

Literature Review

Models of Cancer Services
for Rural and Remote Communities

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Penny Adams, Jill Hardwick, Val Embree,
Sue Sinclair, Bronwen Conn, Jim Bishop

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through prevention, detection, innovation, research and information.



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Australian Technology Park
Biomedical Building
Suite 101
1 Central Avenue
Eveleigh NSW 2015
PO Box 41

Alexandria NSW 1435
Telephone (02) 8374 5600
Facsimile (02) 8374 5700

Email: information@cancerinstitute.org.au

Homepage: www.cancerinstitute.org.au/publications

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I Executive summary

This review investigates rural cancer service delivery models in Australia and in countries with comparable demographic and geographic features to NSW and identifies common elements of best practice. To understand how cancer services are provided to rural and remote communities in Australia and elsewhere, it was essential to understand the systems within which these services are provided. Thus details on cancer services together with the respective implementation strategies were collated for each state and territory in Australia as well as four provinces and one territory in Canada and Scotland.

In all states in Australia cancer services are planned, coordinated and funded by state governments. Most states have a cancer plan and all refer to a model of service delivery. The review of Australian models of cancer services indicated:

- most states have a clear vision about a desired network or system of cancer services
- some visions for cancer services are more detailed and developed than others and define the roles and responsibilities of actual services in the networks
- detail on provision of services specifically to rural/remote communities is not within the scope of most cancer plans or models.

In Canada all provinces have a cancer agency whose mandate is cancer control for the province. Some agencies provide, fund and manage the services, as in the British Columbia Cancer Agency (BCCA), whereas in other provinces the agencies partly fund and manage services. All agencies provide training, set standards, accredit and measure the quality of services. The BCCA, in particular, has implemented a comprehensive cancer network of services with clear lines of accountability and responsibility. Within this network, delineation of services in rural and remote communities and their relationship to the regional centres is clearly defined. Shared care is a key strategic component and the goal to have GPs with a special interest in oncology in every community of 15,000 people or more means that knowledge of cancer – its prevention, screening, detection and treatment – is embedded in primary care. Other provinces in Canada also have well-defined networks of cancer services and where the provision of services is not the responsibility

of the provincial cancer agency, as in Ontario, the agency continues to oversee and performance manage the services to ensure consistent quality throughout the province.

In Scotland the development of cancer managed care networks started in 1999. While the benefits of managed clinical networks are clearly articulated in the associated planning and discussion documents, comprehensive evaluation has not yet been published.

The review also examines key components of rural service delivery including outreach services, shared care, telehealth and service models effective in working with Indigenous populations in rural/remote areas. Shared care, which assumes involvement of the primary care provider in maintaining continuity of patient treatment and care, was found to be most effective as part of a well-coordinated system of care that provides support at a number of levels, such as the GP (with an interest in oncology) initiative currently underway in British Columbia. Debate continues on the effectiveness of shared care outreach, especially 'shifted outpatients' styles of specialist outreach that do not engage the local GPs nor seize the opportunity to educate the primary health care workforce.

Telehealth supports shared care or outreach services by providing long distance linkages, increasing the capacity for consultations, transmission of radiology and pathology results, psychosocial support and enabling multidisciplinary team care, education and administration. Importantly, the success of shared care and telehealth in supporting networked rural/remote cancer services requires the existence of a broader specialised system as well as local primary care providers working collaboratively with the specialised services.

The review examines models of cancer services for Aboriginal peoples in Australia and Canada. Challenges affecting the progress of these models include poor capture of indigenous status in data collection, problems of access to services, necessity for cancer patients to travel out of the communities to access specialist care and follow-up, culturally unsafe/or insensitive services, communication difficulties especially if English is not the first language and other factors such as geographic isolation, poor environmental conditions and inconsistent delivery of health care services in the community.

Cancer control initiatives for Aboriginal people are likely to be more effective when strategies such as cultural awareness training for staff, trained interpreters, provision of outreach services for remote communities and involvement of the Aboriginal community and Aboriginal health providers in planning and developing the health services are in place.

In summary, common elements of successful outreach services are:

- Integration and coordination of the services within a broader system of care, usually incorporating a collaboration and agreement between rural and metropolitan programs for provisions of service, including shared-care models.
- An adequate number of specialists to ensure that the service is viable.
- Adequate demand for the specialised service.
- Adequate stable funding linked to patient demand.
- An established quality system including regular evaluation of the value of the service and in the cancer outcomes it produces.
- Regular, predictable visit scheduled by specialists with contingency planning.
- Involvement of primary care providers in education, the continuity of care and treatment of the patient.
- Cultural awareness training for staff, trained interpreters and the involvement of the Aboriginal community and health providers in planning and developing the health services.

While evidence of improvements in health outcomes associated with outreach programs, shared care and telehealth is not yet available, these programs are employed internationally on the grounds that they improve access and increase utilisation and satisfaction rates among patients.

2 Introduction

2.1 Cancer outcomes in rural and remote areas of NSW

There is significant literature suggesting disparities in cancer outcomes between people living in rural and remote areas and those in urban areas. For example, Jong et al. (2004) cite a 1999 report by the Australian Department of Health and Aged Care assessing cancer survival by categories of remoteness. This report showed that people living in the most remote parts of NSW were 35 per cent more likely to die as a result of their cancer within five years of diagnosis (1992–1996) than people living in areas with the greater access to services.⁴ More recently, Yu et al. (2003) showed that more than half of the pre-2005 NSW Area Health Services (AHS) classified as rural had a relatively higher risk of death from cancer for the period 1994–2000, compared to about one-quarter of metropolitan and other urban AHSs.⁵

Heathcote and Armstrong (2007) identified a number of factors that potentially underlie these results, including late tumour stage at diagnosis, limited access to treatment facilities, socioeconomic disadvantage and greater proportions of Aboriginal and Torres Strait Islander people living in geographically isolated areas who also suffer social and economic disadvantage.⁶ They concluded that more comprehensive data and information is required to understand all the factors involved and their interrelationships. In addition, multidisciplinary research extending beyond the realms of clinical care is necessary to better understand the extent to which language and cultural beliefs influence an Aboriginal and Torres Strait Islander person's understanding of a cancer diagnosis and the need to complete treatment.

Other recent analyses suggest that rurality/remoteness itself is not a sole predictor of cancer incidence, mortality and survival. Analysis conducted on NSW Central Cancer Registry data on incidence and mortality patterns in rural areas over 2000–2004, using pre-2005 AHS boundaries, showed there was no rural AHSs with significantly higher cancer mortality rates (all cancer types except non-melanoma skin cancer) compared to the State average.¹ For specific cancer type, the analysis showed two pre-2005 rural AHSs with higher mortality rates than the State average:

oesophageal cancer in males in the Southern and Greater Murray AHSs. While these are classified as rural areas, the contributions of tobacco and alcohol consumption as risk factors need also to be considered. Conversely, the analysis showed that the old Northern Rivers AHS had significantly lower mortality rates for breast and stomach cancer in females for the time period 2000–2004.

Another recent study examined reasons for improved survival from ovarian cancer in NSW considering: age at diagnosis; socioeconomic status, using the Socioeconomic Index of Relative Disadvantage for Areas (SEIFA); service access using the Accessibility/Remoteness Index (ARIA); and country of birth including Australia, other English speaking countries, or non-English speaking countries. The analysis showed that survival differences did not vary by socioeconomic status or geographic index of remoteness.² A further study on survival and degree of spread for female breast cancers in NSW considered trends by the same socio-demographic differences and found that metropolitan women living in highly accessible areas tended to have more advanced cancers at diagnosis than other women.

Given the highly complex picture that is emerging in this area, further research is required to fully understand the impact of rurality and other socio-demographic factors on access to treatment and outcomes.

2.2 What are specialised services?

The definition and use of the terms 'specialist' and 'specialised' in the design and provision of rural cancer services are the subject of some debate in the literature. Pegrum et al. (2006) suggest it is simplistic to define specialist care as care only provided by a specialist (a doctor registered with specific specialist qualifications), as in rural areas general practitioners (GPs) often perform complex medical tasks and some registered specialists consult as GPs. This indicates that specialist services may be provided by a generalist and that it is the nature of the care that is 'specialist' rather than the provider.⁷ For the purposes of this paper, literature related to services provided to rural communities by a specialist doctor, as well as specialist services provided by a generalist provider such as a GP was reviewed.

3 Methodology

3.1 Cancer Service Structure and Function

To understand the current models of cancer service provision in rural and remote areas, we explored the overall structure and function of cancer services. Details regarding general cancer services in the reviewed states/provinces/countries were collected and are included in the Appendixes. The body of the report presents information pertinent to rural cancer service provision.

3.2 Data Templates

A template was developed and populated to describe how services are currently provided in Canada: British Columbia, Saskatchewan, Manitoba, Ontario, North West Territories (Appendix A). The same template was applied to the Australian states of NSW, Victoria, Queensland, South Australia, Western Australia and the Northern Territory.

A second template⁸ was used to record the literature search (Appendix B).

3.3 Sources of Information

The following websites were analysed:

- Health Departments in NSW, Victoria, Queensland, South Australia, Western Australia and the Northern Territory.
- Cancer agencies in British Columbia, Ontario, Saskatchewan, Manitoba.
- Australian Department of Health and Ageing <www.health.gov.au>.
- NHS (National Health Service) Scotland <www.show.scot.nhs.uk>.
- Clinical Oncological Society of Australia (COSA) <www.cosa.org.au>.
- Cancer Institute NSW <www.cancerinstitute.org.au>.
- Cancer Council Australia <www.cancer.org.au>.

Many of the reports and documents from state and provincial websites were 'grey' literature. Grey literature has been defined as 'that which is produced at all levels of government, academia, business and industry in print and

electronic formats, but which is not controlled by commercial publishers'.⁹

The following electronic databases were analysed:

- Medline.
- APAIS Health (in full).
- ATSI Health (in full).
- Meditext.
- Cochrane Database of Systematic Reviews.
- Rural and Remote Health.

3.4 Search Terms

The search terms used included: rural, outreach, specialist, specialised, cancer, oncology, telehealth, renal, diabetes.

The table of contents of journals including the Journal of Rural and Remote Health and the Journal of the Cancer Council Australia – Cancer Forum were reviewed and reference lists of pertinent articles scrutinised for other relevant references.

3.5 Key Informants

Discussions and/or email communications were held with the following key informants:

- Patricia Ryan, Kits Point Consulting, Vancouver, BC, Canada.
- Sandra Broughton, Regional Administrator, BC Cancer Agency, Centre for the Southern Interior, Kelowna, BC, Canada.
- Pat McCormack-Speak, UPCON program, Cancer Care Manitoba, Canada.
- Dr Bruce Minore, Centre for Rural and Northern Health Research, Thunder Bay, Ontario, Canada.
- Linda Cutler, Executive Director, NSW Institute of Rural Clinical Services & Teaching, Dubbo, NSW.
- Dr Stephen Begbie, Chair Rural Oncology NSW Oncology Group (NSWOG), Port Macquarie, NSW.
- Ruth Jones, Manager Area Cancer and Palliative Care Services, GWAHS.

4 Cancer service models

4.1 Rural Cancer Services in Australia

The Clinical Oncological Society of Australia (COSA), Australia's peak multidisciplinary society representing cancer care professionals, held the first Cancer in the Bush summit in Canberra in March 2001. This meeting brought together a multidisciplinary group of oncology health professionals and government representatives to discuss the development of rural cancer service models from a national perspective.¹⁰

The report from this meeting identified a set of potential planning issues for rural cancer services:

- An equitable travel and accommodation scheme to support rural/remote cancer patients.
- Improved patient support, including the provision of breast cancer nurses nationally and a cancer nurse demonstration project.
- National coordination and funding of training.
- Workforce planning, considering recommendations of Australian Health Workforce Advisory Committee and special needs of rural cancer patients.
- The establishment of networks and national accreditation, and the development of a regional cancer demonstration project.
- Further research to examine rural outcomes in survival, access, psychological support and quality of life in rural and remote Australia.
- Medicare Benefits Schedule (MBS) item numbers for rural services and tele-oncology.
- Addressing issues of national priority, including making specific cancer drugs available on the Pharmaceutical Benefits Scheme and addressing the Radiation Oncology Strategic Plan and the National Cancer Control Initiative utilisation strategy.

In 2006, COSA's Regional and Rural Oncology group completed a mapping exercise to gain a comprehensive picture of regional and rural oncology services across Australia. The report *Mapping Rural and Regional Oncology Services in Australia* (COSA, 2006) suggested that rural and remote Australians may have relatively poorer access to cancer treatment and support compared with populations in large cities.¹¹ Recommendations from this report include:

- Formal recognition of the problem of regional disparity and a collaborative government response.
- Building regional oncology centres of excellence.
- Establishing a national quality assurance framework.
- Short-term capacity-building measures such as:
 - investment in clinical data systems to audit, monitor and plan oncology services
 - investment in psychosocial support services for people in rural and remote areas, who have been shown to have significantly inequitable access to such services
 - support for distance education, mentoring and innovative models such as telemedicine in remote areas
 - improved coordination of government-funded travel and accommodation schemes for cancer patients and their families in remote areas.

Based on the findings of this report, Underhill et al. (2006)¹² and Begbie and Underhill (2007)¹³ advocate the development of regional cancer centres of excellence to enhance access to high quality cancer services in rural areas. They argue that these centres, built where a radiotherapy unit is in place, would provide multidisciplinary care, improve support and educational services and, by being mentored by major metropolitan centres, could provide a link to smaller, more remote services. They cite the success of the Border Cancer Care Coordination Project in Albury-Wodonga as the model.

This proposal reinforces the recommendations of the Baume report¹⁴ on radiotherapy, which favours the hub and spoke model of service delivery and recommends that all rural radiotherapy facilities should be networked with a larger urban facility. This model of service delivery would require further analysis of workforce levels in regional areas to ensure adequate staffing. It would also require investment in delivering psycho-social support services, as well as travel and accommodation schemes.

The July 2007 issue of *Cancer Forum*, the journal of The Cancer Council Australia, is devoted to regional and rural cancer care. In particular, it explores progress since the Cancer in the Bush summit and demonstrates that at least

three of the focus areas identified at the summit (telehealth initiatives, improved patient support and radiation oncology) are starting to be addressed at the national level.

In 2007 the Australian Government through Cancer Australia made a significant investment in the development of service delivery models through the Cancer Service Networks (CanNET) National Demonstration Program, which aims to link regional with metropolitan cancer services into single networks. The model for the CanNET project is drawn largely from the 'Managed Clinical Networks' work of the National Health Service Scotland.¹⁵ Under this approach, networks challenge existing professional and organisational boundaries to ensure patient-centred and equitable provision of high quality, clinically effective services throughout their region, thus improving cancer outcomes.

CanNET involves the Australian state and territory governments working collaboratively with consumers of cancer services and primary, secondary and tertiary health professionals to improve outcomes through better coordination of existing cancer services. There are seven CanNET projects, one in each state and the Northern Territory, each of which is described in Appendix C in the state description of services.

