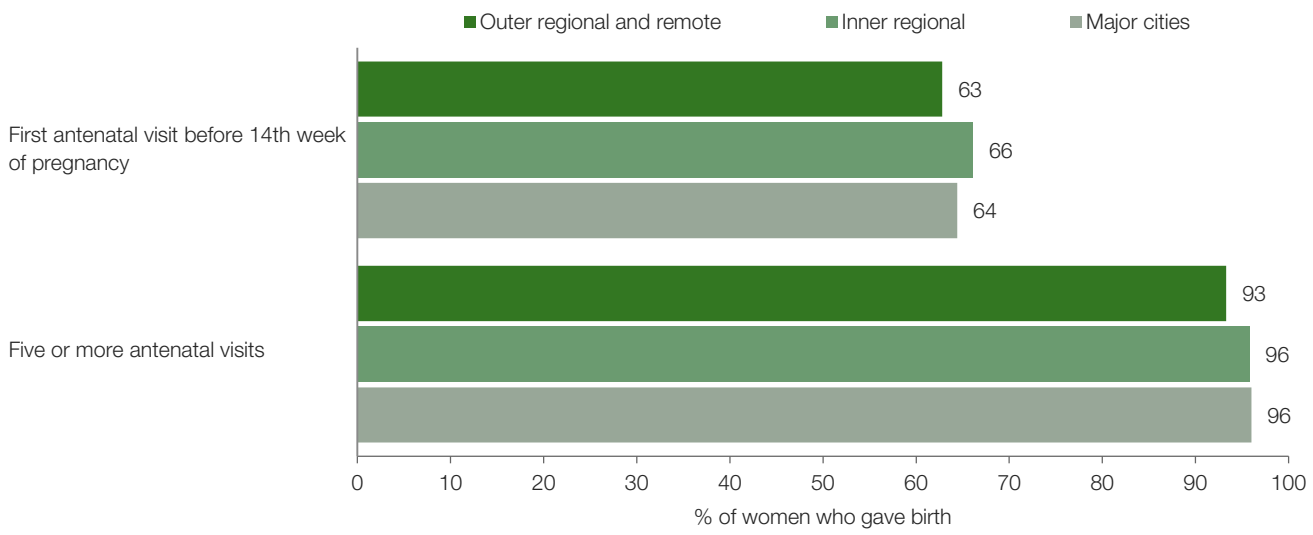
In 2015, the proportion of women who had their first antenatal visit before the 14th week of pregnancy ranged from 63% among women who lived in outer regional and remote areas to 66% among women who lived in inner regional areas (Figure 3.20). These proportions have remained relatively stable since 2012 (Figure 3.21).

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.[22] NSW data records the proportion of women who access antenatal care five or more times.

In 2015, the proportion of women who had five or more antenatal visits ranged from 93% in outer regional and remote areas to 96% in major cities (Figure 3.20).

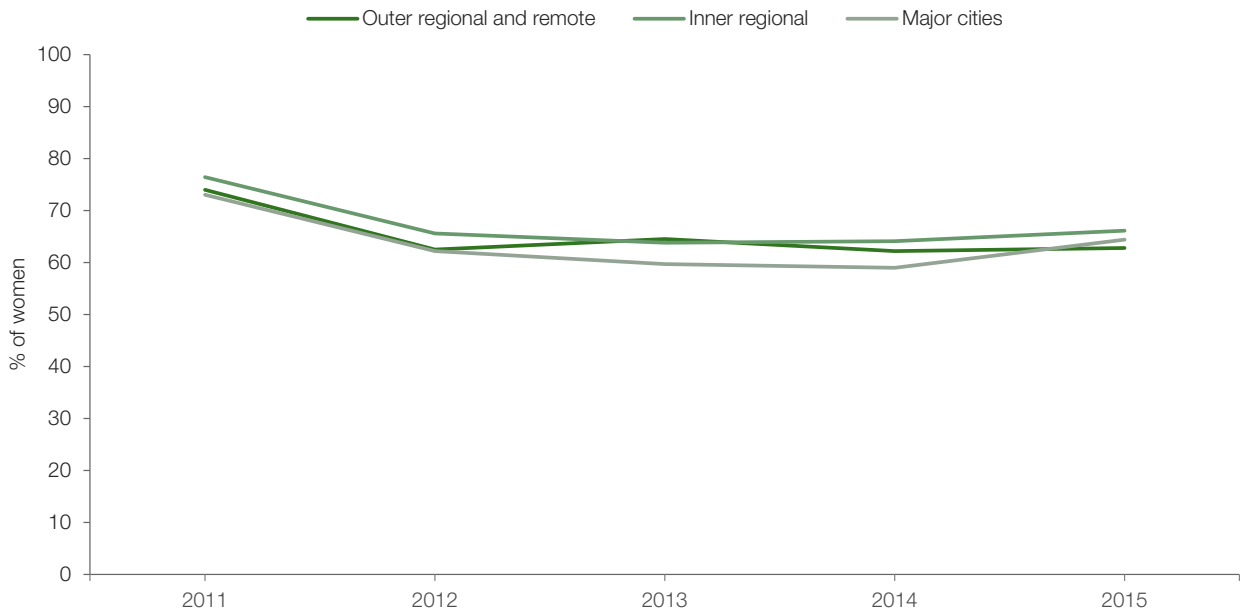
The 2015 NSW Maternity Care Patient Survey asked women who gave birth in a public hospital about their experiences of care. Women did not always receive appropriate advice about risks and behaviours. While around 90% of NSW women said they were asked how they were feeling emotionally during their pregnancy, only 60% of those with worries or fears said a health professional 'completely' discussed them. Among smokers, 49% said they were told about programs they could join to stop smoking. The extent to which they were given other types of advice and support for smoking cessation was not assessed (Figure 3.22).

Figure 3.20 Antenatal care provided, among women who gave birth, NSW by remoteness of residence, 2015



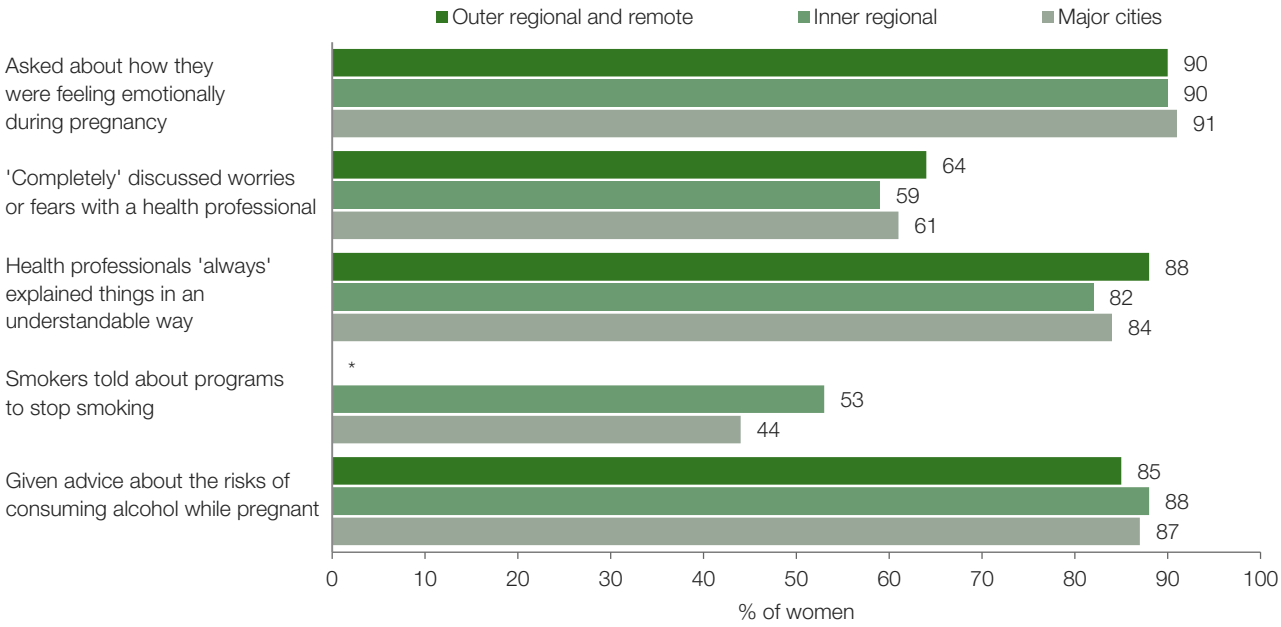
Source: NSW Perinatal Data Collection (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health (BHI analysis).

Figure 3.21 First antenatal visit occurred before 14th week of pregnancy, NSW by remoteness of residence, NSW, 2011–15



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

Figure 3.22 Key elements of antenatal care provided to women who gave birth in a public hospital, NSW by remoteness of hospital, 2015



Source: BHI, Maternity Care Survey, 2015.

* Outer regional and remote results suppressed due to small sample size.

Receiving maternity services: Births

While rates of caesarean section have increased across NSW, rates of elective caesarean sections in public hospitals do not appear to be related to remoteness

Caesarean section rates are a controversial issue. While caesarean section deliveries are the best option for some women and are associated with lower maternal or neonatal mortality, high rates have been linked with increased maternal morbidity and mortality, and neonatal intensive care unit admission.[23,24,25]

Caesarean sections can be emergency (unplanned) or elective (planned). Elective caesarean sections are the type of delivery for which there is an element of discretionary care.

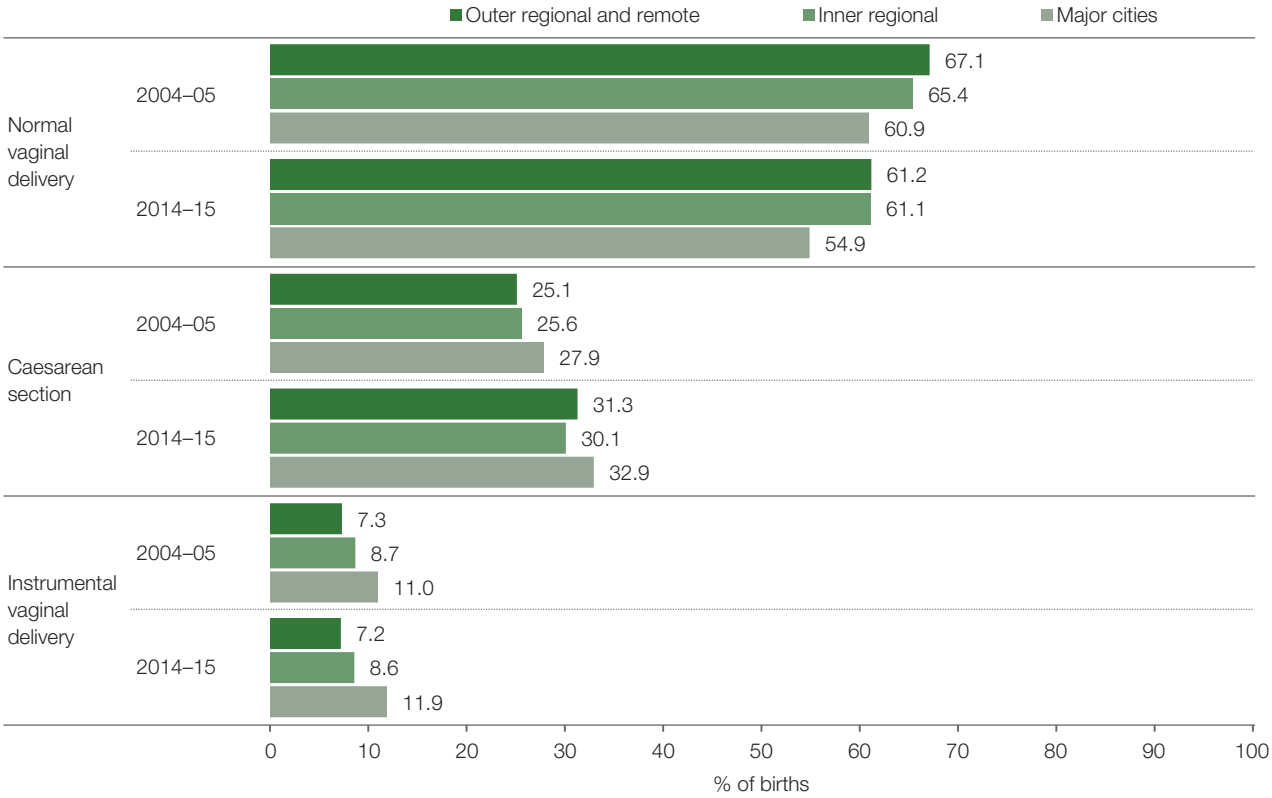
In 2014–15, 32.4% of deliveries (public and private) in NSW were caesarean sections (elective and emergency), compared with 27.3% in 2004–05. While caesarean section rates have increased across the state, the greatest increase was in outer regional and remote areas (Figure 3.23).

There are no published recommendations to guide the appropriate level for elective procedures. Between 2004 and 2014, elective caesarean section rates increased from 13% to 16% of all deliveries in NSW (Figure 3.24).

Such increases in elective 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.

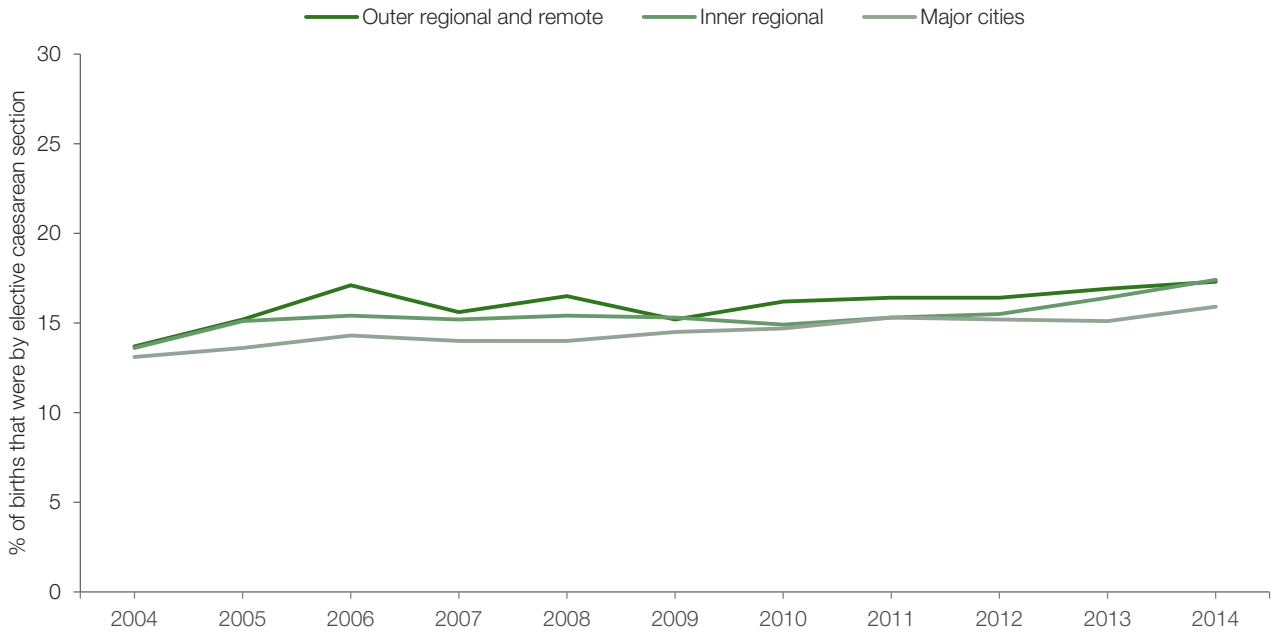
Among public hospitals, the rates of elective caesarean sections do not appear to be related to remoteness and were around 16% of births in 2014–15 (Figure 3.25).

Figure 3.23 Type of birth, public and private hospitals, NSW by remoteness of residence, 2004–05 and 2014–15



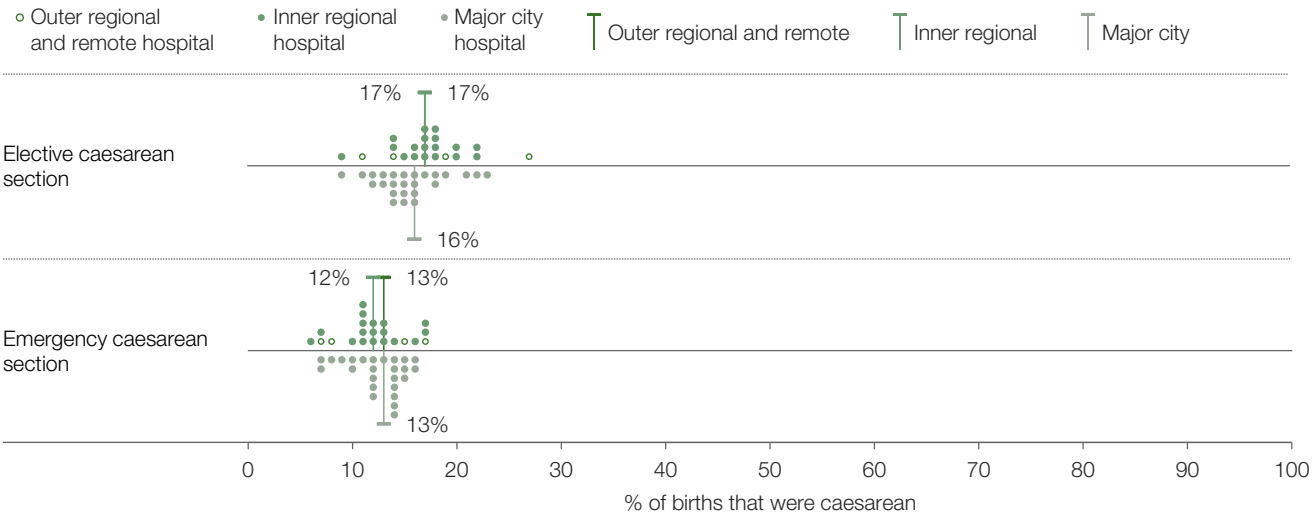
Source: NSW Perinatal Data Collection (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health (BHI analysis).

Figure 3.24 Elective caesarean sections, as a percentage of all births, NSW public hospitals by remoteness, 2004–14



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

Figure 3.25 Type of caesarean sections, percentage of all births, NSW public hospitals by remoteness, 2014–15



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

Appropriateness of cancer services

Most rural patients said they were always treated with respect and dignity

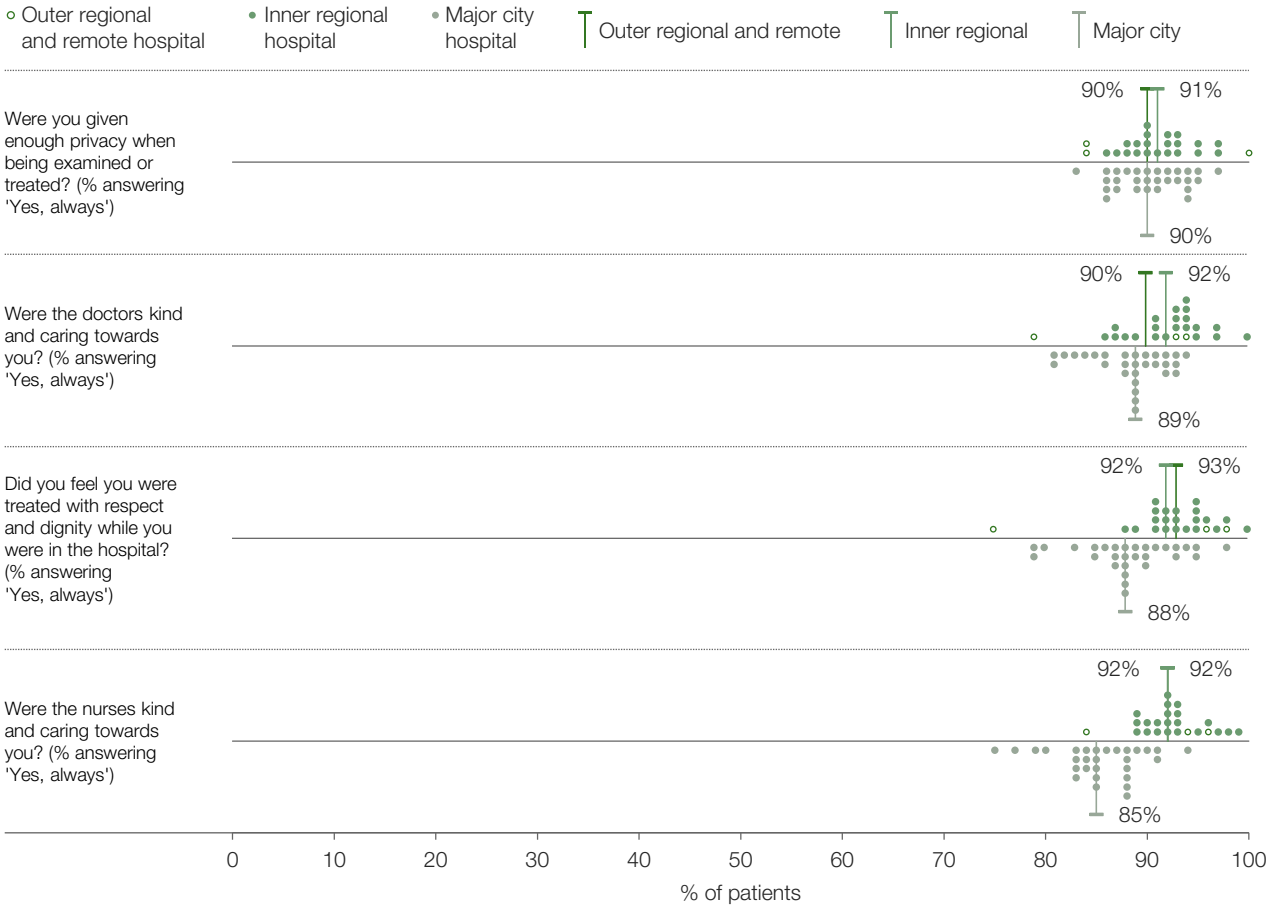
In the past two years, BHI has released two reports that focus on cancer patients' experiences of care.[26,27]

The first report focused on hospital care. Overall, hospitalised cancer patients responded very positively to questions about the appropriateness of care – particularly questions about respectfulness, kindness and courtesy.[26] Patients hospitalised in rural hospitals were slightly more positive than those in major city hospitals (Figure 3.26).

