



Health
Sydney
Local Health District



**Chris O'Brien
Lifehouse**

**The Royal Prince Alfred Hospital and
Chris O'Brien Lifehouse
Model of Care Overview
August 2012**

Contents

INTRODUCTION	4
BACKGROUND	6
THE CONSULTATION AND PLANNING PROCESS	7
THE SYDNEY LOCAL HEALTH DISTRICT	10
CANCER INCIDENCE IN SLHD	11
SLHD CANCER SERVICES	14
THE ROYAL PRINCE ALFRED HOSPITAL	15
INTRODUCTION	15
RPA ROLE DELINEATION	16
RPA BED AND SERVICE PROVISION.....	18
RPA ACTIVITY	21
RPA PROJECTED ACUTE BED NEED	22
RPA CURRENT MODEL OF CARE	23
THE CANCER CARE PATHWAY	26
THE CHRIS O'BRIEN LIFEHOUSE: PLANNED MODEL OF CARE	27
RPA CANCER-RELATED SERVICES	29
THE RPA EMERGENCY DEPARTMENT	29
RPA INTENSIVE CARE DEPARTMENT.....	32
RPA CANCER-RELATED MEDICAL SERVICES	34
<i>Medical Oncology</i>	34
<i>Radiation Oncology</i>	36
<i>Palliative Care</i>	37
<i>Interrelationships with Other Medical Specialties</i>	38
<i>Projections for Future Medical Beds</i>	39
RPA CANCER-RELATED SURGICAL SERVICES	40
<i>Surgical Services Transitioning to Lifehouse</i>	40
<i>Surgical Services To Be Reviewed in December 2014</i>	41
<i>Surgical Services Remaining with RPA</i>	41
<i>Projected Surgical Activity</i>	42
<i>RPA Operating Theatres</i>	43
<i>RPA Anaesthetics</i>	44
RPA CANCER-RELATED OUTPATIENT SERVICES	46
CONCORD HOSPITAL CANCER SERVICES AND LIFEHOUSE	48
INTRODUCTION	48
CONCORD CANCER-RELATED MEDICAL SUBSPECIALTIES.....	48
<i>Medical Oncology</i>	48
<i>Radiation Oncology</i>	49
<i>Palliative Care</i>	49
<i>Haematology</i>	50
<i>Dermatology</i>	50

CONCORD CANCER-RELATED SURGICAL SUBSPECIALTIES.....	50
Head and Neck Surgery	50
Urology.....	50
Breast Surgery.....	50
Colorectal Surgery	50
Upper GI.....	51
Respiratory/Cardiothoracic.....	51
Neurosurgery	51
ROYAL PRINCE ALFRED CANCER SERVICES AND LIFEHOUSE.....	52
A TYPOLOGY OF SERVICE RELATIONSHIPS.....	52
Table 19: Service Relationships - Ambulatory and Outpatient Services.....	54
Table 20: Service Relationships - Inpatient Services	55
Table 21: Service Relationships - Support Services	56
GENERIC MODEL OF CARE ISSUES.....	58
OVERVIEW	58
Ambulatory / Outpatient Care.....	58
Admitted Patient Care	58
Consultation Across the Two Hospitals.....	59
Procedural Work.....	59
Diagnostic Services	59
On-Call Services	60
Financial Arrangements.....	60
Clinical Information	61
ALLIED HEALTH MODELS OF CARE	61
SENIOR NURSING MODEL OF CARE.....	63
MODEL FOR THE PROVISION OF RPA CANCER SERVICES AT LIFEHOUSE.....	64
SERVICES THAT WILL TRANSITION TO LIFEHOUSE IN 2013.....	64
SERVICES THAT WILL TRANSITION TO LIFEHOUSE IN 2015.....	64
SERVICES THAT WILL BE THE SUBJECT OF A COMPREHENSIVE REVIEW (DECEMBER 2014)	64
Appendix 1: RPA/IRO Cancer-Related Activity - Selected SRGs	66
Appendix 2: RPA/IRO Projected Surgical Activity for Selected 2009-2022.....	72
Appendix 2: Projected Medical Activity 2009-2022	73
Appendix 3: Data and Cancer Flag Issues.....	76

Introduction

The *Chris O'Brien Lifehouse* (Lifehouse) aims to provide integrated, comprehensive cancer care in a purpose-built facility in collaboration with the Sydney Local Health District's (SLHD) *Royal Prince Alfred Hospital* (RPA). The Project is an innovative private-public partnership for the provision of cancer and support services. The central proposal is that a component of the private not-for-profit service will be funded through entering into a purchaser-provider arrangement with SLHD for the provision of comprehensive cancer services to public patients. The nine storey Lifehouse building, co-located with RPA on the site of the former RPA Page Chest Pavilion, is due for completion in June 2013. The capital funds for the Lifehouse project have been provided by a mix of Commonwealth and State government grants and private philanthropy.

This document provides an overview of relevant planning data, issues and information. It should be read in conjunction with three other sets of documents which have informed the planning process. The first is titled *Summary of Outcomes from Consultations with RPA Clinical Departments in Respect of the Development of the Chris O'Brien Lifehouse* (Lifehouse). This document outlines the agreements for each service reached between the SLHD and Lifehouse. The agreements were based upon a wide-ranging consultation held with all clinical departments of the Royal Prince Alfred Hospital. The second document *Medical, Nursing and Allied Health Models of Care for RPA and Lifehouse* was developed in consultation with relevant senior staff. The third set of documents, the functional briefs represent the outcomes of consultations with Departments across RPA. These consultations were held to establish cancer-related services, cancer-related activity, current and expected interrelationships with cancer services, issues and their preferred models of care in respect of the Lifehouse development.

Building from the agreements between the two organizations and based on service planning data and information, this overview paper outlines the preferred option for the collaborative establishment of the integrated cancer care centre, the *Chris O'Brien Lifehouse*.

Key principles that have been agreed to guide the development of the transition of cancer services from RPA to Lifehouse are as follows:

1. Public patients should not be disadvantaged. They should receive the same access to and level of care that they would have received if the services were being delivered by RPA. In particular, waiting times for procedures/surgery will be identical for public and private patients
2. Lifehouse will need to meet the activity targets set for RPA for those cancers that Lifehouse is treating

3. The service model changes required as a result of the transition of inpatient services to Lifehouse should not cause a significant disruption to the current models of care at RPA
4. Lifehouse will not have the capacity to provide for all patients with cancer and thus not all cancer types or beds will be transferred: some will continue to be managed in RPA. This is also required for quality reasons, to retain expertise within RPA and to maintain integrated models of care in both cancer and non-cancer treatment provision

Key planning questions which this document seeks to address are:

- What public and private patients should/can be treated in Lifehouse
- What public and private patients should/can be treated in RPA
- What is the best mix, role, service level, volume and set of service relationships to ensure safe and high quality care at each hospital
- What are the major implications for the providers and staff
- What are the key implications for RPA and for the Chris O'Brien Lifehouse

The clinical services planning in this project has particular complexity because of the different approach to planning undertaken for state-run and managed healthcare services (i.e. public hospitals) versus the planning requirements and rules governing private hospitals. Health planning in the public sector is determined and moderated by the District and the Ministry of Health and occurs within a capped financial environment. In contrast, private hospital planning is undertaken by the private hospital itself: choosing to develop clinical services in response to perceived market and consumer demand and in close consultation with medical providers and health insurers in an uncapped financial environment. Where referral in the public system is to a service, referral in the private sector is to a doctor. Private hospitals are regulated by the Commonwealth, while public hospitals are managed by the State.

Thus, within the one organization, Lifehouse, a purchased range of public services and a market-driven set of private services will be provided.

These diverse planning parameters pose some significant challenges to ensuring service viability as well as compliance with the core principles of equity, accountability, service and facility coherence, collaborative service development and clear role delineation.

However, it is clear that for Lifehouse to be successful there needs to be a vigilant commitment to RPA retaining its pre-eminent role as a leading tertiary and quaternary hospital. A further imperative is that a strong, productive and open relationship is sustained between Lifehouse and RPA so that the experience of patients with cancer remains seamless and of the highest quality. The re-organisation of cancer services must add significant value to the provision of cancer care.

Background

In the late 90's inspired by world best practice there was a commitment by the *Sydney Cancer Centre* medical professionals to establish a comprehensive cancer facility at RPA. In 2002, Hon. Frank Sartor, Lord Mayor of Sydney established the *Sydney Cancer Centre Foundation* to undertake fundraising to enhance cancer care. Sydney City Council provided funding for the recruitment of the Executive Director. During 2005 a feasibility study was commissioned to research and report on global integrated cancer centres and world best practice. Professors O'Brien and Boyer presented the report findings to NSW Health to gain their support to build a new Integrated Cancer Centre at RPA. \$10M was initially secured from the Federal Government in May 2007, for a Translational Cancer Research project in partnership with the *Centenary Institute of Cancer Medicine and Cell Biology* (Centenary Institute) a major medical research institute located in the grounds of RPA.

In 2007, the NSW Government provided \$1m for a Business Case to be prepared for the Integrated Cancer Centre at RPA. This was prepared by the firm, *Capital Insight*, and completed in 2008.

The project is a private-public partnership for the provision of cancer and support services. Revenue and profit from the operations of Lifehouse are required to be retained for the benefit of cancer treatment, research, education, training and complementary activities i.e. not-for-profit. The Business Case proposed that the project would "unlock" private patient fees currently not collected at RPA, thereby generating a surplus adequate for reinvestment in cancer care. The other components of the funding were proposed through the relocation of services currently provided at the public RPA hospital, through more efficient service provision and through philanthropic gifts to the project. The public funding will be provided in accordance with activity based funding levels.

As is well known public hospitals are funded by the state government with a significant contribution from the Commonwealth. In agreement with the Commonwealth, all public hospitals are required to provide access to all eligible persons on the basis of clinical need. Patients are also guaranteed the right to choose their public or private status, and private patients are then allowed choice of doctor. The bed day rate of return to the public hospital from private patient billing is less than that which a private hospital would receive.

The proposal includes an agreement that cancer research would be undertaken in partnership with the Centenary Institute and the University of Sydney and that education would be delivered in conjunction with the University of Sydney.

To date the Federal Government has provided \$160M in funding, along with the support and provision of leasehold over the Page Chest Pavilion site on Missenden Road provided by the NSW State Government. The NSW government has also agreed to transfer equipment and assets valued at \$17.8m to the

Lifehouse project. Private philanthropy has contributed a further \$60m to the project.

Building works have commenced, with Lifehouse expected to treat ambulatory and outpatient patients from June 2013 and inpatients from mid 2015.

Lifehouse will have a leadership role in cancer care as one of two nationally funded integrated cancer centres as well as providing improved cancer services to SLHD through a service delivery agreement. The model provides for the provision of care to public patients. However, not all cancer services will transfer to Lifehouse. Importantly, RPA will retain selected cancer services. Concord and Canterbury will also retain their cancer services, with demand for Lifehouse being based on a mix of RPA-generated demand and increasing demand from the marketplace. It is generally expected that Lifehouse will increase the already significant inflows for cancer-related services.

It is understood that Lifehouse will accommodate

- 96 inpatient beds
- 18 Intensive Care Unit (ICU) beds
- 10 operating theatres

Stage 1 of the capital development of Lifehouse is due for completion in early 2013. The facility will include ambulatory care clinics, (including medical and radiation oncology), day surgery, facilities for imaging, wellness and support services and capacity for research. It is anticipated that ambulatory services will commence in Lifehouse in June 2013.

Stage 2 of the project will include the fit out of the inpatient floors and the opening of inpatient beds, intensive care services and 7 additional operating theatres. Inpatient services are expected to open in July 2015.

The sharing of clinical information between RPA and Lifehouse will be enabled through compatible information technology (IT) services facilitated by the collaborative work of IT staff from SLHD and *Lifehouse*.

The Consultation and Planning Process

Ongoing meetings have been held between the District Health Service and its predecessors to articulate the arrangements related to the development of the Lifehouse towards the development of a Service Delivery Agreement.

Over the past several months, the Sydney Local Health District (SLHD) Clinical Directors have been meeting with the SLHD Chief Executive to discuss options for the models of care for the provision of ambulatory and inpatient cancer services at *Lifehouse*. It has been expected that there will be a staged approach to the transition of selected cancer services from RPA to Lifehouse which will mirror the capital works program. The aim of the meetings has thus been to promote

discussion about the models of care for the transition of ambulatory and inpatient cancer services to Lifehouse.

A draft options paper was developed and issued to all Heads of Department at RPA at the end of 2011, containing two options for the transfer of inpatient services from RPA to Lifehouse. This paper did not reflect the views of the SLHD; however, it was issued to provide a starting point from which to devise appropriate models of care.

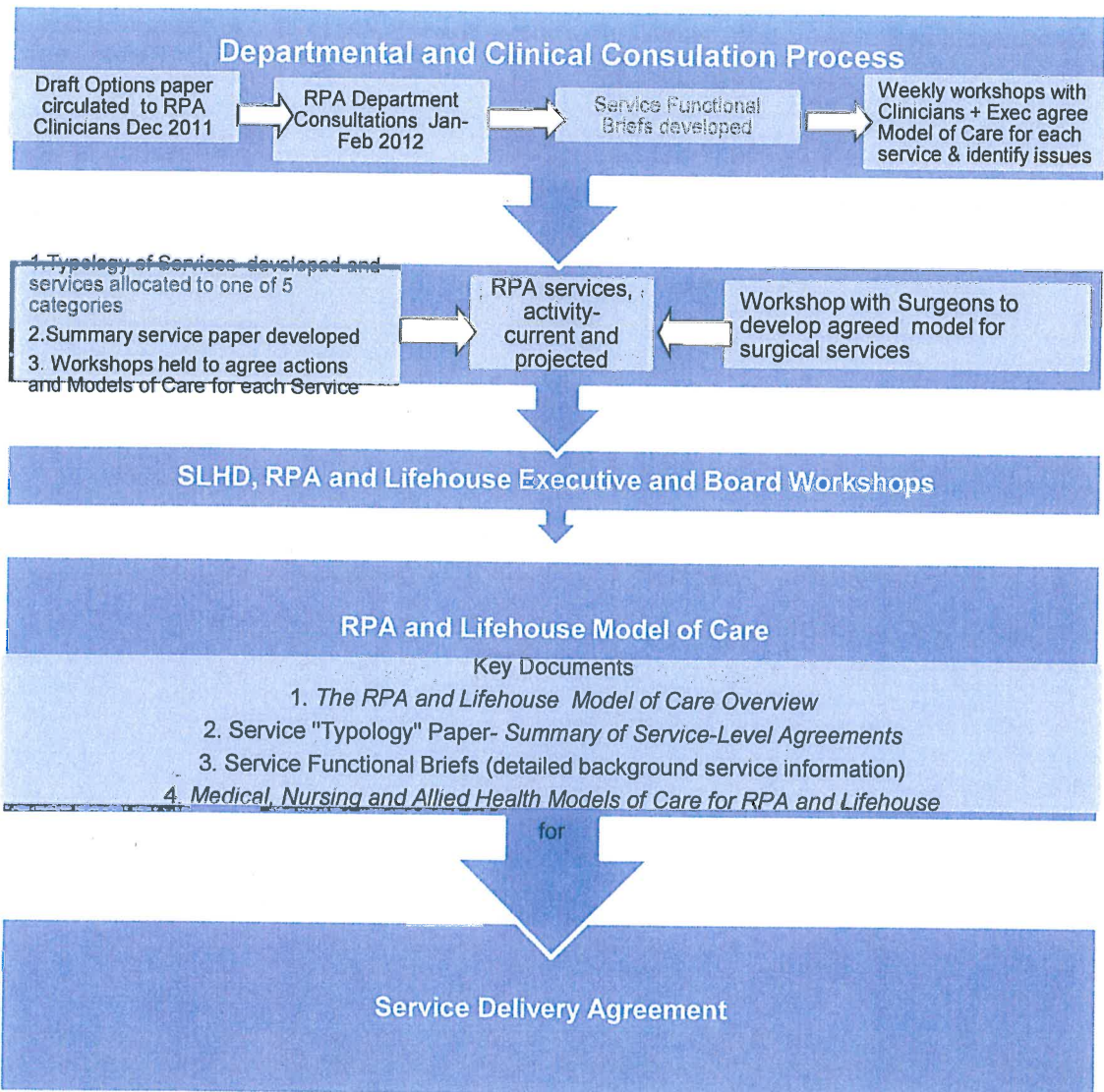
A communications plan has been developed to ensure that staff stay informed about developments. Human Resource issues are clearly integral to the project as staff positions transferring to Lifehouse will be managed by an entirely different entity.