4.2 Australian State and Territory Rural Cancer Services

In all states cancer services are mostly planned, coordinated and funded by the state government. Most states have a cancer plan and all refer to a model of service delivery. The focus across all states and territories is on establishing a coordinated and networked system from which services to rural and remote areas can be formalised.

States appear to be at a relatively early stage in the implementation of rural service delivery models. The optimal model of cancer service delivery in rural and remote areas has not been articulated in detail by any of the state/territory authorities in the policy and planning documents available at the time of the review. Tasmania is not included in this review because, relatively, it does not have the extent of 'remoteness' found in other states or a large Aboriginal

population. Models of cancer services for NSW, Victoria, Queensland, South Australia, Western Australia and the Northern Territory are described in detail in Appendix C. Details regarding rural/remote service provision in each state/territory, together with a description of innovative rural service projects are included in the following section.

New South Wales

Models of care to provide cancer services in rural communities in NSW are largely based on outreach clinics, where a medical oncologist and/or radiation oncologist provide periodic clinics to base hospitals in rural AHS. Components of this model typically include:

- Consultant oncologists who provide expert opinion on treatment, develop patient management plans and perform clinical reviews of patients.
- Cases presented by the medical oncologist at the weekly teaching hospital multidisciplinary team meeting (from where the consultant oncologists are based) with further treatment decisions made by the team.
- Treatment decisions documented and sent to the patient's surgeon and general practitioner.
- Day-to-day management of outreach clinic and care coordination provided by Clinical Nurse Consultant.
- Day-to-day management of patients between visits from the consultant oncologists provided by nurses and general practitioners.

Innovative Models/Approaches

Cancer Networks: A *Clinical Service Framework for Optimising Cancer Care in NSW* (NSW Health 2003) addressed rural cancer service provision through the development of cancer networks, comprising formal inter- and intra-Area linkages. It suggested collaborations with appropriate facilities and health service providers and links with the private sector. It included strategies such as tele-medicine and outreach clinics to facilitate access to multidisciplinary care for all patients. For the more uncommon cancers involving more specialised care, it encouraged the development of formal linkages and agreed referral guidelines between rural services and specialised metropolitan/regional units.

CanNET: CanNET NSW aims to incorporate a networked approach to rural cancer services through linking the Northern Sydney and Central Coast, Hunter New England and the North Coast Area Health Services. Particular program focuses include the development of a services directory, enhancement of multidisciplinary care, role redesign and the strengthening of referral pathways where possible within the network.

GP visiting medical officer (VMO) at Dubbo: This model involves a primary care role redesign approach to support chemotherapy patients in a rural area supported by a specialist visit once a fortnight. The AHS has appointed a GP VMO for 12 hours per week to review patients to determine whether they are well enough to undergo chemotherapy and to triage and prepare patients for the oncologist's visit by coordinating tests, MRIs and biopsies. Protocols and guidelines to support this position and potentially be applied to similar settings are currently being developed under a Cancer Institute NSW Health Services Innovation Grant.

Distance planning for radiotherapy: A radiation oncologist from the Royal Prince Alfred Hospital (RPAH) in Sydney visits Dubbo every month (in addition to a monthly clinic visit) to plan patients' radiotherapy treatment. This saves the patient making a preliminary trip to Sydney before radiotherapy treatment commences.

Under the Cancer Institute NSW Health Services Innovations Grants Program, a number of innovative rural service projects have been funded, including:

- ▶ **Aboriginal Cancer Care Coordinator:** This project aims to coordinate cancer care for Aboriginal people in the Hunter/New England AHS.
- ▶ **Shared oncology care in Cooma:** This project involves the development of a shared care approach between metropolitan oncologists and GPs in Cooma to provide chemotherapy services closer to where rural patients live.
- ▶ **GP telecoloscopists in rural centres:** This project aims to transfer digital images from rural telecolposcopy units using telemedicine technology to enable input from larger centres for specialist assessment and care planning.
- ▶ **Integrated regional cancer transport services:** This project aims to coordinate transport needs of disadvantaged cancer patients in the Central Coast region of the Northern Sydney Central Coast AHS
- ▶ **Cancer intake officer:** The Riverina Division of General Practice has been funded to develop a cancer intake officer position to bridge the gap between initial cancer diagnosis for rural patients and the start of treatment, often in centres outside the area.

Victoria

To provide networked services for cancer patients in Victoria, Rural/Regional Integrated Cancer Services (RICS) are being established in each of the five rural regions. This is based on a network approach that aligns with the current or proposed provision of radiation oncology in Geelong, Bendigo, Ballarat, Traralgon and Wodonga. To oversee each RICS, a director has responsibility for the implementation of standards and audits, and ensures that services comply with accreditation requirements.

As each of the proposed RICS comprises different legal entities, each separately determines and agrees on the operations and accountability of the director. If a RICS does not provide a particular specialised intervention (e.g. neurosurgery), it will establish formal links with a Metropolitan Integrated Cancer Service (MICS). Regular audits establish that the linkage is both maintained and used appropriately.

Innovative Models/Approaches

CanNET Victoria has been established under the national CanNET project framework to link health professionals and facilities providing cancer care in regional and rural areas with cancer services in metropolitan areas.

In 2004, the Victorian Department of Human Services established eight Integrated Cancer Services (ICS) to support the development of integrated care and defined referral pathways for the populations they serve. ICS are clusters of hospitals and associated health services that deliver services for people with cancer in a specific geographical region. The ICS are the platform through which improvements in cancer service delivery and patient care are being implemented in Victoria.

CanNET Victoria is a collaboration between two existing ICSs within Victoria: the North Eastern Metropolitan Integrated Cancer Service (NEMICS) and the Hume Region Integrated Cancer Service (Hume RICS). CanNET Victoria is working to foster networks between these two ICSs that will enable better communication and referral pathways between health professionals caring for people with lung cancer in the Hume and NEMICS regions. Key strategies of the CanNET Victoria project are effective consumer participation, enabling regional clinicians to link to metropolitan multidisciplinary meetings with online meeting technology and consultation with general practitioners, with the aim to improve linkages between primary care and cancer specialists.

Queensland

The *Queensland Cancer Control Strategic Directions 2005–2010* report refers to: 'A model of care that incorporates networked, integrated services enabling people with cancer to access all relevant expertise and facilities, regardless of where they live. Networked models of care ensure that people with cancer in regional, rural and remote areas can access high-quality care by linking smaller centres to large specialist centres'.

Documented planning around how this is to be delivered in rural/remote Queensland was not available in the literature at the time of the review. Presumably, it will form part of the Cancer Control Implementation Program that is currently being developed.

Innovative Models/Approaches

Queensland is involved in a project under the national CanNET program, which intends to establish tumour teams linked into the major metropolitan cancer services.

Queensland Health covers a broad geographical area from Dirranbandi in the south up to Torres Strait and across to Camooweal in the west – an area of 1,730,648 square km. Establishment and support for multidisciplinary care in cancer has been a key component for CanNET Queensland. This has involved and continues to involve recognition of established multidisciplinary teams and enabling smaller teams in isolated geographical areas to 'tap' into this expertise.

Networking across districts, facilitating tele-conferencing and video-conferencing, and promoting multidisciplinary care as best practice aims to improve access for people with cancer to quality care.

South Australia

The Statewide Cancer Control Plan includes the following principles regarding cancer care for rural/remote patients:

- People with cancer should have appropriate and timely access to high quality of care, irrespective of where they live. Metropolitan and rural and remote service planning will ensure coordination of cancer care across the continuum of care.
- Accessible, effective and culturally safe systems of care should be available for groups within the community which may have differing needs, e.g. Aboriginal and Torres Strait Islander people and people from culturally and linguistically diverse backgrounds.

There is no evidence in the current available literature to describe the progress of these objectives.

Innovative Models/Approaches

CanNET in SA aims to help establish and evaluate the statewide cancer clinical network. The network aims to improve access to quality cancer services throughout South Australia, particularly for people living in rural and regional areas and Aboriginal and Torres Strait Islander people. CanNET SA will link health professionals and facilities providing cancer care in regional and rural areas with cancer services in metropolitan areas. The establishment of formal linkages and agreed care pathways will ensure people affected by cancer in South Australia will have access to the most appropriate, evidence-based cancer care. CanNET SA will also promote the active involvement of consumers; inclusion of primary care providers as key members of the cancer care team; and development of systems and process that increase access to multidisciplinary care for people with cancer to ensure they get the best possible treatment and support.

Western Australia

The Western Australian (WA) Government has proposed a model of care for rural and remote areas under the Cancer Outreach Program. Under this model, specialist cancer services will be provided by the Cancer Centre in a regional town, with formal links to local health providers. Each service will have a statewide cancer care coordinator (often a nurse) supported by centrally developed protocols to guide the limits of service. For more remote and/or smaller communities, provision of services by telemedicine links has been highlighted. Connected issues such as Medicare billing, medico-legal protection and cross-state border registration are currently being considered.

Other initiatives planned to facilitate the provision of cancer services in rural and regional WA include:

- Establishment of Tumour Collaboratives to provide formal multidisciplinary links/support across metropolitan/rural and remote regions.
- Introduction of Cancer Nurse Coordinators across rural areas.
- The Cancer Council WA is increasing patient support activity and will subsidise psychosocial support in rural areas.
- Review of workforce issues and identification of gaps.
- The federal government has committed to a mentoring program, linking metropolitan teaching hospitals to regional centres and promoting multidisciplinary care.
- Training/education of cancer specialists with a rural interest and up-skilling of regional generalists.
- Recent State Government commitments include funding doctors in rural hospitals who have a particular interest in cancer, to act as lead cancer clinicians, provide outpatient services and educate GPs in dealing with cancer care. Improvements in communication are expected through the Tumour Collaboratives and tertiary cancer services.
- The Director of the Cancer Network works with the WA Country Health Service and South West Area Health Service to determine if travel and accommodation support can be improved or better tailored to suit country cancer patients.
- Information technology support for rural areas, e.g. video-conferencing linked in to Tumour Collaboratives and Cancer Units, as well as for remote areas.
- The introduction of the Picture Archiving Compression System (PACS) has been identified as a priority along with computer access to pathology results.

Innovative Models/Approaches

CanNET WA is focused on linking the metropolitan cancer services with the Greater Southern region of the state. The purpose of CanNET WA is to establish a Great Southern Cancer Service Network that is linked to other cancer centres, units, regional cancer units, and has good primary care engagement. Key achievements include the implementation of fortnightly multidisciplinary care meetings. These meetings use telehealth to link to tertiary metropolitan centres. Tumour-specific care pathways for common cancers have been mapped and will be used to help deliver consistent care as locally as possible. A statewide directory of cancer services will be developed, the template of which will be rolled out nationally. Education is a strong focus, with visiting metropolitan specialists delivering sessions to health professionals in the Great Southern region. A program has been implemented allowing nurses from the Great Southern region to spend time in tertiary settings to further develop their oncology skills.

Northern Territory

This description of cancer service arrangements in the Northern Territory (NT) are taken from Options for Radiation Oncology services in the Northern Territory report commissioned by the Northern Territory Government.

Due to the limited number of cancer service facilities and the challenges of vast distance, the NT has a tradition of networked cancer services.

There are no radiation oncology services in the NT. Specialist cancer services exist in only two NT centres – Darwin and Alice Springs – and only limited services are available in Alice Springs. Cancer services in both Darwin and Alice Springs have strong, long-standing relationships with services in Adelaide, especially those in and affiliated with the Royal Adelaide Hospital (RAH). These relationships have grown through the professional connections of individuals:

many of the leading figures in the delivery of cancer care in the NT were trained at the RAH, and several migrated to the NT from Adelaide. In addition, medical and radiation oncologists in the RAH have provided outreach services to the Royal Darwin Hospital (RDH) and the Alice Springs Hospital (ASH) for many years. General resident medical officers and some specialty registrars from Adelaide are seconded to NT hospitals on a regular basis.

Weekly joint RDH/RAH general oncology meetings by video-conference are part of cancer management in Darwin, and they provide a means for the delivery of modern multidisciplinary cancer care in the NT. They involve surgical, radiation and medical oncologists; pathologists; nursing staff; junior medical staff; and, occasionally, radiologists and general practitioners.

The connections between the RAH and the RDH and ASH are based entirely on collegial relationships. Formal arrangements do not currently exist.

People who need healthcare in the NT depend heavily on transport to centres within the NT or interstate. The NT Government is responsible for ensuring that the population has equitable access to public-hospital services, regardless of their geographical location. The NT Department of Health and Community Services runs a comprehensive Patient Travel Scheme to help with this requirement.

There is one specialist surgeon fully dedicated to oncology in the NT. Most general and specialist surgeons undertake some cancer surgery. Surgical specialties not represented in the NT include colorectal surgery, neurosurgery and head and neck (other than ENT) surgery. Much elective cancer surgery is referred interstate. Some surgical specialty outreach clinics are conducted in Darwin, enabling limited pre-operative assessment and post-operative follow-up to be done locally.

Patients who need radiotherapy are referred to interstate services, most going to the RAH. Those going to RAH for elective radiotherapy can be assessed in the weekly RDH/RAH oncology video-conference; indeed, treatment planning can begin before the patient leaves Darwin. The RDH has a standardised CT couch, and this enables a CT scan to be obtained in the treatment position that can be used for radiotherapy dosimetry planning prior to treatment at RAH.

The weekly oncology video-conference is a mainstay of multidisciplinary cancer care in Darwin. Patients are invited to attend and participate in discussions on their own care. Patients are also offered video cassette recordings of the discussion of their care whether or not they attend the discussion in person.

The ASH provides some surgical and medical oncology services, although its capacity is limited. Typically, 10 patients are undergoing chemotherapy at any one time, under the supervision of a general physician and the nursing unit manager in charge of the day-stay unit.

A specialist medical oncologist from RAH visits Alice Springs once every three months to conduct a medical-oncology clinic. He also conducts a fortnightly teleconference, in which he is available to answer questions from Alice Springs clinicians. Although video-conferencing facilities are available in both the ASH and the Central Australian Division of Primary Health Care, they are not used for telemedicine in oncology and there are no plans at this stage to develop multidisciplinary cancer care by video-conference.

Innovative Models/Approaches

CanNET in the NT aims to establish a territory-wide cancer network for its 203,000 people. CanNET NT is a territory-wide project. Engagement with urban, rural and remote health professionals and consumers is facilitated through five 'regional cancer groups' (RCGs) in Darwin, Alice Springs, Katherine, Tennant Creek and Nhulunbuy (Gove): the towns in the NT that have hospitals. Each of these groups represents a 'region', having different cancer care-access needs, depending on the hospital services (urban or regional) and distance from larger centres. It is anticipated that the RCGs will continue to provide an important role in network development and quality service provision.

A key aspect of CanNET NT is the development of a 10-year cancer plan, which will inform a service delivery model for cancer services in the NT based on projected population and cancer incidence statistics. Based on data collected to date, it is anticipated that care coordination will emerge as a recommendation from the cancer plan, and that the model of care should focus on prevention and early detection, particularly in remote Aboriginal communities.