The second report focused on the experiences and outcomes of care among patients who visited an outpatient cancer clinic. There were no cancer outpatient clinics situated in outer regional and remote areas of NSW.

The outpatient survey features a number of questions on shared decision-making. When given the opportunity, most people with cancer want to be involved in decisions about their care. Shared decision-making is a collaborative process that allows

Figure 3.26 Interpersonal aspects of care, percentage of hospitalised cancer patients who selected the most positive response category, NSW public hospitals by remoteness, 2013–14

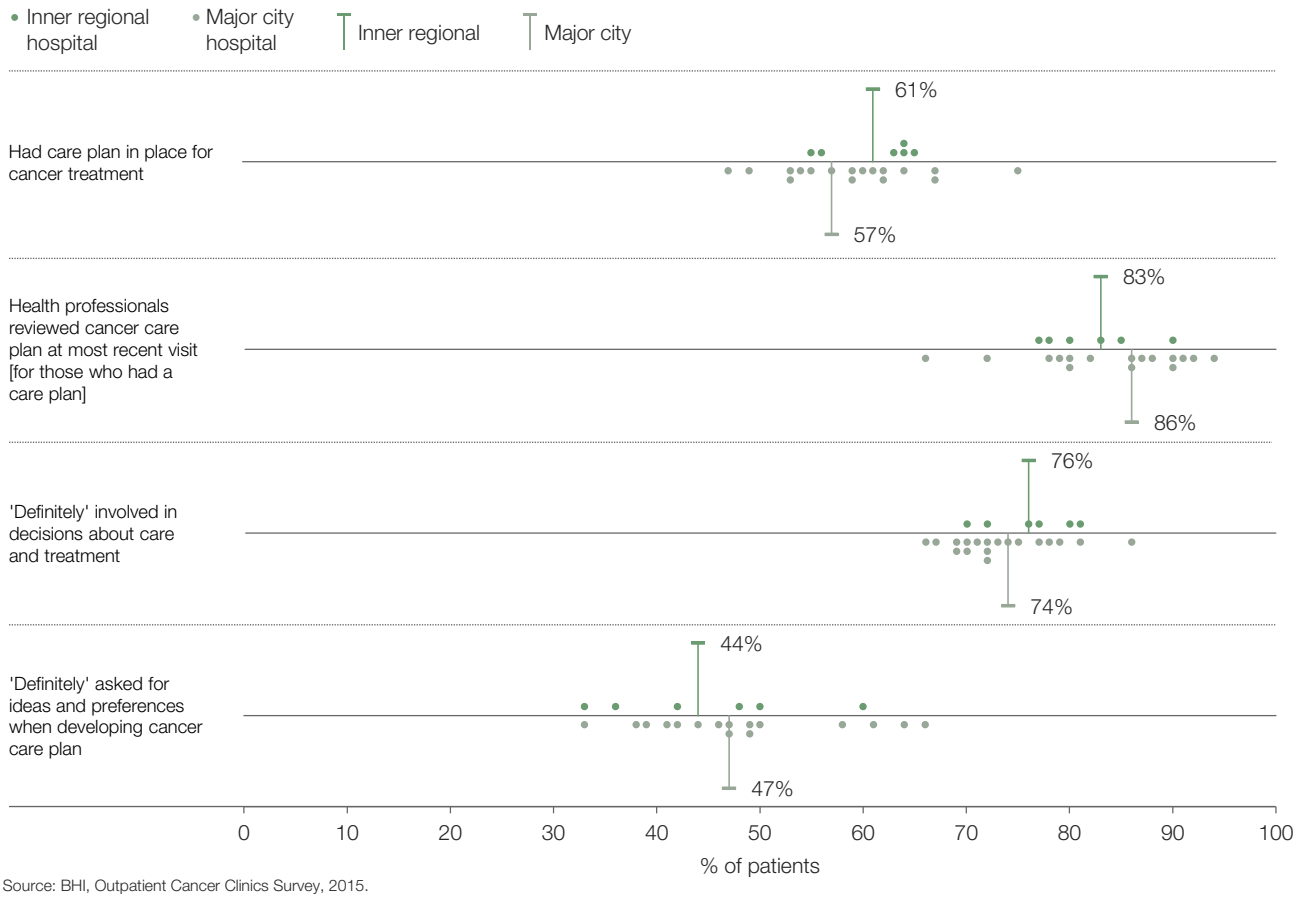


Source: BHI, Adult Admitted Patient Survey, 2013–14.

patients and health professionals to explore together different options for treatment and care, taking into account the best scientific evidence available, as well as patients' values and preferences.[27]

A cancer care plan is developed through shared decision-making processes. It is a vital document that sets out a patient's needs and goals for the treatment and management of their cancer. In inner regional hospitals, 76% of patients said they were 'definitely' involved in decisions about their care and treatment (as much as they wanted to be) compared with 74% in major city hospitals. While about six in 10 patients (61% in inner regional hospitals and 57% in major city hospitals) who needed a cancer care plan said they had one; less than half said they were 'definitely' asked for their ideas and preferences when developing it (44% inner regional and 47% major city) (Figure 3.27).

Figure 3.27 Shared decision-making, percentage of cancer outpatients who selected the most positive response category, NSW public hospitals by remoteness, 2015



Source: BHI, Outpatient Cancer Clinics Survey, 2015.

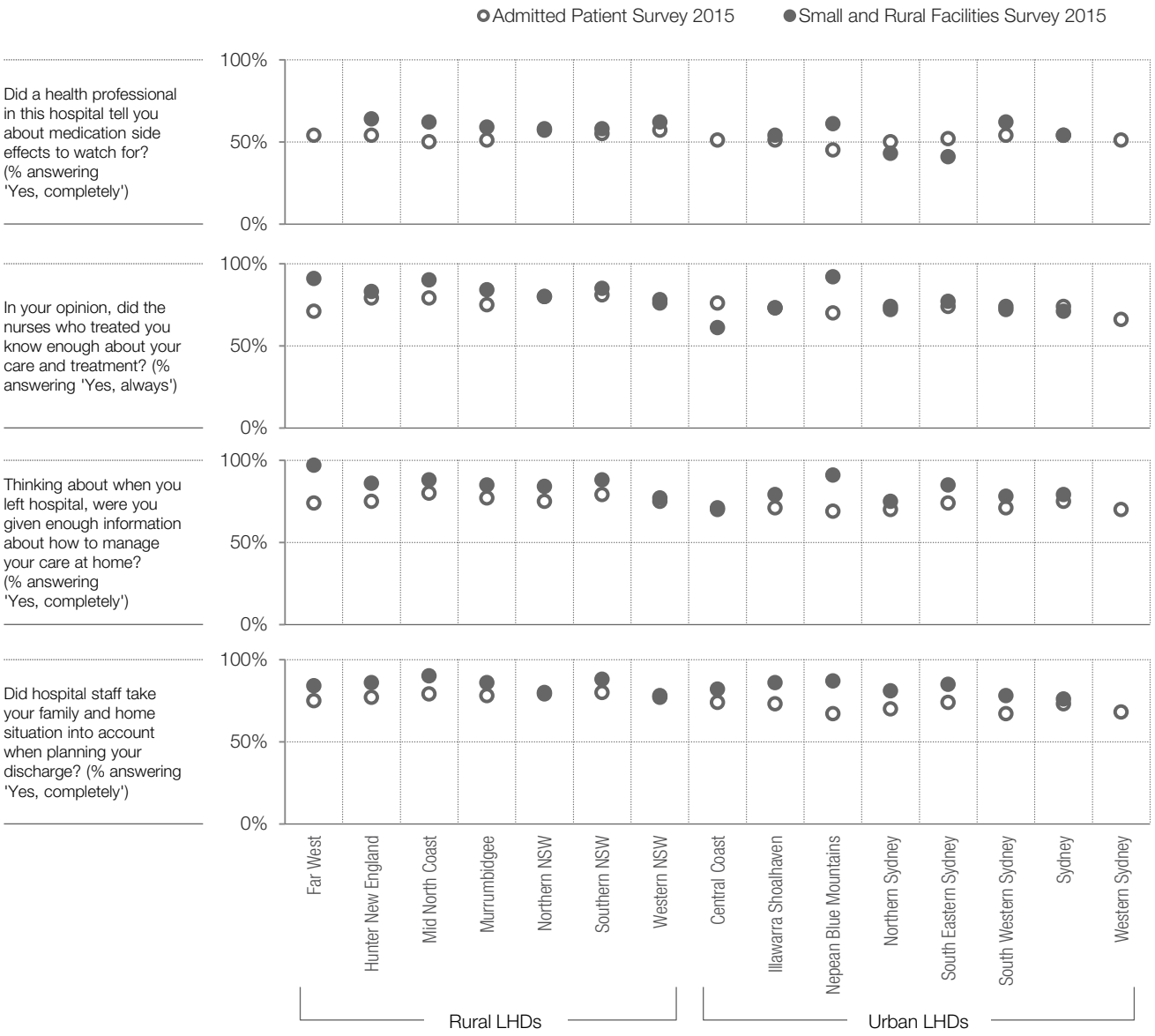
Listening to patients hospitalised in small facilities

Small hospitals provide coordinated care

Small hospitals play a vital role in providing healthcare to people in rural and regional NSW. While patients admitted to principal referral, major and district hospitals in NSW have been surveyed for over 10 years, until now there has been no data about the experiences of patients admitted to smaller facilities.

The figures on pages 85 to 88 show results from the Small and Rural Facilities survey. Figures 3.28 and 3.30 provide results for each local health district (LHD), comparing responses from patients admitted in larger hospitals with those admitted to smaller hospitals. Figures 3.29 and 3.31 show the variation across all the small facilities surveyed in NSW, by rurality.

Figure 3.28 Communication, coordination and comprehensiveness, percentage of patients who selected the most positive response category, adult admitted and small and rural hospital surveys, LHDs, NSW, 2015



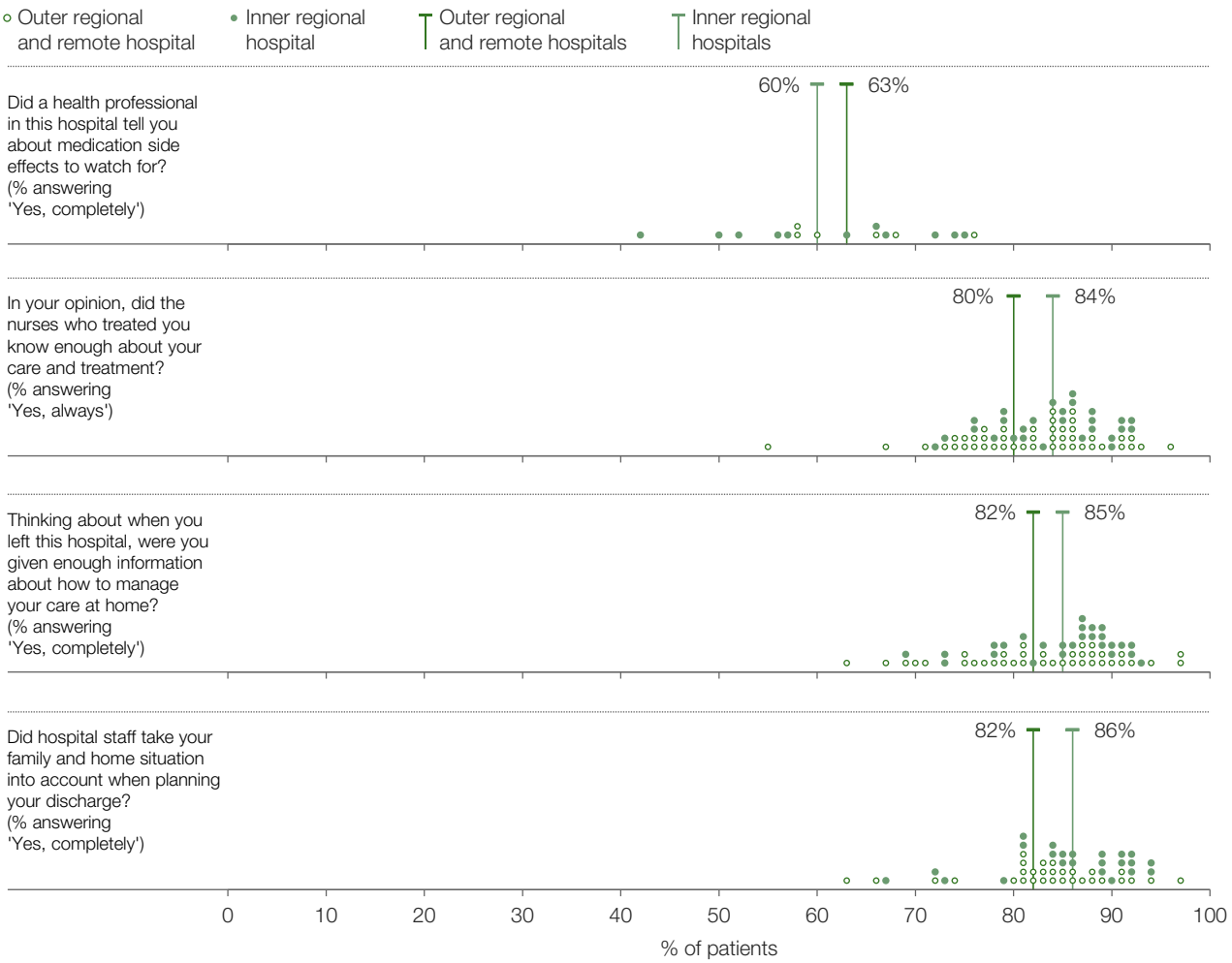
Sources: BHI, Adult Admitted Patient Survey, 2015. BHI, Small and Rural Facilities Survey, 2015.
* Peer group A includes (very large) principal referral and specialist hospitals; peer group B includes (large) major hospitals and peer group C includes (medium and small) district hospitals.

Results for nine key questions are reported: they focus on communication, coordination and comprehensiveness, respectfulness, responsiveness and patient engagement.

Around six in 10 patients in small rural hospitals said they were 'completely' told about medication side effects (Figure 3.29). Notably, in the smaller facilities survey, 22% of patients in NSW overall said they were not told about potential side effects compared with 25% in the adult admitted survey [data not shown].

There was marked variation in responses to some of the questions. For example, 82% of patients hospitalised in small facilities in outer regional and remote NSW said hospital staff took their family and home situation into account when planning their discharge, but this ranged across facilities from 63% to 97% (Figure 3.29).

Figure 3.29 Communication, coordination and comprehensiveness, percentage of patients who selected the most positive response category, NSW small rural public hospitals by remoteness, 2015



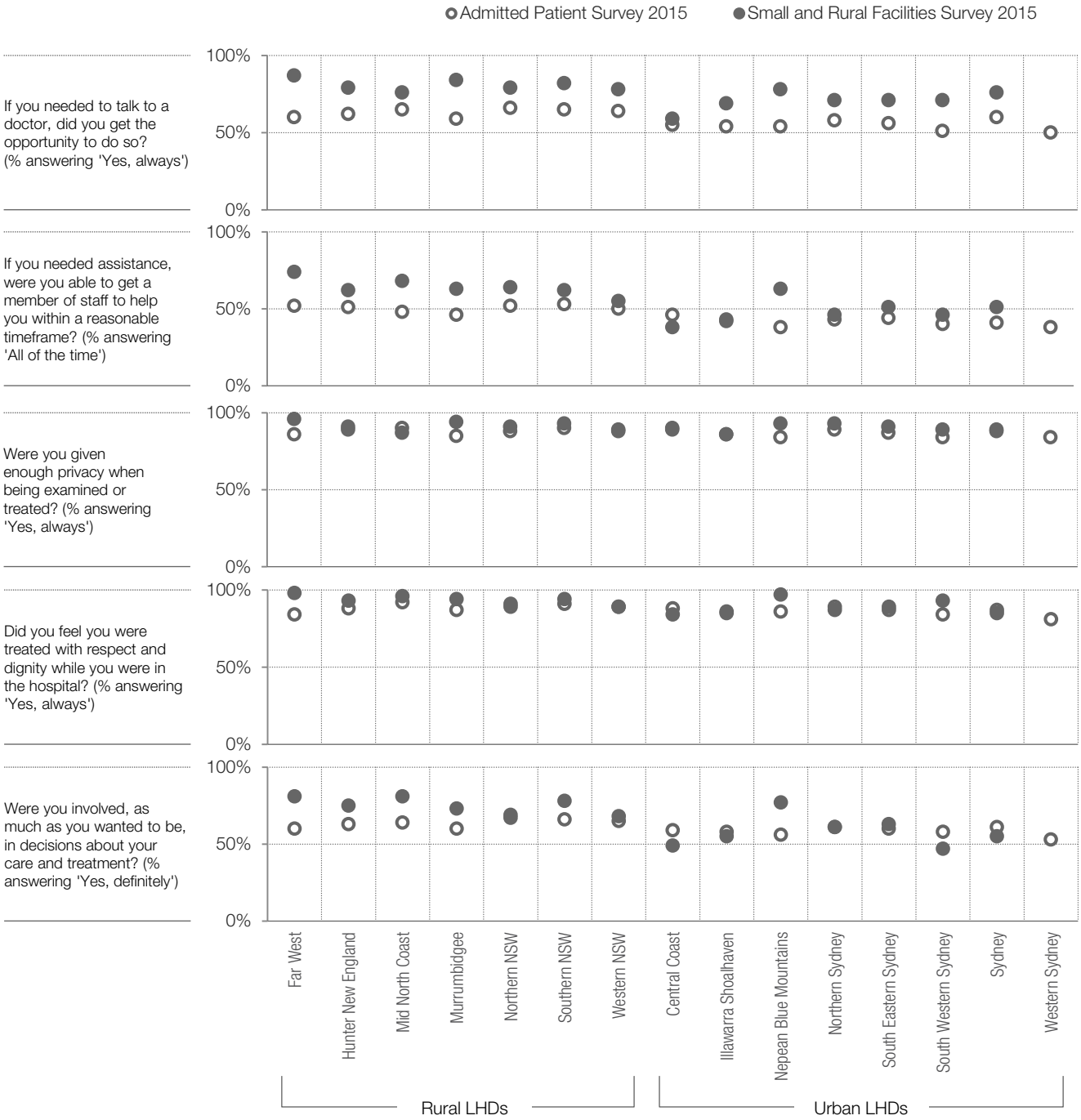
Source: BHI, Small and Rural Facilities Survey, 2015.

