SMICS

Southern Melbourne Integrated Cancer Service

A Model for Cancer care at Casey Hospital

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Prepared for:

SMICS Governance Committee

Background

Cancer is the leading cause of death in Victoria; and one in three Victorians up to the age of 75will receive a diagnosis of cancer. Cancer is a complex set of diseases to diagnose and treat and represents a significant burden to patients and their families and the community at large. There were 35,640 deaths of Victorian residents in 2009 with car causing 29% of these deaths, compared to ischemic heart disease (16%) a, cerebrovascular disease (8%), diabetes (3%), transport accidents (1%) and suicide (1%)(Cancer Victoria 2011).. The five leading cancers in Victoria – prostate, bowel, breast, lung and melanoma – account for almost 60% of all new cancers and half of all cancer deaths. (Thursfield & Farrugia 2011). By 2013, cancer incidence is expected to increase by 16% (Thursfield & Farrugia, 2011).

The Southern Health Casey and Dandenong Hospitals Service Plan completed in August 2011, outlines a service plan in response to the growing population within the Casey and Cardinia Local Government areas. The plan entails a significant expansion of services for Casey hospital to reduce patient transfers to Dandenong hospital and to ensure the needs of the growing community in Casey and Cardinia Local Government Areas are better met. The service plan proposes both an increase in the services available and the acuity of services provided at Casey Hospital. This includes establishing Casey Hospital as a hub for the provision of cancer services by providing chemotherapy, radiation oncology and inpatient services to the outer southeast region. Further, the variety of illnesses treated and acuity of patients will increase which will include a larger scope of specialty care including cardiology, gastroenterology, neurology and intensive medicine.

The potential catchment profile for Casey Hospital includes the bordering Local Government Areas (LGA) of Greater Dandenong, Casey and Cardinia, Knox, Frankston, Mornington Peninsula, Yarra Ranges and those LGA's bordering Cardinia including Bass coast, South Gippsland and Baw Baw. As highlighted in the Southern Metropolitan Integrated Cancer Service (SMICS) service plan dated 2009 – the outcomes of people who have cancer in the Gippsland region are poorer than those in the SMICS region. It was therefore recommended that SMICS develop links with

the Gippsland region in order to provide a better health service for this population. The development of cancer services at Casey may therefore potentially become a link for services in the Gippsland region and offer an opportunity for improved health outcomes.

Over the next 10 years, Casey and Cardinia LGAs are expected to be two of the fastest growing municipalities in Australia. The City of Casey and the Shire of Cardinia are expected to increase by 121,069 (53%) and 57, 288 (94%) respectively between 2007 and 2021(Southern Health, 2011).

To accommodate the increase in the population, Southern Health proposes the increasing of services at Casey hospital to include an extra 172 acute medical/surgical beds; same-day surgery and medical capacity to increase from 14 to 67; emergency department expansion from 28 to 47; palliative beds to increase from 5 to 15; an increase in theatres from 4 to 12; the introduction of 20 Intensive care beds; 15 cardiology beds, 18 oncology inpatient beds and 18 day chemotherapy chairs. Outpatient clinics will increase from 8 to 32. The increases in services will be staged over a 3 -10 year time frame. The increase in size and acuity of Casey hospital will provide an opportunity for the development of both high acuity Haematology and Oncology services at this hospital.

Achieving a world class cancer service at Southern Health

Currently, Southern health is the largest health care service provider in Victoria. To ensure that Southern Health achieves a 'world-class cancer service' and attracts and retains quality staff it must facilitate and drive the development and implementation of the very best treatment options for cancer patients. This will require the integration of biomedical research, academic clinical medicine, community partnerships and capacities to translate new discoveries into clinical practice and therefore into improved patient outcomes. The infrastructure to support this is currently being developed under the banner of the Monash Partners Academic Health Centre. 'Cancer and Blood Diseases' Theme.

An Academic Health Centre by its nature requires central academic leadership and a Clinical governance structure to ensure that local operational arrangements deliver best practice clinical care and that patient outcomes are measured. It is a major challenge to link the efforts of individuals in different institutions and across various geographic sites. Sophisticated networking is required.

Any attempt to develop a model of care for oncology/haematology/palliative patients must recognise that this group encompasses a diverse range of illnesses with a wide variety of treatment needs. Multiple craft groups are involved and care is provided in many different settings. There continues to be a substantial evolution in the treatment paradigms for these patients which is likely to continue into the future. New treatments are becoming office-based or 'outpatient' oriented without the need for a needle to be inserted into a patient. However these patients will still be at risk of side effects of oral regimens and will require direct management input from pharmacists, specialized nurses and allied care professionals. This patient group will continue to have needs associated with the supportive care paradigms, particularly the social and psychological services. A variety of hospital based clinics led by different craft groups, community based general and primary care clinics as well as survivorship centres are likely to be necessary. The planning for only some of these services falls into the traditional remit of Health Services but all are elements of a comprehensive Cancer Centre.

This document identifies the critical issues to be considered in the development of Cancer services at Casey hospital. These have been identified from a series of meetings with current Heads of Departments, key clinicians and senior management staff employed at Southern Health, in addition to key stakeholders within GRICS and Latrobe Regional Cancer Centre and William Buckland Cancer Centre. The goals described in this document can be described as aspirational, and it is acknowledged that any development will be staged and ultimately depend on available resources, including staff and infrastructure. Nonetheless all those contributing to this document articulated constructive and positive views regarding integration of care across the Southern Health sites and networking across all the Health Services in the region.

Ensuring equity in access to cancer services for cancer patients, the service should be centrally governed to ensure timely access to services and clinical trials. Projected population growth ensures

that Casey Hospital will become a very important provider of cancer services in the southern metropolitan region. As part of Southern Metropolitan Integrated Cancer Services (SMICS), the ability for patients to receive quality care close to where they live is possible. For those with rare cancers, appropriate referral pathways will be in place so patients are treated by those with the appropriate experience.

As per the 2009 SMICS service plan, clinicians report that increasingly specialised techniques will be developed including:

- Targeted therapeutics and development of highly specialised and individually tailored chemotherapy relying on the development of new capacities for genetic and molecular testing of individual patient and individual tumours
- Targeted interventional radiotherapy, based on advances in real-time and functional imaging the development of highly specialised radiotherapy services
- Robotic surgery particularly for head and neck tumours and for prostate tumours

Casey Hospital will need to have the capacity to implement these techniques and take up the opportunity to incorporate these into a sophisticated model of care for Oncology patients using a regional and networked approach.

Alignment with Strategic directions

A model of cancer care proposed for Casey Hospital needs to be consistent with strategic direction set by Southern Health, Federal and Victorian Governments including;

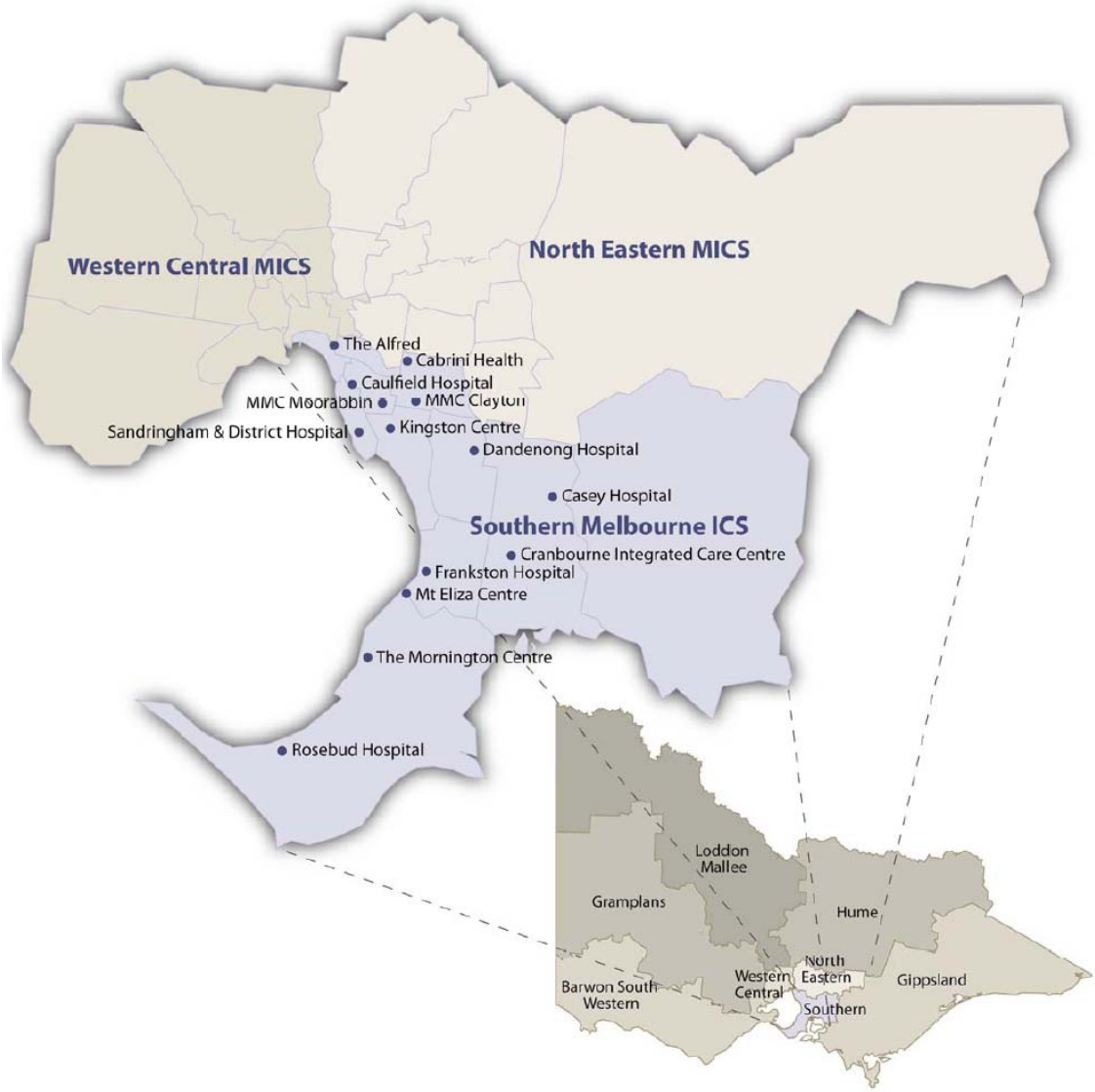
- SMICS – A service plan (2009)
- Victorian Cancer Action Plan 2008-2011
- Linking Cancer Care: A guide for implementing coordinated cancer care
- The Casey and Dandenong Hospitals Service Plan 2011
- Southern Health Strategic Plan 2010-1013
- Southern Health Strategic Service Plan 2010-2022