Engagement and training of Aboriginal health workers in this model of cancer care service provision is critical, evidenced by feedback from training opportunities already provided. Further, the development of clear referral and treatment pathways that encompass multidisciplinary team discussion and criteria for appropriate interstate liaison and referral is considered essential and is currently underway.

4.3 Cancer Services in Canada

Overall model of care

Descriptions of cancer service models in four provinces and one territory in Canada – British Columbia, Saskatchewan, Manitoba, Ontario and the North-West Territories are summarised below and provided in detail under Appendix D. Models of rural/remote service provision and innovative rural service projects are described below.

Rural/remote service provision in these provinces and descriptions of innovative rural service projects are as follows.

British Columbia (BC)

British Columbia has the best outcomes in Canada (with the lowest rates of age-standardised mortality rates for males and females of all the provinces).¹⁷ The management of cancer services is centralised through the British Columbia Cancer Agency (BCCA). There are four regional comprehensive cancer centres located throughout the province funded directly by BCCA and providing the following range of services:

- patient assessment, diagnostic and therapy planning
- radiation therapy
- chemotherapy services
- nursing care
- patient and family counselling
- nutrition counselling
- pharmacy services

- pain and symptom control service
- teaching and applied research activities
- cancer information library.

The Agency delivers care and sets standards of care across all provinces via a Community Oncology Network of community cancer centres, services, consultative clinics, and other community hospitals; the Community Physician Oncology Network and the Surgical Oncology Network.

The BCCA generates and transfers knowledge through the continuous maintenance of the Cancer Management Guidelines, Cancer Drug Manual, Chemotherapy Protocols, Evidence Based Guidelines for all disciplines, education for the community health care professionals, and outcome evaluation and research. This is facilitated by the BCCA's interactive website: <www.bccancer.bc.ca>.

Community Oncology Model and Access to Specialised Care

The Communities Oncology Network (CON) is a collaborative voluntary partnership with community services including 19 community-based Community Cancer Centres, six community-based Community Cancer Services and 12 Consultative Clinics across the province, in conjunction with the Regional Cancer Centres and the Systemic and Radiation Programs. The Network also supports appropriate delivery of cancer patient care and support in 33 other community hospitals.

Components include patients and their families, community health care providers and volunteers, hospitals, community groups, Health Regions, the BC Cancer Agency Regional Centres and all processes facilitated by the Agency. The components are interdependent and held together by trust, mutual respect, communication and education.

BCCA Medical Oncologists who transfer care to the community to receive chemotherapy have the responsibility to ensure that the accepting physician has the necessary knowledge, skill and ability to manage this care and that the community facility meets the BCCA standards as defined by the Communities Oncology Network (CON) model. The standards outlining infrastructure and processes necessary for a comprehensive community cancer care program are

found at the BCCA website.

The CON facilities must have at a minimum, appropriately trained and competent staff (nurses, physicians and pharmacists) to administer and manage the cytotoxic and hazardous products used to treat cancer. As well, they must have access to clinical diagnostic services, such as haematology, with the capability to provide all of the information required to monitor cancer therapy. Additionally, these communities are required to have the capabilities to respond to complications of therapy 24 hours per day.

Each of the community health care professionals are supported to develop and maintain their competency. BCCA medical oncologists do not refer patients to communities that have not met the standards.

Innovative Models

- ▶ A community physician oncology network including a preceptor program has been established. This includes a two-month training course in oncology in a module format, which can be taken as an entire program or by individual modules. The aim is to have at least one family physician with oncology expertise in every BC community with 15,000 people. The program is offered in each of the four cancer centres (Kelowna, Surrey, Victoria and Vancouver). There are several funding sources to support these positions.
- ▶ The CON has clearly defined levels of service and expectations at each level: <<http://www.bccancer.bc.ca/RS/CommunitiesOncologyNetwork/cservices/levelsofservice.htm>>.
- ▶ BCCA has implemented a Surgical Oncology Network, which includes all providers of surgical oncology services from surgeons in remote areas to sub-specialists. Its purpose is to provide strong linkages with surgeons and hospitals across the province, including the BC Cancer Agency's four cancer centres and 17 clinics. The Network's goal is to establish a structure and a system to enable the integration of quality surgical oncology services into the formal cancer care system. Functions include

developing communication tools to enhance surgical decision making provincially; participating in the identification and/or development of peer-reviewed, evidence-based guidelines based on 'best practice' principles; developing a high quality continuing education program; and conducting regionally-based research and outcome analyses.

- ▶ Generation and transfer of knowledge throughout the province is achieved through the continuous maintenance of the Cancer Management Guidelines, Cancer Drug Manual, Chemotherapy Protocols, Evidence Based Guidelines for all disciplines, education for community health care professionals, and outcome evaluation and research. This is facilitated by the BCCA's interactive website, which is a dynamic, interactive resource for physicians, pharmacists and nurses who provide systemic therapy throughout the region.

BC is currently implementing a Northern Health Strategy¹⁸ to improve care to people living in rural and remote areas. This includes additional training and support for northern physicians on cancer control, including access to BCCA resources through outreach and telehealth services. There will be greater focus on cancer screening and early diagnosis and introduction of patient-centred care with navigational supports. The strategy intends to strengthen the network of care that extends from smaller communities to the largest centres through the family practice and community oncology networks.

Aboriginal Cancer Control

BCCA is engaged in a consultative process to develop an aboriginal cancer strategy as part of a broader provincial Aboriginal Health Strategy.

Ontario

Cancer Care Ontario (CCO) is not responsible for service provision, but rather oversees and performance manages all cancer services. The performance management system allows for the monitoring and management of 11 integrated cancer programs (ICPs) across the province. The system

comprises four elements: reporting frequency; reporting requirements; review meetings; and accountability and continuous improvement activities. Cheng and Thompson (2006)¹⁹ report some of the lessons learned from this performance management approach:

- data must be valid and reliable
- performance management requires commitments from both parties in the performance review exercises
- streamlining performance reporting is beneficial
- technology infrastructure that allows for cohesive management of data is vital for a sustainable performance management system
- performance indicators need to stand up to scrutiny by both parties
- providing comparative data across the province is valuable.

Ontario health services are organised into 14 Local Health Integrated Networks (LHIN), covering the full range of community, acute and rehabilitation health services. CCO has appointed a regional vice president (VP) of cancer control for each of the LHINs. The regional VPs meet on a regular basis and provide cancer representation at the executive level.

The VPs appoint surgical leaders and other staff to support quality care within each LHIN. Depending on the needs of their regional population they also implement other initiatives to improve access and quality of care. The CCO focuses on quality issues and has developed a set of quality and performance measures on which the regional VPs report each quarter.²⁰ Surgeons and hospitals, for example, participating in the regional surgical oncology program have to enter standards agreements to meet criteria of volume and quality to participate. LHINs are described in detail on the Cancer Care Ontario website: <www.cancercare.on.ca>.

Community Oncology Model and Access to Specialised Care

Guided by the Ontario Cancer Plan, Regional Cancer Programs link health care professionals, organisations, patients and decision makers across the spectrum of cancer services from prevention to treatment. Their goal is to ensure that every patient, regardless of address, has access

to high-quality care as close to home as possible. While individual organisations provide cancer services, Regional Cancer Programs (RCPs) are responsible for creating an annual cancer service plan and forging networks of cancer services in their LHINs, by building on existing relationships and using agreements and other accountability mechanisms.

Regional Cancer Programs access Cancer Care Ontario's (CCO) planning expertise, policy leadership, cancer information and the provincial standards and programs that are needed to deliver a consistently high quality of care. RCPs have the critical local relationships and structures needed to make improvements appropriate to the local context.

The CCO Provincial Leadership Council and Clinical Council are forums where Regional Vice Presidents and clinical leaders from across the cancer system come together to work on common issues and provide advice to Cancer Care Ontario on cancer priorities for the province. These councils provide a forum to work through issues that cut across LHIN boundaries, such as determining the best way to organise and locate highly specialised treatment services.

Innovative Models

- Innovative models include a video-conferencing program for the North East LHIN which has 7 small hospitals and no academic centre. The regional surgical oncology leader has organised multidisciplinary care conferences that include all surgeons performing cancer surgery within the region for biweekly meetings. The video-conferencing allows high resolution diagnostic and lab pathology slide imaging so all participants can review charts at the same time. A medical oncologist from a larger centre participates in the conferences.
- Another LHIN in the Champlain region has developed a strong community of practice across the region with multidisciplinary cancer team and patients. The program oversees the administration of the chemotherapy home infusion pump program for patients living in Eastern Ontario to avoid travel for overnight stays in larger centres.

Depending on local priorities, service arrangements and focus of innovations vary. For instance, some of the LHINs use telehealth significantly, while others do not. There have been experiments with the development of local community services in remote areas in Ontario. In 1992 outreach services were provided in thirteen small remote communities in north-western Ontario to provide chemotherapy and supportive care to clients. Once each community entered into an agreement to maintain an oncology service in its hospital, local physicians, nurses and pharmacists were designated as oncology providers and were given the opportunity to attend clinical training sessions at the regional cancer centre. Continuing education opportunities were made available using teleconferencing technology.

In 1997 the Centre for Rural and Northern Health Research evaluated the program and reported in 2001²¹ that 'the evidence suggests that the community cancer care program is maturing into a reliable system of care serving a small, but widely dispersed population.'

Aboriginal Health Strategy

Aboriginals in Ontario have the fastest growing incidence of cancer, compared to other indigenous populations across Canada. A well developed aboriginal cancer control strategy is in place, focusing on screening, prevention, health promotion, surveillance and research. Specific initiatives include the development of culturally appropriate videos demystifying cancer treatment; educational videos related to prevention; a tobacco strategy aimed at de-normalizing commercial tobacco and educating youth about traditional tobacco; and community outreach.

Manitoba

CancerCare Manitoba (CCMB) is a province wide agency which has legislated responsibility for cancer prevention, detection, care, research and education. There are two major cancer centres situated within/adjacent to major

teaching hospitals; FOUR urban community centres with oncology programs, and 15 rural community cancer programs. These are detailed on their website - www.cancercare.mb.ca

Community Oncology Model and Access to Specialised Care

The Community Cancer Programs Network (CCPN) is established in 15 rural Manitoba communities. This longstanding and innovative program provides cancer treatment and follow-up care to people living outside the city of Winnipeg. It will shortly expand to 16 sites.

Each CCPN site has a multi-disciplinary team of family physicians, nurses, pharmacists, and may include other health professionals such as social workers and dieticians. In 2005/06, over 14,000 outpatient visits occurred at these sites, avoiding 5.2 million km of travel by remote cancer patients.

Innovative Models

- **Teleoncology:** CCMB introduced teleoncology in 2002. This province wide multiple site program uses two-way videoconferencing equipment to link health professionals to patients and other health care providers. Teleoncology is used to provide:
 - specialised, consultative services to patients and families in rural sites equipped with MBTelehealth;
 - continuing educational sessions;
 - community providers to participate in administrative functions;
 - televisitation visits between patients and family members, when appropriate.

Contractual agreements have been set up between CCMB, the Regional Health Authorities, and the 15 Community Cancer Programs about roles and accountabilities.

- **Uniting Primary Care and Oncology: The UPCON Network in Winnipeg:** The UPCON Network began

as a collaborative partnership between 12 Winnipeg family practice clinics/primary health care centres and CCMB. It is dedicated to promoting and supporting the shared care of the cancer patient.

Using a technology and education strategy, UPCON supports approximately 80 family physicians and more than 50 primary health care providers in communicating more easily about patients with cancer care specialists. Through an evaluation framework, UPCON is ensuring that people with cancer in its 'partner' clinics experience better coordination of care involving different care providers. Main planks of UPCON include:

- 12 participating clinics/centres with dedicated Family Physicians who act as liaison or 'Lead Physician' for the UPCON Network
- CCMB shares the electronic health record with the UPCON Network sites
- educational programs are developed by the Network.

The model is currently being extended into rural Manitoba.

- **Clinical Partnerships:** Family physicians have participated in half-day CCMB clinical partnerships in the areas of their choice. These sessions have permitted CCMB specialists and family physicians to work side by side to enhance practice relationships, to discuss areas of mutual concern and to understand the patient experience of navigating through CCMB services.

Saskatchewan

Saskatchewan has two major cancer centres which serve the north and south of the province. Linkage to health services across the province is via 16 Community Oncology Programs (COPS) based in regional hospitals.

Community Oncology Model and Access to Specialised Care

The Community Oncology Program of Saskatchewan (COPS) is a program of the Saskatchewan Cancer Agency coordinated by the Saskatoon Cancer Centre and the Allan Blair Cancer Centre in partnership with the health regions.

The primary goal of COPS is to provide cancer patients with care and treatment in or near their home communities.

The COPS are funded and operated by regional budgets, not via Saskatchewan Cancer Agency (SCA). The SCA provides a coordinator at each of the Saskatchewan Cancer Agency centres to support the COPS program staff, develop and run training programs and certification programs, etc. <www.saskcancer.ca>.

There are 16 COPS centres located in regional hospitals throughout Saskatchewan. They have nurses, pharmacists, pharmacy technicians and social workers who are specially trained in providing cancer care. They remain in close contact with the cancer care teams at the Allan Blair Cancer Centre in Regina and the Saskatoon Cancer Centre. Patients who receive their cancer care at a COPS centre will still need to periodically visit their oncologist.

Innovative Models

The establishment of the Saskatchewan Oncology Collaborative (SOC) provides a consultative opportunity for Regional Health Authority CEOs, Department of Health officials and the CEO of the Cancer Agency to address any issues and plan service delivery for rural areas.

This includes making recommendations on program development, ensuring evaluation of quality services, sharing of information on cancer-related issues and assessing the impact of new and emerging technologies and new approaches to cancer care. Through this collaborative, working groups have been formed to address pharmacy, operational agreements, malignant haematology services and community oncology services.

North West Territories

North West Territories (NWT) has too small a population and service structure to have a lead agency for cancer control. Instead, it relies on clearly defined care paths and service relationships with a referral centre in Edmonton, Alberta. All treatment plans originate with the specialty services in Edmonton, which is familiar with resources and expertise within NWT. NWT emphasises recognition of Aboriginal culture in treatment planning and delivery, addressing issues of traditional healing, and the need for non-medical escorts for medical travel.

4.4 Cancer Services in Scotland

Overall model of care

Scotland's cancer strategy, *Cancer in Scotland: Action for Change* (Scottish Executive 2001),²² proposes managed clinical networks (MCN) as the model of cancer service delivery to support cancer patients, regardless of location.

The concept of MCNs evolved following a review of acute services. It was defined in a management executive letter in 1999 as 'linked groups of health professionals and organisations from primary, secondary and tertiary care, working in a coordinated manner, unconstrained by existing professional and health board boundaries, to ensure equitable provision of high quality clinically effective services throughout Scotland'.

