

WA Cancer and Palliative Care Network

Model of Care for Cancer

Prepared by the
WA Cancer & Palliative Care Network
2008

Health Networks Branch
Working Together to Create a Healthy WA





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EXECUTIVE SUMMARY

Cancer is not a disease of a single organ system. It is a group of about one hundred diseases that affect every type of tissue and organ - solid and non-solid. Cancer treatments are becoming increasingly multimodal in an effort to get the greatest benefit, with minimal adverse effects, through an appropriate mix of surgery, chemotherapy, radiotherapy and other therapies. This involves people seeing multiple specialists if the full range of alternatives are to be considered. This complexity may lead to problems in the patients' 'cancer journey', as they negotiate the maze of diagnostic, treatment and support services that they are offered (or in some cases, not offered where they ought to be) and try to assimilate messages from each clinician. These messages do not always seem to be saying the same thing.¹

There are a number of reasons why cancer is a high priority. It is arguably the most dreaded of the common diseases in Australia, but there are other more 'objective' reasons.

- Cancer is already the commonest cause of premature death and disability
- The number of newly diagnosed cancers is increasing, while other major causes of death and disability are decreasing. Thus, cancer is not only the commonest cause of early death and disability but it is increasingly important when compared to the impact of other diseases. This also has social and economic consequences that are important though unmeasured, and therefore often ignored.
- We face increasing prevalence of cancer as people live longer².

Implications for planning are:

- Increasing number of patients seeking care,
- Increasing time of follow up and resources to manage the longer term survivors,
- More therapeutic interventions over a longer period of time
- More need for ongoing patient education and better psycho-social support³

The above information, related to cancer care planning implications, could apply to any where in the world. In developing this Model of Care, these factors have been considered including specific issues such as:

- The unique geography of Western Australia
- The disparity of WA rural and remote populations
- Workforce implications
- Consumers wishes to be cared for as close to home as possible.

¹ Clinical Oncological Society of Australia, The Cancer Council and the National cancer Control Initiative 2002: Optimising Cancer Care in Australia. National Cancer Control Initiative, Melbourne, 1-122

² Clinical Oncological Society of Australia, The Cancer Council and the National cancer Control Initiative 2002: Optimising Cancer Care in Australia. National Cancer Control Initiative, Melbourne, 1-122

³ Review of Cancer Services Western Australia (2003) Professor J .Bishop NSW



This Model proposes a strategic statewide linking of all public cancer services in order to improve the care delivered to Western Australian cancer patients. This linkage will be supported by clear referral pathways, evidence based treatment guidelines and strong multidisciplinary team engagement. The model is underpinned by consistent data processing and strong clinical cancer research that aims to increase clinical trial participation rates. Clear communication, coordination of care delivery and consumer engagement will support the development of this cohesive model of cancer care.

The model proposes a specialist led cancer care system that enables high volume, low risk cancer care to occur away from Comprehensive cancer centres whilst maintaining the quality of outcomes that are currently achieved within Western Australia

The major areas of impact will be the development of system wide cancer services in cancer units and community settings that have strong links and accountability to comprehensive cancer centres.

Ian Hammond



CANCER CARE IN WESTERN AUSTRALIA: MODEL OF CARE PROPOSAL

1.0 INTRODUCTION

Cancer affects nearly one- third of the Australian Community at some stage in their lives, and cancer service users report substantial social, psychological and economic effects, as well as an impact on physical health. The numbers of newly diagnosed cancer cases is increasing steadily, as is the number of people living with a diagnosis of cancer (cancer prevalence). It is imperative that the health system provides these people with diagnostic and treatment services and ongoing care that is patient-centered. This is not reported to be the case at the moment.⁴

The traditional model of cancer care has been developed for a critical mass of patients and by service provider availability in both public and private sector cancer services. Cancer services have been provided in Perth since 1947. There is worldwide recognition of the need to extend the philosophy, knowledge and skills of specialist oncologic multidisciplinary care to provide quality care for all people with cancer.

The current challenge is to develop an appropriate cancer care model in accord with international and national best practice. This model could be applied in any health setting reflecting the responsibility of all health care professionals to provide care that meets best practice principles. This model should reflect the role of specialist cancer services and the effective leadership of the care continuum in all tertiary, secondary and primary care settings.

The aim of the model of care is:

Best practice care and services within a health care system for a person or population group as they progress through the stages of a condition, injury or event.

The broad objective of developing a model of care is:

Ensuring people get the right care, at the right time, by the right team and in the right place.

Further information about Model of Care development can be found at:

<http://www.healthnetworks.health.wa.gov.au/publications/>

This overarching Model of Care provides the basis of agreed principles for excellence in cancer care delivery for Adults, on which subsequent tumour specific cancer care models will be developed. This Model of care does not address paediatric cancer care which already delivers a state-wide integrated multidisciplinary service from Princess Margaret Hospital.

⁴ Clinical Oncological Society of Australia, The Cancer Council and the National cancer Control Initiative 2002: Optimising Cancer Care in Australia. National Cancer Control Initiative, Melbourne, 1-122



2.0 METHODOLOGY

The Development of a Cancer Care Model of Care

In developing this Model of Cancer Care specific to the needs of Cancer patients within Western Australia an extensive background review of international models was undertaken including: NSW⁵, UK⁶, New Zealand⁷ and Canada⁸.

The development of this cancer care model builds on work initiated in 2005 by the Cancer Care Advisory Group to the Director General of Health. This group led a review of current cancer care delivery and provision of services within Western Australia that culminated in “The WA Health Cancer Services Framework 2005” (CSF). This report highlights 45 initiatives that are considered essential to address the current gaps in service provision of cancer care in Western Australia.

The WA Cancer Care Network⁹ has the brief to implement the recommendations of the CSF Report and will lead the model development work by:

- Reviewing national and international models of cancer care
- Conducting meetings with lead clinicians and core tumour collaborative team members.
- Developing disease specific models of care by working with tumour collaborative teams
- Consulting with other WA Health Networks and health care providers
- Consulting with patients, carers and consumer representatives
- Distributing relevant documents and receiving relevant feedback

The Cancer Care Network Executive is accountable for the final model of care.

⁵ http://www.health.nsw.gov.au/pubs/c/pdf/cancercare_guide.pdf

⁶ <http://www.library.nhs.uk/cancer/viewresource.aspx?resid=96086>

<http://www.library.nhs.uk/cancer/SearchResults.aspx?searchText=NHS%20Cancer%20Plan%202000>

⁷ NZ Cancer Control Strategy <http://www.moh.govt.nz/moh.nsf/>

⁸ <http://www.bccancer.bc.ca>

⁹ WA Health Cancer Services Framework Oct (2005)



3.0 THE CURRENT STATE OF PLAY

3.1 Definition of Cancer Control

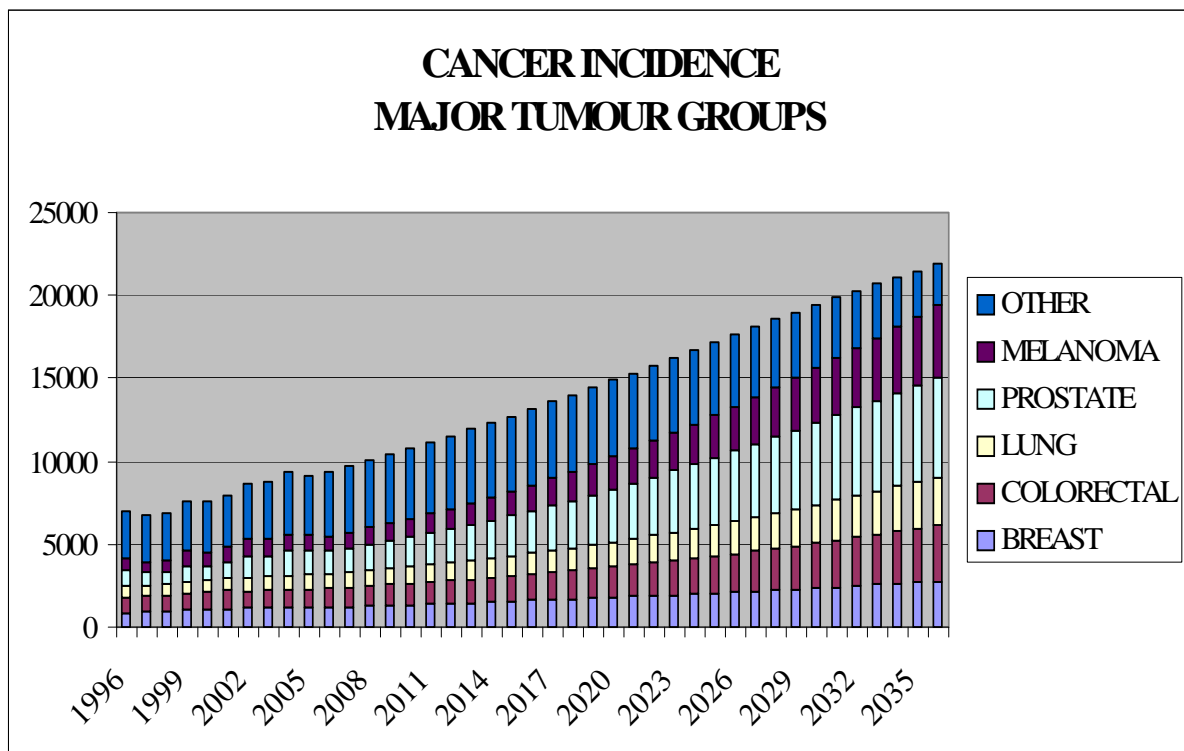
The World Health Organisation (2006)¹⁰ has in recent years defined how the burden of cancer can be reduced. There is an extensive existing body of knowledge about the causes of cancer and about interventions to prevent and manage cancer.

