

CANCER IN RURAL AUSTRALIA



... healthy and sustainable rural, regional and remote communities

People living in rural, regional and remote (rural) Australia have a poorer chance of survival from cancer than those living in major metropolitan centres. Cancer rates are highest in regional areas.



Cancer was the leading cause of disease burden (by disease group) in all geographical regions of Australia in 2018.ⁱ While overall cancer mortality has been reducing over time and survival rates have been improving, the incidence of most common cancers has been increasing.² Given the incidence of cancer is greater in older people, and as our population grows and ages, the rate of new cancer diagnosis is predicted to grow.²

People's experience of cancer in rural areas can be viewed as a journey from prevention, through diagnosis to treatment, survivorship and end-of-life care. During their cancer journey, people are likely to see multiple health practitioners at a number of sites.

Incidence, mortality and survival

There are notable disparities in cancer incidence and outcomes by geography.

The **incidence** of *all cancers combined* is highest for people living in Regionalⁱⁱ areas.³ The incidence of head and neck cancers and cervical cancer increases with geographical remoteness. The rate of liver cancer in Very Remote areas is 60.5 per cent higher than the rate for Australia overall.

People living in rural Australia are **more likely to die** from cancer than their metropolitan counterparts, with the highest mortality rate for *all cancers combined* found in Very Remote areas (190.7 deaths per 100,000 population compared with 150.7 in Major Cities).³ Deaths due to lung cancer, cancer of the

head and neck and cancer of unknown primary site all increase with remoteness. In Very Remote Australia, people die from cervical cancer at 3.3 times and liver cancer at almost twice the rate of Australians overall.

Rural people have poorer **survival rates**ⁱⁱⁱ after a cancer diagnosis – survival from *all cancers combined* is highest in Major Cities (62.5 per cent), reducing with remoteness to its lowest point in Very Remote areas (55.1 per cent).³ Survival for the following reduces with remoteness: lung, head and neck, liver and cervical cancer.

Aboriginal and Torres Strait Islander (Aboriginal) peoples make up a larger proportion of the population with increasing remoteness⁴ and therefore factors affecting them significantly impact population health outcomes in more geographically remote areas. Cancer incidence and mortality rates are higher in Aboriginal people overall, while survival rates are lower.³

Demographics, socioeconomic determinants of health and risk factors

Older people (aged 65 and over) make up a larger proportion of the population in Regional areas.⁵ This influences the incidence of cancer in regional Australia and therefore demand for cancer care services. Demographic differences will be amplified by ongoing population growth in regional areas, including an influx of retirees.

ⁱ National Rural Health Alliance (NRHA) analysis of Australian Institute of Health and Welfare (AIHW) data.

ⁱⁱ Major Cities, Inner Regional, Outer Regional, Remote and Very Remote refer to Australian Statistical Geography Standard – Remoteness Area (ASGS-RA) classifications. The collective terminology Regional and Remote refers to groupings of these areas. www.abs.gov.au/websitedbs/D3310114.nsf/home/geography

ⁱⁱⁱ Five-year observed survival: the proportion of patients who are still alive five years after diagnosis.

Despite the many upsides to living in rural Australia, rural Australian populations experience higher levels of unemployment, lower incomes and lower rates of educational attainment, all of which are important socioeconomic determinants of health and contribute to the complex picture of cancer burden in rural areas.⁵

About half of all cancer burden is attributable to health risk factors, with tobacco exposure resulting in the greatest burden.² At the population level, rural people experience greater rates of these risk factors – including smoking, overweight and obesity, risky alcohol consumption, poorer diet and lower levels of physical activity – all of which have a role to play in cancer aetiology.⁵

Factors contributing to geographic disparities

- Altered age profile.
- Greater socioeconomic disadvantage.
- Higher prevalence of cancer risk factors.
- Larger proportion of Aboriginal peoples (and therefore factors specific to Aboriginal peoples).
- Reduced access to healthcare services.

Access to cancer care services

Access to and timely use of healthcare services is imperative when it comes to maximising cancer outcomes. Services required include prevention activities, screening programs, primary health care, diagnostic imaging, non-GP medical specialist care, as well as allied, psychosocial, survivor and palliative care. Poor access to the full complement of prevention, diagnosis, treatment and rehabilitation options can result in delayed presentation for care and disparities in the interventions undertaken by rural people.