Listening to patients hospitalised in small facilities

Small hospitals provide responsive care

Questions that focus on assistance, respect and patient engagement also revealed considerable variation. For example, only 58% of patients hospitalised in small facilities in outer regional and remote NSW said if they needed assistance, they were able to get a member of staff to help them within a reasonable timeframe – and this ranged from 39% to 85% (Figure 3.31). Similarly, while 71% of patients

Figure 3.30 Assistance, respect and engagement, percentage of patients who selected the most positive response category, adult admitted and small and rural hospital surveys, LHDs, NSW, 2015

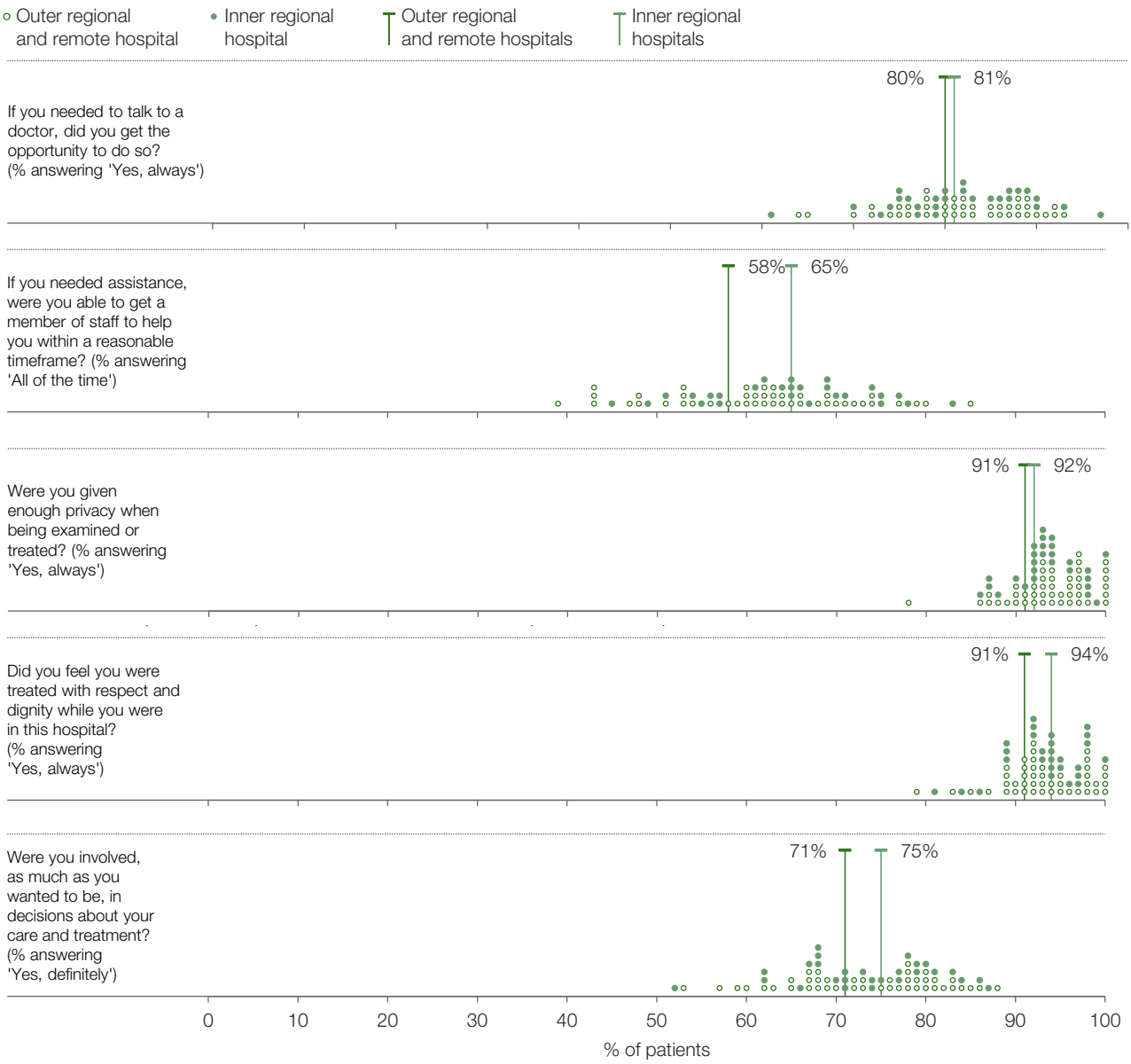


Sources: BHI, Adult Admitted Patient Survey, 2015. BHI, Small and Rural Facilities Survey, 2015.

hospitalised in small facilities in outer regional and remote NSW said they were involved as much as they wanted to be in decisions about their care, this ranged from 53% to 88% (Figure 3.31).

Full results are available on BHI's interactive data portal, Healthcare Observer at **bhi.nsw.gov.au/healthcare_observer**

Figure 3.31 Assistance, respect and engagement, percentage of patients who selected the most positive response category, NSW small rural public hospitals by remoteness, 2015



Source: BHI, Small and Rural Facilities Survey, 2015.

Appropriateness and Aboriginality

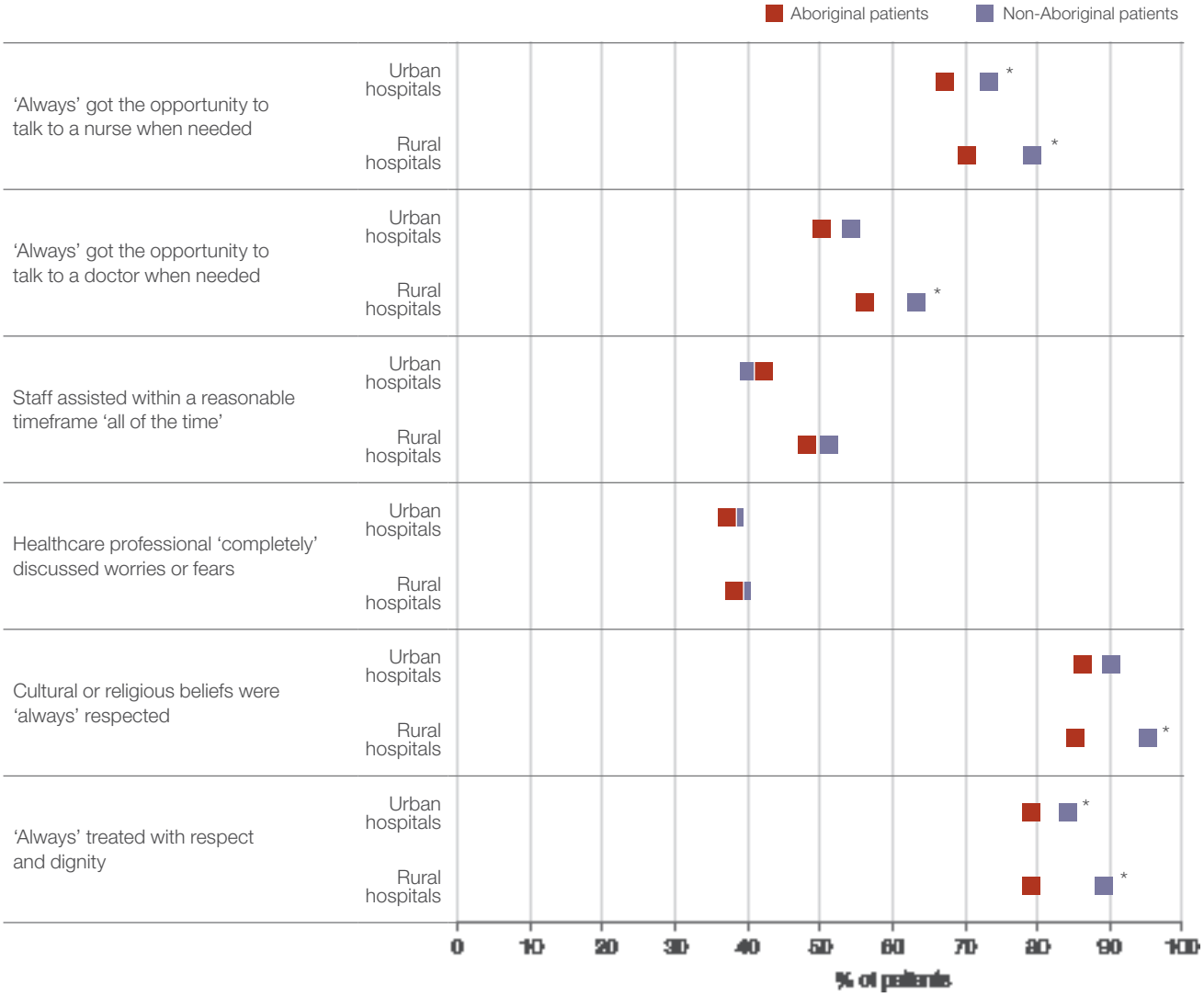
Gaps in experiences of care are wider in rural hospitals

The 2014 Adult Admitted Patient Survey included an oversample of Aboriginal patients in order to explore, for the first time, variation across NSW in their experiences and self-reported outcomes of hospital care. The survey was sent to a random sample of 13,031 adult patients who were identified as Aboriginal and/or Torres Strait Islander in the admitted patient data collection.

Completed questionnaires were received from 2,714 of patients (response rate 21%). Almost one in 10 of all adult Aboriginal patients hospitalised in 2014 responded to the survey (2,714 out of 13,031 patients).

Aboriginal patients reflected positively on their experiences in hospital – 64% rated care overall as 'very good' compared to 63% of non-Aboriginal

Figure 3.32 Appropriateness of care, percentage of patients who selected the most positive response category, Aboriginal and non-Aboriginal patients, urban and rural NSW public hospitals, 2014



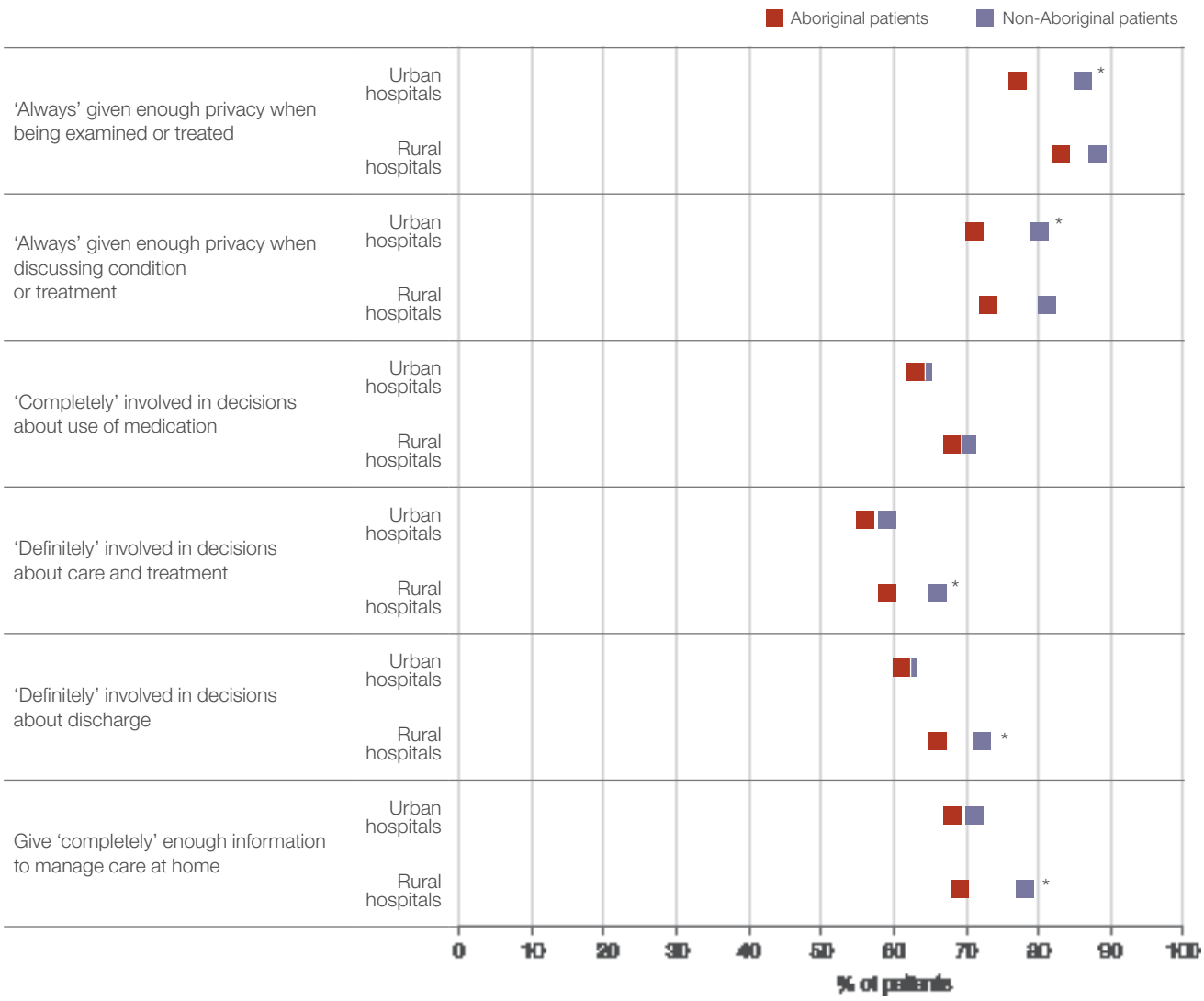
Source: Bureau of Health Information. Patient Perspectives. Hospital Care for Aboriginal People. Sydney (NSW); BHI; 2016.

* There was a significant difference in the proportion of Aboriginal and non-Aboriginal patients who selected the most positive response category.

patients. However, when asked about specific aspects of care, Aboriginal patients were less positive than non-Aboriginal patients for 26 of the 55 survey questions analysed in the BHI report.

Differences in experiences of care between Aboriginal and non-Aboriginal patients are generally bigger in hospitals in rural areas (regional and remote) than those in urban areas (major cities). Results from the NSW Patient Survey Program generally show that patients hospitalised in rural hospitals report more positive patient experiences than those hospitalised in urban hospitals,[28] however this effect was often not apparent among Aboriginal patients (Figures 3.32 and 3.33).

Figure 3.33 Appropriateness of care, percentage of patients who selected the most positive response category, Aboriginal and non-Aboriginal patients, urban and rural NSW public hospitals, 2014



Source: Bureau of Health Information. Patient Perspectives. Hospital Care for Aboriginal People. Sydney (NSW); BHI; 2016.

* There was a significant difference in the proportion of Aboriginal and non-Aboriginal patients who selected the most positive response category.

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' confidence and trust in the healthcare systems and providers, and their ability to realise the potential benefits of treatment, through increased health literacy and self-efficacy at managing their health problems.

Measures can include:

- Assessments of safety outcomes – whether there were any adverse events
- Measures that assess whether the healthcare services provided made a discernible change to patients' health and functional status
- Measures of public trust and confidence in healthcare professionals, organisations and systems.

Summary of findings

- Across the three remoteness categories, a higher proportion of people who lived in outer regional and remote areas were 'very confident' or 'confident' in managing their health problems
- Results from a survey of adult admitted patients showed that a higher proportion of patients in rural hospitals had confidence and trust in healthcare professionals, compared to patients in major city hospitals
- Emergency department re-presentations within 48 hours were more common in rural hospitals
- Hospitals with higher than expected 30-day mortality and readmission rates were located in rural and urban areas
- A smaller proportion of patients hospitalised in rural hospitals experienced complications
- Responses from patients in two rural outpatient cancer clinics were more positive than NSW for multiple measures
- Aboriginal patients were less positive than non-Aboriginal patients regarding self-reported outcomes of hospital care.

Insights from the peer reviewed literature

- There is a marked gradient of increasing chronic disease mortality from cities to remote and very remote areas in NSW[1,2]
- A systematic review found that common elements of effective and acceptable chronic kidney disease management programs for Indigenous people include integration within existing health services, nurse-led care, intensive follow-up, provision of culturally-appropriate education, governance structures, community ownership, robust clinical systems supporting communication and the role of Indigenous health workers[3]
- Online and mobile phone-delivered mental health programs may be effective and acceptable tools for reducing symptoms of depression and other mental health problems in rural areas[4,5]
- Community outreach midwifery-led models of care can improve access to antenatal care for Aboriginal women living in remote areas[6]
- Telehealth and teleoncology models of care allow for the timely and safe delivery of chemotherapy to patients in rural and remote areas[7,8]
- Patients living in rural areas are less likely to survive out of hospital cardiac arrest than those living in urban areas[9]
- A data linkage study found that risk of death from potentially curable colorectal cancer was higher in patients living in remote areas compared with those living in metropolitan areas[10]
- Under-supply of primary healthcare services contributes to unplanned re-presentations to regional NSW hospitals[11]
- Mobile screening for abdominal aortic aneurysm in a remote area of Australia was found to be highly acceptable to the target population, with no deleterious effect on psychological well-being or quality of life[12]
- Cardiologist-supported remote risk stratification, management and facilitated access to tertiary hospital-based early invasive management was associated with an improvement in 30-day mortality for patients who initially present to rural hospitals and are diagnosed with acute myocardial infarction (AMI)[13]
- Asthma death rates per 100,000 population are lowest in major cities in NSW and highest in inner regional areas.[12]

Making a difference: Enabling patients

A higher proportion of people in outer regional and remote areas were 'very confident' or 'confident' in managing their health problems

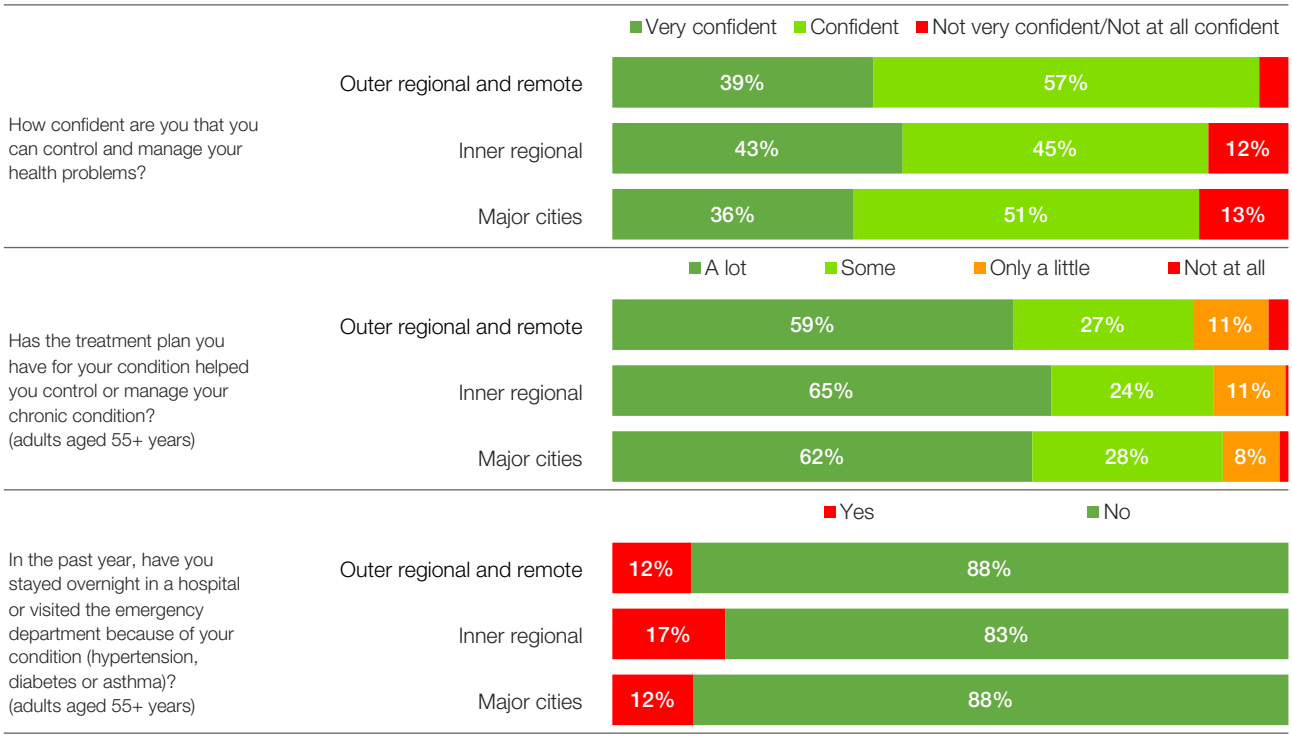
Effective healthcare supports and enables patients to manage their own care. Often referred to as 'self-efficacy', such patient engagement is associated with better quality care, fewer errors and more positive attitudes towards the healthcare system. It is particularly important for patients with chronic conditions.[14]

Measures of self efficacy focus on patients' confidence in their ability to participate in their care; and in seeking, obtaining and understanding health information.