How this will be achieved

- Review Casey and Dandenong Hospital Service Plan 2011 for cancer services
- Develop a plan for ideal service delivery based on data from the Department of Health
- Define the General Principles of the Model of Care
- Develop a resource plan appropriate to the service delivery model
- Develop a transition plan

Integrated Cancer Service (ICS)

Integrated Cancer Services (ICS) were established in 2004 for the development of partnerships between health services for the purpose of planning and service improvement across a geographic area. There are 3 metropolitan, 5 regional and 1 statewide integrated cancer service for paediatrics. Casey, Cardinia and Greater Dandenong LGA's lie within in the Southern Melbourne Integrated Cancer Services (SMICS) region. Bordering Integrated Cancer Services (ICS) are Western, North Eastern and Gippsland. Although cancer services are provided for within these regions, patients from neighboring Gippsland and North Eastern regions may potentially travel to Casey Hospital due to closer proximity to their home. The below diagram demonstrates the Southern Melbourne ICS service area and the surrounding ICS and highlights the Hospitals within the SMICS region,



Southern Health is one of 4 hospital service providers within the SMICS region. Monash Medical Centre (Clayton), Monash medical centre (Moorabbin) and Dandonong Hospital are currently the 3 major providers of cancer services within Southern Health.

Geographically, Casey hospital is located centrally within the SMICS region and is the following distances from current cancer services within Southern Health:
Monash Clayton: 24.5 km
Dandenong Hospital: 19.6 km
Moorabbin Hospital: 35.5km

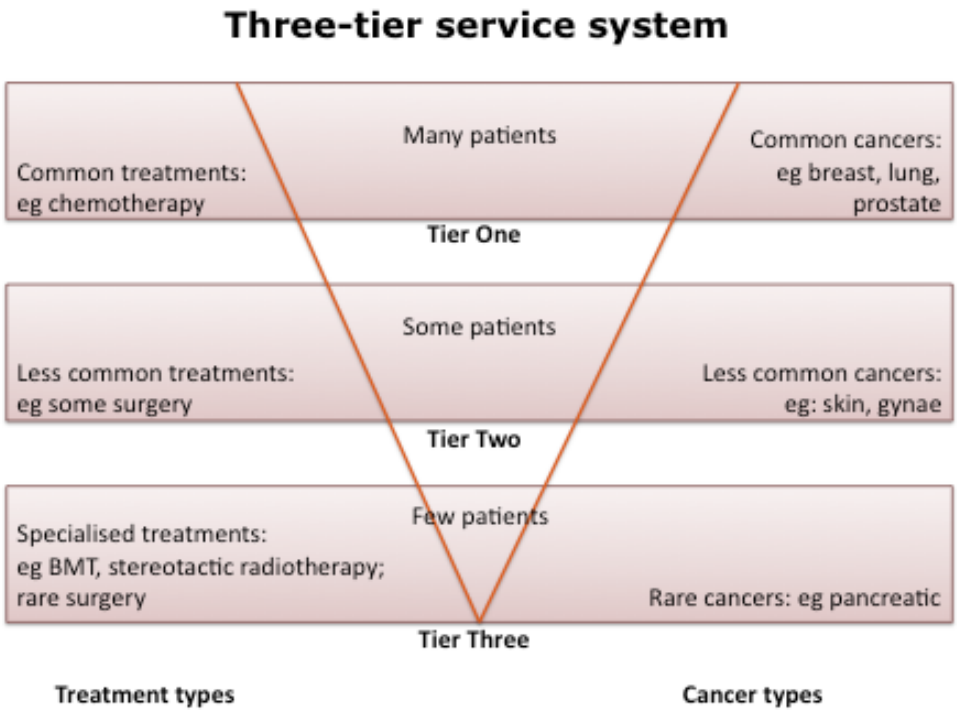
Southern Metropolitan Integrated Cancer Service

The Southern Melbourne catchment area includes a population 1.3 million persons. The Southern Melbourne integrated cancer service (SMICS) supports a comprehensive range of cancer services covering all but a very small number of highly specialised cancer conditions. SMICS is a joint initiation of Alfred Health, Peninsula Health, Southern Health and Cabrini Health. SMICS also has developed working relationships with the state wide paediatric oncology services (PICS) and the Gippsland Region Integrated Cancer Service (GRICS).

As per the SMICS servicer plan 2009 the projected cancer incidence in Southern Metropolitan Melbourne(2009) 2011: 7,681
2021: 9,255
Monash Medical Centre (Moorabbin) currently provides comprehensive services in Medical and Radiation Oncology, but a limitied range of complex surgery is undertaken at this site. The scope of the service is limited by the absence of critical care facilities and supporting specialty units. For example Colorectal cancer surgery is provided at Dandenong Hospital and Upper Gastointestinal cancer surgery and most Thoracic cancer surgery is provided at Clayton.

Haematology services are provided in a Consortium with The Alfred. Aphaeresis and Bone marrow transplants are only performed at The Alfred. Paediatric Oncology services are provided at Clayton with highly complex oncology cases at The Royal Children's Hospital.

SMICS service plan conceptualizes a three tier service system with the aim of identifying different service models for common, less common and rare tumours as well as service models within tumour streams for less complex, more complex and highly complex interventions.



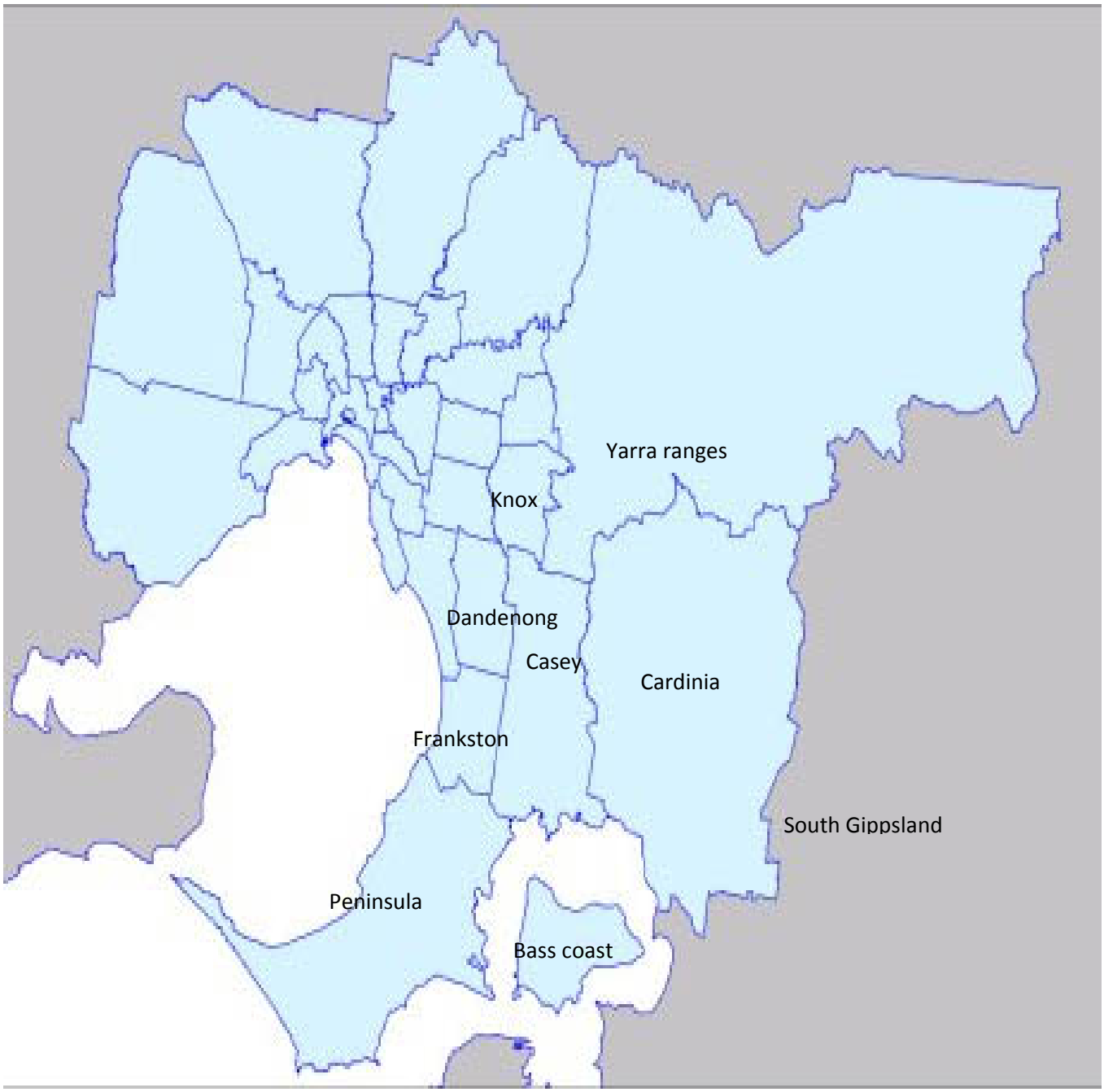
The model of service for Casey Hospital should be based initially on providing services to those patients in Tier one and Tier Two. Tier one cancer services can be provided without the backup of Intensive Care Services. However as Casey Hospital expands and support services are in place, Tier two services will be catered for and higher complexity surgical cases will be managed at Casey Hospital. The rarer cancers and most specialized procedures of Tier Three require referral pathways in place to ensure these patients are cared for at the most appropriate hospital for their tumour stream. For example Bone Marrow Transplants at The Alfred Hospital and Sarcoma management at Peter MacCallum Centre. Nonetheless components of care for such patients may still be delivered locally for the convenience of patients and families. Defined referral pathways and centralized Clinical Governance should ensure that 'State of the art' care is delivered and outcomes data is tracked..

