3.3 Cervical loop excision or laser ablation hospitalisations 15 years and over

Context

This data item examines hospitalisations for cervical loop excision and cervical laser ablation without diagnosis of a gynaecological cancer for women aged 15 years and over based on their place of residence.

The current National Cervical Screening Program (NCSP) aims to prevent cervical cancer through routine screening of women aged 20–69 years to detect and remove precancerous cells from the cervix (neck of the womb).[1] Cervical loop excision and cervical laser ablation are used to treat precancerous cells that have been detected through cervical screening or other examinations.[2]

Both techniques are effective in treating cervical precancer[3], and can be done in outpatient settings under local anaesthetic or as an inpatient procedure.[2,4] Cervical laser ablation uses laser therapy to destroy the abnormal cells.[2,4] Cervical loop excision uses a thin loop of wire, heated by an electrical current, to cut away abnormal cells. This removed tissue can then be sent for examination, which makes loop excision a preferred option in many circumstances.

Most cervical abnormalities detected by a Pap test are low grade.[1] Because these commonly disappear, guidelines recommend monitoring only, for most low-grade abnormalities.[5,6] In contrast, women with high-grade cervical abnormalities require referral for a colposcopy (examination of the cervix).[5,6] At a colposcopy, a biopsy (sample of cells) can be taken for histology testing (examination of cells under a microscope).[2,4,5] Histology testing is used to confirm diagnosis and is required before treatment can start.[5]

Guidelines recommend that high-grade cervical lesions confirmed by histology are treated before they develop into cancer.[5-9] Cervical loop excision and cervical laser ablation are effective for treating the most common of these lesions: moderate or severe cervical intraepithelial neoplasia (CIN II or CIN III).[3,7]

Cervical loop excision or laser ablation hospitalisations 15 years and over

In 2014, 16,505 women in Australia aged 20–69 years were diagnosed with a high-grade abnormality of the cervix, confirmed by histology testing.[1] These abnormalities include abnormalities of the squamous cells, most commonly CIN II or CIN III, and high-grade abnormalities of the glandular cells, such as endocervical dysplasia and adenocarcinoma.[1] In 2016 in Australia, an estimated 903 women will be diagnosed with cervical cancer and 250 women will die from cervical cancer.[1]

There is little doubt about the effectiveness of the NCSP. Diagnoses and deaths from cervical cancer have halved since the introduction of the program in 1991.[1] Almost 80% of cervical cancer now occurs in women who have never been screened or were not screened regularly.[1]

The incidence of cervical cancer in Australia is highest in remote and very remote areas.[1] Similarly, mortality rates for cervical cancer are higher in very remote areas (4.7 deaths per 100,000 women in 2009–2013), compared with major cities and inner regional areas (1.8 and 1.9 deaths per 100,000 women, respectively, in 2009–2013), although it should be noted that mortality rates in remote and very remote areas are both based on just 13 and 12 deaths, respectively.[1] The higher proportion of Aboriginal and Torres Strait Islander women in very remote areas probably contributes to these higher rates, because Aboriginal and Torres Strait Islander women have more than twice the incidence of cervical cancer as non-Indigenous women and four times the mortality.[1]

Most cases of cervical cancer are caused by human papillomavirus (HPV).[4] Risk factors for cervical cancer include persistent undetected HPV infection, socioeconomic disadvantage, lower education level, smoking, possible dietary deficiencies, weakened immune system, oral contraception, lack of regular screening, earlier age at first intercourse, having children early and giving birth to five or more children.[4,10,11]

The National HPV Vaccination Program began in Australia in 2007 with vaccination of 12–13-year-old girls. HPV vaccination reduces the risk of high-grade cervical abnormalities and, potentially, cervical cancer. Vaccination does not entirely eliminate these risks. Cervical screening is recommended whether a woman has been vaccinated or not.[12] From 1 December 2017, the renewed NCSP will offer screening to all women aged 25–74 years every five years using a primary HPV test.[13] This change has been made because a review of the evidence showed that an HPV test performed every five years was more effective than the Pap test procedure under the current NCSP program, was just as safe, and was estimated to result in a greater than 20% reduction in incidence of, and mortality from, cervical cancer in Australian women.[14-16] The renewed NCSP will also provide the option of self-collection of HPV samples for underscreened and never-screened women aged 30 years and over (25 years and over for Aboriginal and Torres Strait Islander women). Self-collection of samples is supported by international evidence that this practice can increase screening among these groups.[10,16]

About the data

Data are sourced from the National Hospital Morbidity Database, and include both public and private hospitals. Rates are based on the number of hospitalisations for cervical loop excision or cervical laser ablation per 100,000 women aged 15 years and over, over the three-year period 2012–13 to 2014–15.

Data are aggregated over three years to provide sufficient numbers to support reporting at the local level. The number of hospitalisations and the summed population over three years are used to provide an average rate. This is comparable to a rate based on data collected over one year.

The analysis and maps are based on the residential address of the patient and not the location of the hospital. Rates are age standardised to allow comparison between populations with different age structures. Data quality issues – for example, the recognition of Aboriginal and Torres Strait Islander status in datasets – could influence the variation seen.

