

Resources, activity and sustainability

Powering the healthcare system

A significant proportion of NSW wealth is spent on healthcare. In 2007, total public and private health expenditure was \$33 billion — 9% of gross state product.¹

Efficient use of resources is a defining characteristic of high-performing healthcare systems. Worldwide, pressures of an ageing population, increased salaries, technological developments and increasing patient expectations are focusing attention on affordability, value for money, efficiency and sustainability.

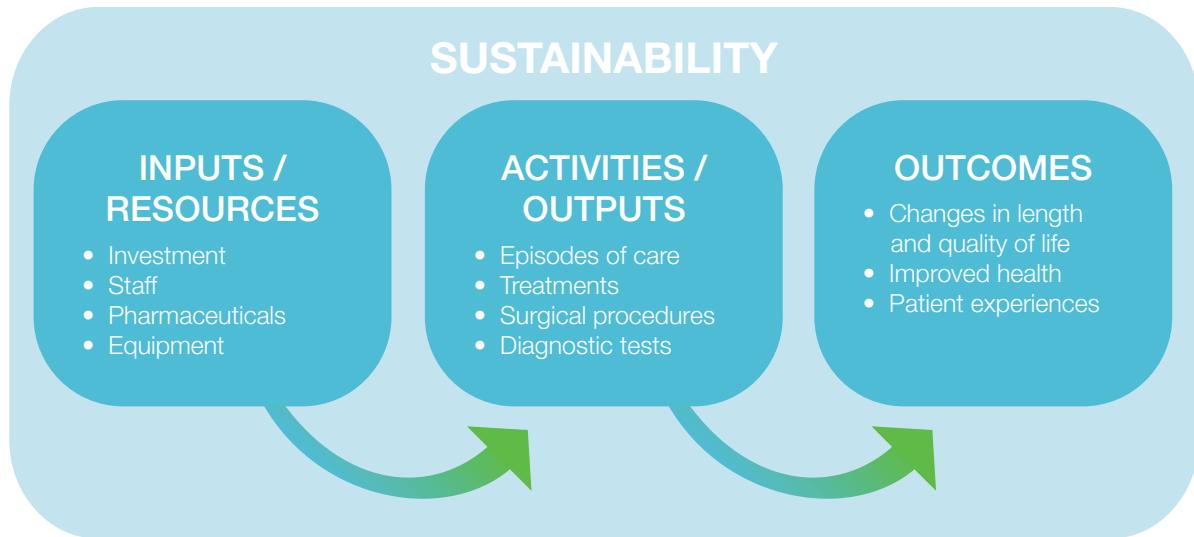
The people of NSW expect their healthcare system to have sufficient resources to provide high-quality, safe care to people who need it. They also expect value for money and efficient use of resources to ensure the system is affordable and sustainable.

From an economic perspective, the healthcare system can be viewed as having a ‘production function’ — where inputs (such as staff, capital, pharmaceuticals) are used to perform activities (such as surgical procedures or treatments) with the ultimate aim of influencing outcomes, such as improved health and length of life. All of this occurs within a framework of needing to be sustainable into the future ([Figure 7.1](#)).

Previous chapters have examined outcomes in terms of health status, mortality and patient experience. Therefore, the focus of this chapter is:

- What resources are used?
- What activities / outputs do those resources produce?
- Are resources used sustainably?

Figure 7.1: Production function in health



Notes about this chapter:

It is difficult to interpret appropriate levels of resources across healthcare systems. While under-resourcing can impede the delivery of high-quality, safe care, higher levels of resourcing do not always and directly correspond to higher performance. Therefore, in the text and comparison table, we note relative numbers, counts and volumes without identifying higher or lower performance.

This chapter draws on the latest available data on resources and activity — primarily for 2007 / 08. This contrasts with the rest of the report where data are generally for 2009 or 2010.

How does NSW compare internationally?

What we learnt about NSW

Note: More resources do not always and directly correspond to higher performance

	Higher number	Middle range	Lower number
In 2007, total public and private health expenditure was \$33 billion . This equates to \$4,727 for each person in the state and represents 9% of gross state product.		■ ±	
In 2008, there were 3.8 beds per 1,000 population		■	
In 2008 the number of professionally active doctors was 3.1 per 1,000 population		■	
In 2008, the number of professionally active nurses was 11 per 1,000 population	■		
In 2008, the number of GPs was 1.4 per 1,000 population	■		
In a population of 5.5 million people aged 15+ years in 2009: 4.6 million visited the GP; 737,700 people visited the ED; and 698,800 people were admitted to hospital; at least once in the previous year		No comparative international data available	

(±) Mid-range relative to 20 similar countries, including those featured in our report as well as founding European Union members.

Input: investment

Many other countries spend more per person on healthcare than NSW and Australia

Total public and private health expenditure in NSW was \$33 billion in 2007. This equates to \$4,727 for each person in the state and represents 9% of gross state product.¹

Health expenditure across countries has been increasing for decades. In NSW between 1997-98 and 2007-08, total public and private health spending increased by an average of 3.5% per year. The rate of growth and the per person spending over this time period was similar across all states of Australia except the Northern Territory ([Figure 7.2](#)).

