



Chapter 5

Gastrointestinal investigations

At a glance



Gastroscopy is used to investigate, treat or monitor conditions of the upper gastrointestinal (GI) tract. Most conditions that affect the upper GI tract and require gastroscopy are uncommon in people aged under 55 years.

The Atlas found that, in 2018–19, the rate of Medicare Benefits Schedule (MBS)–subsidised services for gastroscopy for people aged 18–54 years was almost 11 times higher in the local area with the highest rate than in the area with the lowest.* Rates were markedly higher in major cities than elsewhere. Almost two-thirds of gastroscopy services were performed on the same day as a colonoscopy for the same person.

Few people who have an initial gastroscopy require another within three years. Repeat gastroscopy is used mainly to monitor conditions that increase the risk of upper GI cancer or bleeding in high-risk groups.

The Atlas found that, in 2018–19, the rate of MBS-subsidised services for repeat gastroscopy performed within two years and 10 months of an earlier gastroscopy was almost 15 times higher in the local area with the highest rate than in the area with the lowest.* Rates were markedly

higher in major cities and also increased with socioeconomic advantage.

National guidance on appropriate use of gastroscopy, including when to perform repeat gastroscopy, is needed. Education for clinicians and consumers about the low risk of upper GI cancer for most people, especially those aged under 55 years, and improved consumer understanding about the role of gastroscopy, are required.

Repeat colonoscopy is used mainly to monitor for bowel cancer in people at increased risk. The timing of repeat colonoscopy is based on bowel cancer risk. There are limited reasons for repeating a colonoscopy within three years.

The Atlas found that, in 2018–19, the rate of MBS-subsidised services for repeat colonoscopy performed within two years and 10 months of an earlier colonoscopy was almost 20 times higher in the local area with the highest rate than in the area with the lowest.* Rates were markedly higher in major cities and increased with socioeconomic advantage.

A focus on driving implementation of national guidelines and the *Colonoscopy Clinical Care Standard* is needed.

* After standardising to remove age and sex differences between populations.

Recommendations

The Commission consulted widely, but is solely responsible for making the recommendations; as such, the recommendations may not reflect the views of all contributors to the Atlas.

5a. State and territory health departments to develop and implement evidence-based triage criteria for the prioritisation and allocation of patients to gastroscopy, colonoscopy, and gastroscopy performed with colonoscopy.

5b. Health service organisations to:

- i. Audit clinicians performing endoscopy services and provide the results back to clinicians to act upon, in line with Action 1.28 of the National Safety and Quality Health Service (NSQHS) Standards
 - ii. Incorporate individual clinicians' audit data as part of re-credentialing processes
 - iii. Report key performance indicators, trends and adverse events in endoscopy to the governing body, consistent with the NSQHS Standards.
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5c. The Gastroenterological Society of Australia to develop a position statement on the appropriate use and timing of gastroscopy, and of gastroscopy performed with colonoscopy, for gastroenterologists and general practitioners.

5.1 Gastroscopy MBS services, 18–54 years

Why is this important?

Gastroscopy is used to investigate or treat conditions affecting the upper gastrointestinal (GI) tract. It can also be used to monitor conditions affecting the upper GI tract that lead to cancer in certain high-risk groups.¹⁻³

Most conditions affecting the upper gastrointestinal (GI) tract that require a gastroscopy are uncommon in people aged under 55 years. Oesophageal and stomach cancers are very rare in this age group, and even less common in people without certain risk factors, such as smoking.¹⁻³

The *Third Australian Atlas of Healthcare Variation* found substantial variation in hospitalisations for gastroscopy among people of all ages.⁴ Higher rates were seen in areas of socioeconomic advantage in major cities, and in women. These findings are not consistent with the prevalence of GI disease.

The fourth Atlas now examines gastroscopy services that are subsidised under the Medicare Benefits Schedule (MBS) in a population that has few indications for its use: people aged 18–54 years.

What did we find?

In 2018–19, there were 154,338 MBS-subsidised services for gastroscopy for people aged 18–54 years. The rate was **10.8 times as high** in the area with the highest rate as in the area with the lowest rate.

Rates were markedly higher in major cities than elsewhere. The national rate for women was 1.6 times as high as the rate for men. About six in every 10 gastroscopy services were performed on the same day as a colonoscopy service for the same person.

What can be done?

Development of national guidance on the appropriate use of gastroscopy is a priority. Guidelines should include recommendations on when gastroscopy should be done at the same time as a colonoscopy. Structured referral forms could aid assessment of appropriateness against guidelines. Health service organisations could ensure that credentialing requirements for clinicians performing gastroscopy include audit of adherence to guidelines.

Interventions are needed that focus on educating consumers and clinicians that the risk of upper GI cancer in this age group is low. Improving consumer understanding about the role of gastroscopy is also important.

More attention needs to be given to clinicians' education on the causes of iron deficiency anaemia in women aged under 55 years. Heavy menstrual bleeding, a commonly unrecognised cause, should be excluded before referral for gastroscopy.

Gastroscopy MBS services, 18–54 years

Context

This item examines rates of MBS-subsidised services for gastroscopy for people aged 18–54 years in Australia in 2018–19.

What is gastroscopy?

Gastroscopy, also known as an upper GI endoscopy, is the examination of the upper part of the GI tract, using a small, flexible tube with a camera on the end, called an endoscope. The procedure can also include a biopsy, if needed. The procedure, requires an empty stomach for an accurate examination. It is usually quick to perform, taking up to about 15 minutes.^{1,5}

What is it used for?

Gastroscopy is used to investigate, treat or monitor certain upper GI symptoms or diseases. Recommended uses are¹:

- Investigation of suspected bleeding from the upper GI tract and upper small bowel
- Investigation of symptoms suggestive of cancer (such as difficulty swallowing, weight loss, bleeding and stomach pain) or no response to acid suppression therapy
- Tissue diagnosis of suspected cancer or coeliac disease
- Surveillance of high-risk groups with chronic conditions that can increase cancer risk (for example, Barrett's oesophagus).

Gastroscopy is also used to treat bleeding in the upper GI tract, some upper GI cancers or a narrowed oesophagus (oesophageal stricture). However, gastroscopies for treatment (therapeutic gastroscopies) are not included in this data item.

Most conditions affecting the upper GI tract that require investigation with gastroscopy are uncommon in people aged under 55 years. They become more common with increasing age, the onset of chronic disease, or the use of certain medicines such as non-steroidal anti-inflammatory drugs.^{2,3}

Gastroscopy is not required to investigate uncomplicated reflux^{2,3,6,7}, a common condition that affects more than one in 10 people in Australia^{8,9}, with a few exceptions. This is because:

- Most people with reflux have heartburn or regurgitation that can be diagnosed clinically without investigation and managed effectively with dietary or lifestyle modifications, or acid suppression medicines⁶
- Only about one-third of people with gastro-oesophageal reflux disease (GORD), a condition in which reflux affects wellbeing and requires treatment, have abnormalities visible on gastroscopy²
- Most reflux does not progress to changes in the cells lining the upper GI tract, which can lead to Barrett's oesophagus or oesophageal cancer.²

Investigation with gastroscopy is required if reflux does not respond to a trial of acid suppression therapy and if 'alarm features' suggestive of cancer are present, such as difficulty swallowing, bleeding, weight loss, recurrent vomiting and anaemia. It is also required if the diagnosis is unclear or there are complications such as stricture.^{2,6,7,10-12}

Upper GI cancer is rare in people of any age and even lower in people aged under 55 years. Use of gastroscopy for population-based screening for upper GI cancer is not recommended because the chance of diagnosing serious disease is low. Upper GI cancer rates are lower in women than in men, and lower in people without risk factors, such as those who have never smoked^{2,13-17} (Table 5.1). These are important considerations for the appropriate use of gastroscopy, particularly for common conditions.

Table 5.1: Upper GI cancer rates per 100,000 people, by sex and age group, 2019

Age	Oesophageal cancer		Gastric cancer	
	Males	Females	Males	Females
35–39	0.5	0.1	1.6	1.9
40–44	1.0	0.2	3.4	2.5
45–49	2.9	1.3	5.6	1.6
50–54	7.2	1.5	11.2	5.7

Source: Australian Institute of Health and Welfare¹⁸

Coeliac disease is a common and under-diagnosed condition. Gastroscopy is used to confirm a diagnosis for people with positive coeliac serology or where the diagnosis is uncertain.^{6,10,19} Repeat gastroscopy after treatment with a gluten-free diet is controversial and is yet to be shown as cost-effective.²⁰

Gastroscopy is also used to investigate causes of suspected GI blood loss. People without a clear reason for iron deficiency should have a gastroscopy to exclude GI bleeding or malignancy (for example, postmenopausal women and most men). Menstruating women, blood donors and people with vegetarian or vegan diets should have other common causes of iron deficiency excluded first to avoid a missed diagnosis and unnecessary gastroscopy.^{21,22}

Why examine gastroscopy in people aged 18–54 years?

This Atlas examines variation in MBS-subsidised gastroscopy services for an age group in which signs and symptoms appropriate for investigation with gastroscopy are uncommon: adults aged under 55 years. Findings from the *Third Australian Atlas of Healthcare Variation* and a New South Wales study support exploration of variation in gastroscopy in this age group.^{4,23}

The third Atlas reported more than half a million (505,544) hospitalisations for gastroscopy among people of all ages in Australia in 2016–17.⁴ The rate in the area with the highest rate was 7.4 times as high as the rate in the area with the lowest rate. Higher rates were seen in areas of socioeconomic advantage in major cities, and in women. More than one-third (36%) of hospitalisations for colonoscopy included a gastroscopy.

The third Atlas findings highlighted a clear anomaly between the prevalence of risk factors for upper GI disease and gastroscopy hospitalisations, suggesting that some people are receiving care that is inappropriate and of no or little benefit.

Inappropriate use of gastroscopy in people aged under 55 years was examined in a New South Wales study.²³ Use of gastroscopy for investigating dyspepsia (indigestion or heartburn) in people aged under 55 years was considered low-value care – defined as care that provides no benefit, or a risk of harm that is greater than the benefit, or a benefit that is disproportionately low compared with its cost. About 14% of gastroscopies in adults aged under 55 years in New South Wales public hospitals were identified as low-value care in 2016–17. The rate of low-value gastroscopy increased by about 8% each year between 2010–11 and 2016–17.

Gastroscopy MBS services, 18–54 years

About the data

Data are sourced from the MBS dataset. This dataset includes information on MBS claims processed by Services Australia. It covers a wide range of services (attendances, procedures, tests) provided across primary care and hospital settings.

The dataset does not include:

- Services for publicly funded patients in hospital
- Services for patients in public outpatient clinics
- Services covered under Department of Veterans' Affairs arrangements.

The dataset does not allow analysis by Aboriginal and Torres Strait Islander status.

Rates are based on the number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years in 2018–19.

Because a record is included for each service rather than for each patient, patients who receive the service more than once in the financial year will be counted more than once.

The analysis and maps are based on the patient's postcode recorded in their Medicare file and not the location of the service.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

What do the data show?

Magnitude of variation

In 2018–19, there were 154,338 MBS-subsidised services for gastroscopy, representing 1,247 services per 100,000 people aged 18–54 years (the Australian rate).

The number of MBS-subsidised services for gastroscopy across 327* local areas (Statistical Area Level 3 – SA3) ranged from 218 to 2,348 per 100,000 people. The rate was **10.8 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of MBS-subsidised services for gastroscopy varied across states and territories, from 481 per 100,000 people in the Northern Territory to 1,312 in Victoria (Figures 5.5–5.8).

After the highest and lowest 10% of results were excluded and 263 SA3s remained, the number of MBS-subsidised services per 100,000 people was 2.9 times as high in the area with the highest rate compared with the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates were markedly higher in major cities than in other areas, and markedly lower in remote areas than in other areas. Overall, the rate for major cities was 3.4 times as high as the rate for remote areas (Figures 5.1 and 5.9).

Rates decreased with socioeconomic disadvantage in major cities, and in inner regional and remote areas. Overall, the rate of gastroscopy in the highest socioeconomic group was 1.4 times as high as in the lowest group (Figures 5.2 and 5.9).

* There are 340 SA3s. For this item, data were suppressed for 13 SA3s due to a small number of services and/or population in an area, or potential identification of individual patients, practitioners or business entities.

Notes:

Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Figure 5.1: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and standardised, by remoteness of patient residence, 2018–19

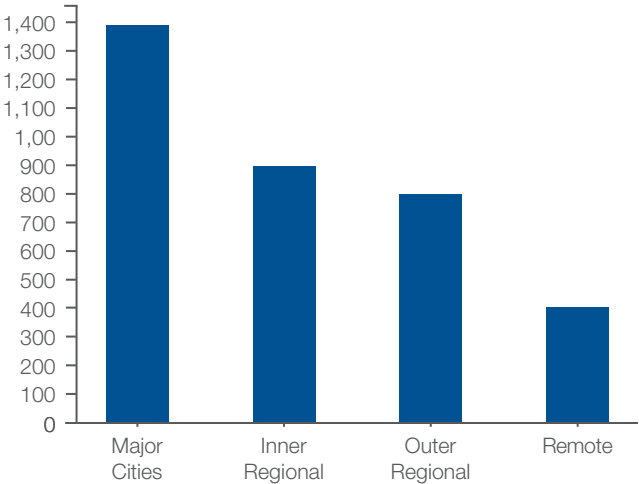
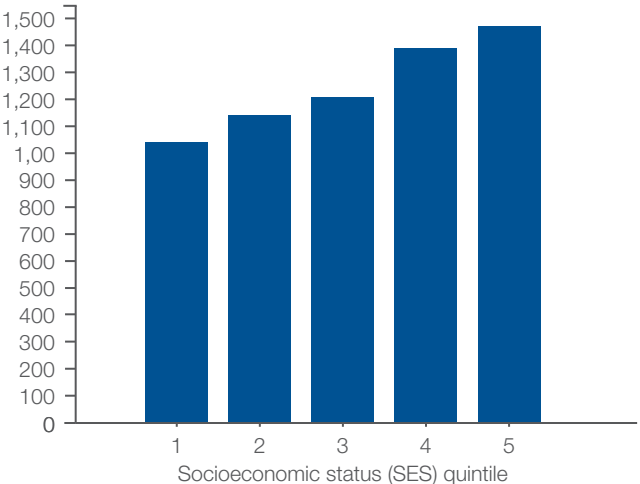


Figure 5.2: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and standardised, by socioeconomic area of patient residence, 2018–19*



Notes:

* Areas with a low SES (=1) have a high proportion of relatively disadvantaged people. Areas with a high SES (=5) have a low proportion of relatively disadvantaged people.

For further detail about the methods used, please refer to the Technical Supplement.

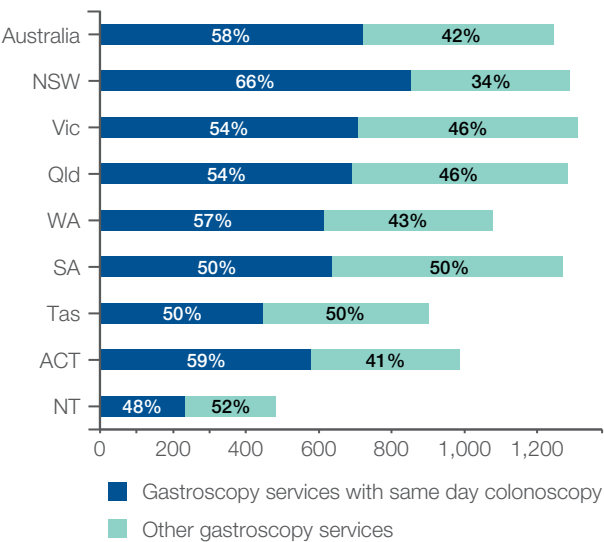
Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Gastrosocopy MBS services, 18–54 years

Number of MBS-subsidised services for gastrosocopy and colonoscopy for the same patient on the same day

In 2018–19, 58% of MBS-subsidised services for gastrosocopy were performed on the same day as an MBS-subsidised service for colonoscopy for the same patient. There were 89,399 services for gastrosocopy that accompanied a colonoscopy (Figure 5.3).

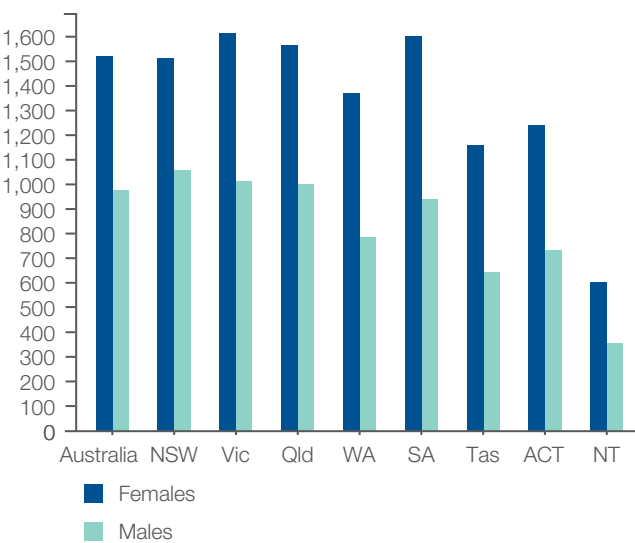
Figure 5.3: Number of MBS-subsidised services for gastrosocopy on the same patient and same day as an MBS-subsidised service for colonoscopy, per 100,000 people aged 18–54 years, age and sex standardised, by state and territory of patient residence, 2018–19



Analysis by sex

The national rate of MBS-subsidised services for gastrosocopy for females was 1.6 times as high as the rate for males. Rates were consistently higher for females in all states and territories (Figure 5.4).