There is currently no way of reporting all cervical loop excision and cervical laser ablation procedures in Australia. This data item does not include outpatient activity. Although another data source, the Medicare Benefits Schedule, includes outpatient activity for private patients, it does not include outpatient activity for public patients. Further, national data on outpatient activity in public hospitals do not include data on procedures.

What do the data show?

Magnitude of variation

Over the three-year period 2012–13 to 2014–15, there were 43,920 hospitalisations for cervical loop excision or laser ablation, representing an average rate of 161 hospitalisations per 100,000 women aged 15 years and over (the Australian rate).

The number of hospitalisations for cervical loop excision or laser ablation across 323† local areas (Statistical Area 3 – SA3) ranged from 23 to 408 per 100,000 women aged 15 years and over. The rate was **17.7 times as high** in the area with the highest rate compared to the area with the lowest rate. The number of hospitalisations varied across states and territories, from 101 per 100,000 women aged 15 years and over in the Australian Capital Territory to 202 in the Northern Territory (Figures 3.17–3.20).

After the highest and lowest 10% of results were excluded and 260 SA3s remained, the number of hospitalisations per 100,000 women aged 15 years and over was 2.1 times as high in the area with the highest rate compared to the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates of cervical loop excision or cervical laser ablation were markedly higher in inner and outer regional areas, and remote areas than in major cities. Rates tended to decrease with socioeconomic disadvantage in major cities, but there was no clear pattern according to socioeconomic disadvantage in other categories of remoteness (Figure 3.21).

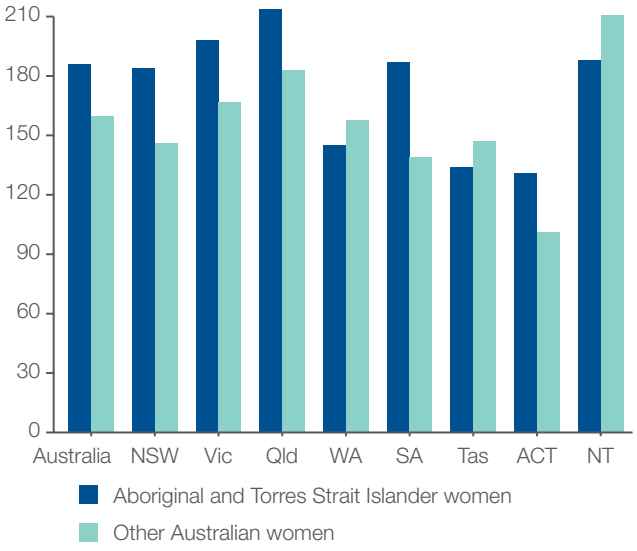
† There are 333 SA3s. For this item, data were suppressed for 10 SA3s due to a small number of hospitalisations and/or population in an area.

Cervical loop excision or laser ablation hospitalisations 15 years and over

Analysis by Aboriginal and Torres Strait Islander status

The rate for Aboriginal and Torres Strait Islander women (186 per 100,000) was 1.2 times as high as the rate for other Australian women (160 per 100,000). However, this pattern varied according to state and territory. Aboriginal and Torres Strait Islander women had lower procedure rates than other women in the Northern Territory, Western Australia and Tasmania, and higher rates in all other states and territories (Figure 3.15).

Figure 3.15: Number of hospitalisations for cervical loop excision or laser ablation per 100,000 women aged 15 years and over, age standardised, by state and territory and Indigenous status, 2012–13 to 2014–15

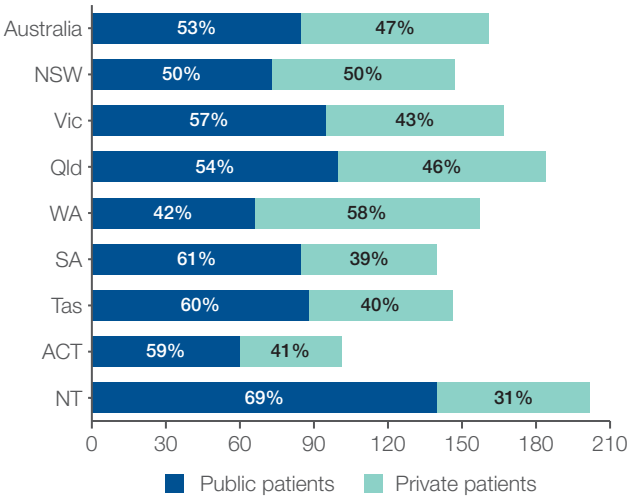


The data for Figure 3.15 are available at www.safetyandquality.gov.au/atlas.

Analysis by patient funding status

Overall, 47% of hospitalisations for cervical loop excision or cervical laser ablation were for privately funded patients. This proportion varied from 31% in the Northern Territory to 58% in Western Australia (Figure 3.16).

Figure 3.16: Number of hospitalisations for cervical loop excision or laser ablation per 100,000 women aged 15 years and over, age standardised, by state and territory and patient funding status, 2012–13 to 2014–15



The data for Figure 3.16 are available at www.safetyandquality.gov.au/atlas.

Notes:
Rates are age standardised to the Australian female population in 2001.
Rates are based on the number of hospitalisations in public and private hospitals (numerator) and women in the geographic area (denominator).
Analysis is based on the patient's area of usual residence, not the place of hospitalisation.
Hospitalisations for public patients do not incur a charge to the patient or to a third party payer, for example a private health insurance fund.
Hospitalisations for private patients do incur a charge to the patient and/or a third party payer.
Data by Indigenous status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander patients are under-enumerated and there is variation in the under-enumeration among states and territories.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database 2012–15 and ABS Estimated Resident Population 30 June 2012 to 2014.