Disparities for rural people include:

- reduced utilisation of exercise-based therapy and other evidence-based non-pharmacological interventions for prevention, during and after treatment and to aid recovery from cancer
- reduced rates of participation in population-level screening
- lower rates of chemotherapy administration⁶
- longer travel times to access specialised surgical care
- reduced access to clinical trials.⁷

Supply side

Population-level **cancer screening programs** aim to detect cancer early to enable timely intervention and ultimately improve cancer outcomes. Participation rates across the three national screening programs (cervical, breast and bowel cancer) are all lowest in Very Remote areas.⁸⁻¹⁰ Rates of breast and bowel cancer screening are lower in Aboriginal peoples.^{9,10}

Almost 43,000 Australians cannot access **primary health care** within an hour's drive of their home, and 65,000 Australians are unable to access a general practitioner (GP) in this drive time.⁵ Access to allied health services is also poorer in remote areas.⁵ Even if primary healthcare services are available within a reasonable distance, access is often reduced by wait times.¹¹

Access to primary health care is essential to prevent development of cancer, manage risk factors and enable early diagnosis and intervention. It is also important for the delivery of shared care with cancer care specialists who might be located at a distance and filling various gaps in more specialised care in rural areas.

Diagnostic imaging services are vital to cancer diagnosis and treatment.⁷ A 2019 government inquiry found geographic disparities in access to these services, with submitters concerned about the limited access to various modalities and a case study from New South Wales highlighting the fact that most PET facilities are located in major cities.¹²

A comprehensive, national, cross-sectional survey completed in 2016 examined the coverage of **cancer services** in Australia and ascertained providers' views on service gaps.¹³ The survey aimed to identify dedicated cancer services, in both the public and private sector, addressing the needs of adults, adolescents and children. Services were provided in hospitals (as both inpatient and outpatient) and community-based organisations. Their geographic location was recorded and categorised.

Survivorship and supportive care services (including allied health, complementary medicine, psychosocial care, survivorship, rehabilitation and wellness services) were rated as the most critical service gap across all geographic regions. When looking at Australia overall, deficiencies in this area were listed significantly more often than those in general cancer service resources (need for nursing staff, hospital beds, improvements in integration and coordination of care), palliative care services (physicians, hospital and hospice services and home-based care) or specialist oncology services (oncologists, chemotherapy, radiotherapy and surgery).

Regional analysis found that significantly more respondents from Remote areas reported gaps in specialist oncology services than in other geographic regions (28.8 per cent compared with 10.9 per cent in Regional areas and 3.4 per cent in Major Cities). While not statistically significant, the highest proportion of respondents reporting their most significant gap was in palliative and hospice care were in Regional areas (23.4 per cent compared with 15.5 per cent in Major Cities and 13.0 per cent in Remote areas).

This research reinforces the findings of an earlier study which also highlighted the burden placed on general physicians, GPs, other doctors and non-chemotherapy-trained nurses by the lack of specialist oncology services in rural areas.¹⁴ Investment in the infrastructure of regional cancer centres (RCCs) is a significant initiative to improve

access to cancer care in rural Australia, however 52 per cent of these centres are located in Inner Regional areas⁷ and at a significant distance from many patients living rurally.

Barriers to accessing specialist cancer services include financial viability for practitioners due to thin rural markets, lack of healthcare infrastructure including access to theatres and day surgery, and difficulties attracting and retaining healthcare staff.

Demand side

Access to healthcare services in rural populations is also influenced by demand. In addition to the demographic, socioeconomic and health risk factor differences in rural Australia, demand is modified by attitudinal factors common in rural people (such as stoicism and self-reliance¹⁵), the need to travel vast distances and financial burden (in the context of a lower socioeconomic profile).

Travelling and living away from home might require a patient or their family to take time off work or pose challenges to caring responsibilities, including childcare. Travelling also removes people from their families, communities and broader support networks. Hence travel is associated with personal and financial burdens¹⁶ and these are felt disproportionately by rural people.

These factors contribute to delayed presentation for care and alteration of treatment choices.