Figure 5.4: Number of MBS-subsidised services for gastrosocopy per 100,000 people aged 18–54 years, age and sex standardised, by state and territory of patient residence, by sex, 2018–19



The data for Figures 5.3 and 5.4, and the data and graphs for analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

Notes:
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Interpretation

There is wide variation in gastroscopy use, probably involving overuse in some areas and underuse in others. Rates of gastroscopy were markedly higher in major cities than elsewhere. Rates were also higher for women than for men in all states and territories.

These findings are consistent with those in the third Atlas, which examined public and private hospitalisations for gastroscopy.

Variation in rates of gastroscopy is likely to be due to geographical differences in the factors discussed below.

Variation between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. People may travel outside their local area to receive health care.

Clinical decision-making

Variation in adherence with available clinical guidelines may influence rates of gastroscopy.

International evidence suggests that a high proportion of gastroscopies do not accord with guideline recommendations. A 2010 meta-analysis of more than 13,000 patients undergoing gastroscopy found that 22% of procedures did not align with recommended indications in European and American guidelines.²⁴ More recently, a 2018 systematic review and meta-analysis reported that up to 54% of gastroscopies in 15 countries were performed for inappropriate indications.²⁵ Despite guidelines that recommend against using gastroscopy to investigate uncomplicated GORD^{6,7,11,26}, a New Zealand study reported this as one of the most common inappropriate indications for performing gastroscopy.²⁷

Differences in clinical opinion on management where the evidence is unclear may contribute to variation. For example, further evidence is needed to demonstrate the benefit of gastroscopy after a diagnosis of coeliac disease.²⁰

Difficulties in keeping up to date with rapidly changing evidence may also influence rates.²⁵

Some clinicians may perform gastroscopy in low-risk people, such as those aged under 55 years, to relieve patient anxiety and reassure them that they do not have GI cancer. However, this reassurance may be short lived, and the procedure has a low chance of diagnosing significant disease.²⁸⁻³⁰

Fear of litigation for not investigating symptoms may influence clinicians' decisions about use of gastroscopy, particularly if they are unaware of current recommendations or evidence about the incidence of upper GI cancers. Concerns about late diagnosis and subsequent litigation, as well as few disincentives for over-testing may also contribute to overuse of gastroscopy.²⁵

Higher rates of gastroscopy in women than in men may be related to higher rates of iron deficiency in women. Gastroscopy might have been used before exclusion of dietary causes of iron deficiency, or heavy menstrual bleeding in menstruating women. Higher gastroscopy rates in women raise concern of delayed diagnoses and treatment, because common causes of iron deficiency are being missed.

Gastroscopy and colonoscopy performed on the same day

The ease of performing a gastroscopy at the same time as a colonoscopy may contribute to variation. About six in 10 gastroscopy services were performed on the same day in the same person. Both procedures should be performed concurrently for only a limited number of conditions, so the high rates suggest inappropriate use.

Australia's National Bowel Cancer Screening Program offers a two-yearly faecal occult blood test (FOBT) for people aged 50–74 years. Guidelines recommend colonoscopy for people who have a positive FOBT to assist with diagnosing disease.³¹ Some clinicians performing gastroscopies may be unaware that a FOBT only detects lower GI tract bleeding.

Gastroscopy MBS services, 18–54 years

Higher rates of both procedures may also reflect investigation of iron deficiency in menstruating women before excluding diet or heavy menstrual bleeding as the cause.

Referral practices

Variation in gastroscopy rates may be due to referral practices. A New Zealand study found that 42% of referrals did not follow American Society of Gastroenterology criteria. No cancers were found in gastroscopies from inappropriate referrals.²⁷ Surveillance of healed benign lesions was the most common inappropriate reason to request a gastroscopy among hospital-based clinicians (31% of consultant requests). Investigation of symptoms considered functional in origin (heartburn) was the most common inappropriate reason among general practitioners (GPs) (25% of requests).

Consumer expectations

Consumer expectations and perception of cancer risk may contribute to variation in rates of gastroscopy use.^{26,32} People often have incorrect beliefs about their cancer risk.^{32,33} This may influence their perceptions about the benefits of interventions such as screening to detect GI cancer, and their preference and demand for investigations, even when their risk of cancer is low.

In the United Kingdom, the ‘Be Clear on Cancer’ campaign in 2015, which aimed to raise awareness of GI cancers, increased demand for gastroscopy by 48% but did not affect the rate of cancer diagnosis.³⁴

Access to services and number of clinicians providing services

Access to clinicians may influence the likelihood of people seeking care and the rates of gastroscopy use. The practice styles of individual clinicians may be more likely to affect rates in areas with fewer clinicians, such as rural and regional locations, than in areas with more clinicians.

Availability and affordability of services may also influence patterns of use. Ability to pay out-of-pocket costs for gastroscopy is likely to be lower in areas of socioeconomic disadvantage, and access is likely to be more difficult in areas with fewer services. Open-access endoscopy services, where GPs are able to request gastroscopy without specialist review, may also influence patterns of use.

Financial incentives

Greater remuneration for providing a service rather than consultation may lead to variation and over-servicing in some areas.

Promoting appropriate care

Unwarranted variation in the use of gastroscopy in people aged under 55 years could be addressed by reducing the rate of inappropriate gastroscopies and increasing access in areas that are under-served.

Australia’s finite health resources should be directed to high-value care, and away from low-value care such as use of gastroscopy to investigate reflux in people aged under 55 years, where it will not change the diagnosis or management. Improving awareness of the causes of iron deficiency unrelated to the upper GI tract will reduce unnecessary gastroscopy and avoid delays in diagnosis. Reducing inappropriate referrals for gastroscopy could also free up resources to reduce waiting times for public colonoscopy services.

Guideline and resource development

Development of national guidance to support appropriate use of gastroscopy is a priority. These could be used to assess appropriateness of referrals and for clinical audit of clinicians’ gastroscopy practices. The guidelines should cover guidance on appropriate use of same-day upper and lower GI endoscopy, as recommended by the Medicare Benefits Schedule Review Taskforce.³⁵

Integration of cancer mortality and lifestyle data into healthcare pathways, training guidelines, and specialist and consumer resources could also support appropriate use of gastroscopy.

Clinical decision-making

Strategies to improve clinicians' skills in provisional diagnosis could improve the assessment of reflux symptoms and iron deficiency, and reduce unnecessary gastroscopy.

Use of medicines that can cause GORD symptoms should be excluded in people presenting with reflux.

Dietary causes and heavy menstrual bleeding should be excluded in women with iron deficiency. Improved awareness and application of the *Heavy Menstrual Bleeding Clinical Care Standard* may reduce delays in diagnosis of heavy menstrual bleeding and the rates of unnecessary gastroscopy in menstruating women.^{4,36}

Improved use of medicines to manage GORD symptoms may help reduce inappropriate gastroscopies. Proton pump inhibitors (PPIs), which are commonly used to manage GORD symptoms, are most effective when taken at least half an hour before the first meal of the day.⁶ Taking PPI medicines at the wrong time can lead to poor symptom control, and may contribute to unnecessary use of gastroscopy to investigate symptoms.

Consumer education and reassurance

Informing people aged under 55 years about the limited role of gastroscopy in the management of most upper GI symptoms, and reassuring them that their risk of developing upper GI cancer is very low may reduce demand for inappropriate gastroscopy. Interactive tools that identify a person's risk or the incidence of cancer – such as the Australian Institute of Health and Welfare cancer summary data tool (see 'Resources' on page 264) – may help clinicians when having conversations with their patients about upper GI cancer risk.¹⁸

Consumer education for women about the importance of considering heavy menstrual bleeding or diet as a cause of iron deficiency anaemia may also reduce unnecessary demand and use of gastroscopy.

Reducing risk factors

Making lifestyle changes to reduce the risk of GORD, upper GI cancers and bowel cancer should be the focus for people aged under 55 years presenting with reflux symptoms who are concerned about cancer, rather than having a gastroscopy. For example, weight loss can reduce GORD symptoms. In women, a 3.5 kg/m² reduction in body mass index can result in a nearly 40% reduction in the risk of frequent GORD symptoms.^{37,38} Improving a person's understanding about their cancer risk – particularly in people aged under 55 years – is important to reduce anxiety and dispel myths about cancer.³⁹

Public health initiatives that address diet, smoking, obesity, excessive alcohol consumption and sedentary lifestyle should be targeted to areas with a high prevalence of risk factors for upper GI disease.

Clinical audit and clinician education

Clinical audit is a tool that could be used more widely to support appropriate use of gastroscopy in Australia.

Health service organisations could ensure that credentialing requirements for clinicians include a clinical audit against evidence-based guidelines. Audits in this area could form part of continuing education requirements for clinicians.

A study of Australian GPs found that participation in clinical self-audit against Gastroenterological Society of Australia recommendations improved management of GORD.⁴⁰ Referral for gastroscopy fell from 48% to 45% of patients during the audit program. Other aspects of management improved – for example, identification of risk factors that triggered symptoms (such as medicines), and recommendations for lifestyle changes such as weight loss and dietary changes.⁴⁰

An indicator to measure gastroscopies performed after a positive FOBT (which is contrary to guidelines which recommend a colonoscopy only) could be developed for clinical audits.

Gastroscopy MBS services, 18–54 years

Structured referral forms and checklists for GPs could support appropriate requests for gastroscopy in younger adults. Using guidelines to assess the appropriateness of referrals could also increase the likelihood that the procedure will assist with providing a diagnosis.

Educational programs for gastroenterologists and GPs could improve the appropriateness of requests for gastroscopy. Education could cover the:

- Non-GI causes of iron deficiency anaemia
- Low risk of upper GI cancer in people aged under 55 years
- Limited role of gastroscopy in GORD
- Low chance that gastroscopy will diagnose significant disease for simple upper GI symptoms.

Appropriate prioritisation of colonoscopy and gastroscopy

Health service organisations need to examine the volume of gastroscopies that may be tying up resources needed to perform colonoscopies. Colonoscopy for people with a positive FOBT should be prioritised over gastroscopy for people whose management is unlikely to change as a result of the gastroscopy, such as people aged under 55 years with typical symptoms of reflux. Better use of resources according to clinical need would improve the likelihood of diagnosing significant disease and reduce delays in diagnosis.

Triage systems

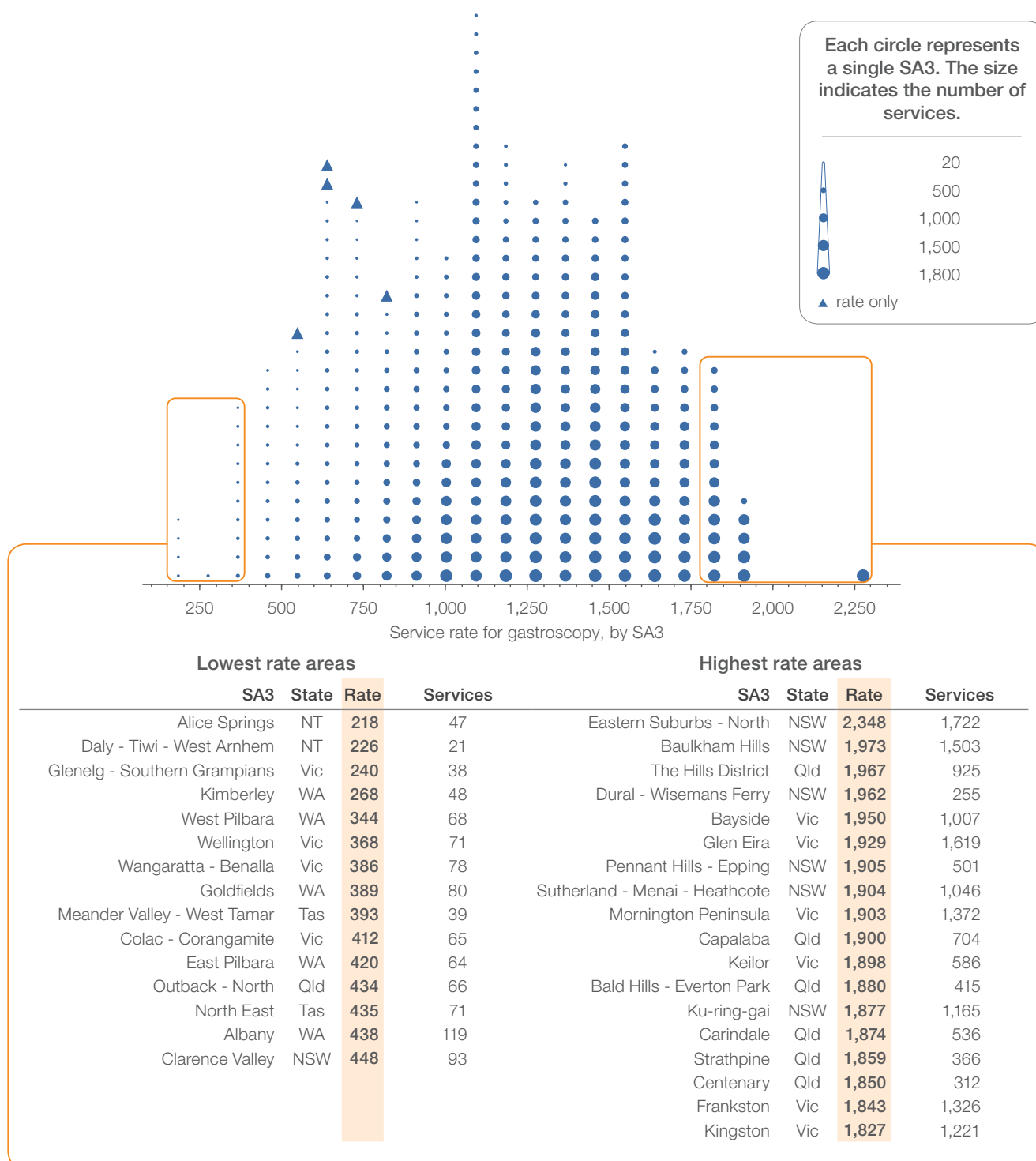
Many states and territories are introducing evidence-based triage systems for prioritising and allocating people for gastroscopy and colonoscopy, with the aim of reducing variation in use of these procedures:

- Victorian health services require clinicians to refer people for gastroscopy according to the categorisation guidelines; these guidelines specify the appropriate use of gastroscopy in people aged under 55 years who have symptoms of GORD with no alarm features, and surveillance of people with Barrett's oesophagus⁴¹
- Tasmania has adopted the Victorian categorisation guidelines and formed a statewide endoscopy network to monitor the quality of its services⁴²
- Queensland and Western Australia have introduced clinical prioritisation criteria for many clinical areas, including gastroenterology, to triage patients referred to public specialist outpatient services.^{43,44}

Wider use of these triage systems could result in more appropriate prioritisation of gastroscopy and colonoscopy.