The Scottish Office suggests that MCNs differ from hub and spoke models in that the interests of the network theoretically dominate those of individual hospitals. Details regarding the establishment and rollout of MCNs are included in an NHS circular (Scottish Executive, 2002).²³

The cancer strategy proposed comprehensive coverage of tumour-specific MCNs across Scotland. To achieve this, three regional cancer networks covering all of Scotland were created: West of Scotland Cancer Network (WoSCAN), South East Scotland Cancer Network as (SCAN) and North of Scotland Cancer Network (NoSCAN).

The establishment of networks in the Scottish context has had the following outcomes:

1. They are clinician led (Kunkler 2000).²⁴
2. They have added local focus to healthcare planning frameworks. Regional Cancer Advisory Groups have been established in each network and work with the local NHS Boards to plan cancer services for each area considering local needs.
3. A major clinical redesign initiative within the program has focused on establishing regional tumour-specific networks. However, treatment of rare and/or specialised cancers is through a national network.

Edwards (2002) describes the benefits of networked models of care to link local services in areas with smaller populations and a narrower range of services to larger, more specialised centres.

*'Networks offer a way of making the best use of scarce specialist expertise, standardising care, improving access, and reducing any "distance-decay" effects that can result from the concentration of specialist services in large centres. They can create systems that ensure patients receive a standard investigation and are referred on rather than being held in a local service that may not have the full range of expertise.'*²⁵

Rural service strategies

In the Scottish strategic planning documents, there is little specific detail about the provision of cancer services to people in rural and remote areas²⁶ of Scotland as opposed to metropolitan service. This may be due to the fact that the MCN project is not seen as 'rural-centric', but rather as an initiative to include the whole country.

Smith and Campbell (2004)²⁷ found that schemes that currently provide oncology services for remote rural patients in Scotland fell into three categories:

- central clinics at a cancer centre
- shared care outreach oncology clinics with chemotherapy provision

- shared care outreach oncology clinics without chemotherapy provision.

This study highlighted the wide variation in oncology service provision in Scotland that prevails in rural areas despite the MCN strategy.

- Outreach clinics were scattered across many parts of Scotland but absent from others with comparable populations and cancer care needs.
- Variable travel time to clinics, with most patients within two hours of the clinic, but some requiring four hours to access care.
- Variable frequency of outreach clinics ranging from weekly to four monthly.
- Variation in treatment options between outreach clinics depending on clinical factors, local facilities and preferences of clinical staff.
- General practitioners played a greater role at outreach locations than central locations.
- The efficiency of services in rural areas was hampered by poor, mostly non-standardised communication between cancer centres and outreach clinics.
- Patients appreciated being able to see an oncologist locally and access some of their treatment locally.

The article proposes key components of outreach clinics to ensure that the quality of care is not comprised:

- local expertise and 'back up' from central oncologists
- continuing professional development of staff
- better and faster communication through standardisation of processes
- more information on the cost effectiveness of outreach programs.

5 Models of specialised services

The most common form of specialist cancer service provision to remote areas in Australia remains outreach services by visiting medical specialists from metropolitan centres (often referred to as ‘fly in – fly out’ services). Details about these services and systems of support are not specified in the State descriptions of models of care. The *NSW Rural Cancer Services Review* (2005)²⁸ found that services available to cancer patients in rural NSW are provided through large regional or base hospitals located in more densely populated townships, with support through outreach arrangements with metropolitan centres. The review highlighted challenges in the operation and sustainability of specialist cancer outreach clinics including:

- Variation in the level and nature of formal arrangements between the metropolitan Area Health Services providing the outreach services and the rural Area Health Services receiving the services.
- Travel and environmental challenges for clinicians.
- Specialist workforce issues such as retention and succession planning.
- Sometimes inappropriate facilities.
- Inconsistent operational processes, including high work loads.

A review of outreach care in Scotland identified similar issues (Smith and Campbell, 2004) while in Canada, shared care was the more common approach to the delivery of cancer services in remote communities. Minore et al. (2001)²⁰ describes ‘outreach’ services in northern Ontario providing chemotherapy and supportive care in thirteen remote communities, through local doctors (not visiting specialists) together with nurses and pharmacists, supported by specialist staff at the Northwestern Ontario Regional Cancer Centre (NWORCC). Similarly in British Columbia, the GPs with a special interest in oncology in remote communities are supported by the specialist staff at one of the four regional comprehensive cancer centres in the province. The literature search did not identify any formal evaluation of the Canadian shared care models.

There are various sources in the literature that explore models of service to promote continuity and integration

in healthcare services to meet the special demands of populations in rural areas. The main areas of focus are integrated and managed care pathways, outreach programs, shared care and telemedicine.

5.1 Integrated and managed care pathways

Rygh and Hjortdahl (2007)²⁹ explore the differences between integrated care pathways and managed care in the rural context. They define an integrated care pathway as an outline of planned care for a specific patient group while managed care refers to the case management of individual patients. Despite the differences, they suggest that both require consideration in the context of rural areas as they benefit from rural health professionals’ special knowledge and skills.

As an example they provide evidence that rural case management depends on a locally based case manager whereas input from the health provider travelling from an urban centre adds value to the integrated care pathway.

5.2 Outreach programs

The benefits and challenges of specialist outreach clinics in primary care settings are explored in a systematic literature review of UK studies (Powell 2002).³⁰

Surveys of general practitioners (GPs), specialists and patients identified the perceived advantages of outreach clinics especially with respect to enhancing GP–specialist communication and improving patient experience and access. Comparative studies showed that more patients expressed a preference for outreach clinics than for hospital-based clinics; measures of patient satisfaction were generally higher for outreach clinics.

Reported disadvantages included administrative costs, accommodation costs and inefficient use of specialists’ time due to poorly developed operational practices at the clinics. Outreach clinics were shown to have higher direct costs to the health system than hospital-based clinics.

The studies in the review did not show any consistent difference in health outcome between outreach and hospital-based clinics.

A Cochrane review of studies focusing on specialist outreach clinics was conducted by Gruen et al. in 2003.³¹ This review examined the benefits and challenges of outreach in a range of specialties and in a variety of settings.

Simple 'shifted outpatients' styles of specialist outreach were shown to improve access, but there was no evidence of their impact on health outcomes. However, outreach as part of more complex multifaceted interventions involving primary care collaborations, education and other services was associated with improved health outcomes, more efficient and guideline-consistent care, and less use of inpatient services. To add to these findings, the authors concluded there is a need for further research to evaluate specialist outreach in all settings, but especially in rural and disadvantaged populations.

Gruen and Bailie (2004)³² took up this challenge and examined specialist outreach in a rural, disadvantaged setting. They focused on a retrospective study in remote Aboriginal communities in northern Australia, which observed the results of a program introducing regular outreach every three–six months by specialists in surgical disciplines:

- The proportion of patients referred to hospital outpatient clinics was halved.
- The rate at which referred patients obtained specialist consultations increased by 41 per cent.
- The proportion of outpatient-based specialist procedures performed in communities increased from 53 per cent to 86 per cent.
- The proportion of patients with certain conditions requiring inpatient care that were booked for treatment decreased from 79 per cent to 59 per cent.

The benefits of outreach in this setting as reported by remote health practitioners, patients and specialists included:

- reduced need for patients to travel large distances
- family and health staff in attendance leading to improved

practitioner and patient understanding of clinical and management issues and improved doctor-patient communication

- improved cultural appreciation by specialists and hospital systems
- improved communication between hospital and remote clinic staff as well as education and training opportunities
- cost savings when compared with the cost of transporting patients to regional centres.

The authors believe that despite the lack of current data on the impact and outcomes of specialist outreach in different settings and across different disciplines, provision of outreach services is justified in countries such as Australia, purely on the basis of equity of access. They support policy makers for continuing to experiment with specialist outreach clinics but stress the need for evaluation of their impact on accessibility, appropriateness and outcomes of care.

In 2000, the Australian government implemented a Medical Specialist Outreach Assistance Program (MSOAP) to address inequities of access to specialist care faced by rural areas, even though there was little evidence for or against their effectiveness. Since the inception of this program, a number of specialist outreach medical services have been established. For example, for the financial year 2007 to 2008, General Practice Queensland contracted 39 specialists to deliver services in 57 communities from Torres Strait Islands in the North to Cunnamulla in the South and Mt. Isa in the West. At the time of the review, cancer services were not included. http://www.gpqld.com.au/page/Programs/Medical_Specialist_Outreach_Assistance_Program_MSOPAP/.

5.3 Shared care

Shared care across the primary-specialty interface has been defined as the joint participation of primary care physicians and specialty care physicians in the planned delivery of care, informed by an enhanced information exchange, over and above routine discharge and referral notices. As a service model, it has the potential to improve the management of chronic diseases and lead to better outcomes than either primary or specialty care as single modalities.

A Cochrane review (Smith et al. 2007)³⁴ examines the effectiveness of shared care for a range of chronic conditions in a variety of healthcare settings.

Shared care interventions identified were complex and multifaceted. Results were varied and, according to the reviewers, many of the studies were of poor quality. Shared care had a clear effect on improving prescribing but the pattern of results was mixed for all other outcomes – physical or mental health outcomes, psychosocial outcomes, psychosocial measures including measures of disability and functioning, hospital admissions, default or participation rates, recording of risk factors and satisfaction with treatment.

The review concludes there is a need to improve the design and quality of studies examining shared care interventions in order to determine which components, if any, are effective. This would allow issues such as sustainability and determination of the most effective patient groups and settings to be analysed more critically.

A review of cancer treatment programs in remote and rural areas in the UK (Campbell et al. 1999)³⁵ suggested there were some indications that shared outreach care was safe and could make specialist care more accessible to outlying patients. The reviewers concluded that larger and more methodologically robust studies are justified and should be conducted.

5.4 Role of primary care

Campbell et al (2002)³⁶ stress the importance of investing in primary care oncology. They argue that nearly all the priorities for cancer services are affected by actions in primary care – reducing the risk of cancer, early detection and faster access to specialist treatment, improved support for patients living with cancer, and reducing inequalities, especially due to access for rural and remote communities.

Adequate resources and support (including information technology), good communication with specialist services, and more primary care based research on which to base recommendations are all needed to enhance the role of primary care providers in cancer services.

5.5 Telehealth

Because of the variety of applications involving telehealth technology it is difficult to form views on its effectiveness. In a systematic review, Hailey et al. (2002)³⁷ found that the most convincing evidence had been provided through studies involving tele-radiology (especially neurosurgical applications), tele-mental health, transmission of echo-cardiographic images, tele-dermatology, home tele-care and some medical consultations. However their results show there is 'little good quality information on the efficacy, effectiveness and cost effectiveness of telemedicine...[and]... few studies included any follow up data on clinical outcomes or health status of patients who had participated in telemedicine services.'

Hailey and Crowe (2003)³⁸ reviewed 89 papers from three Successes and Failures in Telehealth (SFT) conferences which explore the status of telemedicine in several countries. Common themes that emerged in relation to the determination of success and failure of telehealth applications and programs include:

- reliability of equipment, software, communications, technical support and vendors
- a stable supportive environment – political, economic and budgetary
- perceived need for the telehealth service
- involvement of stakeholders in planning and on-going liaison – to encourage a sense of ownership and participation
- stability of management structures and personnel
- cooperation and competition between organisations involved in networks.

The authors came to the conclusion that few papers described the success of telehealth in terms of whether it makes a sustained, worthwhile contribution to the operation of health services and the maintenance or improvement of health status. Success was usually measured in terms of utilisation and satisfaction. There was little information on long-term health or economic outcomes.

Dillon et al. (2005)³⁹ report on a Western Australian Department of Health telehealth project between 1999 and 2004. The 75 videoconferencing sites funded under the project were part of a statewide videoconference network of 104 sites. During the two-year period from January 2002 to December 2003, a total of 3,266 consultations, case reviews and patient education sessions took place. Clinical use was 30 per cent of all activity, educational use approximately 40 per cent and management use about 30 per cent. The average overhead cost per telehealth session across all regions and usage types was A\$192. The authors were unable to compare the results with other public health providers because the data did not exist. Moreover as stated in a previous paper, Dillon and Loermans (2003)⁴⁰, it is difficult to evaluate a broad range of telehealth programs in rural and remote locations for such an embryonic technology. These difficulties are compounded by the current lack of a national strategy to ensure consistency and compatibility, not only of infrastructure, equipment and standards but also of data capture and evaluation methodologies.

Other articles support the use of telehealth in cancer management. Olver et al. (2007)⁴¹ identified a number of potential benefits:

- enabling the formation of multidisciplinary teams in rural areas supplementing existing rural practitioners with experts from larger centres
- psychological support for patients and support for rural practitioners
- transmission of pathology images and tele-radiology.

Collie et al. (2007)⁴² describe the use of videoconferencing to support women with breast cancer in a large rural area to reduce distress and increase emotional expression and self-efficacy for coping with breast cancer. Pre-test and post-test comparisons showed significant decreases in depression and post-traumatic stress disorder symptoms.

6 Models of service for Aboriginal people

6.1 Australia

Cancer among Aboriginal Australians is under-reported because cancer notifications are known to capture Aboriginal status poorly. This applies particularly to rural/remote populations. The fact that cancer is often reported in terms of the proportion of deaths that it causes (12 per cent of Aboriginal deaths compared with around 28 per cent of all deaths in Australia) rather than by rates, has tended to give the erroneous impression that cancer does not have a great impact on Aboriginal people (Kirov et al. 2003).⁴³

Analysis by Cunningham and Paradies (2000)⁴⁴ suggest that there are around 40 per cent more cancer deaths among Aboriginal Australians than expected on the basis of non-Aboriginal rates. Roder (2007)⁴⁵ estimates that the age-standardised cancer death rates among Aboriginal Australians to be about 45 per cent higher than non-Aboriginal Australians. After adjusting for cancer type and stage of progression of cancer at diagnosis, this paper suggests that higher case fatalities among the Aboriginal population are the result of poorer outcomes of treatment. There is evidence from both the NT and Queensland that Aboriginal patients obtain less comprehensive treatment and have more complicated treatment due to higher levels of co-morbidity (Valery et al. 2006; Condon et al. 2005).⁴⁶

Kirov et al. (2003)⁴² list some of the barriers to Aboriginal people using cancer screening and treatment programs:

- limited knowledge about cancer and its management
- problems of access, especially because many live in rural and remote areas and they may lack transport and money. Communication can also be a problem if the Aboriginal person's first language is not English
- culturally unsafe and/or insensitive services
- personal issues such as shame and embarrassment.

Suggested improvements to reduce cancer rates among Aboriginal Australians are mainly at the primary health level and include:

- raising of breast and cervical screening rates
- addressing risk factors such as smoking, poor diet,

excess alcohol consumption and obesity and improve vaccination rates.

The extent to which improvements are made can only be assessed with improved data – national data definitions and better recording of Aboriginal status in cancer registries.

Roder (2007)²⁷ believes that cancer control initiatives for Aboriginal people are likely to be most effective when:

- there is a devolution of decision-making to local communities to define their health needs and priorities
- Aboriginal people are included in the governance structures of mainstream health services
- service providers are educated about Aboriginal culture and about culturally safe and respectful care
- outreach services are introduced wherever practicable, for remote Aboriginal populations
- appropriate transport and accommodation is available when remote residents need to travel to metropolitan centres for care.