Cancer control is understood to be public health actions, aimed at translating this knowledge into practice. It includes the systematic and equitable implementation of evidence based strategies for cancer prevention, early detection of cancer and management of patients with cancer.

3.2 Burden of Disease

The burden of disease is well documented in WA. The WA Cancer Registry conducts a continuous, population based, retrospective study of cancer incidence and mortality in Western Australia (WA). This data is used to project future incidence rates and plan service requirement. The latest report from the WA Cancer Registry details the current cancer incidence and mortality in the state¹¹

Figure 1. Cancer Incidence by Tumour Group¹²



¹⁰ <http://www.who.int/cancer/cancer/definition/en/>

¹¹ WA Cancer Registry 2005 Report

¹² WA Cancer Registry Cancer Incidence 2007



Figure 2. WA Cancer Incidence, WA Cancer Registry 2007 Data

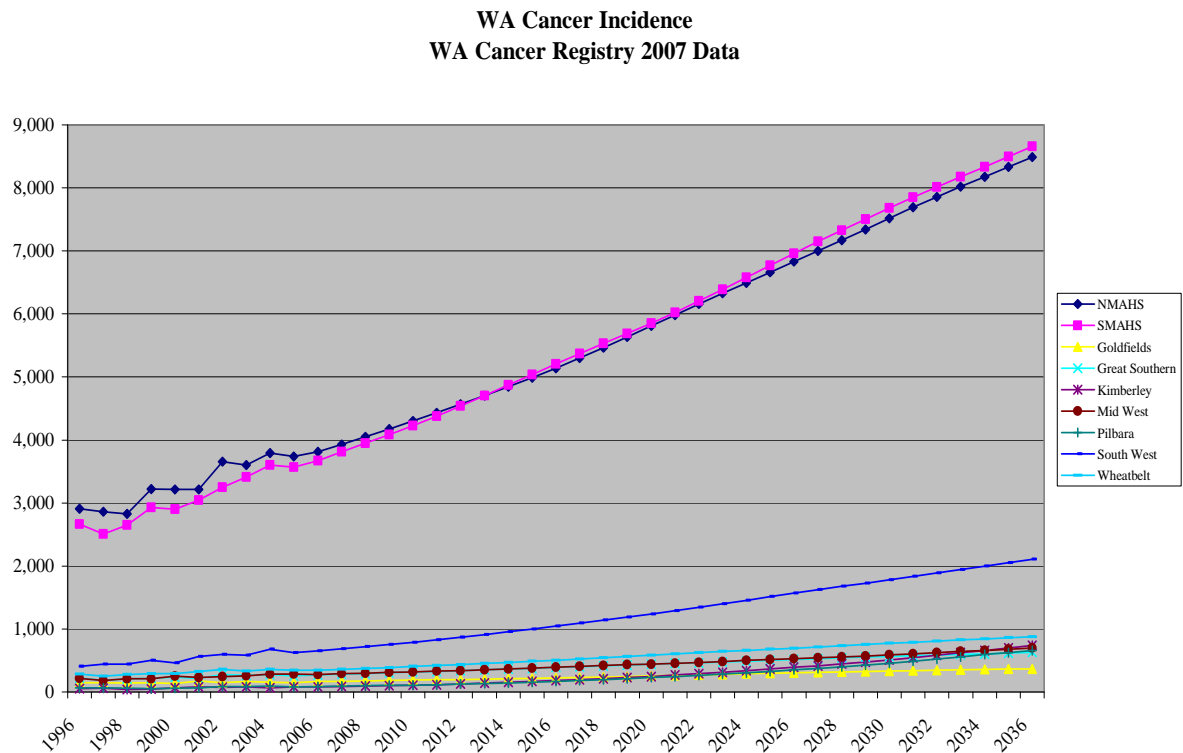
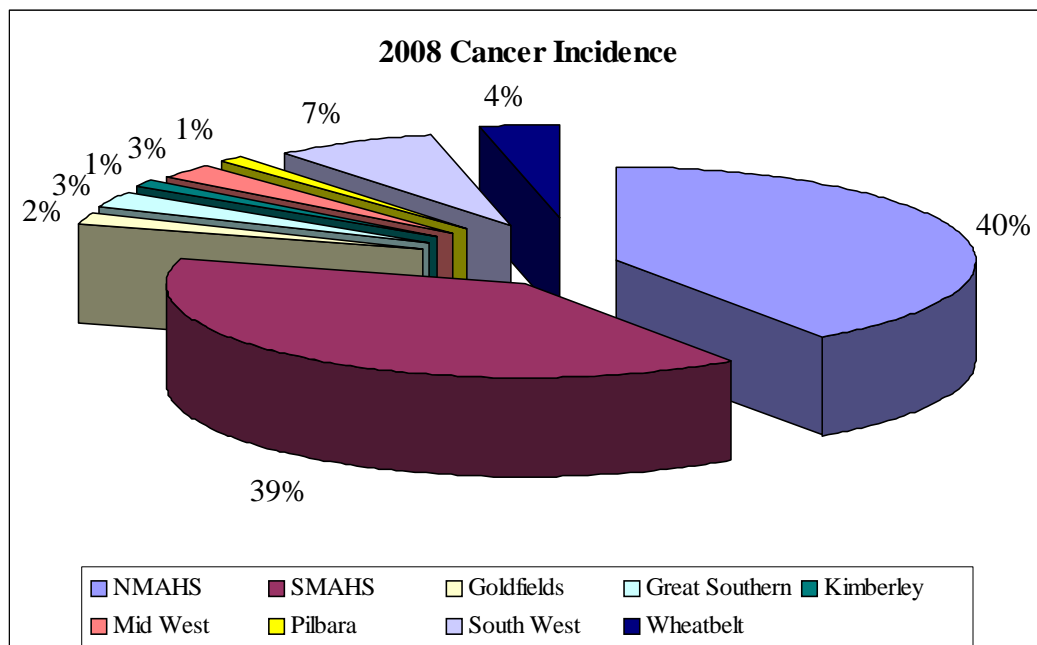


Figure 3. Cancer Incidence by Region in 2008 (WA CR projection in 2007)



Facility workload by same day and multiday separations. This data does not include any outpatient Radiation Therapy or and outpatient consultations in any facility and this large workload greatly influences the facilities that need to be provided for this multidisciplinary care.



Table 1. Number of separations, beddays and average length of stay (ALOS) of all cancer admissions by hospital type, gender, same day flag and health region, WA, 2000-2006

Health region	Hospital Type	Gender	No. same day separations		Overnight separations		
			2000-2006	Average pa	No. overnight separations	Total beddays	ALOS
North MAHS							
	Public	Male	N=41133	5876	N=11969	98627	8.24
		Female	N=40471	5782	N=12761	90368	7.08
	Private	Male	N=49827	7118	N=17362	117415	6.76
		Female	N=51320	7331	N=19563	131207	6.71
	Total		N=182751	26107	N=61655	437617	7.10
South MAHS							
	Public	Male	N=37583	5369	N=12161	100732	8.28
		Female	N=38068	5438	N=13453	95870	7.13
	Private	Male	N=36504	5215	N=14886	100217	6.73
		Female	N=35632	5090	N=14617	96319	6.59
	Total		N=147787	21112	N=55117	393138	7.13
WA Country HS							
	Public	Male	N=22663	3238	N=10727	89709	8.36
		Female	N=20881	2983	N=10210	73044	7.15
	Private	Male	N=18623	3104	N=6192	39439	6.37
		Female	N=17791	2542	N=6193	35745	5.77
	Total		N=79958	11423	N=33322	237937	7.14

WA Average same day separations per year 58642

Notes: 1. Source: Epidemiology & GIS Branch, Dept. Health WA



Table 2. Cancer Centre Treatment Workload Occasions of Service

		Public & Private Same day & Outpatient Treatments only		
	WACR Proj. Cases	CHEMO (Med Onc + Haem)	RADIATION	TOTAL
2006	9,435	69,819	93,171	162,990
2007	9,776	72,342	96,538	168,880
2008	10,118	74,873	99,915	174,788
2009	10,472	77,493	103,411	180,904
2010	10,833	80,164	106,976	187,140
2011	11,209	82,947	110,689	193,635
2012	11,602	85,855	114,570	200,425
2013	12,003	88,822	118,530	207,352
2014	12,413	91,856	122,578	214,435
2015	12,828	94,927	126,677	221,604



3.3 Current Service Provision

Western Australia is fortunate in having specialist cancer care services in inpatient and outpatient settings.

