Clinical Oncological Society of Australia

More than bricks and mortar

Cancer service development in regional and rural Australia

Workshop Briefing Paper

July 2012

About COSA

The Clinical Oncological Society of Australia (COSA) is the peak national body representing multidisciplinary health professionals whose work encompasses cancer control and care. COSA members are doctors, nurses, scientists and allied health professionals involved in the clinical care of cancer patients. COSA is affiliated with and provides medical and scientific advice to Cancer Council Australia.

COSA is the only organisation that provides a perspective on cancer control activity in Australia from those who deliver treatment and care services across all disciplines. The benefits of membership include discounted registration to COSA's Annual Scientific Meeting, access to a range of education programs and workshops, Cancer in the News daily email and subscriptions to Cancer Forum and the Asia Pacific Journal of Clinical Oncology. Please visit our website at www.cosa.org.au for more information.

The COSA Regional and Rural Interest Group is a multidisciplinary group focused on the unique issues facing cancer service delivery outside metropolitan areas. Our goals are to work at highlighting the deficiencies in service delivery, to enhance equity of access to current best practice care, cancer services and clinical trials.

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Contents

Executive Summary

COSA commissioned this briefing paper to inform a COSA workshop on the 3 August 2012 entitled "More than bricks and mortar: cancer service development in regional and rural Australia."

This briefing paper includes:

- an overview of cancer service provision in regional and rural Australia today
- a brief analysis of the workforce needs of regional cancer centres
- a discussion of initiatives currently improving cancer service provision

This paper collates information on regional and rural cancer services and workforce from publicly available reports from government and non-government sources. It also includes an analysis of cancer service provision and cancer workforce in regional and rural Australia from data contained in the COSA report "Mapping rural and regional oncology services in Australia" (2006), the MyHospitals website and the DoctorConnect website. COSA members provided their experiences directly through an open call for comments and a workforce survey.

We conclude that there is a need to complement fiscal capital for buildings and equipment with appropriate levels of human capital in the oncology workforce within regional cancer centres. We believe there is a threshold level of medical, nursing and allied health staff below which it will not be possible to realise improved outcomes for cancer patients in regional and rural Australia.

Greater agreement and coordination between all agencies involved in regional and rural cancer care is required to fund and support the cancer service workforce in regional and rural Australia. Australia must develop effective incentive programs to promote the value of working outside major cities as well as education and relief programs for the workforce already in these areas.

We must delineate the role of a regional cancer centre from that of metropolitan centres in order to ensure patients receive optimal care in a safe and supportive environment. Options for achieving this include the establishment of referral pathways and service delivery networks specific to the needs and resources available in regional and rural areas.

The development of research and education networks between cancer services located in metropolitan and regional areas are essential for the growth and support of regional and rural cancer services. These networks must include links between regional cancer services as well as links to outreach services in rural and remote areas. Access to patient information through shared systems is likely to improve inter-service communication and coordination.

The recent funding for regional cancer centres provides us with a significant opportunity to improve how Australians in regional and rural areas receive cancer care. How we achieve optimal cancer care for all Australians is up to our ingenuity, ability to prioritise and willingness to cooperate. The "More than bricks and mortar" workshop convened by the Clinical Oncological Society of Australia on the 3 August 2012 is an important step towards finding solutions to these complex and pressing issues.

Introduction

Cancer outcomes for Australians living in regional and rural areas highlight the need to improve access to cancer services and medical professionals outside our major cities. The five-year relative survival for Australians diagnosed with cancer decreases as remoteness of residence increases (Figure 1).[1] This disparity in cancer outcomes is most likely due to inadequate delivery of cancer services and health professionals to in regional and rural areas.

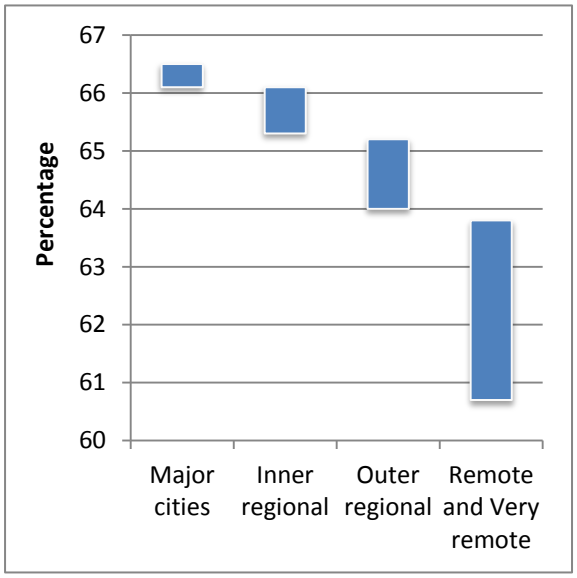

Figure 1: Five-year relative survival proportions for people diagnosed with cancer by remoteness in Australia 2006 – 2010.[1]

The first mapping of rural and regional oncology services in Australia, performed by the COSA in 2006, showed that the availability of oncology services diminishes as geographical isolation increases.[2] In addition, there are close to half the number of medical practitioners per capita in rural areas compared to the numbers of practitioners per capita in major cities.[3]

The pattern of chemotherapy administration in regional hospitals illustrates the challenge of providing cancer services in regional and rural areas. The COSA oncology mapping report found that only 21% of regional hospitals administering chemotherapy have a resident medical oncology service. Those hospitals without a resident service have access to a visiting service (41%) or administer chemotherapy independently (38%).[2]

After a number of years of campaigning for the Australian Government to invest in cancer services in regional and rural Australia, COSA welcomed the announcement of $560 million in capital grants for regional cancer centres in the 2009 -10 Federal Budget.[4] COSA and the Cancer Council Australia convened a workshop in August 2009 to develop an independent position on the ideal criteria for these capital grants. The report from the workshop entitled "A way forward for regional cancer centres – independent expert recommendations" recommended criteria for funding the regional cancer centres based on need, sustainability, integration and flexibility.[5]

The Department of Health and Ageing (DoHA) funded 24 regional cancer centre projects through the Health and Hospitals Fund (HHF) during 2010-2011 to provide infrastructure for regional cancer services including buildings, radiotherapy equipment, chemotherapy beds and patient accommodation.[6] This significant investment in regional infrastructure requires additional staff, coordination and service improvement initiatives to provide quality cancer services in regional and rural Australia.

The demand for cancer services and the workload of the cancer care workforce is likely to increase significantly following the establishment of new radiotherapy facilities in regional and rural Australia. During the preparation of this paper, a number of cancer care professionals working in regional and rural Australia commented on the increase in demand for all local cancer services following

installation of radiotherapy equipment. One centre reported a 10-fold increase in chemotherapy treatment sessions within one year of the radiotherapy service opening. Another reported a tripling in the workload of their cancer care coordinator from an average 250 occasions of service per month to 800 per month since commencement of radiation services.[7]

These are not isolated incidences. In a trial of single machine radiotherapy units in regional Victoria, each site experienced significant growth.[8] The international experience of introducing radiotherapy services into rural settings is also of increased demand for associated medical oncology services.[9]

This paper discusses the status of cancer service provision in regional and rural Australia today, the challenges of meeting the cancer service workforce needs in regional and rural Australia, and documents a number of initiatives already improving access to cancer services for regional and rural Australians.

This paper will inform a workshop convened by COSA on 3 August 2012 that will develop priorities for improving cancer service provision in regional and rural Australia over the next five years.

A note on the Australian Standard Geographical Classification – Remoteness Areas

The Australian Bureau of Statistics developed the Australian Standard Geographical Classification – Remoteness Areas (ASGC-RA) for the collection and dissemination of geographically classified statistics. The size of the population and the physical distance from the nearest urban centre determines the classification of a particular location.[10] DoHA uses this classification for distribution of funds and workforce incentives.[11] This paper refers to the following remoteness area classifications:

RA1 - Major Cities of Australia

RA2 - Inner Regional Australia

RA3 - Outer Regional Australia

RA4 - Remote Australia

RA5 - Very Remote Australia

The ASGC-RA classifies Hobart as RA2 and Darwin as RA3, therefore these capital cities are included in the analysis of cancer service provision in this paper. The ASGC-RA classifies Canberra, Gosford, Wyong, Wollongong and Geelong as RA1 so these centres are not included in the analysis.

The authors would like to note that any reference to regional and rural throughout this paper implies the inclusion of all areas outside major cities, including remote areas.