Interpretation

Potential reasons for the variation include differences in:

- The prevalence of risk factors for HPV-induced cervical disease
- Cervical screening participation rates
- The distance patients need to travel to services ('see and treat' practices in remote areas)
- Clinician adherence to criteria for referral to a colposcopist
- Colposcopist adherence to guidelines on the management of cervical lesions
- Access to female general practitioners in remote areas
- Access to colposcopy services
- Access to culturally safe cervical screening practices for Aboriginal and Torres Strait Islander women
- Models of care, such as whether care is provided in inpatient or outpatient settings
- Private health insurance coverage.

Variation between areas in rates of surgery may also be influenced by the number of clinicians providing services to people living in the area. The practices of specific clinicians are likely to have a greater impact on rates in smaller local areas with fewer clinicians, such as rural and regional locations. Specific clinicians may influence rates across several local areas, especially those with small populations. The effects of practice styles of individual clinicians will be diluted in areas with larger numbers of practising clinicians.

As well, variations 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 care.

Both procedures examined in this item can be done in outpatient settings under local anaesthetic.[2,4] Since outpatient procedures cannot be included in this data item, it is unclear to what extent the variation in the number of hospitalisations may reflect variation in the number of procedures performed in outpatient settings. Given the number of women with histologically confirmed high-grade abnormalities between 2012 and 2015 (about 51,000)[1,17,18], the number of cervical loop excision and cervical laser ablation hospitalisations over this period (43,920) suggests that most women with high-grade cervical lesions were admitted for treatment.

Where patients must travel long distances to access treatment, such as in remote and regional areas, there may be a greater tendency to admit patients overnight rather than have them travel home straight after the procedure. In areas where outpatient services are provided for these procedures, this practice may account for some of the observed difference in hospitalisation rates between regional and major city areas.

Other than the setting for the procedure, the geographic variations seen may reflect a combination of factors, such as differences in the prevalence of risk factors for cervical cancer, cervical screening participation rates, access to colposcopy services, and adherence to guidelines on the management of cervical abnormalities.[10]

Cervical loop excision or laser ablation hospitalisations 15 years and over

Addressing variation

Participation in cervical screening has a direct effect on the incidence of cervical cancer.[1] In 2013–14, the participation rate for the NCSP was 58%.[1] Participation was lowest in very remote areas (52%) and highest in inner regional areas (59%). It also varied according to socioeconomic disadvantage, with participation lowest for women at most socioeconomic disadvantage (52%) and highest for those at most socioeconomic advantage (64%).[1] Available evidence on participation in cervical screening by Aboriginal and Torres Strait Islander women suggests that they are underscreened.[1,10] The variation among states and territories in the hospitalisation rate for cervical loop excision and cervical laser ablation in Aboriginal and Torres Strait Islander women may reflect patterns of underscreening in remote populations.

A number of initiatives aim to increase participation of Aboriginal and Torres Strait Islander women in cervical screening. These include employment of Aboriginal and Torres Strait Islander health workers; outreach clinics in remote areas; development of principles, standards and guidelines for cervical screening in Aboriginal and Torres Strait Islander women; and an Aboriginal and Torres Strait Islander primary healthcare national performance indicator for cervical screening.[1,19] Ensuring culturally safe environments for examinations and treatments, with colposcopies done by female gynaecologists (for example, Aboriginal medical services), are other initiatives.[20]

Improving uptake of HPV vaccination for Aboriginal and Torres Strait Islander children is also a priority for reducing the incidence of cervical cancer in Aboriginal and Torres Strait Islander women.[10]

Increasing access to outpatient models of care for colposcopy is likely to improve patient satisfaction with treatment. In the United Kingdom, the National Health Service Cervical Screening Programme recommends that local cervical treatment procedures are offered with local anaesthesia, where appropriate, and that 80% of women are managed as outpatients with local anaesthesia.[9]

Improving data collection and reporting on diagnosis, treatment and outcomes for women with cervical lesions is likely to improve the consistent delivery of guideline-recommended care. Currently, the national system of state-based Pap smear registers records results of cervical screening, and provides a reminder for women and a means of following up screen-detected abnormalities. The register does not collect data on treatments received by women with histologically confirmed high-grade cervical lesions. Although linked data from state registers and the National Hospital Morbidity Database are informative[10], the data do not include treatments received in outpatient settings.