A process of consultation with all departments and services across RPA was established in January, with completion at the end of February. The purpose was to work with each department to look at their current model of service delivery, assess their current cancer load and cancer-related activities and to propose a model of care related to the establishment of Lifehouse. This process was designed to inform both ambulatory and inpatient care developments. Each of these departments proposed their model of care within a functional brief.

The proposals from these departments were then considered by the Joint SLHD and Lifehouse Project Steering Committee, established by the SLHD Chief Executive. The discussions and issues raised by the Project Steering Committee were, in turn considered by the joint Boards of SLHD and Lifehouse in a series of day-long workshops hosted by the SLHD during March, 2012.

Arising from these workshops, a collaborative model of care for Lifehouse has been developed. This document forms one of four sets of documents which will inform the final Service Delivery Agreement (SDA). This process is illustrated in the chart below (Chart 1).

Chart 1: The Process of Developing the Models of Care Documentation to Inform the Service Delivery Agreement

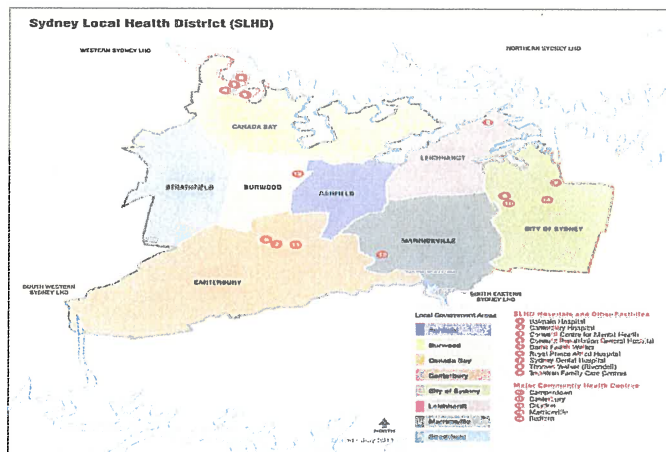


The Sydney Local Health District

The Sydney Local Health District comprises the Local Government Areas (LGAs) of City of Sydney (part), Leichhardt, Marrickville, Canterbury, Canada Bay, Ashfield, Burwood and Strathfield. It covers 126 square kilometres and has a population density of 4,210 residents per square kilometre (ABS 2006). The boundaries are indicated in Map 1.

The District includes principal teaching hospitals at Royal Prince Alfred (RPA) and Concord (RGH Concord), district hospitals at Balmain and Canterbury and the Sydney Dental Hospital in the CBD of Sydney. The Area has a comprehensive range of community-based health services. Services are linked with primary care providers, including Divisions of General Practice and Medicare Locals.

Map 1: Sydney LHD



The population of Sydney LHD is projected to grow to 612,914 by 2016 and to over 650,000 in the next twenty years, with all LGAs expected to experience population increases (see Figure 1 and Figure 2).

Figure 1 Sydney LHD Population Projections 2006-2026

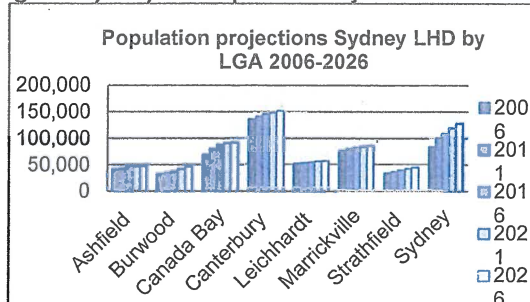
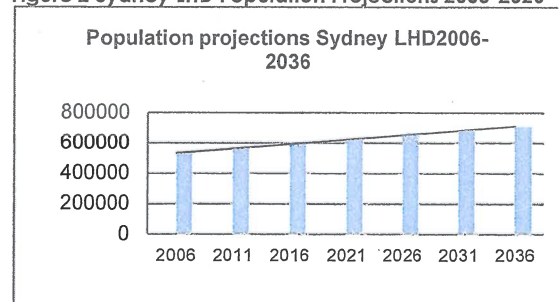


Figure 2 Sydney LHD Population Projections 2006-2026



The District is socio-economically and culturally diverse. Its population is ageing, with the number of residents aged over 70 projected to increase by 29% over the

next decade. Each year, approximately 8,500 babies are born to mothers residing in SLHD. The area is home to very significant populations of Aboriginal people and to people who speak a language other than English at Home (LOTE).

Cancer Incidence in SLHD

Cancer incidence is the most important parameter for estimating cancer related hospital activity. Application of incidence rates to projected populations enables future new cases of cancer to be estimated. Recent projections from the Cancer Institute examines the most common cancers by clinical grouping and major cancer site in NSW and extrapolates trends by age group to project the number new cancers and cancer deaths in 2011, 2016 and 2021. The method uses a linear regression applied to annual age specific cancer rates by five year aged groups from 1993-2007. These rates can then be applied to 2009 population projections. The Cancer Institute expect 5,000 new cases of cancer to be diagnosed in NSW every five years. As is well known, the best predictors of incidence are population increases and ageing, thus the Local Health Districts with the greatest expected increase in cancer incidences are those that are growing and ageing.

Based on this approach, in 2011, SLHD population accounted for 6% of the state's cancer cases, with 2,351 cases of cancer diagnosed in 2011 and 2,912 and 3,244 cases projected for 2016 and 2021 respectively- an expected increase of between 2-3 % per year. It is important to understand that these cases reflect the local population need, not the expected service demand in the local district, nor the demand for Lifehouse. This increase is illustrated in Figures 1-3.

For example, in 2009-10 there were a total of 7,362 patients of Royal Prince Alfred (RPA) and the Institute of Rheumatology and Orthopaedics (IRO) (overnight and same day) with a cancer-related separation. These patients used some 49,297 bed days. Of these 5,509 were overnight separations. It should be noted that the RPA currently experiences significant inflows for cancer-related care. If, for example, qualified babies, unqualified babies, perinatology, definitive paediatric medicine, burns and renal dialysis are excluded, then only 44.7% of the cancer-related separations and 43.7% of the bed days at RPA/IRO are provided for residents of the SLHD. Major districts contributing to inflows include South Eastern Sydney and Illawarra, South Western Sydney, Western NSW, Western Sydney and states and territories outside of NSW. While it could be expected that the development of more local medical oncology and radiotherapy services may result over time in some reduction in RPA cancer activity, this would need to be accompanied by the development of level 6 cancer-related surgical and related medical services to make a significant impact on the inflows.

At RPA, over the past 3 years, between 29-32 % of cancer patients elected to use their private health status (including DVA patients) (see Appendix 1). Of those

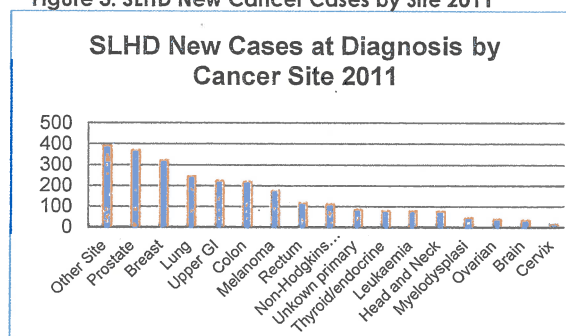
who had a planned admission there was a slightly higher rate of usage of private health insurance status. Across NSW, it is known that the average rate of private health usage is 46.3%. It is assumed that Lifehouse will encourage a higher proportion of patients to utilize their private health insurance status.

The requirements for cancer care are driven by the anticipated increase in cancer incidence, coupled with an increase in cancer survival. More assertive approaches to screening and monitoring in the community is expected to be accompanied by increasing treatments, follow-ups and increased monitoring for relapse. Chemotherapy treatment regimes, for example, are becoming more complex, with multiple drugs being administered and more aggressive therapies being trialed. In concert with developments in nuclear medicine such as PET-CT allowing for organ-specific imaging, there can be expected to be increases in throughput in cancer services and changing approaches to patient management- for example from surgical to radiotherapy/chemotherapy or palliation.

Cancer care is increasingly being provided on a non-inpatient basis. Thus, those who are admitted to a hospital bed tend to be very ill, with multiple co-morbidities, and long lengths of stay.

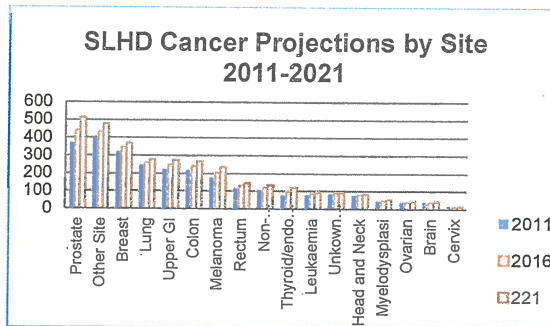
The proportion of cancers recruited to treatment, changing modes of practice and durations of treatment also impact on the hospital requirements. Technological advances are expected to proliferate over the next few decades, particularly shifting towards more "personalized" care, which involves greater use of personal risk profiles using clinical genomics and treatment based on individuals 'genetic make-up. Robotic systems are also expected to become more common place. However, although these advances can have significant impacts, the cost of such technologies has often been prohibitive within the public sector.

Figure 3: SLHD New Cancer Cases by Site 2011



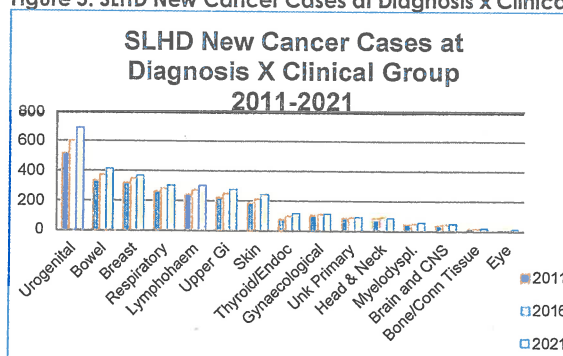
Source; NSW Cancer Institute 2011

Figure 4: SLHD Cancer Projections by Site 2011-21



Source; NSW Cancer Institute 2011

Figure 5: SLHD New Cancer Cases at Diagnosis x Clinical Group



Source; NSW Cancer Institute 2011

SLHD Cancer Services

The SLHD currently provides cancer-related care through an integrated network of Cancer Centers. The Cancer Clinical Stream is under the direction of the Clinical Director, an Operations Manager and a Clinical Manager. The Stream also employs a Cancer Information Program Manager and administration staff. The service works directly with the SLHD Executive and Facility General Managers ensuring the provision of the highest quality cancer care within cancer services and within cancer-related departments.

SLHD Cancer Services include the Sydney Cancer Centre (SCC) at the Royal Prince Alfred Hospital and Concord Repatriation General Hospital. Palliative care services are provided at Canterbury and within community health. Outreach cancer services are provided by Sydney Cancer Centre clinicians at Dubbo.

The following diagram provides an overview of the cancer services by location in SLHD. The services at Dubbo are provided in a networked arrangement with the Sydney Cancer Centre.

Diagram 1: Cancer Services across SLHD

	Medical Oncology		Radiation Oncology		Palliative Care		Haematol.		Gynae Oncology		Head + Neck		Breast Surgery		Urology		Dermatol.		
	Con	Rx	Con	Rx	Con	Bed	Con	Rx	Con	Rx	Con	Rx	Con	Rx	Con	Rx	Con	Rx	
RPA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Canter.	0	0	0	0	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0
Concord	X	X	X	0	X	X	X	X	0	0	0	0	X	X	X	X	X	X	X
Dubbo	X	X	X	0	X	0	X	X	0	0	0	0	X	X	0	0	0	0	0

Con= Consultation Rx = Treatment

Cancer services are provided in a multidisciplinary framework with tumour-specific programs, each with a Tumour Program Leader. The multidisciplinary teams comprise a number of highly skilled participants. These include medical, nursing, data managers and allied health professionals. Tumour groups provided at both RPA and Concord include Breast, Colorectal, Gynaecology, Haematology, Lung, Upper Gastro-Intestinal and Urological. In addition, Bone and Soft Tissue Sarcoma, Head and Neck, Melanoma and Neurological programs are provided at RPA.

The Canterbury Hospital 20 bed inpatient palliative care ward is staffed by medical consultants from both RPA and Concord. On site, the staffing includes a registrar, a CNC and the ward nurses.

The community palliative care team is managed by community nursing. There are 5.9 FTE senior nurses and 3 CNCs. Palliative care services provide consultation

services across all facilities including community, community health and residential aged care facilities.

Major developments in the district providing enhanced cancer care include the radiosurgery unit within Radiation Oncology at RPA, refurbishment of the palliative care unit at Canterbury, the development of a new inpatient palliative ward at Concord, and the development of The Concord Cancer Centre.

The Royal Prince Alfred Hospital

Introduction

The Royal Prince Alfred Hospital is a principle referral group A1 hospital with strong affiliations to the University of Sydney, providing tertiary and quaternary referral and district acute services at mainly role delineation level 6, to the Sydney Local Health District and its local Inner West catchment, rural and other metropolitan residents, interstate and overseas patients.