Survey data show that among NSW people with a chronic condition, those who lived in outer regional and remote areas had relatively high levels of self-efficacy – 39% said they were 'very confident' and 57% said they were 'confident' in managing their own health problems (Figure 4.1).

When asked about the effectiveness of their chronic disease treatment plan, compared to other remoteness categories, a higher proportion of patients in inner regional areas said their plan helped a lot (Figure 4.1).

Figure 4.1 Self-efficacy and management of chronic conditions, all response categories, adults aged 55+ years, NSW by remoteness of residence, 2013 and 2014

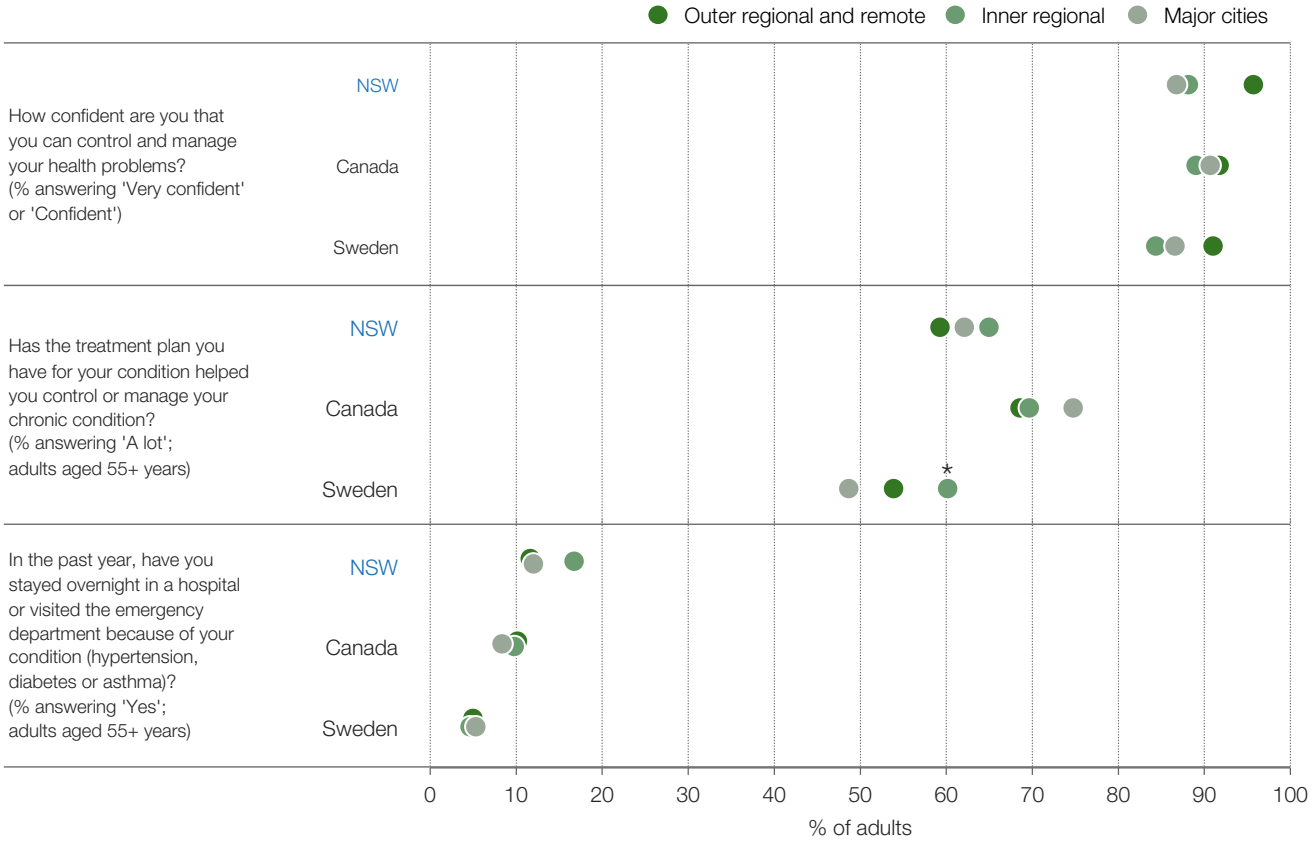


Sources: 2013 Commonwealth Fund International Health Policy Survey. 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

Among adults with a chronic disease a higher proportion of those in inner regional and remote areas of NSW said they had been hospitalised or visited an ED in the preceding year because of their chronic condition (Figure 4.1).

In international comparisons, patients in outer regional and remote areas were most likely to express confidence in their ability to manage their health problems (Figure 4.2).

Figure 4.2 Self efficacy and management of chronic conditions, percentage of adults aged 55+ years who selected positive response categories, NSW, Canada and Sweden, by remoteness of residence, 2013 and 2014



Sources: 2013 Commonwealth Fund International Health Policy Survey. 2014 Commonwealth Fund International Health Policy Survey of Older Adults.

* Estimate is significantly different to major cities.

Emergency department re-presentations

Re-presentations to ED are more common in rural hospitals but are reducing

Emergency department (ED) visits that are followed by an unplanned re-presentation to an ED within 48 hours may indicate sub-optimal care. It may also represent inefficiency in terms of patients making two or more visits to the ED when one should have dealt with their presenting problem satisfactorily.

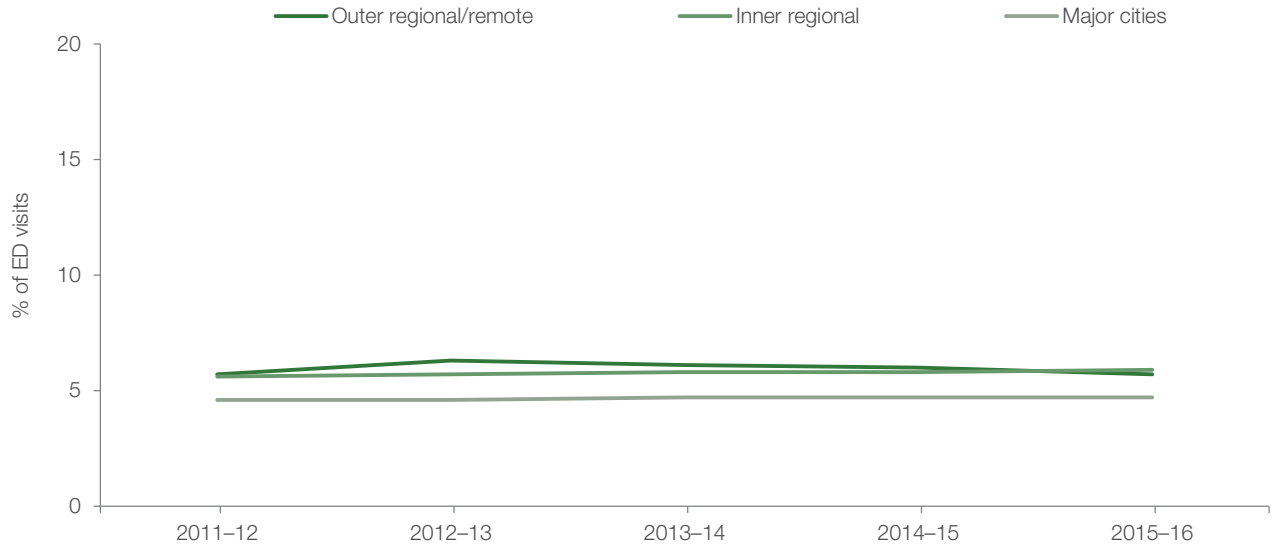
In the year 2015–16, 5.7% of visits to outer regional and remote hospital EDs were re-presentations; compared with 5.9% of visits to inner regional EDs and 4.7% of visits to major city EDs.

The proportion of visits that were re-presentations within 48 hours has slightly increased in both major city and inner regional hospitals, but has been decreasing in outer regional and remote hospitals since 2012–13 (Figure 4.3).

Rates of re-presentation vary more widely across outer regional and remote hospitals than across major city hospitals (Figure 4.4).

Importantly, these data should be interpreted in light of the role that some rural hospital EDs play in providing primary care services. In these cases, re-presentations may be both appropriate and efficient.

Figure 4.3 Emergency department re-presentations, percentage of ED visits for which patient had been to an ED in the preceding 48 hours, NSW by remoteness of hospital, 2011–12 to 2015–16



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

Views from the qualitative consultation

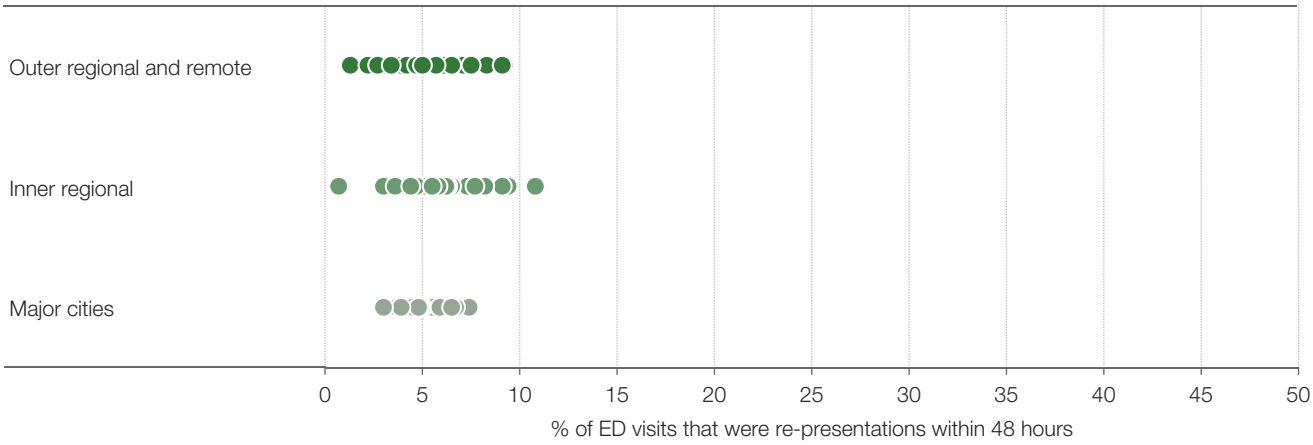
Different models of emergency department care are used in rural NSW:

"High re-presentation rates to rural EDs can be a reflection of the primary care role some perform. In some EDs, there are perverse incentives for re-presentations as GPs contracted to work in the ED are paid per consultation, increasing the likelihood that patients would be asked to return to the ED for check-ups or tests."
(Qualitative consultation respondent)

"Regional hospital A offers a 'fast-track system' in the ED, with a GP onsite. The GP often asks people to come back to the ED for test results rather than referring them on."
(Qualitative consultation respondent)

"The urgent care centre is staffed by local GPs. As the service is open 6am – 6pm, staff find that it is convenient for patients to use the urgent care centre for primary care, but re-presentation rates are low as the GPs in the urgent care centre refer patients back to GP practices in town for follow up."
(Qualitative consultation respondent)

Figure 4.4 Emergency department re-presentations, percentage of ED visits for which patients had been to an ED within the preceding 48 hours, NSW public hospitals by remoteness, 2015–16



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

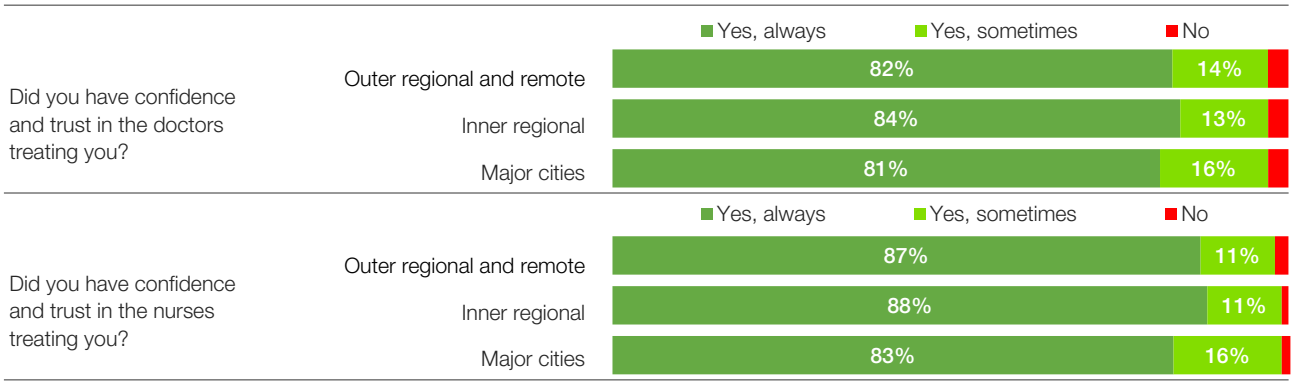
Making a difference: Confidence and trust

Confidence and trust in doctors and nurses are higher in rural areas

Trust between healthcare professionals and patients is essential to performance. Trust leads to open communication, lower referral rates, better patient outcomes and encourages patient enablement. It stems from patients' opinions about the competence of healthcare professionals in both clinical and interpersonal skills.

Ratings of confidence and trust can therefore reflect the effectiveness of healthcare. Levels of patient-reported confidence and trust were higher in rural areas. Over eight in 10 patients admitted to inner regional hospitals 'always' had confidence and trust in the doctors (84%) and nurses (88%) treating them (Figure 4.5).

Figure 4.5 Confidence and trust in doctors and nurses, all response categories, public hospital patients, NSW by remoteness, 2015



Source: BHI, Adult Admitted Patient Survey, 2015.

There was variation at a hospital level however. For rural hospitals, the proportion of patients who said they 'always' had confidence and trust in doctors ranged from 75% to 91%; while in major city hospitals it ranged from 74% to 93% (Figure 4.6).

Similarly the proportion of patients in rural hospitals who said they 'always' had confidence and trust in nurses ranged from 81% to 94% while in major city hospitals it ranged from 76% to 94% (Figure 4.6).

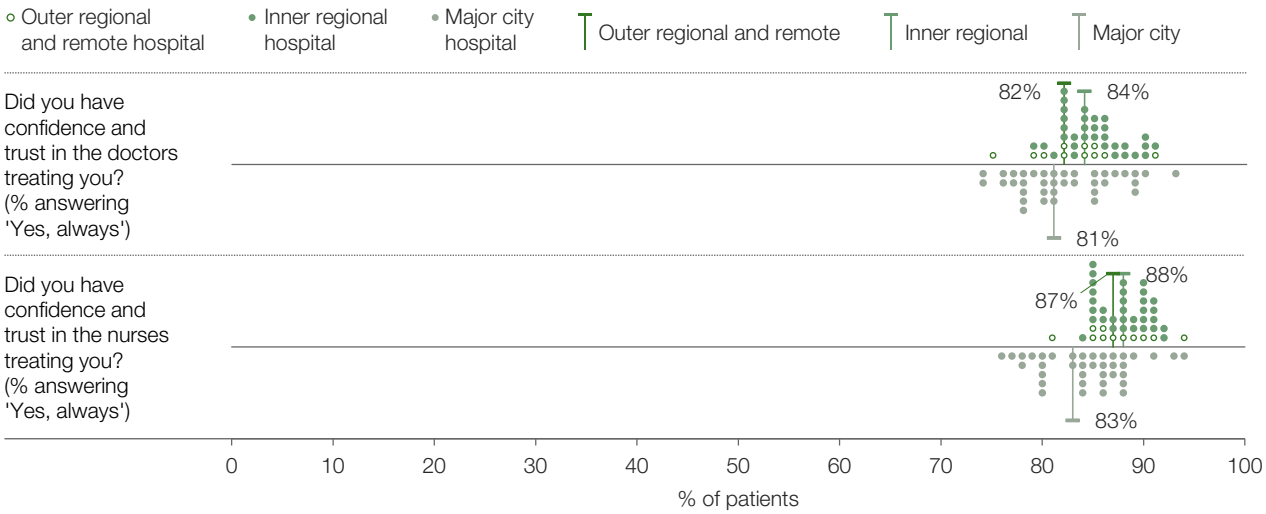
There were only four rural hospitals where less than 80% of patients said they 'always' had confidence and trust in doctors and no rural hospitals where less than 80% of patients said they 'always' had confidence and trust in nurses (Figure 4.6).

Views from the qualitative consultation

"My [clients] want to see me – they know me and trust me. I provide antenatal, child health, promotion and prevention. I do their antenatal and follow them all the way through. We have a 100% vaccination rate. We also have 100% attendance at our dental clinics. If I put them on the list, they will come."

(Qualitative consultation respondent)

Figure 4.6 Confidence and trust in doctors and nurses, percentage of patients who selected the most positive response category, NSW public hospitals by remoteness, 2015



Source: BHI, Adult Admitted Patient Survey, 2015.

Outcomes of care: Mortality and readmissions

Hospitals with higher than expected mortality and readmissions were located in rural and urban areas

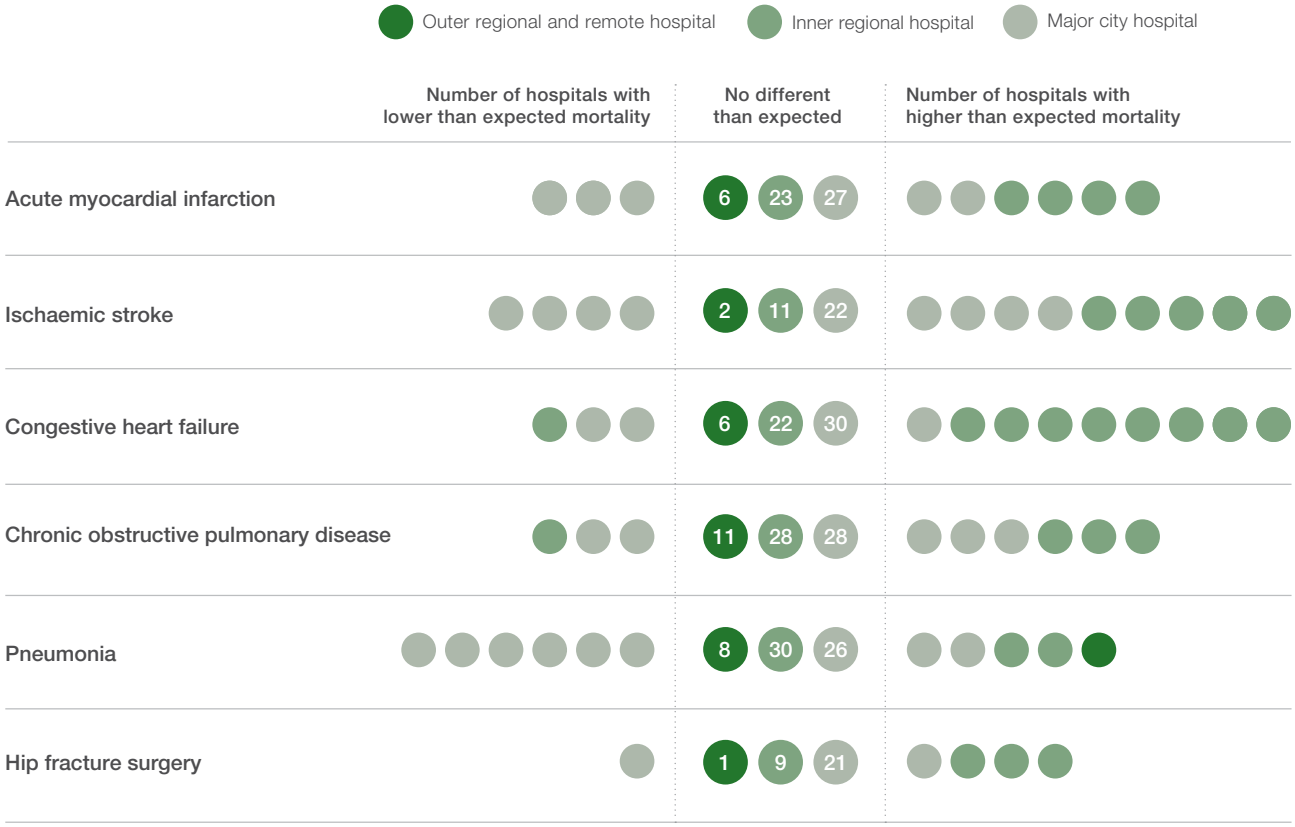
BHI has released a series of reports that measure unwarranted clinical variation in outcomes among NSW patients hospitalised for acute myocardial infarction (heart attacks), ischaemic stroke, haemorrhagic stroke, congestive heart failure, pneumonia, chronic obstructive pulmonary disease, and hip fracture surgery and joint replacement surgery.[15,16]

Results were reported for mortality in the 30 days following hospitalisation in terms of a risk-standardised mortality ratio (RSMR); and for unplanned readmissions in the 30 days following discharge from hospital in terms of a risk-standardised readmission ratio (RSRR).