Initiatives are planned to improve data collection on the treatment of cervical lesions. The Colposcopy Quality Improvement Program (C-QuIP) is an initiative of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists that aims to improve the care of women who are referred for colposcopy and treatment of screen-detected abnormalities. The C-QuIP was set up in 2009, prompted by concern about potential overuse of excisional treatments in young women whose family is not yet complete.[21] The C-QuIP offers all medical practitioners in Australia and New Zealand who are currently practising colposcopy the opportunity to be certified in this field, and for certification and recertification to be used as part of their college's continual professional development requirements.[22]

From December 2017, the National Cancer Screening Register will require colposcopists to send colposcopy data to the register. In return, they will receive aggregated reports about the tests and treatments they have administered as part of the NCSP. These reports will assist clinicians to participate in the C-QuIP program (to be renamed the Cervical Quality Improvement Program).[23]

Initial modelling suggested that colposcopy referral rates are likely to increase and treatment rates are likely to decrease after implementation of the renewed NCSP on 1 December 2017.[15] Further modelling based on planned updates to the clinical management guidelines suggests that, in the long term, there is likely to be a small increase (6%) in the treatment rate for unvaccinated women and a small decrease (5%) in the rate for vaccinated women.[24] Over time, rates of colposcopy are expected to decrease as the size of the HPV-vaccinated population increases.[16]

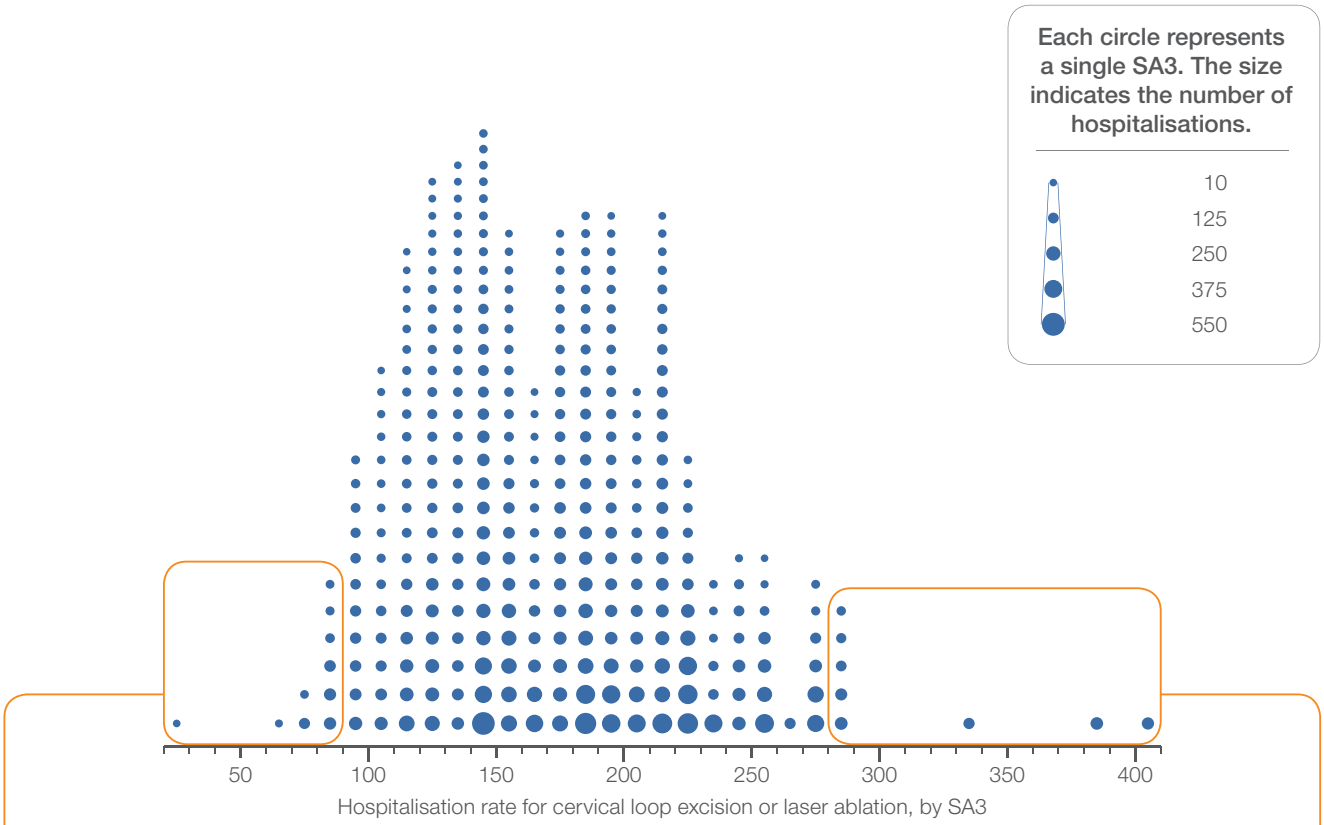
Using data from registers and other sources to map rates of vaccination, screening, colposcopy, histology detection and treatment could help determine the contribution of healthcare factors and risk-factor prevalence to variation in treatment rates. This analysis may also help to focus efforts to improve the appropriateness of care.