The Royal Prince Alfred Hospital has a pre-eminent position in the NSW and Australian health systems resulting from its tradition, since 1882, of providing high quality, integrated clinical services, teaching and research. Its location in the centre of Sydney, its proximity to the University of Sydney, its status as a provider of the broadest range of clinical services on one site in NSW and its ability to deliver high volume district and tertiary services in a cost effective way are also defining attributes. A key to its high quality clinical care is the translation of its research directly into positive patient care outcomes.

RPA has a substantial and widely recognized teaching and research role with world leading and world class research groups in biomedical research, substantial strengths in clinical research, public and population health research and health services research. In close proximity to RPA there are a number of internationally renowned medical/health research centres which are strongly interrelated with RPA and at which many of RPA's senior researchers conduct their laboratory work, or more intensive research. Major research centres include:

- Baird Institute
- Centenary Institute of Cancer Medicine and Cell Biology
- Brain and Mind Research Institute
- George Institute for Global Health
- Heart Research Institute
- Woolcock Institute of Medical Research

The hospital currently has between 920 and 1013 beds opened, with extra capacity being opened in the winter months (see tables 1-5). Additional mental health beds will soon be opened in the northern end of RPA, termed the North West Precinct.

Aside from the services of IRO and Mental Health, the redevelopment of the RPA campus, termed the Resource Transition Program (1996-2006), has led to the consolidation of inpatient services in the main building in levels 4 (critical care, neonatal care and delivery), level 5 (maternity), level 6 (cardiology, renal, MAU, cardiothoracic, vascular, paediatrics, cardiac catheterisation), level 7 (medical oncology, head and neck, gynaecology, urology, radiation oncology, melanoma, dermatology, orthopaedics, rheumatology, drug health, haematology and ambulatory care), level 8 (geriatrics, neurology, neurosurgery, ENT, ophthalmology, maternity and ambulatory care) level 9 (colorectal, upper GI, gastroenterology, transplant services and ambulatory care), level 10 (plastics, breast surgery, immunology, orthopaedics) and level 11 (respiratory and ambulatory care, sleep services). This consolidation of services was undertaken to achieve efficiencies in rosters and to ensure ease of consultation between services: to better integrate the service model. Services are strongly interrelated, with some specialties shared across services. (See Appendix 3 for a visual representation of the ward arrangement and bed numbers).

Some of the tertiary and quaternary services located at RPA include, for example, liver and kidney transplantation, open heart surgery, the National Medical Cyclotron, neo-natal intensive care, mothers and babies and regional trauma services. There are a great many other tertiary and quaternary services, as almost all services are delineated at Level 6. Table 1 shows the role delineation levels across all services at RPA.

RPA Role Delineation

Role delineation is the process for determining the support services, staffing profile, minimal safety standards and other requirements to ensure that clinical services are provided safely and are appropriately supported. The role of a service describes the complexity of the clinical activity and is determined by the presence of relevantly qualified medical, nursing and other personnel. Adequate formal appointment and credentialing processes are therefore mandatory for all facilities. These staff in turn need to be supported by related support services.

Role delineation is a state health tool and does not apply to private facilities, although the principles can be applied to services which are being purchased by the public authority from the private provider. It is envisaged however, that Lifehouse services will be provided at equivalent to tertiary referral levels.

Delineated role levels are sensitive to changes in service interrelationships, volume of services, staffing mix and equipment. Great care needs to be taken when relocating, for example, surgical work from RPA to Lifehouse, that sufficient volume and mix of service is retained at RPA (e.g. in Colorectal Surgery, Upper GI Surgery, Urology) to ensure the retention of skills and specialist staffing required to be recognized and to perform safely as a level 6 tertiary service. Further, should

the predicted volumes of public patients outpace the volumes purchased from Lifehouse, then RPA needs to ensure that it retains the skills and competencies to provide these overflow services at RPA (either as an emergency or an elective case) or that the District has an alternative strategy to referring such patients outside of RPA and the District for treatment.

Further, the quality of care for complex referral patients is assured through consultations from the full range of medical and surgical specialties. Any reduction of these services on site could potentially compromise care.

Royal Prince Alfred Hospital provides tertiary and quaternary medical and surgical services. It is a major trauma centre. Most services are provided at the highest role level - Level 6 (see table 1).

Key services include:

- Emergency Medicine including a Major Trauma service
- Surgical and procedural specialties including Cardiothoracic, Interventional Cardiology, Diagnostic GI Endoscopy, General, ENT, Colorectal, Neurosurgery, Ophthalmology, Otolaryngology, Orthopaedics, Plastics & Reconstructive, Vascular, Gynaecology, Gynae-oncology, Urology, Breast, Head and Neck,
- Organ transplantation (liver and kidney)
- Medical specialties including Cardiology, Dermatology, Endocrinology, Gastroenterology, HIV/AIDS, Immunology, Infectious diseases, Neurology, Renal, Respiratory, Sleep Disorders, Aged Care, Rehabilitation and Rheumatology
- Cancer therapy including Medical Oncology, Haematology and Radiation Oncology
- Obstetrics, Fetal Medicine, Paediatrics and Neonatal Intensive Care
- Intensive Care /High Dependency Unit (ICU/HDU),
- Anaesthetic Services
- Mental health
- Drug health
- Imaging – interventional, Radiology, Nuclear Medicine, PET-CT
- Pathology

The current delineated role of services is provided in the following table.

Table 1: Role Delineation Levels for RPA 2011:

Service	RPA/ IRO	Service	RPA/ IRO
Cardiology ¹	6	Rheumatology	6
Gastroenterology	6	General Surgery	6
Emergency Medicine	6	Burns	3
Intensive Care	6	Thoracic/Cardiothoracic Surgery	6
Haematology – Clinical	6	Day Surgery	4
Medical Oncology	6	Ear, Nose and Throat	6

Service	RPA/ IRO	Service	RPA/ IRO
Pathology	6	Gynaecology	6
Pharmacy	6	Neurosurgery	6
Diagnostic Imaging	6	Ophthalmology	6
Nuclear Medicine	6	Orthopaedics	6
Coronary Care	6	Plastic Surgery	6
Operating Suites	6	Urology	6
General Medicine	6	Palliative Care	6
Dermatology	6	Renal Medicine	6
Endocrinology	6	Respiratory Medicine	6
HIV/AIDS	6	Drug and Alcohol	6
Immunology	6	Geriatrics	6
Infectious Diseases	6	Adult Mental Health (Inpatient)	6
Anaesthetics	6	Genetics	6
Neurology	6	Health Promotion	6
Radiation Oncology	6	Oral Health	5
Rehabilitation	3	Sexual Health	5
Sexual Assault	4	Women's Health	4
Aboriginal Health	5	Multicultural Health	4
Community Health – General	5	Family and Child Health	4
Community Nursing	5	Adolescent Health	3
Adult Mental Health (Community)	5	Older Adult Mental Health (Community)	2
Child/Adolescent Mental Health (I/P)	3	Older Adult Mental Health (I/P)	1
Multicultural Health	4	Child Protection (PANOC)	3

The RPA beds and services, as at February 2012 are provided in the following tables:

RPA Bed and Service Provision

Tables2-5: RPA Beds

RPA Emergency Department (ED) Bed Numbers			Opened Beds	Bed Capacity
	Resus (3) & Acute (14)	ED	17	
RPA Bed Number	Sub-Acute (8) & Iso Rms (2)	Obstetric	10	
Level 5d Emergency	Paediatrics	ED	5	
	EMU (9 beds + 2 chairs)	Type ED	11	
TOTAL ED Beds			43	
RPA Inpatient Non ED Channel Beds (NOT able to handle ED flows)				
5 West 2	Post Natal	Mixed	15	20
5 West 1	Bassinets	Mixed	15	20
5 East 1B		B		
9 East	Post Natal	Surgical	34	34
5 East 2		W&B		
5 West B	Bassinets	Mixed	34	34
8 West 1		B		
Level 3 DW	Delivery Unit	Medical	9	9
Level 3 DW- West 2		Mixed		
B 7 West 1	Bassinets	Medical	9	9
Level 3 - BC	Birth Centre		3	3
Level 3 - BC		Mixed		
B 7 East 1	Birth Centre Bassinets	Mixed	3	3
Level 5 NICU	Neonatal Intensive Care	Medical	34	34
6 East 4		Medical		
8 East	Post Natal	W&B	20	20
TOTAL Inpatient Non ED			176	186
A6 / 6CW	Paediatrics	Medical	10	10
Level 3 ICS	GICU* (General ICU) (10 vent + 4 HDU)	Mixed	14	17
Level 3 ICS	BICU* (General HDU) (7 vent + 6 HDU)	Mixed	13	13
Level 3 ICS	Neuro ICU (4) / HDU (6)	Mixed	10	10
Level 3 ICS	Cardiothoracic ICU (7) / HDU (4)	Surgical	11	11
Level 5 ED	EMU (9 beds + 2 chairs)	ED	11	11
TOTAL INPATIENT BEDS			500	540

RPA Day Only Beds and Chairs			
11 Sleep Unit	Level 11 Sleep Unit (11 West Sleep)		6
10 West	10 West Day Stay (10WD)		4
6 East	6 East Dialysis** (6ED)		10
6 East 3 MAU	Day Procedure beds		2
6 West	Cardiovascular Day Stay (6E-CC)		8
Level 6	Diabetes Day Stay - pumps (DDC)		1
5 East	Fertility Clinic (5E-FG)		10
5 East	Antenatal Same Day (5E-AN)		4
Level 3	TPU - Day Only (Recliners)		18
Level 3	TPU - EDO beds		15
Level 3	Bronchoscopy		6
Level 3	Endoscopy		10
Level 5	HTCDS - Haemophilia		5
Statewide Renal Service (Bldg 12)	Dialysis CAPD (SRS-DTCC)		4
Statewide Renal Service (Bldg 12)	Dialysis Home Training (SRS-DTCH)		10
Statewide Renal Service (Bldg 12)	Dialysis Satellite (SRS-DTCS)		33
TOTAL DAY ONLY BEDS			146
TOTAL RPA BEDS (ED + INPT + DO)			854

Institute of Rheumatology and Orthopaedics ; Mental Health				
IRO & Temp Relocated Missenden Psychiatric Unit (MPU) Inpatient Beds		Type	Opened Beds	Bed Capacity
Q5-Day Stay	IRO Day Stay	DS	6	6
MPU - Q6East	Mental Health (12 Gen & 8 Observational)	MH	20	20
MPU - Q6West	Mental Health	MH	18	18
Q 7 East	Orthopaedics	Surg	24	24
TOTAL IRO & MH BEDS			68	68
TOTAL RPA BEDS (RPA + MH + IRO)			922	972
* Flexing occurs between GICU and BICU				
** 6E Dialysis day only beds stay open on Saturday. All other day only beds close on weekends				

RPA Activity

The key activity parameters of the RPA Hospital are outlined below. The hospital (excluding IRO, Mental Health) provides almost 70,000 overnight separations.

Table 6: RPA Activity 2009-YTD 2011

RPA (excluding DO, IRO, Mental Health)	2009-10	2010-11	2011-12 YTD Feb
Admissions	68,925	69,754	47,870
Separations	68,961	69,681	47,918
Same Day Separations	30,198	30,068	20,635
Same Day as % of Total Separations	43.8%	43.2%	43.1%
Occupied Bed Days	261,317	273,830	183,699
Available Bed Days	264,625	264,625	176,175
Average Available Beds	725	725	725
Transfers In	47,595	49,281	33,681
Transfers Out	47,598	49,294	33,612
Daily Average Beds	716	750	756
Daily Average Occupancy Rate	93%	93%	94%
Length of Stay	2.64	2.75	2.68

Cancer-related activity makes up approximately 20% of the RPA overnight bedday activity (see Table 7), up to 150 beds with medical oncology (including radiation oncology), haematology, urology, tracheostomy, plastic and reconstructive surgery, respiratory, non-subspecialty medicine, upper GI surgery, gastroenterology, orthopaedics, gynae-oncology, cardiothoracic surgery and breast surgery together contributing almost 90% of the total overnight cancer-related bed days. Table 7, based on HIE data shows that for these cancer-related SRGs, between 29-32% of patients identified as private patients. Further detail is available in the HIE tables for 2009-2011 in Appendix 1. This table uses the HIE cancer flag, which, for selected separations identifies a lower percentage of cancer-related separations. However, in respect of bed days, there is less difference.

Table 7: Overview of RPA Cancer-Related Activity

RPA Cancer-Related Activity for Selected SRGs 2011										
SRG	Seps	Beddays	Cancer Related Seps	Cancer as % of Seps	Cancer Related Beddays	Cancer as % of Selected Beddays	Cancer Related Beds @85%	Pub Pats	Private Pats	% Private Cancer Patients
2009	40959	268114	5496	13	43839	16	141	1691	3799	31
2010	41421	206260	5666	14	46493	23	150	3912	1797	32
2011	41547	207183	5390	13	44291	21	143	3816	1566	29

Source: HIE

RPA Projected Acute Bed Need

The projected acute inpatient activity at RPA/IRO Hospital in 2016 and 2022 is outlined in Table 8 below. Considerable growth is expected by 2016, with growth in demand already being experienced. An additional 124 beds are projected as being required off the 2009 bed base, with 95 of those beds being overnight beds. Using the current proportional bed usage for cancer-related activity, derived from the HIE in 2009, a total of 20 additional cancer beds would be required. Based on the Flow-Info Cancer flag, it is estimated that a total of 21 additional cancer beds would be required by 2022 from the 2009 bed base.

RPA/IRO Projected Acute Bed Need 2009-2022			
	2009	2017	2022
Overnight Separations	39,009	41,747	44,378
Overnight Beddays	224,817	238,478	254,426
Overnight Beds @85% Occupancy	725	769	820
Day Only Separations	30,550	35,719	39,220
Day Only @85% Occupancy	98.5	115.1	126.4
Total RPA/IRO Acute Beds	823.1	883.8	946.5 (+124)

Table 8: RPA Projected Acute Bed Need 2009-2022
Source: a/M 2010

It should be noted that the development of Lifehouse will free up capital capacity within RPA for the growth in clinical demand expected over the next 10 years.

RPA Current Model of Care

The Royal Prince Alfred Hospital (RPA) Model of Care has been crafted over a long period of time. Its key feature is a strong commitment to evidence-based care, to leading edge medical and health care delivery and to integrated, multidisciplinary models of care. The hospital plays an important role as a leading hospital within the District and within NSW Health.