For each individual hospital in NSW, statistical models were used to calculate an 'expected' rate of mortality and readmissions, given the characteristics of patients admitted to that hospital.

Results were expressed as 'lower than expected', 'no different than expected' or 'higher than expected'. Detailed results for all NSW hospitals data are available on BHI's interactive data portal at **bhi.nsw.gov.au/healthcare_observer**

Figure 4.7 Risk-standardised 30-day mortality rate, NSW public hospitals, by remoteness, July 2009 to June 2012

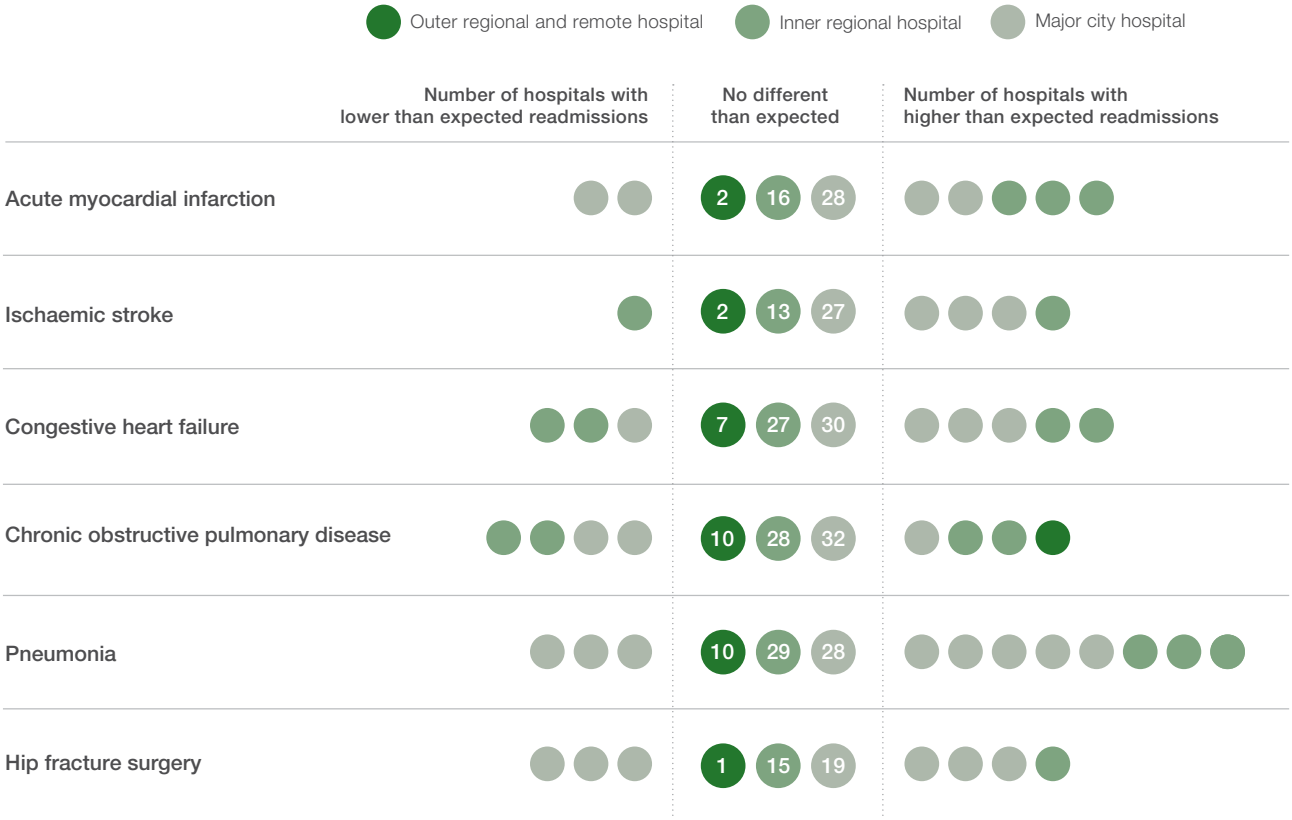


Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).
Note: Includes A-C hospitals with more than 50 index admissions.

Figures 4.7 and 4.8 display patterns of hospital results according to remoteness. For example, for acute myocardial infarction 30-day mortality, among the 65 hospitals that admitted acute patients there were 27 major city hospitals, 23 inner regional hospitals and six outer regional and remote hospitals that had RSMRs no different than expected. There were three hospitals with lower than expected RSMRs and all of these were sited in major cities. There were six hospitals with higher than expected RSMRs – two of these were major city hospitals and four were inner regional hospitals.

Looking across the suite of results, major city hospitals were more likely to achieve lower than expected mortality and readmissions. Hospitals with higher than expected mortality and readmissions were found across the remoteness categories.

Figure 4.8 Risk-standardised 30-day readmission rate, NSW public hospitals, by remoteness, July 2009 to June 2012



Source: NSW Ministry of Health, extracted from SAPHaRI, Centre for Epidemiology and Evidence (BHI analysis).
Note: Includes A-C hospitals with more than 50 index admissions.

Complications and adverse events

Rural hospitals have lower rates of complications

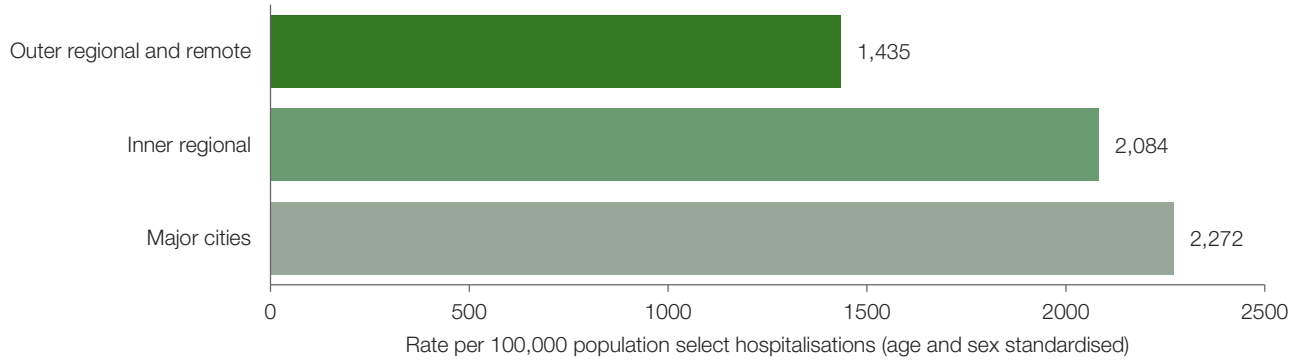
Complications of surgical or medical care are associated with hospital care but can also be influenced by the availability of primary care or community care. While rates serve as short-term indicators of performance, not all complications are avoidable and rates should be interpreted with caution. This is particularly true if results have not been adjusted for case mix, as is the case here.

In 2014–15, there were 15,139 hospitalisations in NSW public hospitals for which 'complications of surgical or medical care' was the principal diagnosis. Calculated as an age–sex standardised rate, complications were highest in major city hospitals (2,272 per 100,000 hospitalisations) and lowest in outer regional and remote hospitals (1,435 per 100,000) (Figure 4.9).

Patient survey data provide another perspective on complications. Among patients admitted to a public hospital in outer regional and remote NSW, 13% said they experienced a complication during or shortly after their hospital stay. This was a lower proportion than among patients hospitalised in inner regional (14%) or major city (16%) hospitals (Figure 4.10).

Infection was the most commonly reported complication. Across NSW, 4% of patients hospitalised in outer regional or remote hospitals and 5% of patients hospitalised in major city hospitals said they experienced an infection (Figure 4.11).

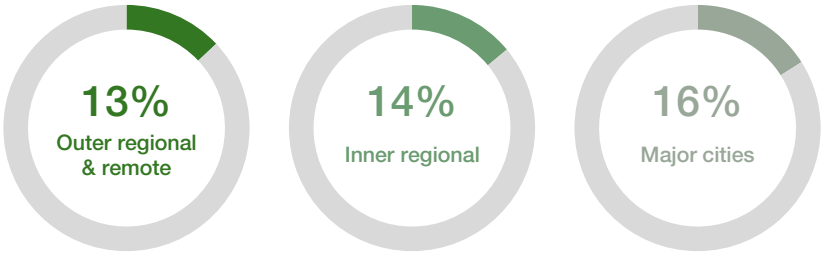
Figure 4.9 Hospitalisations for complications of surgical and medical care, public hospitals in NSW by remoteness, 2014–15



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

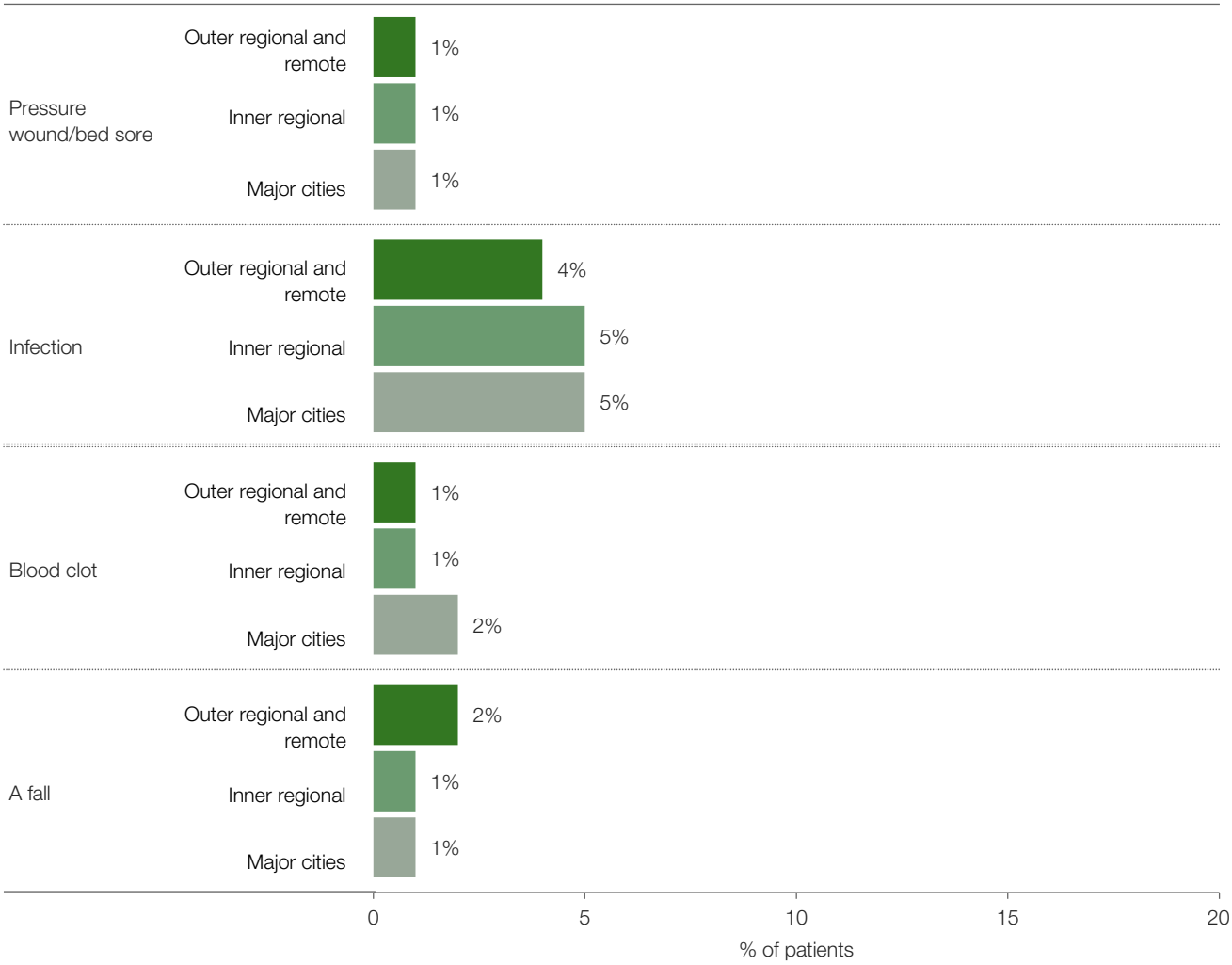
Note: Select hospitalisations include overnight admissions for persons aged 15+ years, excluding maternity and newborn. These figures do not take account of case mix or complexity of patients seen and should be interpreted with caution.

Figure 4.10 Patient-reported complications, percentage of public hospital patients who experienced a complication, NSW by remoteness of hospital, 2015



Source: BHI, Adult Admitted Patient Survey, 2015.

Figure 4.11 Patient-reported complications, percentage of public hospital patients who experienced a complication by type, NSW by remoteness, 2015



Source: BHI, Adult Admitted Patient Survey, 2015.

Effectiveness of maternity services

Rates of obstetric trauma are lower in rural hospitals

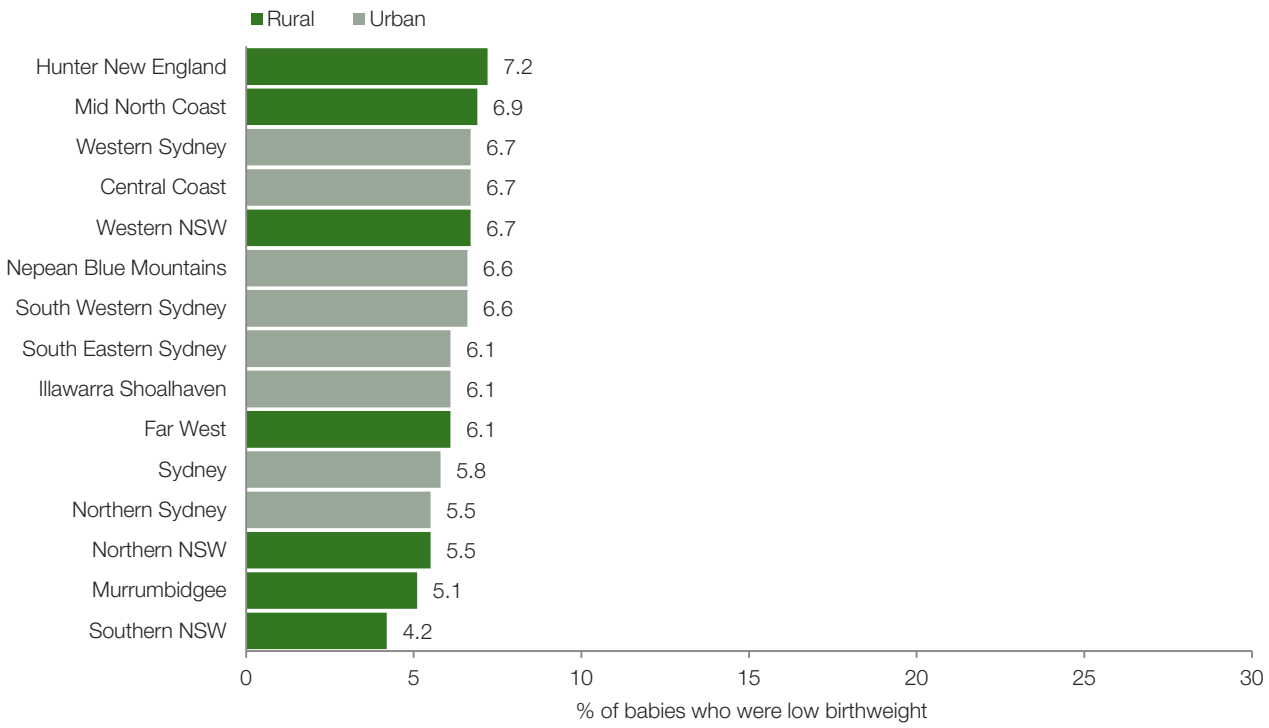
Measures of the effectiveness of maternity care focus on outcomes for babies or mothers. Birthweight is a measure that reflects the health and wellbeing of mothers during their pregnancy. It is a key determinant of a baby's future health, development and wellbeing. Babies are considered to be of low birthweight if they weigh less than 2.5 kilograms at birth. In 2014, 6.3% of NSW babies were of low birthweight, and the proportion ranged across local health districts (LHDs) from 4.2% in Southern NSW to 7.2% in Hunter New England (Figure 4.12).

Following childbirth, poor outcomes include serious lacerations or tears in the perineum (categorised as third- or fourth-degree tears, and referred to as obstetric trauma). These tears usually require surgical repair and can have long term consequences for mothers, such as ongoing pain and incontinence.

Among all hospitals in NSW in 2014, the rate of obstetric trauma for all vaginal births (instrument assisted and non-assisted) was 3 per 100 births (2 per 100 vaginal births in private hospitals and 4 per 100 in public hospitals). By remoteness, outer regional and remote hospitals had the lowest rates of obstetric trauma (although rates of non-assisted vaginal births are also lowest) (Figure 4.13).

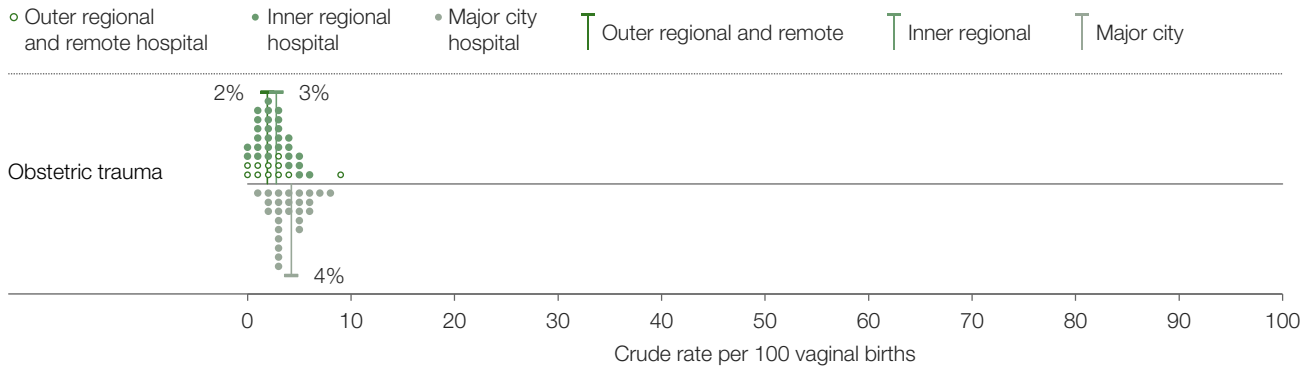
Patient survey data provide additional information about complications and adverse events experienced by maternity patients. In 2015, 18% of women who gave birth in an outer regional or remote hospital said they experienced a complication – a lower proportion than in inner regional (21%) or major city hospitals (23%) (Figure 4.14). Among women who experienced a complication, the proportion who said it was 'very serious' was 8% in outer regional and remote hospitals, 10% in inner regional hospitals, and 14% in major city hospitals (Figure 4.15).

Figure 4.12 Percentage of babies who were low birthweight (<2.5kg), public and private hospitals, by mothers' LHD of residence, NSW, 2014



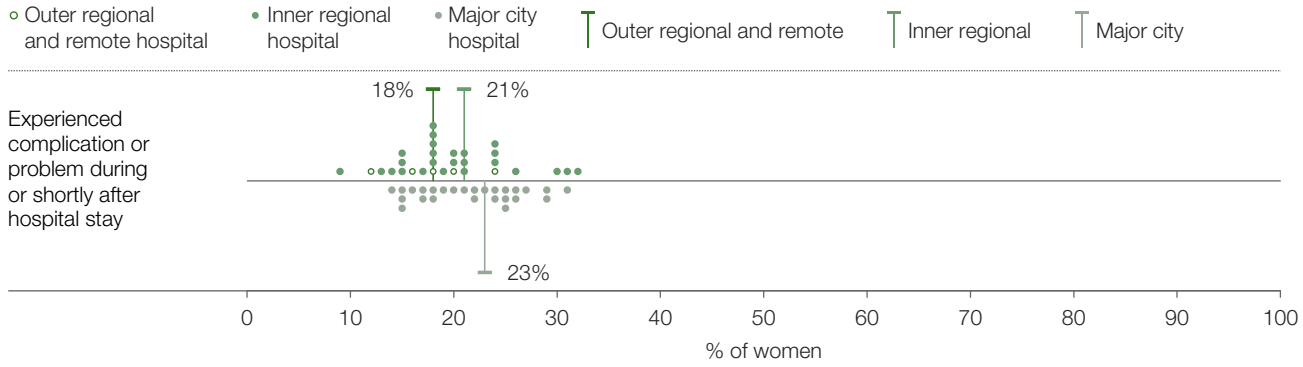
Source: NSW Perinatal Data Collection (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health (BHI analysis).