Audit and feedback of register data on colposcopic assessments, treatments and outcomes could improve the appropriateness of treatment selection. Of the cervical loop excision or cervical loop ablation hospitalisations in 2014–15, about 92% were cervical loop excisions (data not shown). This proportion is consistent with international trends. Both procedures are effective in treating cervical precancer[3]; however, excisional methods allow diagnostic examination of the removed tissue and evaluation of areas around the excision, and, for these reasons, are preferred for most patients.[9,25]

Both excisional and ablative cervical treatments have been associated with increased risk of preterm birth and low birth weight compared with no treatment in women with CIN.[26] The increased risk of adverse obstetric outcomes appears to be associated with depth and dimensions of the tissue removed. Although excisional methods are associated with a higher risk of adverse obstetric outcomes than ablative methods, the increased risk of small-depth excisions compared with just having CIN remains uncertain and is likely to be small.[26] The risk can be minimised by reducing the depth and dimension of tissue removed.[26]

Cervical loop excision or laser ablation hospitalisations 15 years and over

Figure 3.17: Number of hospitalisations for cervical loop excision or laser ablation per 100,000 women aged 15 years and over, age standardised, by Statistical Area Level 3 (SA3), 2012–13 to 2014–15



Lowest rate areas

SA3	State	Rate	Hospitalisations
Goldfields	WA	23	14
Woden	ACT	67	26
Carlingford	NSW	70	52
Merrylands - Guildford	NSW	77	137
Dandenong	Vic	81	175
Parramatta	NSW	81	155
Coffs Harbour	NSW	82	63
Goulburn - Yass	NSW	82	56
Auburn	NSW	85	86
Strathfield - Burwood - Ashfield	NSW	88	180

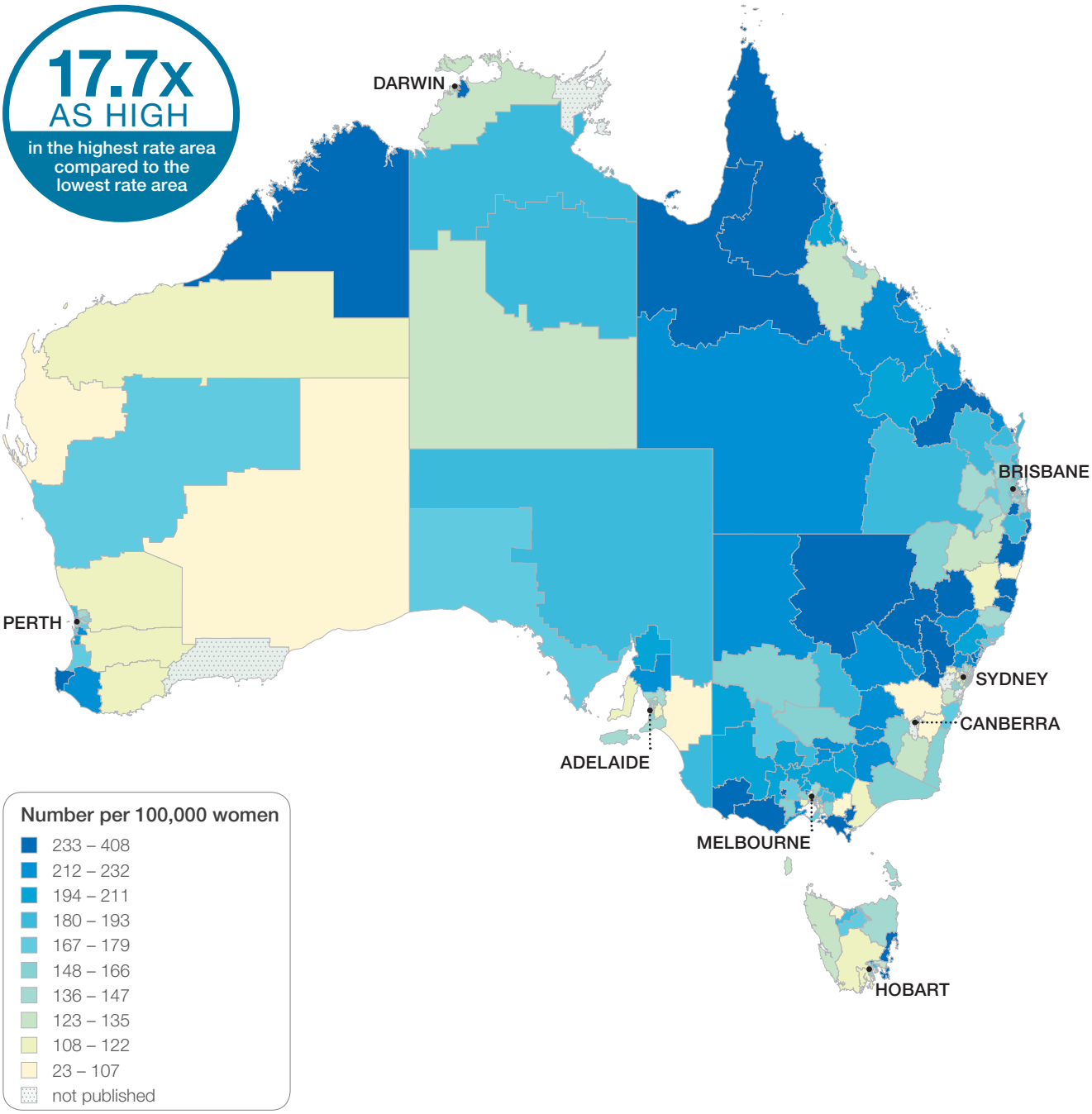
Highest rate areas

SA3	State	Rate	Hospitalisations
Lithgow - Mudgee	NSW	408	177
Bathurst	NSW	383	188
Outback - North	Qld	330	141
Port Macquarie	NSW	288	194
Palmerston	NT	287	123
Bourke - Cobar - Coonamble	NSW	287	78
Cairns - North	Qld	283	170
Far North	Qld	282	105

Notes:
Rates are age standardised to the Australian female population in 2001.
Rates are based on the number of hospitalisations in public and private hospitals (numerator) and women in the geographic area (denominator).
Analysis is based on the patient's area of usual residence, not the place of hospitalisation.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database 2012–15 and ABS Estimated Resident Population 30 June 2012 to 2014.