Table 3. Current WA Cancer Care Services with specialist oncology supervision

Service Type	North Metropolitan Area Health Region	South Metropolitan Area Health Region
Inpatient with designated Cancer care beds and multiday service provision	Sir Charles Gairdner Hospital Princess Margaret Hospital King Edward Memorial Hospital Joondalup Health Campus Hollywood Hospital The Mount Hospital St John of God Hospital (Subiaco)	Royal Perth Hospital Fremantle Hospital Peel Health Campus St John of God Hospital (Murdoch)
	Western Australia Country Health Service	
Specialist oncology outreach services provided	Albany Hospital St John of God Bunbury Geraldton Regional Hospital	Kalgoorlie Hospital Northam Hospital St. John of God Hospital Geraldton

The current service provision is departmentally based, but there is a gradual move with the facility planning of Comprehensive Cancers Centres at SCGH and FSH to integrated care in a comprehensive cancer setting. A current example of an integrated specialist cancer service is the Western Australian Gynaecologic Cancer Service (WAGCS). The WAGCS is based at King Edward Memorial Hospital and was established in 1976 with a multidisciplinary outpatient clinic, including specialists in gynaecologic oncology, radiation and medical oncology and more recently palliative care and allied health professionals. It has provided a comprehensive multidisciplinary model of care for the assessment and management of women with gynaecologic cancer. All new outpatients who have had a pre-referral diagnostic biopsy will have their pathology reviewed at this meeting prior to their initial clinic consultation. All inpatients are subject to review by a weekly multidisciplinary team meeting that reviews progress and plans hospital discharge and future care.

In order that all WA women with gynaecologic cancer benefit from a multidisciplinary approach, all of the specialists involved in the service (WAGCS) bring their cases to a weekly multidisciplinary tumour board where the diagnostic and post surgical pathology is reviewed and management plans are developed, agreed and documented by the multidisciplinary team. Management is according to locally accepted and published evidence based guidelines developed by WAGCS. In particular, cases managed in private practice and at private hospitals (St John of God Subiaco & Murdoch), are reviewed at this weekly meeting. This interface between the public and private sector in the area of tumour board review is innovative and offers patients and their doctors' access to optimised multidisciplinary management. However, this service could be further improved by



having integration of treatment modalities at a single geographical facility as mentioned in the Reid report¹³.

3.4 Quality of Care

The WA Cancer services framework (2005) highlights opportunities for improving current service delivery, the inequity of access to cancer care services and in particular the groups of people who are not well served by the current models of cancer care.

Current service delivery will be improved by adopting the NBCC recommendations for multidisciplinary care as detailed at <http://www.nbcc.org.au/bestpractice/mdc>.

Current referral pathways for most patients to specialist cancer care services are not structured or well documented. At present each specialist discipline throughout the state (i.e.: radiation, medical or surgical oncology) throughout the state has an informal referral pathway that is not necessarily based on outcomes or a strong evidence base. Consumers want to see high quality cancer services organised around the patient. The referral system should not be a “lottery” as to the type and adequacy of the initial treatment one receives. Consumers want to be able to choose how they are involved in the development of their treatment plan, and they want treatment in a multidisciplinary setting. They want treatment that is evidence based timely (no unnecessary long waits) and organised around their wider needs, for example, the need to travel. They expect evidence based information to be routinely provided to them and to be told where to get more. They want reasonable access to a range of supportive care services (including psychosocial and palliative care). They expect that care is of the same standard in public and private sectors and that these sectors are as integrated as possible. They want providers to be skilled, sensitive communicators who are aware of their wider needs.¹⁴

Access to cancer care is limited by the referral process, knowledge of contemporary cancer services and treatments available. The current approach to cancer care may limit access to input from appropriately skilled health professionals who understand the multidisciplinary cancer care processes. This approach may adversely affect those people who have experienced cancer diagnosis and treatment. They often find the process bewildering, and not one that they believe necessarily delivers consistent, high quality care¹⁵

Patient involvement in the decision making process regarding their care is critical to patient satisfaction.

¹³ WA Health Reform

¹⁴ Clinical Oncological Society of Australia, The Cancer Council and the National cancer Control Initiative 2002: Optimising Cancer Care in Australia. National Cancer Control Initiative, Melbourne, 1-122

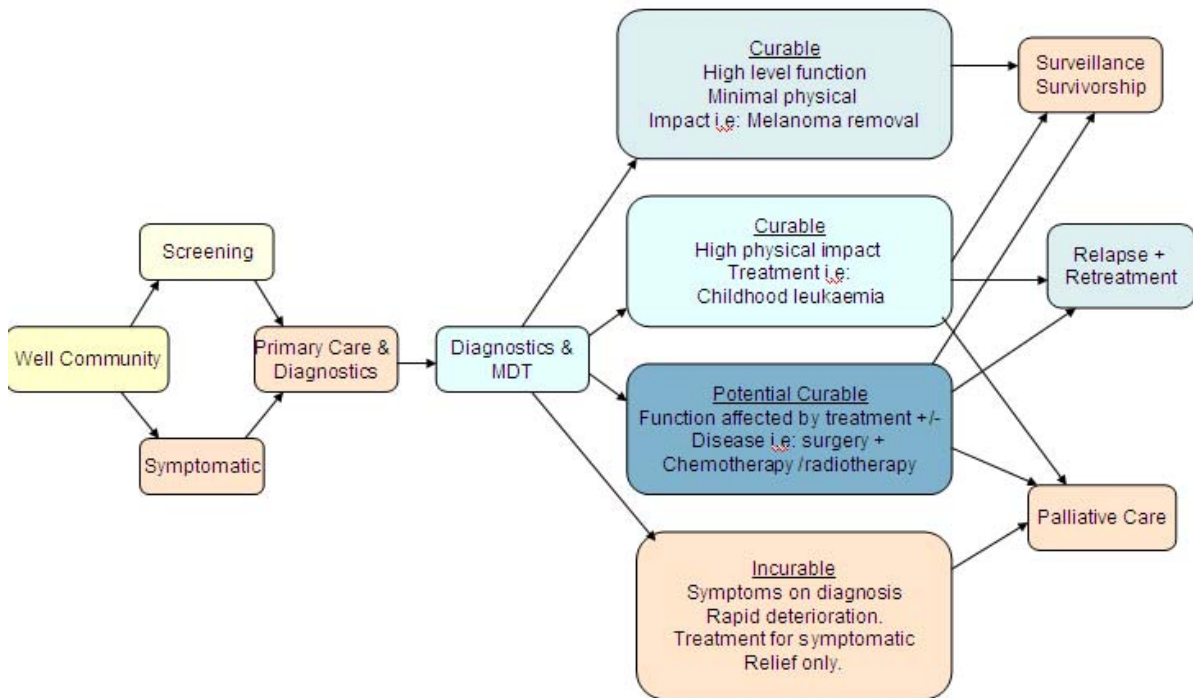
¹⁵ Clinical Oncological Society of Australia, The Cancer Council and the National cancer Control Initiative 2002: Optimising Cancer Care in Australia. National Cancer Control Initiative, Melbourne, 1-122



Cancer Pathways

Figure 4 diagrammatically illustrates the possible pathways for cancer patients according to the stage of cancer at diagnosis. The level of individual function and support required can differ greatly between these stages.

Figure 4. Potential cancer pathways dependent on stage at diagnosis



Other gaps in service delivery include limited services available for people with cancer who are¹⁶:

- Indigenous
- Adolescents
- come from culturally diverse backgrounds
- have extensive co morbidities
- have disabilities
- older and/or live in residential care
- living in outer metropolitan areas with difficult access to existing cancer care services
- living in rural and remote areas with difficult access to existing cancer care services¹⁷

¹⁶ Reid Report

¹⁷ http://www.cosa.org.au/cosa/File/publications/Mapping_regional_oncology_services_MAR06.pdf



Rural Cancer

It is known that Australians who live outside State capital cities are at risk of significantly poorer survival rates following a cancer diagnosis than people with similar diagnoses in major metropolitan centres. For some cancers remote patients are up to 300% more likely to die within 5 years of diagnosis.