Treatment Planning:

SMICS coordinate Multidisciplinary Team (MDT) meetings throughout the SMICS region. These are the key to successful treatment planning for cancer patients. Each meeting includes input from medical, surgical, pathology, radiology, nursing, allied health and palliative care professionals. Currently at Southern Health, MDM's take place at Clayton, Moorabbin and Dandenong Hospitals. Casey hospital will need to be able to facilitate MDM's. Meeting rooms will require virtual meeting technology, projection facilities and access to all relevant clinical information and diagnostics investigations.

CASEY Local Government authority (LGA)

The below diagram illustrates CASEY LGA and surrounding LGA's including Cardinia, Peninsula, Frankston, Dandenong, Knox, Yarra Ranges, Bass coast, Baw-Baw and South Gippsland which have been identified as potential catchment areas for Casey Hospital



Casey and Dandenong Hospital Service Plan 2011

Surgical

The current service plan for Casey and Dandenong Hospital indicates that surgery services at Casey hospital will expand and new services introduced.

- General surgery – currently provided at MMC Clayton (adult, paediatrics, and upper gastrointestinal), MMC Moorabbin (low complexity general surgery), Casey Hospital (Adult, paediatric general surgery for non-urgent cases), Dandenong Hospital(adult and paediatric general surgery and Colorectal and endocrine surgery) and Cranbourne Integrated Care Centre (low complexity general surgery services). It is planned for urgent general surgery to commence at Casey Hospital, potential Acute surgical unit implemented at Casey Hospital, and moving colorectal surgery to Casey Hospital upon the establishment of radiotherapy, chemotherapy and intensive care services at Casey Hospital.

- ENT surgery – Currently available at MMC Clayton, Moorabbin, Dandenong and Casey Hospitals however to be consolidated to 3 Southern Health sites including MMC Moorabbin, Dandenong and Casey Hospital. Casey Hospital is currently providing lower acuity service, however in the long term Casey will treat higher acuity patients when the support of other clinical areas are established on this site including intensive care.

- Urology – Potential consolidation of Urology surgery to a single site instead of both MMC Moorabbin and Casey hospitals.

- Plastic and reconstructive surgery – continue at Dandenong Hospital for emergency and elective plastic surgery. Introduction of emergency and elective plastic and reconstructive surgery at Casey Hospital in the long term.

- Oral and maxillofacial surgery – continue at Clayton and Dandenong Hospitals

- Breast surgery – continue at MMC Moorabbin for major and subspecialty breast surgery and Casey Hospital for elective surgery service

- Gynaecology – continue at Dandenong, MMC Clayton, Casey, Moorabbin Hospitals and Cranbourne Integrated Care Centre. Gynae-oncology will be provided at Casey Hospital upon establishment of radiotherapy, chemotherapy and intensive care services.

Medical Oncology

Related Oncology Medical Services

- Medical Oncology – MMC Moorabbin is currently the principal hub for cancer related activity. Quaternary and tertiary level cancer services are provided at MMC Clayton and Dandenong provides a day oncology service (6 chairs). New services at Casey Hospital to include a Chemotherapy day unit (18 chairs), radiation oncology service, inpatient services

- Clinical Haematology – supportive haematology services currently in place. The 2011 service plan includes the development of a clinical haematology service which offers a multidisciplinary setting for the diagnosis, treatment and follow up for a wide range a hematological diseases. This is to include multiple myeloma and related disease, other non-malignant hematological and autoimmune diseases and clotting and bleeding disorders. Acuity of service will be dependent upon intensive care services, radiotherapy and medical oncology services at Casey Hospital.

- Radiotherapy services are provided from a 3 linac/4 bunker facility at MMC Moorabbin by Peter MacCallum Cancer Centre (PMCC). 3 linac/4 bunkers are being planned for Casey Hospital to support oncology services.

- Palliative Care – currently there are 5 palliative inpatient beds at Casey Hospital, the Service Plan indicates that these will increase to 15

- Monash HEART -Plan for the establishment of an acute cardiac inpatient unit, an interventional cardiology laboratory and increased outpatient services at Casey Hospital.

Paediatric services

Southern Health offers a state-wide integrated paediatric service at MMC Clayton, Casey Hospital and Dandenong Hospital through Monash Children's. Casey currently provides surgical and medical services. High growth or high volume specialties will be required at Casey Hospital in the coming years to manage future demands. Future oncology paediatric services as per the Casey hospital service plan 2011 include:

- Palliative care inpatient consultation service

- Clinical haematology inpatient service

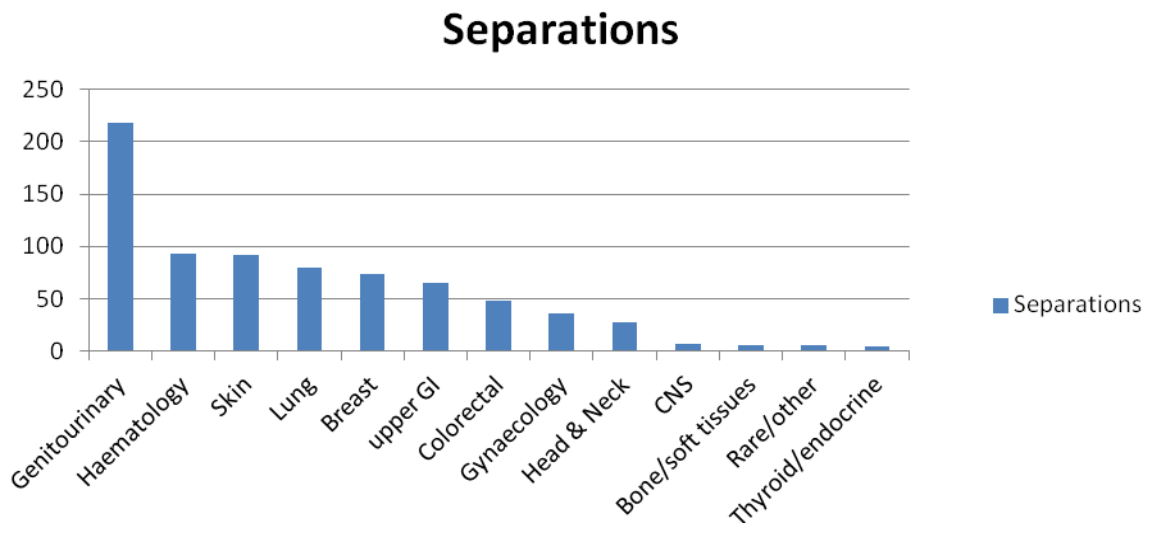
There is no plan for the introduction of inpatient oncology, chemotherapy or radiotherapy for paediatrics at Casey Hospital.

Review of Casey Hospital activity for cancer services 2009/10 (DoH, 2011)

Casey Hospital is currently a 245 bed hospital located in Berwick. Below outlines the current cancer related activity in 2009/10.

Total 1st Cancer diagnosis patient number: 556

Total Patient separations: 753



Genitourinary 218 in total Most common diagnosis was prostate ca followed by bladder. Most patients live in Casey -82, Cardinia – 33, Greater Dandenong – 40

Haematology 93 in total. Most common diagnosis Leukaemia, Multiple myeloma, Myelodysplastic syndrome and non Hodgkin's lymphoma. Most patients live in Casey – 59, Cardinia – 25

Skin 92 in total. Most common diagnosis was melanoma and various cancers of the face.
Most patients live in Casey -43, Cardinia -24 and Greater Dandenong – 11

Lung 79 in total. Most common diagnosis was ca bronchus
Most patients live in Casey – 42 and Cardinia – 25

Breast 74 in total. Most common surgical specific diagnosis
Most patients live in Casey – 43, and Cardinia -11, Greater Dandenong – 9

Upper GI 65 in total. Most common diagnosis was oesophagus and pancreas.
Most patients live in Casey -28 and Cardinia – 28

Colorectal 48 in total. Most common were surgical diagnosis

Most patients live in Casey – 22, Cardinia – 15 and Greater Dandenong – 8

Gynaecology 36 in total. Most common diagnosis was ca cervix following by Endometrium and ovary. Most patients live in Casey – 17, Greater Dandenong – 8

Head and neck 27 in total. Most common diagnosis was cancer of glottis and larynx. Most patient live in Casey -6 and Mornington Peninsular – 6

Central Nervous system 7 Most patients from Casey
Bone and soft tissue 5 Most patients from Casey
Rare/other 5 Most patients from Casey
Thyroid/endocrine 4 Patients from Cardinia and Casey

Current main oncological service at Casey Hospital is Genitourinary (29%) followed by Haematology and skin (12%). These numbers reflect the high surgical initial diagnosis service currently in place at Casey Hospital.

Review of patient population in Casey, Cardinia and Greater Dandenong

To better understand the treatment needs of those living in Casey, Cardinia and Greater Dandenong LGA's, it is imperative to know the current population in terms of diagnosis and separations from hospital and where they are currently being treated. Service planning needs to take into account both the incidence and prevalence, as both impacts on resource requirements.

The catchment areas of Casey, Cardinia and Greater Dandenong comprise 34% of Southern Health's total catchment population. It is from these 3 LGA's that the majority of patients are expected to attend Casey Hospital for future cancer services.