Figure 4.13 Rates of obstetric trauma, NSW public hospitals by remoteness, 2014



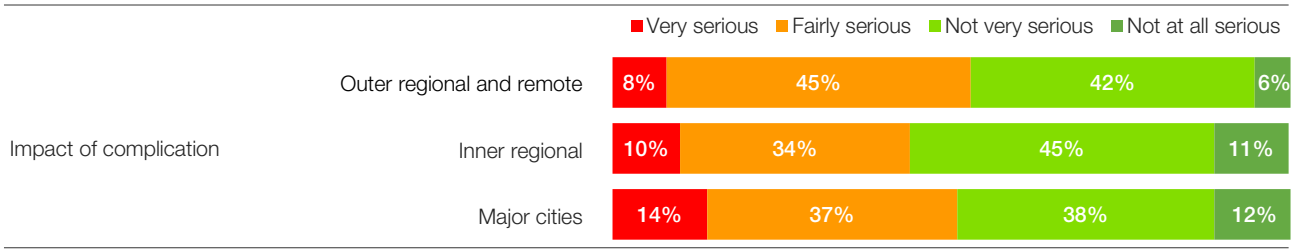
Source: NSW Perinatal Data Collection (SAPHaRI), Centre for Epidemiology and Evidence, NSW Ministry of Health (BHI analysis).

Figure 4.14 Patient-reported complications, percentage of women who said they experienced a complication, NSW public hospitals by remoteness, 2015



Source: BHI, Maternity Care Survey, 2015.

Figure 4.15 Seriousness of complications, all response categories, women who said they experienced a complication, NSW public hospitals by remoteness, 2015



Source: BHI, Maternity Care Survey, 2015.

Effectiveness of cancer services

Responses from patients in two rural outpatient cancer clinics were more positive than NSW for multiple measures

In 2016, BHI released a report that explored how outpatient cancer clinics performed across NSW. The report featured responses from outpatients (who were in an active treatment phase for cancer) to questions about symptom severity and perceptions about self-efficacy and outcomes. Respondents were asked for their views approximately three months after the outpatient visit of interest.[17]

The report featured data collected with the Edmonton Symptom Assessment System (ESAS).[17] This survey tool consists of numerical rating scales for common symptoms of cancer and cancer treatment and asks patients to rate their symptoms on a 10-point rating scale of severity (e.g. 'no pain' to 'worst possible pain'). Lower scores indicate lower symptom burden.

Patients in two rural cancer clinics (Coffs Harbour and Port Macquarie) reported significantly lower scores than the NSW result for two or more symptoms (Figure 4.16).

The report also featured data collected with the Communication and Attitudinal Self-Efficacy Scale for cancer (CASE-Cancer). It was used to ask patients to reflect on how confident they are in their ability to participate in their care; whether they can maintain a positive attitude; and their confidence in seeking, obtaining and understanding information. Their responses were converted into a score and results compared across clinics (Figure 4.17).

Responses from patients in a rural clinic – Coffs Harbour – were more positive than the NSW result for two of the three self-efficacy components.

Prior to the outpatient cancer clinics report, BHI released a report on cancer patients' experiences of hospital care.[17] The majority of patients responded positively to questions about outcomes but patients hospitalised in rural hospitals were generally more positive than those in major city hospitals (Figure 4.18).

Figure 4.16 Symptom severity score at time of survey completion (ESAS), patients in active treatment phase, hospital results relative to NSW, 2015

	Bankstown/Lidcombe	Blacktown	Campbelltown	Chris O'Brien Lifehouse*	Coffs Harbour	Concord	Gosford	Grafton	Lismore	Liverpool	Manly	Nepean	Port Macquarie	Royal North Shore	Shoalhaven	St Vincent's	Westmead	Wollongong	Wyong	NSW
Tiredness	5.0	4.8	4.0	5.2	4.2	4.2	4.3	4.8	4.3	4.4	4.0	4.5	3.7	4.1	3.6	4.2	4.2	4.1	4.8	4.4
Wellbeing	3.9	3.7	3.5	4.4	3.5	3.4	4.0	3.4	3.9	3.9	3.1	3.5	3.2	3.2	3.3	3.5	2.9	2.6	4.1	3.6
Appetite	3.1	4.1	3.1	3.7	2.7	2.8	3.4	3.8	3.3	3.1	2.2	3.1	2.7	2.2	3.0	3.4	2.4	2.5	3.2	3.0
Anxiety	3.3	2.8	1.9	3.8	1.9	2.6	2.7	2.2	2.4	3.4	1.9	2.1	1.3	2.0	2.3	2.4	2.2	1.8	3.2	2.6
Drowsiness	3.2	2.7	1.9	3.4	2.6	2.6	2.8	2.6	2.8	3.0	2.6	2.8	2.3	2.5	2.4	2.6	1.9	1.7	3.2	2.6
Shortness of breath	2.9	3.2	2.1	2.9	3.1	2.6	2.2	2.3	2.3	3.1	3.0	2.9	2.4	2.0	2.7	2.4	2.1	2.2	2.8	2.6
Depression	2.9	2.5	1.6	3.5	1.6	2.1	3.0	1.9	1.9	3.3	1.5	1.9	1.4	2.1	2.0	2.0	1.8	1.6	3.1	2.3
Pain	3.0	2.6	1.3	3.3	1.1	2.2	2.1	2.4	2.4	2.0	1.8	2.1	1.5	1.7	2.2	1.6	2.0	1.9	2.4	2.2
Nausea	1.8	2.4	1.1	2.1	0.8	1.1	1.3	1.5	1.4	2.2	0.9	1.6	0.8	1.4	1.3	1.5	0.5	0.4	2.0	1.4

Hospital result, relative to NSW: Significantly less severe; Significantly more severe; No significant difference; Data suppressed (<30 responses)

Source: Bureau of Health Information. Patient Perspectives – How do outpatient cancer clinics perform? Experiences and outcomes of care, February and March 2015. Sydney (NSW); BHI; 2016.

Notes: At the time of sampling, no patient level data were available for hospitals in Far West, Murrumbidgee, Southern NSW and Hunter New England local health districts (LHDs). Bathurst, Sydney/Sydney Eye, Dubbo, Orange, Prince of Wales, Royal Prince Alfred and St George are excluded from above analysis due to insufficient responses (<30).

Scores are average values for each symptom.

* Chris O'Brien Lifehouse is not a NSW Health facility but is contracted to provide services to some public hospital patients.

Figure 4.17 Self-efficacy score at time of survey completion (CASE), patients in active treatment phase, public hospital results relative to NSW, 2015

	Bankstown/Lidcombe	Blacktown	Campbelltown	Chris O'Brien Lifehouse*	Coffs Harbour	Concord	Gosford	Grafton	Lismore	Liverpool	Manly	Nepean	Port Macquarie	Royal North Shore	Shoalhaven	St Vincent's	Westmead	Wollongong	Wyong	NSW
Seeking and obtaining information	8.3	8.8	9.4	8.1	9.7	8.5	8.9	9.5	9.4	8.8	9.2	9.0	9.1	9.0	9.1	8.9	9.1	9.1	8.8	8.8
Understanding and participating in care	8.0	8.2	8.8	7.6	9.3	8.0	8.7		8.7	8.4	8.6	9.0	8.8	8.8	8.6	8.7	8.6	8.7	8.2	8.4
Maintaining a positive attitude	7.7	8.2	8.4	6.6	8.5	7.5	8.1	8.4	8.3	7.9	8.3	8.4	8.3	8.3	8.1	8.2	8.5	8.8	7.6	8.0

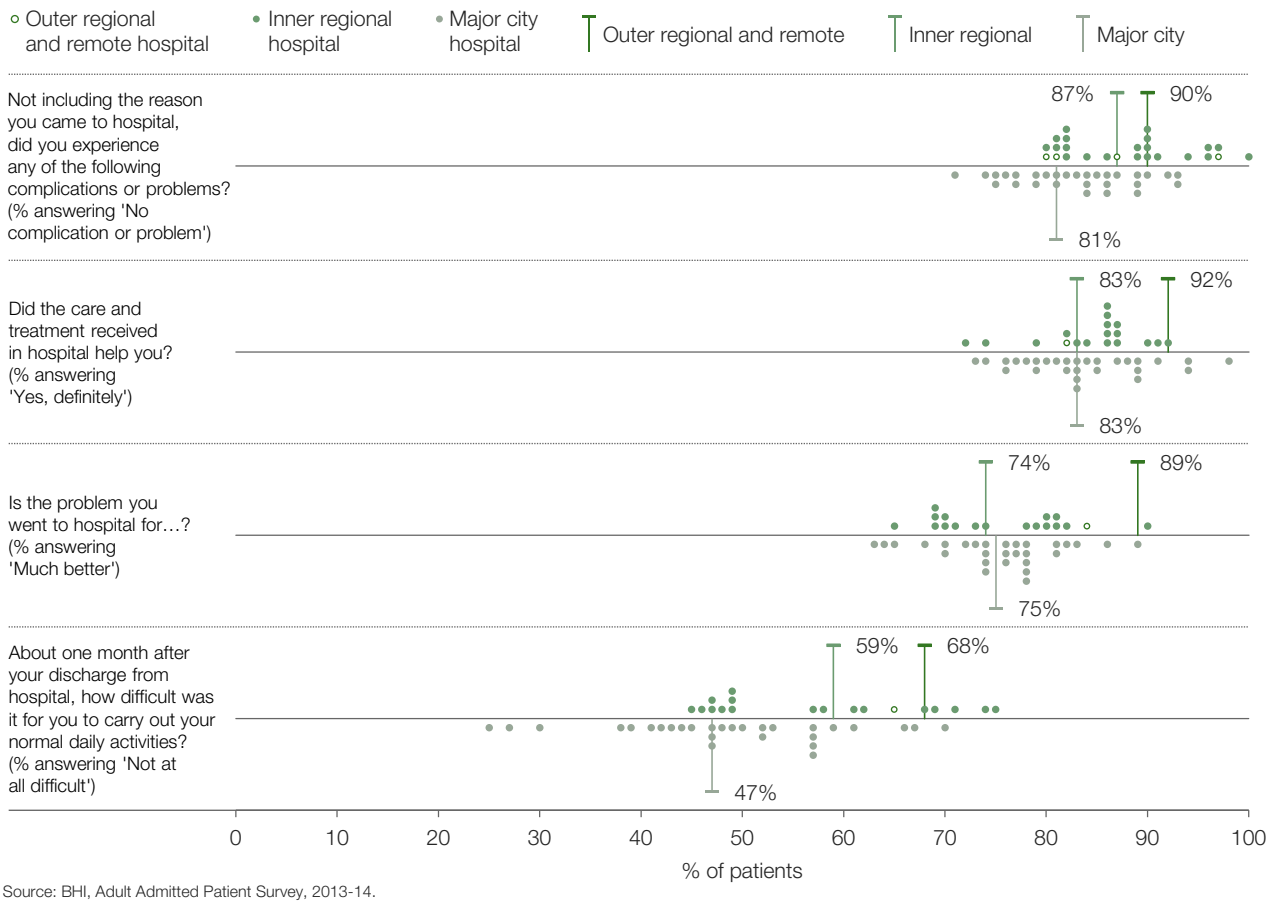
Hospital result, relative to NSW: Significantly higher; Significantly lower; No significant difference; Data suppressed (<30 responses)

Source: Bureau of Health Information. Patient Perspectives – How do outpatient cancer clinics perform? Experiences and outcomes of care, February and March 2015. Sydney (NSW); BHI; 2016.

Note: At the time of sampling, no patient level data were available for hospitals in Far West, Murrumbidgee, Southern NSW and Hunter New England local health districts (LHDs). Western NSW LHD, Bathurst, Sydney/Sydney Eye, Dubbo, Orange, Prince of Wales, Royal Prince Alfred and St George hospitals are excluded due to insufficient responses (<30). Results are generated by scoring the four response options and averaging the scores by theme.

* Chris O'Brien Lifehouse is not a NSW Health facility but is contracted to provide services to some public hospital patients.

Figure 4.18 Patient-reported outcomes, percentage of cancer patients who selected the most positive response category, NSW public hospitals by remoteness, 2013–14



Source: BHI, Adult Admitted Patient Survey, 2013-14.

Hospital size and effectiveness measures

Patients admitted to rural hospitals were less likely to experience a complication

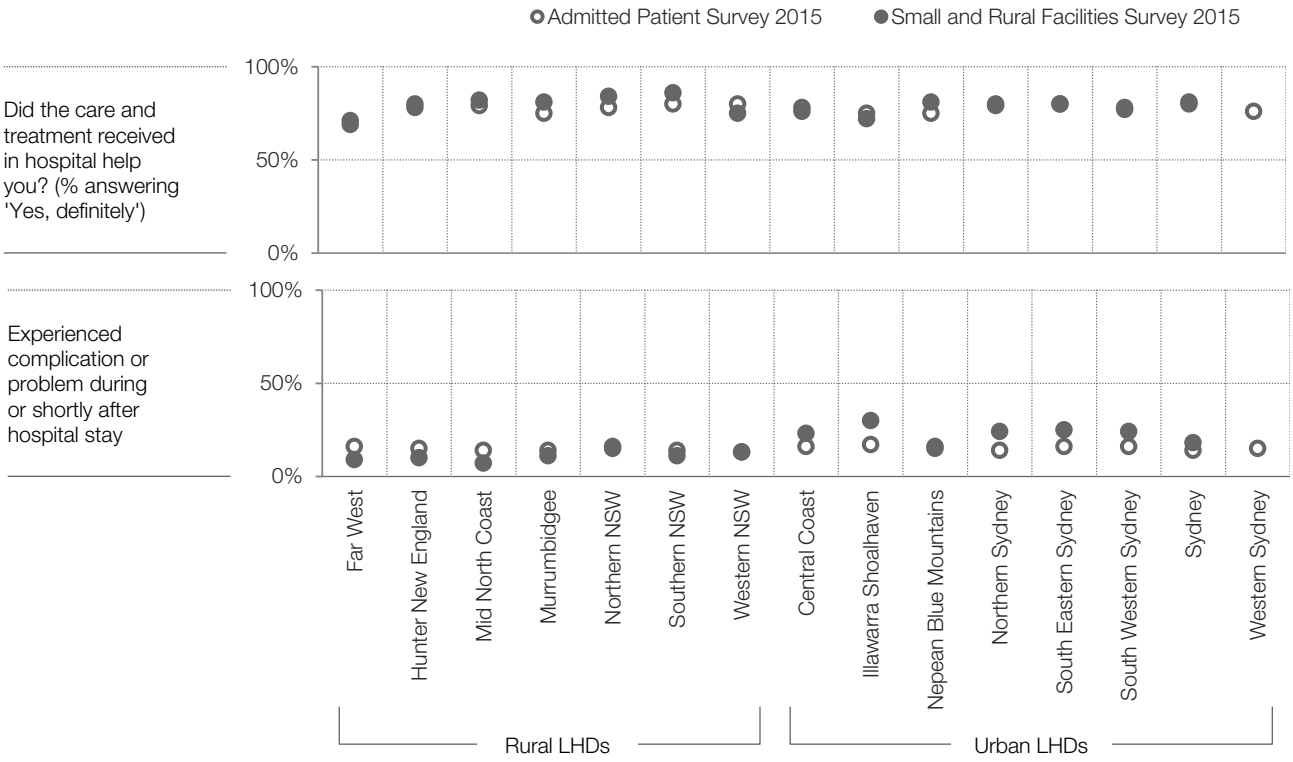
BHI's surveys make it possible to compare the experiences of patients in principal referral, major or district hospitals (often called peer groups A, B and C) and smaller hospitals (all other peer groups) across remoteness categories.

In terms of effectiveness measures, within most rural LHDs there was only a slight difference between small and large hospitals in the proportion of patients who said the care and treatment they received in hospital helped them; and who said they experienced a complication (Figure 4.19).

Within the small hospital survey however, there was variation in the proportion of patients who said care 'definitely' helped them – ranging from 63% of patients in a small outer regional and remote hospital to 93% in two hospitals, one outer regional and remote and one inner regional hospital (Figure 4.21).

The Small and Rural Facilities Survey also asked patients whether they had been readmitted or visited an emergency department (ED) in the month following their discharge (Figure 4.20).

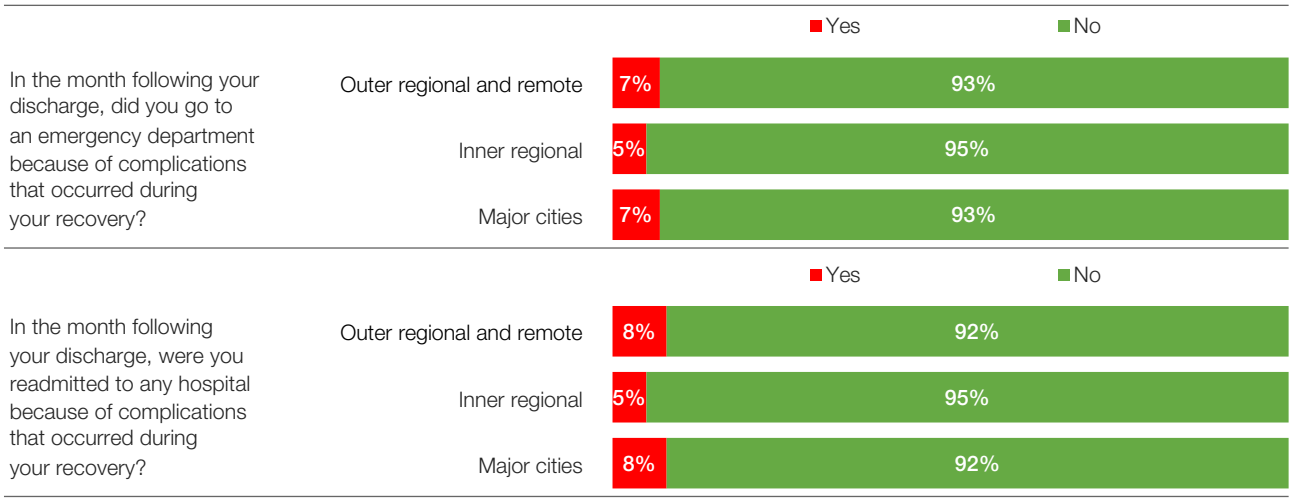
Figure 4.19 Patient-reported outcomes, percentage of patients who selected the most positive response category, adult admitted (larger hospitals) and small and rural public hospital surveys, LHDs, NSW, 2015



Sources: BHI, Adult Admitted Patient Survey, 2015. BHI, Small and Rural Facilities Survey, 2015.