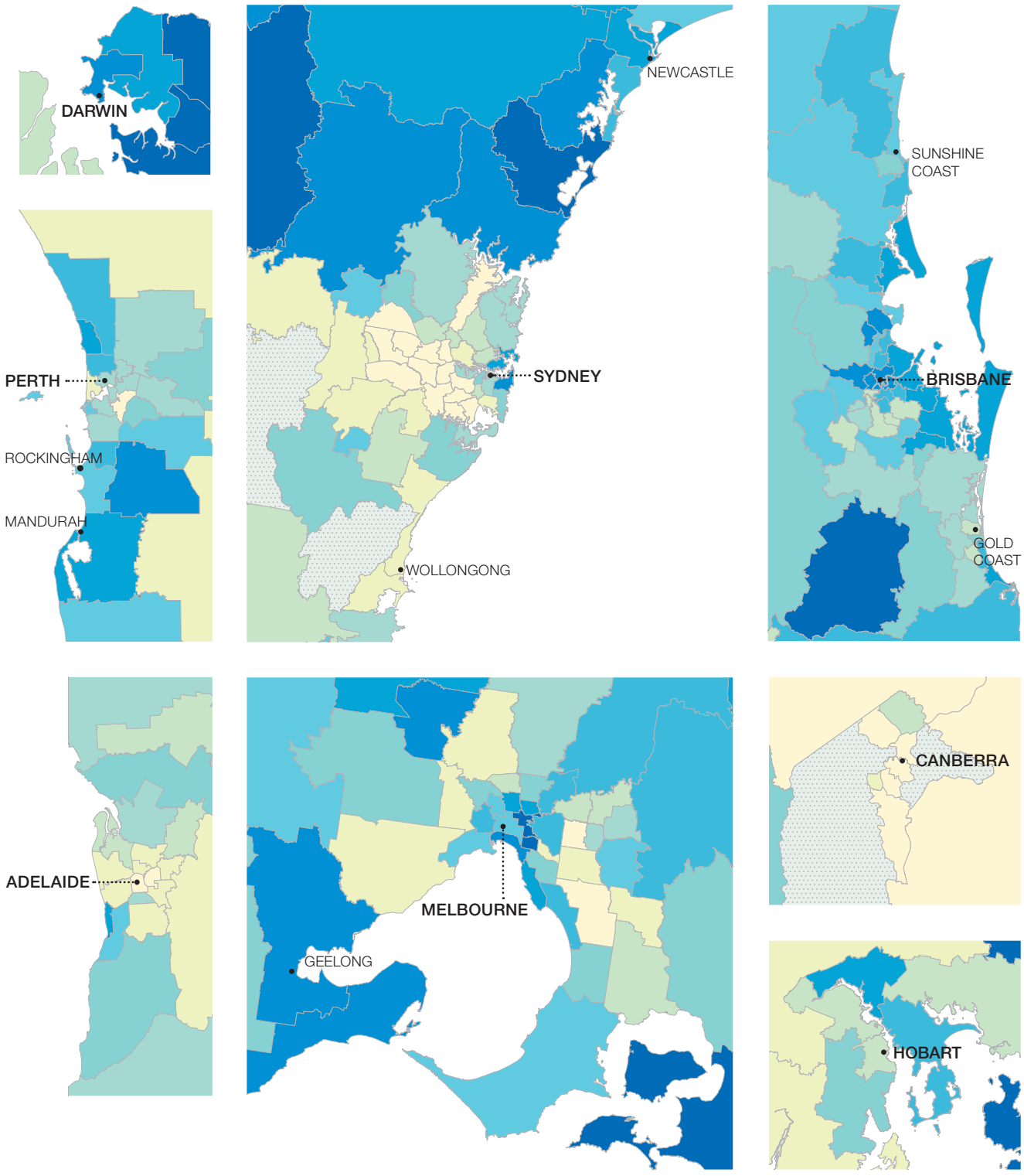
Cervical loop excision or laser ablation hospitalisations 15 years and over

Figure 3.18: Number of hospitalisations for cervical loop excision or laser ablation per 100,000 women aged 15 years and over, age standardised, by Statistical Area Level 3 (SA3), 2012–13 to 2014–15: Australia map



Notes:
Rates are age standardised to the Australian female population in 2001.
Rates are based on the number of hospitalisations in public and private hospitals (numerator) and women in the geographic area (denominator).
Analysis is based on the patient's area of usual residence, not the place of hospitalisation.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database 2012–15 and ABS Estimated Resident Population 30 June 2012 to 2014.