Cancer service provision in regional and rural Australia today

Key Points

- 52% of the HHF funded regional cancer centre project sites are located in inner regional areas while the others are located in outer regional areas (28%), major cities (13%) and remote or very remote areas (7%).
- 77% of MRI machines listed on the DoHA website are located in major cities, 19% in inner regional areas and 4% in outer regional areas.
- Cancer screening rates are lowest in remote and very remote areas.[13,14,15]
- The use of MRI and PET facilities in Australia is currently inefficient.[19]
- Cancer outcomes for some cancers are better for patients operated on by high-volume specialist surgeons.[21-25]
- The use of radiotherapy services in Australia is below optimal levels.[29]
- Administration of chemotherapy by nurses trained in chemotherapy delivery decreases as remoteness increases.[2]
- The most unmet supportive care needs for Australian patients are psychological.[36]
- Patient travel and accommodation assistance schemes do not reflect the actual costs to patients.[47]

Cancer service provision in Australia today reflects the complexity of the Australian health system and the nature of this multifaceted disease. To expand the knowledge of cancer service provision in regional and rural Australia, COSA mapped regional and rural oncology services in Australia in 2006.[2] Since then the Council of Australian Governments (COAG) signed the National Health Reform Agreement, which includes major reforms to the organisation, funding and delivery of health care in Australia.[12] In addition, DoHA announced $560 million in funding to develop regional cancer centres in the 2009-2010 Federal Budget.

There are 24 regional cancer centre projects throughout Australia funded through the HHF scheme (Appendix 1).[6] The funding covers infrastructure for cancer services, including:

- Operating theatres
- Patient and carer accommodation
- Magnetic resonance imaging (MRI) scanners
- Positron emission tomography (PET) scanners
- Computed tomography (CT) scanners
- Radiotherapy bunkers
- Linear accelerators
- Chemotherapy chairs and beds
- Isolation and palliative care beds
- Education and research facilities
- Consultation rooms
- Video and tele-health facilities

The 24 regional cancer centre projects are located in 18 primary sites and 28 satellite sites, primarily on the southeastern coast of Australia. Approximately half of the project sites are located in inner regional areas (52%) while the others are located in outer regional areas (28%), major cities (13%) and remote or very remote areas (7%) (Figure 2). Private companies are responsible for six of these projects. The remaining projects are the responsibility of the relevant State and Territory governments, which contributed additional funding to many of the projects.

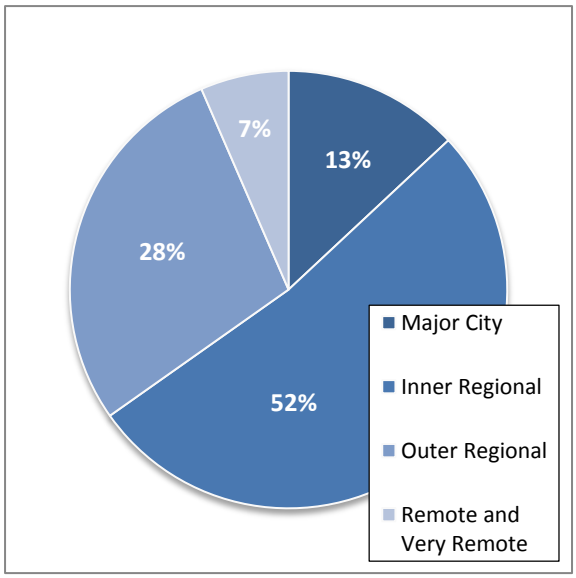

Figure 2: Location of HHF funded regional cancer centre projects including primary and satellite sites by remoteness area classification.

The development of regional cancer centres is a significant step towards improving access to treatment for cancer patients in regional and rural Australia; however, these 24 projects are only part of the picture. In the following section, we provide a brief summary of the provision of diagnostic, treatment and supportive care services available to cancer patients in regional and rural Australia today.

Diagnostic and Imaging Services

Screening

BreastScreen Australia services provide free screening to all women over 40 and specifically targets women aged 50-69 years. Participation in BreastScreen is highest in inner regional (56.7%), outer regional (58.3%) and remote locations (56.3%), and lowest in major cities (53.8%) and very remote locations (50.2%).[13]

The National Cervical Screening Program promotes routine Pap smears every two years for women between the ages of 18 and 69 years. Participation is highest in major cities (58.9%), followed by inner regional areas (58.3%) and outer regional areas (57.1%). Participation is lowest in remote (56.5%) and very remote areas (57.1%).[14]

Through the National Bowel Cancer Screening Program Australians turning 50, 55, or 65 years of age, receive an invitation to complete a faecal occult blood test. Participation rates are higher in inner regional (40.1%) and outer regional (39.1%) areas and lower in very remote regions (25.0%).[15]

Imaging

Imaging is essential for determining the precise location and stage of cancer to inform surgery, radiotherapy and other cancer treatments. Imaging is also used to monitor treatment success and for detecting recurrence. The limited availability of imaging tools in regional Australia means that multiple trips to metropolitan areas are necessary for diagnosis, treatment planning and follow-up for many regional and rural patients and their carers. The six CT scanners, two X-ray machines, one MRI scanner and three PET scanners funded through the HHF should alleviate some of the travel burden for patients.

Improved access to imaging services will have a significant impact on patient outcomes and healthcare cost. The Medical Services Advisory Council has assessed the safety, effectiveness and cost-effectiveness of PET for a number of cancers. Their assessment of the use of PET for recurrent colorectal cancer found that it leads to the avoidance of surgery, improvements in surgical morbidity and mortality and a potential cost saving of $2 000 per patient.[16]

Of the 125 MRI machines listed on the DoHA website, 77% are located in major cities, 19% in inner regional areas and 4% in outer regional areas (Figure 3).[17] The Federal Government also recently announced 30 additional regional licences for Medicare-rebated MRI services under the Diagnostic Imaging Review Reform Package.[18]

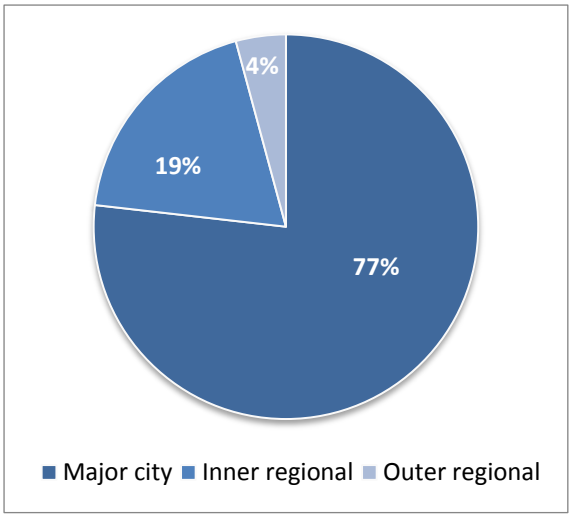

Figure 3: Distribution of MRI scanners in Australia by remoteness area classification.

A recent DoHA report found that the current MRI arrangements are unnecessarily complex, making patient access difficult. The report also noted that a number of units are located where there is insufficient population and specialists.[19] In addition, the report found that although Australia has a comparatively high number of CT machines compared to the OECD average, they are not being utilised efficiently.[19]

Treatment Services

Surgery

Surgery has become increasingly specialised over recent decades, with the Royal Australasian College of Surgeons (RACS) now recognising nine different areas, within which there is further subspecialisation. Cancer surgery is a variable part of the total workload in all of these disciplines, varying from a relatively minor part in the workload of vascular surgeons, to the predominant part of the work of many general and urological surgeons. The College recognises the importance of Surgical Oncology as a discipline, through formation of the Surgical Oncology Section.[20]

There are clear advantages for increased specialisation of the surgical workforce. Patients with colorectal cancer treated in high-volume hospitals, by high-volume surgeons and colorectal specialists have a significantly improved five-year survival, as demonstrated by a recent Cochrane systematic review.[21] Patients with pancreatic cancer,[22] oesophageal cancer,[23] and rectal cancer[24] experience similar outcomes. Data also indicates that patients operated on by specialised surgeons have better outcomes than patients operated on by non-specialised surgeons.[25]

Evidence of the optimal outcome for regional and rural patients must inform decisions on performing surgery in a regional or metropolitan centre. Australians living in rural areas are less likely to receive optimal specialist surgical treatment for colorectal cancer,[26] and radical prostatectomy for prostate cancer.[27] While the evidence for a link between caseload, specialisation and cancer outcomes varies with procedure and cancer types it is an important factor to consider when planning access to specialist surgeons for regional and rural patients. In addition, many surgical procedures require substantial support from a number of surgeons, anaesthetists, high dependency units and occasionally intensive care departments.