Comparing expenditure internationally reveals much more variation, with NSW spending less per person than many other countries surveyed ([Figure 7.3](#)).

After accounting for differences in currency, this ranks mid-range relative to 20 similar countries, including those featured in our report as well as founding European Union members.

When interpreting these data, it is important to note that evidence has shown more spending does not always and directly correspond to higher performance.^{2,3,4}

The \$33 billion spent on NSW healthcare in 2007 was allocated to various types of care. Over two-thirds (68%) of total health expenditure funded inpatient and outpatient services (which here includes primary care). Only 2% was directly allocated to dedicated prevention and health promotion activities ([Figure 7.4](#)).

Figure 7.2: Average health expenditure (recurrent) per person, public and private, (\$AU 2007-08 prices), 1997-98 to 2007-08^o

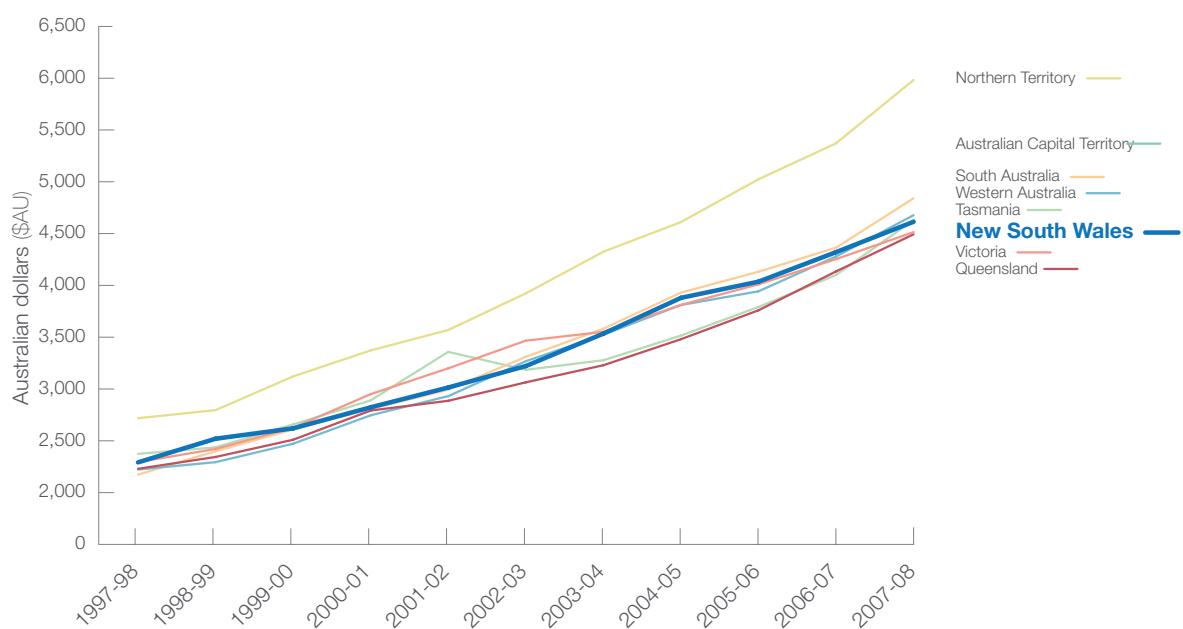


Figure 7.3: Total health expenditure (public and private) per person in Australian dollars (purchase price parity), 2007^π