First Diagnosis and Patient separations for Cancer in Casey, Cardinia and Greater Dandenong

The data from the Department of Health (DoH) for 2009/2010 for patient separations and 1st diagnosis of cancer in Casey, Cardinia and Greater Dandenong LGA's is summarized in T**able 1.0.**

Table 1.0 Summary of Patient numbers, separations, chemotherapy for people residing in Casey, Cardinia and Greater Dandenong –both Private and Public data including paediatrics across all Victorian hospitals 2009/10 data (DoH)

LGA	Patient 1st diagnosis		Patient Separations		Chemotherapy Separations*	
	Public	Private	Public	Private	Public	Private
Casey	1204	1257	5280	3809	2848	1659
Cardinia	406	452	1996	1302	995	589
Greater Dandenong	903	604	4106	1886	2073	828
TOTAL	2513	2313	11 382	6997	5916	3076

***Chemotherapy separations are included in patient separations.**

Data from 2007-08 and 2008-09 demonstrates a steady increase in both patient's with 1st diagnosis of cancer (17%) and patient separations (21%) from 2007 to 2009/10.

Radiotherapy for cancer for Casey and Cardinia LGA

Table 2.0 Total number of courses of radiotherapy received by patients from the Casey and Cardinia LGA 2010/11 (DoH)

LGA	Courses of Radiotherapy completed 2010/11	
	Public	Private
Casey	424	190
Cardinia	115	38
Total	539	228

In total, there were 614 courses of radiotherapy completed by Casey residents in Victoria. Cardinia residents completed 153. All together that is 767 courses. This is equivalent to approximately 15,300 visits by Casey and Cardinia residents to radiotherapy centers. Currently, the closet radiotherapy centre is Frankston (private) or Moorabbin(Peter Mac).

Casey LGA overview

Casey is the largest and fastest growing municipality and the dominant growth area for South-Eastern Melbourne.

- Current Population: 241,000. 30% of residents were born overseas.
- Projected Population: 362,069 by 2021 (increase of current population of 50% in 10 years)
- Age distribution: It has the youngest age profile of all Melbourne LGA's. 29% of Casey's population is <18 (metropolitan Melbourne is 23%). 11% of the population is aged over 65 and older people continue to move into the municipality
- Patient numbers with 1st diagnosis in Victorian hospitals with cancer from Casey LGA 2009/10: 2,461

  Patient separations for cancer related treatment from Casey LGA 2009/10: 9,089
- Patient separations for chemotherapy from Casey LGA 2009/10: 4,507
- Number of completed radiotherapy courses from Casey LGA: 614
- Casey LGA patients receiving cancer service at Casey Hospital 2009/10: 177 (7% of total 1st diagnosis).

- Casey LGA separations for Casey Hospital 2009/10: 350 which equates to 3.85% of all cancer separations for Casey residents which indicates that the majority of Casey residents travel outside of Casey for cancer services.
- Socioeconomic: Is considered a fairly 'well-off' city. This is reflected in a higher amount of patients being first diagnosed with their cancer in private hospitals compared to public hospitals. However this trend reverses with total patient separations and chemotherapy separations. It is difficult to predict if any or how many private patients will choose to be treated publicly once a public cancer service is established in Casey.

Where Casey LGA patients received cancer services 2009/10

Casey LGA patients are receiving cancer services across Melbourne. The majority of the services are within Southern Health.

Public Hospitals

Separations for Casey LGA 2009/10 **(**DoH, 2011)

Moorabbin Hospital separations	1757 (19.3% of total seps)
*Moorabbin chemotherapy separations:	1266 (majority breast, colorectal, lung, haem)
Dandenong Hospital patient separations:	1006 (11% of total seps)
*Dandenong chemotherapy separations:	459 (colorectal, breast, lung)
Frankston Hospital:	623 (Breast, colorectal, Haem, lung)
Alfred Hospital separations:	503 (majority being breast, haematology)
Clayton Hospital separations:	382 (4.2% of total seps)
Casey Hospital:	352 (genitourinary, breast, haem, lung)
Peter MacCallum separations:	323 (majority being haematology, Head&neck)

Private Hospitals

Total separations at private hospitals for Casey LGA is 3,809 (41.9% of total Casey LGA patients) and 1,257 1st diagnosis of cancer in patients. Chemotherapy accounts for 1,659 separations. Main private hospitals utilized are Cabrini Malvern and Cabrini Brighton Hospitals for Haematology, colorectal, breast and genitourinary tumour streams. There is no plan for a co-located private hospital at Casey Hospital however this data clearly demonstrates a large proportion of patients are travelling large distances for cancer services in the Private system.

Tumour stream patient numbers and separations for Casey LGA

Table 3.0 Types and numbers of cancer diagnosis from Casey LGA 2009/10(DoH)

Tumour stream	Patient numbers 1st diagnosis of cancer**		Patient Separations**		Chemotherapy Separations* **	
	Public	Private	Public	Private	Public	Private
Bone & Soft Tissue	11	12	25	19	9	1
Breast	152	104	787	705	577	521
Central nervous system	22	7	78	34	8	18
Colorectal	100	99	959	611	718	352
Genitourinary	178	197	471	460	157	165
Gynaecology	114	69	248	139	85	56
Haematology	200	64	1302	420	778	283
Head & Neck	29	5	101	20	33	10
Lung	100	27	472	167	269	109
Rare Cancers	7	9	21	13	9	3
Skin	179	610	959	896	6	4
Thyroid	26	7	77	7	21	0
Upper GI	86	47	467	296	178	137
TOTAL	1204	1257	5280	3787	2848	1659

***Chemotherapy separations are included in total patient separations.**

****Including Paediatrics (0-19)– Paediatrics account for 30 patients with 1st diagnosis and 329 separations (.7%)**

1st diagnosis of cancer for residents from Casey LGA is clearly dominated by skin cancers (889). This is followed by Genitourinary (375), Haematology (264), Breast (256) Colorectal (199), Gynaecology (183), Upper GI (133) and lung (127).

Skin cancer data suggestive of predominately surgical management of skin cancer in the private sector and probably reflect dominant early stage disease not requiring chemotherapy as there are only 6 from 959 total separations for public patients and 4 from 896 separations from private patients receiving chemotherapy for skin cancer.

Chemotherapy accounts for 54% of total separations for cancer related services. If skin data is excluded, chemotherapy would account for 66% of total separations. The remaining separations include surgical, palliative and non-cytotoxic related infusions. Currently, the majority of public patients are receiving their cancer service at MMC Moorabbin, Dandenong and Clayton. Haematology accounts for 25% of total separations for all public cancer related separations. This is followed by colorectal and skin (18% each), breast (15%) and Upper GI, Lung and Genitourinary follow at 9%.

Currently private radiotherapy centres are providing 30% of radiotherapy services to patients from the Casey LGA. Of the remaining 70%, Peter Mac provides 79% of total public patients with radiotherapy at Moorabbin, Box Hill and East Melbourne. Peter Mac (Moorabbin) is the main provider for radiotherapy for patients from the Casey LGA (58%).

Haematology services Casey LGA 2009/10

Haematology oncology is the dominant separation (25%) within the Casey population in 2009/10 in the Public Hospital system. Overall, haematology accounts for 19% in 2009/10 which is a slight increase from 2007/08 and 2008/19 (18%). The administration of Cytotoxic drugs made up 60% of total separations for Haematology patients from Casey LGA 2009/10.

There are 4 hospitals providing the majority of cytotoxic services for Casey LGA patients as outlined below. The most common diagnosis, patient separations and the total number of cytotoxic separations are as follows in table 4.0.

Table 4.0 Haematology diagnosis and patient separations

Diagnosis	Public patient separations						
	Alfred	MMC moorabbin	MMC clayton	MMC Dandenong	Frankston	Austin	Peter Mac
Multiple myeloma	87	7	3	25	23		25
Acute promyelocytic leukaemia/AML	52						10
Acute Lymphoblastic Leukaemia		1	224	15			
Acute Leukaemia (unspecified)							
Non-Hodgkin Lymphoma	18	61	11	12	3	4	3
Hodgkin's Lymphoma	19	40	3				9
Chronic Lymphocytic Leukaemia		20					
Hairy cell leukaemia		10	1				
T-Cell/plasma cell Lymphoma		9	2		3		22
Waldenstrom macroglobulinaemia							6
Total	177	151	279	12	29	4	75

Additionally, there were 20 paediatric Acute Lymphoblastic Leukaemia chemotherapy separations at the Royal Children's Hospital and a total of 283 private patient separations for chemotherapy.

The 4 main hospitals to provide chemotherapy for Haematological malignancies are MMC Clayton and Moorabbin, Peter MacCallum and The Alfred Hospital. These hospitals currently provide 87% of total cytotoxic services required for Haematology patients from Casey LGA.

MMC (Dandenong) additionally provided 27 separations, Frankston Hospital 29, The Royal Children's 20.

Casey Hospital is currently not providing cytotoxic services, however 2009/10 data shows Casey hospital provided 93 separations for Haematological services. Most people came from Casey and Cardinia LGA's to receive this service. The main diagnosis was Myelodysplastic syndrome, Leukaemia (unspecified), AML and Non-Hodgkins Lymphoma. Without an audit of the patients histories, it is unknown what specific treatment was received for these diagnosis. However after conferring with Haematologists from Casey, the most likely treatment would be blood transfusions. It is likely that this patient population will come to Casey Hospital once Haematology- oncology services are introduced in the future.

Radiotherapy for Casey LGA

The majority of completed courses of Radiotherapy for Casey LGA is predominantly in public radiotherapy centers totally 424, however overall total including private patients is 614.

Paediatrics, Adolescence and Young Adults with cancer from Casey LGA 2009/10

Total Paediatric patients from Casey LGA 1st diagnosis (0-19):	28 public and 2 private
Total Paediatric separations from Casey LGA (0-19):	329
Total young adults from Casey LGA (20-29):	38 public and 13 private (ages above 26 not strictly AYA)
Total young adults separations from Casey LGA (20-29):	180

Table 5.0 outlines the specific tumour groups, the hospitals where treatment was received and the total number of separations in each age group.