Radiotherapy

Studies estimate that 52% of people with newly diagnosed cancer are likely to benefit from radiotherapy.[28] However, only 38% of Australians diagnosed with cancer received radiotherapy in the year 2000, indicating that the use of radiotherapy services in Australia needs to increase by at least one-third.[29]

In 2002, the Federal Government set up the Radiation Oncology Inquiry in response to extended waiting times for radiotherapy due to workforce and equipment shortages.[30] Implementation of the recommendations from

the inquiry saw the establishment of radiotherapy services in regional centres in Victoria, New South Wales, Queensland and Tasmania.[29]

Access to radiotherapy services has a significant impact on the treatment decisions of regional and rural patients. Of the 21 services outside major cities administering radiotherapy (listed on the MyHospitals website or funded by the HHF) the majority are located in inner regional areas (Figure 4, Appendix Two). Travel to metropolitan or regional centres for radiotherapy means that regional and rural patients must leave their families and employment for extended periods. Some rural breast cancer patients choose to opt out of radiotherapy and have a mastectomy in preference to being away from home.[31]

In line with the need for increased service provision, the regional cancer centre projects funded by the HHF include a total of 28 radiotherapy bunkers and 17 linear accelerators. This funding will provide radiotherapy services for the first time in Burnie (TAS), Rockhampton (QLD) and Nowra and Tamworth (NSW).

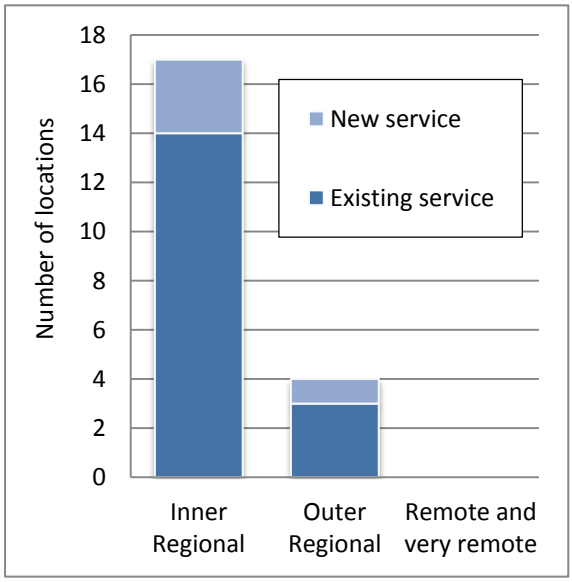

Figure 4: Location of radiotherapy administration in Australia by remoteness area.

In NSW in the last ten years, provision of radiotherapy services has only just kept up with demand, with some regional centres performing better due to the installation of new facilities.[32] Evaluation of the impact of increased provision of radiotherapy services in regional centres around Australia would inform future planning decisions.

Chemotherapy

An Australian newly diagnosed with cancer will attend an average of five chemotherapy services, mostly intravenous administration of chemotherapy drugs over six hours or less.[29] Studies have suggested that the national chemotherapy utilisation rate may be as low as 19%.[33]

Medicare claims for chemotherapy services are generally lower in rural areas; however, some rural areas without access to radiotherapy services have a higher number of claims for chemotherapy, indicating that access to services is affecting therapy choice.[29]

There are 98 hospitals outside our major cities listed as providing chemotherapy services on the MyHospitals website.[34] The majority of these hospitals are located in inner regional and outer regional areas of Australia nine of which received HHF funding (Figure 5, Appendix Two). Approximately 47% of hospitals providing chemotherapy services outside major cities are located in districts of health workforce shortage.

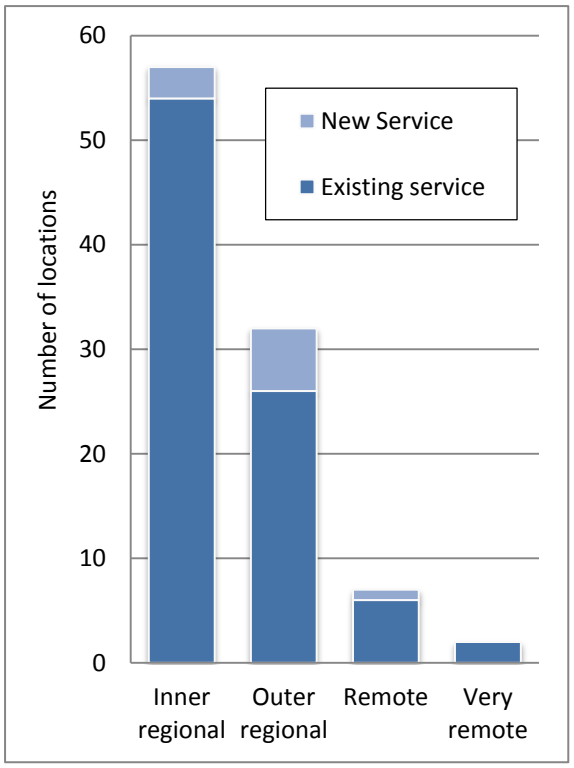

Figure 5: Location of chemotherapy administration in Australia by remoteness area.

In line with the need for increased provision of chemotherapy services, the regional cancer centre projects funded by the HHF include a total of 289 additional chemotherapy chairs and 2 paediatric chemotherapy chairs. This funding will provide chemotherapy services for the first time in eight towns in rural South Australian and one in Western Australia.

Mapping of chemotherapy orders and administration patterns in Australia in 2006 showed as remoteness increases medical oncologists are less likely to order chemotherapy. COSA found similar results for administration of chemotherapy by trained nurses, which decreases as remoteness increases (Figure 6).[2]

The majority of chemotherapy preparation and dispensing in Australia occurs in dedicated manufacturing facilities located in metropolitan areas. Only a small proportion of regional centres have an oncology pharmacist, allowing for the preparation of chemotherapy on-site (Figure 6).[2] Centres that do not have access to an oncology pharmacist or a medical oncologist are greatly disadvantaged when patients experience adverse reactions to treatment regimes. The increasing availability of orally administered chemotherapy permits the management of patients in the community

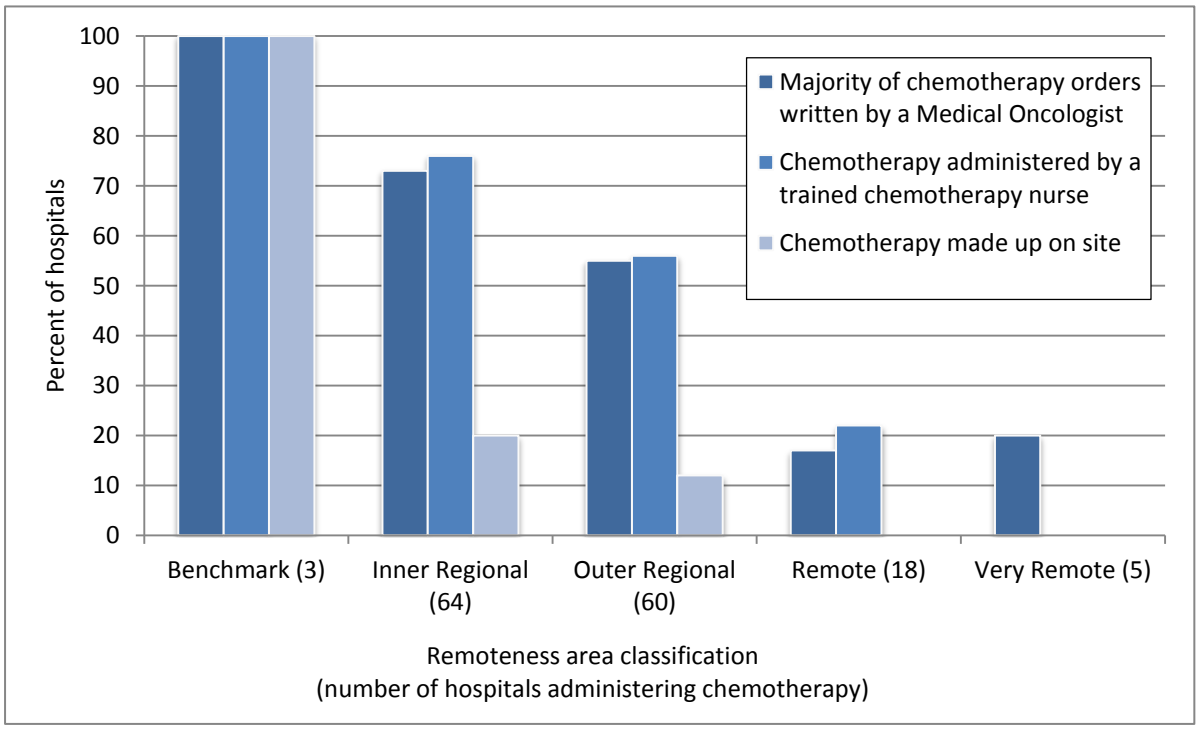

Figure 6: Regional and Rural Hospitals Administering Chemotherapy (2006)[2]

setting, however orally administered chemotherapies still have the potential to cause serious toxicities or fatal outcomes if used incorrectly. The Victorian Department of Health reports patient toxicity due to both over and under-administration of oral chemotherapy.[35]

Supportive care services

Supportive care focusses on the physical, psychological, social, information and spiritual needs of the patient. A range of allied health professionals provide supportive care including psychologists, psychiatrists, speech pathologists, occupational therapists and social workers, physiotherapists, dieticians and community health care providers.