The key components of this Model of Care include:

- An expectation that all departments within the hospital will have a strong and active research commitment linked to clinical care improvements and high quality patient care. This has evolved from the long history of integration with the collocated University of Sydney as well as other leading Australian tertiary educational institutions. Research ranges from basic research (cell and molecular studies) to translational, public health and epidemiological studies. There is an expectation therefore of innovative, cutting edge clinical practice, knowledge and understanding.
- A rich heritage of under-graduate and post-graduate medical, allied health, nursing and provider training. The University of Sydney Clinical School at RPA (CCS) offers clinical exposure to common and rare chronic medical illnesses. This includes acute illness and trauma, the full range of surgical conditions, with patients ranging across all age groups. Many of the clinical teachers at RPA are national and international leaders in their respective fields of medicine and healthcare. The CCS, for example, currently has 234 undergraduate medical students across the 4 year degree, with approximately 60 in each year. Approximately 200 Postgraduate Students are enrolled in the CCS, based at RPA and at Medical Research Institutes linked to RPA. Many of these are supervised by hospital clinicians and many of their projects involve analysis of RPA clinical samples or data.
- An expectation that senior staff from within RPA will work with other Local Districts, states and countries (as appropriate) to support the delivery of evidence-based care and research. Further, senior staff are encouraged to work with the Ministry of Health, the Commonwealth, the World Health Organisation and other specialty groups and organisations to improve health and ensure high quality health policy, planning and delivery.
- As the hospital is a quaternary referral hospital, there is expectation that all information of relevance to a patient's diagnosis, treatment and care will be systematically assembled and that the highest available advice from a variety of disciplines and professions will be gathered to inform the approach to care. Staff review information (pathology, radiology) which has, for example, been paid for elsewhere as a key component of that approach. Consultation across departments is expected and encouraged.
- Senior medical staffing (consultants) which is comprised of Clinical Academics, Staff Specialists and contracted Visiting Medical Officers. Each department has strategically developed its academic links, with clinical academics spread throughout the hospital. Staff specialists are generally

expected to have a postgraduate research-oriented degree; many have a PhD.

- Consultants (senior medical staff of all types) are supported by, and supervise, fellows, registrars and resident staff. An important philosophy at RPA is that all clinical care is led by specialist consultant medical staff. Teaching and exposure of registrar and resident staff to all aspect of medicine is critical, and commonly these staff may be the first point for patient contact and assessment. However, consultant review and input into the care of every patient is paramount. The complementary philosophies of ensuring excellent teaching, but within an environment of consultant lead high quality care, are an important part of the ethos of all specialist medical staff working at RPA.
- Nursing staff on the wards are supported by Clinical Nurse Educators and Clinical Nurse Consultants (CNCs). A number of departments also have Clinical Care Coordinators. CNCs and senior nursing staff provide consultations across the hospital. This is especially important in areas such as diabetes management, stoma management or care of patients having infusions.
- Allied Health staff who are available for treatment, consultation and service provision. These include Social Work, Physiotherapy, Occupational Therapy, Speech Pathology, Nutrition and Dietetics, Podiatry and Orthotics.
- A wide range of tertiary diagnostic and support services, such as radiology, nuclear medicine and PET, but also including vascular lab, neurophysiology (including Video EEG), cardiac monitoring and assessment. Pathologists are involved in pre-treatment diagnosis and provide a range of time sensitive services ranging from on the spot examination of tissue aspirates / frozen sections through to re-examination of archived samples from previous tumour blocks. Molecular diagnostics are increasingly being used for sub-classification of cancer and guidance of therapy. The model of care operating in many organ based clinical services in RPA involves multidisciplinary pathology/ radiology/ medical/ surgery / radiotherapy meetings to plan and monitor interventions.
- An Acute Pain Service provided to all patients post-operatively requiring epidurals, intrathecal opiates, ketamine infusions and patient controlled analgesia. The Acute Pain Service provides a daily ward round to the entire campus to review patients. The RPA Chronic Pain Service provides a comprehensive outpatient service to patients living with pain.
- Pre-admission clinics (PACs) which may be multidisciplinary which "work up the patient" prior to elective admission.
- Outpatient clinics which are generally run close to the inpatient area, which provide information, support, post-discharge treatment and assessment, linked to the patient's primary care provider(s) and treating medical staff. For surgical patients, these clinics provide multidisciplinary wound care, dressings, referral and advice.
- Linkages to community-based and ambulatory care services managed by the SLHD.

- A busy emergency department which is supported by an Emergency Medical Unit (EMU) for short stay and a Medical Assessment Unit (MAU) for patients requiring short-term (ambulatory) medical care and treatment.
- Services which are delineated across the spectrum of care at the highest level. This includes a wide range of quaternary services provide across the state or for designated sections of NSW or Australia.
- The RPA governance structure aligns medical specialties and health services with clinical streams. Clinical streams bring together health professionals with specific skills and expertise in similar health problems, or a focus on specific target populations, with a focus on developing and implementing evidence-based health care.

The Cancer Care Pathway

Based on the overall RPA integrated model of care, the care pathway for cancer patients may be different for those with a principal diagnosis of cancer as compared with those who principal diagnosis is not cancer. For those with a principal cancer diagnosis, their hospital episode is less likely to commence in the Emergency Department.

Many cancer patients are diagnosed in primary care settings and are referred direct to Cancer Care services and/or a relevant surgeon.

Others may transition through ED, without a definitive diagnosis, but with symptoms which require hospitalisation and further diagnostic exploration. These patients are admitted to a medical subspecialty such as respiratory, immunology, gastroenterology or geriatrics.

A higher percentage of those with a principal diagnosis have same day episodes of care. About a quarter of those with a principal diagnosis of cancer have a same day episode of care, while only 6-7% of those with a secondary diagnosis have a same day episode of care. The average length of stay for cancer patients is between 6.5 and 8 days. However, it must be recognized that within quaternary facility there are many patients whose treatment requires very significant periods of time in hospital, for example, those undergoing pelvic exenterations, transplants etc.

Table 9: RPA Cancer-Related Episodes of Care 2008-2011

Year	Cancer Diagnosis as Principal/Secondary	Episodes	Same Day Episodes	% of Same Day Episodes	Total Overnight Bed Days	Length of ON stay	Episodes Admitted thru ED	Planned Admission	Hours in ICU
2008	Principal	4757	1106	23.2	33604	7.1	617	3609	17538
	Secondary	1045	71	6.8	8053	7.7	630	120	5514
	TOTAL	5804	1177	20.3	41657	7.2	1247	3729	23052
2009	Principal	5168	1290	25.0	33017	6.4	666	4015	20881
	Secondary	1065	73	6.9	8670	8.1	648	171	3534
	TOTAL	6233	1363	21.9	41687	6.7	1314	4186	24415
2010	Principal	5266	1356	25.8	34120	6.5	689	4109	32782
	Secondary	1079	77	7.1	9801	9.1	661	153	4857
	TOTAL	6345	1433	22.6	43921	6.9	1350	4262	37639
2011	Principal	5181	1233	23.8	34927	6.7	626	4137	22771
	Secondary	933	63	6.8	7368	7.9	568	164	4031
	TOTAL	6114	1296	21.2	42295	6.9	1194	4301	26802

Source: HIE 2008-2011

(Cancer Diagnosis Codes selection criteria: ICD10AM Version 7 clinical codes between 'C00' and 'D48.99' or suffix of clinical codes = '1/3'; '1/6'; '9' or Cancer Flag = 'Y')

The Chris O'Brien Lifehouse: Planned Model of Care

The Chris O'Brien Lifehouse model of care has been designed to build on the existing strengths of RPA. Its key feature is the delivery of high quality multi-disciplinary, evidence-based integrated cancer care which is focused on the needs of patients and their families. This will be provided in an environment which values and supports research, education, and training.

The model of care at Lifehouse will be based on the provision of multidisciplinary care. This will be underpinned by clinical meetings where patient information can be reviewed and discussed, as well as multidisciplinary clinics where multiple specialists are present and see the patient during the same visit. All patients will be assessed to identify their supportive care requirements, both physical and psychological. The goal is to ensure that a treatment plan is developed for each patient that addresses that individual's needs, and that has input from all relevant clinicians.

The approach taken to care provision will minimise the number of visits required for a new patient to have a definitive treatment decision made, and will minimise the number of locations that a patient needs to attend to see different medical, nursing and allied health specialists. This will be achieved by:

- Collocation of different specialists (e.g. surgeon, radiation oncologist, medical oncologist, allied health) in a single clinic area, allowing multidisciplinary discussion of patients without the need for referral to a different location.
- Availability of diagnostic imaging services and blood pathology collection within the facility.
- Use of care coordinators for each specialty to help guide patients and to coordinate appointments and investigations.
- Development of referral pathways detailing required investigations and results.
- Triage of all new referrals, including review of existing investigation results, and comparison with referral pathway requirements prior to a first appointment. Where required information is missing, this can be obtained prior to the initial appointment.
- Development and use of a common information technology platform throughout the centre allowing for the sharing of clinical and patient information across all practitioners, as well as a single source of scheduling information.

Implementation of the Lifehouse model of care will occur in two stages. In stage 1, ambulatory services and day only surgery will be provided. In stage 2, inpatient care, including high dependency care, as well as full surgical services will commence.

As a cancer hospital, Lifehouse will not provide all general medical services. Where these are required, appropriate RPA clinicians will see Lifehouse patients, both ambulatory and inpatient, for assessment or treatment. Similarly, this partnership with RPA will include the provision of specialty cancer services by Lifehouse clinicians to RPA. Cross credentialing of clinical staff of the two organisations will allow this to occur. Lifehouse and RPA will also work together to provide training opportunities for staff, with RPA junior medical staff rotating through terms at Lifehouse.

Data collection will be built into the routine operations of the organisation to allow for real time analysis of performance and outcomes. These data will feed into the organisation's quality improvement efforts and support innovative ways of delivering services by providing rapid feedback.

Research is an integral part of the Lifehouse model of care. Clinical trials and research activities will be supported throughout the organisation, and the collocation of significant University of Sydney research groups within the facility will foster interaction leading to greater research collaboration. In general, senior clinical staff at Lifehouse will be expected to have undertaken formal training in research and have appropriate higher qualifications relating to this.

Education and training will form a core part of the activities at Lifehouse and will extend from medical and other health student training through to advanced clinical and research training. Additionally, the identification and training of the next generation of clinical leaders will be a priority.

Specialist nursing positions, including clinical nurse specialists, consultants and educators, together with nurse practitioners will be supported in Lifehouse. They will provide expert nursing advice within the organisation, and where appropriate, to RPA.

The model of ambulatory care at Lifehouse recognises the central role played by general practitioners in the care of patients with cancer. Referral guidelines will be developed and distributed to General Practitioners to assist the referral of patients to Lifehouse, and they will be encouraged to participate in multidisciplinary clinical meetings.

The Lifehouse Integrative Medicine Centre will provide patients with access to evidence-based complementary therapies that may help patients to cope with symptoms of cancer and the side effects of their treatment. Therapies will be provided by qualified practitioners who have an understanding of the needs of cancer patients and the desire and willingness to be involved in research supporting quality of life improvement.

RPA Cancer-Related Services

The RPA Emergency Department

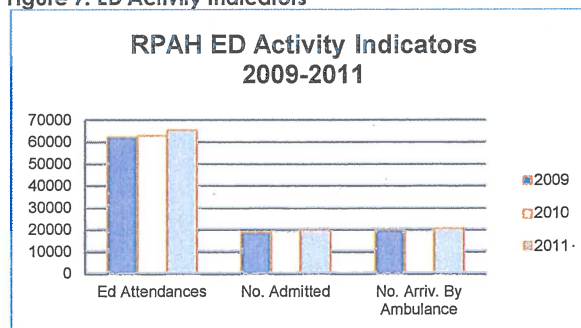
The RPA Emergency Department has 43 beds and provides care for adult and paediatric patients. The activity through the Emergency Department at RPA has increased over the past three years to 65,445 attendances, with 30% of those attending being admitted and about 30% arriving by ambulance (Table 10 and Figure 7 below).

Table 10: RPA Emergency Department Activity

Year	ED Attendances	Admitted to Hospital (no)	Admitted to Hospital (%)	Number Arriving by Ambulance	% Off Stretcher Time
2009	62,383	18,669	30%	19,812	N/A
2010	62,888	19,525	31%	19,595	58%
2011	65,445	19,741	30%	20,640	58%

Source: FirstNET Emergency data collection (NB There are some minor differences in data between HIE and First Net)

Figure 7: ED Activity Indicators



Source: FirstNET Emergency data collection

The cancer-related attendances at the RPA Emergency Department have remained relatively constant over the past 4 years. The table below (Table 11) disaggregates the cancer-related attendances between those with a primary diagnosis of cancer and those with a secondary diagnosis. This demonstrates that where cancer is the principal diagnosis, the entry point to the hospital tends to be planned; indeed, that it tends to be for surgery (i.e. more than 60% of all episodes of care for cancer patients are for surgery/procedures). Patients with a secondary diagnosis of cancer represent between 15-18% of the total patients with cancer-related hospitalizations over the 4 years (2008-2011).

Very few patients with a cancer-related diagnosis have an episode of care entirely in the ED. The patients who become sick as a result of their cancer treatment, therefore, can readily be assessed within the cancer hospital, if appropriate services are available. Those who are admitted through the ED tend to stay for an average of 11 days; that is, they are very sick patients.

The data indicates that there are, on average, 3-4 cancer-related presentations per day through the Emergency Department. This is a small number in the context of an average of 180 presentations, with about 55 general patients being admitted on average every day.

Table 11: RPA Cancer-Related Emergency Department Activity

Cancer Related Diagnosis as Principal or Secondary Diagnosis	Total No. of Cancer-related Episodes	Cancer-related Episodes admitted via ED	Episodes through ED as % of total cancer episodes	Total ED Presentations	Cancer ED episodes as % of Total ED Presentations	Total Inpatient Admissions via ED	Cancer-related Episodes admitted via ED as % of Total Inpat. Admi. via ED
2008 Principal Diagnosis Cancer	4759	617	12.96%		8.05%		3.42%
2008 Secondary Diagnosis Cancer	1045	630	60.29%		1.77%		3.49%
2008 Total	5804	1247	21.49%	59116	9.82%	18047	6.91%
2009 Principal Diagnosis Cancer	5168	666	12.89%		8.28%		3.69%
2009 Secondary Diagnosis Cancer	1065	648	60.85%		1.71%		3.59%
2009 Total	6233	1314	21.08%	62402	9.99%	18065	7.27%
2010 Principal Diagnosis Cancer	5266	689	13.08%		8.38%		3.68%
2010 Secondary Diagnosis Cancer	1079	661	61.26%		1.72%		3.53%
2010 Total	6345	1350	21.28%	62876	10.09%	18701	7.22%
2011 Principal Diagnosis Cancer	5181	626	12.08%		7.92%		3.30%
2011 Secondary Diagnosis Cancer	933	568	60.88%		1.43%		3.00%
2011 Total	6114	1194	19.53%	65426	9.34%	18946	6.30%

Source:
HIE 2008-
2011
Cancer
Diagnosis

Codes selection criteria: ICD10AM Version 7 clinical codes between 'C00' and 'D48.99' or suffix of clinical codes = '1/3'; '1/6'; '1/9' or Cancer Flag = 'Y'
Secondary Diagnosis are diagnoses where the principal diagnosis is not a cancer-related code

RPA Intensive Care Department

The RPA 54 bed (48 commissioned) Intensive Care Service (ICSU) includes 11 Cardiothoracic beds, 10 Neurosurgical beds, 17 General Intensive Care beds and 10 High Dependency beds. The Intensive Care Service is one of the largest in Australia and one of the world's most advanced multi-specialty intensive care units. The Intensive Care Service includes general, cardiothoracic and neurosciences ICUs and a High Dependency Unit (HDU). The Cardiothoracic Unit (CICU) specialises in open-heart surgery; including coronary artery bypass surgery, vascular surgery and surgery of the thorax. The Neurosciences Unit (NSICU) specialises in neurosurgical procedures such as brain tumours, cerebral vascular surgery, stroke and trauma. The General Intensive Care Units, Blue and Green units (BICU & GICU), care for people with liver disease, post liver transplant, patients requiring ECMO, patients with multi-organ failure and trauma.