Rates by local area

Figure 5.5: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

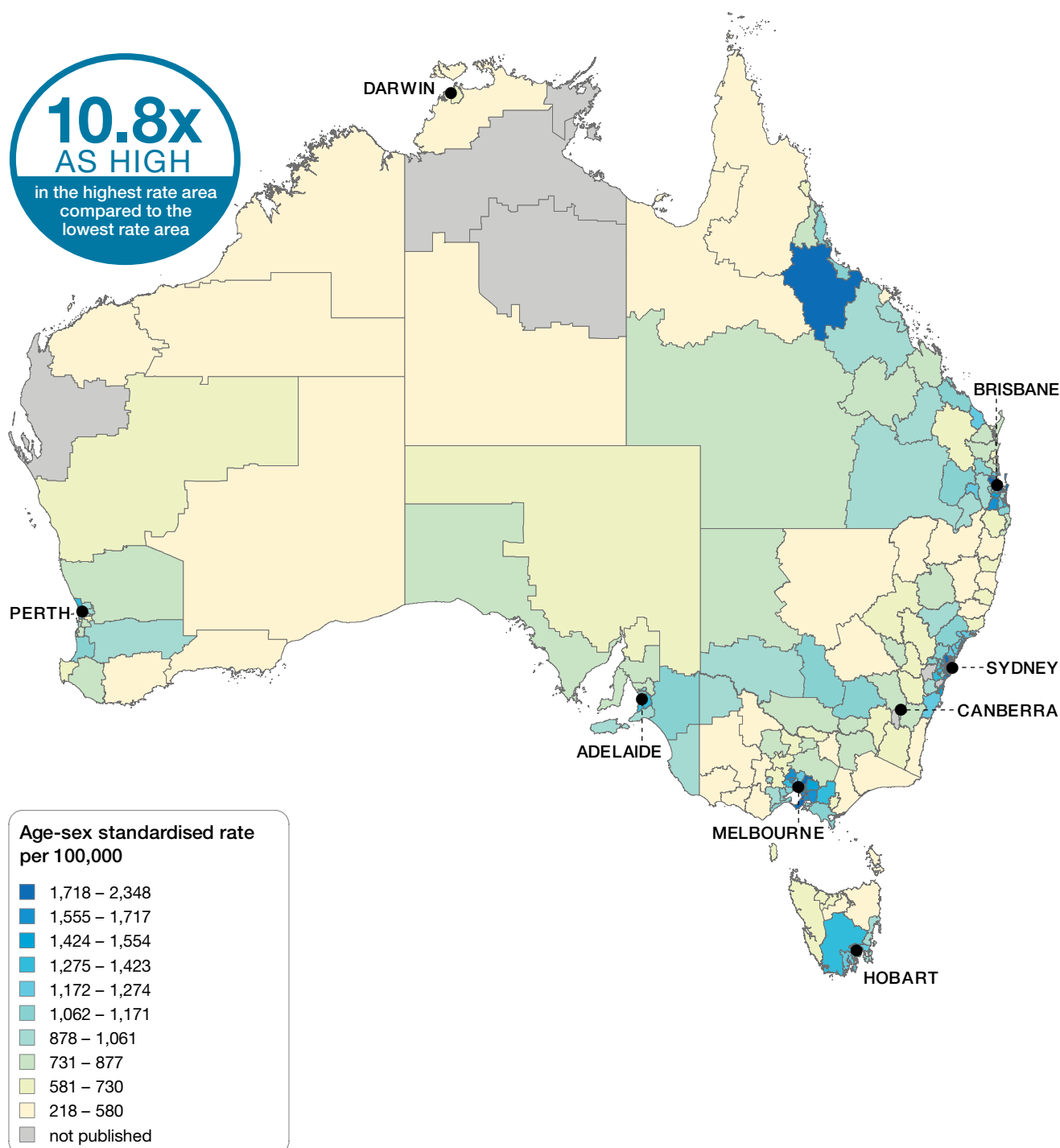
Triangles (▲) indicate SA3s where only rates are published. The number of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Gastrosocopy MBS services, 18–54 years

Rates across Australia

Figure 5.6: Number of MBS-subsidised services for gastrosocopy per 100,000 people aged 18–54 years, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



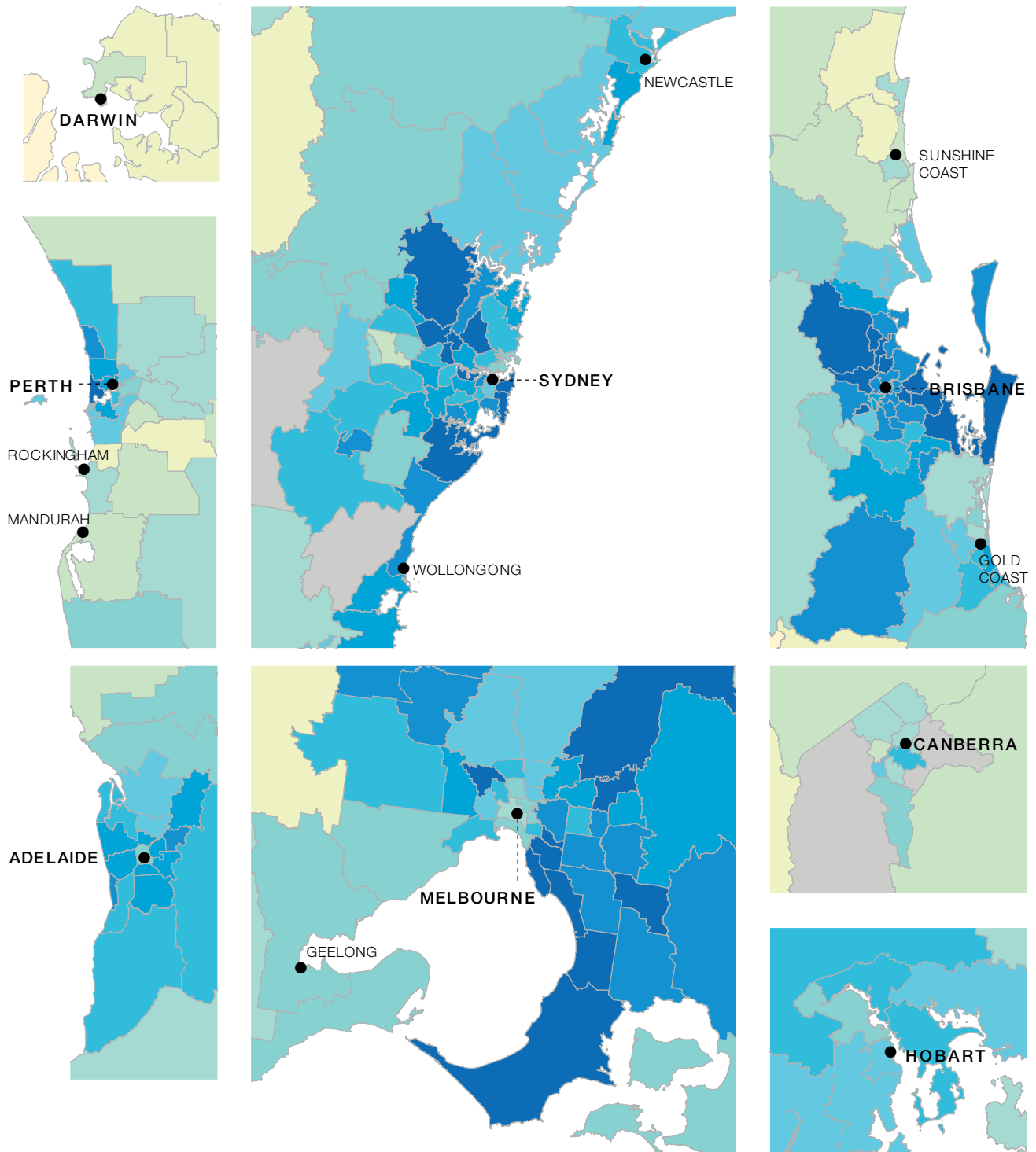
Notes:

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates across capital city areas

Figure 5.7: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

For further detail about the methods used, please refer to the Technical Supplement.

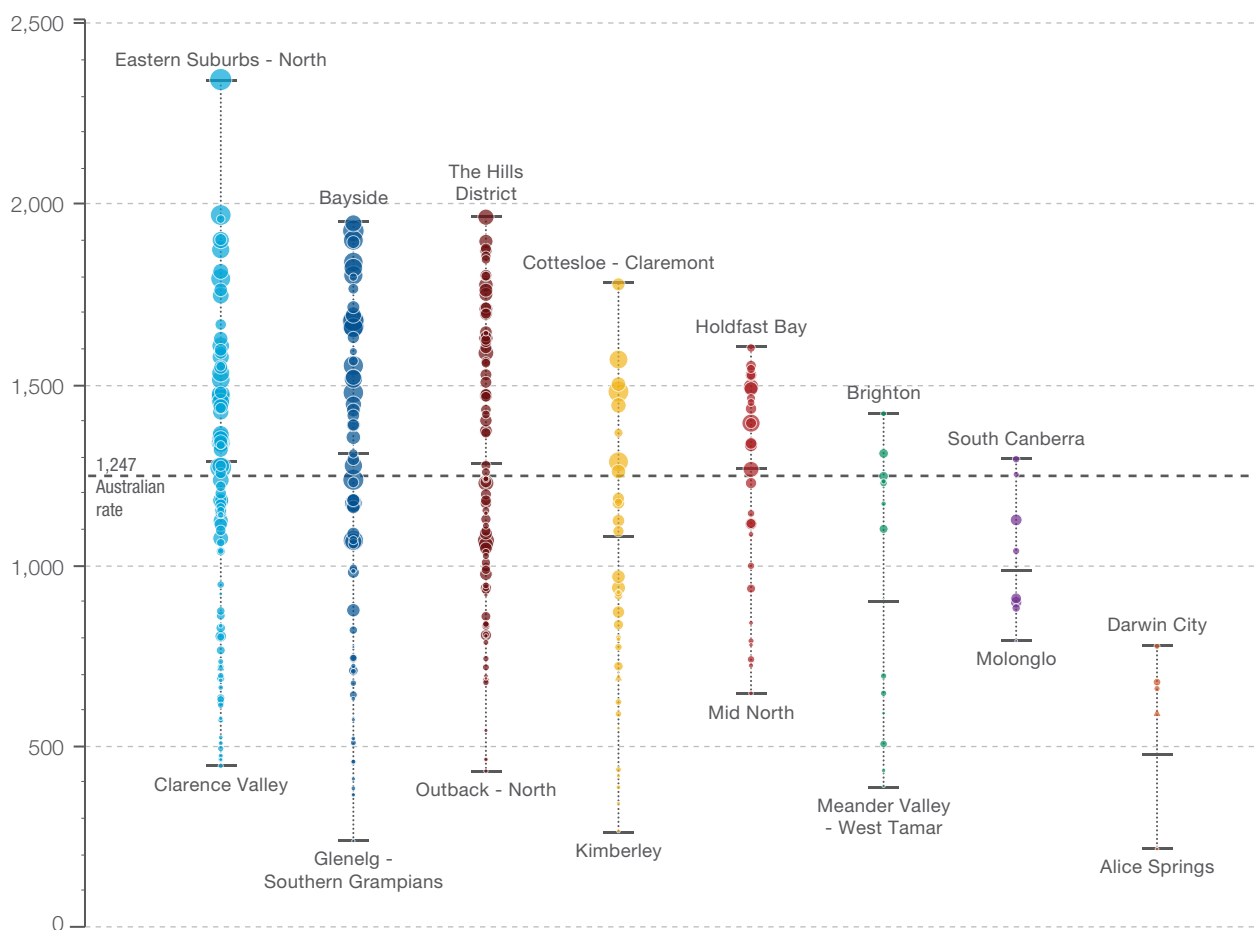
Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Gastrosocopy MBS services, 18–54 years

Rates by state and territory

Figure 5.8: Number of MBS-subsidised services for gastrosocopy per 100,000 people aged 18–54 years, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	2,348	1,950	1,967	1,781	1,605	1,423	1,297	779
State/territory	1,287	1,312	1,282	1,078	1,270	902	987	481
Lowest rate	448	240	434	268	649	393	794	218
Total services	50,349	42,576	31,703	14,143	10,549	2,198	2,167	641



Each circle represents a single SA3. The size indicates the number of services.

▲ rate only



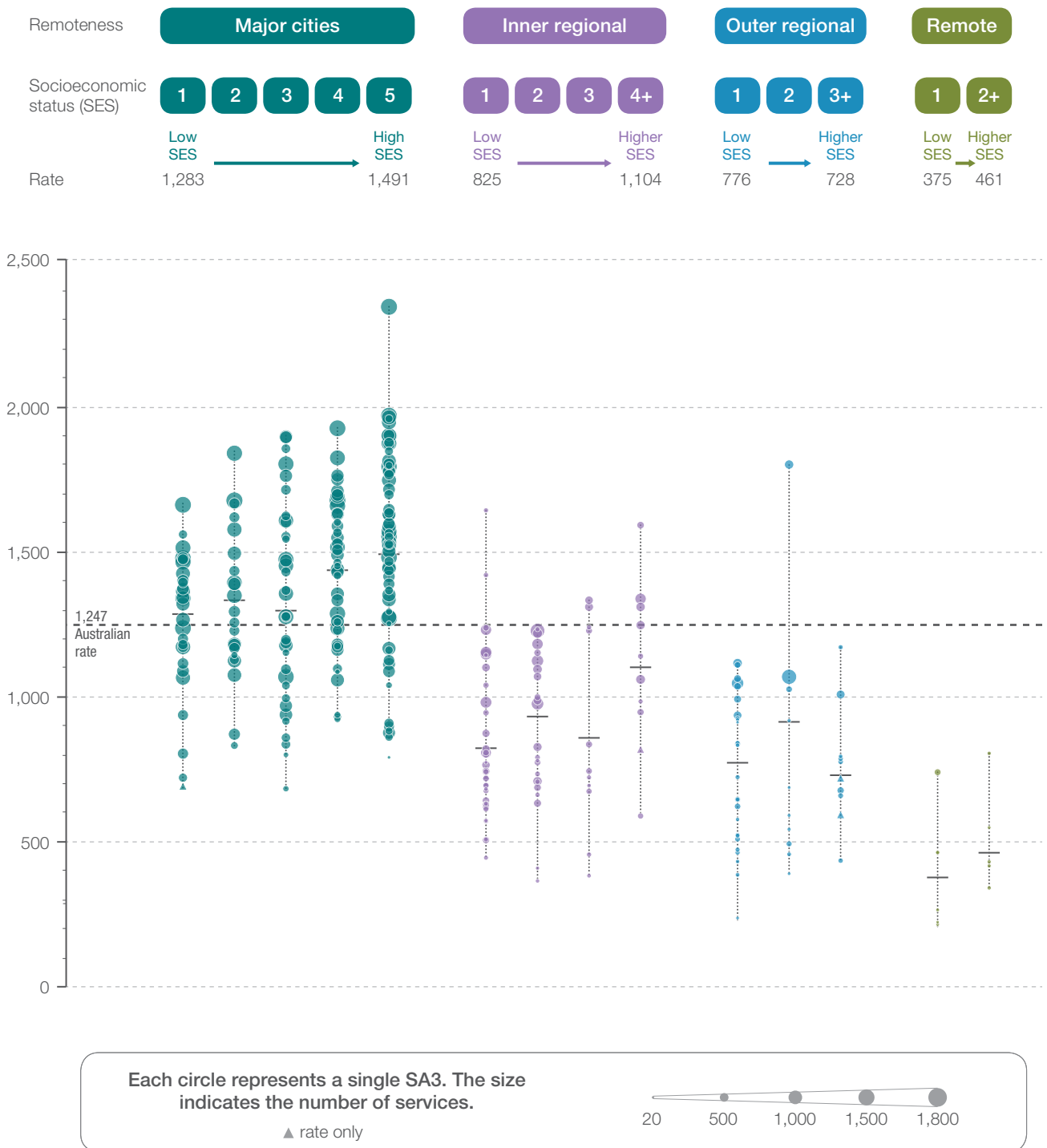
Notes:

Triangles (▲) indicate SA3s where only rates are published. The number of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates by remoteness and socioeconomic status

Figure 5.9: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Gastrosocopy MBS services, 18–54 years

Resources

- Australian Institute of Health and Welfare, Cancer summary data visualisations¹⁸, aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/cancer-summary-data-visualisation
- *Gastro-oesophageal Reflux Disease in Adults: Clinical update* (2011)²
- *Clinical Practice Guidelines for the Diagnosis and Management of Barrett's Oesophagus and Early Oesophageal Adenocarcinoma*¹⁶
- *Therapeutic Guidelines: Gastrointestinal*, version 6⁶
- *Gastro-oesophageal Reflux Disease and Dyspepsia in Adults: Investigation and management* (clinical guideline)³
- *Suspected Cancer: Recognition and referral – upper gastrointestinal tract cancers*⁴⁵
- Guidelines for the diagnosis and management of gastroesophageal reflux disease⁷
- The role of endoscopy in the management of GERD¹¹

Australian initiatives

The information in this chapter will complement work already underway to improve the use of gastroscopy in Australia. At a national level, this work includes:

- Royal Australasian College of Surgeons, Choosing Wisely recommendation 4: Do not use endoscopy for investigation in gastric band patients with symptoms of reflux⁴⁶
- A review of the impact of the changes made to the MBS items for gastroenterology services in response to the Medicare Benefits Schedule Review Taskforce.³⁵

Many state and territory initiatives are also in place to address access to gastroscopy, including:

- *Upper Gastrointestinal Endoscopy Categorisation Guidelines for Adults*, Victoria⁴¹
- *Endoscopy Action Plan*, Queensland⁴⁷
- Clinical prioritisation criteria: endoscopy⁴⁸ and Clinical prioritisation criteria: gastroenterology⁴³, Queensland
- *Referral Guidelines: Direct Access Gastrointestinal Endoscopic Procedures*, Western Australia⁴⁹
- *Urgency Categorisation and Access Policy for Public Direct Access Adult Gastrointestinal Endoscopy Services*, Western Australia⁴⁴
- Statewide endoscopy care network, which monitors and assesses the quality of endoscopy services, Tasmania.⁴²

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5.2 Repeat colonoscopy MBS services, all ages

Why is this important?

Colonoscopy is used to investigate bowel problems or symptoms. Repeat colonoscopy is mainly used to monitor for bowel cancer and its precursor, polyps (adenomas), in people with an increased risk of developing bowel cancer. Less commonly, colonoscopy is repeated to manage chronic inflammatory conditions of the bowel.

The first and third Atlases in the *Australian Atlas of Healthcare Variation* series found substantial variation in rates of colonoscopy according to where people live.^{1,2} Differences in adherence to surveillance guidelines were identified as a possible reason for the variation. Guideline recommendations on the timing of repeat colonoscopies are based on bowel cancer risk. There are limited reasons for repeating a colonoscopy after a period of less than three years.

The fourth Atlas examines rates of colonoscopy that are repeated within two years and 10 months of an earlier colonoscopy, using Medicare Benefits Schedule (MBS) data.

What did we find?

In 2018–19, there were almost 148,000 MBS-subsidised services for repeat colonoscopy performed within two years and 10 months in people of all ages.

The rate in the area with the highest rate was **19.9 times as high** as the rate in the area with the lowest rate. Rates were markedly higher in major cities than elsewhere. In major cities, rates increased with socioeconomic advantage.

What can be done?

More needs to be done to improve the consistent application of the national guidelines on bowel cancer screening and surveillance. A concerted focus by clinicians, medical colleges and health service organisations to drive implementation of the *Colonoscopy Clinical Care Standard* and national guidelines could reduce inappropriate requests for repeat colonoscopies and free up services for people at high risk of bowel cancer.^{3–5}

Structured referral forms could aid assessment of requests for repeat colonoscopies against guidelines. Health service organisations could ensure that re-credentialing requirements for clinicians performing colonoscopy include clinical audit against guidelines to promote high-quality colonoscopies.