Table 5.0 Paediatric, adolescence and young adults hospitals for tumour specific treatment

Tumour group	Hospital	0-9	10-19	20-29
Bone/soft tissue	Private		3	
	St Vincent's, MMC, Peter Mac, Casey (1 each)			5
Breast	Alfred			18
	Casey and MMC (Moorabbin)			3
	Private			7
CNS	RCH	23	1	
	MMC (Clayton 15) Dandenong and Casey (3)	10	5	4
Colorectal	MMC (Dandenong 6, Casey 2, Moorabbin 6)		1	13
	RCH		1	
	Frankston			15
	Private			6
Genitourinary	MMC (Clayton)	15		
	Private			9
Gynaecology	Single visits various hospitals. MMC (Moorabbin 12)			24
	Private			12
Haematology	MMC (Clayton)	141	64	3
	MMC (Dandenong)	1		1
	MMC (Moorabbin)		12	10
	MMC (Casey)	2		
	RCH	3	21	
	RMH		9	
	Alfred			14
	Peter Mac and Western Hospital – I each			2
	Private			1
Head and Neck	MMC (Moorabbin, Clayton)			2
	Peter Mac			9
Skin	The Alfred (1), MMC Dandenong(3) Private (2)			6
Thyroid/endocrine	MMC (Clayton) Dandenong (2)	9		3
	RCH	5		
	Warragul and Private 1 each			2
Upper GI	MMC (Clayton 2) Jessie mac (3)		2	3
	Austin		1	
	MMC (Casey, Dandenong, Clayton 1 each, Moorabbin 3)			6
	Peter Mac			2
Total Separations		209	120	180

Currently, Southern Health provides 261 separations for Casey paediatric patients aged 0-19. This represents 80% of total separations for this age group. In the 20-29 young adult age groups, southern health currently provides only 31% of total services or 40% if excluding private hospitals. Heamatology oncology dominates the age group of 0-19.

Cardinia LGA

Cardinia has a large rural population. 1/3 of the residents of Yarra Ranges, Mornington Peninsula and Hume live outside an 'urban' centre. The culturally and linguistically diverse and non-English speaking background communities are currently a very small population group.

Current Population: 79,203 (estimate for 2011) 14% of residents born overseas.

Projected Population: 118,041 by 2021

Age distribution: 29.8% of residents are < 18 (metro 23%).

Patient numbers with 1st diagnosis in vic hospitals with cancer from Cardinia LGA 2009/10: 858

Patient separations for cancer related treatment from Cardinia LGA 2009/10: 3,298

Patient separations for chemotherapy from Cardinia LGA 2009/10: 1,584

Completed courses of Radiotherapy from Cardinia LGA 2009/10: 153

Table 6.0, as with Casey, shows a higher proportion of patients being diagnosed with a cancer in private hospitals compared to public. But the trend reverses for total separations and chemotherapy separations.

Table 6.0 Cardinia LGA tumour streams, patient separations and patient 1st diagnosis

Tumour stream	Patient 1st diagnosis*		Patient Separations*		Chemotherapy Separations*	
	Public	Private	Public	Private	Public	Private
Bone & Soft Tissue	6	1	32	2	27	0
Breast	44	40	314	173	242	129
Central nervous system	8	1	15	1	6	0
Colorectal	33	34	288	250	208	188
Genitourinary	53	69	183	131	80	65
Gynaecology	27	8	79	12	35	1
Haematology	69	27	510	139	213	88
Head & Neck	6	0	25	0	13	0
Lung	36	16	194	124	100	99
Rare Cancers	1	3	2	21	0	17
Skin	86	238	138	370	5	0
Thyroid	5	2	4	2	3	0
Upper GI	32	13	202	37	63	2
TOTAL	406	452	1996	1302	995	589

*includes paediatrics

Public patients

Dominant tumour streams for 1st diagnosis for Cardinia LGA is skin (37%), Genitourinary (14%), Haematology (11%), breast (10%) and colorectal (8%).

Chemotherapy accounts for 50% of total separations for cancer related services. If skin data is excluded, chemotherapy would account for 53% of total separations. The remaining separations include surgical, palliative and non-cytotoxic related infusions.

Currently, the majority of public patients are receiving their cancer service at MMC Moorabbin. However a large percentage of haematology separations are from The Alfred. West Gippsland healthcare Group (Warragul), Peter MacCallum, Casey Hospital, Dandenong, Clayton and Maroondah and the Austin Hospitals are all in the top 3 of hospitals utilized for treatment in each tumour stream. Warragul hospital is treating a large amount of Haematology, breast, skin and colorectal patients and a smaller amount of Head and Neck and Lung patients.

Haematology accounts for 25.5% of total separations for all Cancer related separations. This is followed by breast (15%), and colorectal (14%). Upper GI, Lung, skin and Genitourinary follow at approximately 9% each.

Completed courses of Radiotherapy for patients from the Cardinia LGA are provided publicly for 75% of Cardinia population.

Greater Dandenong LGA

Bordering the western border of Casey LGA is Greater Dandenong. As identified in the Casey and Dandenong Service Plan 2011, the city of Greater Dandenong is an area of high disease burden; there are a large number of households with low income, a high level of residents born overseas and low English proficiency.

Current Population: 138,000 Over half -56% of population born overseas and 51% from nations where English is not the main spoken language (metro average is 24%)

Projected Population: 148,269

Age distribution: The ageing of people currently in their middle years will lead to a doubling of the number of older residents by 2030.

Patient numbers for 1st diagnosis with cancer from Dandenong LGA 2009/10:	1,507
Patient separations for cancer related treatment from Dandenong LGA 2009/10:	5,992
Patient separations for chemotherapy from Dandenong LGA 2009/10:	2,901

More patients from this LGA have their first diagnosis of cancer in public hospitals. This is also applicable to total separations and chemotherapy as well.

Table 7.0 Greater Dandenong LGA tumour streams, patient separations and patient 1st diagnosis

Tumour stream	Patient numbers*		Patient Separations*		Chemotherapy Separations*	
	Public	Private	Public	Private	Public	Private
Bone & Soft Tissue	6	4	32	4	18	0
Breast	88	50	539	228	421	173
Central nervous system	10	2	67	5	8	0
Colorectal	83	60	552	309	373	198
Genitourinary	135	109	391	305	156	129
Gynaecology	72	32	257	103	126	50
Haematology	139	36	904	231	453	136
Head & Neck	42	4	197	6	96	0
Lung	96	25	450	104	235	69
Rare Cancers	13	2	17	0	0	0
Skin	117	250	207	425	6	0
Thyroid	23	2	35	3	2	0
Upper GI	79	28	458	132	179	73
TOTAL	903	604	4106	1886	2073	828

1st diagnosis is Dandenong LGA is led by Skin (24%), Genitourinary (16%), Haematology (12%), Colorectal and Breast (9%)

Chemotherapy accounts for 50% of total separations for public patients receiving cancer related services or 53% excluding skin patients.

Currently the majority of public patients are receiving their cancer service at Monash Medical Centre (Moorabbin) for breast, colorectal, genitourinary, gynaecology, haematology, Lung and upper gastrointestinal. Dandenong campus is the 2nd biggest provider of services for Upper GI, breast and Colorectal and the main provider for skin.

Haematology accounts for 22% of total separations and the main hospitals are MMC (Clayton), The Alfred, Peter Mac and MMC (Dandenong). This followed by colorectal and breast at 13%, upper GI and Lung at 11%.

It remains unknown how many people from the Dandenong LGA will utilize cancer services at Casey Hospital. Currently, patients from Dandenong are however in the top 3 users of Casey Hospital.

Surrounding LGA's of Mornington Peninsular, Baw Baw, South Gippsland, Knox, Bass coast, Frankston and Yarra Ranges numbers are as below (DoH 2011)

Table 8.0 Surrounding LGA patient separations and patient 1st diagnosis

LGA	Patient numbers		Patient Separations		Chemotherapy Separations	
	Public	Private	Public	Private	Public	Private
Mornington Peninsula	1006	2257	4014	7061	1827	2587
Frankston	746	978	3148	3499	1425	1486
South Gippsland	449	117	1717	343	721	144
Bass Coast	547	229	1615	612	611	211
Baw Baw	460	177	2038	463	1008	170
Knox	820	1194	3642	3650	1899	1615
Yarra Ranges	976	979	4087	3250	2228	1471
TOTAL	5004	5931	20 2061	18 878	9719	7684

Mornington Peninsula patients

Bordering the Southern border of Casey LGA is Mornington Peninsula LGA. The majority of public patients with a 1st diagnosis of cancer are being seen at Frankston Hospital. There is double the amount of private patients from the Mornington Peninsula LGA with a 1st diagnosis of cancer. Patient separations including chemotherapy separations are also greater in the private hospital system.

The majority of public patients are being treated at Frankston Hospital for (breast, colorectal, upper GI, Haematology, lung, skin, Genitourinary) Rosebud (Breast, Haematology, colorectal), MMC – Moorabbin (gynaecology), Peter Mac (Haematology, skin), Alfred (Haematology, skin)

Frankston LGA patients

Bordering the Western border of Casey LGA is Frankston LGA. The majority of public patient separations for Frankston LGA patients are at Frankston Hospital. Frankston hospital separations account for approx 56% of patient separations and 56% of 1st diagnosis. The Alfred Hospital is the next largest service provider with 10% of separations and 1st diagnosis. There is an approximate even number of 1st diagnosis and separations in the private system in the Frankston LGA.

The majority of public patients are being treated at Frankston hospital for Breast, colorectal, Genitourinary, haematology, lung, skin and upper GI.

South Gippsland LGA patients

Bordering Southern Cardinia LGA is South Gippsland LGA. 8% of public patients with a 1st diagnosis of cancer are being treated at Latrobe Regional Hospital. 35% at Leongatha. However total separations at Latrobe Regional are 16% and 28% for Leongatha hospital. These separations are mainly for breast, colorectal, genitourinary, haematology, skin and upper GI.

Separations are recorded across many hospitals scattered across Gippsland and Melbourne with not one dominant hospital. However upon review of chemotherapy separations, 26% of separations occur at Leongatha Hospital, and 20% at Latrobe Memorial Hospital.