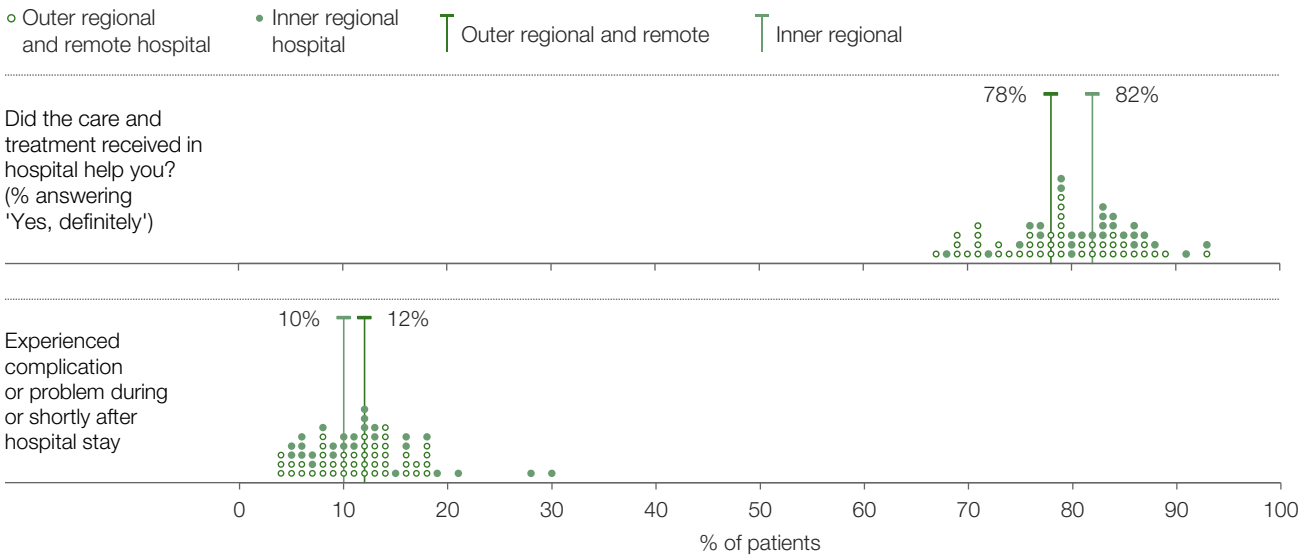
* Peer group A includes (very large) principal referral and specialist hospitals; peer group B includes (large) major hospitals and peer group C includes (medium and small) district hospitals.

Figure 4.20 Patient-reported outcomes, all response categories, small public hospitals in NSW by remoteness, 2015



Source: BHI, Small and Rural Facilities Survey, 2015.

Figure 4.21 Patient-reported outcomes, percentage of patients who selected the most positive response category, NSW small public hospitals by remoteness, 2015



Source: BHI, Small and Rural Facilities Survey, 2015.

Full results are available on BHI's interactive data portal, Healthcare Observer at:
bhi.nsw.gov.au/healthcare_observer

Effectiveness and Aboriginality

Differences in patient-reported outcomes by Aboriginality were seen in rural and urban hospitals

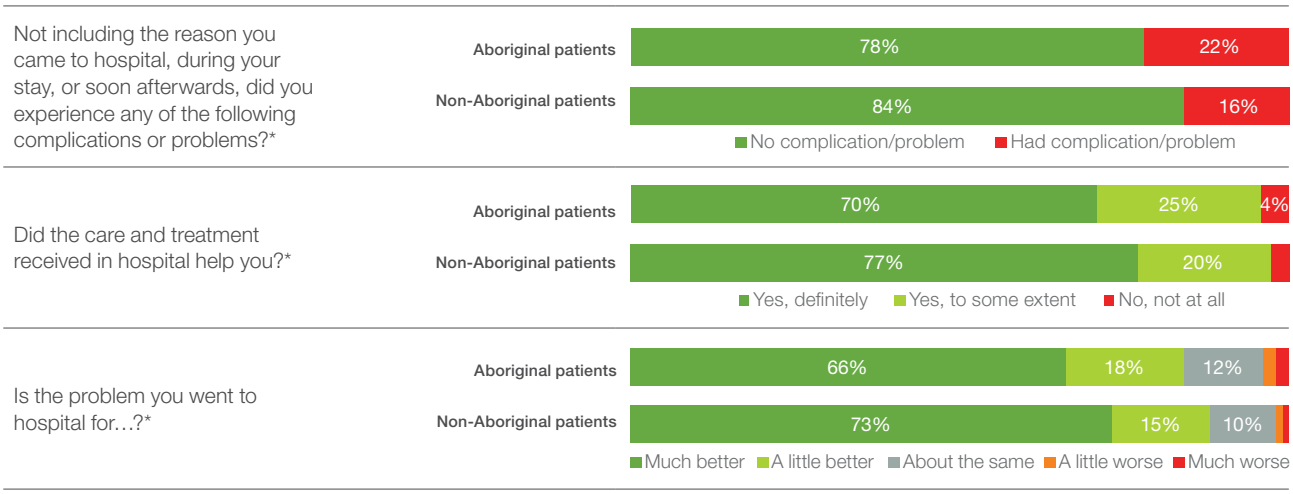
Within the Adult Admitted Patient Survey of larger public hospitals, there were three questions that asked about outcomes of care. For all three of these self-reported outcome measures, Aboriginal patients were less positive than non-Aboriginal patients. There were differences in the percentage who said: they experienced a complication or problem (22% of Aboriginal patients and 16% of non-Aboriginal patients); care and treatment 'definitely' helped them (70% and 77%); and at the time of questionnaire completion (approximately three months after hospital discharge), the problem that prompted their hospital stay was 'much better' (66% and 73%) (Figure 4.22).

Across NSW, 22% of Aboriginal patients said they experienced a complication, compared with 16% of non-Aboriginal patients. Infections were more often reported by Aboriginal patients (9%) than by non-Aboriginal patients (5%). Among those who reported a complication, Aboriginal patients were more likely to rate it as 'very serious' (29% and 19%) [data not shown].

Differences between Aboriginal and non-Aboriginal patient-reported outcomes were seen in rural (regional and remote) and urban (major city) hospitals (Figure 4.23).

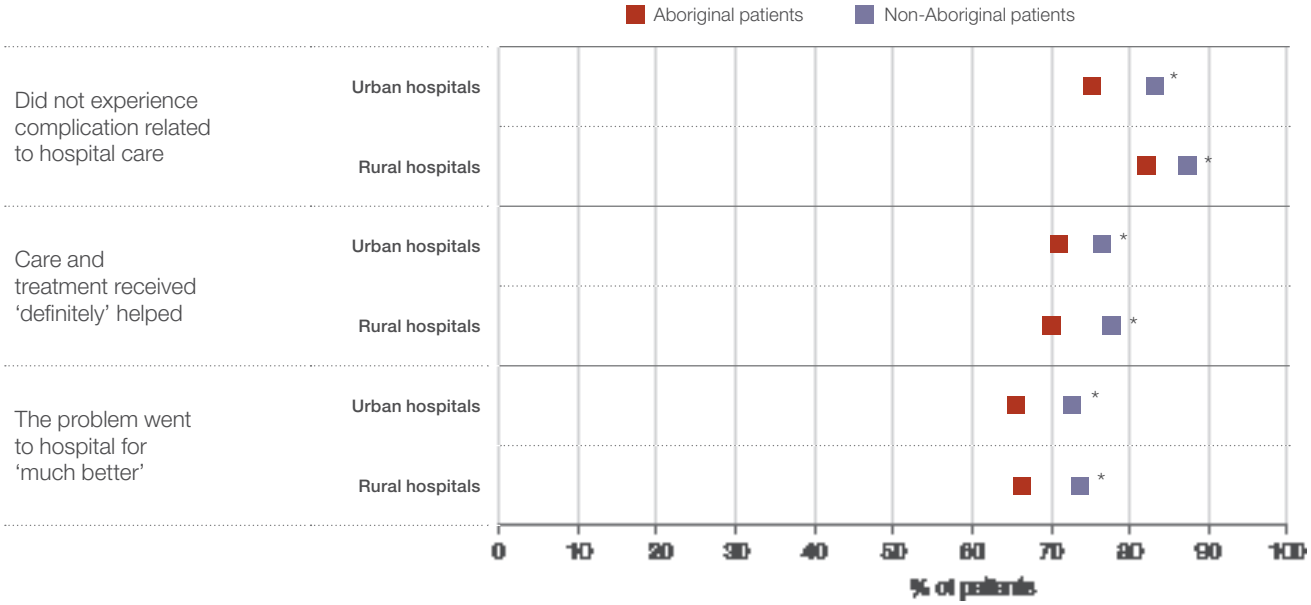
Comparing Aboriginal patients' responses across LHDs, the widest variation was in the question about whether patients were 'definitely' helped by the care they received which ranged from 52% to 91% (Figure 4.24).

Figure 4.22 Patient-reported outcomes, all response categories, Aboriginal and non-Aboriginal patients, NSW public hospitals, 2014



Source: Bureau of Health Information. Patient Perspectives. Hospital Care for Aboriginal People. Sydney (NSW); BHI; 2016.
* There was a significant difference in the proportion of Aboriginal and non-Aboriginal patients.

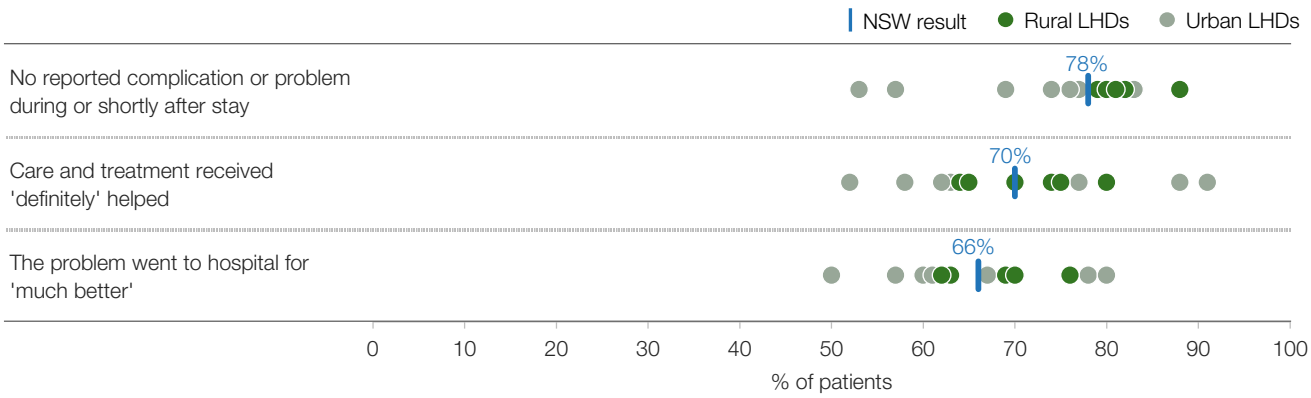
Figure 4.23 Patient-reported outcomes, percentage of patients who selected most positive response category, Aboriginal and non-Aboriginal patients, urban and rural NSW public hospitals, 2014



Source: Bureau of Health Information. Patient Perspectives. Hospital Care for Aboriginal People. Sydney (NSW); BHI; 2016.

* There was a significant difference in the proportion of Aboriginal and non-Aboriginal patients who selected the most positive response category.

Figure 4.24 Patient-reported outcomes, percentage of patients who selected the most positive response category, Aboriginal patients, LHDs, NSW 2014



Source: Bureau of Health Information. Patient Perspectives. Hospital Care for Aboriginal People. Sydney (NSW); BHI; 2016.

Appendices

Appendix 1: Public hospitals in NSW

Hospitals differ in terms of size, complexity of services, and remoteness. These tables provide descriptive information about public hospitals in NSW.

Principal referral hospitals are only found in major citiies. Small hospitals are distributed throughout the state. Across local health districts (LHDs), the percentage of hospitalisations that occur in community hospitals, multipurpose services (MPS) or smaller facilities ranges from 0% in several metropolitan LHDs to 22% in Western NSW and 32% in Murrumbidgee.

The number of public facilities by area and hospital peer group, NSW, 2015

		Principal referral	Paediatric specialist	Acute	Major	Medium District	Small District	Community acute (with surgery)	Community acute (without surgery)	Community non-acute	Psychiatric	Multipurpose Service	Other (all categories below MPS)
Remoteness	**Major cities**	14	3	3	12	5	5	1	1	2	7	0	16
	Inner regional	0	0	0	9	6	17	5	8	8	2	11	7
	Outer regional/remote	0	0	0	0	3	8	5	11	11	0	40	3

Source: NSW Health Information Exchange (HIE)

NSW public hospital peer groups

Peer group	Name	Description
A1	Principal referral	Very large hospitals providing a broad range of services, including specialised units at a state or national level.
A2	Paediatric specialist	Specialist hospitals for children and young people.
A3	Ungrouped acute – tertiary referral	Major specialist hospitals that are not similar enough to any other peer group to be classified with them.
B	Major	Large metropolitan and non-metropolitan hospitals.
C1	District group 1	Medium sized hospitals treating between 5,000–10,000 patients each year.
C2	District group 2	Smaller hospitals typically in rural locations.

The percentage of acute hospitalisations by LHD and hospital peer group, NSW, 2015

		Principal referral	Paediatric specialist	Acute	Major	Medium District	Small District	Community acute (with surgery)	Community acute (without surgery)	Multipurpose Service	Other (all categories below MPS)
Rural local health districts	Hunter New England	32	0	10	28	9	14	3	2	1	0
	Northern NSW	0	0	0	61	19	15	0	3	1	0
	Mid North Coast	0	0	0	78	0	17	5	0	0	0
	Southern NSW	0	0	0	0	38	50	5	5	2	0
	Murrumbidgee	0	0	0	41	16	10	18	6	8	0
	Western NSW	0	0	0	51	14	13	3	8	11	0
	Far West	0	0	0	0	92	0	0	1	7	0
Urban local health districts	Sydney	83	0	0	16	0	0	0	0	0	1
	South Western Sydney	59	0	0	34	5	0	0	1	0	0
	South Eastern Sydney	62	0	21	17	0	0	0	0	0	0
	Illawarra Shoalhaven	59	0	0	20	14	3	0	0	0	3
	Western Sydney	51	0	0	38	11	0	0	0	0	0
	Nepean Blue Mountains	73	0	0	0	12	13	1	0	0	0
	Northern Sydney	47	0	0	43	10	0	0	0	0	0
	Central Coast	69	0	0	31	0	0	0	0	0	0
	NSW *	41	3	3	30	8	6	2	1	1	2

Source: NSW Ministry of Health, extracted from Clinical Services Planning Analytics (CaSPA) FlowInfo v15.0, Health System Planning and Investment Branch (BHI Analysis).
* Excludes hospital in the home, renal dialysis & chemotherapy

Appendix 2: LHD survey results at a glance

This Appendix summarises results at an LHD level for six NSW patient surveys. Each row corresponds to a survey question. Squares for which an LHD result was significantly higher than NSW are coloured green, while those with results significantly lower than NSW are coloured red.

Summarising survey results at an LHD level in this way reveals patterns of performance across aspects of care as well as across geographies.

While this report focuses on healthcare in rural NSW, metropolitan LHD results are provided for context.

Adult Admitted Patient Survey 2014: Aboriginal patients

Aspect of care	Question	NSW	Central Coast	Hunter New England	Illawarra Shoalhaven	Mid North Coast	Murrumbidgee	Nepean Blue Mountains	Northern NSW	Northern Sydney	South Eastern Sydney	South Western Sydney	Southern NSW	St Vincent's Health Network	Sydney	Western NSW	Western Sydney
Overall experience	Would 'speak highly' of the hospital to friends and family	72	73	77	67	76	57	67	76	81	70	63	80	86	78	69	64
	Overall, care in hospital was 'very good'	64	64	69	65	69	58	48	67	71	69	48	77	66	78	58	55
Access and timeliness	Time spent in the emergency department was 'about right'	62	64	69	48	68	45		70		73	38	50		76	71	53
	Time waited to be admitted to hospital was 'about right'	69	67	71	48	67	58	77	74	70	79	53	56		73	70	83
Physical environment and comfort	Wards or rooms were 'very clean'	65	63	69	65	65	55	54	71	61	70	59	81	59	70	68	56
	Toilets and bathrooms were 'very clean'	58	55	59	62	64	53	51	68	68	65	60	64	55	60	56	43
Information provision	Given 'right amount' of information about condition or treatment during stay	78	76	82	71	85	66	81	83	81	83	69	79	88	87	76	67
	'Completely' informed about medication side effects to watch for	55	47	61	47	73	52	50	63	59	55	46	60		62	51	37
Responsive communication	Nurses 'always' answered important questions in an understandable way	72	79	78	66	76	64	56	73	66	77	61	85	57	82	70	64
	Doctors 'always' answered important questions in an understandable way	66	57	68	60	69	53	51	78	66	85	59	68	53	71	71	60
Respectful practices	Cultural or religious beliefs were 'always' respected	86	79	88	84	88	81	96	87	92	96	85	94		92	85	69
	'Always' treated with respect and dignity	79	79	85	85	83	70	65	80	84	85	71	89	74	87	78	69
	'Always' given enough privacy when being examined or treated	80	84	86	78	86	67	62	84	74	89	76	93	74	66	82	67
Engagement and participation	'Definitely' involved in decisions about care and treatment	58	50	64	51	58	47	37	61	71	61	56	73	61	64	60	47
	'Definitely' involved in decisions about discharge	63	62	68	63	72	56	60	68	57	62	60	73	51	67	62	52
	Given 'completely' enough information to manage care at home	68	64	72	70	75	57	62	75	71	74	66	62	65	81	65	55
Comprehensive and whole-person care	Nurses were 'always' kind and caring	80	77	83	86	80	77	58	84	87	84	74	86	72	87	76	78
	Doctors were 'always' kind and caring	80	81	82	87	87	78	74	86	88	79	74	76	75	86	82	70
	Staff 'completely' considered family and home situation when planning discharge	68	64	74	69	74	58	57	72	61	70	63	76		82	65	58
Coordination and continuity	At discharge, 'completely' adequate arrangements made for services needed	64	71	68	78	70	46	64	68	74	61	48	82		78	65	58
	Told who to contact if worried about condition after discharge	83	86	87	86	81	74	81	84	86	89	79	93	86	92	79	73
Assistance and responsiveness	'Always' got the opportunity to talk to a doctor when needed	53	45	58	41	61	45	41	60	61	69	35	59	46	59	57	40
	Staff assisted within a reasonable timeframe 'all of the time'	45	42	50	48	50	34	29	49	60	51	34	54	20	47	46	40
	Healthcare professionals 'completely' discussed worries or fears	37	39	35	26	49	27		36		32	45				38	30
Safety and hygiene	'Always' saw nurses wash their hands or use clean gloves	66	66	69	76	70	59	57	71	71	65	57	87	41	65	64	60
	'Always' saw doctors wash their hands or use clean gloves	55	47	58	42	61	48	50	57	51	66	51	65	33	57	63	54
Trust and confidence	'Always' had confidence and trust in nurses	78	79	84	74	82	69	64	80	84	82	70	92	61	87	75	74
	'Always' had confidence and trust in doctors	76	69	78	73	82	69	67	81	85	79	72	75	70	82	78	70
Patient reported outcomes	No reported complication or problem during or shortly after stay	78	74	81	82	80	79	77	82	57	76	69	88	53	83	81	74
	Care and treatment received 'definitely' helped	70	65	74	74	80	64	58	75	91	77	63	70	52	88	65	62

LHD result, relative to NSW: Significantly higher Significantly lower No significant difference

Targeted oversampling allowed the survey to make comparisons among Aboriginal patients – assessing whether responses from hospitalised Aboriginal patients in each LHD were significantly different to those from NSW Aboriginal patients overall.

Small and Rural Hospitals Patient Survey 2015

Aspect of care	Question	NSW	Central Coast	Far West	Hunter New England	Illawarra Shoalhaven	Mid North Coast	Murrumbidgee	Nepean Blue Mountains	Northern NSW	Northern Sydney	South Eastern Sydney	South Western Sydney	Southern NSW	St Vincent's Health Network	Sydney	Western NSW	Western Sydney
Overall experience	Overall, care in hospital was 'very good'	77		88	79		84	82		80				85			73	
	Would 'speak highly' of the hospital to friends and family	86		95	86		94	89		87				90			80	
Access and timeliness	Time waited to be admitted to hospital was 'about right'	82			81		66	90		93				73			90	
	Time from arrival until taken to room/ward was 'about right'	92		95	92		87	92		90				93			94	
	Discharge was not delayed	93		93	94		97	95		95				93			94	
Physical environment and comfort	Wards or rooms were 'very clean'	84		91	85		78	90		87				88			80	
	Toilets and bathrooms were 'very clean'	82		91	83		79	88		87				85			78	
Communication and information	Doctors 'always' answered important questions in an understandable way	84		89	84		91	87		86				87			81	
	Given 'right amount' of information about condition or treatment during stay	90		94	90		95	91		89				93			87	
	'Completely' informed about medication side effects to watch for	58			64		62	59		58				58			62	
Respect and dignity	'Always' given enough privacy when being examined or treated	91		96	91		87	94		91				93			89	
	Always' treated with respect and dignity	92		98	93		96	94		91				94			89	
Engagement and participation	'Definitely' involved in decisions about care and treatment	71		81	75		81	73		69				78			68	
	'Completely' involved in decisions about discharge	79		89	80		84	83		78				80			75	
Comprehensive and whole-person care	Health professionals were 'always' kind and caring	91		100	91		97	94		89				95			88	
Coordination and continuity	Health professionals worked together in 'very good' way	66		84	67		73	70		66				74			62	
	Told who to contact if worried about condition or treatment after discharge	90		97	92		95	91		90				90			86	
Assistance and responsiveness	Staff assisted within a reasonable timeframe 'all of the time'	59		74	62		68	63		64				62			55	
Safety and hygiene	'Always' saw nurses wash their hands or use clean gloves	68		71	67		62	71		69				72			67	
	'Always' saw doctors wash their hands or use clean gloves	60		63	60		49	60		61				60			60	
Trust and confidence	'Always' had confidence and trust in health professionals	87		95	88		92	90		86				91			82	
Patient reported outcomes	Did not experience any complication during or shortly after hospital stay	87		91	90		93	89		85				89			87	
	Care and treatment received 'definitely' helped	80		71	80		82	81		84				86			75	

LHD result, relative to NSW: Significantly higher Significantly lower No significant difference

Results for patients hospitalised in small facilities in rural LHDs are shown. Results that were significantly different to NSW results are highlighted.