The most unmet supportive care needs for Australian patients are psychological, while carers need more health care services information.[36] In 2006, COSA estimated that only 39% of regional hospitals administering chemotherapy had a dedicated oncology counselling service.[2]

Supportive care is particularly important for regional and rural patients as they are more isolated, have limited access to resources, have a more self-sufficient lifestyle and are less likely to ask for help. The need to travel for treatment causes additional practical, emotional and financial problems for regional and rural patients.[37] Supportive care services need to be located as close as possible to the patient and be sensitive to their cultural needs. Health professionals working in supportive care need adequate access to rooms and equipment as well as support for administration and transport.

The Victorian Government has developed a supportive care policy as part of Victoria's Cancer Action Plan 2008 – 2011. Supportive Cancer Care Victoria is assisting with the implementation of this policy, including training of the cancer workforce in supportive care screening processes and survivorship awareness.[38] Cancer Council NSW developed a supportive-care screening tool, suitable for implementation in a clinical setting, to reliably screen for unmet needs among cancer patients,[39] however more support is needed for the uptake of these tools in the clinical setting.

Palliative Care

Cancer patients are the largest users of palliative care in Australian hospitals, comprising 60% of all palliative care separations in 2008 - 2009.[40] In 2006, only 22% of regional hospitals administering chemotherapy had a dedicated palliative care doctor and 59% had dedicated palliative care nurses.[2]

Due to the lack of palliative care specialists outside metropolitan areas, GPs play a pivotal role in the provision of palliative care services in rural and regional areas,[41] however many of these GPs do not have the capacity to provide optimal palliative care.[42] Specialist nurses trained in palliative care, supported by local GPs, visiting specialists,[43] and a program of continuing professional development in palliative care[44] also provide palliative care to Australian living in rural areas.

The number of palliative care separations in Australian hospitals increased by 56% between 1999 and 2009,[40] highlighting the need for increased support for palliative care for our ageing population. If properly supported palliative care can improve quality of life, result in less aggressive care towards the end of life and extend survival when provided early.[45]

Accommodation

Providing cancer services in regional areas is necessary for reducing regional disparities in cancer outcomes; however, patients in rural and remote locations must be able to access

tertiary treatment centres in both regional and metropolitan locations for specialist services. A recent study found that travel burden is greatest for rural patients, and is associated with greater financial burden.[46]

State and territory governments are responsible for managing their respective Patient Assisted Travel Schemes. In 2009, The National Health and Hospitals Reform Commission's final report recommended these schemes take into account the true cost of travel for patients and their families.[47] In order for patients to be eligible for assistance, they must receive care as close to home as possible, making those patients who wish to participate in clinical trials ineligible for funding.

Current accommodation schemes are struggling to deal with demand, incur cross-border inconsistencies and impose unnecessary administrative burden on patients and cancer centre staff. The provision of over 150 additional patient accommodation rooms through HHF funds will alleviate some of the problems and provides an opportunity to address current problems.

Workforce

Key Points

- The supply of medical practitioners per person is highest in major cities.[51]
- On average across the 20 professions in 12 regional cancer centres, demand for staff is 2.84 times the current staffing levels.
- An increasing number of oncologists are women who want to work part time.[48]
- Only 6% of regional hospitals administering chemotherapy have a resident surgical oncologist.[2]
- The proportion of resident radiologists in regional and rural areas is less than the proportion of the general population residing in these areas.[49]
- A shortfall of 156 medical oncologists in Australia is predicted for 2014.[50]
- On average, nurses working in rural and remote regions work longer hours than nurses in major cities.[59,60]
- Metropolitan areas tend to employ tumour-specific cancer care coordinators while cancer care coordinators in regional and rural areas are more often generalists.[60]
- It is estimated that only 24% of regional hospitals administering chemotherapy have a dedicated palliative care specialist.[2]
- Incentives for the cancer workforce to move to regional and rural areas include the provision of comprehensive cancer services, adequate numbers of staff and support for professional development.

The supply of the health workforce is a major challenge to providing cancer services to Australians living outside our major cities. In 2010, medical practitioner supply across Australia ranged from 400 full-time equivalents per 100,000 people in major cities to 185 in outer regional areas (Figure 7).[51]

The COSA Workshop in 2009 "A way forward for regional cancer centres" concluded that regional cancer centres must have the capacity to support the staffing mix required to make a centre viable and able to improve cancer outcomes.[5] To meet this requirement, the workshop proposed a number of essential staffing enablers:

- Radiation oncologists (minimum of two)
- Medical oncologists (minimum of two)
- Surgeons with oncology training
- At least one cancer care coordinator
- At least one medical professional trained in palliative care
- At least one medical professional trained in psycho-social care
- Oncology pharmacy in larger facilities
- Resident or networked pathology
- Optimal nursing numbers and access to specialist nurse educators
- Access to the full suite of allied health services
- Staff with data management and clinical trial expertise

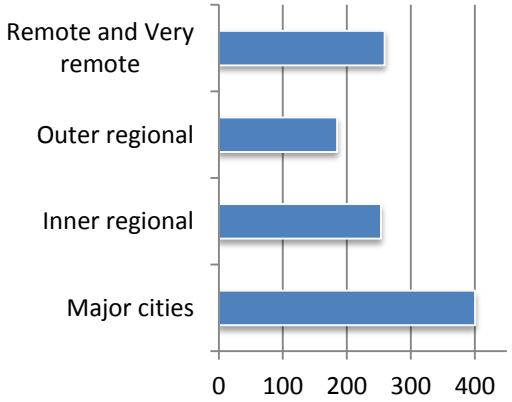

Figure 7: Medical practitioners in Australia by remoteness classification, 2010. [51]

A snapshot of the cancer service workforce in regional and rural Australia

COSA performed a survey of cancer centres in regional and rural Australia to gauge the

cancer workforce needs of these centres. This was the opinion of cancer care professionals and not a comprehensive audit of the workforce needs of cancer services in the region. We asked participants for the current numbers of people working in 20 health professions as well as the number of additional staff the centre required to provide optimal cancer services.

A range of professionals including oncologists, nurses and service directors from twelve regional centres responded to the survey. The towns included four in Queensland, three each in New South Wales and Victoria and one each in the Northern Territory and Tasmania. Three of the towns are located in outer regional areas while the remaining nine are located in inner regional areas.

On average across the 20 professions, staffing levels need to increase by 2.84 times the current levels. The need for surgical oncologists, data managers, psychologists, clinical trial coordinators, physiotherapists and radiation oncologists is more than twice that of present staffing levels (Figure 8, Appendix 3). Respondents also nominated other professions already present or needed in the centre. These other professions in demand included welfare officers, nurse unit managers/directors, nurse