Baw Baw

Bordering the Eastern Cardinia LGA, is the LGA of Baw Baw

Majority of patients with a 1st diagnosis of cancer are being seen at West Gippsland Healthcare Group (Warragul) - 63%. Total separations include 54% at Warragul hospital. Latrobe regional are providing 12% of total separations.

The majority of separations are haematology (23%), colorectal (18%), breast (12%).

Knox

Bordering the northern LGA of Casey is Knox. Whilst it is not anticipated that a large amount of public patients will travel to Casey due to hospitals that are closer, certain parts of the Southern region of Knox are within close proximity.

The majority of public patients with a 1st diagnosis of cancer are at the Angliss, Box Hill and Maroondah Hospitals. Currently, Southern Health hospital (Dandenong, Clayton and Moorabbin) only has 11% of these patients. Separations at the Southern Health hospitals equates to 14% of total activity for Knox. The majority of these separations are for breast, colorectal and haematology. There is a larger amount of patients in the private system with a 1st diagnosis of cancer from the Knox LGA and total separations are approximately the same.

Overall the majority of separations are for haematology (22%), Breast (19%) and colorectal and lung (12%).

Bass coast

Bordering Southern Cardinia LGA is Bass coast LGA. Bass coast Regional Hospital provides the majority of 1st diagnosis of cancer service to this region. However, separations for cancers from the Bass coast LGA are highest at MMC – Moorabbin at 16%, Leongatha 14%, Bass coast regional hospital (11% excluding skin or 26% including skin) and Peter Mac 9%

Overall the majority of separations are for skin (28%), colorectal, haematology and Genitourinary (13%).

Yarra Ranges

Bordering the North Eastern LGA of Casey is the Yarra Ranges LGA. The majority of public patients with a 1st diagnosis of cancer are at Maroondah and Box Hill Hospitals. Maroondah hospital (31%), Box Hill Hospital (21%) and Yarra ranges health (18%) are providing the largest amount of separations for these patients. The largest amount of separations were for Haematology and Breast cancer (22%), colorectal (13%), skin (10%) Genitourinary and lung (8%).

Southern Health hospitals are currently providing minimal services.

Overall review of data

Skin cancer is the dominant tumour stream for all LGA's 1st diagnosis. Within the Casey, Cardinia and Dandenong LGA's , Genitourinary, Haematology, Breast, Colorectal, Upper GI and Lung are consistently the top diagnosis. Separations are dominated by Haematology, Colorectal, Breast, Upper GI, Lung and Skin. This data is consistent with that published by Cancer Victoria 2011 "Cancer in Victoria: Statistics and trends 2010".

Surgery at Casey Hospital

Currently Casey Hospital provides both adult and paediatric general surgery for primarily non-urgent cases.

5,802 surgical separations in total for 2008-2009 period:

- Colorectal
- ENT
- Head & Neck
- Non subspecialty
- Orthopaedics
- Plastics & Reconstructive
- Upper GI tract
- Urology
- Ophthamology
- Vascular

The 2011 Service Plan for Casey and Dandenong hospital suggests the following changes for surgical services:

- Introduction of urgent general surgery at Casey Hospital
- Introduction of Colorectal surgery (to be moved from Dandenong Hospital to Casey)
- Future head & neck surgery will be consolidated at MMC Moorabbin for in-hours electives and all other adult emergency and elective procedures undertaken and Dandenong and Casey Hospital
- Exploration of consolidating all Urology services at a single site ?which site
- Emergency and elective plastic and reconstructive surgery at Casey Hospital in the long term to meet the future demand in the outer south east catchment and surrounding regional areas such as Gippsland
- Orthopaedic surgery to be consolidated at Dandenong
- Continue the growth of breast surgery at Casey Hospital

Breast and Gynaecology

Breast surgery at southern health is currently provided at Moorabbin and Casey Hospitals. Plans to increase the throughput of patients is currently unknown. However with the introduction of supportive services including breast care nurses, radiotherapy and chemotherapy, Breast oncology surgery will be viable.

Gynaecology surgery at Southern health is provided across all Southern Health sites. Most procedures are undertaken at Moorabbin. Gynae-oncology services are proposed to be introduced to Casey Hospital upon the establishment of radiotherapy, chemotherapy and intensive care

services. Casey hospital has been experiencing a 17.8% growth in gynaecology separation from 2007 to 2010.

Head and Neck Oncology

Ear, Nose and Throat (ENT) surgery is a high volume growth specialty provided across Clayton, Moorabbin, Dandenong and Casey hospitals. The growth of ENT surgery for people residing in Cardinia and Casey has been rapid (10.7% per annum) as per the Southern Health ENT surgery separations data 2006 -2010. With the introduction of ICU there will be the opportunity to treat higher acuity patients at Casey Hospital. Currently the majority of all Head and Neck Oncology surgery is performed at Moorabbin Hospital. Highly complex cases that require the intervention of reconstructive plastic surgeons take place at Dandenong Hospital.

Urology surgery

The urology service at Southern Health is currently the largest in Victoria providing services across Clayton, Moorabbin, Dandenong and Casey Hospital but predominantly at Moorabbin and Casey with just over 2,800 separations annually per site. Approximately 2,500 patients are seen through the Outpatients clinical annually.

The service plan allows for the expansion of Urology service and as supportive services at Casey Hospital is introduced, the complexity and acuity of Urology surgery will increase.

Colorectal Surgery

Colorectal surgery will be introduced to Casey hospital with the introduction of an Intensive Care Unit. It is planned to relocate current services from Dandenong Hospital.

Consultation with Key stakeholders at Southern Health

Consultation with key stakeholders at Southern Health took place to ensure the services being planned are in line with departmental service plans.

Discussions with Colorectal and Urology Surgeons

Following discussions with the Heads of Department for Colorectal and Urology the main requirements for a successfully integration of current services at Casey Hospital are:

- Central departmental governance with site specific administration for each unit
- Adequate Outpatient access is critical
- Office space for Surgeons especially full time surgeons and administration staff
- Education, Training and Research adequately catered for
- Potential partnership with a private hospital on site at Casey hospital to attract and support surgeons
- Links with Gippsland population with consulting services to this region
- Acute General surgical unit required
- Infectious Disease, Cardiology and vascular services in place
- Higher acuity urology surgery also requires surgical cardiac services
- Acuity of Colorectal surgery will be dependent upon ICU support
- MDT meeting room need to be available
- Critical to the service is a good communication network including the improvement of the current IT infrastructure in the transfer of correspondence for both internal and external referrals, communication between medical staff in the hospital, radiation departments, pathology and radiology
- Robotic technology needs to be seriously considered for the operating rooms
- Important for specialist surgical services will be the appointment of a Professor/Director with a University and Research link. The Urology service at Southern Health will become the largest in Australia and must be world class
- Required is sub specialty expertise in Oncology Pathology and Oncology radiology

Consultation with Paediatric department and PICS

Supportive care for young adults as they transition from an adolescent to an adult is an area that Casey Hospital could facilitate with 'survivorship models of care' or "late effects clinic"

Inpatient Paediatric Oncology, Chemotherapy or Palliative care services are not planned for Paediatrics at Casey Hospital; however the care of young adults and adolescents (AYA) and the transition of the care of these patients from paediatric oncologists to adult oncologists could be facilitated through the guidance of paediatric protocols and a paediatric oncology Registered Nurse based at Casey Hospital.
The Paediatric Oncology team at Clayton and Paediatric Integrated Cancer Service (PICS) would like to see AYA protocols/pathways introduced to Casey.

Identified constraints for paediatric oncology services (across Southern Health)

- 47% of children require radiotherapy to treat their cancers. There appears to be access issues in the <18 years due to only one Paediatric Radiation Oncologist in Victoria. Other issues with radiation oncology include the need for General Anaesthesia for children requiring radiotherapy.
- Stem cell therapy not available at Clayton
- No PET MRI available at Southern Health
- Palliative care services in the home for children poorly incorporated into current services
- Model of Paediatric Oncology palliative care nurse supporting established community palliative care service considered most appropriate

Palliative care services

Effective palliative care is critical for all Oncology patients. Currently, Southern Health provides Palliative care services across Clayton, Moorabbin, Dandenong, Kingston hospitals that is centrally managed at Clayton and a standalone service is at Casey Hospital

Casey Hospital provides a small inpatient palliative care service with 5 beds specialising in end of life care, symptom control, and psychosocial support.

There is a planned introduction of 10 additional beds at Casey Hospital. Currently the service is at level 1 and will need to move up to a level 2 service and potentially a level 3 service in order to effectively manage complex oncology patients. Integration with the Oncology department at site level may be a possible solution for ongoing management of staff and patients. However, Palliative care services across the rest of Southern Health is managed at McCulloch house (Clayton) under the leadership of Dr. Kate Jackson and it would seem logical to have Casey hospital palliative care services also managed under Dr. Jackson or the Director of Palliative care. This would facilitate the effective management of patients across the entire network and provide career opportunities for rotation of staff across campuses to ensure experience is evenly distributed, leave is covered effectively and patient care remains at the highest standard.

Upon review of patient numbers that are referred to the Palliative Care service at Clayton, Dandenong Kingston and Moorabbin hospital that have come from the Casey LGA and close surrounding suburbs, there was a total of 518 for2011. Currently, that is approximately 1/3 of the total patients seen by this service. 119 were however from Dandenong and these patients may choose McCulloch house due to closer proximity to home. Demand for palliative care in Victoria is expected to grow by at least 4.6% each year.

For a Palliative care service to be effective, a partnership with community palliative care is imperative. This will have to include RDNS and South East Palliative Care and GP's. Potential for any of these groups to have an office or be based at Casey may be necessary to ensure a comprehensive service.

The inclusion of a Palliative care physician and or a Palliative Nurse consultant in tumour specific outpatient clinics would be beneficial to both patients and Oncologists. However outpatient palliative care again comes with the same funding issues that Oncology patients experience including access to allied health support. Allied health supportive is imperative for this population to ensure that they can be palliated at home with support in place.