The limited evidence on cancer in indigenous people in non metropolitan areas also indicates significantly poorer treatment outcomes than those in the mainstream. Cancer as a disease group kills more Australians than any other cause and its impact is felt disproportionately in regional areas. The evidence indicates that reducing inequality in cancer outcomes requires a combination of improved primary health care and access to specialist multidisciplinary services.¹⁸

Individual site-specific tumour models of care will identify the particular needs of rural and remote cancer patients and will be culturally sensitive. There are examples of good practice in Cancer care encouraging links and embracing new technology as in the following article.¹⁹

Linking centres of expertise with regional, rural and remote areas

A video conferencing link has been established for some time between Adelaide and Darwin to enable Darwin clinicians to participate in multidisciplinary oncology meetings at the tertiary referral centre in Adelaide. This is supplemented by regular visits by the Adelaide oncologists. An evaluation of the videoconferencing link reported that all clinicians found the link to be useful in enabling remote area clinicians to participate in multidisciplinary cancer meetings, better support for isolated clinicians, decreased travel for people with cancer and enhanced education and peer review.

Appropriate access for special populations

The provision of standard services may not be sufficient to create appropriate access for some groups. For example, aboriginal people living in regional, rural and remote areas are reported as being particularly disadvantaged in accessing cancer services, especially radiotherapy.²⁰ The diagnosis of cancer is often regarded as meaning death and the person may be living in a community that must regularly deal with premature death. In addition, there are cultural and cross cultural issues - such as fear, disfigurement, failure to be given or to fully understand the treatment options - which play a substantial part in treatment 'choices'. There is an opportunity to improve access to services, (especially radiotherapy), particularly for people living in regional, rural and remote areas and from Aboriginal and Torres Strait Islander backgrounds.²¹

¹⁸ Mapping rural and regional oncology services in Australia. March 2006

¹⁹ Olver I, Selva-Nayagam S. Evaluating the telehealth link between Darwin and Adelaide to facilitate cancer management. *Telemedicine Journal* 2000; 6:213-218

²⁰ Clinical Oncological Society of Australia, The Cancer Council and the National cancer Control Initiative 2002: *Optimising Cancer Care in Australia*. National Cancer Control Initiative, Melbourne, 1-122

²¹ National Service Improvement Framework for Cancer (2005)



4.0 MODEL OF CARE

4.1 Aim

The aim of the WA Cancer Care Model is to:

- Reduce the incidence and mortality from cancer
- Improve outcomes and patient satisfaction
- Define the necessary clinical services for patients with cancer
- Determine the most appropriate setting for delivery of clinical services
- Ensure quality of service provision
- Identify partnerships between cancer care, primary care and other providers
- Create an environment that enables patients with cancer to have access to appropriate care
- Empower patients to be actively involved in the decision making processes.

This is supported by the World Health Organisation²² strategy for prevention and control of cancer and is based on their following guiding principles:

- People- centered
- Equity
- Ownership
- Partnership and multisectoral approach
- Sustainability
- Integration
- Stepwise approach
- Evidence based

4.2 Principles

The following principles underpin the WA Cancer Care Model:

- Every cancer patient in WA should have access to specialist oncologic supervision in the formulation and delivery of their care
- Cancer care is multidisciplinary and is an integral part of the health care system.
- Cancer care should be evidence based
- Data collection regarding treatment and outcomes is essential to monitor the quality and safety of care
- Clinical research including clinical trials will inform and define best practice
- Education of the community and health care providers regarding cancer prevention strategies in a culturally appropriate manner
- Education and participation of the community and health care providers in established screening programmes in a culturally appropriate manner

²² <http://www.who.int/cancer/cancer/definition/en/>



- Appropriate and timely referral pathways for people with a possible cancer diagnosis.
- Patients are actively involved in the decision making processes regarding their treatment
- Quality of life issues are integral to the care of a cancer patient.
- The patient and family are the unit of care
- Effective communication with the patient, family and care providers
- Patients and families need to experience coordinated care with smooth and timely transition from one service to another.
- Age appropriate care

This schematic representation of the model of care has been adapted for Western Australia.

Axis 3 illustrates the components of the health care system. Policy is the instrument of governance and direction and describes the broad intentions or mandatory requirements and is the key driver for all activities at the patient care level. Organisations may be health care or community service based. Individuals include health practitioners and patients.

Axis 1 and 2 are illustrated in Figures 6, 7 & 8 below, demonstrating the integration of the stages of cancer control, patient care and the services required.



4.3 Governance Matrix

Figure 5. Figure Integration of Cancer Control and Care, Service Delivery and Governance