Wider consumer awareness about the impact of lifestyle on cancer risk is needed. Educating people on ways they can reduce their risk of bowel cancer and improve their general health should be an integral part of surveillance. Integration of data about cancer incidence and lifestyle into healthcare pathways, training guidelines and consumer resources could help prompt discussion between clinicians and patients and may reduce inappropriate repeat colonoscopy.

Repeat colonoscopy MBS services, all ages

Context

This item examines rates of MBS-subsidised services for repeat colonoscopy performed within two years and 10 months of an earlier colonoscopy for people of all ages in Australia in 2018–19.

What is colonoscopy?

Colonoscopy is the examination of the large bowel (colon) using a small, flexible tube with a camera on the end, called a colonoscope. It can also include removal of polyps (adenomas) or other abnormal growths, and a biopsy. Polyps can be precursors of bowel cancer and are a marker of increased risk.

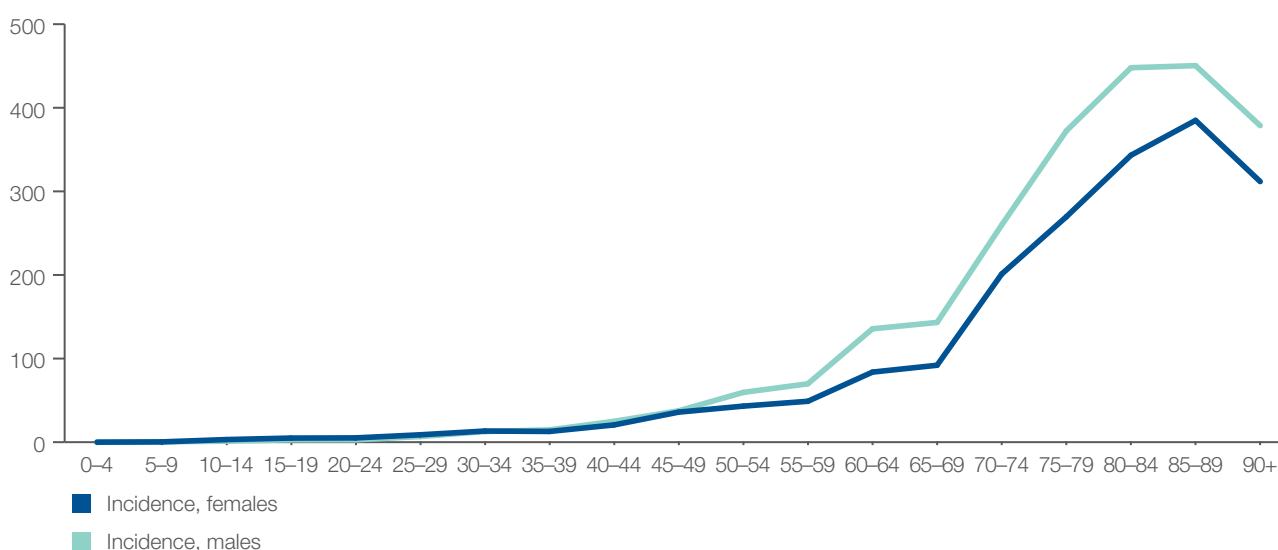
What is it used for?

Colonoscopy is used to investigate bowel problems or symptoms. It is also used to monitor for and detect polyps or bowel cancer (colorectal cancer) in people with no symptoms but with an increased risk, and to manage chronic conditions of the bowel, such as inflammatory bowel disease (IBD). Increased

risk of bowel cancer can be identified from a faecal occult blood test (FOBT) of a person's bowel motion (possibly done as part of the National Bowel Cancer Screening Program [NBCSP]), previous results of a colonoscopy, a family history of bowel cancer or a high-risk genetic condition.³ Bowel cancer is the fourth most commonly diagnosed cancer in Australia.^{6,7} After the age of 50, the incidence of bowel cancer steadily increases (Figure 5.10).⁴ About 55% of the bowel cancer burden in Australia can be attributed to lifestyle factors including diet (high in processed meat, red meat and sugar), physical inactivity, being overweight, smoking and alcohol use.⁷

While the age-standardised incidence of bowel cancer in Australia declined from 2001 to 2020* (from 66 to 51 cases per 100,000 people), the estimated number of people diagnosed with bowel cancer increased (from 12,806 to 15,494 people) because of the ageing population.⁸

Figure 5.10: Colorectal cancer rates (per 100,000 people), by sex and age group, 2020*



* 2020 incidence estimates are projections based on 2007–2016 incidence data.

Source: Australian Institute of Health and Welfare.⁸

When does a colonoscopy need to be repeated?

The most common reasons to repeat a colonoscopy are^{4,5}:

- Monitoring (surveillance) of the bowel after colorectal surgery or removal of polyps that can lead to bowel cancer
- Monitoring (surveillance) of chronic conditions of the bowel such as IBD
- Regular screening of people with a strong family history of bowel cancer, or a hereditary cancer syndrome that can lead to bowel cancer
- Removal (treatment) of previously identified polyps
- Onset of new signs or symptoms thought to be from the lining of the bowel
- Inadequate previous colonoscopy; for example, because of an incomplete colonoscopy or poor bowel preparation.

High-quality colonoscopy can detect about 95% of bowel cancers and polyps, but it is an invasive and costly procedure with a risk of complications.⁵ For this reason, colonoscopy for population screening is reserved for people with an increased risk of bowel cancer, if there is a higher chance of diagnosing significant disease.⁷ Similarly, recommendations for a repeat colonoscopy and its timing for greatest benefit are based on a person's risk of bowel cancer.

The national *Colonoscopy Clinical Care Standard* mandates that, if surveillance is required, colonoscopy is repeated at intervals consistent with evidence-based guidelines.³ Two Australian national guidelines address the need for and timing of repeat colonoscopy – one focuses on the use of colonoscopy in screening high-risk groups (that is, people with a family history of bowel cancer or a hereditary cancer syndrome), while the other focuses on the use of colonoscopy for surveillance.^{4,5}

If guidelines are followed, a small proportion of people who have an initial colonoscopy might be expected to need a repeat within three years. These would usually be people identified as having a high risk of bowel cancer or who have IBD. A poor-quality colonoscopy, or uncertainty about when a previous colonoscopy was performed, are also reasons a colonoscopy may be repeated within one or two years.^{4,5} However, the *Colonoscopy Clinical Care Standard* addresses the problem of uncertainty about the timing of a previous colonoscopy by stipulating that the results of colonoscopies are communicated to the person who had the procedure, the general practitioner (GP) and any other relevant clinicians involved in the person's care.³

Colonoscopy surveillance guidelines identify a person's risk of bowel cancer based on the results of their previous colonoscopy or colonoscopies.^{5,9} These guidelines apply to anyone who has had a colonoscopy, including participants in the NBCSP who had a colonoscopy because of a positive FOBT. The timing of the next colonoscopy, if needed, depends on the number, size and type of polyps removed.⁹ The greater the risk, the smaller the interval before repeating the procedure. People at potentially high risk will generally require a repeat colonoscopy every one to two years. Yearly colonoscopies are also recommended for high-risk people with IBD, and a repeat colonoscopy is also recommended within 12 months of bowel resection (surgery).⁵

A colonoscopy is also recommended every one to two years for people with, or at high risk of having, a hereditary cancer syndrome, such as Lynch syndrome, and may start at 25 years or younger for people with this syndrome.⁴

Repeat colonoscopies are also recommended for other groups, such as people with a strong family history and people otherwise at moderate risk of bowel cancer. However, for most people in these groups, the recommended intervals between colonoscopies are longer than that examined in this Atlas.^{4,5}

Repeat colonoscopy MBS services, all ages

Why examine repeat colonoscopy?

The first and third Atlases in the *Australian Atlas of Healthcare Variation* series examined MBS-subsidised services for colonoscopy and hospitalisations for colonoscopy, respectively.^{1,2} Although these Atlases used different datasets, each found substantial variations in colonoscopy rates according to where people live. They also found patterns of use that did not match the burden of disease. Outer regional areas and areas of socioeconomic disadvantage have the highest rates of bowel cancer incidence and mortality in Australia^{7,10}, yet both Atlases found the highest rates of colonoscopy in the most socioeconomically advantaged areas of major cities.

Clinical practice that is not supported by guidelines, such as repeating colonoscopies sooner than is recommended, was identified as a possible reason for the high rates of colonoscopy in some metropolitan areas. Differences in uptake of the NBCSP were also identified as a possible reason for the variation between major cities and other areas.^{1,2}

Little is known about the rate of repeat colonoscopies in Australia. This Atlas examines variation in rates of short-interval repeat colonoscopy using MBS-subsidised services performed in the same person in 2018–19. The interval of two years and 10 months was chosen to exclude services to people who present early for their three-yearly colonoscopy.

Data from this Atlas item should provide a baseline for evaluating changes to MBS items for colonoscopy introduced by the Australian Government in 2019, which included new item numbers with guideline-recommended surveillance intervals.¹¹ It should also be helpful for evaluating implementation of the *Colonoscopy Clinical Care Standard*, mandated in 2019, as part of the National Safety and Quality Health Service (NSQHS) Standards for the accreditation of all hospitals and day procedure services performing colonoscopy.^{3,12}

About the data

Data are sourced from the MBS dataset. This dataset includes information on MBS claims processed by Services Australia. It covers a wide range of services (attendances, procedures, tests) provided across primary care and hospital settings.

The dataset does not include:

- Services for publicly funded patients in hospital
- Services for patients in outpatient clinics of public hospitals
- Services covered under Department of Veterans' Affairs arrangements.

The dataset does not allow analysis by Aboriginal and Torres Strait Islander status.

Rates are based on the number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, in 2018–19.

Because a record is included for each service rather than for each patient, patients who receive the service more than once in the financial year will have more than one service counted.

In the patient count analysis, patient counts reflect the number of unique patients, regardless of the number of services the patient may have received in the year.

The analysis and maps are based on the patient's postcode recorded in their Medicare file and not the location of the service.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

What do the data show?

Magnitude of variation

In 2018–19, there were 147,875 MBS-subsidised services for repeat colonoscopy performed within two years and 10 months, representing 522 services per 100,000 people of all ages (the Australian rate).

The number of MBS-subsidised services for repeat colonoscopy across 324* local areas (Statistical Area Level 3 – SA3) ranged from 62 to 1,236 per 100,000 people. The rate was **19.9 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of MBS-subsidised services for repeat colonoscopy varied across states and territories, from 191 per 100,000 people in the Northern Territory to 596 in Queensland (Figures 5.13–5.16).

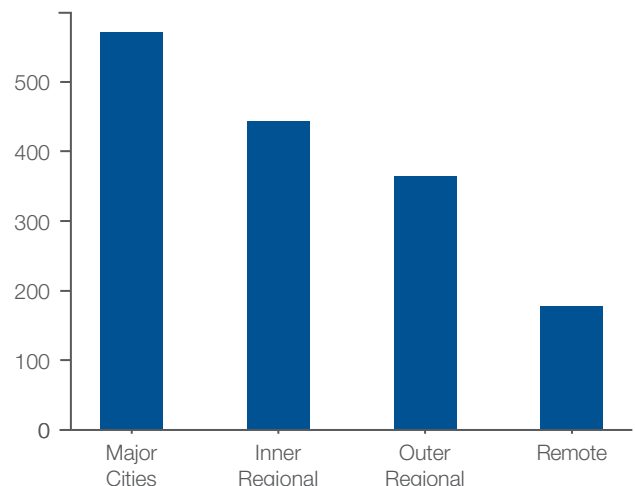
After the highest and lowest 10% of results were excluded and 260 SA3s remained, the number of MBS-subsidised services per 100,000 people was 2.7 times as high in the area with the highest rate compared with the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates for MBS-subsidised services for repeat colonoscopy were higher in major cities than elsewhere. The rate for major cities was 3.2 times as high as the rate for remote areas (Figures 5.11 and 5.17).

Rates increased with socioeconomic advantage in major cities and overall. The rate in the highest socioeconomic group was 1.6 times as high as the rate in the lowest (Figures 5.12 and 5.17).

Figure 5.11: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by remoteness of patient residence, 2018–19



The data for Figures 5.11 and 5.12 are available at safetyandquality.gov.au/atlas

* There are 340 SA3s. For this item, data were suppressed for 16 SA3s due to a small number of services and/or population in an area, or potential identification of individual patients, practitioners or business entities.

Notes:

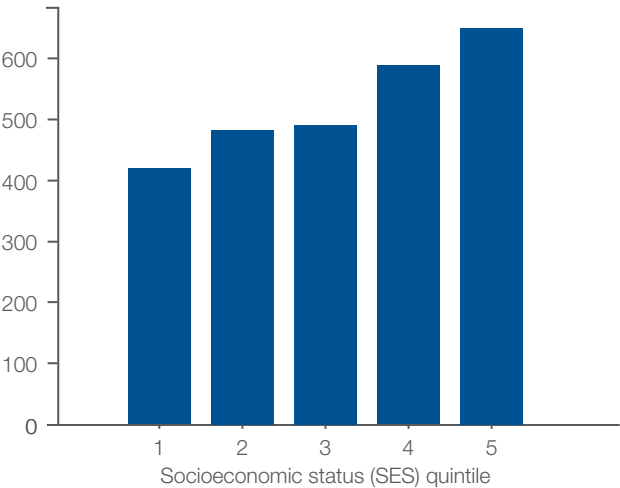
Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Figure 5.12: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by socioeconomic area of patient residence, 2018–19



Analysis by number of people who had at least one repeat colonoscopy

In 2018–19, there were 139,072 people who had at least one MBS-subsidised service for repeat colonoscopy, representing 491 people per 100,000 people of all ages.

Analysis by number of repeat colonoscopy services without polyp removal

In 2018–19, there were 71,464 MBS-subsidised services for repeat colonoscopy without polyp removal, representing 257 services per 100,000 people of all ages (the Australian rate). The percentage of MBS-subsidised services for repeat colonoscopy without polyp removal was 49%, and varied across states and territories, from 35% in the Australian Capital Territory to 55% in Victoria and the Northern Territory.

The data and graphs for analysis by number of people who had at least one repeat colonoscopy, analysis by number of repeat colonoscopy services without polyp removal, and analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

Notes:
Areas with a low SES (=1) have a high proportion of relatively disadvantaged people. Areas with a high SES (=5) have a low proportion of relatively disadvantaged people.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Interpretation

Variation is warranted when it reflects variation in underlying disease and need for care; however, the rates of repeat colonoscopy do not appear to match this pattern, nor do they match the epidemiology of disease. There was widespread variation in repeat colonoscopy use, with rates much higher in major cities compared with elsewhere. Rates were also lower in areas of socioeconomic disadvantage.

These findings are consistent with the findings in the first and third Atlases, which examined rates of MBS-subsidised colonoscopy, and public and private hospitalisations for colonoscopy, respectively.

Variation in rates of repeat colonoscopy is likely to be due to the geographical differences in the factors discussed below.

Variation between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. Patients may travel outside their local area to receive health care.

Clinical decision-making

High rates of early repeat colonoscopy may be related to clinical practice that is not supported by guidelines. Australian and international studies have found that one-third of colonoscopies are repeated at intervals sooner than the guidelines recommend, with some reporting this to be as high as half.¹³⁻¹⁸ Difficulties in keeping up to date with guidelines and differences in clinical opinion on management may also contribute.¹⁹

Fear of litigation for not investigating symptoms may also influence clinicians' decisions about when and how often to provide repeat colonoscopies for the same person, particularly if they are unaware of current recommendations, or of evidence about the incidence of gastrointestinal (GI) cancers and the risk of symptoms leading to significant disease. Concerns about late diagnosis and subsequent litigation, and a lack of disincentives for over-testing, may also contribute to overuse.¹⁹

Some colonoscopies may be repeated because the previous report was not easily accessible or did not contain the information required to guide clinical decision-making.

Quality of bowel preparation

High-quality bowel preparation is essential for a successful colonoscopy.⁵ In the United Kingdom, poor bowel preparation has been reported to account for up to 25% of failed colonoscopies.²⁰ Poor bowel preparation results in poor visualisation of the colon, and has been associated with up to 47% lower likelihood of detecting and removing polyps that can lead to the development of bowel cancer.²¹ For this reason, people who had a colonoscopy with poor bowel preparation require a repeat colonoscopy within a year.^{5,22} Poor bowel preparation also results in considerable inconvenience and waste. Australian guidelines recommend that successful bowel preparation should be achieved in at least 90% of colonoscopies.⁵

The training and experience of the colonoscopist may also contribute to variation. International studies report a three-to-six-fold difference in adenoma detection rate variability between colonoscopists.⁵

Consumer expectations

A person's understanding about their risk of bowel cancer and the rate of development of bowel cancer may drive anxiety and lead to more frequent surveillance. Anxiety about interval cancers – cancers that occur between routine surveillance – has been suggested as a reason for repeating colonoscopies at shorter intervals than guidelines currently recommend.²³ Lack of access to a GP, specialist or surgeon who is informed about the evidence to help allay a person's anxiety about their risk of developing cancer may also lead to inappropriate repeat colonoscopies.