Summary

It is evident that there are significant disparities for rural people in access to the healthcare services required during a cancer journey. Yet research from the United States found that when rural people have access to the standardised treatment protocols of clinical trials, their outcomes are not significantly different from their metropolitan counterparts.¹⁷ Hence, if we are to drive equity of cancer outcomes in rural people, we must improve rural people's access to high-quality services across the spectrum of cancer care and ensure this care is provided as close to home as possible.

Cancer care and related workforce

The provision of high-quality, comprehensive, culturally safe cancer services relies on the presence of an appropriately trained workforce. However, we know attracting and retaining a well-distributed health workforce in rural Australia is difficult across many professions.

The full time equivalent (FTE) rate of **GPs working in primary care** (per 100,000 population) drops off considerably in small rural towns and remote areas (from 117.3 in major cities to 67.2 in very remote areas).^{18,iv} The number of GPs

in rural and remote areas has been reducing over time.¹⁹ This is of concern, given that rural GPs are required in greater numbers due to their broader scope of practice and the higher burden of disease in rural populations.

Comprehensive cancer care requires access to the services of a suite of health professionals, including nurses, pharmacists and other allied health professionals. Yet rural communities have fewer pharmacists, psychologists, physiotherapists, occupational therapists and other registered **allied health practitioners**, based on 2020 data.⁵ They also have fewer dietitians, speech pathologists, audiologists and social workers, based on 2016 data.²⁰

Workforce inadequacies are amplified when specialised skills are considered – for example, only 19 of 8,000 accredited exercise physiologists in Australia focus exclusively on oncology exercise treatment as part of multidisciplinary teams, therefore this specific workforce in rural Australia is exceedingly small.^v

After initial diagnosis, many people with cancer will require the services of **non-GP medical specialists**. Radiation and medical oncologists are predominantly located in major cities, regional centres and large rural towns.^{21,vi} Palliative medicine specialists are in very short supply in rural towns of all sizes.^{21,vi}

The need for system-level innovation and reform

Some cancer care is highly specialised and might always need to be provided in tertiary centres in major cities. The vast distances and small populations in rural Australia make provision of face-to-face diagnostic, oncology and palliative care services in all areas very difficult.

To address the geographic disparities in cancer experience in Australia and improve equity of outcomes for rural populations, policy action is needed across the spectrum of care, from prevention and early intervention, to increasing access to primary, secondary and tertiary care. Broad areas of policy endeavour include: addressing the challenges of training, recruiting and retaining the required workforce; considering how different models of care will contribute to building the workforce and improving access; and focusing on the specific needs of Aboriginal peoples.

Shifting to a value-based healthcare approach, with a focus on the outcomes that matter most to healthcare consumers relative to the resources required, is likely to be useful in reforming the way cancer care is provided to rural people.²² The incorporation of virtual models of care should be considered in relation to the full care pathway.²³ Mechanisms to improve the ability of healthcare consumers to navigate the system throughout their cancer journey also warrant investigation.²⁴

^{iv} Based on the Modified Monash Model (MMM) geographical classification system.

^v Data provided directly by Exercise & Sports Science Australia, Feb 2022. www.essa.org.au

^{vi} NRHA analysis of 2020 National Health Workforce Dataset data utilising population data from 2020 by MMM, obtained directly from the Australian Government Department of Health.

The Alliance believes the following specific actions ought to be considered by the major stakeholders in the cancer care sector in rural Australia:

- Improve prevention and early intervention measures:
 - Prioritise action at the primordial level on the broader determinants of health.
 - Act to reduce the differential risk-factor burden in rural Australia.
 - Increase participation in screening programs, especially in very remote Australia.
- Improve access to primary health care in rural Australia, particularly GPs and other models of care that increase accessibility and affordability while maintaining quality and safety (such as nurse-practitioner- and nurse-led models of care).
- Improve access to specialist cancer care services in rural Australia:
 - Ensure a cohort of surgical specialists, radiation and medical oncologists, and palliative medicine specialists practice in rural Australia. This is essential to the provision of high-value cancer care and training of the next generation of rural cancer doctors.
 - Enhance the rural training pipeline for non-GP medical specialties (general physicians and surgeons, other surgical specialties, radiation and medical oncologists, and palliative medicine specialists), to build a larger cohort of trainees who stay rural for the majority of their training. This requires the presence of more state and territory government-funded positions for early career doctors in rural areas, in concert with more accredited vocational training posts, both of which rely on the availability of clinical supervisors and mentors.
 - Decentralise specialised cancer care wherever feasible, using innovative models where necessary (including digital health care), to ensure equitable access to high-quality, comprehensive care for rural populations. This might include:
 - » the design of mechanisms to make larger public hospital cancer centres accountable for the provision of outreach, telehealth and peer support to defined rural areas and practitioners
 - » incentivising secondary telehealth by increasing patient-end Medicare rebates and ensuring telehealth more generally is adequately rebated.
 - Increase access to cancer clinical trials in rural Australia. This is also imperative. Teletrial models that connect primary and satellite sites via telehealth, to generate capacity in smaller regional or rural sites via networks, show promise.²⁵ Tying funding from government bodies to a requirement for partnerships with regional and rural sites might enable this.
- Bolster the health workforce in rural Australia for nursing, pharmacy and other allied health, to maximise the contribution of these workforces to cancer care in primary and secondary care in rural areas. Essential to this is the development of mechanisms to appropriately fund multidisciplinary team meetings and other components of team-based care.
- Enhance cancer care skills in local generalist workforces – particularly GPs, nurses, pharmacists and other allied health practitioners – and ensure they are adequately funded to deliver this care.
- Act on attitudinal factors in rural populations to increase the likelihood of individuals accessing behavioural lifestyle change services as preventive care and seeking clinical care in a timely manner.
- Ensure travel and accommodation assistance schemes are adequately funded and easy for consumers to navigate.
- Include a specific focus on Indigenous service provision. The National Aboriginal Community Controlled Health Organisation is commencing this work with the development of an Aboriginal and Torres Strait Islander Cancer Plan, co-designed with the Aboriginal community. This plan might include measures to build the Aboriginal health workforce, improve the cultural safety of health services and enhance the cancer health literacy of Aboriginal peoples.