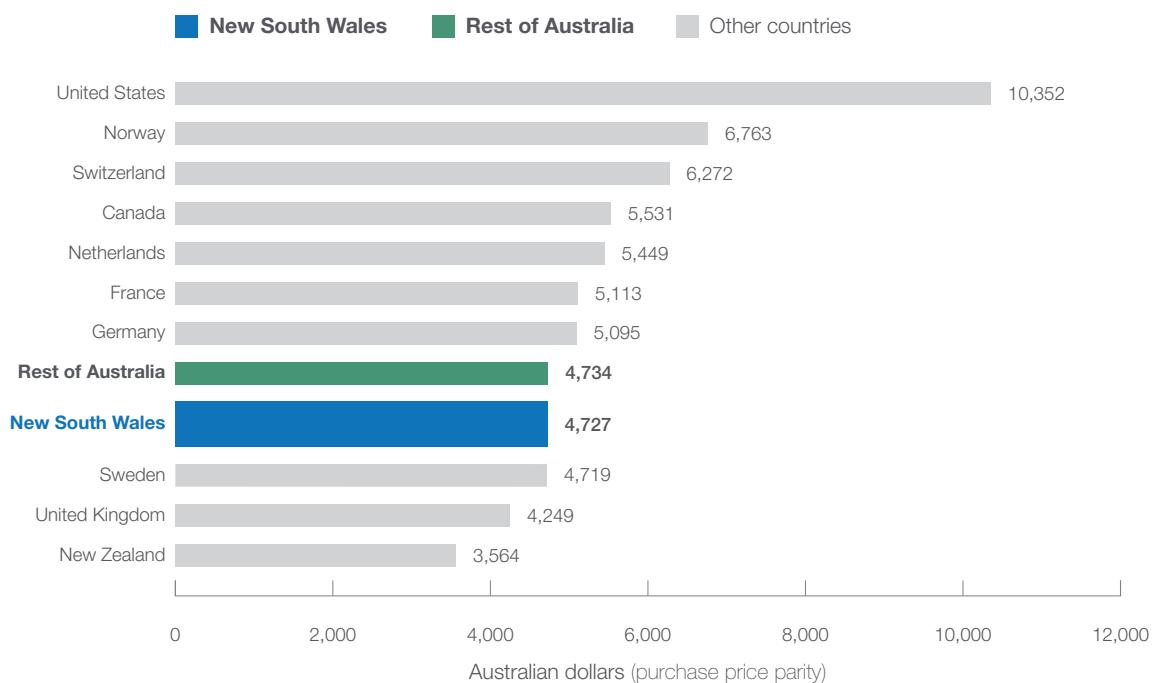
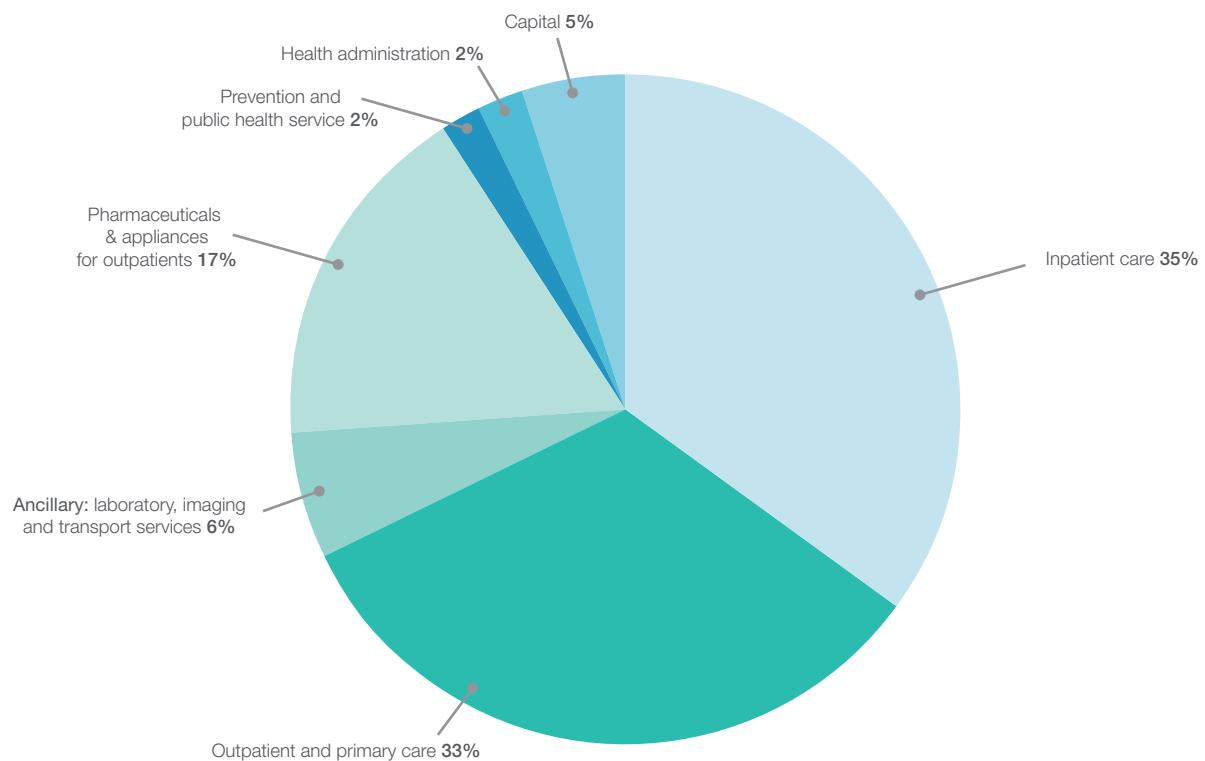


Figure 7.4: Total health expenditure (public and private), NSW, 2007^π



(∞) AIHW Health expenditure Australia 2007-08, citing health expenditure database.

(π) AIHW Health expenditure database unpublished data, analysis using OECD System of Health Accounts, commissioned by Bureau of Health Information (Note: Percentages are rounded).

Resources: beds and workforce

The number of hospital beds, nurses and doctors in NSW is similar to other countries

