

Overview

Antimicrobial dispensing

- Australia has very high overall rates of community antimicrobial use compared with some countries. In 2013–14, more than 30 million PBS prescriptions for antimicrobials were dispensed.

Diagnostic interventions

- Nearly 600,000 MBS-funded fibre optic colonoscopies were performed in Australia in 2013–14. Very large variations were seen across the country – the area with the highest rate was 30 times higher than that of the area with the lowest rate.
- In 2013–14, 314,000 MBS-funded computed tomography scans were performed on the lumbar spine with marked variation across the country. Inappropriate use of diagnostic imaging exposes patients to unnecessary radiation.

Modern medicine is characterised by an increasing expectation that people will receive care that is evidence based. Despite this expectation the safety and quality of health care varies, both across geographic areas and among individual clinicians. Understanding this variation is critical to improving the quality, value and appropriateness of health care. Some variation is desirable and warranted – it reflects differences in people’s need for health care. But where variation is unwarranted, it signals that people are not getting appropriate care. Examining variation is an important first step in identifying and addressing unwarranted variation.

The Australian Commission on Safety and Quality in Health Care (the Commission) has collaborated with the Australian, state and territory governments, specialist medical colleges, clinicians and consumer representatives to develop the *Australian Atlas of Healthcare Variation* (the atlas).

For many years, Australia has been reporting on aspects of healthcare variation for performance and statistical purposes at both state¹ and national levels.^{2,3,4} This is the first time that data from the Medicare Benefits Schedule (MBS), Pharmaceutical Benefits Scheme (PBS) and Admitted Patient Care National Minimum Data Set (APC NMDS) have all been used to explore variation across different healthcare settings. In addition, this is the first Australian atlas where healthcare variation across the country has been presented alongside national recommendations for action.

We now have a clear picture of substantial variation in healthcare use across the country, and across many areas of health care. Some of this observed variation will be warranted and associated with need-related factors such as underlying differences in the health of specific populations, or personal preferences.

Surgical interventions

- Rates of MBS-funded knee arthroscopy in people aged 55 and over were seven times higher in some areas of Australia than in others. Despite the evidence that knee arthroscopy is of little benefit for people with osteoarthritis, and may in fact cause harm, more than 33,000 operations were performed in Australia.
- Women living in regional areas of Australia were up to five times more likely to undergo a hysterectomy or endometrial ablation for abnormal uterine bleeding than those living in cities.
- Patients in some areas of Australia were seven times more likely to undergo MBS-funded cataract surgery than those in some other areas, with more than 160,000 operations recorded in 2013–14.

Opioid dispensing

- In 2013–14, nearly 14 million prescriptions were dispensed through the PBS for opioid medicines. The number of prescriptions dispensed was 10 times higher in the area with the highest rate compared to the area with the lowest rate. There is no apparent explanation for this, although the availability of other options for treatment of non-cancer pain may be a factor.

Interventions for chronic diseases

- In remote areas, hospital admission rates for adults were markedly higher than in metropolitan areas for:
 - heart failure
 - asthma and chronic obstructive pulmonary disease
 - diabetes-related lower limb amputation.
- While Australians have higher rates of asthma compared with other countries, hospitalisation rates are low. From 2010–11 to 2012–13, on average around 15,000 children and young people were admitted to hospital for asthma in Australia each year. This may reflect a strong emphasis on using asthma management plans in primary care.

However, the weight of evidence in Australia and internationally suggests that much of the variation documented in the atlas is likely to be unwarranted.⁵ It may reflect differences in clinicians' practices, in the organisation of health care, and in people's access to services. It may also reflect poor-quality care that is not in accordance with evidence-based practice. This unwarranted variation may mean that some people are missing out on health care that could have helped them – such as cataract surgery – while others are having interventions that are unlikely to be of benefit. Overuse of some interventions – such as unnecessary antimicrobials – may cause harm. Recognition is growing internationally that more health care is not necessarily better health care.