References

- 1 Australian Institute of Health and Welfare. Australian Burden of Disease Study: Impact and causes of illness and death in Australia, 2018. Remoteness estimates for Australia: Supplementary tables. 2021 Nov 24 [cited 2022 Jan]. www.aihw.gov.au/reports-data/health-conditions-disability-deaths/burden-of-disease/data
- 2 Australian Institute of Health and Welfare. Cancer in Australia 2021. 2021 Dec 1 [cited 2022 Feb]. www.aihw.gov.au/reports/cancer/cancer-in-australia-2021/summary
- 3 Australian Institute of Health and Welfare. Cancer in Australia 2021. Supplementary tables for Chapter 10: Key population groups. 2021 Dec [cited 2022 Jan]. www.aihw.gov.au/reports-data/health-conditions-disability-deaths/cancer/data
- 4 Australian Institute of Health and Welfare. Profile of Indigenous Australians. 2020 Jul 23 [cited 2022 Jan]. www.aihw.gov.au/reports/australias-health/profile-of-indigenous-australians
- 5 National Rural Health Alliance. Rural Health in Australia Snapshot 2021. 2021 [cited 2022 Feb]. www.ruralhealth.org.au/rural-health-australia-snapshot
- 6 Martin H, Ohara K, Chin W et al. Cancer services in Western Australia: a comparison of regional outcomes with metropolitan Perth. *Aust J Rural Health*. 2015 [cited 2021 Oct];23:302–8. doi.org/10.1111/ajr.12218
- 7 Clinical Oncological Society of Australia. More than bricks and mortar: cancer service development in regional and rural Australia. Workshop Report. 2012 Dec [cited 2022 Feb]. www.cosa.org.au/publications/reports-and-papers/2010-to-present
- 8 Australian Institute of Health and Welfare. National Cervical Screening Program monitoring report 2021. 2021 Dec 3 [cited 2022 Feb]. www.aihw.gov.au/reports/cancer-screening/national-cervical-screening-program-monitoring-rep/summary
- 9 Australian Institute of Health and Welfare. BreastScreen Australia monitoring report 2021. 2021 Oct 1 [cited 2022 Feb]. www.aihw.gov.au/reports/cancer-screening/breastscreen-australia-monitoring-report-2021/summary
- 10 Australian Institute of Health and Welfare. National Bowel Cancer Screening Program monitoring report 2021. 2021 Jun 23 [cited 2022 Feb]. www.aihw.gov.au/reports/cancer-screening/nbcsp-monitoring-report-2021/summary
- 11 Australian Bureau of Statistics. Patient experiences in Australia: summary of findings, 2020–21 financial year. 2021 Nov 17 [cited 2022 Jun]. www.abs.gov.au/statistics/health/health-services/patient-experiences-australia-summary-findings/2020-21
- 12 Commonwealth of Australia. Availability and accessibility of diagnostic imaging equipment around Australia. 2018 [cited 2022 Jun]. www.aph.gov.au/Parliamentary_Business/Committees/Senate/Community_Affairs/Diagnosticimaging/Report
- 13 Hunter J, Smith C, Delaney G et al. Coverage of cancer services in Australia and providers' views on service gaps: findings from a national cross-sectional survey. *BMC Cancer*. 2019 [cited 2022 Jun];19. [bmcancer.biomedcentral.com/articles/10.1186/s12885-019-5649-6](https://doi.org/10.1186/s12885-019-5649-6)
- 14 Underhill C, Bartel R, Goldstein D et al. Mapping oncology services in regional and rural Australia. *Aust J Rural Health*. 2009 [cited 2021 Oct];17:321–9. doi.org/10.1111/j.1440-1584.2009.01106.x
- 15 Kaukiainen A and Kolves K. Too tough to ask for help? Stoicism and attitudes to mental health professionals in rural Australia. *Rural and Remote Health*. 2020 [cited 2022 May];20(2). www.rrh.org.au/journal/article/5399#ref_34
- 16 Bygrave A, Whittaker K, Paul C et al. Australian experiences of out-of-pocket costs and financial burden following a cancer diagnosis: a systematic review. *Int J Environ Res Public Health*. 2021 [cited 2022 May];18:2422. www.mdpi.com/1660-4601/18/5/2422
- 17 Unger J, Moseley A, Symington B et al. Geographic distribution and survival outcomes for rural patients with cancer treated in clinical trials. *JAMA Netw Open*. 2018 [cited 2022 Feb];1(4):e181235. doi.org/10.1001/jamanetworkopen.2018.1235
- 18 Australian Government Department of Health. General practice workforce providing primary care services in Australia (2014 to 2020 calendar years) [download]. 2022 Jan 14 [cited 2022 Jun]. www.hwd.health.gov.au/resources/data/gp-primarycare.html
- 19 Australian Government Department of Health. General practice workforce providing primary care services in Australia (general practice workforce commentary 2020 calendar year) [download]. 2022 Jan 14 [cited 2022 Jun]. www.hwd.health.gov.au/resources/data/gp-primarycare.html
- 20 National Rural Health Alliance. Allied health workforce in rural, regional and remote Australia [fact sheet]. 2019 Jul [cited 2022 Mar]. www.ruralhealth.org.au/factsheets/thumbs
- 21 Australian Government Department of Health. National Health Workforce Dataset [data tool]. 2020 [cited 2022 Feb]. www.hwd.health.gov.au/datatool
- 22 Saunders C, Millar L, Ives A et al. Towards value based healthcare: lessons learnt from implementing outcomes measures. 2019 Oct 11 [cited 2022 May]. Australian Healthcare and Hospitals Association: Canberra, ACT. <https://valuebasedcareaustralia.com.au/publications/research/>
- 23 Slavova-Azmanova N, Millar L, Ives A et al. Moving towards value-based, patient-centred telehealth to support cancer care. 2020 Aug 20 [cited 2022 May]. Australian Healthcare and Hospitals Association: Canberra, ACT. <https://valuebasedcareaustralia.com.au/publications/research/>
- 24 Healthcare Management Advisors. Cancer care navigator analysis. Final report. 2021 Sep 16 [cited 2022 May]. All.Can Australia: Brussels, Belgium. www.all-can.org/national-initiatives/australia/#panel-pub-res
- 25 Sabesan S, Brown A, Poxton M et al. Implementation of a Teletrial model in the Northern Cluster (North Queensland, Australia): A Case Study. *Asia-Pac J Clin Oncol*. 2019 [cited 2022 Feb];15(Suppl.8):3–14.