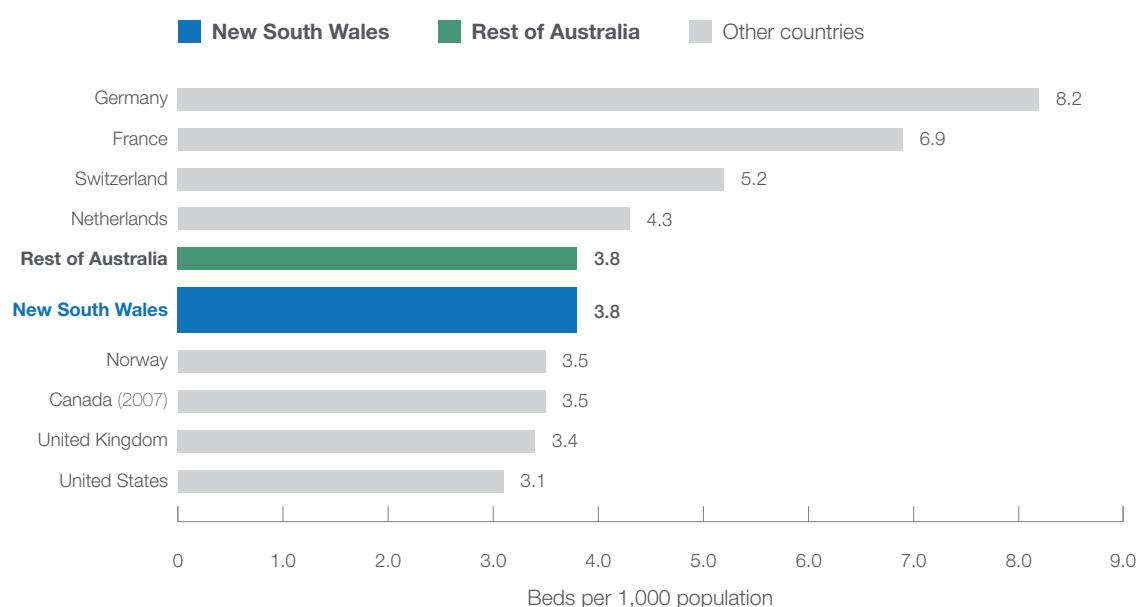
Across healthcare systems internationally, the number of hospital beds has been declining for decades. This is largely due to medical advances, shorter hospital stays, shifts to more day surgery, and the growth of 'care in the community' for older people and those with mental illness. In 2008, NSW had 3.8 beds per 1,000 population; placing it mid-range in the list of comparator countries ([Figure 7.5](#)).

The workforce of a healthcare system is one of its most valuable resources. In NSW, the hospital and community care system depends on the

commitment and skills of about 180,000 people who work within it to provide patient care.⁵

International comparisons show that in 2008 the state's number of professionally active doctors (3.07 per 1,000 population) placed it in the middle of the countries surveyed ([Figure 7.6](#)). In the same year, NSW had 11.2 nurses for every 1,000 people – more than in many other countries ([Figure 7.7](#)). There were 1.44 GPs per 1,000 population, more than most other countries except France ([Figure 7.8](#)).

Figure 7.5: Hospital beds (public and private) per 1,000 population, 2008 (or latest year)[†]



(†) OECD Health Data 2010 and AIHW Australian Hospital Statistics, 2008-09 (Notes: Figure 7.7: Australia and NSW data include those employed in nursing as clinical nurses, in clinical management and / or nurse / midwifery administration or management, as a lecturer, teacher or supervisor, researcher or other not elsewhere classified. It excludes those on extended leave or who are looking for work in nursing; Figure 7.8: General practitioners refers to primary care practitioners, i.e. practitioners engaged in general practice or in the primary care of patients. This category includes practitioners recognised by Medicare as VRGPs, RACGP Fellows, RACGP registrars and other medical practitioners whose main practice is unreflected patient attendances. Education required is 5-6 year degree plus a 1-year internship. Data include hospital non-specialists).

Figure 7.6: Professionally active doctors / physicians (head count) per 1,000 population, 2008[†]

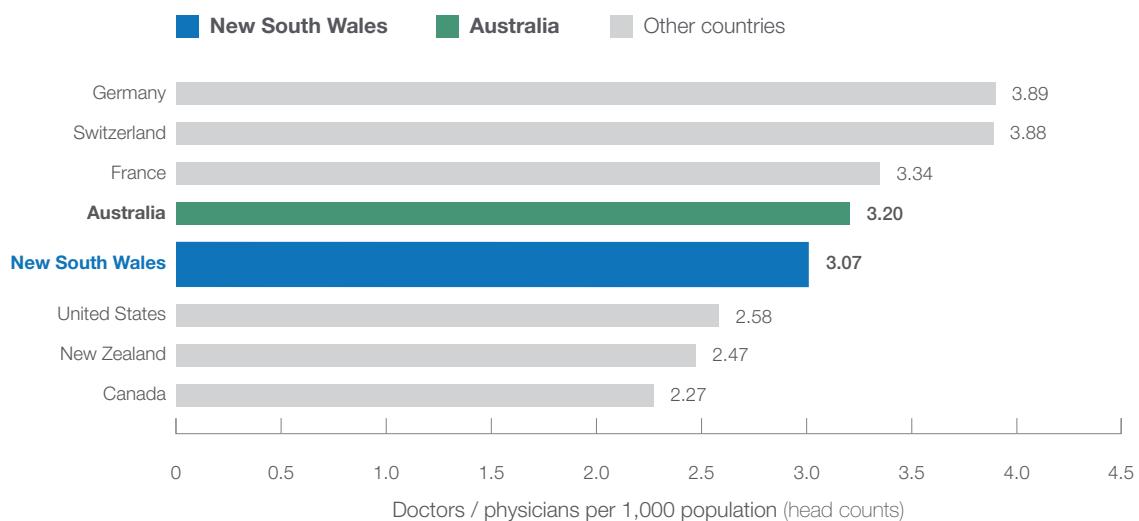


Figure 7.7: Professionally active nurses (head count) per 1,000 population, 2008[†]