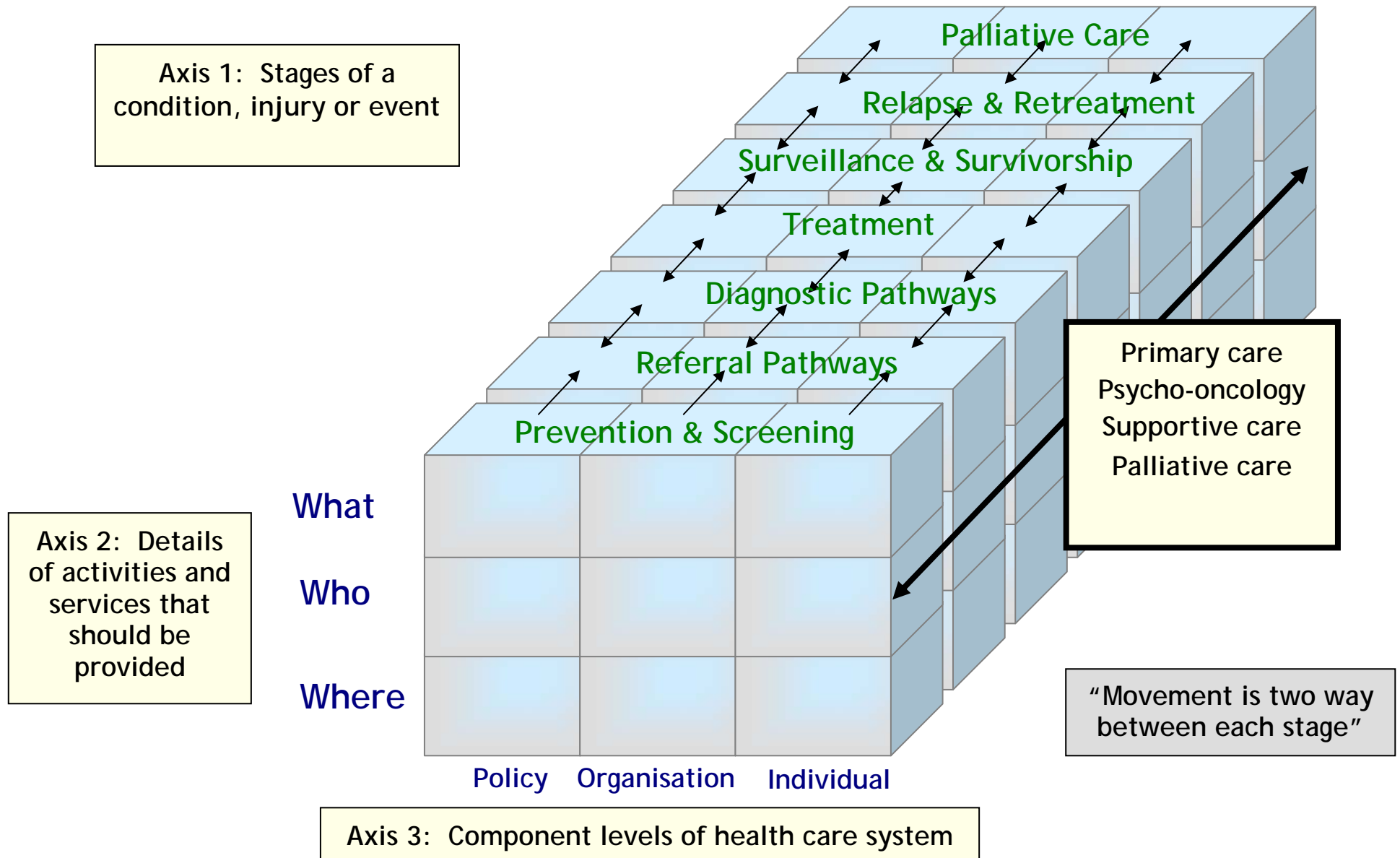




Figure 6. WHAT will be provided by the WA Model of Cancer Care

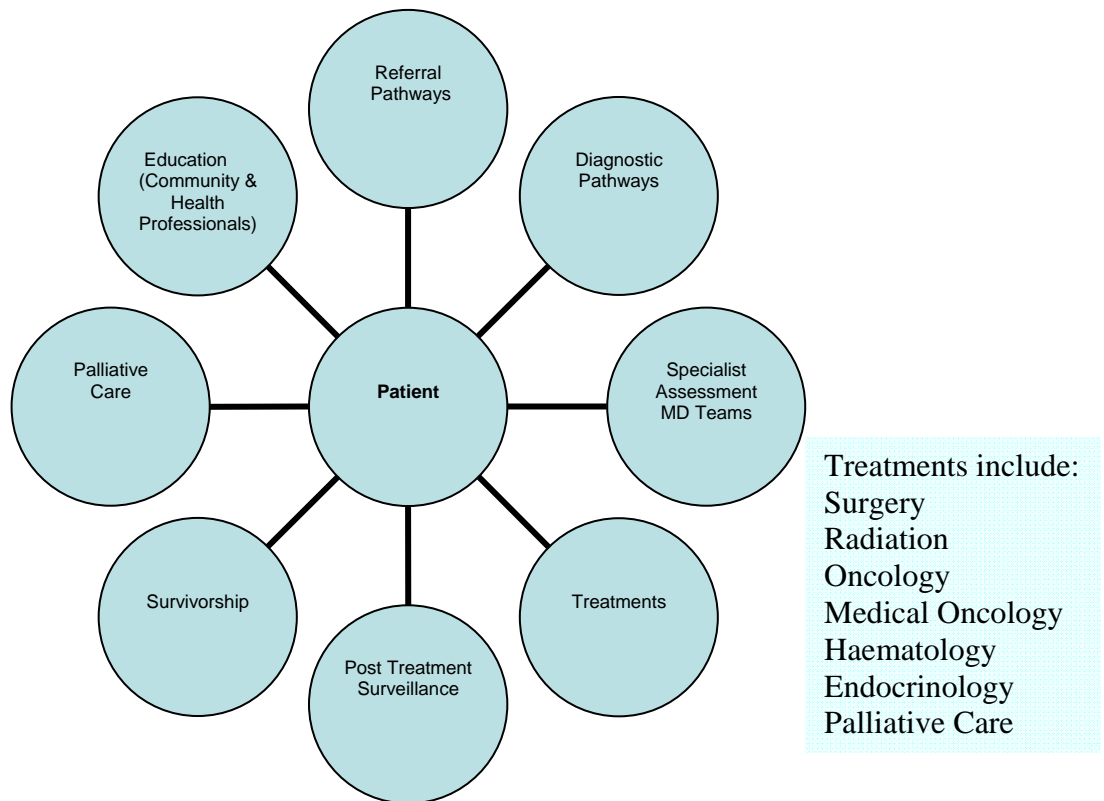
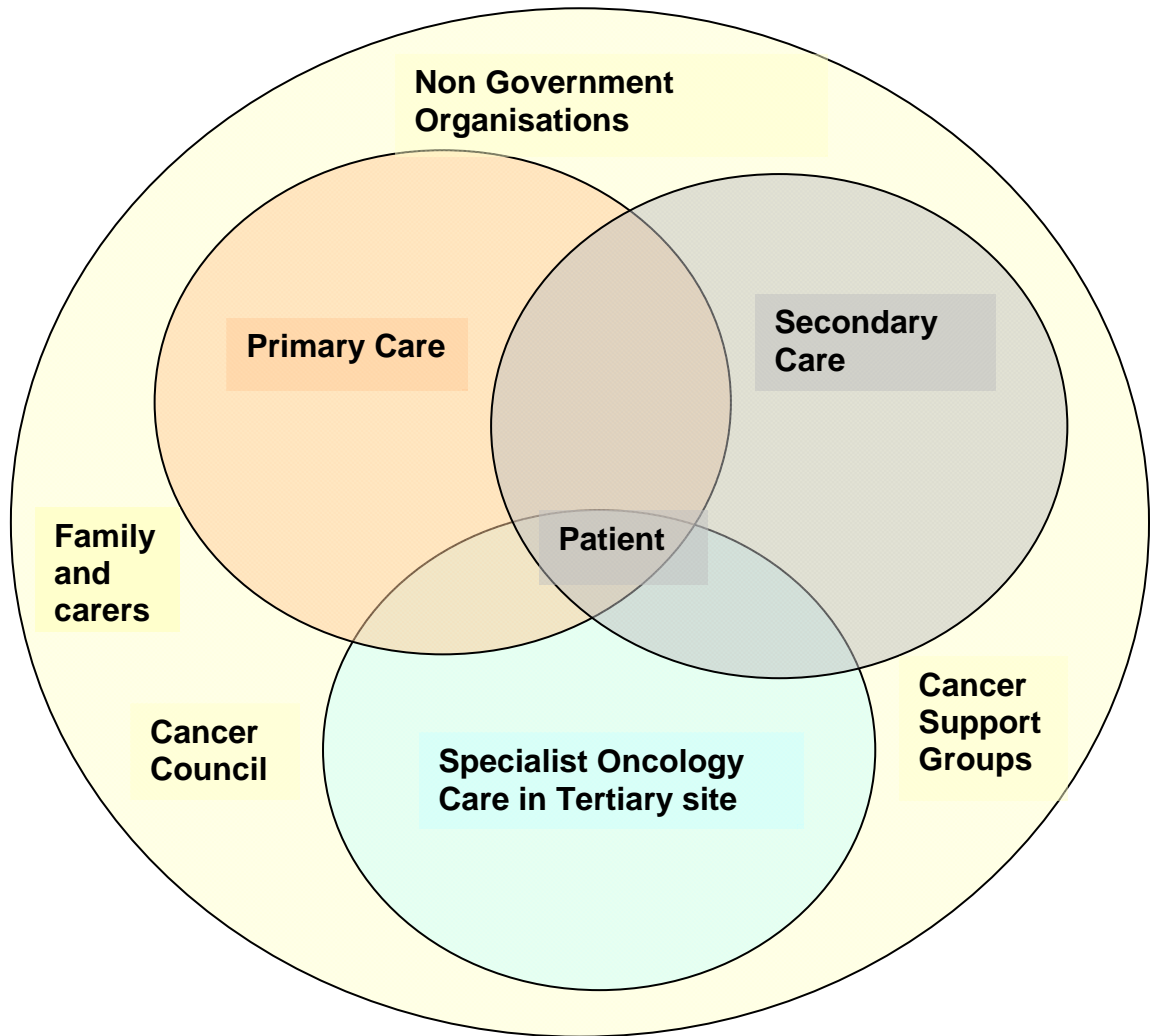




Figure 7. WHO will provide the Cancer Care Partnerships



Cancer care, appropriate to the needs of patients and families, should be delivered in one or more of the following ways:

Specialist oncologic care may be required to manage the full spectrum of care of the complex cancer patient

Ongoing specialist oncologic care may be available with the primary health care team providing the supportive role.

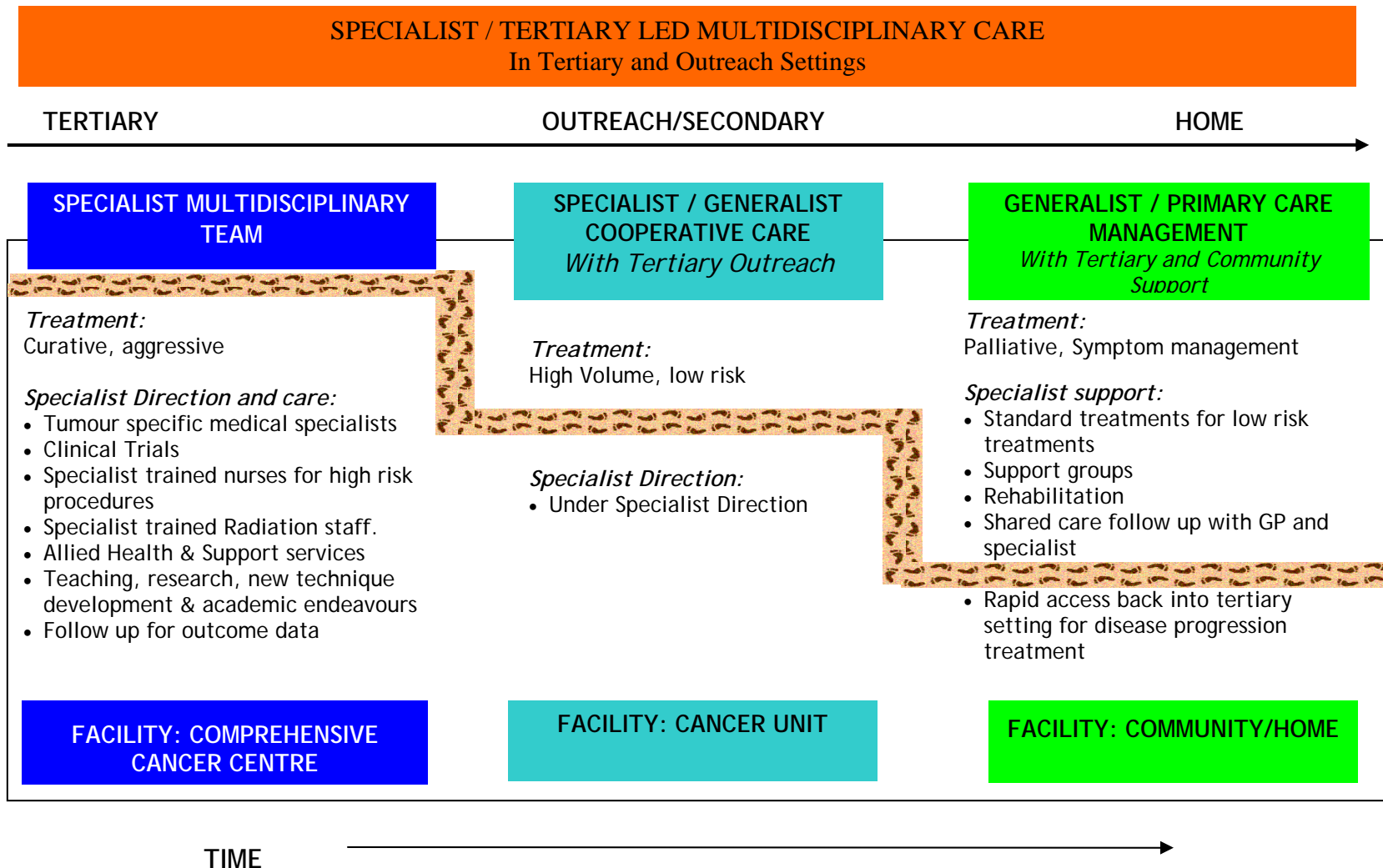
Patients may remain under the primary care of other specialists and will be able to access episodic consultation with members of an interdisciplinary specialist cancer care team