Table 12: RPA Intensive Care Department Activity

FY Year	Beds	Separations	Beddays	ALOS
2009/10	48	412	13933	32.33
2010/11	48	470	15696	31.77
2011/12 ytd Feb 2012	48	323	10155	30.59

Patients in the 48 bed unit had an average length of stay of over a month (Table 13). Table 14 examines the usage, by hours, of the ICU by patients with either a primary or a secondary cancer diagnosis. Overall, 3-6 beds area used by the full range of patients with a cancer-related diagnosis (Table 13).

Table 13: RPA Intensive Care Department Activity

	2009		2010		2011	
	Hrs in ICU	ICU bed usage @100% (75%)	Hrs in ICU	ICU bed usage	Hrs in ICU	ICU bed usage
Primary Cancer Diagnosis	20881	2.4	32782	3.7	22771	2.6
Secondary Cancer Diagnosis	3534	0.4	4857	0.6	4031	0.5
Total	24415	2.8 (3.7)	37639	4.3 (5.72)	26802	3.1 (4.1)

Source: HIE

(Cancer Diagnosis Codes selection criteria: ICD10AM Version 7 clinical codes between 'C00' and 'D48.99' or suffix of clinical codes = '1/3','1/6','/9' or Cancer Flag = 'Y'). + note: State-wide services suggests planning new ICU units at a 75% occupancy

The cancer-related ICU hours utilised is heavily dependent on surgical activity with well over 90% in each of the three years being a surgical-related admission. Great care must be taken in interpreting this data as these cancer-related surgical procedures include state-wide transplants (kidney and liver), haematology bone marrow transplants, lymphoma with complications, complex neurosurgery (craniotomy) and complex colorectal surgery (rectal resection). These are services which are not envisaged to transition to Lifehouse.

In respect of HDU bed usage, the usage by primary and secondary cancer patients is more significant, with 8-12 beds being occupied by those with a principal or secondary cancer diagnosis (Table 14). However, most of those with a secondary cancer diagnosis would not be expected to be accommodated in Lifehouse.

For those with a principal cancer diagnosis, many of these are in service areas that will not initially transition to Lifehouse. The DRGs with over a thousand hours in the HDU in 2011 include, for example, tracheostomy with complications, major chest procedures with complications, cranial procedures with complications, liver transplant, acute leukaemia with complications, pancreas, liver and shunt procedures, major small and large bowel procedures with complications and rectal resections.

In terms of the services that have been agreed to transfer to Lifehouse in Stage One, there are some HDU hours utilized for Plastic and Reconstructive Surgery associated with breast reconstruction, Gynaecology Oncology (e.g. pelvic evisceration and radical vulvectomy), non-subspecialty surgery ("other" neoplasms) and Medical Oncology (e.g. nervous system neoplasms, digestive malignancy).

More significant HDU usage is evident in respect of the surgical subspecialties which will be considered in Stage 2, including Colorectal Surgery, Upper GI and Urology.

	2009		2010		2011	
	Hrs in HDU	HDU bed usage @100% (75%)	Hrs in HDU	HDU bed usage	Hrs in HDU	HDU bed usage
Principle Cancer Diagnosis	34,651	4.0	36,307	4.1	38,852	4.4
Secondary Cancer Diagnosis	38,457	4.4	40,088	4.6	41,074	4.7
Total	73,109	8.3 (11)	76,396	8.7 (11.6)	79,927	9.1 (12.1)

Table 14: RPA High Dependency Bed Activity

Source: HIE

(Cancer Diagnosis Codes selection criteria: ICD10AM Version 7 clinical codes between 'C00' and 'D48.99' or suffix of clinical codes = '1/3','1/6','/9' or Cancer Flag = 'Y') (NOTE: this captures a significantly greater proportion of patients than the cancer flag)

RPA Cancer-Related Medical Services

Medical Oncology

The Level 6 tertiary referral Medical Oncology Service (Sydney Cancer Centre) provides multidisciplinary treatment of solid core tumours by systemic therapy. It provides cytotoxic chemotherapy, hormonal and/or biologically targeted therapies. Ambulatory care, inpatient and consultation services are provided for adults with solid cancers excluding haematological malignancies. A cytotoxic pharmacy is currently located on-site. The ambulatory service has 5 beds and 22 chemotherapy chairs, so that 27 ambulatory patients can be treated at any one time. The service provides 125-140 non-chemotherapy treatment per month, 3-5 non-cancer treatments per month and 20-35 blood transfusions per month. A weekly outreach clinic is provided at Dubbo in the central west. This service will be managed by Lifehouse from 2013.

Chemotherapy Planning

Cancer incidence is the most important parameter for estimating cancer-related hospital activity. Application of incidence rates to projected populations enables future new cases of cancer to be estimated. The proportion of cancers recruited to treatment, changing modes of practice and durations of treatment also impact.

Chemotherapy is provided on an ambulatory care basis. The Lifehouse business case planning assumes that each chemotherapy chair can cater for three chemotherapy patient care visits (PCV) per day. The NSW Health Service Planning Guideline for Intravenous Chemotherapy Services December 2007 reports survey data that 1.2 infusion patients per chair per day is achieved in NSW. This equates to 285 PCVs per annum per chair compared to the NSCC planning assumption of 720 PCVs per annum per chair.

Unlike radiotherapy, there is no benchmark for the proportion of cancer patients that should receive chemotherapy. However, a widely accepted treatment guideline suggests that approximately 50% of cancer patients should receive chemotherapy and that 25% of this treated group should be re-treated.

Currently RPA's chemotherapy service is configured as 22 chairs and 5 beds (27 chair /bed capacity) and Concord has 9 chairs and 5 beds (14 chair/bed capacity). This gives the SLHD capacity of 41 chairs/beds for chemotherapy. Utilising the NSW Cancer Institute's latest projections (May 2011) for new cancer cases in the SLHD it would be estimated that there is a need for 51 (chairs/beds) by 2016 and 57 by 2021. Of this total number of chairs for the SLHD in 2016, it is estimated that RPA's current local demand would require 33 (chairs/beds) and Concord's catchment 17 (chairs, beds) and by 2021 RPA would require 38 (chairs/beds) and Concord 19 (chairs/beds). These estimates will require revision upon release of new population projections and related cancer incidence data.

Consideration also needs to be given to the requirements of non-cancer patients receiving cytotoxic treatment/infusions etc. A 10% increase in chemotherapy chair requirements is included to take account of non-cancer patient needs. Further planning is required to confirm these estimates.

The following table (Table 15) provides the overall SLHD activity and projections

Table 15: RPA Chemotherapy and Radiotherapy Requirements

Chemotherapy and Radiation Oncology Requirements of Sydney Local Health District 2011-2021			
Parameter	2011	2016	2021
Total population SLHD ¹	578,162	612,914	642,009
Total new cases of cancer SLHD ²	2,585	2,912	3,244
Chemotherapy Supply Projections SLHD			
Total chemotherapy courses of treatment demand ³	1,293	1,456	1,622
Total PCVs supplied ⁴	12,925	14,560	16,220
Total Chairs required ⁵	45	51	57
With additional capacity for non-chemotherapy users ⁶	50	56	63
Radiotherapy Machine Supply Projections SLHD			
New cases of cancer requiring radiotherapy ⁷	1,515	1,903	2,120
Radiotherapy machine demand ⁸	4.0	5.0	5.12*
¹ NSW Health Population Projection series 1.2009			
² <i>Cancer Incidence and Mortality: Projections to 2011 to 2021 May 2011 Report. Cancer Institute NSW</i>			
³ 40% of new cases of cancer plus 25% re-treatment =50%			
⁴ 10 PCVs per course of treatment			
⁵ 285 PCVs per chair per annum (NB based on 1.2 patients per chair)			
⁶ 10% increased capacity			
⁷ National planning parameter of 52.3% of new cases requiring radiotherapy and 25% of these retreatment =65.35% Source: Page 17 <i>Selected Specialty Service and Statewide Plans Report 7 Radiotherapy Services in NSW Strategic Plan to 2016, NSW Health</i> . It is understood that the national planning parameter is currently under review.			
NOTE: No assumptions have been made in regard to the quantum of projected inflows or outflows from SLHD.			
⁸ National planning parameter of 414 new and retreatment courses per LINAC attendances per course of treatment. Source: Page 17 <i>Selected Specialty Service and Statewide Plans Report 7 Radiotherapy Services in NSW Strategic Plan to 2016, NSW Health</i> The Local Planning assumption is that 6 machines are required to address equity of access issues for the Concord catchment. Radiotherapy is a Statewide Service, and therefore is subject to Statewide Planning by the Ministry of Health. Recommendations regarding the distribution of this high cost complex equipment is therefore determined by the Ministry. The current statewide plan for radiotherapy is to 2016. A new statewide plan is required to indicate distribution of machines and services to 2021 and beyond.			

Radiation Oncology

The Department of Radiation Oncology (DRO) provides a Level 6 state-wide tertiary referral service. The Department of Radiation Oncology provides treatment and support for patients with cancer and related conditions. A multidisciplinary approach is taken. Treatment includes external beam radiation, brachytherapy, stereotactic radiosurgery, orthovoltage/superficial X-ray therapy. Clinical trials and research are integral to the model of care. Clinics are held in

Gloucester House (RPA), Concord, Strathfield and Dubbo. The service has 4 linear accelerators; a brachytherapy bunker; a superficial orthovoltage machine; a national stereotactic department and a 5th linear accelerator with Exac-Trac Imaging. An onsite CT scanner is available for treatment planning. This service will be managed by Lifehouse from 2013.

Radiation Oncology Planning

NSW follows the nationally supported planning approach that radiotherapy services are best delivered through an integrated and multidisciplinary model, with clear linkages to a number of subspecialty disciplines, such as medical oncology, paediatric oncology, surgical oncology, clinical haematology, palliative care and rehabilitation, as part of a quality comprehensive cancer service.

The SLHD Strategic Plan has indicated the need for the establishment of radiation oncology services at Concord Hospital. This initially would require an additional LINAC for the District. The number of LINACS (standard) for the District would therefore total 5 if Lifehouse is maintained at the current configuration of 4 standard (+ 1 specialised) LINACs. There are strong equity arguments for the establishment of a radiation oncology service at Concord Hospital which provides for a densely populated growing population with high rates of malignancy and high death rates from cancer. This would alleviate the fundamental long standing inequity for patients from Concord having to travel to RPA for their radiotherapy. However, radiotherapy is a statewide service and is therefore subject to statewide planning regarding the allocation of this high cost complex equipment. The current NSW Health statewide plan for radiotherapy is to 2016. A new State plan is required to indicate distribution of machines and services over the next 5-10 years.

Initial planning at the local level indicates a utilization of 5.12 LINACS by 2021 for the District however this crude planning does not incorporate any assumptions relating to the quantum of inflows to or outflows from SLHD for radiation oncology services. It is understood that the National Planning Parameters for radiotherapy treatment rates is currently being developed at the national level. It is recognised that there is a greater level of uncertainty in planning projections and assumptions, the further out that the planning time frame extends. As revised projections become available, or as planning assumptions are updated, estimates of machine requirements will be re-assessed.

Palliative Care

The Palliative Care Service aims to provide pain and symptom management, end of life care, address quality of life concerns and future care planning whilst recognising the psychological, spiritual and cultural dimensions of care. The Palliative Care Service provides for the assessment and care of patients not only with cancer, but for patients with complex care needs, including those with a

non cancer diagnosis. The Service acts in an advisory capacity to support referring teams in their delivery of patient care.

There are 6-8 palliative care beds in 7E2 used in RPA at any one time, although there is not a dedicated palliative care unit. The majority of palliative care activity is consultation-based. The team has access to the District Bereavement counselors and works in collaboration with members of multidisciplinary teams and allied health throughout the hospital.

For SLHD residents a new 20 bed palliative care inpatient unit is planned for the Concord Hospital. The 14 beds currently provided at Canterbury Hospital will be transferred to Concord and 6 new beds will be provided through COAG sub-acute funding to form a 20 bed service. Currently Palliative Care services across SLHD are in a transition phase. The delivery of palliative care and the model of service delivery within SLHD will be determined over the next 12 months through the development of the SLHD Healthcare Services Plan. It is envisaged that the Cassia Ward at Canterbury Hospital will revert to acute aged care beds to be consistent with its built intention.

Bereavement Services

The Bereavement Service, comprising 1.4 FTE staff is funded by RPA and enhanced by 0.2 FTE funded by Lifehouse. The service provides bereavement support to patient families through a regular follow-up service. Additional services include maintaining the carer follow-up database, quality assurance, education and memorial service advice. The service is currently located at Gloucester House. It is agreed that the service would benefit from remaining on the RPA campus. Although a relatively small service, the Bereavement Service is an important service that needs to be available to RPA, the District and Lifehouse.

Interrelationships with Other Medical Specialties

There are a range of other services which will have strong cancer roles and links but will be managed by RPA. This includes services such as Haematology and Dermatology.

Relationships also need to be strongly maintained with core medical subspecialty services such as Gastroenterology, Cardiology, Clinical Immunology, Neurology, Endocrinology, Respiratory and Geriatrics.

Projections for Future Medical Beds

The following table outlines the projected medical beds to 2022. The projection is based on an assumption that the current ratio of cancer bed days (by service related group) will be maintained. The projection also assumes that historical trends in acute hospital utilisation will prevail, with some adjustments for new clinical practice changes, technology and/or, epidemiology, as validated by clinicians. The model assists with quantifying the overall impacts of changing demography, technology and changing models of care on the resource requirements for the cancer care.