Cass et al. (2002)⁴⁸ explores the factors limiting the effectiveness of communication between Aboriginal patients with end-stage renal disease and healthcare workers and concludes that to improve communication, trained interpreters are necessary as well as a fundamental change in the delivery of healthcare. In particular, the construction of a shared understanding is required, from the perspectives of both staff and patients, focusing on the physiological processes and treatment options of the disease as well as the cultural, social and economic realities confronting Aboriginal patients and their families.

Cunningham et al. (2005)⁴⁹ argue that the responsibility for reducing ethnic disparities in the quality of health care rests with the healthcare system and its providers. System level changes that are required include adequate funding for primary care, an adequate Aboriginal health workforce and improvements in the interface between primary care and specialist services.

The evaluation of specialist outreach services in the Top End of the NT by Gruen et al (2002) found a fourfold increase

in the annual number of consultations with people from remote communities following the implementation of the service. Corresponding increases have not been observed in those specialties in the absence of outreach. The benefits of outreach in this setting as reported by remote health practitioners, patients and specialists in this evaluation included:

- no need for patients to travel large distances
- family and health staff in attendance leading to improved practitioner and patient understanding of clinical and management issues and improved doctor-patient communication
- improved cultural appreciation by specialists and hospital systems
- improved communication between hospital and remote clinic staff as well as the education and training opportunities
- cost savings when compared with the cost of transporting patients to regional centres.

The requirements for sustainable specialist outreach in the NT, according to Gruen et al are:

Specialist base considerations:

- an adequate number of specialists
- outreach is shared and not dependent on one person
- outreach is integrated, valued and facilitated by the host hospital/region
- the outreach specialist has a hospital role.

Primary care considerations:

- primary care is adequately resourced and staffed
- demand exists for specialist care
- a multidisciplinary framework centred in primary care and not dominated by the specialists.

The outreach service:

- is coordinated and there is prior planning of visits
- it is funded separately and evaluated regularly.

The nature of outreach visits:

- are regular and predictable
- respond to individual community and cultural needs
- are accountable to the referring practitioner and community
- are the appropriate mix of clinical services, education and support
- utilise education and training opportunities
- ensure correspondence is reliable and communication is good.

6.2 Canada

Differences between the health status of Canada's Aboriginal and non-Aboriginal populations in a range of areas – life expectancy, higher prevalence of diseases such as diabetes, HIV and tuberculosis, mental health, addictions issues, child mortality and suicide – is compounded by issues such as geographic isolation, poor environmental conditions, inadequate housing and inconsistent delivery of health care services in the community (Muttitt et al. 2004).⁵¹ Interestingly, with the exception of male prostate cancer, First Nations cancer mortality rates are lower than those for the overall Canadian population⁵² yet continuity in the process of care provided to cancer patients is a major concern for residents of northern Aboriginal communities (Minore et al. 2002).⁵³ Some of the reasons for this lack of continuity include:

- lack of adequate numbers of medical and nursing staff to service First Nations communities
- necessity for cancer patients to travel out of the communities to access specialist diagnostic, treatment and follow-up care.

Suggested improvements include:

- expand treatment services and introduce or expand programs to detect, screen and prevent cancer
- develop strategies to recruit and retain staff
- explore alternative means of doing preventative care and increase health promotion

- improve discharge planning from tertiary care so that resources actually available in a client's community are taken into account
- ensure good communication between primary and tertiary care centres
- identify what treatment, diagnostic and screening tests can be done in the communities
- work with First Nations communities to access resources for training and developing home care programs
- provide training for paraprofessionals from the communities to provide palliative care in the home
- recognise cultural differences in grief counselling and make use of First Nation people who have knowledge as grief counsellors
- provide cultural awareness training for health care providers
- encourage physicians from regional service centres to provide on-reserve medical services
- provide funding for the costs associated with having members of an extended family travel to be with a patient when death is imminent

The Health Canada website⁵⁴ describes telehealth as a prominent theme in the recent Blueprint for Aboriginal Health. Community-level health care providers and Aboriginal communities view it as essential to improving service delivery. Nationally there are about 95 videoconferencing sites and 80 telehealth sites in First Nations and Inuit communities across Canada, with a number of new initiatives being planned. Telehealth evaluations have recognised the following benefits for First Nations and Inuit communities:

- Improving access to specialist care, which can lead to improvements in the diagnostic skills of community-based personnel, while reducing the stress levels for both care providers and patients;
- Reducing the number of patient transfers to specialist centres;
- Improving waiting times for consultations, assessments, and monitoring;

- Improving time management through data sharing among primary health care providers at the community level;
- Supporting service integration with the provinces, and
- Contributing to support and education/training for staff in a fashion that improves retention and recruitment.

Muttitt et al. (2004) argue that the full potential of telehealth as a solution for healthcare in Aboriginal populations has yet to be realised. Teleoncology has been a key initiative of CancerCare Manitoba and Manitoba Health and Health Canada's First Nations. The Inuit Health Branch and the University of Manitoba share a vision for the integration of telehealth into current regional and provincial health service delivery to support health and wellness in First Nations communities.

Ontario appears to have the most developed Aboriginal Cancer strategy, moving significantly upstream to address the cancer risks due to the fact that Ontario Aboriginals have the fastest growing incidence of cancer. Youth summits, anti-commercial versus traditional tobacco messages, culturally appropriate videos about prevention, early diagnosis and treatment are some of the strategies employed. Ontario and other provinces have also introduced patient navigators to help newly diagnosed Aboriginal people and their families navigate the system.

7 Conclusions

Specialised care such as cancer care, provided to people in rural and remote areas, including Aboriginal people, benefits from being integrated into a broader, formalised service system that is adequately resourced, well coordinated, has clear standards and is monitored regularly to ensure appropriate and consistent quality.

The most common forms of service delivery currently applied in rural and remote areas include outreach programs, shared care and telehealth. Although evidence of the efficacy of outreach programs, shared care and telehealth for long-term improvements in health outcomes is not yet available, they are all used and promoted in Australia, Canada and Scotland in rural and remote communities. They are justified on the grounds that they provide equitable access and have been shown to increase utilisation rates among patients. Successful use of shared care, telehealth and outreach in rural / remote service delivery assumes the existence of a broader specialised system as well as local primary care providers working collaboratively with the specialised services to ensure continuity of care for the patient.

The success and sustainability of outreach services depends on many factors including:

- Integration and coordination of the outreach services within a total system of care.
- An adequate number of specialists to ensure that the service is supported and viable.
- Adequate demand for the specialised service.
- Adequate stable funding.
- Regular evaluation of the value of the service and its outcomes.
- Regular and predictable visit schedule.
- Prior planning of visits.
- Involvement of primary care providers to learn about the specialised care being provided and to maintain continuity of care and treatment of the patient.

In addition, an overall strategy should be developed and agreed. This would include deliberate development of the fly-in services, shared care and local support. Such development

could include agreements between rural and metropolitan-based facilities.

Outreach services for Aboriginal people have the additional requirements of staff cultural awareness, trained interpreters and the involvement of the Aboriginal community and Aboriginal health providers in planning and developing the health services. Cancer services for Aboriginal people are likely to be most effective when:

- There is a devolution of decision-making to local communities to define their health needs and priorities.
- Aboriginal people are included in the governance structures of mainstream health services
- Service providers are educated about Aboriginal culture and about culturally safe and respectful care.
- Outreach services are introduced wherever practicable, for remote Aboriginal populations.
- Appropriate transport and accommodation is available when remote residents need to travel to metropolitan centres for care.

The review confirms that redesign and networking approaches have the potential to strengthen existing service models for cancer patients in rural / remote locations. In identifying key elements of successful outreach services and describing models used in comparable situations in other countries, this review will support a review of existing cancer outreach services and inform projects to strengthen rural cancer services in NSW.

8 Appendixes

8.1 Appendix A Australian State and Territory Overviews

State: New South Wales

Population Overview
Population: 6.720m. Pop in Rural Areas: 1.949m. (29% of total population of NSW) Aboriginal and Torres Strait Islander pop: 146,000 in total; 89,000 live in rural areas which is 4% of the rural population) Geography/Size: 803,161 km²
Cancer Care Model and Mandate
The eight Area Health Services (AHS) and the Children's Hospital Westmead are responsible for planning, managing and delivering public sector cancer services and BreastScreen NSW for their local populations. The NSW Department of Health sets standards and guidelines; it allocates funds to AHS and non government organisations to provide services. NSW Health plays a direct role in the planning and funding of several cancer services. The Population Health Branch is responsible for key programs such as tobacco. The Statewide Services Branch is responsible for the Radiotherapy Strategic Plan, the Radiotherapy Management Information System Report and the planning of capital projects for radiotherapy and other cancer services. The Cancer Institute NSW is Australia's first government supported cancer control agency. It was established in 2003 and its statutory role is to facilitate leadership on cancer issues. The Cancer Institute NSW has direct responsibilities for a range of programs, such as the NSW Central Cancer Registry; the Pap Test Register; Quitline, BreastScreen NSW, the Cervical Screening Program and other services. In addition, the Cancer Institute NSW uses funding provided by the NSW Government to facilitate significant innovations in cancer prevention, service delivery and research. However the Cancer Institute NSW itself is not a direct provider of services and does not directly manage funding for the vast majority of cancer services provided through the NSW Health system. In 2006–07, the Cancer Institute NSW spent \$134.98 million, with 96% of funds spent on cancer prevention, screening, services and education, research and information and registries. The Australian Government, through the Medical Benefits Scheme and Pharmaceutical Benefits Scheme, supports a broad range of services provided through the public and private sectors. It also contributes substantial funding to the three major screening programs and plays a central role in supporting cancer research, mainly through the National Health and Medical Research Council (NHMRC). Recently the Australian Government established Cancer Australia, a national cancer agency. This agency will provide national leadership and coordination in cancer control. The model of care for the provision of cancer services in NSW is articulated in NSW Health (1999) and consists of the following components: • Population Health Services encompassing prevention, screening and diagnostic services on both an individual and population basis; • Cancer Units comprising Role Delineation Level 4 medical oncology, radiation oncology and general surgical services, supported by nursing and allied health personnel. This level of service would be located at a district metropolitan or major non-metropolitan referral hospital (Base Hospital); and • Comprehensive Cancer Care Centres comprising Role Delineation Level 5 and Level 6 medical oncology, radiation oncology and specialist surgical services, supported by specialist nursing and allied health personnel. This level of service would normally be located with a major metropolitan referral or principal referral hospital. A <i>Clinical Service Framework for Optimising Cancer Care in NSW</i> (NSW Health 2003) provides further detail on the operation of the Cancer Care Model at an Area Health Service level to optimise care for all cancer patients in NSW. It sets clear standards for cancer service delivery in the following areas 1. Implementation, monitoring and review of standards for cancer care in NSW 2. An Area-wide approach to optimising cancer care 3. Patient-centred care 4. Access to appropriate clinical services 5. Multi-disciplinary care 6. Communication between primary, secondary and tertiary services 7. Education, training and continuing professional development. Within each cancer topic, key objectives are stated as are the specific standards that need to be met to achieve these objectives. For each standard, information is given regarding the activity required to demonstrate compliance, and a recommended time frame within which compliance with each standard is to be demonstrated.

Cancer services in rural communities

The model of care proposed for providing cancer services in rural communities is based on outreach clinics where a medical oncologist and radiation oncologist provide weekly clinics (on different days) to Base Hospitals in rural AHS. Services include:

- Consultant oncologists who provide expert opinion on treatment, develop patient management plans, perform clinical review of patients.
- Cases presented by the medical oncologist at the weekly teaching hospital multi-disciplinary team meeting (from where the consultant oncologists are based) and further treatment decisions made by the team.
- Treatment decisions documented and sent to patient's surgeon and general practitioner.
- Day to day management of outreach clinic and care coordination provided by Clinical Nurse Consultant. Day to day management of patients in-between visits from the consultant oncologists is provided by nurses and general practitioners.

A Clinical Service Framework for Optimising Cancer Care in NSW (NSW Health 2003) discusses the need for AHS to develop cancer networks, comprising formal inter- and intra-Area linkages and collaborations with appropriate facilities and health service providers, including effective and efficient links with the private sector, to ensure that their residents have access to the full range of cancer services needed to effectively manage common cancers. Where necessary, strategies such as tele-medicine and outreach clinics should be utilised to facilitate access to multi-disciplinary care for all patients. If there are specific tumour sites or procedures that would be more optimally managed at another intra- or inter-Area facility, formal linkages and agreed referral guidelines should be developed. These collaborative working links should be utilised to facilitate multi-disciplinary care for all patients.

Innovative Models/Approaches

- **CanNET**
CanNET NSW aims to link the Northern Sydney and Central Coast, Hunter New England and the North Coast Area Health Services into one network - a population of 2.4 million.
- **GPVMO at Dubbo**
A medical oncologist and registrar used to visit Dubbo once a week but since the AHS amalgamation, the service is only available every two weeks with no registrar. GWAHS have appointed a GPVMO for 12 hours per week to review patients to determine whether they are well enough to undergo chemotherapy and to triage and prepare patients for the oncologist's visit by doing tests, MRI's and biopsies. Protocols and guidelines are needed for this position to ensure the GP only does what is within their skill range.
- **Distance planning for radiotherapy**
A radiation oncologist from RPAH visits Dubbo every month (in addition to his monthly clinic visit) to plan patients' radiotherapy treatment. This saves the patient making a preliminary trip to Sydney before radiotherapy treatment commences.
A number of projects have been funded under the Health Services Innovations Grants Program of the CINSW including:
- **Aboriginal Cancer Care Coordinator**
An Aboriginal Cancer Care Coordinator has been appointed for 12 months to provide a more coordinated approach to cancer care for Indigenous people in the Hunter/New England AHS.
- **Shared oncology care in Cooma**
Shared care between metropolitan oncologists and GPs in Cooma is being trialled to provide chemotherapy services closer to the patient's home.
- **GP telecolposcopists in rural centres**
Three telecolposcopy clinics are proposed in outlying centres within the Hunter New England AHS where digital images of the cervix will be transferred for specialist assessment and care planning using telemedicine technology.
- **Integrated regional cancer transport services**
An integrated cancer transport model is proposed to meet the transport needs of disadvantaged cancer patients in the Central Coast region of the Northern Sydney Central Coast AHS
- **Cancer Intake Officer**
The Riverina Division of General Practice has been funded to appoint a cancer intake officer who will bridge the gap between initial cancer diagnosis and the commencement of treatment. They will improve communication, provide information, identify psycho-social needs of the patient and family, link the patient and the family with relevant agencies. They will also provide relevant information to GPs, specialists and other health care providers.

State: Victoria

Population Overview

Population: 4.963m.

Pop in Rural Areas: 1.4m. or 28% of the total population of Victoria

Aboriginal and Torres Strait Islander pop: 30,000 in total; 14,000 live in rural and regional areas which is 1% of the rural population)

Geography/Size: 227,594 km² in total; 218,730 km² in rural and regional Victoria

Cancer Care Model and Mandate

The Cancer Services Framework (Victorian Department of Human Services, 2003) articulates a vision for a cancer service system in Victoria that identifies a number of major metropolitan and regional providers with formalised strategic links to intermediate and smaller services, and to rural services.