Patients may remain in a primary health care setting with oncologic input, with a general practitioner providing the care.

Consultation may be provided by visiting specialist cancer care team members or through the use of technologies such as Telehealth in order to meet the needs of rural patients.



Figure 8. WHERE the care will be provided



This diagram represents the continuum of care and the ability of patients to move between the streams of care depending on their clinical need. It is planned that Cancer Units will be linked to a comprehensive cancer centre ensuring the quality of care. This model is dependent on excellent communication supported by appropriate technological advances such as telehealth and PACS (Picture Archiving and Communication System).



This model is based on the team approach. The team agrees on the precise diagnosis and staging of the disease, the best treatment option for the patient (taking into account the patient's own preferences), and the development of a treatment plan. The rationale for integrated multidisciplinary care is that most people with cancer require input from more than one (usually several) clinical disciplines to optimize treatment and care. It is preferable to obtain clinical consensus about treatment at a particular stage, than for each discipline to act unilaterally, which results in poorly coordinated and potentially suboptimal care.²³

Tumour specific models of care will address the activities that can safely occur in each setting of the model and their expert considerations will include the relationship between outcome and volume of procedures undertaken in a particular setting.

“A tiered but linked approach may be the way to maintain and improve quality whilst retaining local availability of cancer care. Use of superspeciality centre's visiting specialists, it's protocols and it's other external support systems (for example, teleconferencing) should enable essentially the same quality of care to be delivered at the regional centre for all but the most complex care”²⁴

5.0 CONCLUSION

This model of Cancer Care will ensure that people with cancer, irrespective of geographical location, can access high quality care by linking all sectors with larger specialist centres. This may be achieved through personal visits, teleconferencing or multidisciplinary case conferencing. This Model of Care will provide the foundation for tumour specific model of cancer care.

²³ Clinical Oncological Society of Australia, The Cancer Council and the National cancer Control Initiative 2002: Optimising Cancer Care in Australia. National Cancer Control Initiative, Melbourne, 1-122

²⁴ Clinical Oncological Society of Australia, The Cancer Council and the National cancer Control Initiative 2002: Optimising Cancer Care in Australia. National Cancer Control Initiative, Melbourne, 1-122



6.0 RECOMMENDATIONS

Recommendation 1

The Model of Care for Cancer is endorsed for use in WA Health

Recommendation 2

A plan for model implementation is developed by Area Health Services in conjunction with the Cancer & Palliative Care Network and local service providers. Tumour specific models of care will enhance this development facilitating the use of the model of care as close to home as is safe and practicable.

Recommendation 3

That Cancer services are integrated state wide with the Cancer & Palliative Care Network linking stakeholders to ensure quality and equitable service provision.

Recommendation 4

Continued development of evidence based clinical guidelines using a multidisciplinary approach. These guidelines should be adapted to West Australian needs, be easily accessible and provide benchmarks for auditing the safety and quality of service provision.

Recommendation 5

Further development of data linkages and agreed processes of data collection are developed and implemented. This will ensure that data required to monitor treatment and outcomes is supported.

Recommendation 6

Continue the development of a state-wide approach to clinical cancer research and clinical trials that will inform and define best practice and are integral to this model of care.

Recommendation 7

Continue working with Non Government organisations and existing education providers to ensure the provision of high quality education to the community and health care providers, regarding cancer prevention strategies and established screening programmes in a culturally appropriate manner.

Recommendation 8

Referral pathways are developed to ensure appropriate and timely referral for people with a possible cancer diagnosis.

Recommendation 9



Patients are actively involved in the decision making processes regarding their treatment and provided with appropriate information with which to make informed choices and consent to their cancer treatments.

Recommendation 10

Continue active consumer engagement in all areas of the Model of care development particularly in relation to development of supportive care options

Recommendation 11

Cancer Network should work collaboratively with relevant agencies to provide education and training that will ensure effective communication with the patient, family and care providers.

Recommendation 12

Further enhancement of the successful implementation of Cancer Nurse coordination service will support the development of services in cancer units and community settings.

6.1 Implementation of Recommendations

The Cancer & Palliative Care Network proposes the implementation of the recommendations be phased according to resource needs and further planning and development. There is scope within the existing Network resources to implement the suggested Phase 1 recommendations outlined below, but the other recommendations will require additional planning and will have resource implications.

Phase One

The Cancer & Palliative Care Network (funded until June 2009) can undertake:

- Delivery of tumour specific models of care for each area of cancer by September 2008
- To link stakeholders via tumour collaboratives to ensure quality and equitable service provision (REC 3)
- Development of evidence based tumour specific guidelines by tumour collaboratives by September 2008 (Rec 4)
- Continued development of the Statewide linked cancer data base (Rec 5)
- Continued development of the Statewide cancer research program enhancing the potential to increase clinical trial participation (Rec 6)
- Implement the development of appropriate referral pathways for patients with a suspected cancer diagnosis. (Rec 8)
- Support the development of cancer consumer engagement plan that specifically addresses consumer needs in cancer service redesign (Rec 9-10)
- Continue development and evaluation of cancer nurse coordination service (rec 12)
- Lead education and training for health professionals in Cancer communication and multidisciplinary team effectiveness (Rec 11)



Phase Two

- Planning for the implementation of the model by Area Health Services in conjunction with the Cancer & Palliative Care Network and local service providers (Rec 2)
- Development of accreditation model for cancer services
- Leadership in the credentialing model for relevant disciplines



APPENDICES

Appendix 1: Statistics

WA Cancer Registry Data 2007 (T070064B)									
Results data for Male + Female (Combined) by Region									
Incident Cases		1996-2005 Actual					2006-2036 Projections		
	NMAHS	SMAHS	Goldfields	Great Southern	Kimberley	Mid West	Pilbara	South West	Wheatbelt
1996	2,910	2,666	148	226	56	215	67	405	284
1997	2,860	2,510	149	183	59	181	69	441	249
1998	2,826	2,650	141	208	43	210	58	441	276
1999	3,219	2,932	149	218	45	213	54	500	292
2000	3,213	2,904	137	235	71	249	62	465	290
2001	3,214	3,048	180	216	79	234	70	565	325
2002	3,660	3,251	150	278	77	244	86	596	359
2003	3,600	3,412	170	263	82	256	89	586	333
2004	3,795	3,605	157	277	69	285	93	679	359
2005	3,741	3,567	149	260	81	287	81	628	349
2006	3,811	3,673	170	273	79	279	87	651	350
2007	3,928	3,811	173	283	86	290	94	684	362
2008	4,049	3,947	180	295	92	300	100	719	374
2009	4,174	4,088	185	305	100	311	106	754	390
2010	4,302	4,231	189	317	108	321	112	791	406
2011	4,433	4,380	194	329	118	332	118	829	421
2012	4,568	4,540	200	342	131	343	126	870	437
2013	4,705	4,705	204	352	142	355	134	913	454
2014	4,845	4,872	210	365	155	368	146	956	471
2015	4,988	5,040	216	377	168	380	157	1,002	488
2016	5,138	5,207	224	391	181	393	167	1,048	506
2017	5,300	5,371	232	403	198	405	182	1,094	526
2018	5,466	5,530	239	417	214	419	196	1,139	545
2019	5,638	5,692	246	430	230	432	211	1,189	565
2020	5,810	5,855	255	442	248	444	228	1,238	585
2021	5,984	6,022	262	454	270	458	246	1,292	606
2022	6,157	6,206	271	464	291	471	265	1,346	625
2023	6,326	6,391	280	476	315	486	286	1,401	643
2024	6,494	6,581	290	488	339	500	306	1,457	661
2025	6,660	6,770	300	502	365	515	329	1,513	679
2026	6,829	6,960	309	515	392	530	351	1,569	696
2027	6,999	7,148	315	529	418	543	375	1,624	715
2028	7,170	7,329	322	543	446	557	399	1,678	734
2029	7,343	7,506	329	555	477	572	427	1,729	753
2030	7,515	7,678	336	567	510	589	457	1,784	772
2031	7,692	7,852	343	578	544	607	489	1,837	790
2032	7,856	8,015	350	587	583	625	525	1,890	810
2033	8,018	8,175	355	597	622	643	560	1,942	829
2034	8,178	8,335	361	607	661	660	595	1,997	846
2035	8,334	8,497	365	619	701	677	627	2,052	864
2036	8,487	8,661	368	630	742	697	657	2,109	879