Table 16: RPA Cancer-Related Medical Beds Projected to 2022

Cancer-Related Medical Beds Projected to 2022			
SRG	2009 Cancer-Related Beds	2017 Cancer-Related Beds	2022 Cancer-Related Beds
11 Cardiology	1.0	1.1	1.2
13 Dermatology	0.6	0.6	0.6
14 Endocrinology	1.0	1.1	1.3
15 Gastroenterology	3.6	3.5	3.8
17 Haematology	19.2	19.8	21.0
18 Immunology and Infections	1.6	2.0	2.2
19 Medical Oncology	19.4	19.5	20.9
21 Neurology	1.3	1.6	1.8
22 Renal Medicine	0.9	0.9	1.0
24 Respiratory Medicine	6.1	6.4	6.9
25 Rheumatology	0.3	0.2	0.2
26 Pain Management	0.0	0.0	0.0
27 Non Subspecialty Medicine	1.8	2.3	2.5
43 Colorectal Surgery	2.1	2.0	2.2
44 Upper GIT Surgery	1.0	1.0	1.1
46 Neurosurgery	2.2	2.6	2.7
48 Ear, Nose and Throat	0.2	0.2	0.2
49 Orthopaedics	0.8	0.9	1.0
50 Ophthalmology	0.1	0.1	0.1
51 Plastic and Reconstructive Surgery	0.6	0.5	0.5
52 Urology	1.7	1.6	1.7
53 Vascular Surgery	0.3	0.4	0.4
54 Non Subspecialty Surgery	2.7	3.3	3.7
71 Gynaecology	0.3	0.3	0.3
Grand Total	68.8	72.0	77.4

Medical Services Agreement

The agreement in respect of RPA Medical Services is that

- Medical Oncology and
- Radiation Oncology will transfer to Lifehouse.

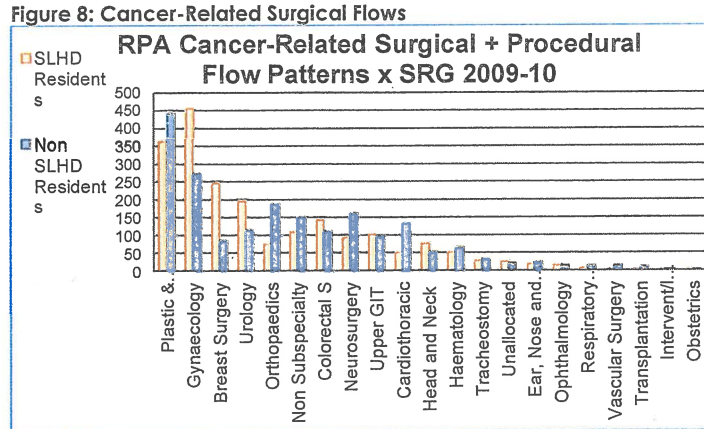
Their Ambulatory Services will transfer in 2013, followed by inpatient beds in 2015.

These services will continue to provide consultation to RPA and Concord and to Balmain and Canterbury, as per current arrangements.

Palliative Care will be managed by SLHD, with consultation provided at

RPA Cancer-Related Surgical Services

The cancer-related surgical services of RPA attract significant patient inflows. This is illustrated, by surgical subspecialty, in Figure 8.



Overall, about 56 % of RPA patients with cancer have surgery and another 7% have a procedure of some sort (Flow-Info 2010). Among the five principal cancers – colorectal, breast, prostate, lung and melanoma – surgery is the principal initial treatment in four of these with approximately 30% of lung cancer patients being treated with primary surgery. For women, gynaecological and breast surgery were the most common types. Among other cancers, a high proportion of those involving the head and neck, upper gastrointestinal tract, kidney, bladder and brain require surgical treatment.

For each of the surgical subspecialties at RPA, varying components of their services are provided for people without cancer. Planning must provide for these patients to be appropriately operated on in a non-cancer hospital, where this may be an issue. The surgical services planning is critical to the development of Lifehouse and to the retention of core RPA service levels and integrated care.

Surgical Services Transitioning to Lifehouse

The Breast Surgery Service provides inpatient and ambulatory care for patients with benign and malignant breast disease. This service will transfer to Lifehouse in 2015, with ambulatory clinics transferring in 2013.

The tertiary referral **Gynaecological Oncology Service** provides inpatient and outpatient care for patients with confirmed invasive gynaecological cancer, suspected cancers, dysplasia and complex and benign gynaecology. Two thirds of the patient load of this service in the past have not had cancer, however, it is accepted that many patients could potentially have cancer when referred to the gynae-oncologist. This service will transfer to Lifehouse in 2015. Ambulatory clinics will transfer in 2013.

The **Melanoma and Surgical Oncology Department** treats patients newly diagnosed with melanomas and other non-sub specialty cancers e.g. sarcomas. The service operates on an integrated model which includes diagnostics, surgery, regional chemotherapy, immunotherapy and domiciliary support. The non-cancer load is generally 130-140 patients per annum (2-3 per week). This service will transfer to Lifehouse in 2015. Ambulatory clinics will transfer in 2013.

Surgical Services To Be Reviewed in December 2014

Plastic and Reconstructive Surgery is frequently required as a component of surgical care or as the primary surgical service. The Plastic surgeons frequently combine with breast, head and neck, colo-rectal, orthopaedic and neurosurgery. As Breast Surgery is transferring to Lifehouse, breast reconstructions which are "non-delayed" will be transferred to Lifehouse. Breast reconstructions which are "delayed" (i.e. planned after the initial surgery), will continue to be provided in RPA.

The tertiary referral **Colo-rectal Department** provides state-wide colo-rectal acute, general surgery and trauma services. Colorectal surgical techniques have generally become less invasive, although the RPA service has a unique mix of minimally and maximally invasive surgery, with pelvic exenterations being performed as a state-wide service, contributing to the high bed/day usage. This service will be part of a review of surgical services undertaken in December 2014.

The **Upper GI Surgery Service** also provides a mix of minimally invasive and maximally invasive services. This includes tertiary referral services for complex Gastrointestinal problems and quaternary referral for very complex Hepato Pancreato Biliary (HPB) surgery. As with many of these services, there have been improvements in the treatment of pancreatic tumours, trends to neoadjuvant and adjuvant therapies, PET scanning, endoscopic ultrasound etc. This service will be part of a review of surgical services in December 2014.

The Level 6 **Head and Neck Surgical Service** provides care for patients with head and neck malignancies. About 50-60% of patients have cancer; others require non-malignant thyroid, salivary gland surgical treatments. Some of these cases are jointly operated with neurosurgery. Ambulatory clinics will transfer in 2013. This service will be part of a review of surgical services in December 2014.

The Urology Service treats urological malignancies and benign conditions of the urinary system – including cancers of kidney, bladder, prostate, testis, urethra, & penis. Benign conditions include incontinence, stone disease, sexual dysfunction and stricture. Just over a quarter of the service provision is for cancer-related conditions. This service will remain at RPA, with private VMO sessions being provided at Lifehouse. This service will be part of a review of surgical services in December 2014.

Surgical Services Remaining with RPA

The Level 6 **Orthopaedics Service** does not have a primary cancer focus as the major focus is joint replacements, shoulder and hand surgery, knee and foot surgery, back surgery, biopsies and other elective orthopaedic surgery. Procedures to treat bone tumours are an important component of the service and although being relatively small proportion of orthopaedics, the service is still numerically significant. This service will remain at RPA. The Bone and Soft Tissue Sarcoma clinic, however, will be located at Lifehouse, managed by RPA. Private VMO orthopaedic sessions will be provided at Lifehouse.

The Level 6 **Neurosurgery** tertiary referral service provides elective and emergency surgical services. Approximately 25% of the work is for cancer. This service provides highly complex surgery, frequently requiring Intensive Care admission. Neurosurgery will remain at RPA.

The Level 6 **Cardiothoracic Surgery Service** provides high complexity tertiary and quaternary cardiac and thoracic surgical services in close collaboration with the Cardiology service. The service will remain managed by RPA, with private VMO sessions being provided at Lifehouse.

SRG	2009 Cancer-Related Beds @85%	2017 Cancer-Related Beds 85%	2022 Cancer-Related Beds @85%
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Similarly, the Level 6 **Vascular Surgery service** will remain managed by RPA.

Appendix 1 provided

medical and surgical activity data for 2009-11, based on the HIE.

Projected Surgical Activity

Table 18 shows that 13 additional surgical cancer beds are forecasted to be required by 2022 off the 2009 bed base. The increase in minimally invasive surgery is expected to drive greater bed efficiencies across the spectrum of cancer surgical services. Appendix 2 provides greater detail in relation to these projections.

Table 18: Projections for RPA Cancer-Related Surgical Activity 2009-2022

12 Interventional Cardiology	0.1	0.2	0.2
24 Respiratory Medicine	0.8	0.7	0.7
41 Breast Surgery	2.0	1.8	1.8
42 Cardiothoracic Surgery	5.1	5.7	6.2
43 Colorectal Surgery	10.3	9.6	10.3
44 Upper GIT Surgery	5.3	5.5	5.7
45 Head and Neck Surgery	1.8	2.0	2.0
46 Neurosurgery	8.8	11.2	12.2
48 Ear, Nose and Throat	0.3	0.3	0.3
49 Orthopaedics	5.0	5.6	6.2
50 Ophthalmology	0.1	0.0	0.1
51 Plastic Reconstructive Surg.	7.7	8.4	9.0
52 Urology	6.8	5.9	6.3
53 Vascular Surgery	0.7	0.8	0.8
54 Non Subspecialty Surgery	7.6	7.0	7.6
61 Transplantation	1.2	1.1	1.2
63 Tracheostomy	6.5	8.1	8.9
71 Gynaecology	3.8	3.8	3.8
Grand Total	75.5	81.7	88.0

Source: aIM 2010 + Flow Info Flag

RPA Operating Theatres

Currently RPA has a total of 22 operating theatres (within RPA) and a further 3 operating suites in IRO. In addition there are three cardiac catheter laboratories currently in operation with a fourth laboratory available for future expansion.

RPA is currently establishing an Interventional Unit which will provide superior imaging quality through the utilization of hybrid angiography equipment which will shorten procedure times, decrease the risk of complications and improve patient outcomes. Although the hybrid theatre will occupy one of the current theatres it will enable increased sessions to be available in other theatres.

The aims of the hybrid theatre are to:

- Maximise effective use of resources in the theatre and the Cardiac Catheter Laboratory
- Improve patient flow management and reduce competing bed demands.

The procedures to be performed in the unit include, but are not limited to:

- Vascular Surgery
- Cardiac device implants e.g.: transapical/transaortic heart valves (TAVI)
- Complex procedures currently undertaken under Image Intensifier or in the angiography suite within RPA

The proposed model of care adopts a collaborative approach between surgeons and interventionalists for both patient diagnosis and treatment.

Operating Theatre Planning

The theatre capacity at RPA/IRO comprises 22 theatres in JL, 3 in IRO, The Perioperative Unit, and the Endoscopy/Brochoscopy service. It can be expected that with the projected growth in demand at RPA, that a commensurate growth in theatre access will be required. This may be in the order of 3-4 theatres, although additional planning is required to assess this more accurately.

Using the baseline activity projections data for 2016 and 2021 it is estimated that around 80% of the surgical and procedural activity undertaken in SLHD and RPA would be planned, with 20% unplanned or emergency.

The percentage of planned activity at RPA will vary depending upon the role RPA and other hospitals within the SLHD surgical network play in the future. A surgery planning process will be undertaken in 2012-13 to inform the development of the SLHD District Healthcare Services Plan and Asset Strategic Plan. It can be assumed that RPA, with the higher emergency workload and a higher level trauma role would expect a lower percentage of planned activity, possibly in the 70%-75% range. However, RPA will continue to provide services at role level 6 and quaternary services for the State including its role as one of the three major trauma centres for the Sydney metropolitan area. It could be expected that the current range of surgical services (excluding primary cancer and those identified by surgeons to transfer to Lifehouse) will be maintained with a growth in volume, including a projected growth in cardiothoracic and neurosurgical work.

The RPA Institute for Rheumatology and Orthopaedics (IRO) will continue in its present role, with 3 theatres, providing elective orthopaedic surgery. However there is expected to be a growth in orthopedic surgery due to the strong growth in the population aged over 65 years.

RPA Anaesthetics

The Anaesthetics Department is a Level 6 tertiary service providing inpatient and outpatient services to medical and surgical patients. Preadmission clinics, acute pain services, vascular access, anaesthesia for surgery, obstetrics, IV diagnostics/therapies, trauma & cardiac arrest assist, liver transplantation, ECMO retrieval, ICU assistance are core services. 20,000 RPA procedures per annum require anaesthesia.

In relation to cancer, the service provides anaesthesia for cancer-related surgery, vascular access for haematology and oncology inpatients and for patients having bone marrow aspirates. 13 sessions per week are provided to the Department of Radiology for interventional radiology procedures (many of which are malignancies), PET scans and cardiology/respiratory interventions on cancer patients.

The service also provides the Acute Pain Service for post-operative patients requiring epidurals, intrathecal opiates and ketamin infusions. A key responsibility is the management of inpatients with pain secondary to cancer or as complication of treatment.

The Anaesthetics Department will provide a service to the whole of Lifehouse based on a Service Level Agreement, with the one department responsible for all services at both RPA and Lifehouse.

Surgical Services Agreement

The agreement in respect of RPA Surgical Services is that the first stage of service provision will include the transfer of the following services to Lifehouse in 2015.

- Breast Surgery
- Melanoma and Surgical Oncology
- Gynaecological Oncology
- Plastic Surgery related to non-delayed Breast Reconstruction

Anaesthetic services will be provided by the RPA Anaesthetics Department based on an SLA.

Ambulatory Services related to these subspecialties will transfer to Lifehouse in 2013.

Selected other surgical subspecialties will be part of a review to determine further staging of surgical services in December 2014. This will

RPA Cancer-Related Outpatient Services

The following table provides selected activity for 2010-11 Outpatient and Ambulatory Activity as collected by CERNER. The percentage of cancer occasions of service is estimated based on the inpatient cancer percentages for each area. The Cancer Flag from the Flow-Info Tool has been used for this purpose.