Figure 3.19: Number of hospitalisations for cervical loop excision or laser ablation per 100,000 women aged 15 years and over, age standardised, by Statistical Area Level 3 (SA3), 2012–13 to 2014–15: capital city area maps

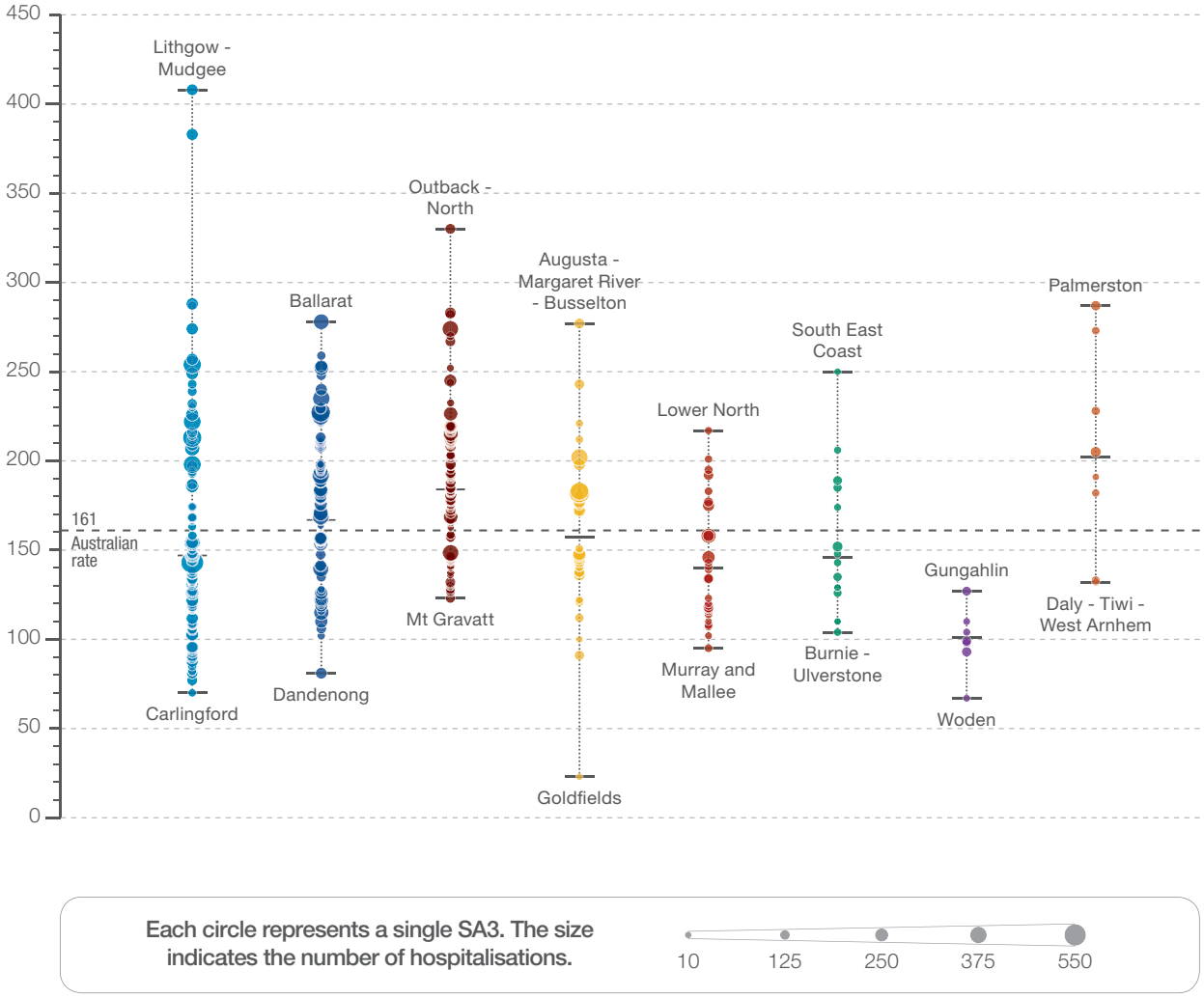


Notes:
Rates are age standardised to the Australian female population in 2001.
Rates are based on the number of hospitalisations in public and private hospitals (numerator) and women in the geographic area (denominator).
Analysis is based on the patient's area of usual residence, not the place of hospitalisation.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database 2012–15 and ABS Estimated Resident Population 30 June 2012 to 2014.