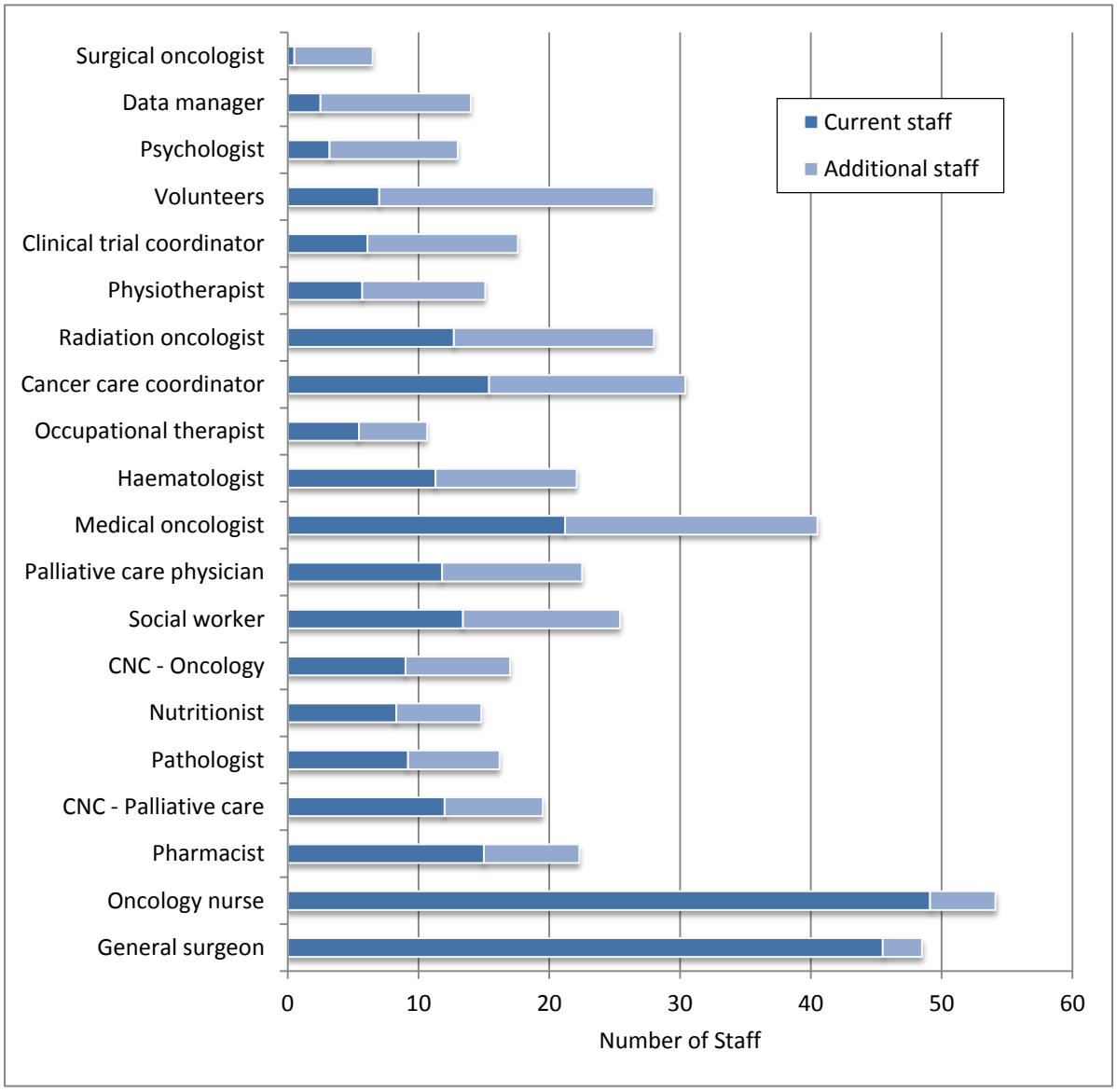

Figure 8: Current staff numbers and additional staff numbers needed in 12 regional cancer centres.

educators, radiation oncology registrars, radiation therapists, radiation physicists and information technology support (Appendix 3). While this survey is not definitive, it gives an indication of the level of workforce shortages in regional cancer centres. It also provides a snapshot of the variety and depth needed within the cancer service workforce for the provision of a truly comprehensive and integrated service.

Cancer service workforce shortages

Australia is currently experiencing shortages in the health workforce throughout the diverse locations and disciplines involved in health service delivery. The predicted increase in the number of cancer patients due to the ageing of Australia's population will place further strain on the supply of health services. The challenge of recruiting health professionals to regional and rural Australia is compounding the impact of these shortages on cancer outcomes in the regional and rural population.

Inflexibility, lack of training, lack of access to specialist services and insufficient support for leave and continuing professional development are problems that lead to staff stress, disruption to services and difficulty recruiting staff. Subsequent staff shortages lead to high staff turnover, long working hours and high levels of stress.

A survey of oncologists in 2011 found that an increasing number of oncologists are women who want to work part time.[52] Health workforce planning is currently not allowing for these natural variations in workforce levels, further challenging recruitment and retention of the existing workforce in regional and rural areas.

In the following section, we provide details of specific workforce issues in cancer services in regional and rural Australia.

Surgeons

Modelling done by RACS indicates that due to the expected retirement of a large cohort of surgeons and the desire to reduce reliance on international medical graduates Australia faces a surgical workforce crisis within the next 15 years.[53]

In 2006, only 6% of regional hospitals administering chemotherapy had a resident surgical oncologist.[2] In 2011, almost 15% of the active RACS Fellows indicated that they worked outside a major city. Over 40% of these 635 surgeons were 65 years or older,[54] indicating that a critical shortage of surgeons in rural areas is likely to occur in the next couple of years.

Radiotherapy professionals

In addition to the 17 linear accelerator machines funded by the HHF, the government has committed to the installation of 16 additional machines throughout Australia, a 23 per cent increase in overall numbers.[55] This will require a corresponding increase in the workforce to operate these machines.

The 2012 Skilled Occupation List includes Radiation oncologists as an area of need.[56] While there are close to sufficient numbers of radiation oncologists and radiation therapists to operate existing services there is currently a significant shortage (13.7%) of radiation oncology medical physicists in Australia. These professions will come under increasing pressure due to service expansion.[55]

An analysis of radiologists by the Royal Australian and New Zealand College of Radiologists revealed that the proportion of resident radiologists in regional and rural areas is less than the proportion of the general population residing in these areas.[57]

Medical oncologists

In Australia, the demand for full-time medical oncologists in 2009 was 391, a shortfall of 157. The authors expect the current shortage and high workload of medical oncologists to continue, with a shortfall of 156 medical oncologists predicted for 2014.[58] The same survey found that 33 rural locations account for 22% of medical oncology practices in Australia,[58] numbers that are unlikely to be sufficient to service the one-third of Australians who live outside our capital cities.

Nurses

In general, there are more FTE nurses per 100,000 people in regional and remote areas than in major cities; however, nurses working in very remote and remote areas work more hours than the national average.[59] Cancer nurse coordinators in metropolitan WA work an average of five hours overtime while their rural counterparts worked an average of 11 hours overtime,[60] indicating there may be a greater need for nursing roles in regional and rural areas.

In 2006, COSA estimated there were 200 FTE nurses with recognised oncology certificates administering chemotherapy outside major cities. In addition, there were approximately 53 FTE nurses outside major cities administering chemotherapy without a recognised certificate.[2] This highlights the need for education and training of the existing nursing workforce to provide chemotherapy in an environment that is safe for patients and staff.

Cancer care coordinators

Cancer care coordinators streamline patient care and support patients and their carers throughout the cancer journey. This is particularly important in regional and rural areas where the spread of services is across disperse geographical areas and political and organisational boundaries.[61]

Metropolitan areas tend to employ tumour-specific cancer care coordinators while cancer care coordinators in regional and rural areas are more often generalists.[60]

The care coordinator role enables networking between centres as cancer care coordinators in regional and rural areas develop referral pathways with cancer care coordinators in metropolitan hospitals.[62]

Palliative care specialists

Cancer patients are the largest users of palliative care in Australian hospitals, comprising 60% of all palliative care separations in 2008 - 2009.[40] In 2006 COSA estimated only 24% of regional hospitals administering chemotherapy had a dedicated palliative care specialist.[2]

The Australian & New Zealand Society of Palliative Medicine estimates that Australia has approximately half the palliative medicine specialists it needs to service the population, a need that is greater outside our capital cities.[63]

Allied health workforce

Allied health professionals include physiotherapists, occupational therapists, psychologists, pharmacists, dieticians, social workers, counsellors, speech pathologists, optometrists, podiatrists, audiologists, exercise physiologists and Aboriginal health workers. Australia currently lacks an accurate profile of allied health professionals working in cancer care, making it difficult to accurately plan for learning and development initiatives and models of care.

Emerging roles

During the consultation phase for this briefing paper, respondents made a number of comments regarding roles in the cancer workforce that are of particular importance to

regional and rural areas. We briefly discuss these roles and their relevance to cancer service delivery in regional and rural Australia in the following section.

Oncology GP/Visiting Medical Officer

An oncology GP/VMO supplements the outreach service provided by visiting oncologists in regional areas by conducting routine pre-chemotherapy reviews, reviewing patients who are unwell in the chemotherapy suite, assisting with triaging of patients (including arranging biopsies and staging scans) and charting chemotherapy treatment. This role is of value to nursing staff and patients as it increases the hours of on-site medical cover.

Cancer Care Workforce Development Officers

There are four Cancer Care Workforce Development Officers in Queensland, including one specialising in paediatric care. The purpose of the role is to build the capacity of allied health professionals through learning and development activities across the state. This multidisciplinary approach to education increases understanding of the roles of other disciplines, as well as improving referral processes and networks.[64]

Oncology Nurse Practitioner

Nurse practitioners are registered nurses who have acquired the expert knowledge base, complex decision-making skills and clinical competencies to practice at an advance level.[65] When applied to the regional and rural oncology setting, this role maximises a nurse's capability in medical oncology to meet the needs of patients. If the source of funding is multiple providers in the region, the role is sustainable and adds value to existing services.

Nurse educators

Respondents to COSA's call for comments noted that nurse educators make a substantial contribution to the education of staff in regional cancer centres. There is no workforce data and no agreed competencies regarding the appropriate and relevant qualifications for cancer nurse educators in Australia. This is of concern, as nurse educators are responsible for training the nurses in the safe handling and administration of chemotherapy.