Level 1 services (the lowest level):

These services would be capable of providing chemotherapy using pre-ordered materials. A nurse with training in the administration of chemotherapeutic agents would be on site. No surgical or radiation oncology services would be available. Level 1 services would be linked with higher-level services to meet other requirements in the continuum of cancer care.

Level 2, 3 and 4 services:

These services would offer progressively more sophisticated care, with Level 4 services being typical of those provided in a major centre such as Geelong.

Level 5 services (the highest level):

Level 5 services would exist only in selected centres in Melbourne. They would provide the full range of specialised surgical, radiation and medical oncology services, as well as imaging and pathology, although not all super-specialty services would be available at all sites.

Regardless of the level of the service in which they receive treatment, all patients would be provided with education and information, as well as access to rehabilitation, psychosocial support, and palliative care services, either on site or by referral. Services of different levels would contribute to multidisciplinary care. A formal accreditation process, conducted by an independent body, would lead to approval of the role-designation level for a particular service in a given tumour stream. Accredited services would be responsible for the enlistment of practitioners who have appropriate credentials to carry out aspects of service delivery. Accredited services would also develop local databases providing detailed information to the accrediting body and the Statewide tumour-stream-specific reference groups. Local care coordinators would assist accredited services, and Statewide reference groups would oversee their evaluation.

The vision is for cancer services to be part of a service system, with the establishment of Integrated Cancer Services (ICS) in Melbourne and outside Melbourne. Each ICS would comprise clusters of hospitals and associated health services that deliver services for people with all types of cancers within a geographic area. Each ICS is intended to be self-sufficient in accordance with its role designation and to the extent that the ICS can meet the requirements of the standards of care that form the core of the Framework.

It is envisaged that each Metropolitan ICS (MICS) would bring together two or more of the existing Metropolitan Health Services and hospitals. The broad range of services, up to and including Level 5 services, could be provided in each MICS. Each MICS would also be expected to carry out research in its established field of strength, as well as education and training. Where a MICS does not provide a specialist service, it would develop links with another MICS that does.

Highly-specialised services, services for the management of rarer cancers, and other services providing for the whole of Victoria, would be available only at a limited number of sites. This may require rationalisation of existing services to concentrate high-level expertise and specialised facilities as effectively and efficiently as possible. Such specialised services may include the following:

- services for the management of certain gynaecological, head and neck, upper gastro-intestinal and paediatric cancers, sarcoma, and melanoma
- allogeneic bone marrow transplantation services
- stereotactic radiosurgery services
- brachytherapy services.

Possible groupings that would constitute the MICSs, based on existing hospital sites and services, are:

Southern Melbourne – Bayside, Southern and Peninsula Health.

Western Melbourne – PeterMac, Melbourne Health, Western Health, Women's and Children's Health, and Mercy Werribee.

North Eastern Melbourne – Austin Repatriation Medical Centre, St Vincent's Hospital, Eastern Health, Northern Health, and Mercy Women's Hospital.

A Director, with secretariat support, would manage each ICS. Their role would include:

- development of a strategic and service plan that would encompass training, quality improvement, research, and the development of links with other ICSs
- provision of leadership in the development and implementation of tumour-stream-specific standards of care
- development of funding models and budget management.

Within each ICS, each tumour stream would be led by an executive comprising clinicians from each hospital. Ideally, some or all of the members of the tumour-stream executive would also work in the private sector; thus providing a means to engage the private sector in the integrated services, and work with providers to ensure uptake in the private sector.

Cancer services in rural communities

Rural/Regional Integrated Cancer Services (RICS) are to be established in each of the five rural regions in Victoria and provide Level 1 - 4 services. This proposal accords with the current or proposed provision of radiation oncology in Geelong, Bendigo, Ballarat, Traralgon and Wodonga. A Director with appropriate management and infrastructure support would oversee each RICS. The Director would have responsibility for the implementation of standards and audits, and for ensuring that services comply with accreditation requirements. As the proposed RICS also comprise different legal entities, each will separately determine and agree on the operations and accountability of the Director. If a RICS does not provide a particular specialised intervention (e.g. neurosurgery), it must have links with a MICS that does provide the intervention in question. Formal relationships should be negotiated between RICS and MICS. Audit should demonstrate that the linkage is used appropriately.

Five RICSs aligned with the Department of Human Services rural regions are proposed.

Innovative Models/Approaches

CanNET Victoria will link health professionals and facilities providing cancer care in regional and rural areas with cancer services in metropolitan areas. The establishment of formal linkages and agreed care pathways will ensure people affected by cancer in the Hume Regional Integrated Cancer Service and North Eastern Metropolitan Integrated Cancer Service (population of 1.6 million) will have access to the most appropriate, evidence-based cancer care.

State: Queensland

Population Overview
Population: 4.09m. Pop in Rural Areas: 1.47m. or 36% of total population of Qld Aboriginal and Torres Strait Islander population: 128,000 in total; 97,000 live outside the metropolitan area which is 7% of the total rural population Geography/Size: 1,734,156 km²
Cancer Care Model and Mandate
The Queensland Cancer Control Strategic Directions 2005-2010 (Queensland Health 2006) provides a statewide framework to strategically guide the investment of resources and achieve improved health outcomes for all patients with cancer. It outlines Queensland Health's strategic intent for cancer services for the next five years. It provides the blueprint for the development of a more detailed Cancer Control Implementation Program for Queensland as part of a five-year implementation process. It identifies gaps in current services especially the fact that the components of cancer management and care are not well integrated into a comprehensive, coordinated system. As a result referrals to treating specialists or treatment centres may be made more on the basis of convenience and in a haphazard manner rather than to the most appropriate service. The proposed model for cancer care that is currently under development is a hub and spoke model of cancer centres, cancer units and networks. This model, according to this document, will involve statewide implementation of clearly defined service networks that encompass the public and private sector. The model will promote service integration, coordination, a multidisciplinary team approach, evidence-based care and support for people on their cancer journey. Issues relating to communication across these networks, clinical governance, standardisation of care, coordination, timeliness of service provision and the need for people with cancer to travel to receive highly specialised treatments will need to be addressed. Service and clinical data systems need to be developed to link cancer service networks to aid communication, monitoring, quality improvement, evaluation and planning of cancer management and service delivery.
Cancer services in rural communities
The detail of how services are to be delivered in rural and remote settings is not available. The cancer control strategic directions document does state that 'A model of care that incorporates networked, integrated services enables people with cancer to access all relevant expertise and facilities regardless of where they live. Networked models of care ensure that people with cancer in regional, rural and remote areas can access high-quality care by linking smaller centres to large specialist centres.' It does not describe how this will happen in practice and presumably it will part of the Cancer Control Implementation Program that is currently being developed.
Innovative Models/Approaches
Queensland is involved in CanNET. Their project will establish tumour teams linked into the major metropolitan cancer services. The population of the region affected by the CanNET demonstration project is 1.83 million.

State: South Australia

Population Overview
Population: 1.533m. Pop in Rural Areas: 427,000 or 28% of SA's total population Aboriginal and Torres Strait Islander population: 26,000 in total; 12,000 living outside the metro area which is 3% of the rural population Geography/Size: 985,334 km²
Cancer Care Model and Mandate
The Statewide Cancer Control Plan (SA Health, 2006) describes a Statewide Integrated Cancer Care Service that will function as a coordinated service, delivering quality cancer care for the whole of South Australia. The Statewide Integrated Cancer Care Service will comprise Comprehensive Cancer Centres and Cancer Services. A Comprehensive Cancer Centre will be based in a major metropolitan hospital and develop collaborative links with affiliated Cancer Services which will comprise smaller metropolitan and country hospitals, primary health care services and associated health services. The levels of care provided within the Cancer Services will vary, with larger services providing some of the more complex cancer treatment modalities. Given South Australia's population size and regional health profile, some highly specialised services would not be duplicated across Regional Health Services and may only be provided at certain sites (e.g. major metropolitan hospitals) which would provide for the whole of South Australia. This would include highly specialised services, services for the management of rarer cancers and services where there are small numbers of specialists. Largely, this formalises what already exists, but this may require rationalisation of existing services to concentrate high-level expertise and specialised facilities as effectively and efficiently as possible. Such specialised services include: • gynaecology oncology – single site based at Royal Adelaide Hospital (RAH) with outreach at Flinders Medical Centre (FMC) • allogeneic bone marrow transplantation services – single site based at RAH • radiation oncology: such as brachytherapy services: - limited number of providers - single public service and single private service - each provider may have multiple facilities - all brachytherapy based at RAH • paediatric oncology – single site based at Women's and Children's Hospital (WCH) • some diagnostic services (e.g. PET and CT). - RAH Comprehensive Cancer Centres Comprehensive Cancer Centres will provide highly specialised, complex and sophisticated levels of medical care. Comprehensive Cancer Centres will provide, or ensure access to, the range of specialised surgical, radiation and medical oncology services, plus imaging and pathology. Given the need for some of the highly-specialised services to be managed as statewide services provided in a single site, the Comprehensive Cancer Centres will need to work collaboratively and develop formal links to facilitate access to these services for all South Australians. There will be 3 publicly managed Comprehensive Cancer Centres (CCC): • Northern CCC; based at Royal Adelaide Hospital • Southern CCC; based at Flinders Medical Centre • Paediatric CCC; based at Women's and Children's Hospital Cancer Services The level and type of cancer care provided in the Cancer Services will vary. The range of care available will vary from core services, such as limited chemotherapy, to progressively more sophisticated care including major surgery, experimental drug treatments and total parenteral nutrition. Cancer Services providing lower levels of care will link to other Cancer Services providing higher levels of cancer care to ensure people with cancer; first accessing cancer care at these points have access to the full continuum of cancer care. Mid level services Cancer Services affiliated with Northern CCC: The Queen Elizabeth Hospital; Lyell McEwin Health Service; Modbury Hospital; Larger health units in Eyre, Northern and Far Western, Wakefield and Riverland country regions e.g. Whyalla Hospital Cancer Services affiliated with Southern CCC: Noarlunga Health Service (NHS); Repatriation General Hospital (RGH); Larger health units in country regions HMS, South East, e.g. Mt Gambier. Country based Cancer Services may also have links with Paediatric CCC. Private Cancer Services: Private cancer service providers; Adelaide Radiation Centre (ARC) Low level services Cancer Services aligned with Northern CCC: St Margaret's Hospital; Gawler; Smaller health units in Eyre, Northern and Far Western, Wakefield and Riverland country regions e.g. Ceduna Cancer Services aligned with Southern CCC: Smaller health units in HMS, South East. Country based Cancer Services may also have links with Paediatric CCC. Private Cancer Services: Private cancer service providers; Adelaide Radiation Centre (ARC).

Cancer services in rural communities

According to the Statewide Cancer Control Plan, the following principles will be applied to ensure equity of access and timeliness of cancer care:

- People with cancer should have appropriate and timely access to high quality of care, irrespective of where they live. Metropolitan and rural and remote service planning will ensure coordination of cancer care across the continuum of care.
- Accessible, effective and culturally safe systems of care should be available for groups within the community which may have differing needs, e.g. Aboriginal and Torres Strait Islander people and people from culturally and linguistically diverse backgrounds.

Innovative Models/Approaches

CanNET in SA aims to help establish and evaluate the statewide cancer clinical network for its population of 1.54m.

The network will improve access to quality cancer services throughout South Australia, particularly for people living in rural and regional areas and Aboriginal and Torres Strait Islander people. CanNET SA will link health professionals and facilities providing cancer care in regional and rural areas with cancer services in metropolitan areas. The establishment of formal linkages and agreed care pathways will ensure people affected by cancer in South Australia will have access to the most appropriate, evidence-based cancer care. CanNET SA will also promote the active involvement of consumers; inclusion of primary care providers as key members of the cancer care team; and development of systems and process that increase access to multidisciplinary care for people with cancer to ensure they get the best possible treatment and support.

State: Western Australia

Population Overview
Population: 1.978m. Pop in Rural Areas: 533,000 or 29% of total WA population Aboriginal and Torres Strait Islander population: 59,000 in total; 38,000 live outside the metro area which is 7% of the rural population. Geography/Size: 2,532,429 km²
Cancer Care Model and Mandate
The WA Health Cancer Services Framework 2005 to 2010 (WA Health 2005) provides the direction for the provision of cancer service in WA. It proposes the appointment of a Director of the Cancer Network whose key responsibilities will be to: • Determine and implement a tiered cancer care service delivery system based on best practice principles. • Ensure coordination and integration of cancer services statewide. • Review and recommend strategies addressing training and workforce issues. • Monitor performance including the development of accreditation and credentialing framework and systems. • Facilitate a continued quality improvement program. • Facilitate clinical research. • Manage the resources and budget of the Cancer Network. • Advise on the range and mix of cancer services to be funded. • Measure outcomes and report on a 12 monthly cycle. • Ensure long-term sustainability of the structure of the Cancer Network. • Support the development of the Cancer Nurse Coordinator roles. • Utilise consumer groups as reference groups. The Director of the Cancer Network will report directly to the Executive Director Health Policy and Clinical Reform who reports directly to the Director-General of Health. The Director will be supported by a State Cancer Network Secretariat consisting of an office manager, project officers for policy development, audit, development of a hospital-based cancer registry, credentialing, accreditation, oversight of Cancer Nurse Coordinators, and administration of Tumour Collaboratives. The model of care consists of two Cancer Centres at tertiary referral hospitals in Perth. Four secondary metropolitan and rural hospitals will be developed as accredited Cancer Units. Tumour Collaboratives are to be established to provide multidisciplinary links across metropolitan, rural and remote areas of the State. These Collaboratives are multidisciplinary teams who provide cancer care to a specific cancer group. They will define standards of care, aim to improve survival and other defined outcomes for specific tumours, and act as a resource for all aspects of care from diagnosis to treatment. Members of the Tumour Collaboratives will report through Area Health Services and be supported through the WA Cancer Network Secretariat. Proposed funding allows for 20 new positions of Cancer Nurse Coordinators (CNC) to be established including a team leader based at the WA Cancer Network Secretariat. This is in addition to nurses currently fulfilling some of this role, for example, rural breast nurses, specialist breast nurses in four metropolitan public hospitals and one private hospital, specialist haematology nurses and others. Due to the difference in volume of cases there will be differences between rural and metropolitan models for CNC: Rural: • Accessed by all cancer patients. • Has a program of professional development for the CNC based on the four most common cancers in that health service. Metropolitan: • Speciality-based, i.e. breast, colorectal, lung, etc. • Is a member of the multidisciplinary team. Number and FTE of CNC to be based on the incidence of cancer and cumulative caseload, with the latter taking into account the proposed number of planned patient interventions. In essence, a community-based model – consider the role of Child Health Nurse as an analogy for operating. Key components of the role include: • A readily accessible contact point for all (patients and health care providers). • Provides information on multiple occasions and at appropriate times. • Provides emotional support. • Provides practical support and information. • Helps with navigating the health care system (making appointments, explaining procedures, etc.). • Referral to other services such as Palliative Care, Silver Chain, community support services, etc. • There can be any number of patient-initiated contacts. • The CNC have discretion to initiate any number of patient contacts. • Use of a validated tool to screen for psychosocial distress (e.g. GHQ12), administered at diagnosis and on discharge from care.