Cervical loop excision or laser ablation hospitalisations 15 years and over

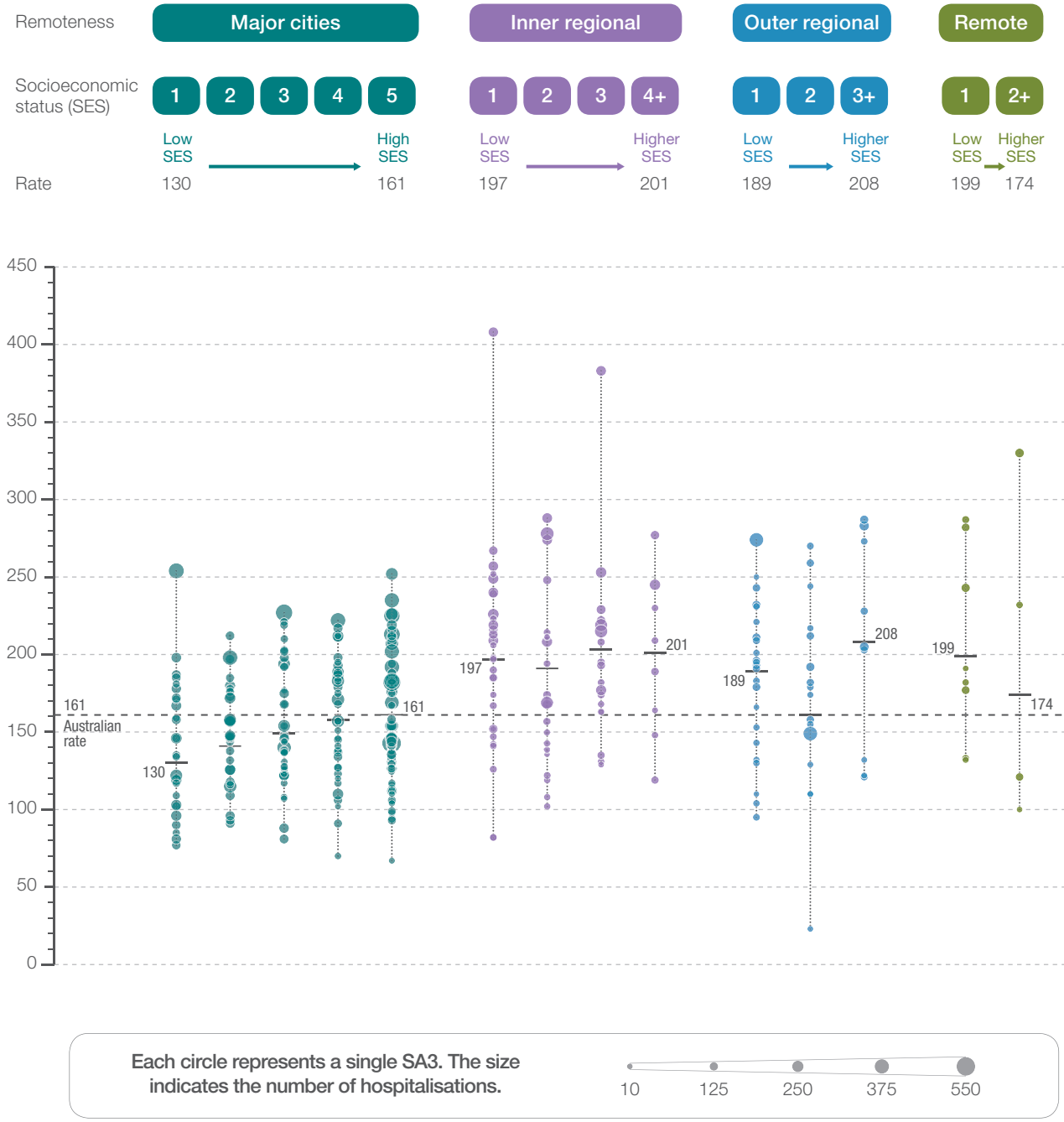
Figure 3.20: Number of hospitalisations for cervical loop excision or laser ablation per 100,000 women aged 15 years and over, age standardised, by Statistical Area Level 3 (SA3), state and territory, 2012–13 to 2014–15

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	408	278	330	277	217	250	127	287
State/territory	147	167	184	157	140	146	101	202
Lowest rate	70	81	123	23	95	104	67	132
No. hospitalisations	12,772	11,630	10,064	4,780	2,605	774	504	623



Notes:
Rates are age standardised to the Australian female population in 2001.
Rates are based on the number of hospitalisations in public and private hospitals (numerator) and women in the geographic area (denominator).
Analysis is based on the patient's area of usual residence, not the place of hospitalisation.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database 2012–15 and ABS Estimated Resident Population 30 June 2012 to 2014.

Figure 3.21: Number of hospitalisations for cervical loop excision or laser ablation per 100,000 women aged 15 years and over, age standardised, by Statistical Area Level 3 (SA3), remoteness and socioeconomic status, 2012–13 to 2014–15



Notes:
Rates are age standardised to the Australian female population in 2001.
Rates are based on the number of hospitalisations in public and private hospitals (numerator) and women in the geographic area (denominator).
Analysis is based on the patient's area of usual residence, not the place of hospitalisation.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database 2012–15 and ABS Estimated Resident Population 30 June 2012 to 2014.

Cervical loop excision or laser ablation hospitalisations 15 years and over

Resources

- National Health and Medical Research Council. Screening to prevent cervical cancer: guidelines for the management of asymptomatic women with screen-detected abnormalities. Canberra: NHMRC; 2005. (currently being updated)

Australian initiatives

The information in this chapter will complement work already under way to improve management of cervical precancerous abnormalities in Australia. At a national level, this work includes:

- The renewed National Cervical Screening Program, Australian Government. www.cancerscreening.gov.au/internet/screening/publishing.nsf/Content/future-changes-cervical
- Colposcopy Quality Improvement Program (C-QuIP), Royal Australian and New Zealand College of Obstetricians and Gynaecologists. www.cquip.edu.au
- Choosing Wisely Australia, which advises 'Do not perform ablative or excisional treatment of cervical low-grade squamous intraepithelial lesion (LSIL) in women during their reproductive years'. www.ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/News/CW_Recommendations_RANZCOG_v3-FINAL.PDF.

Some states and territory initiatives are also in place, including:

- The NSW Agency for Clinical Innovation Gynaecological Oncology Network – activities include the development of clinical practice guidelines, support for education, and support for improved services and equity of access for patients in rural, remote and regional New South Wales.

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