Attracting and retaining workforce in regional and rural areas

Incentives

In response to COSA's call for comments (Appendix Three), cancer health professionals working in regional and rural Australia noted a number of factors that attract medical professionals to their region. These factors can be broken in to three main areas; service provision, workforce and professional development.

Service Provision

- The availability of radiotherapy locally
- Medicare licencing for MRI machines
- Cancer care centres providing a centralised and comprehensive service
- Access to clinical trials
- Functional day chemotherapy units
- Multidisciplinary teams
- Telehealth capability

Workforce

- Presence of a wide range of professionals needed to deliver effective cancer care
- Sufficient workforce
- Appropriate office space and secretarial support
- Well supported positions
- Concurrent appointments at metropolitan centres

Professional Development

- Increased educational opportunities
- More on-site education and opportunity for travel to courses
- Reduce administrative barriers to allow staff to up-skill by attending metropolitan centres
- Challenging and interesting treatment approaches
- Opportunities for teaching and research

Disincentives

It is evident that the recruitment and retention of oncology health professionals to regional and rural regions of Australia is problematic due to the sparseness of the population and the availability of infrastructure in these areas. Health professionals are unlikely to move to areas that lack the desired schools, telecommunication, community services and leisure activities. The decision to move out of major capitals in Australia will depend on the relative cost of living and transport as well as available employment for partners and social networks. Individuals may also consider the sustainability of funding for the position and the availability of support staff.

The lack of access to continuing professional development is also of concern for health professionals considering a move to regional Australia and the lack of peer support due to lower numbers of peers may act as a disincentive. This includes challenges in updating procedures and practices due to isolation and poorly supported education networks. The volume and complexity of work may be too low to keep some cancer health professionals engaged. In addition, sparsely distributed populations reduce the opportunity for participation in research.

Health professionals living in rural Australia need to call on a wider variety of skills than their city counterparts, which may be a disincentive to some professionals who prefer to specialise in one particular area or procedure. The perceived levels of stress associated with working in rural and remote regions may also be a deterrent for health professionals. Increased demand to be on call or to work more night shifts than professionals in major cities is a reality of rural and regional employment.

Improving cancer service provision

Key Points

- Multidisciplinary meetings in rural areas are comprised primarily of nurses and allied health professionals.[56]
- The development of best-practice referral pathways may streamline the referral process in regional and rural settings.
- Remote radiotherapy planning may reduce the number of times a patient travels to major centres for radiotherapy.
- Satisfaction with this tele-health has proven to be high among both patients and health workers.[68]
- A research network for regional cancer centres would provide consistency across services and increase opportunities.
- There is currently no formal accreditation system in Australia for nurses working with cancer patients.
- Studies which include Indigenous community members in genuine research roles result in successful outcomes.[78]
- HWA is developing a National Cancer Workforce Strategy to address cancer workforce issues

The challenges to delivering cancer services to regional and rural Australians centre on the fragmentation of funding between State, Territory and Federal Governments, the difficulty in coordinating services in the public and private sectors and the challenge of providing optimal care over large distances. In addition, current models of funding and service provision are service centred as opposed to a patient centred approach.

New Zealand uses a population-based funding formula where funding metrics for the District Health Boards include a rural adjuster.[66] The recent establishment of the Independent Hospital Pricing Authority to oversee the implementation of activity based funding in public hospitals in Australia is a step towards matching funding to service use, however it is unclear what impacts this will have on regional and rural communities.

In this section, we discuss some of the initiatives that are improving cancer service provision in regional and rural Australia today.

Multidisciplinary care

Multidisciplinary care is a coordinated, patient centred approach to cancer care in which a team of health professionals involved in a patients care meet to consider appropriate treatment options. The multidisciplinary team collaboratively develop an individualised treatment and care plan and work to coordinate the timing and location of care with respect to patient needs. Benefits of this approach include better patient outcomes, improved communication between health professionals, increased efficiency and enhanced professional relationships and opportunities for education.

In regional and rural areas, multidisciplinary meetings are small and lack input from specialists. A survey of health professionals participating in multidisciplinary team meetings in Western Australia found that meetings in rural areas were comprised primarily of nurses and allied health professionals with one of 11 medical oncologists and one of five radiation oncologists attending rural and metropolitan meetings.[60]

Referral pathways

Changing historical referral pathways may be a challenge for regional cancer centres, as some GPs choose to bypass regional cancer centres in favour of maintaining their links with metropolitan health services. Public and political perception that large centres always have the best outcomes compounds this

problem. Unnecessary referral to metropolitan centres adds an additional level of complexity for a patient who wishes to return to the regional setting after treatment or mid-treatment. In addition, metropolitan cancer services may lack knowledge of services available in regional and rural areas.

The development of best-practice referral pathways may streamline the referral process in regional and rural settings and inform metropolitan cancer services of the options available to patients closer to home. A 30% increase in referrals from a regional health service to radiation services in Perth since the start of CanNET in Western Australia demonstrates the potential impact of this program.[67]

Remote radiotherapy planning

Remote radiotherapy planning reduces the number of times a patient travels to major centres for radiotherapy. Remote radiotherapy planning is available in Dubbo once a month on the same day as the radiation oncology clinic. A team of one radiation oncologist and two radiotherapists travel to Dubbo Base Hospital from Royal Prince Alfred Hospital for the day to perform preliminary planning in the radiology department. The radiotherapists perform CT scans, measurements and tattooing and take copies of the images back to Sydney for further planning. This may take one to two weeks after which the patient must travel to Sydney for treatment.

Tele-health

The Australian Government is expanding the provision of telehealth services through the Connecting Health Services with the Future: Modernising Medicare by Providing Rebates for Online Consultations initiative. Under the initiative, Medicare rebates for video consultations across a range of medical specialties became available from 1 July 2011.

The Townsville Cancer Centre has provided routine and urgent medical oncology services to rural and remote communities through videoconferencing since 2007. Satisfaction with this model of care has proven to be high among both patients and health workers.[68]

Data

The recording and retrieval of cancer patient data is essential for care coordination and treatment planning for patients, for assessment of population outcomes and evaluation of service improvement programs. A single medical record of cancer patient history that is accessible for all health professionals involved in their treatment would enable service integration and greater coordination of care.

Electronic note systems and electronic prescribing are already in widespread use however the exchange of imaging results as well as pathological slides remains difficult for some providers. In many cases, different IT systems restrict the sharing of information between health services. Web-based storage and retrieval systems would allow the easy exchange of imaging data or other relevant files, however this is dependent on a reliable and supported broadband internet connection in regional areas.

Cancer Australia's National Cancer Data Strategy outlines potential opportunities for cancer data development in Australia.[69] There are currently no National Minimum Data Sets for cancer-related data however; Cancer (clinical) and Breast Cancer (cancer registries) Data Set Specifications are available through the Australian Institute of Health and Welfare.[70]

Research and Clinical Trials

The only mechanism for many rural and regional cancer patients to access certain chemotherapy regimens is by attending clinics

involved in clinical trials in metropolitan centres.[71]

A research network for regional cancer centres would provide consistency across services, streamline ethics approval processes and increase opportunities to access trials. Employment of two trial co-ordinators enabled the establishment of cancer clinical trial capability in Warrnambool, including access to international sponsored studies. Recruitment has been successful for two international cancer related vaccine studies, indicating that regional populations are supportive of this type of research.[72]

Cancer education for nurses

There is currently no formal accreditation system in Australia for nurses working with cancer patients. The Australian College of Nursing offers a Graduate Certificate in Cancer Nursing and a Graduate Certificate in Breast Cancer Nursing. A number of cancer related subjects are also available through the college's Continuing Professional Development program face-to-face or online.[73]

The National Cancer Nursing Education (EdCaN) project, funded by the Australian Government and managed through Cancer Australia, has develop a competency standards framework for the cancer nursing workforce, and a set of capabilities for nurses working in cancer control. The project's web-based resource materials, available via the Cancer Learning website, help nurses acquire these capabilities.[74]

Indigenous cancer services

Indigenous Australians make up a greater proportion of the population as remoteness increases, peaking at 44.8% of the population in very remote areas.[75] Indigenous Australians experience higher mortality rates than non-Indigenous Australians for all cancers combined,[76] and access to and use of health services for Aboriginal and Torres Strait Islander people is lower than for other Australians.[77]

A recent review of cancer control studies among Indigenous people of Australia, New Zealand, Canada and the USA observed that studies which included Indigenous community members in genuine research roles resulted in successful outcomes.[78] The provision of cancer services by Indigenous Australians may also improve cancer outcomes however in 2010, there were only 113 medical practitioners employed in medicine in Australia who identified as Aboriginal or Torres Strait Islander.[51] Cancer education courses for Indigenous health professionals are also of benefit.[79]

Workforce Reform

In response to the growing need for an adequate and stable health workforce, COAG initiated the formation of Health Workforce Australia (HWA). HWA is developing a National Cancer Workforce Strategy to address cancer workforce issues, accelerate reform initiatives and promote workforce innovation projects across Australia.