Cancer Incidence by Top Five Tumour Groups

WA Cancer Registry 2007

	BREAST	COLO RECTAL	LUNG	PROSTATE	MELANOMA	OTHER
1996	876	896	696	952	708	2849
1997	915	930	693	730	670	2763
1998	926	943	721	717	724	2822
1999	1025	952	768	937	918	3022
2000	1022	1073	759	821	873	3078
2001	1106	1109	764	956	883	3113
2002	1147	1026	840	1240	1052	3396
2003	1135	1101	829	1252	1057	3417
2004	1151	1100	848	1517	957	3746
2005	1154	1083	906	1471	958	3571
2006	1192	1151	889	1347	884	3932
2007	1230	1182	920	1448	938	4010
2008	1267	1223	958	1549	992	4074
2009	1309	1258	989	1657	1048	4150
2010	1349	1293	1023	1768	1111	4221
2011	1392	1333	1058	1887	1176	4286
2012	1434	1373	1095	2013	1249	4356
2013	1478	1416	1132	2147	1321	4422
2014	1521	1465	1174	2282	1402	4474
2015	1565	1519	1211	2425	1483	4524
2016	1612	1569	1266	2571	1570	4557
2017	1657	1629	1318	2720	1664	4586
2018	1702	1689	1375	2869	1759	4608
2019	1750	1755	1437	3025	1861	4614
2020	1798	1825	1504	3182	1968	4605
2021	1848	1899	1572	3348	2079	4584
2022	1898	1977	1648	3519	2194	4559
2023	1951	2057	1726	3691	2315	4515
2024	2005	2139	1803	3866	2443	4461
2025	2060	2226	1882	4043	2569	4396
2026	2114	2320	1966	4223	2705	4309
2027	2172	2407	2056	4391	2848	4221
2028	2230	2500	2146	4564	2993	4113
2029	2293	2597	2243	4738	3144	3977
2030	2355	2703	2338	4911	3294	3828
2031	2421	2815	2442	5088	3454	3654
2032	2486	2920	2539	5270	3617	3453
2033	2553	3031	2635	5453	3786	3232
2034	2618	3141	2740	5651	3959	2983
2035	2684	3249	2843	5847	4134	2731
2036	2748	3364	2948	6046	4320	2457



Same Day Separations related to Cancer Incidence

Year	Hospital Type	Gender	Cancer Incidence	Same day separations	
				#	/new case
2000					
	Public	Male		13087	
		Female		12736	
	Private	Male		10099	
		Female		9211	
	Total		7,633	45133	5.9
2001					
	Public	Male		13140	
		Female		12698	
	Private	Male		12872	
		Female		11690	
	Total		7,934	50400	6.4
2002					
	Public	Male		13463	
		Female		13629	
	Private	Male		14205	
		Female		14365	
	Total		8,710	55662	6.4
2003					
	Public	Male		14181	
		Female		14471	
	Private	Male		15576	
		Female		15977	
	Total		8,795	60205	6.8
2004					
	Public	Male		15162	
		Female		14319	
	Private	Male		16057	
		Female		17110	
	Total		9,325	62648	6.7
2005					
	Public	Male		16258	
		Female		15778	
	Private	Male		17878	
		Female		17890	
	Total		9,151	67804	7.4
2006					
	Public	Male		16324	
		Female		15965	
	Private	Male		18450	
		Female		18675	
	Total		9,435	69414	7.4



Hospitalisation rates by cancer type, age group, sex and health region, WA 2000-2006

Notes: 1. Rates and regions are based on residency of patients.

2. Rates are calculated using all separations (same day and overnight stayers).

3. Main findings in terms of hospitalisation rates by comparing ASR and their 95% confidence intervals.

Age specific rate (per 100,000 person years)																				Total CR	ASR	LCI	UCI
Results data for NMAHS Male (Combined)																							
Age Grp	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+					
Prostate cancer	0	0	4	0	0	0	1	1	8	56	161	440	716	1023	900	1245	1437	1332	184	210	204	216	
Breast cancer	0	0	0	0	0	0	0	0	0	1	1	3	1	7	8	2	3	9	1	1	1	1	
Cervix cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Uterus/Ovarian cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Skin melanoma	1	0	1	3	4	13	11	19	18	38	35	66	92	112	145	225	264	221	36	40	37	42	
Skin neoplasm	0	0	1	2	9	24	45	87	138	226	381	626	841	1140	1745	2900	4367	4763	375	447	438	456	
Colorectal cancer	0	0	1	1	2	3	18	17	32	70	144	275	391	559	639	827	940	837	124	141	136	146	
Lung cancer	1	0	0	0	3	1	3	5	11	28	38	95	234	286	541	631	672	478	71	84	80	88	
Bladder cancer	10	0	0	1	1	2	1	5	9	35	64	148	289	466	847	1283	1434	2058	128	160	154	165	
Benign neoplasms	146	101	162	144	120	186	269	290	363	522	786	974	1341	1611	1804	1677	1462	908	499	524	516	533	
All other cancers	239	178	153	117	156	167	231	222	405	682	998	1708	2639	3414	4480	6286	6878	7039	971	1099	1085	1112	
Results data for NMAHS Female (Combined)																				Crude	ASR	LCI	UCI
Age Grp	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+					
Prostate cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Breast cancer	0	0	0	1	1	9	51	99	198	329	415	537	590	582	407	415	397	357	192	188	183	193	
Cervix cancer	0	0	0	3	2	3	15	24	24	19	25	32	22	16	62	53	55	55	17	17	15	18	
Uterus/Ovarian cancer	0	3	5	1	2	5	14	20	22	50	87	138	167	213	189	243	160	178	55	54	52	57	
Skin melanoma	0	0	0	3	6	11	14	13	30	22	33	39	43	48	42	61	96	71	21	21	19	22	
Skin neoplasm	0	1	0	3	4	29	49	86	168	236	338	398	518	647	840	1158	1556	1959	252	242	237	248	
Colorectal cancer	0	0	0	1	2	8	6	18	33	58	114	155	251	310	434	509	565	554	93	91	88	95	
Lung cancer	0	0	0	0	2	0	1	5	11	10	36	77	90	140	254	244	184	88	36	36	34	39	
Bladder cancer	0	0	0	0	0	3	3	4	4	17	28	46	75	133	206	298	335	317	40	39	37	41	
Benign neoplasms	154	122	208	283	308	357	523	813	1179	1481	1330	1256	1409	1534	1357	1315	984	456	776	766	755	776	
All other cancers	164	115	136	111	163	243	236	308	463	670	957	1330	1714	2202	2818	3173	3550	3330	767	755	745	765	