Table 9: RPA Outpatient Occasions of Service by Specialty 2010-11

RPA Outpatient Occasions of Service by Specialty 2010 & 2011 (All Patients)									
Specialty	2010	2011	Est % Cancer *	Est No. 2011	Specialty	2010	2011	Est % Cancer	Est No. 2011
Medical Oncology	2231	22531	98	22080	Orthopaedics	1573	15542	7	1088
Radiation Oncology	3751	34063	*98	33382	Gynaecology	3735	3964	20	793
Gynae. Oncology	6257	7328	36	2638	Endocrinology	2894	28447	10	2845
Breast & Surgical Oncology	8432	7119	87	6194	Immunology	1696	15918	7	1114
Melanoma	3504	3689	(80)*	2951	Neurology	1307	10431	3	313
Head & Neck Surgery	906	842	70	589	Geriatric Medicine	2467	3079	5	154
Palliative Care	106	270	93	251	Cardiology/ Cardiothoracic	6599	8253	*10	825
Plastic & Reconst. Surg	2101	1688	60	1013	Thoracic Medicine	1629	18551	25	4638
Urology	757	529	30	1013	Neurosurgery	321	219	24	53
Colorectal	2747	1667	23	159	Pain Management	3291	2050	1.6	33
Upper GI	255	80	24	383	Renal Medicine	1486	12035	6	722
Gastroenterology	7274	6825	13	19	Ophthalmology	3832	3471	5	174
Haematology	2420	29442	52	887	Renal Transplant	5045	4551	11*	501
Liver & Transplant	1860	19267	15	15310	Rheumatology	5645	4551	2	91
E.N.T.	1905	1877	7	2890	Infectious Diseases	7680	6166	7	432
Dermatology	8339	8480	22	131					

Source: SLHD Business and Performance. The estimated proportion of cancer-related work has been derived by applying the Cancer Flag from Flow-Info to 2009 inpatient work by SRG and applying the resulting percentage to the outpatient clinics to provide a rough estimate of cancer-related outpatient activity. The * indicates where a % has been estimated i.e. that no figure is available from the data source.

There are very significant limitations to the above data. Firstly, much outpatient data at RPA is currently not entered into CERNER. Secondly, there is variation in the counting of occasions of service. For example, an allied health phone call or a Multidisciplinary Team Meeting would both count as 1 occasion of service.

Further work in respect of enhancing the overall validity and reliability of this data set will be undertaken within the next 6-12 months. The data currently provides an indication of activity.

For each of the services which are scoped to transfer to Lifehouse or to be provided in Lifehouse, there is a need to re-examine in detail the ambulatory component. This needs to be compared with bookings and subjected to clinician validation.

Further, the percentage of cancer-related ambulatory work outlined above is also an estimate. While the agreement has been to use the HIE data, in this instance, the Flow-Info rates conform more closely to clinician views.

There are a range of ambulatory clinics which will either transfer to Lifehouse in 2013 or which will be located in Lifehouse after 2013 and managed by RPA. The activity in the following clinics needs to be verified for Stage One (2013):

- Medical Oncology
- Radiation Oncology
- Breast Surgery
- Breast Assessment Services
- Gynaecological Oncology
- Melanoma and Surgical Oncology
- Cancer-related Palliative Care
- Haematology
- Cancer-related Dermatology
- Plastic Surgery (in relation to non-delayed breast reconstruction)
- The Bone and Soft Tissue Sarcoma Clinic (Orthopaedics)
- Clinical Genetics
- The Lymphoedema Clinic (Occupational Therapy)
- Selected cancer-related Allied Health clinics which may be located at Lifehouse
- Selected other surgical subspecialty clinics related to cancer which may elect to be located at Lifehouse but are managed by RPA.

The following need to be verified for the Stage Two (December 2014) review process:

- Cancer-related Urology
- Cancer-related Head and Neck Surgery
- Cancer-related Colorectal Surgery
- Cancer-related Upper GI Surgery

Concord Hospital Cancer Services and Lifehouse

Introduction

The Concord Hospital provides a wide range of tertiary level cancer services which, to date, have been integrated with the RPA services, under the emblem of the Sydney Cancer Centre.

Each of these relationships needs to be recognised within the Service Delivery Agreement. It is expected that these identified relationships will be maintained and further developed over time.

The following section outlines the specific issues for each cancer-related department in Concord Hospital. The information is provided in some detail as this is not included in other supporting documents.

Concord Cancer-Related Medical Subspecialties

Interrelationships include cross-appointments between Concord and RPA, joint teaching programs, the provision of clinics at Concord by RPA senior medical staff, on-call rosters (for both consultants and registrars), and clinical trial studies.

Medical Oncology

The Concord Medical Oncology service includes clinics, multidisciplinary team participation, inpatient care and consultations. The chemotherapy suite has 9 chairs and 4 beds and the service has access to 12 inpatient beds. The department is involved in teaching of medical students and junior medical staff. All five Concord senior medical staff members are cross-credentialed at RPA. Two have regular outpatient clinics at RPA. A single on-call roster for staff specialists covers both Concord and RPA and all 12 senior clinicians from both institutions participate in this. There is a separate on-call roster for the advanced training registrars. Advanced trainees rotate between Concord and RPA. Clinical trials are carried out in the department and there is some sharing of clinical trials staff.

The Concord-RPA medical oncology links need to be retained with the development of Lifehouse.

It is proposed that senior Concord medical oncology staff be cross-accredited to Lifehouse. The actual time spent at Lifehouse will depend on clinical roles. It is expected that the employment model for Concord based staff providing services at Lifehouse will be of fractionation or as part of the individual's rights of private practice, subject to individual negotiation. A model for clinical academics is yet to be determined.

It is proposed that a separate on-call roster be developed for Concord independent of the Lifehouse / RPA on call roster, which will involve those senior staff whose primary appointment is to Concord.

Advanced trainees would rotate between Concord and Lifehouse.

Radiation Oncology

The RPA Department of Radiation Oncology (DRO) provides up to 5 clinics per week, with multidisciplinary team (MDT) participation at Concord. There are no Concord DRO inpatient beds. Trainees attend clinics/MDTs as appropriate but are based at RPA. RPA staff are cross-credentialed at Concord. There is no Concord on-call roster for radiation oncology: referral is to the on-call clinician at RPA. The DRO has no routine involvement in teaching/training at Concord, although they may be involved in individual events by invitation.

The Concord–DRO relationship is vital to retain and acknowledge.

The SLHD has incorporated the development of radiation oncology services within its Strategic Plan. However, until this is established, radiation oncology services will need to be provided by Lifehouse, with clinics and MDT participation. Clinicians (both senior and junior) would be based at Lifehouse, but credentialed to attend clinics and MDT meetings as appropriate. SLHD would be billed for these services, with payment of facility fee from Lifehouse to Concord for use of space for clinics. Lifehouse staff need to be cross-credentialed to Concord. No Concord on call roster would be provided for radiation oncology, with referral to the on-call clinician at Lifehouse and there would be no designated radiation oncology inpatient beds at Concord.

After establishment of a Concord Cancer Care Centre, which includes a radiation oncology, it is likely that the relationship would continue with Lifehouse with initial support by technical staff, and provision by Lifehouse of medical staff. At that time a dedicated on-call service will be required for Concord. This model may change as the Concord department develops, and especially once a second linear accelerator is installed allowing development of a stand-alone department with dedicated inpatient beds and associated ambulatory clinics.

Palliative Care

The Palliative Care Service currently has 4 acute palliative care beds and provides four outpatient clinics per week. The service employs two staff specialists, two advanced training registrar positions, one CNC, one CNS. The department provides medical coverage to the Telopea Ward (palliative care) at Canterbury Hospital and provide a limited community medical service. Strong liaison occurs with the palliative care community nursing service.

The service will develop to 20 inpatient beds with the relocation of the Canterbury service to Concord. Referral links will be maintained, but no particular problems are envisaged.

Haematology

The Haematology service has 12 inpatient beds. The seven senior staff medical staff members service Concord and Bankstown Hospitals for cancer and non-cancer Haematology. Two advanced training positions are available. Treatment is provided for all cancers other than allogeneic bone marrow transplants which are undertaken at RPA. There is an active clinical trials program. The Haematology Ambulatory Care Unit (HACU) provides cancer and non-cancer services such as blood transfusions, apheresis, iron infusions and chemotherapy.

No specific problems are envisaged in relation to the Lifehouse development.

Dermatology

Dermatology provides an inpatient consultative service with one registrar and several VMOs. There are outpatient clinics and treatment can involve infusional services which are currently done in Haematology Ambulatory Care. No specific problems are envisaged in relation to the Lifehouse development.

Concord Cancer-Related Surgical Subspecialties

The cancer-related surgical sub-specialties at Concord are not expected to be affected by the development of Lifehouse.

Head and Neck Surgery

The Head and Neck Service, provided by 3 VMO Head and Neck surgeons, provides five outpatient clinics per month. Head and Neck operations for both cancer and non-cancer cases occur at Concord. No specific issues in respect of Lifehouse are envisaged.

Urology

Concord has a number of Urology VMOs, a staff specialist, an advanced training registrar, two CNCs and a 0.5 data manager shared with RPA. Seven outpatient clinics are provided per week. There is a multidisciplinary prostate cancer clinic.

Negotiations will be required in respect of the shared data manager.

Breast Surgery

The Breast Surgery Service is provided by four VMOs and a senior registrar. The service is linked with the Strathfield Breast Centre. The Breast Cancer CNC provides clinics and support. Outpatient clinics are provided. No specific implications of Lifehouse are envisaged.

Colorectal Surgery

The Colorectal service has five surgeons, two senior registrars/fellows, a data manager and a Care Coordinator. The service provides outpatient clinics, upper

and lower endoscopy, endoscopic ultrasound and surgery. Research is integral to the department. No specific implications of Lifehouse are envisaged.

Upper GI

The Upper GI service has six surgeons, five VMOs, one staff specialist, two senior registrars, one fellow and a CNC. This service treats a large number of upper GI cancers such as pancreas and oesophagus. There is a weekly MDT meeting attended by medical oncology, radiation oncology, and radiology. They provide both outpatient service (primarily in rooms) and surgery.

Respiratory/Cardiothoracic

Currently no major thoracic surgery is undertaken at Concord Hospital. Minor procedures only are done. A consultative service is provided with one weekly surgical list. An inpatient respiratory unit is provided and advanced training registrars offer a full range of diagnostic procedures. A weekly meeting is held to discuss lung cancer patients with medical oncology input. There is one CNC.

Neurosurgery

There is a small cancer related neurosurgical service provided at Concord Hospital.

Concord Hospital-Lifehouse Agreement

The agreement in respect of Concord Hospital is to retain the current cross-appointments (Concord-RPA) between Concord and Lifehouse, retain the joint teaching programs, the provision of clinics at Concord by Lifehouse senior medical staff, the shared on-call rosters (for both consultants and

Royal Prince Alfred Cancer Services and Lifehouse

A Typology of Service Relationships

RPA Departments can be divided into five groups, based on their agreed relationship with the *Chris O'Brien Lifehouse*. The specific agreements associated with these services are contained in the document entitled *Summary of Outcomes from Consultations with RPA Clinical Departments in Respect of the Development of the Chris O'Brien Lifehouse*.

These are:

1. Services/departments that will transfer to Lifehouse. These services predominately provide cancer care. These services will need to consult back to RPA. This includes Medical Oncology, Radiation Oncology, Breast Surgery, selected Plastic and Reconstructive Surgery (i.e. non-elective, non-delayed breast reconstructions), Melanoma and Surgical Oncology and Gynaecological Oncology.
2. Services/departments with significant cancer loads which also have very significant non-cancer loads. The options for the provision of the cancer-related services within this group will be reviewed in December 2014. These services include Colorectal Surgery, Head and Neck Surgery, Urology, Upper GI Surgery and selected and related Plastic and Reconstructive Surgery services.
3. Services with varied cancer loads which will remain managed by RPA, with all inpatient services located in RPA. Selected ambulatory clinics will be colocated with Lifehouse with a facility fee paid by RPA, if required. Services in this category include, for example, Haematology, Neurosurgery and Transplant Services. Examples of selected clinics which will be provided in Lifehouse include Haematology Ambulatory clinics and cancer-related Dermatology clinics.
4. Services/departments with strong relationships with cancer services but which will remain managed and located at RPA with strong service and consultation links to Lifehouse. This includes, for example Cardiology, Clinical Immunology, Benign Gynaecology and Gastroenterology.
5. Services/departments in RPA which will have linkages for unusual cases, but whose service and business will be largely unaffected by the Lifehouse development. This includes, for example, Obstetrics and Paediatrics.

The following tables (Tables 19-21) summarise these agreed interrelationships. Services are listed as Medical, Surgical, Support or Administration Services.

Ambulatory Care services which will transfer in 2013 are listed first. The table does not list all services in RPA.

Table 19: Service Relationships - Ambulatory and Outpatient Services				
Services Which Will Transfer/Be Provided by Lifehouse in mid 2013	Major Cancer and Non-Cancer Role, with Options Review for the Cancer Role in December 2014	Cancer and Non-Cancer Role Managed by RPA	Interrelationship	Services Less Directly Affected
Ambulatory/Outpatient Medical Services (A-Z)				
Medical Oncology			Aged Care and Rehabilitation, Aged Community Services Clinics	Renal Dialysis
Radiation Oncology			Clinical Immunology/HIV/AIDS Clinics	Allergy Clinics
BreastScreen Assessment		BreastScreen Screening	Diabetes/Endocrinology/Metabolism and Obesity	Sexual Health
		Dermatology Clinics	Community Nursing	Sexual Assault
		Haematology Ambulatory Clinics	Oral Health	
			Endoscopy	
			Renal Medicine Clinics	
Ambulatory/Outpatient Surgical Services (A-Z)				
Breast Surgery Clinics		Neurosurgical Clinics	Cardiothoracic Surgical Clinics	
Melanoma and Surgical Oncology Day Stay Surgery and Clinics		Ophthalmology Clinics	Vascular Surgical Clinics	
Gynaecological Oncology Clinics		Orthopaedic Clinics (Bone and Soft Tissue Sarcoma Clinic to be provided in LH)		
		Plastic Surgery Services (EPCS)		
		ENT Clinics		
		Related Selected Plastic Surgery Clinics		
		Urology Clinics		

Table 20: Service Relationships - Inpatient Services

Services Which Will Transfer/Be Provided by Lifeshouse	Major Cancer and Non-Cancer Role, with Options Review for the Cancer Role in December 2014	Cancer and Non-Cancer Role Managed by RPA	Interrelationship	Services Less Directly Affected
Inpatient Medical Services (A-Z)				
Medical Oncology		Dermatology	Aged Care/Rehabilitation and General Medicine	Drug and Alcohol
Radiation Oncology		Haematology Palliative Care	Cardiology Clinical Immunology/Allergy/HIV/AIDS Diabetes/Endocrinology/Metabolism and Obesity Emergency Medicine-MAU (up to 48 hours) Gastroenterology Neurology Oral Health Renal Medicine	Mental Health Microbiology and Infectious Diseases Paediatrics Women's and Babies /Infertility Clinic
Inpatient Surgical Services (A-Z)				
Breast Surgery	Colorectal Surgery	Neurosurgery/Neuroscience	Cardiothoracic Surgery • Cardiac • Thoracic ENT	Trauma
Gynaecological Oncology	Upper Gastrointestinal Surgery	Transplant Services		
Melanoma and Surgical Oncology	Head and Neck Surgery	Orthopaedics	Benign Gynaecology	
Selected Plastics and Reconstructive Surgery	Selected Related Plastic Surgery		Ophthalmology	

Table 20: Service Relationships - Inpatient Services				
Services Which Will Transfer/Be Provided by Lifecare	Major Cancer and Non-Cancer Role, with Options Review for the Cancer Role in December 2014	Cancer and Non-Cancer Role Managed by RPA	Interrelationship	Services Less Directly Affected
(non-delayed breast reconstruction)	Services Urology		Vascular Surgery	
Table 21: Service Relationships - Support Services				
Support Services (A-Z)				
• Cancer-related Social Work and Psych-Oncology Services			Aboriginal Liaison	Child Protection NARMU
			Allied Health: • Dietetics • Occupational Therapy • Orthotics • Physiotherapy • Podiatry • Speech Pathology	
			Anaesthetics	
			Cardiology: • Coronary Care • ECGs	
			Education and Training	
			Imaging • Diagnostic Radiology • Nuclear Medicine and PET	

Table 20: Service Relationships - Inpatient Services

Services Which Will Transfer/Be Provided by Lifecare	Major Cancer and Non-Cancer Role, with Options Review for the Cancer Role in December 2014	Cancer and Non-Cancer Role Managed by RPA	Interrelationship	Services Less Directly Affected
			Intensive Care	
			Interpreters	
			Neurology - EEGs	
			Operating Theatres Perioperative (TPU)	
			Pain Management	
			Pathology	
			Respiratory (Bronchoscopy)	
			Vascular Laboratory	
			Administration Services	
			SLHD Cancer Stream Administration	

Generic Model of Care Issues

Overview

There are a number of generic issues relevant to all departments that will be providing care across both RPA and Lifehouse campuses. Separate papers are available which provide more detailed information on the Models of Care related to the major professional groups and clinical governance. These are

- *Medical Staff Models of Service Provision* This paper describes the proposed employment, allocation, remuneration, billing and indemnity arrangements for medical staff affected by the Lifehouse project.
- *Allied Health Models of Care* This paper outlines the agreed model of care for each of the allied health services.
- *Nursing Models of Care* This paper outlines the agreed model of care for senior nursing services.
- *Clinical Governance and Lifehouse* This paper outlines the SLHD approach to clinical governance and the opportunities for sharing of quality and safety approaches.