Repeat colonoscopy MBS services, all ages

People often have incorrect perceptions of their cancer risk and the benefits of interventions such as screening and surveillance to detect GI cancer.^{24,25} These perceptions can influence their preference and demand for investigations, even when their risk of cancer is low.²⁶

Access to services and number of clinicians providing services

Access to clinicians may influence the likelihood of people seeking care and the rates of repeat colonoscopy. The practice styles of individual clinicians may be more likely to affect rates in areas with fewer clinicians, such as rural and regional locations, than in areas with more clinicians.

Availability and affordability of services may also influence patterns of use. Ability to pay out-of-pocket costs for services is likely to be lower in areas of socioeconomic disadvantage, and access is likely to be more difficult in areas with fewer services. Open-access endoscopy services, in which GPs are able to request colonoscopy without specialist review, may also influence patterns of use.

Financial incentives

Greater remuneration for providing a service rather than a consultation may lead to variation and over-servicing in some areas.

Promoting appropriate care

More must be done to improve the consistent application of the national guidelines on bowel cancer screening and surveillance. The Atlas shows a pattern of repeat colonoscopy use that is not consistent with the prevalence of disease, indicating possible overuse in some areas and underuse in others. Repeating the procedure in people who are unlikely to benefit puts them at risk of procedural harms and may reduce opportunities for people who are at high risk of bowel cancer and more in need of the procedure. It also results in inconvenience, cost and confusion to the individual and the health system.

A concerted focus by clinicians, medical societies and colleges, and health service organisations across Australia to implement the *Colonoscopy Clinical Care Standard*³ is needed to drive improvements in the appropriate use of colonoscopy, reduce inappropriate short-interval repeat colonoscopies and free up services for people at high risk of bowel cancer.

The *Colonoscopy Clinical Care Standard* aims to ensure colonoscopies are used appropriately and performed safely, and is mandated as part of the NSQHS Standards for the accreditation of hospitals and day procedure services performing colonoscopy in Australia.^{3,12} To improve the follow-up and reporting of a colonoscopy, it recommends that the clinician who performs the colonoscopy communicates in writing the reason for the colonoscopy, its findings, any histology results, and recommendations for management to the person having the procedure, the GP, and any other relevant clinicians, and documents this in the facility records. It recommends that, if surveillance colonoscopy is required, it must be consistent with the intervals in national evidence-based guidelines.

Health service organisations could improve the implementation of the *Colonoscopy Clinical Care Standard*³ by ensuring that credentialing requirements for clinicians performing colonoscopy include a clinical audit against the clinical care standard, and that they provide audit results to the hospital's clinical review meetings and re-credentialing committee. Resources for colonoscopists to support implementation include a colonoscopy report template and a template for follow-up letters to GPs and patients (see Resources).

The low rates of short-interval repeat colonoscopies in disadvantaged remote areas are concerning, because they suggest that people at high risk of bowel cancer could be missing out on appropriate surveillance. These low rates are consistent with participation rates reported in the NBCSP.⁷ Strategies to improve participation in the NBCSP and access to colonoscopy services for people living in remote areas are a priority.

Unwarranted variation in repeat colonoscopy could be addressed in the following ways.

Quality colonoscopy and clinical audit

Recertification of ongoing competency is now mandatory for all practitioners working in health service organisations that are assessed against the NSQHS Standards.¹² Only colonoscopists who meet the certification and recertification standards can perform colonoscopy independently in Australia. The quality indicator together with the standard for reporting should reduce the proportion of repeat colonoscopies performed because of uncertainty about the quality of another clinician's colonoscopy.

Clinical audit could be used more widely to support decision-making about repeat colonoscopies. Audits in this area could also be part of continuing education requirements for clinicians.

Structured referral forms and checklists outlining the appropriate reasons for, and frequency of, repeat colonoscopy for greatest benefit, as recommended in the *Colonoscopy Clinical Care Standard*³ and national guidelines, could aid assessment of requests that do not meet guideline-recommended intervals.

Clinician education

Educational programs for clinicians could improve the appropriateness of requests for repeat colonoscopies. Improving clinician familiarity with guidelines, with the evidence base for recommended surveillance intervals and with the consequences of overuse of colonoscopy could better equip them to manage requests for performing colonoscopy earlier than the guidelines recommend.

Consumer education and reassurance

Informing and reassuring people of their risk of developing bowel cancer, and that the rate of progression from polyp formation to bowel cancer is generally slow may reduce demand for more frequent surveillance. Improving a person's understanding about their cancer risk is important to reduce anxiety and dispel myths about cancer. Interactive tools that identify a person's cancer risk – such as the Australian Institute of Health and Welfare cancer summary data tool (see 'Resources' on page 282) – may aid understanding.⁸

Integration of data about cancer incidence and lifestyle into healthcare pathways and consumer resources could help prompt these discussions between consumers and clinicians.

Reducing risk factors

Wider consumer awareness about risk factors and the impact of lifestyle on bowel cancer risk is needed. Bowel cancer incidence could be significantly reduced with successful modification of the key population attributable risks – that is, addressing diet (21.8%), physical inactivity (16.5%), being overweight or obese (12.5%), smoking (7.4%) and alcohol use (5.5%).^{7*} Public health initiatives to address risk factors should be targeted to areas with a high prevalence of these.

Educating consumers on ways they can reduce their risk of bowel cancer and improve their general health should be an integral part of colonoscopy surveillance, and may reduce requests for colonoscopies to be performed sooner than the guidelines recommend.

* Attributable burden from multiple risk factors cannot be combined or added together due to the complex pathways and interactions between risk factors.

Repeat colonoscopy MBS services, all ages

Triage systems

Many states and territories are introducing evidence-based triage systems for prioritising and allocating people for gastroscopy and colonoscopy, with the aim of reducing variation in use of these procedures:

- Victorian health services require clinicians to refer people for colonoscopy according to the categorisation guidelines²⁷
- Tasmania has adopted the Victorian categorisation guidelines and formed a statewide endoscopy network to monitor the quality of its services²⁸
- New South Wales has developed categorisation guidelines to support the appropriate use of colonoscopy across all healthcare settings²⁹
- Queensland and Western Australia have introduced clinical prioritisation criteria for many clinical areas, including gastroenterology, to triage patients referred to public specialist outpatient services.³⁰⁻³²

Wider use of such systems could result in more appropriate prioritisation of colonoscopy, as well as gastroscopy.

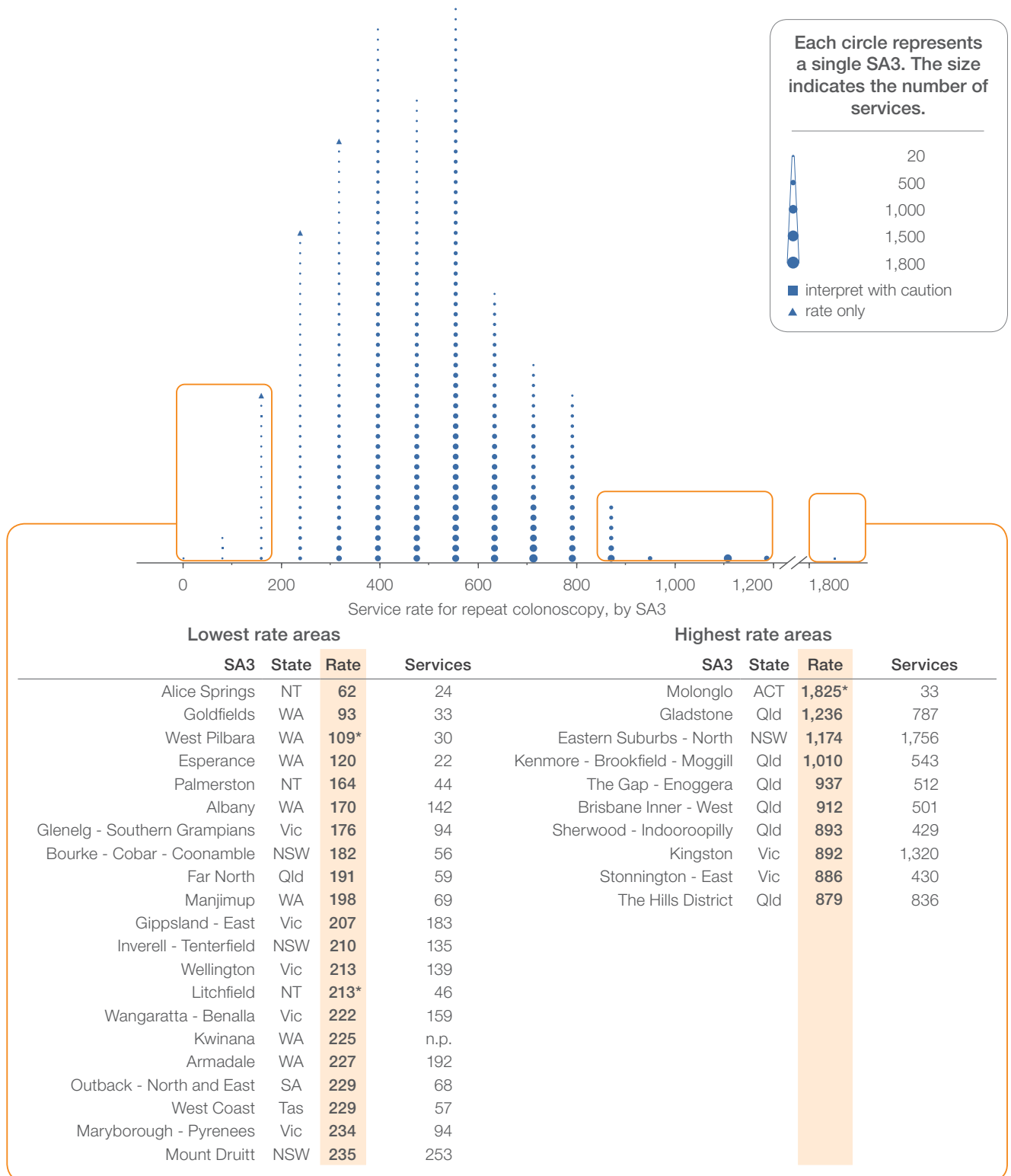
Promoting existing initiatives

As part of the Choosing Wisely Australia initiative, the Gastroenterological Society of Australia made the following recommendation in 2016, to promote the appropriate use of surveillance colonoscopy³³:

- Do not repeat colonoscopies more often than recommended by the National Health and Medical Research Council–endorsed guidelines.

Rates by local area

Figure 5.13: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution.

Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published (n.p.) for confidentiality reasons.

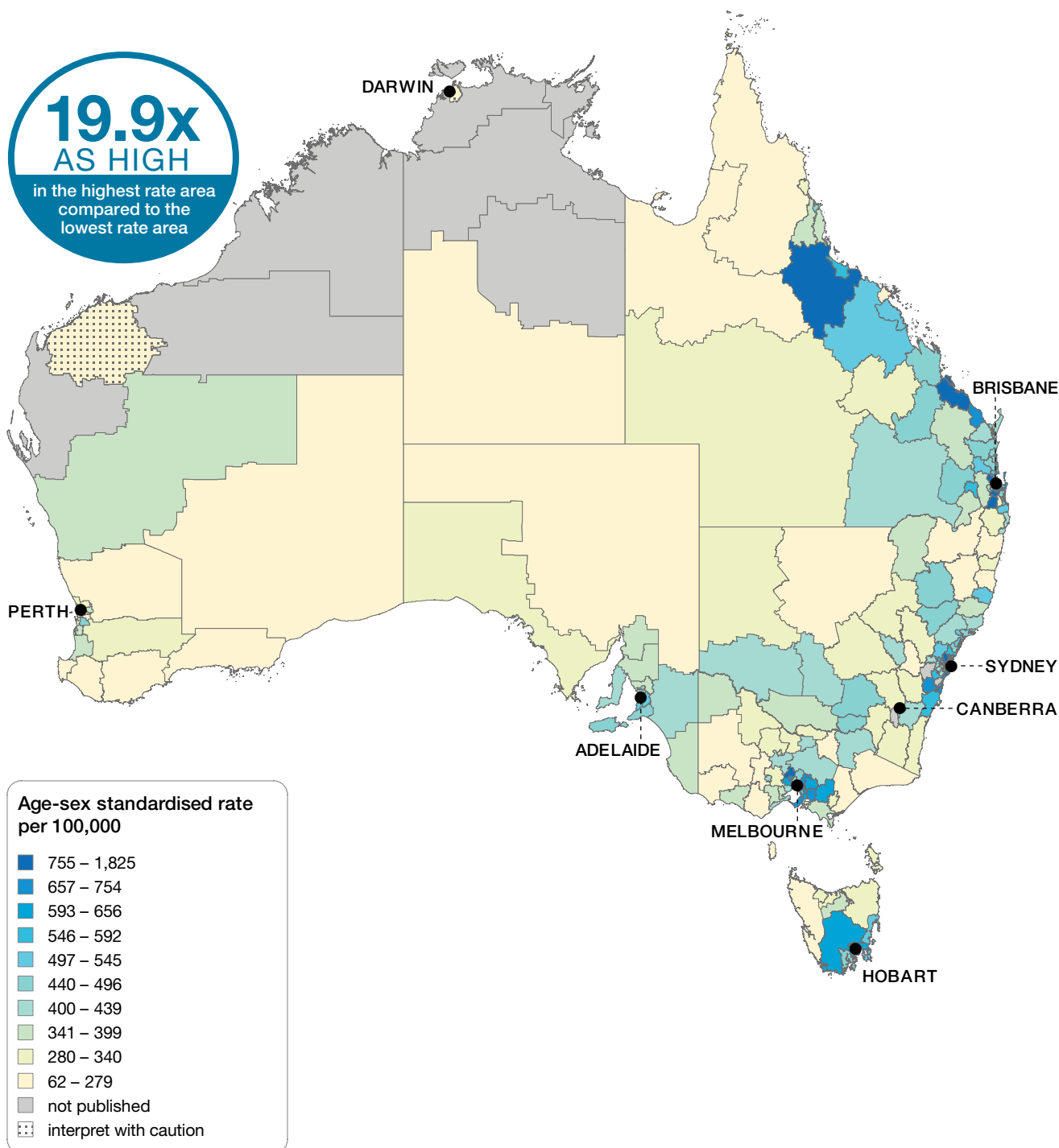
For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Rates across Australia

Figure 5.14: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



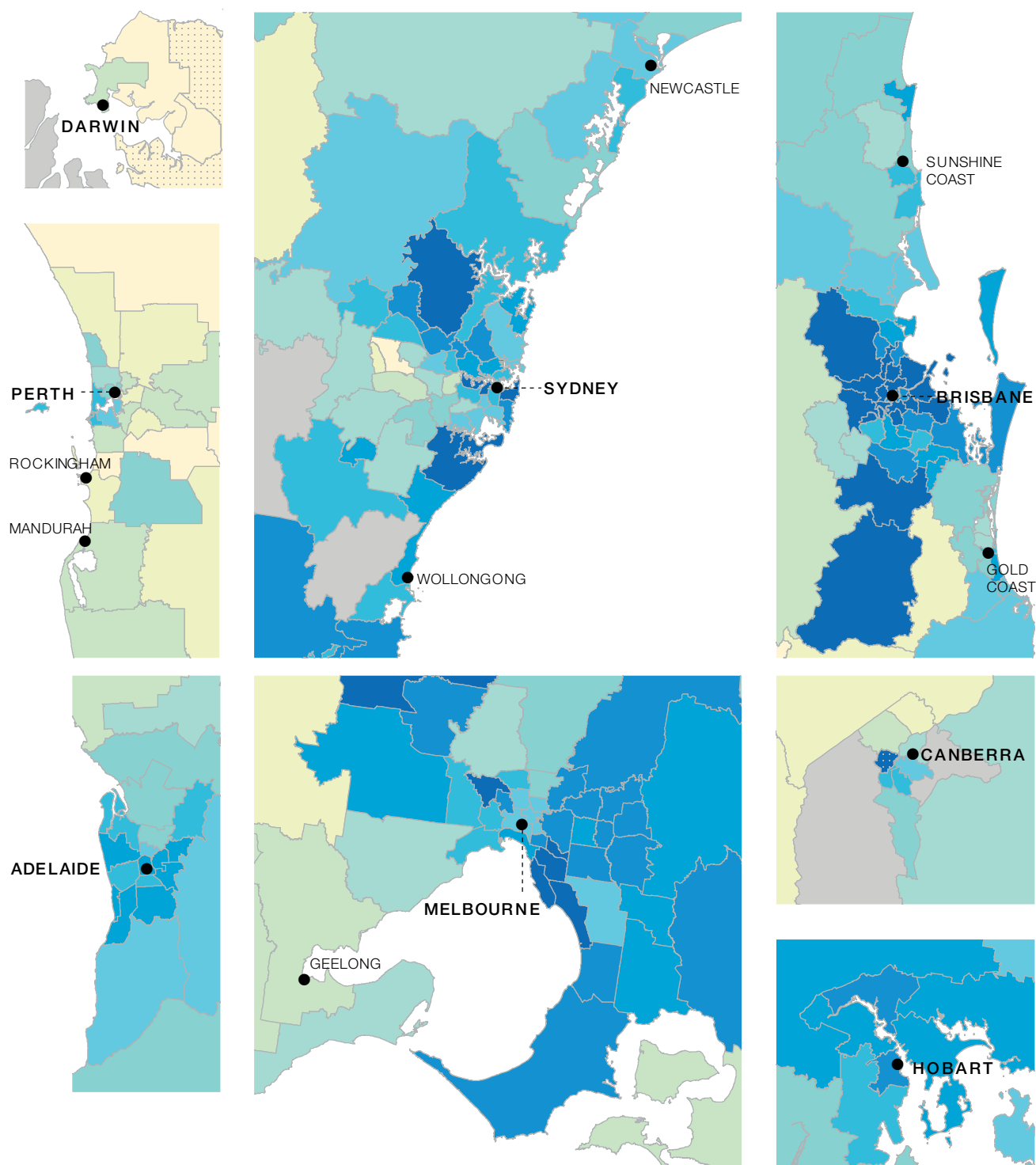
Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates across capital city areas

Figure 5.15: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. For further detail about the methods used, please refer to the Technical Supplement.