Results data for SMAHS Male (Combined)																				Crude	ASR	LCI	UCI
Age Grp	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+					
Prostate cancer	0	0	0	8	0	0	1	1	8	44	147	395	637	1003	973	1334	1675	2027	202	221	215	227	
Breast cancer	0	0	0	0	1	0	1	0	0	2	0	2	4	6	12	9	6	0	1	2	1	2	
Cervix cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Uterus/Ovarian cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Skin melanoma	0	1	1	0	4	6	24	10	14	23	34	38	68	78	127	159	242	186	29	31	29	33	
Skin neoplasm	0	4	3	2	3	16	40	67	97	173	319	468	666	1043	1436	1942	3003	3418	303	337	329	345	
Colorectal cancer	0	0	0	1	2	8	12	16	22	65	156	217	355	557	773	891	893	1028	133	144	139	149	
Lung cancer	1	0	0	1	1	0	0	5	9	28	56	110	213	331	525	568	699	392	77	83	79	87	
Bladder cancer	0	0	0	0	3	1	5	6	20	38	77	161	276	408	808	1372	1749	1601	140	160	154	165	
Benign neoplasms	131	65	127	114	90	121	195	247	355	481	747	1019	1218	1560	1504	1580	1352	901	467	476	467	484	
All other cancers	177	183	121	149	160	154	233	252	419	696	991	1622	2203	3195	4596	5454	7421	6841	982	1056	1042	1069	
Results data for SMAHS Female (Combined)																							
Age Grp	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+			LCI	UCI	
Prostate cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Breast cancer	0	0	0	11	2	16	42	93	189	332	476	496	603	582	472	518	427	229	201	193	188	199	
Cervix cancer	0	0	0	0	2	19	22	24	34	34	20	23	22	53	23	29	80	24	19	19	17	20	
Uterus/Ovarian cancer	0	0	0	7	4	4	7	14	21	38	85	130	150	235	215	257	268	144	58	55	52	57	
Skin melanoma	0	0	0	3	3	7	16	12	15	25	29	35	37	55	59	58	98	55	20	19	17	21	
Skin neoplasm	1	1	2	2	6	16	43	62	110	180	230	254	346	437	629	897	994	1308	182	169	164	174	
Colorectal cancer	0	0	0	0	4	7	17	21	32	64	112	118	281	331	438	588	697	584	105	98	94	102	
Lung cancer	0	0	0	2	1	0	0	7	12	35	44	82	93	191	250	286	196	68	44	42	40	45	
Bladder cancer	0	0	0	0	1	0	1	11	7	15	28	47	63	153	240	337	340	499	49	44	42	47	
Benign neoplasms	153	112	162	208	258	293	492	683	1053	1306	1206	1154	1271	1310	1300	1228	917	401	693	681	671	691	
All other cancers	240	121	135	103	182	273	295	392	476	617	982	1279	1793	2200	2628	2974	3670	2922	795	758	748	769	
Results data for Country Male (Combined)																							
Age Grp	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+			LCI	UCI	
Prostate cancer	0	0	0	0	0	0	0	0	3	33	124	355	537	757	933	1341	1347	2222	155	198	191	206	
Breast cancer	0	0	0	0	0	0	0	0	0	0	1	3	1	6	10	0	0	27	1	1	1	2	
Cervix cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			



Uterus/Ovarian cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Skin melanoma	0	0	0	3	3	8	7	20	24	23	59	56	105	125	219	164	159	168	33	39	35	42	
Skin neoplasm	0	0	2	0	10	30	55	115	229	317	573	785	1248	1805	2356	3172	3890	3648	433	529	517	542	
Colorectal cancer	1	0	0	0	1	5	2	11	30	54	115	259	393	735	724	832	1347	912	124	153	146	160	
Lung cancer	12	0	0	0	2	0	0	1	3	39	40	109	234	264	527	553	445	248	61	75	70	79	
Bladder cancer	0	0	0	1	0	0	2	13	14	39	89	118	299	458	714	1241	1341	1532	110	146	139	153	
Benign neoplasms	97	77	119	105	80	113	159	247	309	380	536	734	956	1042	1081	1009	951	646	338	361	351	370	
All other cancers	215	122	98	125	60	134	150	208	393	685	922	1747	2406	3245	4114	4949	5634	5286	819	961	945	978	
Results data for Country Female (Combined)																							
Age Grp	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Crude	ASR	LCI	UCI	
Prostate cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Breast cancer	0	0	0	4	1	22	41	119	216	301	426	567	638	616	466	489	419	375	188	199	192	206	
Cervix cancer	0	0	0	0	3	13	26	21	27	30	37	23	51	43	72	6	42	30	19	20	18	22	
Uterus/Ovarian cancer	0	0	0	4	10	15	8	12	31	43	48	145	182	194	203	329	242	207	51	57	53	61	
Skin melanoma	0	0	3	8	5	15	18	14	25	32	45	40	79	66	98	115	116	158	28	30	27	33	
Skin neoplasm	0	0	0	2	16	31	54	118	203	278	439	543	685	920	1346	1587	1889	1983	287	316	307	326	
Colorectal cancer	0	0	0	0	2	2	9	29	28	43	87	133	357	418	404	785	717	533	93	105	99	110	
Lung cancer	0	0	0	0	0	0	2	3	5	28	46	82	95	165	188	198	219	54	32	36	33	39	
Bladder cancer	0	0	0	0	0	0	0	2	2	16	25	56	77	146	173	287	414	414	35	40	37	44	
Benign neoplasms	122	98	137	266	299	318	471	627	982	1178	1043	1026	1068	1013	1037	897	735	345	590	607	594	619	
All other cancers	152	101	82	141	219	301	288	288	558	640	904	1226	2091	2448	2705	2966	3652	3211	714	773	759	788	
Source: Epidemiology Branch, Department of Health WA, November 2007.																							



Appendix 2: Cancer Centre & Cancer Unit Definition

Comprehensive Cancer Centres and Cancer Units were first described in the UK as they set their national policy framework for provision of cancer services using a hub and spoke model for cancer care. The Calman Hine Report (UK Dept of Health April 1995) describes the three levels of care that the WA Cancer Framework is adopting in the following words:

1. "Primary care is seen as the focus of care. Detailed discussions between primary Care Teams, Units and Centres will be necessary to clarify patterns of referral and follow up which will ensure the best outcomes.
2. Designated Cancer Units should be created in many district general hospitals. These should be of a size to support clinical teams with sufficient expertise and facilities to manage the commoner cancers.
3. Designated Cancer Centres should provide expertise in the management of all cancers, including common cancers with their immediate geographical locality and less common cancer by referral from Cancer Units. They will provide specialist diagnostic and therapeutic techniques including radiotherapy."

The Royal college of Radiologists' recommendation (UK) is that Comprehensive Cancer Centres should serve a population of a minimum of two-thirds of a million people to ensure an adequate range of tumour site specific non-surgical cancer specialists would be available. For planning purposes the UK uses one comprehensive cancer centre per one million population.

Treatments and services provided in the Comprehensive Cancer Centres will include:

- Radiation Therapy
 - 52.3% of all new cancers require this treatment
 - 20% of all these cancers will require further treatment due to disease progression.
 - Specialised services like Paediatrics, Stereotactic Radiosurgery & Total body irradiation for Bone Marrow transplants will be coordinated between the two cancer centres due to the small numbers in WA.
 - Phase 2 and 3 clinical trials
 - Outreach clinics to cancer units
 - Telemedicine for some follow up in rural areas.
 - Pilots of new technology and processes.
 - Clinical research for new treatment techniques and quality improvement.
- Haematology
 - Specialist services like Bone Marrow transplants, peripheral blood stem cell support and other rare haematological disorders and clinical trials will be provided at the Cancer Centres.
 - Phase 2 clinical trials and the co-ordination of phase 3 trials in cancer units.



- Outreach clinics to cancer units
- Telemedicine for some follow up in rural areas.
- Clinical research for new treatments.
- Medical Oncology
 - Chemotherapy for the rarer or more aggressive cancers like neurological cancers and melanoma will all be treated at a Cancer Centre
 - Dual Modality treatments that require concurrent chemotherapy and radiation therapy like head and neck tumours will also be treated at a Cancer Centre.
 - Treatments with known potentially serious side-effects like taxanes will be treated by a specialist team to deal with these side effects.
 - Some biological therapy will be available in both the cancer centre and cancer units and outcomes monitored at the cancer centre.
 - Phase 2 clinical trials and the co-ordination of phase 3 trials in cancer units.
 - Outreach clinics to cancer units
 - Telemedicine for some follow up in rural areas.
 - Clinical research for new treatments.
- Palliative Care
 - Outpatient clinics to assist patients and carers to manage advanced disease symptoms in their own homes.
 - Pain clinics in a multidisciplinary setting
 - Supportive care for end of life issues.
 - Outreach clinics to other palliative care units.
 - Seamless referral to palliative care within hospitals and at home.
 - Linking with community palliative care services to enhance quality of life issues.
- Rehabilitation and Wellness
 - Allied health outpatient clinics to manage disease side effects like lymphoedema.
 - Dieticians support for nutrition advice and help with lack of salivary production.
 - Support groups like Look Good Feel Better
 - Exercise facility to teach patients how to keep well.

These Cancer Centres & Cancer Units will be integrated into the hospital where they are located so that multidisciplinary care can occur. In-patient care, surgery, other medical specialists like neurosurgeons, dermatologists, endocrinologists and urologists together with services like radiology, pathology, physiotherapy, dietetics, speech therapy, occupational therapy, chaplaincy, social workers and clinical psychologists as well as some information about complementary therapies should be readily available for cancer patients.



Delivering a Healthy WA

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