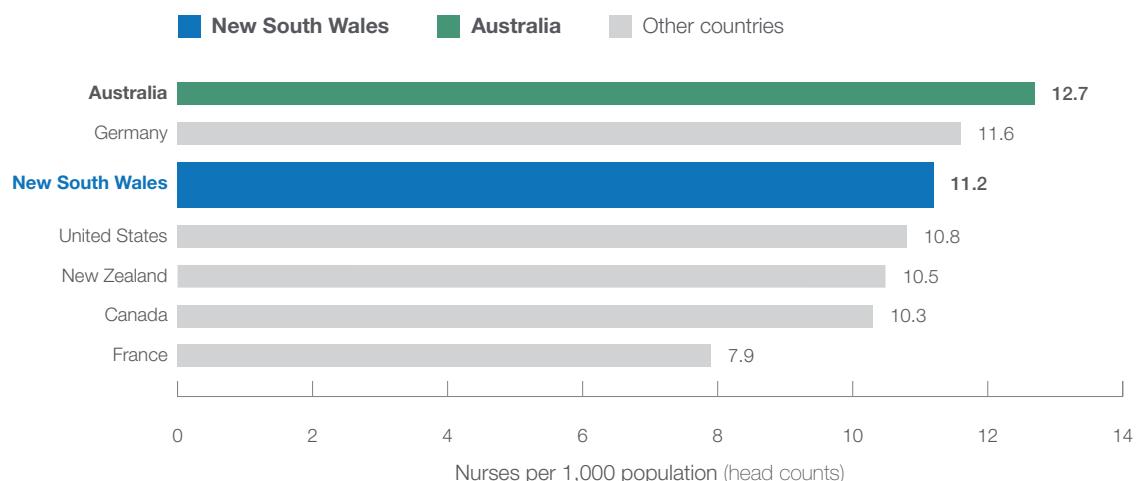
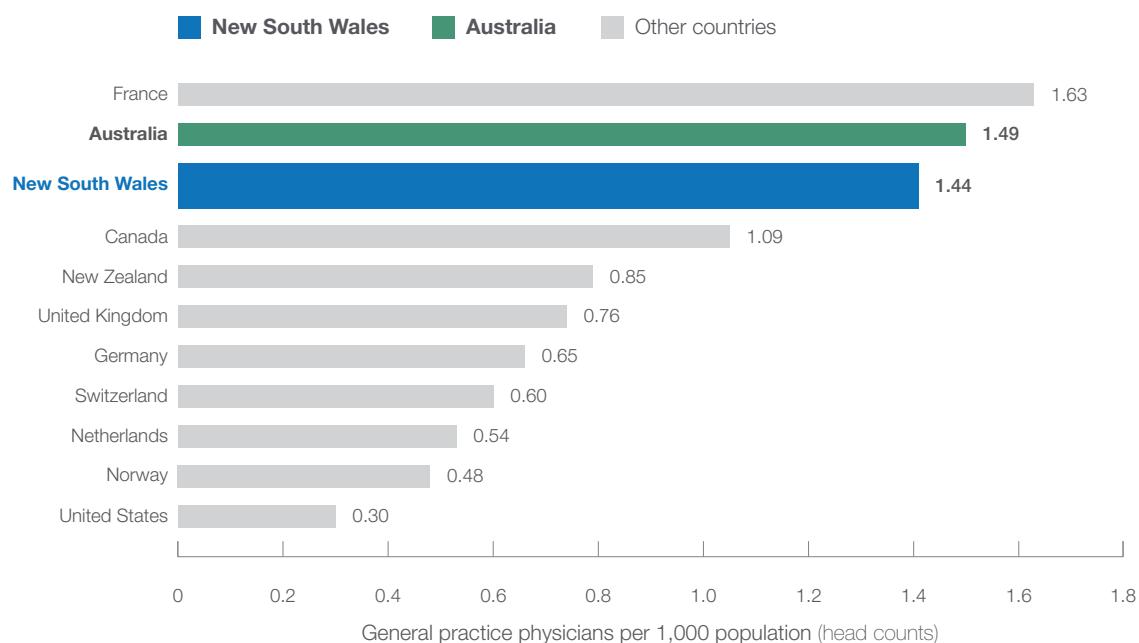


Figure 7.8: General practitioners (head count) per 1,000 population, 2008[†]



Outputs / activity

The NSW health system undertakes a large volume of activity

In the delivery of healthcare, money is used to purchase physical ‘inputs’ to the process of care in the form of staff, capital, pharmaceuticals, etc. These inputs are used to produce a range of activities and together, create physical ‘outputs’ in the form of episodes of patient care.