Cancer services in rural communities

The proposed model of care in rural and remote areas is:

A Cancer Outreach Program is to be utilised in geographically remote areas where there is no Cancer Centre or Cancer Unit. Specialist cancer services will be provided by the Cancer Centre, with local health providers having formal links with a specified Cancer Centre and the relevant Cancer Nurse Coordinators. Each service will have a lead clinician (often a nurse) and with protocols which guide the limits of service.

For more remote and/or smaller communities, provision of services by telemedicine links are important and it is urgent that issues that could inhibit this process such as Medicare billing, medico-legal protection and cross-state border registration are addressed.

Other initiatives, that will facilitate the provision of cancer services in rural and regional WA include:

- Establishment of Tumour Collaboratives to provide formal multidisciplinary links/support across metropolitan/rural and remote regions.
- Introduction of Cancer Nurse Coordinators across rural areas.
- The Cancer Council WA is increasing patient support activity and will subsidise psychosocial support in the country. Further support by the Area Health Services is vital.
- Review of workforce issues:
- Mentoring regional cancer services.
- Training/education of cancer specialists with a rural interest and up-skilling regional generalists.
- Recent State Government commitments include funding doctors in country hospitals who

have a particular interest in cancer; to act as lead cancer clinicians, provide outpatient services and educate GPs in dealing with cancer care. Improvements in communication are expected through the Tumour Collaboratives and tertiary cancer services. The Federal Government has committed to a mentoring program, linking metropolitan teaching hospitals to regional centres and promoting multidisciplinary care.

- The Director of the Cancer Network works with the WA Country Health Service and South West Area Health Service to determine if travel and accommodation support can be improved or better tailored to suit country cancer patients.
- Information technology support for the country, e.g. video-conferencing linked in to Tumour Collaboratives and Cancer Units, as well as for remote areas. The introduction of the Picture Archiving Compression System (PACS) in rural areas is an urgent priority. Pathology results equally need to be easily accessible by computer.

Innovative Models/Approaches

CanNET WA is focused on linking the metropolitan cancer services with the Greater Southern region of the State.

A specialist oncology service will be established at Albany Regional Hospital to provide Great Southern residents (60,000 people) with local access to an oncologist and reducing the need for travel to Perth.

It will involve regular once a month fly-in, fly-out visits by a specialist oncologist from a Perth tertiary hospital who will be available for consults and the ongoing monitoring of patient care. The specialist oncologist will manage and plan patient's chemotherapy treatments which may be undertaken in Albany, Denmark, Katanning or Perth.

The funding for the program will also ensure the current visiting radiation oncologist, Dr David Joseph, who manages patients' radiotherapy treatment, will continue to see public patients on his bi-monthly visit to Albany.

The service will also establish close links between local services and specialist cancer services at Perth tertiary hospitals ensuring that local practitioners have access to the best pathways of care and specialists in the State.

Northern Territory

Population Overview
Population: 200,000 Pop in Rural Areas: 94,000 or 47% of total population of the NT Aboriginal and Torres Strait Islander population: 54,000 in total; 44,000 live outside the metro area which is 47% of the rural population. Geography/Size: 1,352,158 km²
Cancer Care Model and Mandate
This description of cancer service arrangements in the NT are taken from Barton and Frommer (2004). Specialist cancer services exist in only two NT centres – Darwin and Alice Springs – and only limited services are available in Alice Springs. In general, cancer patients who live in Darwin and elsewhere in northern parts of the NT obtain access to specialist care through services in Darwin, while those who live in southern parts of the NT (i.e. Central Australia) obtain access to specialist care through Alice Springs. Cancer services in both Darwin and Alice Springs have strong, long-standing relationships with services in Adelaide, especially those in and affiliated with the Royal Adelaide Hospital (RAH). These relationships have grown from the professional connections of individuals: many of the leading figures in the delivery of cancer care in the NT were trained at the RAH, and several migrated to the NT from Adelaide. In addition, medical and radiation oncologists in the RAH have provided outreach services to the Royal Darwin Hospital (RDH) and the Alice Springs Hospital (ASH) for many years, and general resident medical officers and some specialty registrars from Adelaide are seconded to NT hospitals on a regular basis. Weekly joint RDH/RAH general oncology meetings by video-conference are part of cancer management in Darwin, and they provide a means for the delivery of modern multi-disciplinary cancer care in the NT. They involve surgical, radiation and medical oncologists; pathologists; nursing staff; junior medical staff; and, occasionally, radiologists and general practitioners. The connections between the RAH and the RDH and ASH are based entirely on collegial relationships. No formal arrangements have ever been made. People who need health care in the NT depend heavily on transport to centres within the NT or interstate. The NT Government is responsible for ensuring that the population has equitable access to public-hospital services, regardless of their geographical location. The NT Department of Health and Community Services runs a comprehensive Patient Travel Scheme to help with this requirement. There is only one specialist fully dedicated to oncology in the NT. Most general and specialist surgeons undertake some cancer surgery. Surgical specialties that are not represented in the NT include colorectal surgery, neurosurgery, and head and neck (other than ENT) surgery. Much elective cancer surgery is referred interstate. Some surgical specialty outreach clinics are conducted in Darwin, enabling limited pre-operative assessment and post-operative follow-up to be done locally. No radiotherapy services exist in the NT. Patients who need radiotherapy are referred to interstate services, most going to the RAH. Those going to RAH for elective radiotherapy can be assessed in the weekly RDH/RAH oncology video-conference; indeed, treatment planning can begin before the patient leaves Darwin. The RDH has a standardised CT couch, and this enables a CT scan to be obtained in the treatment position that can be used for radiotherapy dosimetry planning prior to treatment at RAH. The weekly oncology video-conference is a mainstay of multi-disciplinary cancer care in Darwin. Patients are invited to attend and participate in discussions on their own care. Patients are also offered video-cassette recordings of the discussion of their care whether or not they attend the discussion in person. The ASH provides some surgical and medical oncology services, although its capacity is limited. Typically, 10 patients are undergoing chemotherapy at any one time, under the supervision of a general physician and the nursing unit manager in charge of the day-stay unit. A specialist medical oncologist from RAH visits Alice Springs once every three months to conduct a medical-oncology clinic. He also conducts a fortnightly teleconference, in which he is available to answer questions from Alice Springs clinicians. Although video-conferencing facilities are available in both the ASH and the Central Australian Division of Primary Health Care, they are not used for telemedicine in oncology, and there has been no attempt to develop multi-disciplinary cancer care by video-conference.
Cancer services in rural communities
People outside Darwin or Alice Springs need to travel to one of these towns for cancer diagnosis, assessment and referral.
Innovative Models/Approaches
CanNET in the NT aims to establish a Territory wide cancer network for its 203,000 people.

8.2 Appendix B Canadian Province and Territory Overviews

Province: British Columbia

Population Overview
Population: 4.31M % Pop in Rural Areas: 15% % First Nations: 4% Geography/Size: 944,700 sq km; 9.5% of Canada <i>BC's Aboriginal population of approximately 180,000 is about equally divided between rural and urban residents. Aboriginals form the majority of residents in some rural and northern communities and, in the Northern Health Authority, make up about 10 percent of the population.</i> <i>The health divide between rural and urban BC is present within the aboriginal population so that the relatively high proportion of aboriginals in some rural and northern communities only partially explains the persistent and adverse disadvantage in health status noted for some rural and northern relative to urban communities.</i> Italics above from Dr. Aleck Ostry – Rural Health – pre-publication.
Cancer Care Model and Mandate
The BC Cancer Agency (BCCA) has province-wide responsibility for cancer control. It establishes provincial standards and guidelines, funds cancer drugs, works in partnership with communities to provide a network of chemotherapy clinics The BC Cancer Agency operates four regional cancer centres (see orange dots on map) and a fifth one to open in the middle of 2008, that report to the BCCA and have close links with local hospitals. These centres provide the following services for patients: • Patient Assessment, Diagnostic and Therapy Planning • Radiation Therapy • Chemotherapy Services • Nursing Care • Patient and Family Counselling • Nutrition Counselling • Pharmacy Services • Pain and Symptom Control Service • Teaching and Applied Research Activities • Cancer Information Library The Vancouver Cancer Centre also provides inpatient services. A Communities Oncology Network (see details in next column) supports people to get care and service closer to home. Budget details not available.

Community Oncology Model and Access to Specialised Cancer Care

The Communities Oncology Network (CON) is a collaborative voluntary partnership with community services including 19 community-based Community Cancer Centres, 6 community-based Community Cancer Services and 12 Consultative Clinics across the province, in conjunction with the Regional Cancer Centres and the Systemic and Radiation Programs. The Network also supports appropriate delivery of cancer patient care and support in 33 other Community Hospitals.

Components include patients and their families, community health care providers and volunteers, hospitals, community groups, Health Regions, the BC Cancer Agency Regional Centres and all the processes facilitated by the Agency. The components are interdependent and held together by trust, mutual respect, communication and education.

BCCA Medical Oncologists who transfer care to the community to receive chemotherapy have the responsibility to ensure that the accepting physician has the necessary knowledge, skill and ability to manage this care and that the community facility meets the BCCA standards as defined by the Communities Oncology Network (CON) model. These standards outlining infrastructure and processes necessary for a comprehensive community cancer care program are found at the BCCA website.

The CON facilities must have at a minimum, appropriately trained and competent staff (nurses, physicians, pharmacists) to administer and manage the cytotoxic and hazardous products used to treat cancer. As well they must have access to clinical diagnostic services, such as haematology, with the capability to provide all of the information required to monitor cancer therapy. Additionally these communities must have the capabilities to respond to complications of therapy 24 hours per day.

Each of the community health care professionals must be supported to develop and maintain their competency. BCCA Medical oncologists will not be referring patients to communities that do not meet the standards. (see web site)

Innovative Models/Approach, Lessons Learned and Research Outcomes

- A community physician oncology network including a preceptor program. Training which entails a two-month training in oncology, in a module format, that can be taken as an entire program or by individual modules. The aim is to have at least one family physician with oncology expertise in every BC community with 15,000 people. The program is offered in each of the four Cancer Centres (Kelowna, Surrey, Victoria and Vancouver). There are several funding sources to support rural family practitioners.
- The CON has clearly defined levels of service and expectations at each level:
- <http://www.bccancer.bc.ca/RS/CommunitiesOncologyNetwork/cservices/levelsofservice.htm>
- BCCA have implemented a Surgical Oncology Network which includes all providers of surgical oncology services from surgeons in remote areas to sub-specialists. Its purpose is to provide strong linkages with surgeons and hospitals across the province, including the BC Cancer Agency's four cancer centres and 17 clinics. The Network's goal is to establish a structure and a system to enable the integration of quality surgical oncology services into the formal cancer care system. Functions include developing communications tools to enhance surgical decision making provincially; participating in the identification and/or development of peer-reviewed, evidence-based guidelines based on 'best practice' principles; developing a high quality continuing education program; and conducting regionally based research and outcome analyses.
- The BCCA takes its responsibility to generate and transfer knowledge for the agency and throughout the province seriously. They do this through the continuous maintenance of the Cancer Management Guidelines, Cancer Drug Manual, Chemotherapy Protocols, Evidence based guidelines for all disciplines, education for the community health care professionals, and outcome evaluation and research. This is facilitated by the BCCA's interactive website, which is not only a static resource, but a dynamic, interactive resource for physicians, pharmacists and nurses who provide systemic therapy throughout the province.
- BC is currently implementing a northern health strategy to improve care to those living in rural and remote areas. This includes additional training and support for northern physicians on cancer control including access to BCCA resources through outreach and telehealth services. There will be greater focus on cancer screening and early diagnosis and introduction of patient centered care with navigational supports. They intend to strengthen the network of care that extends from smaller communities to the largest centres through the family practice and community oncology networks.

Aboriginal Cancer Control Strategy

Engaged in a consultative process to develop an aboriginal cancer strategy as part of a broader provincial Aboriginal Health Strategy.

Source: www.bccancer.bc.ca

Province: Manitoba

Population Overview
Population: 1.18M % Pop in Rural Areas: 28% % First Nations: 13.5% Geography/Size: 647,800 square km; 6.5% of Canada
Cancer Care Model and Mandate
CancerCare Manitoba is a province wide agency which has legislated responsibility for cancer prevention, detection, care, research and education. Two major cancer centres situated within/adjacent to major teaching hospitals; 4 urban community centres with oncology programs, and 15 rural community cancer programs. Budget - \$74M, with drug costs 18% of budget. Aboriginal Cancer Control Strategy Any aboriginal person diagnosed with cancer has access to the aboriginal health program operated out of the Winnipeg Regional Health Authority. This provides: ▪ Patient advocacy and support ▪ Language interpretation and translation ▪ Spiritual and cultural care Community liaison and discharge planning
Community Oncology Model and Access to Specialised Cancer Care
The Community Cancer Programs Network (CCPN) is established in 15 rural Manitoba communities. This longstanding and innovative program provides cancer treatment and follow-up care to people living outside the city of Winnipeg and will expand to 16 sites in the near future. Each CCP site has a multi-disciplinary team of family physicians, nurses, pharmacists, and may include other health professionals such as social workers and dieticians. In 2005/06, over 14,000 outpatient visits occurred at Manitoba's CCP sites. This means more than 5.2 million kilometers of travel to and from Winnipeg were avoided by patients because they were able to have their cancer care closer to home at a CCP.

Innovative Models/Approach, Lessons Learned and Research Outcomes

Teleoncology: CCMB introduced teleoncology in July 2002. This province wide multiple site program uses 2 way videoconferencing equipment to link health professionals to patients and other health care providers. Teleoncology is used to provide:

- specialised, consultative services to patients and families in rural sites equipped with MBTelehealth;
- continuing educational sessions;
- community providers to participate in administrative functions;
- enable televisitation visits between patients and family members, when appropriate.

Contractual agreements set up between CCMB, the Regional Health Authorities, and the 15 Community Cancer Programs about roles and accountability.

Uniting Primary Care and Oncology:The UPCON Network in Winnipeg (largest city)

The UPCON Network began as a collaborative partnership between 12 Winnipeg family practice clinics/primary health care centres and CancerCare Manitoba (CCMB) and is dedicated to promoting and supporting the shared care of the cancer patient.

Using a technology and education strategy, UPCON supports approximately 80 family physicians and over 50 primary health care providers in communicating more easily about patients with cancer care specialists. UPCON is ensuring that people with cancer in its 'partner' clinics experience better coordination of their care between their different care providers.

There are :

- 12 participating clinics/centres with dedicated Family Physicians who act as liaison or "Lead Physician" for the UPCON Network
- CCMB shares the electronic health record with the UPCON Network sites
- educational programs are developed by the Network

This initiative is now being extended into rural Manitoba.