HWA is also responsible for a raft of health workforce programs including formation of the Integrated Regional Clinical Training Networks, the Rural Health Professional Program, the Simulation in Health Directory and development of the Rural and Remote Health Workforce Innovation & Reform Strategy.[80]

The Australian Government is also investing $1.8 billion over four years to deliver:

- 5,500 new GPs
- 975 places each year for junior doctors to experience general practice
- 680 more specialist doctors
- support for the aged care workforce
- locum support for 7,500 rural nurses and 1,000 rural allied health workers

to access professional development activities
- 1,000 extra clinical placement scholarships for allied health students
- support for general practice nurses

Service improvement initiatives

Cancer Services Network National Demonstration Program (CanNET)

The key elements of CanNET are active consumer engagement, primary care involvement, multidisciplinary care, directory of cancer services, quality assurance and workforce development. With funding from Cancer Australia seven jurisdictions throughout Australia developed CanNET Programs resulting in:

- A directory of cancer services for each jurisdiction
- Participation of 1,196 health care providers in professional development activities
- Support for 19 multidisciplinary teams
- 16 network-wide referral pathways for a range of different tumour streams[81]

Federal funding for the CanNET project ceased in June 2012.

Border Medical Oncology

The establishment of the Border Cancer Coordination Project in 2009 enabled the unique delivery of cross border inter-jurisdictional clinical cancer care. The Border Medical Oncology Unit was able to extend its capacity, develop better patient support services and improve coordination of care.

The results were overwhelmingly positive, an increase in the number of new patients treated locally from 150 to 750 a year (over 10 years), an eight-fold increase in chemotherapy day treatments performed locally, the establishment of multidisciplinary clinics and more than 10% of new patients participating in a clinical trial.

Victorian Integrated Cancer Services

There are eight geographically based and one speciality based Integrated Cancer Services (ICS) in Victoria, established to improve access to the full range of cancer services for all Victorians. The ICS are formal partnerships between health services that aim to improve the planning and delivery of cancer care so that it is coordinated, appropriate and effective. Evaluation of the ICS program in 2011 found that 51% of patient records surveyed included a care treatment plan from a multidisciplinary team, an improvement on the 2010 state-wide aggregate of 38%.[82]

Regional Outreach Shared Care Program

Treatment of rare tumours and paediatric cancers in regional and rural areas is problematic due to the low number of cases and disperse population. The Regional Outreach Shared Care Program (ROSCP) in Victoria facilitates the transition between the primary treating hospital and the regional centre that cares for children and adolescents with cancer. Seven regional partners participate in training and education programs and offer shared care services based on agreed levels of training and standards.[83]

Gippsland Chemotherapy Nurse Preceptor Program.

Nurses providing services to cancer patients within the Gippsland Region can enrol in The Gippsland Chemotherapy Nurse Preceptor Program. The program offers staff the opportunity to work with a preceptor within the Chemotherapy Unit at Latrobe Regional Hospital. Staff on a one day placement are given the opportunity to gain clinical competency in Peripherally Inserted Central Venous Catheter management and accessing and taking blood from an implantable PORT.

Staff on a five-day placement have the opportunity to gain clinical competency in chemotherapy administration and safe handling and IV Cannulation.

MDT Meetings in Mount Gambier

A group of clinicians providing cancer services in the Mount Gambier region of rural South Australia have been running multidisciplinary team meetings since October 2008. The team includes a general surgeon, two cancer care coordinators, and a private radiology provider, as well as a number of allied health professionals covering palliative care, nutrition, speech pathology and social work. Medical oncologists, a radiation oncologist and a pathologist who link into the meeting by videoconference from Adelaide 450 km away, complete the team. All treatment plans are available to care providers less than 24 hours after the meeting. This program has resulted in less travelling for cancer patients and a better understanding of the treatment decisions by all care providers.

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Appendix One: Health and Hospital Fund

Health and Hospital Funds allocation to Regional Cancer Centres, November 2011[6]

Project Title	Location	Satellite	$M	Population
ACT				
Enhanced Capital Region Cancer Centre and Patient Accommodation	Canberra		29.65	570,195
NSW				
New England and North West Regional Cancer Centre	Tamworth	Armidale	31.69	147,025
Central Coast Regional Cancer Service	Gosford	Wyong	28.59	1,086,175
North Coast Cancer Institute	Lismore	Port Macquarie, Coffs Harbour	17.07	483,335
Lismore Cancer Patient and Carer Accommodation	Lismore		2.62	as above
Shoalhaven Regional Cancer Centre	Nowra		23.80	118,265
Illawarra Regional Cancer Centre	Wollongong		12.07	375,291
NT				
Alan Walker Cancer Care Centre	Darwin		19.00	235,314
QLD				
Central Integrated Regional Cancer Service	Multiple	Bundaberg, Hervey Bay, Rockhampton	84.64	474,280
Premion Nambour Regional Cancer Centre	Nambour		12.75	as above
Toowoomba and South Western Queensland Integrated Cancer Service	Toowoomba		9.55	238,025
Enhancement of Service Capability of the St Andrew's Cancer Centre	Toowoomba		6.69	as above
Townsville & Mt Isa Integrated Regional Cancer Service	Townsville	Mt Isa	70.11	671,456
SA				
SA Regional Cancer Services	Whyalla	Adelaide, Mt Barker, Mt Gambier, Pt Augusta, Victor Harbor, Clare, Murray Bridge, Gawler, Northern Yorke Peninsula, Naracoorte, Port Lincoln	69.79	511,180
TAS				
Tasmanian Cancer Care Project	Hobart	Launceston, Burnie	18.70	505,060
VIC				
Ballarat Regional Integrated Cancer Centre	Ballarat		42.03	152,478
Expansion of Gippsland Cancer Care Centre	Traralgon		22.00	133,981
Stage 2 Accommodation Gippsland Cancer Care Centre	Traralgon West		1.50	as above
Statewide Enhancements to Regional Cancer Centres	Multiple	Ballarat, Bendigo, Traralgon, Albury-Wodonga	9.50	157,028
Albury/Wodonga Regional Cancer Centre	Albury/Wodonga		65.00	221,997
Albury/Wodonga Patient & Carer Accommodation Centre	Albury/Wodonga		1.50	as above
Integrated Regional Cancer Centre	Geelong	Hamilton, Portland, Warrnambool	26.07	376,252
WA				
Strengthening Cancer Services in Regional Western Australia	Albany	Northam, Narrogin, Geraldton, Kalgoorlie	22.30	163,337
South West Health Campus Comprehensive Cancer Centre	Bunbury		23.37	153,895

Appendix Two: MyHospitals Data

Location	State	HHF funds	Chemotherapy administration (f = HHF funded)	Radiotherapy administration (f = HHF funded)	Remoteness Area	District of Workforce Shortage
Albany	WA	✓	✓		RA3	no
Albury-Wodonga	VIC	✓	✓	✓	RA2	yes
Alice Springs	NT		✓		RA4	yes
Ararat	VIC		✓		RA2	yes
Armidale	NSW	✓	✓		RA2	no
Atherton	QLD		✓		RA3	no
Bairnsdale	VIC		✓		RA3	no
Ballina	NSW		✓		RA2	no
Ballarat	VIC	✓	✓	✓	RA2	no
Bathurst	NSW		✓		RA2	no
Bega	NSW		✓		RA2	yes
Bendigo	VIC	✓	✓	✓	RA2	no
Berry	NSW		✓		RA2	no
Bourke	NSW		✓		RA5	yes
Bowral	NSW		✓		RA2	no
Broken Hill	NSW		✓		RA3	yes
Broome	WA		✓		RA4	yes
Bunbury	WA	✓	✓	✓	RA2	no
Bundaberg	QLD	✓	✓		RA2	no
Burnie	TAS	✓	✓	f	RA3	no
Cairns	QLD		✓	✓	RA3	no
Clare	SA	✓	f		RA3	no
Coffs Harbour	NSW	✓	✓	✓	RA2	no
Cowra	NSW		✓		RA2	yes
Darwin	NT	✓	✓	✓	RA3	yes
Davenport	TAS		✓		RA3	no
Denmark	WA		✓		RA3	yes
Dubbo	NSW		✓		RA2	no
Echuca	VIC		✓		RA2	yes
Esperance	WA		✓		RA4	yes
Forster	NSW		✓		RA2	no
Geraldton	WA	✓	✓		RA3	no
Gladstone	QLD		✓		RA2	yes
Grafton	NSW		✓		RA2	yes
Griffith	NSW		✓		RA3	yes
Gunnedah	NSW		✓		RA3	yes
Gympie	QLD		✓		RA2	no
Hamilton	VIC	✓	✓		RA2	yes
Hervey Bay	QLD	✓	✓		RA2	no
Hobart	TAS	✓	✓	✓	RA2	no
Horsham	VIC		✓		RA3	yes