A pictorial representation of the number of NSW adults who reported using healthcare in 2009 is shown in [Figure 7.9](#). In 2009, 4.6 million people across the state aged 15+ years reported that they had visited the GP at least once in the past year; 737,700 people visited the ED; and 698,800 people were admitted to hospital.⁵

The relative volume of a range of hospitalisations in NSW public hospitals is shown in [Figure 7.10](#). While these data show the number of hospitalisations, they do not include information on the length of hospital stays within categories. The length of stay varies widely across diagnostic groups.

Figure 7.9: Use of NSW healthcare system by adults (15+ years), 2009⁶

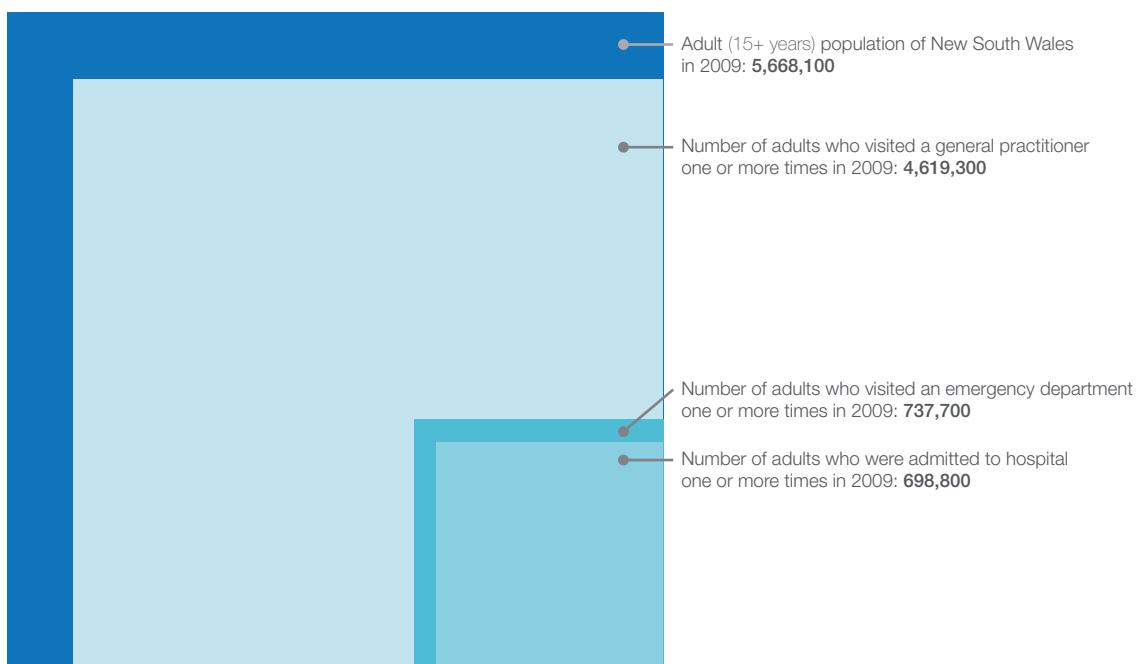
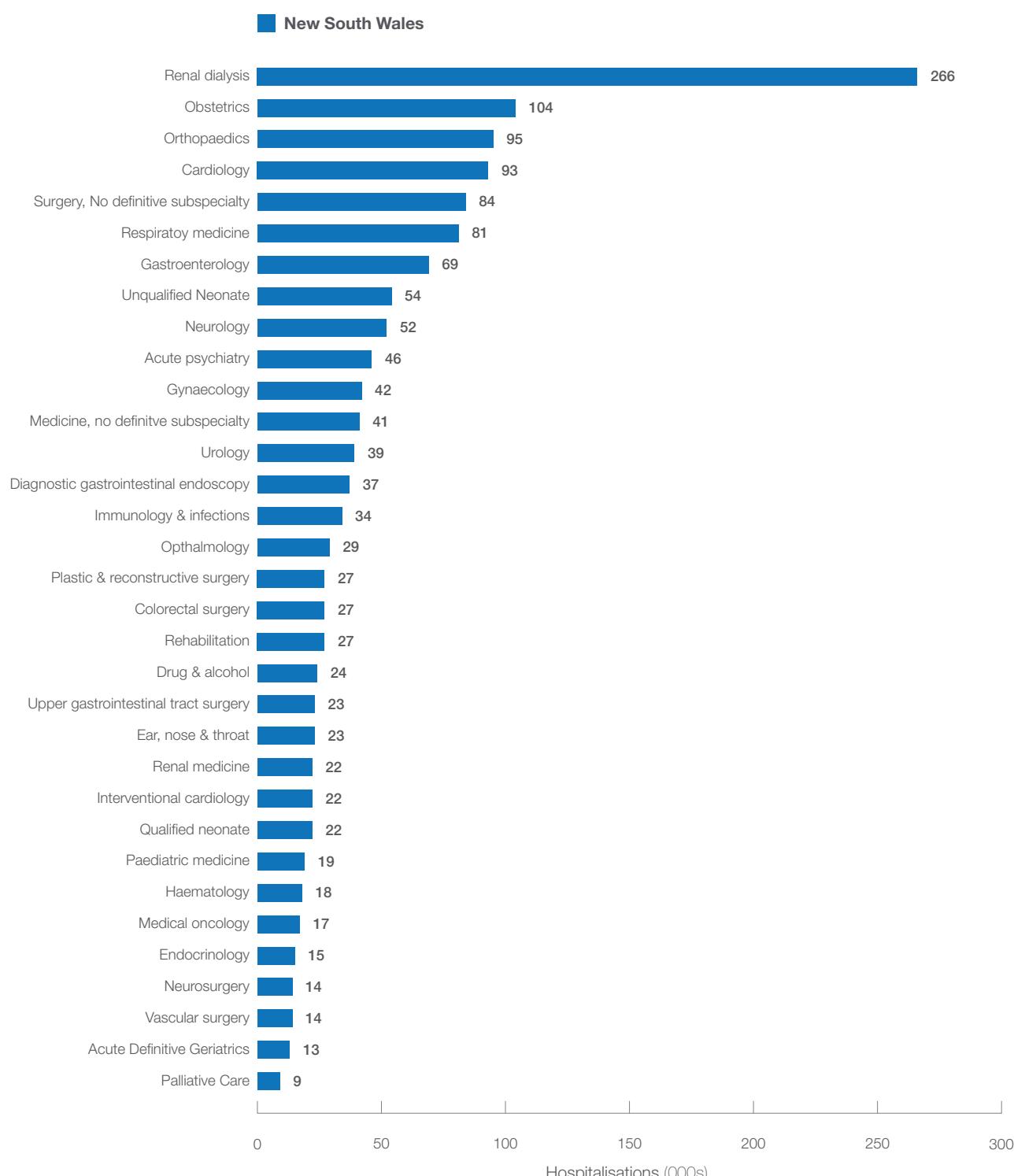