The inclusion of a Palliative Care Physician at Multi disciplinary team meetings where review of people with complex symptoms and communication with patients GP's is imperative. Video conferencing with GP's will ensure that GP learning occurs and their role in patient's palliation becomes integral to the overall care of these patients.

Key to all of this is:

Integrated computer system across all sites to assist in patient management

Paediatric Palliative Care

Paediatric palliative care is currently provided by the Royal Children's Hospital as there is no funding at Southern Health. The on-call paediatric oncologist from RCH provides this service currently but how sustainable this will be in the future if on site consultation is required at Casey is unknown. There are no plans for Paediatric Palliative beds at Casey. If a child requires in patient palliation, they do need to travel to RCH or Clayton.

Day Chemotherapy feedback (Moorabbin)

Day chemotherapy requirements:

- Adequate space around treatment chairs
- Treatment chairs need to be able to go to a supine position
- Private education/review room
- Adequate toilets (at least 2) for patients
- Separated room to treat potential/known infectious patients
- Separate research area for research patients and staff
- Adjacent to Oncology ward to facilitate staff training and resources

- Provision of dedicated supportive care staff such as Dietician, social worker, occupational therapist
- CHARM system for ease of booking patients for appointments and prescribing chemotherapy
- Large open nurses station and reception area
- Waiting room
- Separate from outpatients clinic

Medical Oncologist group feedback

Lessons learnt from Moorabbin

- Equivalent Full Time (EFT's) Medical Oncologist at Moorabbin is currently not adequate. EFT for Casey Hospital needs to be carefully reviewed
- Radiotherapy: a service agreement between radiotherapy and Casey Hospital that there will be one common medical record. ? Should Southern Health develop its own radiotherapy service if we are providing 6 linacs across the network?
- Care coordinators need to be present in clinic - Moorabbin extremely under resourced with no support for Oncologists in clinic
- Outpatient clinics also need access to allied health – there has been a shift from inpatient to outpatient work as treatments become 'oral' based, however physical and psychosocial effects are still present in patients
- Need to look at improving efficiency in outpatients. Need IT solution for easy access to pathology results, radiotherapy, chemotherapy, radiology especially if provided by organisations external to southern Health
- Clinical Trials need to be an integral part of the work at Casey hospital

Feedback from a current Oncologist working at Dandenong Hospital

- Publicity/communication concerning the introduction of Oncology services at Dandenong Hospital was poorly communicated to both internal staff and medical staff. Patients were routinely transferred out from Dandenong to Moorabbin due to patients and medical staff not knowing a service existed
- Medical workforce was not adequately prepared. Advice is to expect the oncology unit to grow quickly and plan well ahead. On-site oncology presence is critical and Oncologists dedicated to the Casey site is essential

Radiotherapy

Achieving a world class radiotherapy service at Casey Hospital

Radiotherapy is a key aspect of cancer care. 52% of total patients diagnosed with cancer should receive radiotherapy during some stage of the cancer treatment. Each treatment of external radiotherapy is known as a 'fraction' – these are normally given for periods of consecutive days with rest days in between to recover. On average each patient receives approximately 20 fractions of radiotherapy.

The coordination of access to radiotherapy services across the Southern Health and South Gippsland region should be considered so that patients will have timely access.

Radiotherapy services are provided from a 3 linac/4 bunker facility at MMC Moorabbin by Peter MacCallum Cancer Centre (PMCC).

As per the Casey and Dandenong Hospital service plan 2011; the establishment of 3 linac/4 bunkers at Casey Hospital is required to support the southeast growth corridor. This will ensure patients can receive ongoing radiotherapy as close as possible to where they live.

Integral to Radiotherapy services as per the feedback from all departments is a common medical record. As per the feedback from all stakeholders, whichever Radiotherapy is chosen to provide this service a common medical record across the hospital and indeed the network will be mandatory.

?? Southern Health develops its own radiotherapy service.

The Alfred Hospital is within the SMICS hospitals catchment area and discussion with William Buckland Radiotherapy centre Director Jeremy Miller is as follows;

- Aria is the radiation information system used at William Buckland. Discussion regarding a shared medical record with Casey hospital is possible through a module -Information exchange management (IEM) system that can extract identified data such treatment plans from patients medical records and sent to southern Health electronic medical records via HL7 messaging. Aria is capable of auditing, identification of subsets of data and processing of information that can be important for research and data management
- Radiotherapy by William Buckland is provided for those > 16 years. Due to low numbers and specialty practice, paediatric radiotherapy is only available at one centre (Royal Children's Hospital)
- Average of radiotherapy received is approximately 20 fractions per patients
- Each Linac/year averages 420 courses of radiotherapy
- Links with Gippsland essential for a 'network service' for planning of treatments for patients who live in the Casey and Gippsland regions. Specialised radiotherapy such as Stereotactic and Brachy therapy should be kept to key sites due to the complex treatment and low numbers. Casey could become a key site and have its specialty over time

- An ambulatory service at Casey will provide Radiotherapy to high volume tumour streams. 52% of all cancer diagnosed should be treated at some stage over the disease period by radiotherapy
- Casey Hospital has the ability to be a world-class cancer centre that is a place of academic excellence. Key stakeholders have identified the importance of Oncology clinicians to steer the development and growth of Oncology services and not undertaken by executive in isolation of Oncology management. In order to attract Oncologist, Radiation Oncologists and Surgeons, a world-class oncology hospital with academic ties to Monash University and Academic Health Sciences Centre will be vital to the success of the service
- From the prospective of a new business, Radiation Oncology will need suitable space for 3 linacs/4 bunkers, office administration areas, research officers, planning rooms, offices for radiation oncologists, patient review rooms. All machines will have to be matched so patients can be moved between machines. Also will need a big car-park for patients
- A governance arrangement with Southern Health will be required. Ideally, the Governance structure will include an overall manager of Oncology services or even a 'network' manager who will manage cancer services across the SMICS region. This will facilitate better use of resources across the network
- The identification of the relationship between allied health and medical staff with a clear interface between onsite services

General Principles of the Model of Care for Casey Hospital

Following consultation with key stake holders from Southern Health including Department Heads from Medical and Surgical Oncology and Palliative care, requirements necessary for the successful establishment of Oncology services at Casey Hospital will require:

- A model which delivers best practice cancer care which optimizes the coordination of the patient pathway, experience and outcomes of care
- A service which is designed to place the patient at the centre of all activities to optimize access and minimize navigation challenges
- A model which delivers care in a clinically appropriate and cost effective manner
- A model that takes into account the care continuum for inpatient, day patients, outpatients that are flexible to rapid changes in oncology practice and links across the total patient pathway
- Central leadership and Governance for Haematology, Oncology and Palliative Care services required to ensure services are coordinated across Southern Health
- Multidisciplinary outpatient clinics – 'survivorship and wellness' models of care incorporating allied health team.
- Key Surgical and Oncology nurse care coordinators across low volume and complex tumour streams
- Adequate facilities for acute assessment and treatment (nursing, pharmacist, RMO and Registrar) of both day and outpatient patients.
- Common medical record with Radiotherapy service provider
- Establishment of a Adolescence and Young adults (AYA) service
- Surgical services continue to develop based on the availability of medical support in the hospital such as intensive care.
- Tier 1 and 2 cancer services to be provided by Casey Hospital growing to Tier 3 in future years
- Emphasis of role and links to primary and community health care
- Provision of level 1 and 2 Palliative care services initially and level 3 services in the future
- Planning for non-malignant illness and laboratory services integrated with cancer services clinical staff and facilities will be shared
- Educational and research links with Monash University, MCCC
- Clinical research fully integrated with patient care
- Integrated information technology platform
- Development of links with Gippsland for both surgical and medical services
- MDT establishment with SMICS
- Links with Private Practice Supportive and dedicated Diagnostic and Pathology services

Provision of patient information and support services through a dedicated centreWhat will be needed to provide integrated cancer services at Casey Hospital?

- Comprehensive ambulatory, day and inpatient services that integrate with the remainder of Southern Health
- Diagnostics – including dedicated oncology pathologists and radiologist and diagnostic pathways
- Referral pathways for GP's integrated into the electronic medical record
- Treatments to include
    1. Medical Oncology (inpatient, day patient & outpatient)
    2. Surgery
    3. Chemotherapy
    4. Medical Day Unit
    5. Radiation Therapy
    6. Haematology
    7. Palliative Care
    8. Rehabilitation and Wellness clinics
    9. Survivorship planning and support
    10. Multidisciplinary Outpatients
- Specialist Assessment at Multidisciplinary team meetings
- When patients' become unwell between appointments with specialists - dedicated ambulatory care team (nurse, RMO, pharmacist) for urgent review of patients via the emergency department or a medical day centre – adequate isolation facility required especially for haematology and neutropenic patients
- Outpatients needs to be multidisciplinary incorporating a survivorship model of care and full access to multidisciplinary staff
- Supportive and Palliative care
- Research fully integrated with clinical care to provide the highest quality cancer care possible (phase 1 -4 inclusive)
- Over –riding the service is the integration of information through an appropriate IT solution
- Education

Treatments

Medical Oncology in-patient service

Treatments with known potentially serious side effects.

Clinical trials

Care for frail patients who may not cope with chemotherapy on an outpatient basis

Telemedicine for treatments/advice/follow-ups in GRICS and rural regions

Surgery

All major tumour streams surgical services including supportive care such as breast care nurses, gynae, head and neck, urology and colorectal clinical nurse coordinators/consultants

Chemotherapy Day Unit

Day chemotherapy unit to service oncology/haematology patients 18 chairs in total

Providing chemotherapy, monoclonal antibodies, and ambulatory chemotherapy

Seamless referrals to multidisciplinary support, hospital in the home

Chemotherapy for the rarer and more aggressive cancers will be treated at the appropriate hospital within the SMICS network of hospitals. For example this may include bone marrow transplants at The Alfred, Paediatric chemotherapy at Clayton and the Royal Children's Hospital

Dual Modality treatments that require concurrent chemotherapy and radiation therapy ie head and neck

Medical Day Unit

Provision of non-cytotoxic and non malignant services such as blood transfusion, iron infusions, PICC line care, monoclonal antibody infusions, oral oncology drugs.