Location	State	HHF funds	Chemotherapy administration (f = HHF funded)	Radiotherapy administration (f = HHF funded)	Remoteness Area	District of Workforce Shortage
Innisfail	QLD		✓		RA3	yes
Inverell	NSW		✓		RA3	no
Kalgoorlie	WA	✓	✓		RA4	yes
Katherine	NT		✓		RA4	yes
Kerang	VIC		✓		RA3	yes
Kilmore	VIC		✓		RA2	no
Launceston	TAS	✓	✓	✓	RA2	no
Leongatha	VIC		✓		RA2	yes
Lismore	NSW	✓	✓	✓	RA2	no
Mackay	QLD		✓		RA3	yes
Maryborough	QLD		✓		RA2	no
Mildura	VIC		✓		RA3	no
Milton	NSW		✓		RA2	no
Moree	NSW		✓		RA3	yes
Mt Barker	SA	✓	f		RA2	no
Mt Gambier	SA	✓	f		RA3	yes
Mt Isa	QLD	✓	✓		RA4	yes
Mudgee	NSW		✓		RA2	yes
Murray Bridge	SA	✓	f		RA2	no
Muswellbrook	NSW		✓		RA2	yes
Nambour	QLD	✓	✓	✓	RA2	no
Naracoorte	SA	✓	f		RA3	no
Narrogin	WA	✓	f		RA3	no
Nhulunbuy	NT		✓		RA5	yes
Northam	WA	✓	✓		RA2	yes
Nowra	NSW	✓	✓	f	RA2	no
Orange	NSW		✓	✓	RA2	no
Parkes	NSW		✓		RA3	yes
Port Augusta	SA	✓	✓		RA3	no
Port Lincoln	SA	✓	f		RA4	no
Port Macquarie	NSW	✓	✓	✓	RA2	no
Portland	VIC	✓	✓		RA3	no
Rockhampton	QLD	✓	✓	f	RA2	yes
Roma	QLD		✓		RA3	yes
Sale	VIC		✓		RA2	no
Shepparton	VIC		✓		RA2	no
Singleton	NSW		✓		RA2	yes
Stawell	VIC		✓		RA2	yes
Strathalbyn	SA		✓		RA2	no
Swan Hill	VIC		✓		RA3	no
Tamworth	NSW	✓	✓	f	RA2	yes
Taree	NSW		✓		RA2	no
Tocumwal	NSW		✓		RA2	yes
Toowoomba	QLD	✓	✓	✓	RA2	no

Location	State	HHF funds	Chemotherapy administration (f = HHF funded)	Radiotherapy administration (f = HHF funded)	Remoteness Area	District of Workforce Shortage
Townsville	QLD	✓	✓	✓	RA3	no
Traralgon	VIC	✓	✓	✓	RA2	no
Victor Harbor	SA	✓	f		RA2	no
Wagga Wagga	NSW		✓	✓	RA2	yes
Wallaroo	SA	✓	f		RA3	no
Wangaratta	VIC		✓		RA2	yes
Warragul	VIC		✓		RA2	no
Warrnambool	VIC	✓	✓		RA2	no
Wee Waa	NSW		✓		RA3	yes
Whyalla	SA	✓	f		RA3	yes
Yeppoon	QLD		✓		RA2	yes
York	WA		✓		RA2	yes
Young	NSW		✓		RA2	yes

Appendix Three: COSA Workforce Survey

Staff at 12 regional centres (full-time equivalent)	Current staff	Additional staff required	total	Fold increase required
General surgeon	45.50	3.00	48.50	1.07
Oncology nurse	49.12	5.00	54.12	1.10
Pharmacist	15.00	7.30	22.30	1.49
Clinical nurse consultant - Palliative care	12.00	7.50	19.50	1.63
Pathologist	9.20	7.00	16.20	1.76
Nutritionist	8.30	6.50	14.80	1.78
Clinical nurse consultant - Oncology	9.00	8.00	17.00	1.89
Social worker	13.40	12.00	25.40	1.90
Palliative care physician	11.80	10.70	22.50	1.91
Medical oncologist	21.20	19.30	40.50	1.91
Haematologist	11.30	10.80	22.10	1.96
Occupational therapist	5.45	5.21	10.66	1.96
Cancer care coordinator	15.40	15.00	30.40	1.97
Radiation oncologist	12.70	15.30	28.00	2.20
Physiotherapist	5.70	9.40	15.10	2.65
Clinical trial coordinator	6.10	11.50	17.60	2.89
Volunteers	7.00	21.00	28.00	4.00
Psychologist	3.20	9.80	13.00	4.06
Data manager	2.50	11.50	14.00	5.60
Surgical oncologist	0.50	6.00	6.50	13.00
				2.84
Other				
Biomedical engineer	1.00		1.00	1.00
Breast care nurse	1.00		1.00	1.00
Clinical nurse specialist	5.62		5.62	1.00
Genetics Nurse	0.60		0.60	1.00
Medical oncology registrar	3.00		3.00	1.00
Prostate Nurse	1.00		1.00	1.00
Registered nurse	2.53		2.53	1.00
Enrolled Nurse	3.20	0.80	4.00	1.25
Dietician	2.30	0.71	3.01	1.31
MDT / Telehealth Coordinator	2.00	1.00	3.00	1.50
Patient Care Attendant	2.00	1.00	3.00	1.50
Administrative staff	11.00	6.00	17.00	1.55
Speech Pathologist	2.90	1.60	4.50	1.55
Indigenous Liaison Officer	1.50	1.00	2.50	1.67
Medical Physicists	5.00	4.00	9.00	1.80
Nurse Practitioner	1.23	1.00	2.23	1.81
Radiation Therapist	22.00	18.00	40.00	1.82

Staff at 12 regional centres (full-time equivalent)	Current staff	Additional staff required	total	Fold increase required
IT Support	0.50	0.50	1.00	2.00
Physicists	2.00	2.00	4.00	2.00
Radiation Therapists	6.00	6.00	12.00	2.00
Radiation Oncology Registrar	3.00	3.00	6.00	2.00
Nurse educator	1.00	2.00	3.00	3.00
Nurse unit manager/director	1.00	2.00	3.00	3.00
Welfare Officer	0.50	1.00	1.50	3.00
Statistician		1.00	1.00	
Audiologist		0.10	0.10	
Clinical Director		2.00	2.00	
Exercise Physiologist		0.21	0.21	
Nurse Specialists		3.00	3.00	
Oral Chemotherapy Nurse		1.00	1.00	
Volunteer Coordinator		0.60	0.60	
Wellness Centre Manager		0.80	0.80	
Radiation Therapy educator	0.00	0.50	0.50	

Appendix Four: Call for Comments

Call for comments on cancer service development in regional and rural Australia.

To maximise the return on the Australian Government's investment of $560 million in Regional Cancer Centres around Australia, COSA is developing a discussion paper on the status of cancer service development in regional and rural Australia, which will inform a COSA workshop planned for August 2012.

We ask that you consider the following questions when formulating your comments:

- What type of cancer service you provide? In which region (or regions) of Australia do you provide this service?
- What are the greatest strengths of cancer services currently operating in this region?
- What are the biggest challenges facing the delivery of cancer services in this region?
- What role (or roles) do you see a Regional Cancer Centre playing in this region? What cancer services should they provide?
- Do cancer services in this region have links with metropolitan cancer centres? In what way could the Regional Cancer Centres improve this relationship?
- What is the role of visiting cancer services in this region? What is the best way to link these services with the Regional Cancer Centres?
- What types of health professionals provide cancer services in this region? Is the type and number of health professionals adequate?
- What is the best way to attract cancer service professionals to this region? What other solutions are there to addressing workforce issues in this region (tele-health for example)?
- Please tell us of any service improvement initiatives in this region (either completed or ongoing) that would be worthwhile implementing throughout regional Australia.

You are welcome to include examples of your experience of cancer service provision in regional and rural Australia and any relevant reference material.

Please send your comments to Jessica Harris, COSA Project Coordinator jessica.harris@cancer.org.au by Friday 25th May 2012. We will seek permission of the author before publication of any comments.

We look forward to your involvement in this important project.

Bogda Koczwara, COSA President

Adam Boyce, Chair of the COSA Regional and Rural Interest Group

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