Figure 7.10: Hospitalisations (000s) by service related groups NSW public hospitals, 2008-09^z



(◊) ABS National Health Survey, 2009 (Note: Adults include those aged 15+ years).

(Σ) AIHW, Australian Hospital Statistics citing Australian National Morbidity Database (Notes: Based on AR-DRG version 5.2; excludes hospital boarders and posthumous organ procurement).

Sustainability

Operational costs dwarf public health and research investment

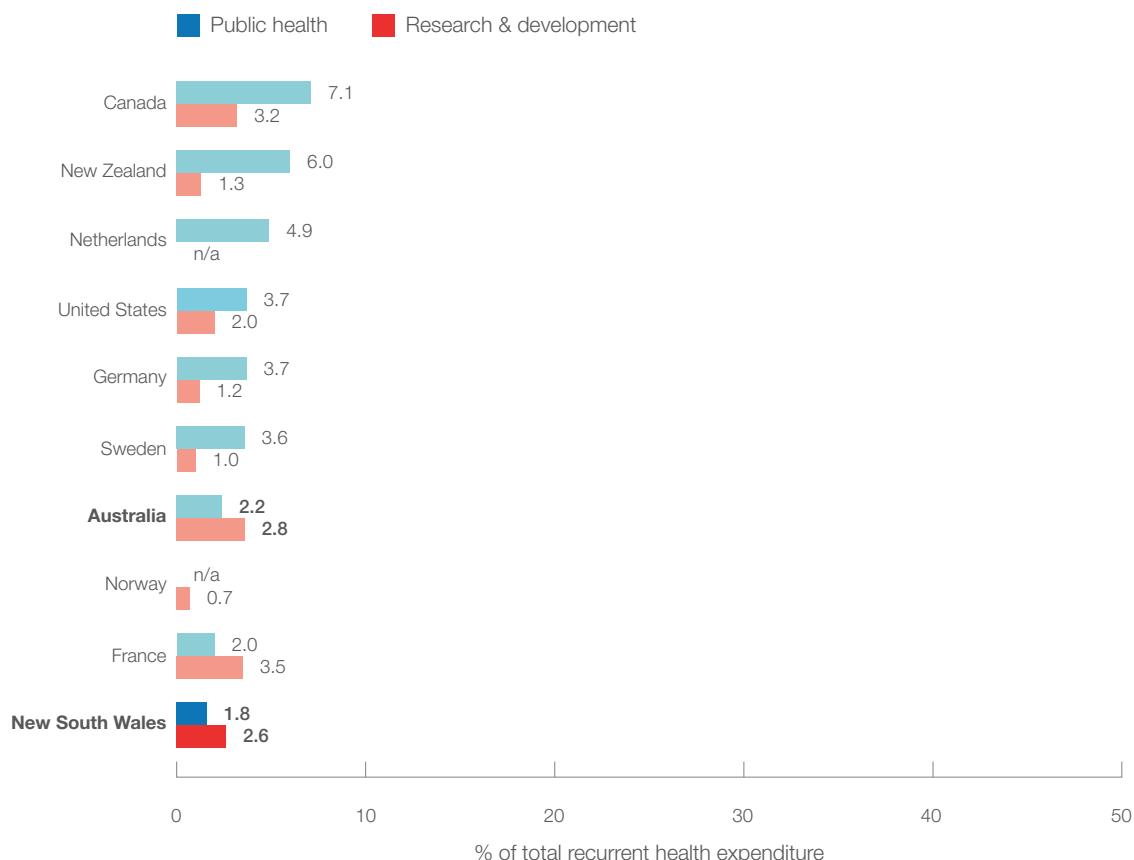
Healthcare spending continues to outpace the rate of growth in overall government spending. Steep increases in healthcare expenditure have meant that concerns about sustainability have arisen in healthcare systems internationally.