Maternity Care Patient Survey 2015

Aspect of care	Question	NSW	Central Coast	Far West	Hunter New England	Illawarra Shoalhaven	Mid North Coast	Murrumbidgee	Nepean Blue Mountains	Northern NSW	Northern Sydney	South Eastern Sydney	South Western Sydney	Southern NSW	Sydney	Western NSW	Western Sydney
Overall experience	Overall, hospital care during labour and birth was 'very good'	74	75		77	75	75	74	76	77	80	79	63	84	74	78	69
	Overall, hospital care after baby was born was 'very good'	56	63		58	51	64	60	53	67	65	61	47	74	49	63	49
	Would 'speak highly' of maternity experience at the hospital to friends and family	79	88		75	77	79	80	81	83	90	83	68	87	80	79	77
Access and timeliness	Length of stay in hospital was 'about right'	80	83		79	76	82	81	75	83	84	76	76	86	87	87	79
Physical environment and comfort	Wards or rooms used after birth of baby were 'very clean'	67	69		70	79	78	56	63	83	80	67	60	80	54	68	64
	Toilets and bathrooms used after birth of baby were 'very clean'	64	55		61	77	80	54	58	83	79	59	56	82	57	64	63
Respect and dignity	'Always' treated with respect and dignity during labour and birth	88	89		88	88	89	91	91	87	90	91	82	91	87	90	88
	'Always' given enough privacy in birth room or theatre	89	94		88	85	86	87	90	87	90	92	88	88	89	89	93
Engagement and participation	'Definitely' involved in decisions during labour and birth	71	69		75	70	70	67	77	71	72	70	66	76	71	77	71
	'Definitely' involved in decisions about discharge from hospital	65	68		73	58	70	71	61	78	67	61	57	81	65	76	65
Comprehensive and whole-person care	Midwives or doctors were 'always' kind and caring during labour and birth	85	80		87	87	85	86	87	89	88	90	77	89	83	89	87
Coordination and continuity	Did not receive conflicting information from midwives or doctors during labour and birth	81	82		79	84	81	84	86	85	86	85	71	82	83	88	78
	Did not receive conflicting information from health professionals after birth of baby	68	71		68	66	65	73	72	73	66	68	63	68	55	75	76
	'Completely' informed about caring for myself and baby before leaving hospital	62	71		65	58	61	59	64	67	60	59	62	72	57	67	59
	Told who to contact if worried about my or baby's health after discharge	93	96		95	96	93	93	96	92	95	95	87	97	91	93	88
Assistance and responsiveness	Midwives or doctors 'definitely' did everything to help manage pain during labour and birth	76	83		79	75	81	72	81	77	78	77	66	78	81	81	76
	'Always' able to get assistance from midwives or doctors when needed during labour and birth	80	86		80	80	82	80	83	81	84	84	71	83	81	82	81
	Midwife or doctor 'completely' discussed worries or fears during labour and birth	60	62		56	56	56	55	69	54	65	54	55	63	67	66	67
	'Always' able to get assistance or advice from health professionals when needed after birth of baby	66	70		64	63	65	69	70	68	72	68	59	80	61	72	63
Safety and hygiene	'Always' saw health professionals clean their hands	67	65		71	75	62	65	68	67	67	64	63	76	64	68	69
Trust and confidence	'Always' had confidence and trust in midwives or doctors during labour and birth	84	83		83	84	87	86	87	82	89	86	79	88	85	88	86
Complications	Did not experience any complication or problem related to hospital care	78	72		75	82	80	74	70	78	76	82	80	78	78	82	77

LHD result, relative to NSW: Significantly higher Significantly lower No significant difference

Appendix 2: LHD survey results at a glance continued

Adult Admitted Patient Survey 2015

Aspect of care	Question	NSW	Central Coast	Far West	Hunter New England	Illawarra Shoalhaven	Mid North Coast	Murrumbidgee	Nepean Blue Mountains	Northern NSW	Northern Sydney	South Eastern Sydney	South Western Sydney	Southern NSW	St Vincent's Health Network	Sydney	Western NSW	Western Sydney
Overall experience	Overall, care in hospital was 'very good'	65	66	60	70	65	74	68	63	72	69	65	57	73	68	63	72	55
	Would 'speak highly' of the hospital to friends and family	78	80	73	78	74	83	77	73	82	79	79	74	83	86	82	81	72
Access and timeliness	Time from arrival until taken to room/ward was 'about right'	79	83	87	88	80	82	81	68	81	77	77	76	87	84	72	85	73
	Time waiting (from first tried booking appointment with specialist) to be admitted was 'about right'	64	60	59	63	62	55	63	60	64	73	67	56	59	74	71	63	64
	Discharge was not delayed	80	75	82	82	79	81	84	80	84	77	80	79	87	76	83	83	77
Physical environment and comfort	Wards or rooms were 'very clean'	68	73	61	73	71	78	63	62	77	71	62	64	74	75	64	76	56
	Toilets and bathrooms were 'very clean'	60	61	59	66	66	72	59	51	71	63	56	53	70	69	53	70	49
Communication and information	Doctors 'always' answered important questions in an understandable way	76	72	70	77	73	79	73	74	78	80	76	73	82	82	78	79	70
	Given 'right amount' of information about condition or treatment during stay	85	82	81	85	83	86	85	80	88	86	86	84	88	87	87	86	83
	'Completely' informed about medication side effects to watch for	52	51	54	54	51	50	51	45	57	50	52	54	55	49	54	57	51
Respect and dignity	'Always' given enough privacy when being examined or treated	87	89	86	89	86	90	85	84	88	89	87	84	90	88	89	88	84
	'Always' treated with respect and dignity	87	88	84	88	86	92	87	86	89	89	87	84	91	90	87	89	81
Engagement and participation	'Definitely' involved in decisions about care and treatment	60	59	60	63	58	64	60	56	67	61	60	58	66	62	61	65	53
	'Completely' involved in decisions about discharge	64	67	63	70	62	72	74	66	71	63	63	57	73	63	63	71	57
Comprehensive and whole-person care	Doctors were 'always' kind and caring	87	86	83	86	84	90	86	85	87	89	88	87	90	88	89	89	84
	Nurses were 'always' kind and caring	85	90	84	87	84	91	86	84	89	87	84	81	91	88	82	87	80
Coordination and continuity	Health professionals worked together in 'very good' way	55	55	54	60	52	62	55	49	62	54	56	49	61	57	56	62	48
	Told who to contact if worried about condition or treatment after discharge	86	83	87	88	86	88	87	84	89	85	86	86	89	82	88	86	84
	Care was 'very well organised'	65	70	64	69	61	73	65	59	70	67	63	60	71	69	65	71	56
Assistance and responsiveness	Staff assisted within a reasonable timeframe 'all of the time'	44	46	52	51	43	48	46	38	52	43	44	40	53	44	41	50	38
	Staff 'definitely' did everything they could to help manage pain	77	76	73	80	74	82	77	72	82	79	78	73	82	78	79	79	72
Safety and hygiene	'Always' saw nurses wash their hands or use clean gloves	59	59	61	62	61	64	61	56	62	51	59	61	62	59	62	64	54
	'Always' saw doctors wash their hands or use clean gloves	49	45	50	49	47	49	48	42	49	41	51	53	50	51	56	52	48
Trust and confidence	'Always' had confidence and trust in doctors	82	76	75	83	79	84	83	77	82	83	82	79	86	87	88	85	78
	'Always' had confidence and trust in nurses	84	86	81	87	85	89	86	81	88	85	84	80	89	85	82	86	78
Patient reported outcomes	No reported complication or problem during or shortly after stay	85	84	84	85	83	86	86	84	84	86	84	84	86	81	86	87	85
	Care and treatment received 'definitely' helped	78	78	69	78	75	79	75	75	78	79	80	77	80	81	80	80	76

LHD result, relative to NSW: Significantly higher Significantly lower No significant difference

Cancer Outpatient Survey 2015

Aspect of care	Question	NSW	Central Coast	Illawarra Shoalhaven	Mid North Coast	Nepean Blue Mountains	Northern NSW	Northern Sydney	South Eastern Sydney	South Western Sydney	St Vincent's Health Network	Sydney	Western NSW	Western Sydney
Overall experience of care	Overall, care was rated as 'very good'	83	86	86	90	83	90	85	81	80	81	80	93	83
	Would 'speak highly' of the clinic to friends and family	92	92	93	95	95	98	93	88	92	89	92	94	89
	Overall, health professionals were rated as 'very good'	85	85	87	90	85	89	86	83	84	83	81	93	85
	Care was 'very well organised'	81	84	88	89	83	93	78	76	81	84	75	89	76
Access and timeliness before the visit	Able to get an appointment time that suited them	98	99	98	99	97	99	99	96	98	98	96	99	98
	Time waited for appointment was 'about right'	92	97	94	90	90	95	91	87	93	96	90	93	92
	Travelled 'less than 30 minutes' to get to the clinic	54	64	65	51	53	49	39	54	67	51	52	34	47
	Had no out-of-pocket expenses in relation to visit	54	64	66	63	74	61	48	55	54	40	38	59	44
	Appointment started 'within 30 minutes' of scheduled time	81	93	93	94	75	89	85	73	84	89	74	92	72
	Told reason for wait (for appointment to start)	29	32	33	32	27	41	31	27	32	26	25	53	23
	Told how long to wait (for appointment to start)	28	31	35	36	25	40	27	25	32	27	24	46	18
Physical environment and comfort	'No difficulties' entering and moving around the clinic	90	92	87	96	95	97	91	91	86	94	90	93	84
	'Definitely' easy to find way to the clinic	85	94	83	91	91	95	78	82	87	89	90	83	75
	Waiting area was 'very comfortable'	48	64	57	63	40	67	52	40	38	69	38	56	34
	'No problem' finding parking near the clinic	48	65	52	59	61	46	65	29	52	51	45	31	22
Addressing patient concerns	'Definitely' had enough time to discuss health issues with health professionals	92	93	91	95	95	93	93	89	92	86	87	92	93
	'Definitely' had confidence and trust in health professionals	88	88	88	93	92	94	89	88	87	85	89	94	87
	Health professional 'completely' discussed worries or fears	69	73	76	75	76	64	65	62	72	71	68	68	68
	While in the clinic, received or saw information about how to comment or complain	34	37	29	39	30	36	31	24	40	25	34	40	35
Respect and dignity	Cultural or religious beliefs were 'always' respected	98	98	100	100	100	97	99	99	96	100	98	100	98
	'Always' treated with respect and dignity	97	96	97	98	99	99	96	94	98	96	97	99	98
	Health professionals were 'always' kind and caring	95	93	96	97	97	98	96	94	96	93	93	98	95
	'Definitely' given enough privacy when being examined or treated	93	90	91	93	98	88	95	95	96	92	90	94	88
	'Definitely' given enough privacy when discussing condition or treatment	93	90	92	96	98	84	95	94	95	88	89	92	89
	'Always' saw nurses wash their hands or use clean gloves	93	96	96	98	99	98	95	89	95	92	92	99	88
Information to support patient	Health professional 'completely' explained purpose of new medication	93	90	95	93	97	96	90	90	94	91	89	97	91
	Told who to contact if worried about condition or treatment after leaving the clinic	92	91	92	97	93	94	89	91	94	90	96	94	93
	Health professionals 'always' explained things in an understandable way	91	90	93	94	95	93	90	88	92	88	86	95	89
	'Completely' informed about medication side effects to watch for	76	86	75	83	76	83	77	80	78	71	81	76	71
	'Completely' informed about any other treatment side effects to watch for	74	69	74	76	72	83	75	60	80	64	69	79	74
Shared decision-making	Had care plan in place for cancer treatment	57	64	57	64	54	61	59	54	58	49	63	64	60
	Health professionals reviewed cancer care plan at most recent visit [for those who had a care plan]	86	85	79	87	79	78	89	85	90	72	95	84	86
	'Definitely' involved in decisions about care and treatment	74	72	72	78	78	78	76	71	72	77	73	72	72
	'Definitely' asked for ideas and preferences when developing cancer care plan	47	39	45	49	44	54	49	50	40	47	66	37	49
Coordination and continuity	Did not receive conflicting information from health professionals [in the past 12 months]	91	97	94	93	92	93	92	91	88	90	91	93	93
	Health professionals were able to access patient's health records when needed [in the past 12 months]	84	86	86	88	91	90	87	81	86	76	80	82	82
	Health professionals 'definitely' knew enough about patient's medical history	83	85	81	88	80	83	84	83	86	79	85	85	81
	Health professionals worked together in a 'very good' way	77	84	80	80	78	88	76	69	74	78	72	84	74
Hygiene and cleanliness	Clinic was 'very clean'	83	91	92	92	83	96	87	73	82	92	73	96	73
	'Always' saw health professionals wash their hands	68	73	72	76	69	89	61	61	68	68	66	76	67
Patient reported outcomes	Did not go to an emergency department because of cancer or cancer complications in the past three months	90	85	88	91	93	84	90	93	89	84	86	90	92
	Did not experience any complication related to care received at the clinic	88	86	88	85	85	91	91	90	87	87	90	79	91

LHD result, relative to NSW: Significantly higher Significantly lower No significant difference

Appendix 2: LHD survey results at a glance continued

Adult Admitted Patient Survey 2013–14: Cancer inpatients

Aspect of care	Question	NSW	Central Coast	Hunter New England	Illawarra Shoalhaven	Mid North Coast	Murrumbidgee	Nepean Blue Mountains	Northern NSW	Northern Sydney	South Eastern Sydney	South Western Sydney	Southern NSW	St Vincent's Health Network	Sydney	Western NSW	Western Sydney
Overall experience	Overall, how would you rate the care you received while in hospital?	71	72	78	69	77	63	66	79	74	68	59	81	69	70	81	71
Access	Time between booking appointment with specialist and admission to hospital was 'about right'	73	74	75	78	70	68	67	76	72	77	68	71	65	78	77	73
	Waiting time to be admitted to hospital was 'about right'	80	78	83	82	77	76	75	81	79	81	78	79	84	83	83	79
Continuity of care and relationships	Patient told who to contact if they were worried after discharge	90	93	92	89	93	92	86	91	86	91	87	95	87	89	90	90
	Doctors 'always' knew enough about medical history	82	79	85	80	85	82	74	85	79	84	79	86	82	82	83	83
	Nurses 'always' knew enough about care and treatment	77	78	82	74	84	77	79	81	77	77	73	87	69	72	81	75
	'Completely' adequate arrangements were made for services after discharge	74	75	78	73	85	78	67	82	79	76	63	89	62	74	76	67
	Care in hospital was 'very well organised'	71	72	77	72	74	66	67	79	71	68	65	80	74	71	78	68
Communication	Hospital staff explained surgical procedure in a 'completely' understandable way	84	81	87	86	84	82	80	86	86	83	82	90	80	83	84	85
	Doctors 'always' answered important questions in an understandable way	80	75	82	79	79	81	79	84	81	75	75	88	80	81	82	84
	Staff explained results of test, X-ray or scan in a 'completely' understandable way	77	73	80	65	81	74	79	73	81	76	77	75	66	82	75	77
	'Always' got the opportunity to talk to a nurse when needed	73	73	75	74	73	73	68	79	79	71	66	81	70	74	77	73
	'Always' got the opportunity to talk to a doctor when needed	63	65	68	62	67	68	64	68	62	59	54	70	69	64	68	61
Information	Staff 'always' explained the purpose of test, X-ray or scans	82	86	86	79	80	80	84	83	79	83	80	83	77	82	84	81
	'Completely' given enough information to manage care at home	79	81	80	76	85	79	69	83	82	82	77	86	72	81	83	77
	Staff 'completely' told patient about medication side effects to watch for	61	66	64	58	60	70	52	61	57	56	57	77	63	62	65	59
Shared decision-making	'Definitely' involved in decisions about discharge	69	69	76	68	77	74	72	77	68	67	58	77	67	65	76	66
	Felt 'completely' involved in decisions about use of medication	68	72	72	72	67	81	65	77	63	64	61	77	65	74	70	64
	Definitely' involved in decisions about care and treatment	67	63	67	59	77	66	57	73	64	70	63	78	69	65	70	66
Addressing patient concerns	'Always' had confidence and trust in doctors	88	88	92	86	92	88	83	91	84	87	84	93	86	89	89	91
	'Always' had confidence and trust in nurses	85	90	89	88	90	87	85	93	83	82	80	95	77	80	89	83
	Healthcare professional 'completely' discussed worries and fears	48	44	46	43	40	51	40	31	45	51	47	46	51	51	51	54
Care requirements	Hospital staff 'definitely' did everything they could to help manage pain	82	86	83	85	85	87	69	82	85	84	78	89	83	80	79	78
	Food 'always' suitable for dietary needs	60	66	65	60	65			40	55	60	59	80		63	54	55
	'Always' saw nurses wash their hands or use clean gloves	47	52	53	44	53	48	47	56	49	45	36	64	38	39	54	48
Respect for the patient	'Always' given enough privacy when being examined or treated	90	89	92	88	91	88	87	91	94	90	88	92	91	90	89	90
	Doctors were 'always' kind and caring	90	90	91	89	92	89	83	92	89	88	88	93	89	90	90	91
	'Always treated with respect and dignity while in hospital	89	88	92	91	92	87	91	94	90	88	82	95	88	89	92	89
	Nurses were 'always' kind and caring	87	87	90	87	92	88	87	91	86	86	78	94	85	84	92	86
Tailoring healthcare services for each patient	Felt well enough to leave hospital when discharged	95	97	97	95	95	97	95	98	94	93	91	98	92	93	95	97
	'Right amount' of information about condition or treatment was given to family or carer	83	81	82	81	83	86	75	82	80	85	82	85	87	83	89	82
	Staff 'completely' considered family and home situation when planning discharge	78	80	84	82	87	85	73	86	76	81	64	86	76	76	81	70
	Family or carer 'definitely' had opportunity to talk to a doctor	53	57	54	54	53	60	49	55	59	55	50	53	52	50	60	52
Patient reported outcomes	Did not report complication or problem	83	87	87	79	84	84	77	85	84	79	84	89	71	82	88	80
	Care and treatment received in hospital 'definitely' helped	83	89	84	80	82	81	83	86	83	84	79	86	85	82	85	82

LHD result, relative to NSW: Significantly higher Significantly lower No significant difference

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Setting the scene

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External Advisors and Reviewers

Brad Astill	NSW Ministry of Health
Kim Browne	BHI Rural Advisory Committee Convener
Margaret Crowley	Health Education and Training Institute
Michael Dirienzo	Hunter New England LHD
Lyn Fragar	University of Sydney
Patrick Frances	Consumer Representative
David Hutton	Northern NSW LHD
Jill Ludford	Murrumbidgee LHD
Ms Jenny Preece	Agency for Clinical Innovation
Brian Shimadry	NSW Ministry of Health
Christina Summerhayes	NSW Ministry of Health

Bureau of Health Information Project Team

Research

Lilian Daly

Ariana Dobrovic

Kim Sutherland

Major Analytics

Huei-Yang (Tom) Chen

Anna Do

Roger Jiang

Support Analytics

Lisa Corscadden

Carolynn Fredericks

Diane Hindmarsh

Jill Kaldor

Behnoosh Khalaj

Sadaf Marashi-Pour

Design

Ed Bury

Adam Myatt

Efren Sampaga

Mark Williams

Communications and Stakeholder Engagement

Rohan Lindeman

Karen Perini

Stephanie Watson

bureau of health information

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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