Clinical Partnerships

Family physicians have participated in half-day CCMB clinical partnerships in the areas of their choice. These sessions have permitted CCMB specialists and family physicians to work side by side to enhance practice relationships; to discuss areas of mutual concern; and to understand the patient experience of navigating through CCMB services.

Source: www.cancercare.mb.ca

Province: Saskatchewan

Population Overview
Population: 1.0M % Pop in Rural Areas: 36% % First Nations: 13.8% Geography/Size: 651,000 sq. km; 6.5% of Canada
Cancer Care Model and Mandate
- Provincial agency with legislated responsibility for stewardship of cancer control for the province including funding of cancer drugs. - Two major cancer centres. - Budget of \$69.1M with drugs 34% of total budget.
Community Oncology Model and Access to Specialised Cancer Care
The Community Oncology Program of Saskatchewan (COPS) is a program of the Saskatchewan Cancer Agency co-coordinated by the Saskatoon Cancer Centre and the Allan Blair Cancer Centre in partnership with the health regions. The primary goal of COPS is to provide cancer patients with care and treatment in or near their home communities. There are 16 COPS centres located in regional hospitals throughout Saskatchewan. COPS centres have nurses, pharmacists, pharmacy technicians and social workers who are specially trained in providing cancer care. They remain in close contact with the cancer care teams at the Allan Blair Cancer Centre in Regina and the Saskatoon Cancer Centre. In 2007/8 just there were just over 1000 patients received treatment at a COPS centre. The cancer doctors (oncologists) at the cancer centres have responsibility for the overall management and prescribing of treatment; therefore, patients who receive their cancer care at a COPS centre will still need to periodically visit their oncologist.
Innovative Models/Approach, Lessons Learned and Research Outcomes
- Following the development of Regional Health Authorities that were given responsibility for delivery of all health services, including cancer care, it became clear that it was timely to develop a clear understanding of roles and accountabilities across the continuum of standard setting and oversight to service delivery and training. One of the outcomes was the development of the Saskatchewan Oncology Collaborative (SOC) which provided a "table" for Regional Health Authority CEOs, Department of Health officials and the CEO of the Cancer Agency to meet to address any issues and plan service evolution. This includes making recommendations on program development, ensuring evaluation of quality services, sharing of information on cancer-related issues and assessing the impact of new and emerging technologies and new approaches to cancer care. Working groups have been formed to address pharmacy, operational agreements, malignant hematology services and community oncology services. - The COPS program was very successful which caused signalth authorities which were funding the staffingicant pressure on the hospitals in the he. Due to staff turnover and budget issues some programs were shut down or hours cut. Challenges led to recommendations for SOC (discussed above), for the development of a role and accountability matrix, and the formalization of operating agreements between the Agency and the Regions.

Source: www.saskcancer.ca

Province: Ontario

Population Overview
Population: 12.687 M % Pop in Rural Areas: 15% % First Nations: 1.7% Geography/Size: 1.076 M square km; 10.8% of Canada.
Cancer Care Model and Mandate
Cancer Care Ontario is a provincial agency reporting directly to the Ministry of Health with a mandated responsibility for oversight and performance management for the province's cancer services although individual hospitals and other health care organizations are responsible for delivering services to patients. There are 14 regional cancer centres with a Regional Vice President (RVP) who reports to both the CEO of the hospital where the cancer centre is based and the president and CEO of Cancer Care Ontario. Cancer Care Ontario also has various agreements or contracts with hospitals and other organizations that deliver cancer screening, assessment, treatment and care services. Funding (from 2004/5 Annual Report) \$410 M 304 Staff \$82M in funded drugs
Community Oncology Model and Access to Specialised Cancer Care
Regional Cancer Programs (RCPs) have been established in all 14 Local Health Integration Networks (LHINs) to better coordinate, integrate and raise the quality of all cancer services provided to local populations. The RVPs are responsible for the establishment and progress of Regional Cancer Programs in their respective LHINs to ensure cancer access and quality standards are consistently met while responding to local needs. Guided by the Ontario Cancer Plan, Regional Cancer Programs link together health care professionals, organizations, patients and decision-makers across the spectrum of cancer services from prevention. Their goal is to ensure that every patient, no matter where they live, has access to high-quality care as close to home as possible. While individual organizations provide cancer services, Regional Cancer Programs are responsible for creating an annual cancer service plan and forging networks of cancer services in their LHINs, by building on existing relationships and using agreements and other accountability mechanisms. Regional Cancer Programs access Cancer Care Ontario's planning expertise, policy leadership, cancer information, and the provincial standards and programs that are needed to deliver a consistently high quality of care. RCPs have the critical local relationships and structures needed to make improvements happen within local organizations and at the point of care. Cancer Care Ontario's Provincial Leadership Council and Clinical Council are forums where Regional Vice Presidents and clinical leaders from across the cancer system come together to work on common issues and provide advice to Cancer Care Ontario on cancer priorities for the province. These councils also provide a venue to work through issues that cut across LHIN boundaries, such as determining the best way to organize and locate highly specialized treatment services.
Innovative Models/Approach, Lessons Learned and Research Outcomes
- Ontario has put in place Regional VPs for Cancer report to both the Cancer Centre CEO which is part of the regional LHIN (which has the mandate to delivery all health services to a population) and the Cancer Care Ontario. This means that each region has a VP responsible for cancer sitting on their executive. These regional VPs also get together as a group on a regular basis. - These Regional VPs of cancer have appointed Surgical Cancer leaders and other staff to support quality care within each Local Integrated Health Network. Depending on the needs of their regional population they are also implementing other initiatives to improve access and quality of care. - Cancer programs and strategies to ensure access to timely quality care vary significantly due to the widely varying populations and geographies across Ontario. The North east LHIN for instance is a large geographic area with small population with a high proportion of aboriginal people. - Innovative examples include a video conferencing program for the North East LHIN which as 7 small hospitals with no academic centre. The regional surgical oncology leader has organized multidisciplinary care conferences that include all surgeons performing cancer surgery within the region for biweekly meetings. The videoconferencing allows high resolution diagnostic and lab pathology slide imaging so all participants can review charts at the same time. There is 100% participation and a community of practice is evolving. They conference in a systemic oncologist from a large centre. - Another LHIN in the Champlain region has developed a strong community of practice across the region with multidisciplinary cancer team and patients. The program oversees the administration of the chemotherapy home infusion pump program for patients living in Eastern Ontario to avoid travel for overnight stays in larger Centres. Aboriginal Health Strategy - Aboriginals in Ontario have the fastest growing incidence of cancer and CCO with partners has a well developed aboriginal cancer control strategy, focusing on screening, prevention, health promotion, surveillance and research. - Developing targeted and focused strategies such as: aboriginal youth summits to develop a 5 yr strategy; developing culturally appropriate videos demystifying cancer treatment; educational videos related to prevention; a tobacco strategy aimed at denormalizing commercial tobacco and educating youth about traditional tobacco; and community outreach.

Source: www.cancercare.on.ca

Territory – North West Territories

Population Overview
Population: 37,360 (2001) % Pop in Rural Areas: 42% % First Nations: 51% Geography/Size: 1.346 M sq km; 13.5% of Canada.
Cancer Care Model and Mandate
- no stand-alone Cancer agency - managed as other medical specialties, supported by a Cancer Registry since 1990. - Significant service relationships with out-of-Territory specialized providers Profile of Cancer in the NWT - During 1992-2000, an average of 75 new cases of cancer occurred each year in the NWT. Between 1990 and 1999, an annual average of 34 cancer deaths took place in the NWT. Telehealth - Using telehealth technologies, people living with cancer in remote locations are able to consult with their physician or specialist on a more regular basis, and minimize the time and cost associated with traveling. It permits the patient to receive information within his/her community amidst a support network of family and friends. Services are currently available in the following communities: Yellowknife, Fort Smith, Inuvik, Holman, Fort Simpson, Hay River, Deline, Lutselk'e and Fort Resolution. - In the NWT, telehealth currently has a limited role in cancer-related services. The most frequent use of telehealth is made for skin cancer cases. The capacity of telehealth towards the diagnostics and care for other cancer types is yet to be fully realized.
Community Oncology Model and Access to Specialised Cancer Care
Cancer Treatment - Certain treatments are provided at the Stanton Territorial Hospital in Yellowknife, while others are only offered by more specialized facilities outside of the NWT. The majority of NWT patients are referred to the Cross Cancer Institute in Edmonton, Alberta. Radiation therapy is only provided out-of-territory. - Prior to undergoing chemotherapy in the NWT, a patient generally visits the oncologist at the Cross Cancer Institute in Edmonton, returning to the NWT with a chemotherapy treatment plan. The nurses in the medical Daycare Unit at the Stanton Territorial Hospital coordinate the administration of chemotherapy. In between scheduled treatments at the hospital, the patient can return to his/her community to recuperate. Care coordination - Most of the cancer care coordination is carried out by nurses in clinics and health centres, under the direction of primary care physicians. - Currently, there is no cancer care coordinator in the NWT. Continuing Care/Supportive Services - Treatment extends beyond the hospital and includes care provided in the community or at home. In order to do so, a coordinated approach is needed to provide access to a full range of services in all communities and ensure seamless delivery between the community and hospital. - There are a limited number of palliative care beds available at Stanton Territorial Hospital and long-term care facilities. Most individuals, however, will choose to die at home with the assistance of home care resources. - If home nursing is required in a community that does not have home care programs or has limited services, provisions are made to transfer the client to the closest community so that he/she can receive these essential services.

Innovative Models/Approach, Lessons Learned and Research Outcomes

- Formal service partnerships**
- with regional & out-of-Territory providers – “Establishing effective cancer control requires the collaboration of numerous stakeholders so as to ensure a full range of programs and services by removing gaps and duplication, increasing integration and improving coordination of services. NWT strategy identifies ways that various stakeholders have taken part in, or can approach, cancer control.”
- Medical travel benefits**
- provided to the closest place where the necessary service is available. Travel must originate from within the NWT. Provides for return airfare, ambulance services on emergency medical evacuations, and limited support for meals, accommodation and ground transportation. [Note: Boarding home with ‘country foods’, Inuit speaking staff or translators in Yellowknife and Edmonton available to Inuit on a priority and as- space-available basis to support out-patient diagnostic or treatment services]
 - Benefits can be extended to a medical or non-medical escort who is authorized to accompany a patient.
- Aboriginal Health Strategy**
- monitoring variations in incidence and prognosis
 - clear accommodation of traditional healing
 - use of tele-health
 - availability of medical travel benefits, including non-medical escort.
- Traditional Healing Options**
- “Traditional healing methods are beneficial in palliative care, pain management and addressing the patient’s spiritual and emotional needs. When seeking a traditional healer, it is important to ask about the appropriate protocol needed to approach the healer (cloths /blankets /tobacco/ berries/ food) and follow the treatment protocol as described. It is also necessary to consult with the treating physician to verify whether the remedies from both therapies are compatible.”
- Service delivery challenges**
- “Living in the North can bring about some challenges, especially with regards to the accessibility of cancer services. People living both within urban and remote communities must often travel significant distances to visit medical personnel for diagnosis and treatment. This can be a frightening experience, especially for individuals who have never traveled to a major urban centre. They must leave their support network, often to undergo tests or treatment, to make difficult decisions or to face distressing news. In addition, access to cancer education and awareness programs is limited in the NWT and not necessarily culturally or language specific.”
 - “Depending on the frequency of and the delay between chemotherapy treatments, traveling from the community to Yellowknife can be tiring for the patient.”
 - “In many communities, staff are burdened with a broad range of duties and may sometimes lack the capacity to provide cancer care services such as cancer prevention education or palliative care. Such issues can be exacerbated with high staff turnover. These challenges speak to the need for a more organized approach to the management of cancer screening, treatment and follow-up programs in the NWT, including provider as well as patient/family support and education.”

Source: Cancer in the NWT 1990 – 2000: A Descriptive Report. NWT Dep’t of Health & Social Services 2003.
http://www.hlthss.gov.nt.ca/pdf/reports/diseases_and_conditions/2003/english/cancer_in_the_nwt.pdf

8.3 Appendix C BC Cancer Agency – Levels of Chemotherapy Service Categorisation

The hospitals offering chemotherapy services across the province have been divided into four broad categories. The level definitions and descriptions are as follows:

Satellite Centres of BCCA: Level IV

A Satellite Centre is staffed by a BC Cancer Agency (BCCA) medical oncologist, and/or a General Practitioner in Oncology (GPO), a graduate of the BC Cancer Agency's Family Practice Oncology Network Preceptorship Program or equivalent. The Centre also has chemotherapy certified oncology nurses, oncology trained pharmacists and pharmacy staff. All chemotherapy in these centres is supervised by a BCCA medical oncologist.

Satellite Centres prepare and deliver oral and parenteral outpatient chemotherapy agents. This includes first dose treatment and the full spectrum of outpatient chemotherapy protocols as delineated by the BC Cancer Agency. It is also electronically connected to the BC Cancer Agency's Cancer Agency Information System (CAIS) and therefore has full access to electronic patient information.

Full Service Community Chemotherapy Centres: Level III

A Full Service Community Chemotherapy Centre is located in a general community hospital and delivers out patient oral and parenteral cancer chemotherapy as well as provides medical and nursing support for cancer patients. The Centre is typically staffed with community physicians who are general oncologists, internists or general practitioners in oncology, chemotherapy certified oncology nurses, oncology experienced pharmacists and pharmacy staff. Referring physicians are required to complete a Communities Oncology Network referral for the transfer of care.

Staff is able to manage all types of out patient IV and oral chemotherapy protocols including first cycle and trained in care and management of central venous access devices.

Staff does not have access to the BC Cancer Agency's Cancer Agency Information System (CAIS) unless specifically indicated.

Basic Community Chemotherapy Service: Level II

Chemotherapy services offered are limited with restrictions to types of chemotherapy treatments, specialized equipment or specialized skill. A basic community chemotherapy service typically consists of at least a chemotherapy certified oncology nurse. One or more physicians maybe involved in the medical management of patients on chemotherapy. It may not be advisable to do first cycle in these centres depending on the expertise available and the particular chemotherapy regimen.

Staff does not have access to the BC Cancer Agency's Cancer Agency Information System (CAIS) unless specifically indicated.

Community Chemotherapy Service: Level I

Minimal amount of oncology service offered. Nature of services varies from site to site. These hospital pharmacies dispense some anticancer drugs. No formalized cancer care team available. BC Cancer Agency does not recommend intravenous chemotherapy to be provided by these facilities.

Staff does not have access to the BC Cancer Agency's Cancer Agency Information System (CAIS) unless specifically indicated.

Source: www.bccancer.bc.ca

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Contact Directory

Australian Technology Park
Biomedical Building
Suite 101
1 Central Avenue
Eveleigh NSW 2015
Australia

PO Box 41
Alexandria NSW 1435

Tel: + 61 2 8374 5600
Fax: + 61 2 8374 5700
Email: information@cancerinstitute.org.au
Web: www.cancerinstitute.org.au

Service and business hours: 8.30am – 5.00pm