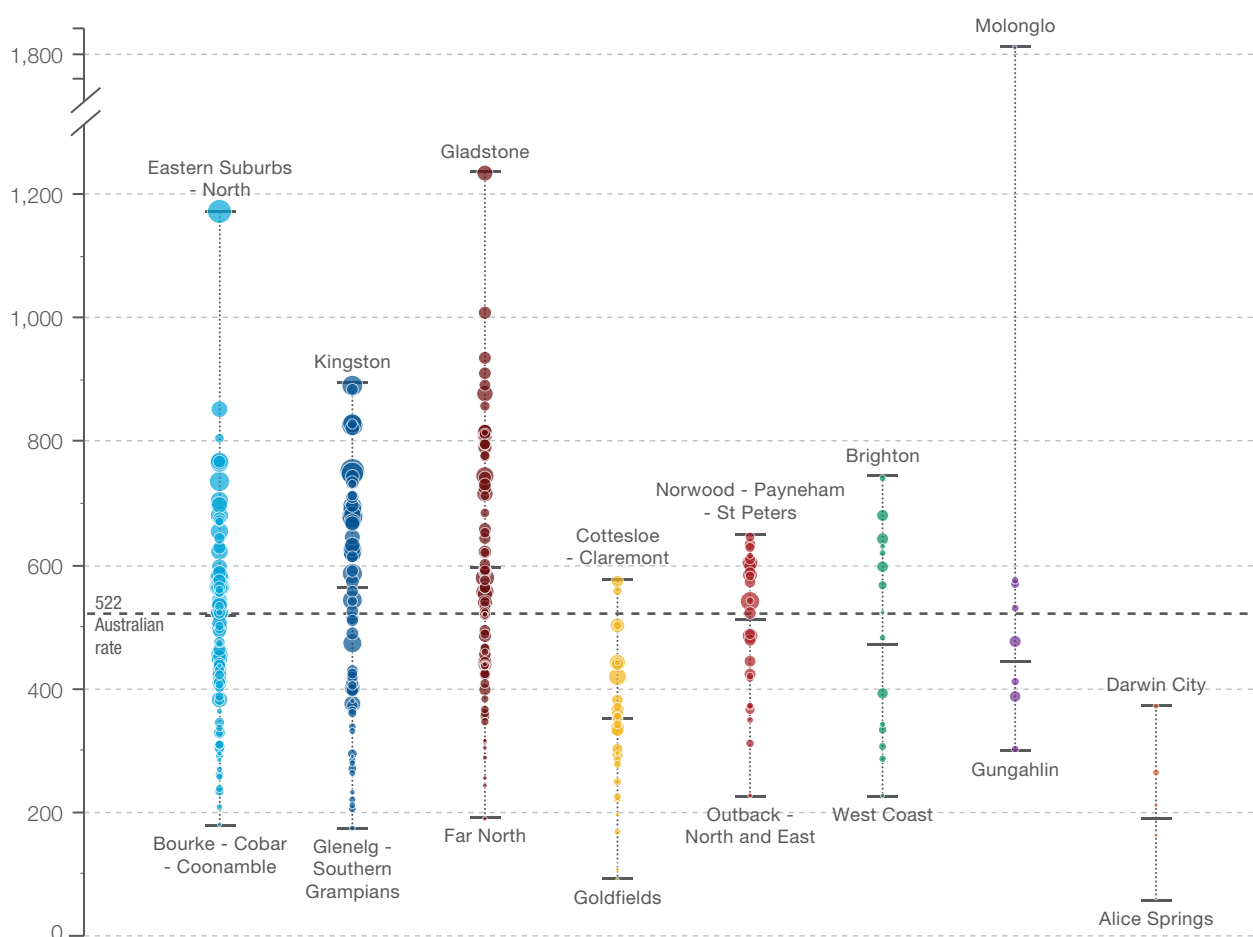
Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Rates by state and territory

Figure 5.16: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19

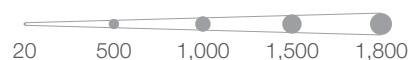
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	1,174	892	1,236	575	647	742	1,825*	373
State/territory	517	562	596	352	513	472	443	191
Lowest rate	182	176	191	93	229	229	304	62
Total services	47,257	40,377	33,629	9,977	11,002	3,331	1,884	391



Each circle represents a single SA3. The size indicates the number of services.

▲ rate only

■ interpret with caution



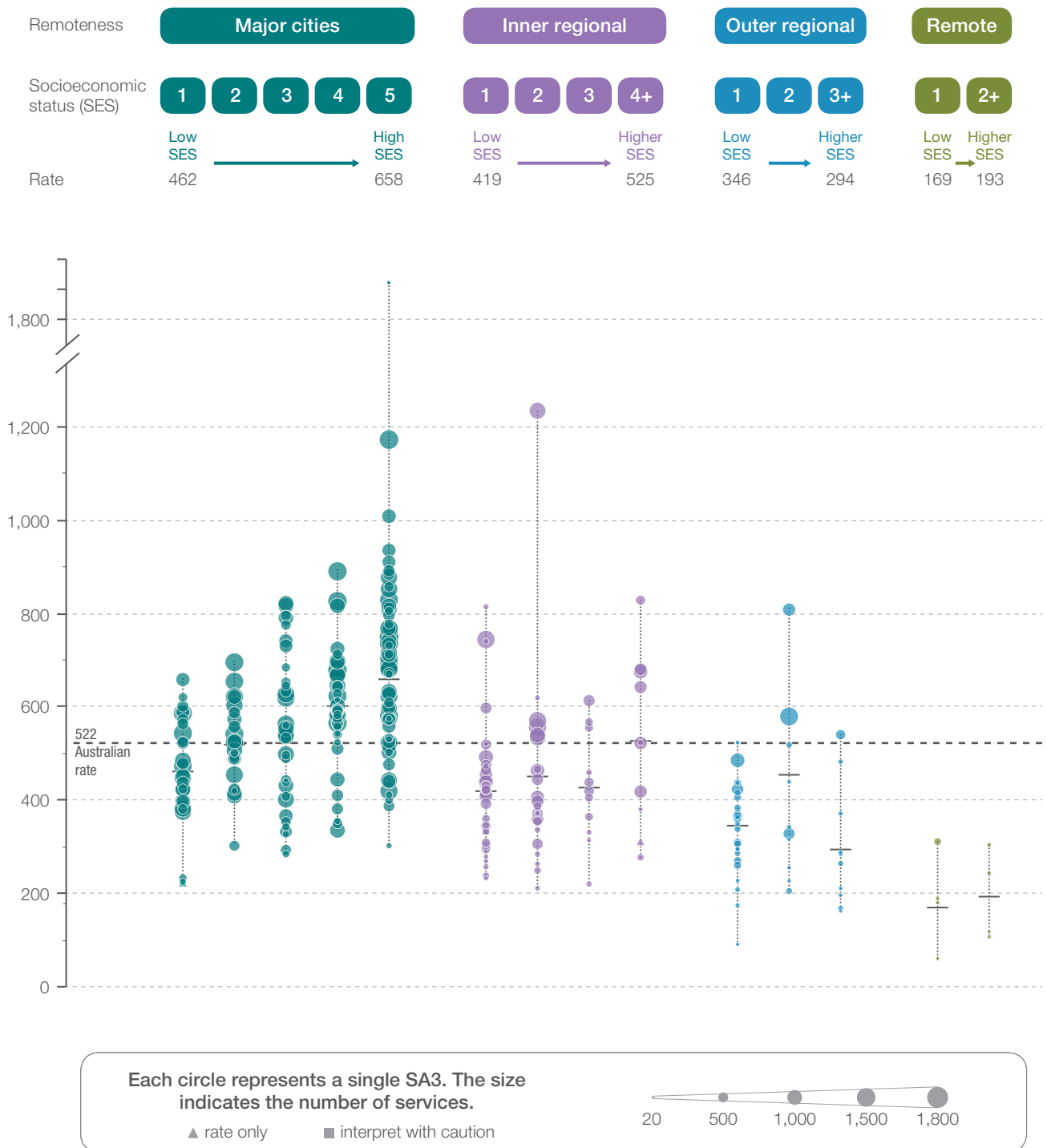
Notes:

Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates by remoteness and socioeconomic status

Figure 5.17: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Resources

- Australian Commission on Safety and Quality in Health Care, *Colonoscopy Clinical Care Standard*³
- Cancer Council Australia, *Clinical Practice Guidelines for the Prevention, Early Detection and Management of Colorectal Cancer*⁴
- Cancer Council Australia, *Clinical Practice Guidelines for Surveillance Colonoscopy*⁵
- Australian Institute of Health and Welfare, Cancer summary data visualisations⁸, aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/cancer-summary-data-visualisation

Australian initiatives

Information in this chapter will complement work already underway to prevent inappropriate repeat colonoscopy in Australia. At a national level, this work includes:

- Australian Commission on Safety and Quality in Health Care, *Colonoscopy Clinical Care Standard*³
- Gastroenterological Society of Australia, Choosing Wisely recommendation 1: Do not repeat colonoscopies more often than recommended by the National Health and Medical Research Council–endorsed guidelines.³³

Many state and territory initiatives also aim to improve colonoscopy use, including:

- Clinical Priority Category: Colonoscopy²⁹, Agency for Clinical Innovation, New South Wales
- *Colonoscopy Categorisation Guidelines*, Victoria³⁴
- *Endoscopy Action Plan*, Queensland³⁵
- Clinical prioritisation criteria: endoscopy³⁶ and Clinical prioritisation criteria: gastroenterology³⁰, Queensland
- *Referral Guidelines: Direct access gastrointestinal endoscopic procedures*, Western Australia³¹
- *Urgency Categorisation and Access Policy for Public Direct Access Adult Gastrointestinal Endoscopy Services*, Western Australia³²
- Statewide endoscopy care network, which monitors and assesses the quality of endoscopy services, Tasmania.²⁸

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Repeat colonoscopy MBS services, all ages

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5.3 Repeat gastroscopy MBS services, all ages

Why is this important?

Gastroscopy is used to investigate or treat conditions affecting the upper gastrointestinal (GI) tract. It can also be used to monitor conditions affecting the upper GI tract that lead to cancer in certain high-risk groups.¹

Differences in use of gastroscopy for monitoring were identified as a possible reason for the substantial variation seen in hospitalisations for gastroscopy reported in the *Third Australian Atlas of Healthcare Variation*.² There are very few clinical reasons for repeating a gastroscopy after a period of less than three years. Guidelines recommend repeating gastroscopy at three to five years to monitor for signs of cancer for most people with Barrett's oesophagus, the most common condition that may require surveillance.³

The fourth Atlas examines rates of gastroscopy that are repeated within two years and 10 months of an earlier gastroscopy, using Medicare Benefits Schedule (MBS) data.

What did we find?

In 2018–19, there were almost 88,000 MBS-subsidised services for repeat gastroscopy performed within two years and 10 months in people of all ages.

The rate in the area with the highest rate was **14.9 times as high** as the rate in the area with the lowest rate. Rates were markedly higher in major cities than elsewhere. Rates increased with socioeconomic advantage everywhere apart from outer regional areas.

What can be done?

Development and application of national guidance on the appropriate use of gastroscopy are priorities. The guidelines should include guidance on when it is appropriate to repeat the procedure.

Integration of data about cancer incidence and lifestyle into healthcare pathways and resources could promote discussion between clinicians and patients about the low risk of upper GI cancer for most people and reduce inappropriate requests for the procedure.

Better ways to identify people at high risk of progression to upper GI cancers are needed to improve rates of cancer detection and minimise low-value care. Educating people about the lifestyle measures that can be taken to reduce upper GI cancer risk could also reduce inappropriate repeat gastroscopy.

Repeat gastroscopy MBS services, all ages

Context

This item examines rates of MBS-subsidised services for repeat gastroscopy performed within two years and 10 months of an earlier gastroscopy for people of all ages in Australia in 2018–19.

What is gastroscopy?

Gastroscopy, also known as an upper GI endoscopy, is the examination of the upper part of the GI tract, using a small, flexible tube with a camera on the end, called an endoscope.⁴ It can also include a biopsy, if needed. The procedure requires an empty stomach for a safe and accurate examination. It is usually quick to perform, taking up to about 15 minutes.^{1,4}

When does a gastroscopy need to be repeated?

Gastroscopy is used to investigate, treat or monitor certain upper GI symptoms or diseases.

The most common reasons to repeat a gastroscopy are¹:

- Monitoring (surveillance) of conditions that can increase the risk of upper GI cancer or bleeding in high-risk groups – for example, Barrett's oesophagus, gastrointestinal metaplasia (GIM) and oesophageal varices
- Investigation of new signs and symptoms, such as bleeding
- Confirmation that a stomach ulcer is healing.

Gastroscopy may be repeated within one to two years of a previous gastroscopy in people with coeliac disease to monitor response to treatment with a gluten-free diet, although there is uncertainty about its benefit.^{5–8}

A repeat gastroscopy is also recommended to treat upper GI conditions detected in an earlier gastroscopy, such as bleeding, some upper GI cancers, or a narrowed oesophagus (oesophageal stricture) that may be causing difficulty swallowing. However, gastroscopies repeated for treatment (therapeutic gastroscopy) are not included in this data item.

A small proportion of people who have a gastroscopy require a repeat within three years. Many people who have a gastroscopy do not need a further one because they have a negative result or a further investigation is of no benefit.⁹ A minority of people may require a repeat gastroscopy for surveillance of an upper GI condition or for the reasons noted above. However, of these, only a small number are likely to need one within three years if guidelines are followed.

Barrett's oesophagus is a chronic upper GI condition in which the cells change in the lining of the oesophagus. It requires monitoring with gastroscopy because it can lead to oesophageal cancer in some people. It affects about 5% of the general population.¹⁰ Barrett's oesophagus is more common in men, people aged 55 years and over, and people with chronic uncontrolled gastro-oesophageal reflux disease (GORD).^{10–12}

Guidelines recommend that people with Barrett's oesophagus undergo repeat gastroscopy every three to five years, with more frequent surveillance if risk factors are present.^{3,11,13,14} Although this is recommended practice, there is uncertainty about the effectiveness and value of gastroscopic surveillance for people at low risk of developing cancer. The evidence base for surveillance is weak, except in high-risk groups.^{15–17}

Although people with Barrett's oesophagus have up to 50 times the risk of developing oesophageal cancer of the general population, the absolute risk of progression to cancer in most people is very low.^{3,12} Population-based studies estimate that the incidence of oesophageal cancer for people with Barrett's oesophagus is 0.22% per year.¹⁸ People with Barrett's oesophagus are more likely to succumb to other conditions, such as coronary artery disease, before developing oesophageal cancer.¹⁹ As well, the vast majority of people who develop oesophageal cancer have no previous diagnosis of Barrett's oesophagus.³ For these reasons, the anxiety associated with surveillance may outweigh the chance of detecting cancer for people with Barrett's oesophagus who are at low risk of developing upper GI cancer, and so they may choose not to participate in gastroscopic surveillance.^{11,20,21}

Similarly, in people with GIM – a condition that can lead to stomach cancer – the annual risk of progression to cancer is very low, with a Dutch study reporting estimates of 0.25% per year.²² United Kingdom guidelines suggest surveillance with gastroscopy every three years²³, whereas United States guidelines promote participation in shared decision making instead.²⁴

Use of gastroscopy for population-based screening for upper GI cancer is not recommended because of the low chance of diagnosing serious disease.

Why examine repeat gastroscopy?

The Gastroenterology Clinical Committee of the Medicare Benefits Schedule Review Taskforce reviewed numbers of repeat gastroscopies per patient.²⁵ It noted that more than 40% of people who had a gastroscopy between 2008–09 and 2014–15 had a repeat gastroscopy within three to five years. The number of repeat gastroscopies ranged from two to 51 per patient. The rates were higher than expected, given the taskforce's estimation of rates of recurrent bleeding.²⁵

The *Third Australian Atlas of Healthcare Variation* examined rates of hospitalisation for gastroscopy and found that the rate in the area with the highest rate was 7.4 times as high as the rate in the area with the lowest rate.² Rates were higher in major cities and inner regional areas than elsewhere, and generally lower in areas with more socioeconomic disadvantage. Patterns of gastroscopy use did not reflect the prevalence of risk factors for, or burden of, upper GI cancer in Australia. Differences in clinical opinion on the value of gastroscopy for surveillance of people with Barrett's oesophagus and other upper GI conditions were identified as a possible reason for variation.²

This Atlas examines variation in rates of MBS-subsidised short-interval repeat gastroscopy services performed in the same person. The interval of two years and 10 months was chosen to exclude services to people who present early for their three-yearly gastroscopy for surveillance of Barrett's oesophagus or other conditions such as GIM.

About the data

Data are sourced from the MBS dataset. This dataset includes information on MBS claims processed by Services Australia. It covers a wide range of services (attendances, procedures, tests) provided across primary care and hospital settings.