The medical day unit could also provide consulting room for assessment of unwell cancer patients who have come in for treatment or to outpatients or potentially infectious cancer patients who need to be isolated from patients receiving chemotherapy.

Radiation

World-class radiotherapy service

52% of cancers will require radiotherapy during the course of the disease

Clinical Trials/research

Provision of a common medical record

Haematology

Clinical trials/clinical research

Specialist services like BMT, stem cell support, and aphresis to be provided at Alfred Hospital – referral pathways need to be in place for a smooth process to occur. Potentially Casey Hospital could provide it's own specialized service in the future as services expand.

Nonmalignant haematology services also need to be catered for and integrated with Haematology Oncology services.

Palliative care

Current inpatient palliative care service to increase to 15 beds (from 5)

Outpatient clinics to assist patients and carers to manage advanced symptoms in the homes

Pain Clinics in a multidisciplinary setting

Supportive care for end of life issues

Seamless referrals to palliative care within hospitals and at home

Linking with community palliative care services

Services for rural patients

There are a range of conditions which can only be managed in tertiary centre's and this group of patients will have to travel to Casey Hospital for treatment. Ensuring timely and equitable access for rural patients should be considered a high priority in planning.

Rural Community Baw-Baw and South Gippsland

- Integration of a timely referral service from rural Victoria to Casey Hospital through centrally managed referral triage system. An integrated electronic record available to designated care providers across the spectrum of care.
- Telemedicine for treatments/advice/follow-ups in GRICS and rural regions

Electronic Patient record system

?solution. ?health smart

Strategies for improved communication at a professional level

?Web based treatment guidelines including diagnostic algorithms for common malignancies, prognostic information and guidelines for referral to support services

Integration with the Private Sector

Current information systems are a significant barrier to ready exchange of clinical and diagnostic information Consideration of relationship to co-located private hospital

Consideation of VMO appointments for oncologists/haematologists in local private practice

Teaching and Education

Ideally all staff should be able to move between different facilities within the Southern Health network to ensure adequate training. Appropriate ratios of senior to junior staff need to be implemented to ensure adequate supervision and training of junior staff and safe patient care.

Input from Southern Clinical School needed.

Multidisciplinary Services

Current Multidisciplinary services at Casey

- Physiotherapy
- Occupational Therapy
- Hand Therapy
- Speech Pathology
- Dietetics
- Social Work
- Interpreting services
- Podiatry

What else is needed for cancer services?

- Pastoral Care
- Counseling staff
- Infectious disease physician
- Vascular access device services
- Pain service
- Oncology Pharmacist
- Psychco-oncology support
- Considration of wellness modalities

Challenges for multidisciplinary services

- Increase in service demand
- Professional workforce education, training and development activities provision for onsite
- Community allied health service (HITH, Pall care, RDNS)
- Attracting skilled workforce

Diagnostic Imaging requirements

Dedicated research radiologist is paramount to ensure the success of clinical trials. Additionally, the following diagnostic equipment is essential:

- Ultrasound
- MRI
- CT
- General radiography
- PET CT, ?PET MRI
- Interventional radiologist

Pathology Requirements

pathology service with timely provision of results.

Key challenges for Casey

- Managing increase in work volumes
- Physical space
-
- Incorporating oncology expertise through intra-SH and external histopath review
- Incorporating molecular pathology

Workforce

Recruiting and maintaining skilled, dynamic personnel is likely to the greatest challenge for a Casey Cancer Centre. A culture that incorporates a flexible and more mobile workforce will be necessary to build a locally based, professional staff that is highly skilled and develops the appropriate degree of sub-specialisation.

- Allied health support (Dietician, Physiotherapy, Pharmacy, Counseling services) is critical to the delivery of multidisciplinary care and an appropriate model for service provision for services must be developed in the outpatient setting. Ongoing professional development may be facilitated by rotations through other SH sites and SMICS member hospitals.

- Nursing – Nursing staff play a central and increasingly diverse role in management of patients with Oncological, Haematological and Palliative needs in a variety of settings including inpatient, outpatient, day patient and home services. The emerging role of the Nurse Practitioner will become an increasing vital support role for Oncologists. Clinical care coordinators for specific tumour streams in outpatients and MDT's are also critical for the smooth transition of patients throughout Southern Health hospitals and other SMICS member hospitals if requiring particular specialized treatment

- Medical Staff – A range of consultant Oncology, Haematology and Palliative services will be required at Casey Hospital. The ability of the medical workforce to rotate to different Southern Health hospital sites and to Southern Gippsland is critical during the establishment of cancer services at Casey. As Casey hospital increases in size and acuity, the service capability will mature and the availability of skilled staff will improve. An additional cancer centre within SH provides an opportunity, through scale of service, to develop full-time positions to clinical academics in all disciplines. Consideration will also need to be given to developing on-site options for private practice consulting and operating to attract and maintain high caliber staff.

  Currently there is a mix of full time and part-time medical staff providing Oncological services at Southern Health. Surgical oncology department heads would prefer that more surgeons have full time roles rather than part time roles at Casey Hospital.

Special Needs

Apheresis

Currently there is no aphaeresis at Southern Health hospitals, the closest being The Alfred which is located in Prahran. Patients requiring apheresis will need to travel to Prahran for this service.

Allografting

Currently there is no allografting capability at Southern Health hospitals, the closest being The Alfred which is located in Prahran. Patients requiring allografting will need to travel to Prahran for this service.

Adolescents

There is a need for closer collaboration between adult and paediatric services to develop a model of care at Southern Health sites. Potentially this could be the establishment of an adolescent and young adult (AYA) service at Casey Hospital. Currently, this service is present at Peter MacCallum Hospital only. Collaboration between Casey Hospital and Paediatric services at Clayton and the Royal Children's Hospital should be formalized to ensure that adolescent and young adult services can be provided at Casey Hospital for those who live in and around the Casey LGA.

Integration with non-malignant services

Haematologist and Palliative care physicians' care for patients with non-malignant disease. This patient population requires the same clinical and laboratory services as those with a malignancy.

Uncommon cancers

Consolidation of treatment for uncommon malignancies (Tier 3) will be contained to limited sites in Melbourne. At this stage there are no plans to treat uncommon malignancies at Casey Hospital.

Clinical Trials

Casey Cancer Centre will be an important component of the MCCC and AHSC. Clinical trials are integral to standard of care clinical management of diseases with low cure rates. Add-on trials capacity to established clinical units is difficult because of space and logistic requirements. A new Cancer Centre development, incorporating capacity for clinical trials at the outset will more efficiently integrate trial activity. The Casey Cancer Centre will link to the Monash Health Translation Precinct and other SH sites and MCCC partners to potentially build a world class cancer research institute. This opportunity arises because of scale but requires central academic leadership and a comprehensively networked organisation across sites. As one of Victoria's largest cancer service providers, Southern Health has a responsibility to 'lead' in this area and will need to be resourced appropriately at Casey Hospital with both physical space and allocation of resources.

Patient information systems

Critical issues in delivering care across different sites is the development of an electronic record containing up to date clinical, diagnostic and treatment information. Given that cancer patient care is likely to be delivered across several sites and that clinical staff will be networked across SH, patient

information will need to accessible readily at any point of care. Additionally an electronic record that also is part of radiotherapy services is critical for ongoing patient management.

Teaching and Education

Teaching and education are essential functions for any clinical service and a specific model should be developed to address the needs across the Southern Health sites. Ideally staff should be able to move between the different hospital sites to ensure adequate training.

Transition

The introduction of a new health care service is a continuous process. This service should be phased in according to resource availability and further planning and development. Surgical and hematological services are already present at Casey Hospital, however these services will continue to expand and grow in capacity to support high acuity cases as support services and building infrastructure are developed. The introduction of Oncology and Hematology services will require substantial but staged workforce recruitment, education and training.

Phase 1

- Building development of Chemotherapy Day Unit (CDU), Medical Day Unit (MDU), and Outpatients.
- Building of inpatient ward
- Introduction of oncology pharmacy, expansion of diagnostic and pathology services.
- Radiotherapy services
- Expansion of Palliative care beds
- Establishment of multi-disciplinary teams in high volume cancers
- Establishment of supportive care services in ambulatory setting

Phase 2

- When ICU services are developed, higher acuity of oncology and hematology patients
- Establishment of multi-disciplinary teams in most tumour streams
- Establishment of integrated supportive care services across the care continuum
- Strongly networked component of AHSC

Phase 3

- Introduction of specialized Oncology/Hematology services for rare tumours
- Regional centre of excellence for particular tumour streams
- Clinical academic centre incorporating education, training and research

Haematology services

Following discussions with the Hematologists from Southern Health, below are their recommendations moving forward with Casey Hospital Haematology services:

Near Future (Starting 2012):

1. Increase ambulatory services:
    a. Initially for non-chemotherapy infusions via infusion centre (e.g. bisposhonates, Iron infusions, gamma globulin, transfusion of monoclonal antibodies
    b. Introduce “chemotherapy trained” nursing staff, to commence chemotherapy infusions.
2. Review role of current lymphoma/Myeloma coordinator to include coordination of treatment for patients across three campuses (Moorabbin, Casey and Dandenong).
3. Joint Gen Med/Haematology registrar to facilitate inpatient haematological consultations and covering infusion centre.
4. Outpatient clinic for general haematology at Casey.

2013 - 2016.

1. Radiation-oncology service at Casey.
2. Formal chemotherapy infusion centre (CDU) for outpatients’ chemotherapy treatment.
3. Provided there is ICU support at Casey, consideration is to be given for establishment of an inpatient haematology bed card for treatment of acute haematological conditions (malignant and non-malignant).
4. Treatment/procedure room or Medical Day unit for bone marrow biopsies/ blood transfusion, Iron infusions, lumbar punctures etc – These biopsies will still be reported at Dandenong or Clayton if there is not yet to be a Haematology Pathologist/registrar based at Casey.

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