The atlas has identified opportunities for improving the health care Australians receive. Importantly, it identifies a number of geographic and clinical areas where marked variation in practice is occurring. The important relationship between socioeconomic disadvantage and illness is reflected in the findings of many of the analyses. In disadvantaged areas, people tend to have poorer health and thus a greater need for health care. People in disadvantaged areas may also have less access to healthcare services, which can compound the existing disadvantage. For example, one reason for the variation in the dispensing of psychotropic medicines may be a lack of access to affordable, accessible mental health services in rural or disadvantaged areas, with limited availability of psychosocial interventions as alternatives to medical treatments.

Some interventions are used more in areas of higher socioeconomic status, or are mainly provided in private settings. These are therefore less accessible for people who do not have private health insurance. For example, rates of cataract surgery are lowest in areas of low socioeconomic status and increase with rising socioeconomic status. The atlas suggests that it would be worthwhile examining this issue further by looking at provision in both the public and private sectors and the extent to which variation in interventions for some conditions is linked to access to private health insurance.

In addition to the general theme of socioeconomic status and equity, specific issues relate to the health of Aboriginal and Torres Strait Islander peoples. The findings add to the weight of evidence about the urgent need to address the determinants of Indigenous health inequality. Given the importance

of improving the health and wellbeing of Indigenous people, unwarranted variation is unacceptable. It is vital that efforts to address unwarranted variation prioritise this population's needs and concerns.

While the atlas highlights variation in a range of different procedures and treatments, it does not provide information about what the ideal rates for these interventions should be. The average rates displayed in the atlas are not necessarily the ideal; and high or low rates are not necessarily good or bad. More work is needed to assess the outcomes of interventions, to help identify appropriate treatment rates, and what level of variation is warranted.

International comparisons can help put Australian results into context. Although inconsistent data collection methods and indicators make it difficult to draw direct comparisons, a number of other countries have analysed healthcare variation – for example, the pioneering Dartmouth Atlas project in the United States,⁶ the *NHS Atlas of Variation in Healthcare* series in England,⁷ and the New Zealand Health Quality and Safety Commission's *Atlas of Healthcare Variation*.⁸ International comparisons have been referenced throughout the atlas.

This atlas is the first in a series, and while it represents a significant step forward, much more work is needed. The atlas should be seen as a catalyst for generating action, with the ultimate aim of improving people's care and outcomes, through improving the efficiency and effectiveness of the healthcare system.

Six clinical areas are examined in the atlas, covering prescribing, diagnostic, medical and surgical interventions. Priority areas for investigation and action include the use of antimicrobials and psychotropic medicines; variation in rates of fibre optic colonoscopy, knee arthroscopy, hysterectomy and endometrial ablation; and inequitable access to cataract surgery.



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Interventions for mental health and psychotropic medicines

- A very high variation was seen in dispensing of psychotropic medicines for children and adolescents 17 years and under. More than 500,000 prescriptions were dispensed for attention deficit hyperactivity disorder medicines in Australia in 2013–14. The number of prescriptions per 100,000 people in the area with the highest rate was 75 times higher than in the area with the lowest rate.
- Australia is second only to Iceland in the use of antidepressants for OECD countries. Nearly 15 million PBS-funded prescriptions for antidepressant medicines were dispensed for people aged 18 to 64.
- More than 900,000 prescriptions for antipsychotic medicines were dispensed for people aged 65 and over. The number of prescriptions was seven times higher in the area with the highest rate compared to the area with the lowest rate. High and inappropriate prescribing of antipsychotic medicines has been documented in older people. These medicines may be prescribed outside guideline recommendations, such as for behavioural disturbances related to dementia or delirium, before secondary causes have been excluded and non-pharmacological measures have been tried.
- Also of significance in this age group was the variation in anticholinesterase medicines dispensing, illustrated in Chapter 6: Interventions for chronic diseases. The number of prescriptions dispensed for anticholinesterase medicines for people aged 65 and over was more than 15 times higher in the areas with the highest rate compared to the area with the lowest rate.