The dataset does not include:

- Services for publicly funded patients in hospital
- Services for patients in outpatient clinics of public hospitals
- Services covered under Department of Veterans' Affairs arrangements.

The dataset does not allow analysis by Aboriginal or Torres Strait Islander status.

Rates are based on the number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, in 2018–19.

Because a record is included for each service rather than for each patient, patients who received the service more than once in the financial year will be counted more than once.

In the patient count analysis, patient counts reflect the number of unique patients, regardless of the number of services the patient may have received in the year.

The analysis and maps are based on the patient's postcode recorded in their Medicare file and not the location of the service.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Repeat gastroscopy MBS services, all ages

What do the data show?

Magnitude of variation

In 2018–19, there were 87,933 MBS-subsidised services for repeat gastroscopy performed within two years and 10 months, representing 314 services per 100,000 people of all ages (the Australian rate).

The number of MBS-subsidised services for repeat gastroscopy across 321* local areas (Statistical Area Level 3 – SA3) ranged from 61 to 908 per 100,000 people. The rate was **14.9 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of MBS-subsidised services for repeat gastroscopy varied across states and territories, from 114 per 100,000 people in the Northern Territory to 353 in Queensland (Figures 5.20–5.23).

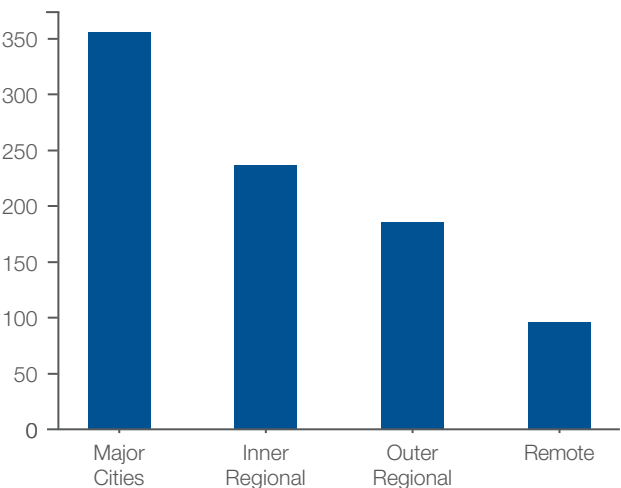
After the highest and lowest 10% of results were excluded and 257 SA3s remained, the number of MBS-subsidised services per 100,000 people was 3.1 times as high in the area with the highest rate compared with the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates for MBS-subsidised services for repeat gastroscopy were markedly higher in major cities than elsewhere. The rate for major cities was 3.7 times as high as the rate for remote areas (Figures 5.18 and 5.24).

Rates decreased with socioeconomic disadvantage in major cities, and inner regional and remote areas. Overall, the rate in the highest socioeconomic group was 1.6 times as high as the rate in the lowest (Figures 5.19 and 5.24).

Figure 5.18: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by remoteness of patient residence, 2018–19



The data for Figures 5.18 and 5.19 are available at safetyandquality.gov.au/atlas

* There are 340 SA3s. For this item, data were suppressed for 19 SA3s due to a small number of services and/or population in an area, or potential identification of individual patients, practitioners or business entities.

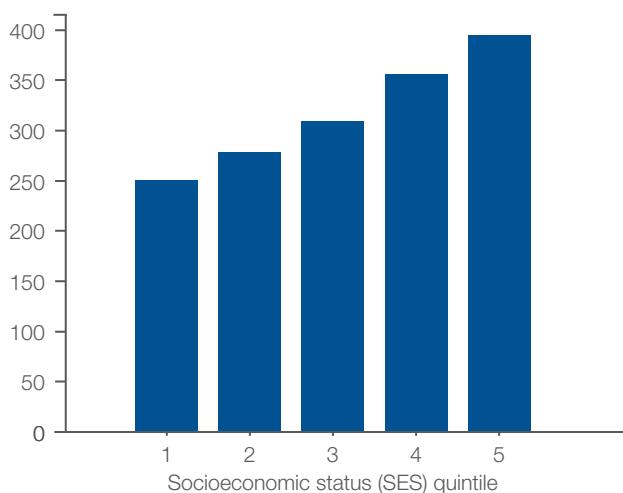
Notes:

Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Figure 5.19: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by socioeconomic area of patient residence, 2018–19



Analysis by number of people who had at least one repeat gastroscopy

In 2018–19, there were 81,893 people who had at least one repeat MBS-subsidised service for gastroscopy, representing 292 people per 100,000 people of all ages.

The data and graphs for analysis by number of people who had at least one repeat gastroscopy, and for analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

Interpretation

There is wide variation in repeat gastroscopy use. Rates were higher in major cities and in areas with socioeconomic advantage than elsewhere.

These findings are consistent with those in the third Atlas, which examined hospitalisations for gastroscopy.

Variation in rates of repeat gastroscopy is likely to be due to geographical differences in the factors discussed below.

Variation between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. People may travel outside their local area to receive health care.

Clinical decision-making

Variation in adherence with available clinical guidelines may influence rates of repeat gastroscopy.

A high proportion of repeat gastroscopies are performed earlier than intervals recommended in guidelines.^{26–28} According to a 2012 multi-centre study in the United States of people with Barrett’s oesophagus at low risk of progression to oesophageal cancer, 65% were recommended a repeat gastroscopy earlier than the recommended three to five year interval, resulting in a mean of 2.3 excess endoscopies per person.²⁶ A more recent study conducted in 2019, also in the United States, found that 30% of people had a repeat gastroscopy too soon.²⁸ A United States retrospective analysis of data from a registry of patients with Barrett’s oesophagus reported that less than 16% of people had gastroscopy repeated at the interval recommended by guidelines.²⁷

Notes:

Areas with a low SES (=1) have a high proportion of relatively disadvantaged people. Areas with a high SES (=5) have a low proportion of relatively disadvantaged people.

For further details about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat gastroscopy MBS services, all ages

Differences in clinical opinion on management where the evidence is unclear may contribute to variation. For example, although surveillance is recommended for people with Barrett's oesophagus, whether it is beneficial is unclear, particularly in low-risk groups.¹⁵⁻¹⁷ A multi-centre randomised controlled trial is currently examining the impact of two-yearly surveillance on outcomes such as overall survival, cancer-specific survival, and stage of oesophageal cancer at diagnosis in people with Barrett's oesophagus in low-risk groups. The results will help determine who may benefit most from surveillance.²⁹

Difficulties in keeping up to date with evidence may also influence rates.³⁰

Fear of litigation for not investigating symptoms may influence clinicians' decisions about when and how frequently to repeat a gastroscopy for the same person, particularly if they are unaware of current recommendations, or evidence about the incidence of upper GI cancers or risk of progression to significant disease. The risk of GORD progressing to Barrett's oesophagus is low, as is the risk of Barrett's oesophagus progressing to oesophageal cancer.³

Concerns about late diagnosis and subsequent litigation, as well as few disincentives for over-testing, may also contribute to overuse.³⁰

Consumer expectations

Consumer expectations, perception of cancer risk, and anxiety about developing oesophageal cancer have been highlighted as potentially driving overuse of gastroscopic surveillance.^{31,32}

People often have incorrect beliefs about their cancer risk; for example, people with Barrett's oesophagus often greatly overestimate their risk of developing oesophageal cancer.^{31,33,34} This can influence their perception about the benefits of interventions such as surveillance to detect upper GI cancer, and their preference and demand for investigations, even when their risk of cancer is low.¹¹

Access to services and number of clinicians providing services

Access to clinicians may influence the likelihood of people seeking care and the rates of repeat gastroscopy. The practice styles of individual clinicians may be more likely to affect rates in areas with fewer clinicians, such as rural and regional locations, than in areas with more clinicians.

Availability and affordability of services may also influence patterns of use. Ability to pay out-of-pocket costs for gastroscopy is likely to be lower in areas of socioeconomic disadvantage, and access is likely to be more difficult in areas with fewer services. Open-access endoscopy services, where general practitioners are able to request gastroscopy without specialist review, may also influence patterns of use.

Financial incentives

Greater remuneration for providing a service rather than consultation may lead to variation and over-servicing in some areas.

Promoting appropriate care

Inappropriate use of gastroscopy for monitoring, such as frequent use in people with very low risk of upper GI cancer, contributes to low-value care and can reduce access to the procedure for people who are most in need. Adherence to the recommended intervals for repeating a gastroscopy ensures that the benefits of the procedure outweigh the risk of procedural harms and costs to individuals.

Unwarranted variation in repeat gastroscopy could be addressed in the following ways:

Guideline and resource development

Development of national guidance to support appropriate use of gastroscopy services is a priority. These should incorporate the current guidelines on the diagnosis and management (including surveillance) of Barrett's oesophagus.³ This is consistent with recommendations made by the

Medicare Benefits Schedule Review Taskforce in 2015 to develop guidelines that cover when a repeat gastroscopy is clinically appropriate.²⁵ The guidelines could be used to assess appropriateness of referrals and for clinical audit of clinicians' practices.

Integration of data on cancer incidence and lifestyle into healthcare pathways, training guidelines, and specialist and consumer resources could also support appropriate use of repeat gastroscopy.

Consumer education and reassurance

Informing people about the role of gastroscopy, and reassuring them that their risk of developing upper GI cancer is very low may reduce demand for gastroscopy or repeating gastroscopy earlier than guidelines recommend. Interactive tools that identify a person's cancer risk – such as the Australian Institute of Health and Welfare cancer summary data tool (see 'Resources' on page 298) – may help clinicians when having conversations with their patients about the risk of upper GI cancer.³⁵

Reducing risk factors

Improved consumer awareness of risk factors for GORD and upper GI cancers, and of making lifestyle changes to reduce risk factors, should be the focus for people presenting earlier than the recommended intervals for gastroscopic surveillance. Improving a person's understanding about their cancer risk – particularly in people without additional risk factors for upper GI cancer – is important to reduce anxiety and dispel myths about cancer.³³

Public health initiatives that address risk factors for GORD and upper GI cancer – such as smoking, obesity, excessive alcohol consumption, sedentary lifestyle or uncontrolled symptoms of GORD – should be targeted to areas with a high prevalence of these risk factors before repeating gastroscopy earlier than guidelines recommend.³³ For example, smoking cessation reduces the risk of upper GI cancers – people with Barrett's oesophagus who smoke are twice as likely to progress to oesophageal cancer as people who do not.^{12,36}

Clinical audit and clinician education

Clinical audit is a tool that could be used more widely to support appropriate use of repeat gastroscopy for monitoring upper GI tract cancer.

Guidelines are available outlining which people are most at risk of developing upper GI cancer and how frequently gastroscopic surveillance should be performed. Clinical audit against these guidelines could help determine the value of surveillance and whether it can be stopped, particularly in people at low risk, to achieve more effective use of healthcare resources. Audits in this area could also form part of continuing education requirements for clinicians.

Structured referral forms and checklists outlining appropriate reasons and frequency of repeat gastroscopy for greatest benefit could support appropriate requests. Using guidelines to assess the appropriateness of requests against recommended surveillance intervals could also improve use of healthcare resources.

Educational programs for clinicians could improve the appropriateness of requests for repeat procedures. Education could cover the:

- Conditions that require gastroscopic surveillance, and the timing of surveillance for greatest benefit
- Low prevalence of conditions that require gastroscopic surveillance, such as Barrett's oesophagus, and the low risk of progression to significant disease unless other risk factors are present
- Low likelihood that repeating gastroscopy earlier than guidelines recommend will diagnose significant upper GI disease for most people.

Repeat gastroscopy MBS services, all ages

Appropriate prioritisation of services

Health service organisations need to examine the volume of gastroscopies that may be tying up resources needed to perform colonoscopies. People who need a colonoscopy for a positive faecal occult blood test should be prioritised over those having repeat gastroscopies earlier than recommended, especially when the likelihood of the findings changing management is low – for example, in people without additional risk factors for developing upper GI cancer. Better use of resources according to clinical need would improve the likelihood of diagnosing significant disease and reduce delays in diagnosis.

Triage systems

Many states and territories are introducing evidence-based triage systems for prioritising and allocating people for gastroscopy and colonoscopy, with the aim of reducing variation in use of these procedures:

- Victorian health services require clinicians to refer people for gastroscopy according to the categorisation guidelines – the guidelines specify the appropriate gastroscopic surveillance intervals for people with Barrett's oesophagus³⁷
- Tasmania has adopted the Victorian categorisation guidelines and formed a statewide endoscopy network to monitor the quality of its services³⁸
- Queensland and Western Australia have introduced clinical prioritisation criteria for many clinical areas, including gastroenterology, to triage patients referred to public specialist outpatient services.³⁹⁻⁴¹

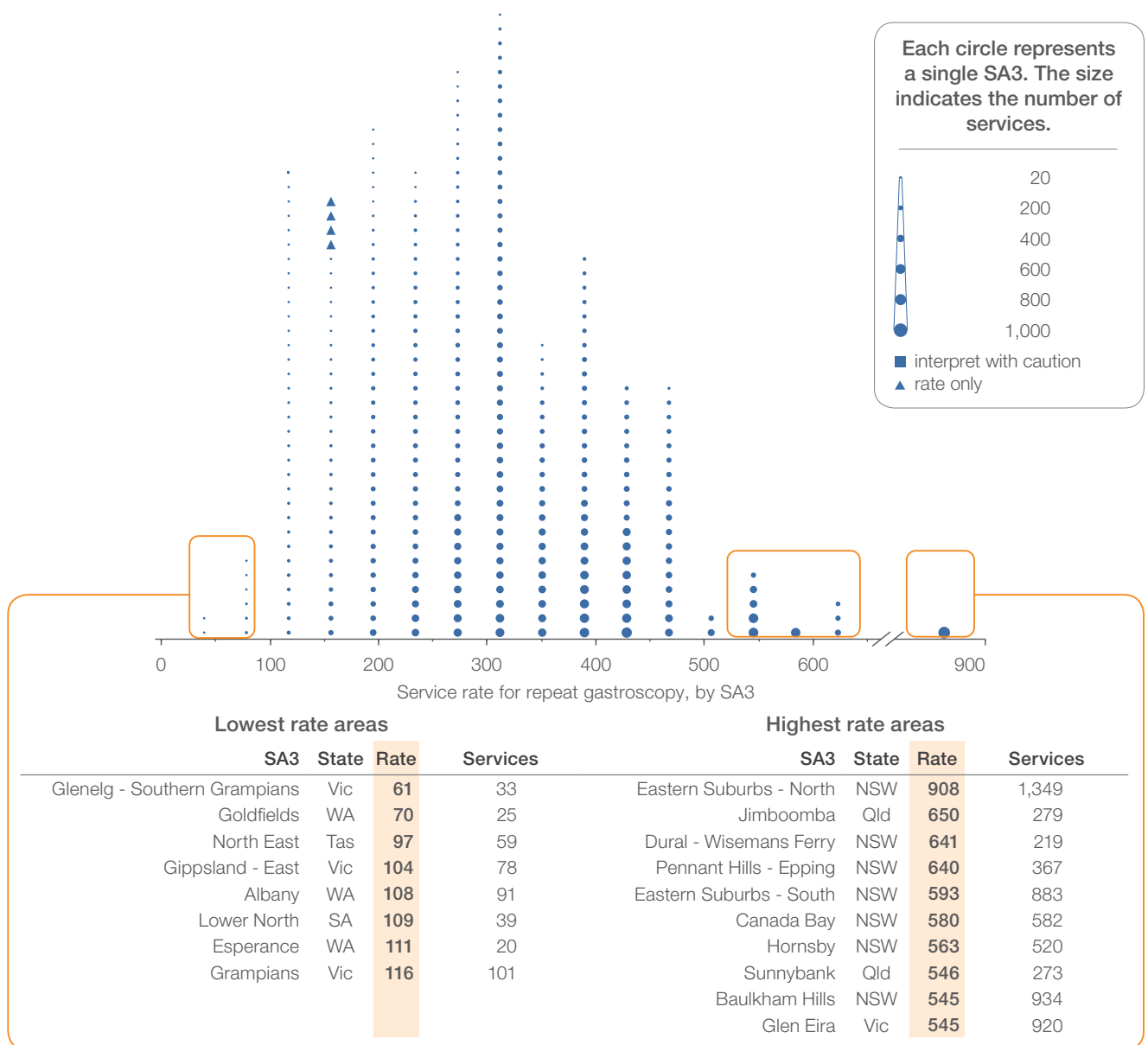
Wider use of these triage systems could result in more appropriate prioritisation of repeat gastroscopy.

Promotion of existing initiatives

In 2016, the Gastroenterological Society of Australia recommended, as part of Australia's Choosing Wisely campaign, that gastroscopy for people with Barrett's oesophagus should be questioned by people if recommended sooner than three years after their last gastroscopy.⁴² This is consistent with the Choosing Wisely campaign in the United States. People with Barrett's oesophagus who have no abnormal cells present have a very low risk of developing oesophageal cancer. In these people, it is not necessary to examine the oesophagus more frequently than every three years because, if cellular changes occur, they do so very slowly. Recommendation 5 states: Do not perform a follow-up endoscopy less than three years after two consecutive findings of no dysplasia from endoscopies with appropriate four quadrant biopsies for patients diagnosed with Barrett's oesophagus.