Many factors affect the long-term sustainability of a healthcare system: demographics; wider determinants of health and wellbeing; the burden of disease; innovation, effectiveness and

efficiencies in models of delivering care; community expectations; and the health workforce.

Indicators that gauge sustainability include measures of investment that either: reduce the burden of disease or achieve early disease detection (public health, prevention); or investigate ways to deliver better healthcare (research and development), and improve service efficiency (Figure 7.11).

Figure 7.11: Percentage of total health expenditure on research and development, and public health, 2007-08[†]



(†) OECD Health Data 2010 and COAG NHA Tables 66.1 and 68.1, citing AIHW health expenditure database (Notes: NSW and Australia data are reported for 2007-08; all international data are for 2008; for public health, Canada, Netherlands and Norway figures are estimates; for research and development expenditure, Canada figure is an estimate; for NSW, public health expenditure is derived from Figure 7.4 (AIHW); research and development expenditure for NSW includes all funding sources).

Relating inputs to outcomes

NSW does well in achieving health per dollar spent

The inputs and activities shown on the previous pages are not the endpoint of the production process in healthcare.

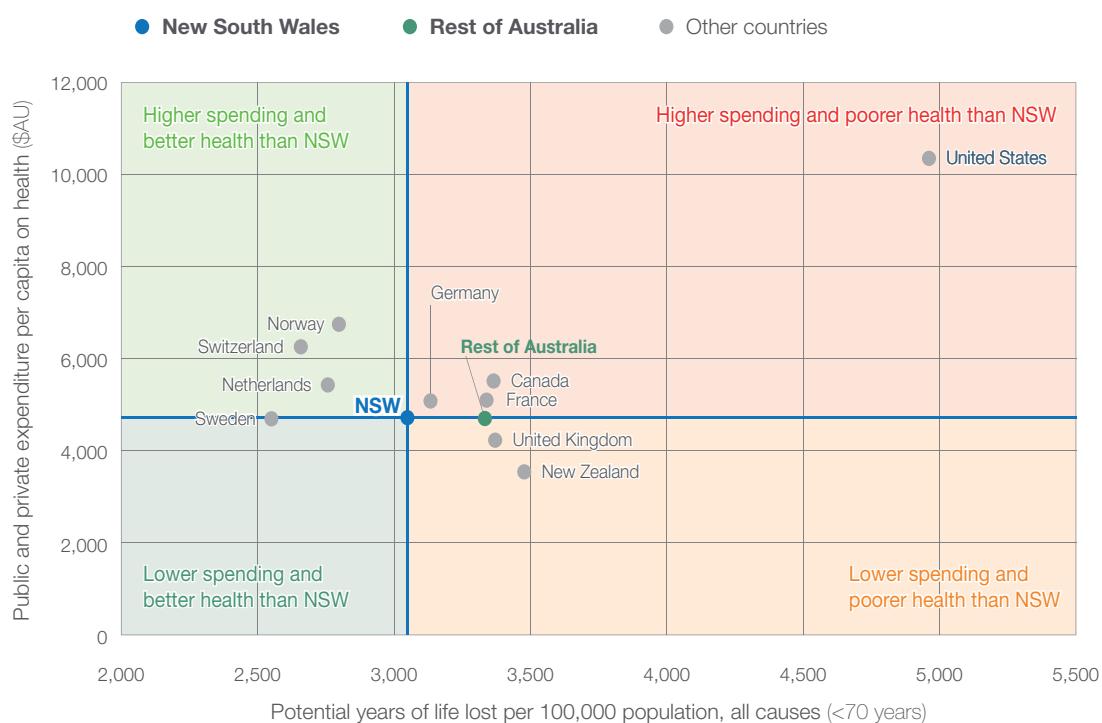
They are an incremental step towards the ultimate outcome the healthcare system strives for: improvements in health and patient care experiences at affordable costs.

One way to compare different healthcare systems in terms of the relationship between inputs and outcomes is to graph spending per person to

population outcomes, such as years of life lost.

Compared to other countries surveyed, NSW does well in achieving health per dollar spent. These findings are similar to work that compares Australia to other countries in achieving health per dollar spent.^{2,3,9,10} No country has lower spending *and* better health. Norway, Switzerland and Netherlands have higher spending and better health than NSW. Germany, France, Canada and the United States have higher spending and poorer health than NSW (Figure 7.12).

Figure 7.12 Per person health spending (\$AU) vs potential years of life lost (<70 years), 2007 (or latest year)[¥]



(¥) Bureau of Health Information analysis of OECD Health Data 2010 and AIHW expenditure data (Notes: Australian dollar 2007 (purchase price parity); years of life lost is a summary measure of premature mortality, calculated by totalling all deaths occurring at each age and multiplying this figure by the number of remaining years of life up to a selected age limit, here 70 years).