Rates by local area

Figure 5.20: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

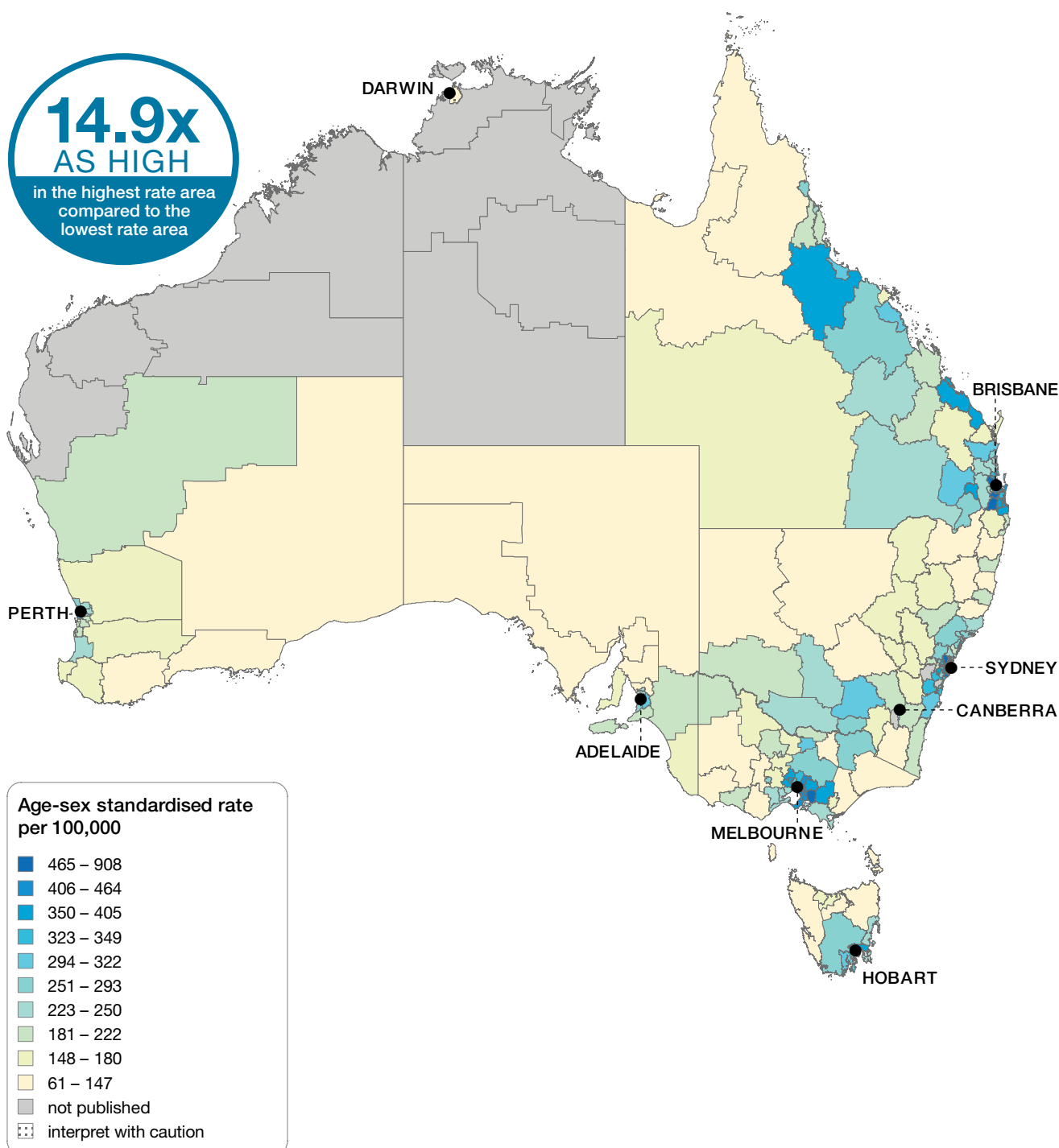
Squares (■) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat gastroscopy MBS services, all ages

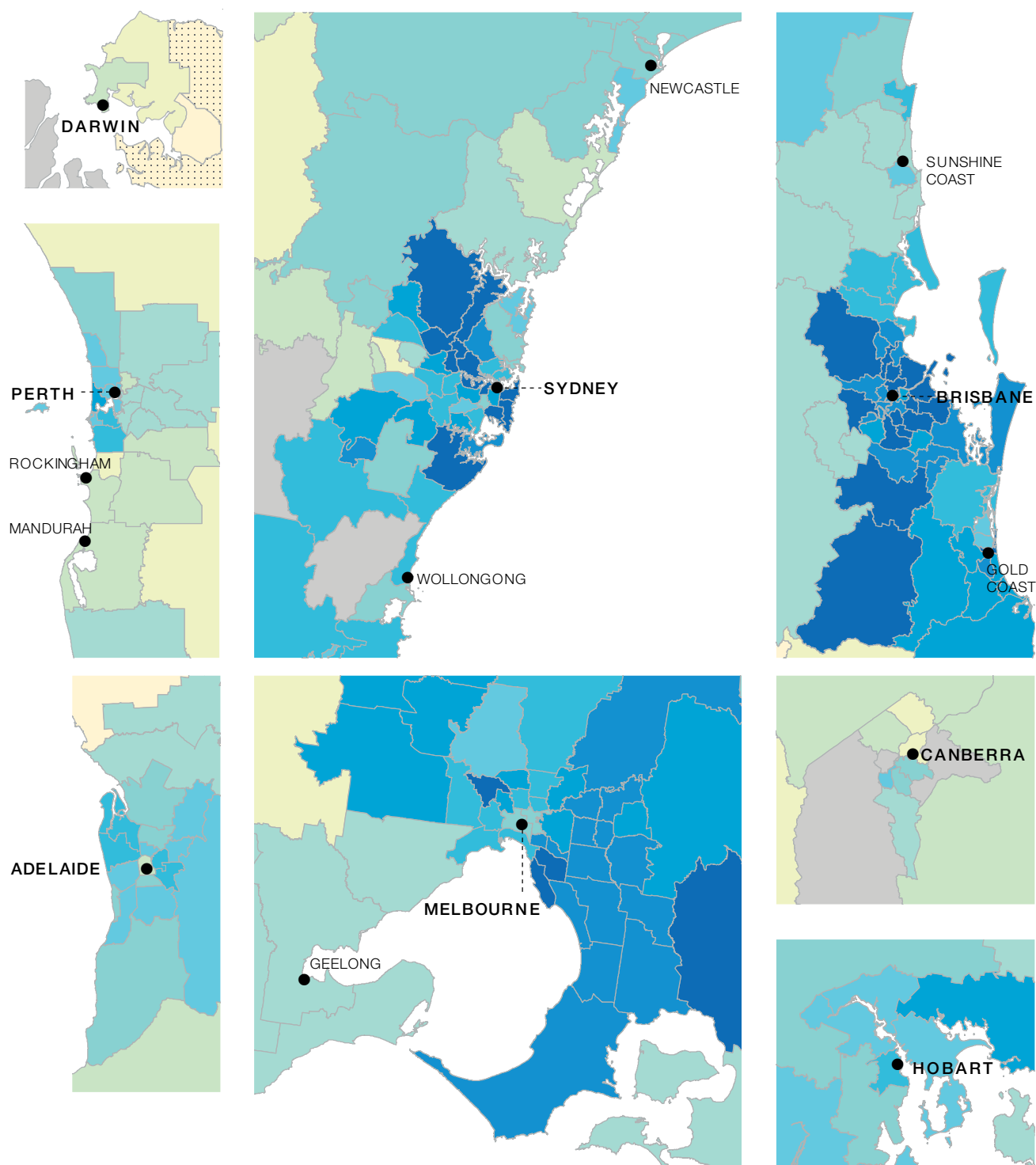
Rates across Australia

Figure 5.21: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Rates across capital city areas

Figure 5.22: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

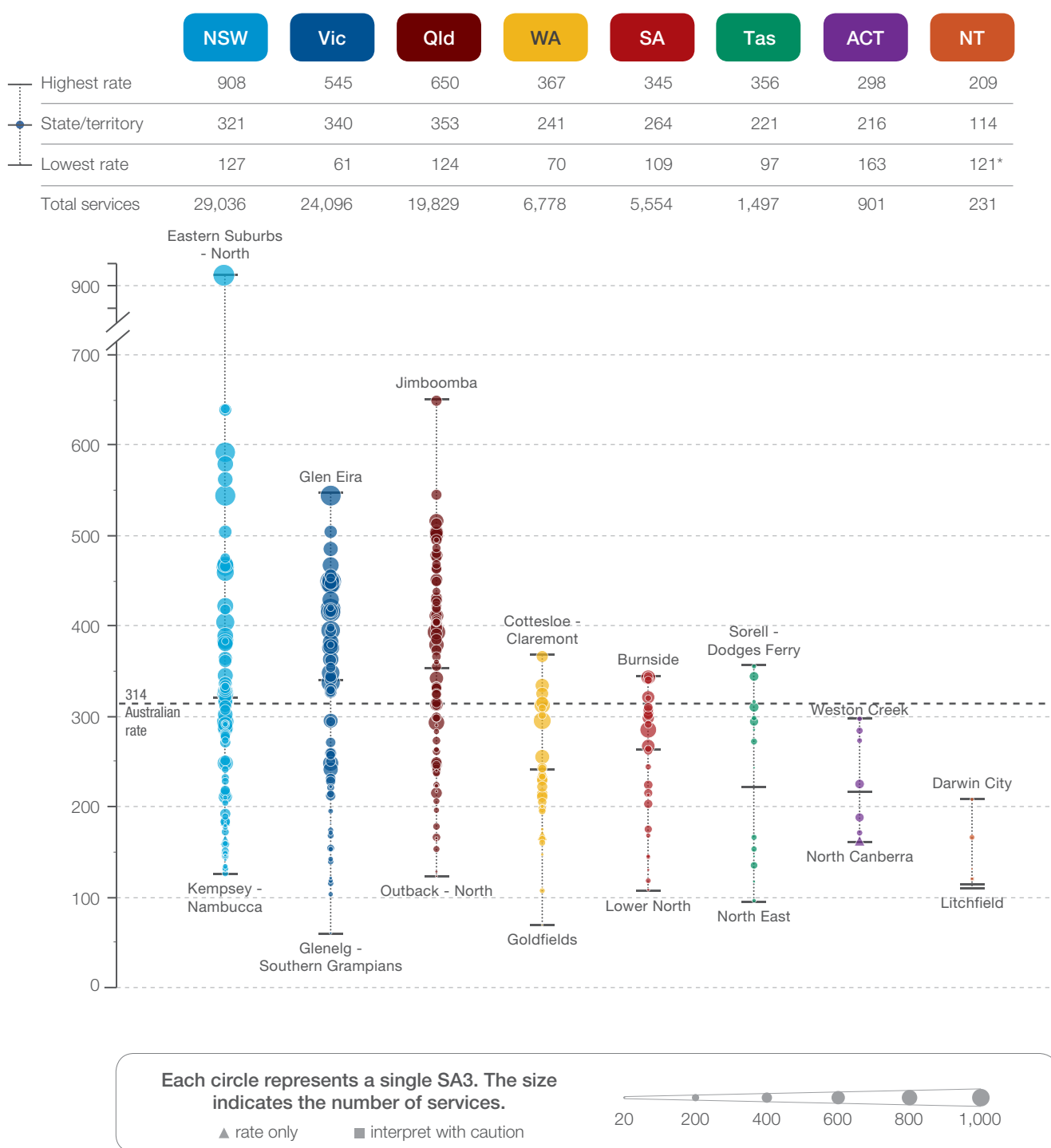
Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat gastroscopy MBS services, all ages

Rates by state and territory

Figure 5.23: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



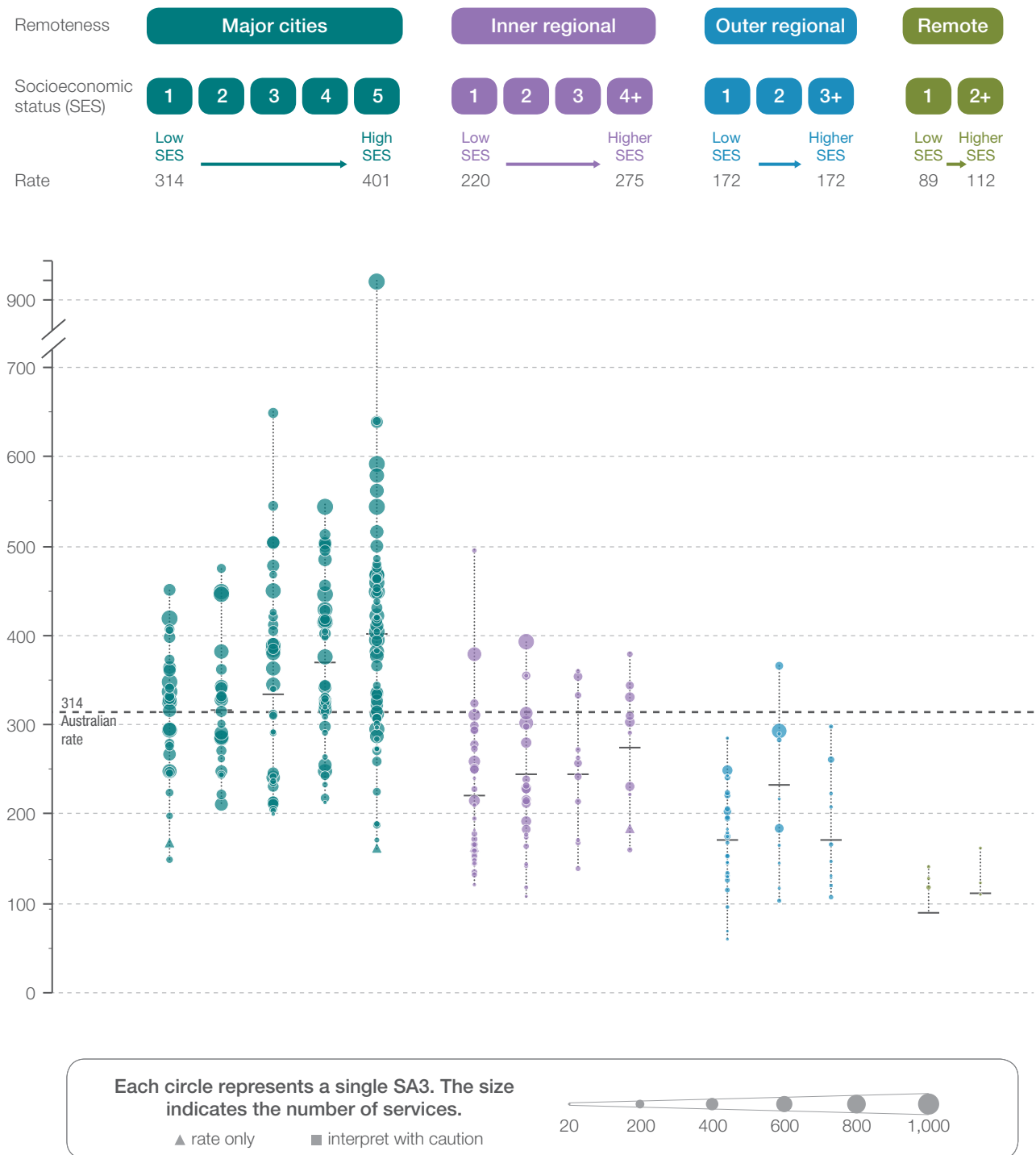
Notes:

Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For the NT, the territory rate is lower than the minimum SA3 rate as it includes SA3 rates that are not published for reliability and/or confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates by remoteness and socioeconomic status

Figure 5.24: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

Squares (■) indicate rates that are considered more volatile than other published rates and should be interpreted with caution.

Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons.

For Remote and SES of 1, the remoteness and SES rate is lower than the minimum SA3 rate as it includes SA3 rates that are not published for reliability and/or confidentiality reasons.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat gastroscopy MBS services, all ages

Resources

- Australian Institute of Health and Welfare, Cancer summary data visualisations³⁵, aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/cancer-summary-data-visualisation
- *Gastro-oesophageal Reflux Disease in Adults: Clinical update*⁴³
- *Clinical Practice Guideline for the Diagnosis and Management of Barrett's Oesophagus and Early Oesophageal Adenocarcinoma*³
- *Therapeutic Guidelines: Gastrointestinal*, version 6⁴⁴
- *Suspected Cancer: Recognition and referral – upper gastrointestinal tract cancers*⁴⁵

Australian initiatives

Information in this chapter will complement work already underway to prevent inappropriate repeat gastroscopy in Australia. At a national level, this work includes:

- Gastroenterological Society of Australia, Choosing Wisely recommendation 5: Do not perform a follow-up endoscopy less than three years after two consecutive findings of no dysplasia from endoscopies with appropriate four quadrant biopsies for patients diagnosed with Barrett's oesophagus.⁴²

Many state and territory initiatives are also in place to improve gastroscopy use, including:

- *Upper Gastrointestinal Endoscopy Categorisation Guidelines for Adults*, Victoria³⁷
- *Endoscopy Action Plan*, Queensland⁴⁶
- Clinical prioritisation criteria: endoscopy⁴⁷ and Clinical prioritisation criteria: gastroenterology³⁹, Queensland
- *Referral Guidelines: Direct access gastrointestinal endoscopic procedures*, Western Australia⁴⁰
- *Urgency Categorisation and Access Policy for Public Direct Access Adult Gastrointestinal Endoscopy Services*, Western Australia⁴¹
- State-wide endoscopy care network, which monitors and assesses the quality of endoscopy services, Tasmania.³⁸

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