Other issues that may be only relevant to individual departments are considered in the departmental functional briefs.

Ambulatory / Outpatient Care

From mid 2013 ambulatory care clinics for patients with cancer from Medical Oncology and Radiation Oncology, Breast Surgery, Melanoma and Surgical Oncology, Gynaecological Oncology and selected Plastic and Reconstructive Surgery clinics will be transferred to Lifehouse. Lifehouse will assume the clinical governance, management and administrative responsibility for these transferred clinics.

For those services with a cancer role which will remain managed by RPA (e.g. Haematology, Lymphoedema, Dermatology), selected clinics will be provided within the Lifehouse building for the payment, if required, of a facility fee. For these services, the clinical governance, management and administrative responsibility will remain with RPA.

Admitted Patient Care

From mid 2015, those departments transferring to Lifehouse will have inpatient beds in Lifehouse. Some admissions may still occur in RPA for these departments, either through the Emergency Department prior to a patient transferring to Lifehouse, or in other critical care areas where Lifehouse is unable to provide the level of care required.

In Stage 2, after a review in December 2014, consideration will be given to selected surgical services in Group 2 namely, Colorectal Surgery, Upper GI Surgery, Head and Neck Surgery and related Plastic and Reconstructive Surgery being provided in Lifehouse.

Consultation Across the Two Hospitals

If an admitted patient in Lifehouse requires a medical or surgical consultation from a medical service not based in Lifehouse, they would request this from the on-call or preferred RPA consultant. The department may choose to send a registrar (advanced or basic trainee) to undertake the initial consultation, followed by a consultant review. This would replicate the current RPA model of care. Transfers of care to an RPA based consultant who has no inpatient beds at Lifehouse, would be achieved by the discharge of the patient from Lifehouse and a direct ward admission to RPA. Transfer via the RPA emergency department is to be avoided except where absolutely necessary for urgent clinical reasons.

Similarly, if an admitted patient in RPA requires consultation from a Lifehouse based consultant, then this would be directed to the on-call or preferred Lifehouse based consultant.

Consultants based at either facility may be requested to provide consultant input into a multidisciplinary patient assessment (or similar) at the other facility. This will be arranged ad-hoc in the same manner as for an inpatient consultation, or for ongoing regular attendance via an agreement between the relevant departments.

Consultants based at either facility may be requested to participate in other matters across each campus such as policy and procedure development, patient safety investigations, complaint management or other administrative activities.

Procedural Work

It is an accepted principle that as much as possible patients should be treated within each facility without the need to formally transfer between facilities for reasons of patient convenience, continuity of care, and service efficiency.

However, if inpatients of Lifehouse require a procedure that is provided at RPA, and for clinical, logistical or other reasons this service cannot be provided at Lifehouse, the patient may be temporarily transferred to RPA for the relevant procedure. This may involve a discharge from Lifehouse and admission to RPA, depending upon the nature of the procedure. Referral of non-inpatients from Lifehouse for procedures at RPA should be made in the standard manner as for any ambulatory patient referral to the RPA.

If inpatients of RPA require a procedure or service that is only available at Lifehouse, they will be similarly transferred temporarily for these procedures.

Diagnostic Services

RPA will provide consultation services and reporting for imaging, nuclear medicine, pathology and a range of other diagnostic services which are not expected to be provided at Lifehouse. (ECGs, holter monitors, echocardiograms, vascular access). These services will be the subject of a service level agreement.

On-Call Services

It is agreed that Lifehouse and RPA will share senior medical staff and, where appropriate, specialist registrar on call rosters across the two campuses. This is to ensure rapid access to consultant level care for all specialty disciplines at both facilities, as well as for reasons of efficiency and convenience.

Financial Arrangements

Service agreements will be negotiated between the SLHD and Lifehouse to account for, and reimburse where appropriate, relevant services provided between RPA and Lifehouse.

Clinical Information

For reasons of continuity of care, RPA consultants and registrars who are granted clinical privileges or authority to work in Lifehouse will be enabled access to relevant clinical information held by Lifehouse for patients referred for consultation, procedural, or diagnostic tests as well as Lifehouse patients who are admitted to RPA for inpatient care.

Allied Health Models of Care

Three approaches to the provision of allied health services have been agreed.

Model One:

Psychology services are funded and managed within clinical services in RPA. Psycho-Oncology is a separate department within RPA that is staffed by clinical psychologists and social workers and provides counseling and therapy to cancer patients. It is agreed that the Psycho-Oncology department will transfer to Lifehouse.

Model Two:

The Social Work service in Lifehouse will directly employ and manage Social Workers to provide cancer services in collaboration with the Psycho-Oncology service. This model for Social Work is dependent on the continuation of funding from Cancer services for Psycho-Oncology services. However if this funding was to cease then Social Work should be considered in the same way as the other allied health departments in Model Three, and operate under a fee for service arrangement.

Model Three

It is agreed that the RPA Nutrition and Dietetics, Occupational Therapy, Orthotics, Physiotherapy, Podiatry and Speech Pathology departments will be wholly retained by RPA and provide a service to Lifehouse as part of a service level agreement. Within this model a mutually agreed FTE staffing allocation/level will be provided and charged to Lifehouse inclusive of the rostered afterhours service and call backs.

These staff members will continue to be managed by, supported and function within the Allied Health departments of RPA. On call and additional corporate/professional services will be provided from RPA to Lifehouse at no cost. Call Back will be charged to Lifehouse.

Allied Health Corporate + Professional Services

Staff management, supervision, competency assessment, recruitment and professional support

Provided to Lifehouse as per current RPA on call arrangements

Clinical

Mutually agreed Allied Health FTE allocation and level inclusive of rostered after hours service and call backs

Senior Nursing Model of Care

Senior nursing consultation and cross departmental service delivery is integral to the RPA Model of Care and to the provision of high quality care. RPA has a total of 116.4 FTE senior clinical and non-clinical nursing positions. These positions consist of Nurse Practitioners, Clinical Nurse Consultants, Clinical Nurse Specialists and registered Nurses.

A number of senior nursing positions will transition to Lifehouse with their departments and provide a consultancy service back to RPA e.g. Oncology Service Nurse Practitioner. Other senior positions will be managed by RPA and provide a consultancy service to Lifehouse e.g. CNC Stomal Therapy. A third group of senior nurses will not provide a consultancy service to Lifehouse e.g. CNC Infection Control.

All of these senior nurses will require dual credentialing, indemnity and clinical governance in order to provide a service across both campuses. Recruitment will be undertaken by the managing facility. A common billing process and billing price will need to be established for cross consultation.

Model for the Provision of RPA Cancer Services at Lifehouse

Services that will Transition to Lifehouse in 2013

Ambulatory Clinics and selected Day Surgery that will, from 2013, be managed by Lifehouse and located at Lifehouse includes:

- Medical Oncology
- Radiation Oncology
- Breast Surgery (not Day Surgery)
- Gynaecological Oncology
- Melanoma and Surgical Oncology
- Psycho-oncology and selected cancer-related Social Work services

Ambulatory Clinics that will continue to be managed by RPA and located at Lifehouse in 2013 include:

- Cancer-related Palliative Care
- Haematology
- Clinical Genetics
- Plastic Surgery (in relation to non-delayed breast reconstruction)
- The Bone and Soft Tissue Sarcoma Clinic (Orthopaedics)
- Cancer-related Dermatology Clinic(s)
- Breast Assessment Services (BreastScreen NSW)
- The Lymphoedema Clinic (Occupational Therapy)
- Other cancer-related Allied Health clinics
- Selected Surgical Subspecialty clinics related to cancer patients

The activity for these services will need to be determined as a priority.

Services that will Transition to Lifehouse in 2015

The following inpatient services will transition to Lifehouse and will provide services back to RPA in Stage 1, 2015, of the Lifehouse development.

- Medical Oncology services based on the HIE activity 2009-11 (appendix 1)
- Radiation Oncology based on the HIE activity 2009-11.
- Breast Surgery based on the HIE activity 2009-11.
- Gynaecological Oncology Service. The service will continue to provide services to RPA Obstetrics as per current arrangements. The service will be based on the activity of the Gynaecological Oncology surgeons derived from the HIE.
- Melanoma and Surgical Oncology. This will be based on the activity of the AMOs derived from the HIE.

Services that will be the Subject of a Comprehensive Review (December 2014)

The following services will be comprehensively reviewed in relation to Stage 2 of the inpatient Lifehouse development.

- Colorectal Surgery

- Upper Gastrointestinal Surgery
- Urology
- Related Plastic and Reconstructive Surgery
- Head and Neck Surgery

Appendix 1: RPA/IRO Cancer-Related Activity - Selected SRGs 2009

Selected SRGs	Separatio ns	Beddays	Ca Related Separations	Ca as % of Selected Separatio ns	Ca Related Beddays	Ca as % of Selected Beddays	Ca Related Beds @85% Occupancy	Private Pats	Public Pats	% Private Pats
11 Cardiology	2077	8296	58	2.8	406	4.9	1.3	15	42	25.9
12 Interventional Cardiology	1949	7896	9	0.5	99	1.3	0.3	4	5	44.4
13 Dermatology	171	714	32	18.7	214	30.0	0.7	9	22	28.1
14 Endocrinology	536	2288	48	9.0	280	12.2	0.9	17	31	35.4
15 Gastroenterology	2407	9563	277	11.5	1895	19.8	6.1	78	199	28.2
16 Diagnostic GI Endoscopy	797	1907	51	6.4	303	15.9	1.0	12	39	23.5
17 Haematology	1232	8392	641	52.0	7150	85.2	23.0	252	388	39.3
18 Immunology & Infections	969	4283	79	8.2	697	16.3	2.2	30	49	38.0
19 Medical Oncology (inc Rad Onc)	1082	6684	998	92.2	6226	93.1	20.1	247	750	24.7
21 Neurology	1843	6189	48	2.6	348	5.6	1.1	12	36	25.0
22 Renal Medicine	704	3230	43	6.1	380	11.8	1.2	12	31	27.9
24 Respiratory Medicine	2285	14697	199	8.7	2208	15.0	7.1	51	148	25.6
25 Rheumatology	348	1022	2	0.6	13	1.3	0.0	2	0	100.0
26 Pain Management	384	646	6	1.6	17	2.6	0.1	1	5	16.7
27 Non Subspecialty Medicine	1218	3328	57	4.7	316	9.5	1.0	17	40	29.8
41 Breast Surgery	358	852	255	71.2	740	86.9	2.4	88	167	34.5
42 Cardiothoracic Surgery	825	7809	191	23.2	1358	17	4.4	34	157	17.8
43 Colorectal Surgery	1165	9346	248	21.3	4164	44.6	13.4	91	156	36.7
44 Upper GI Surgery	856	5536	173	20.2	1610	29.1	5.2	40	133	23.1
45 Head & Neck Surgery	172	632	78	45.3	408	64.6	1.3	17	61	21.8
46 Neurosurgery	1269	9398	158	12.5	2084	22.2	6.7	71	87	44.9
47 Dentistry	40	67	4	10.0	4	6.0	0.0	0	4	0.0
48 Ear, Nose & Throat	703	1061	33	4.7	127	12.0	0.4	12	21	36.4
49 Orthopaedics	3856	17732	159	4.1	1461	8.2	4.7	52	107	32.7
50 Ophthalmology	839	1272	35	4.2	97	7.6	0.3	8	27	22.9
51 Plastic & Reconst. Surgery	1348	4363	721	53.5	2348	53.8	7.6	244	477	33.8
52 Urology	1747	5716	317	18.1	2254	39.4	7.3	93	224	29.3
53 Vascular Surgery	858	7215	20	2.3	342	4.7	1.1	9	11	45.0
54 Non Subspecialty Surgery	2661	11180	233	8.8	2147	19.2	6.9	70	163	30.0
61 Transplantation	120	2272	19	15.8	380	16.7	1.2	0	19	0.0
63 Tracheostomy	304	9329	59	19.4	2079	22.3	6.7	19	40	32.2
71 Gynaecology	3691	6036	175	4.7	770	12.8	2.5	75	100	42.9
81 Drug & Alcohol	777	2972	5	0.6	73	2.5	0.2	0	5	0.0
82 Psychiatry - Acute	824	11771	11	1.3	134	1.1	0.4	0	11	0.0
86 Palliative Care	14	150	13	92.9	126	84.0	0.4	2	11	15.4
88 Acute Definitive Ger. Medicine	355	2225	19	5.4	185	8.3	0.6	3	15	15.8
99 Unallocated	175	2045	22	12.6	398	19.4	1.3	4	18	18.2

TOTAL	40259	198114	5496	13.4	43839	16.4	1413	1691	3799	30.8
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SRGs omitted: Obstetrics, Defn. Paediatrics, Rehabilitation, Mamt., Renal Dialysis, non-acute Psychiatry, Qualif. Neonates, Unqual. Neonates, Perinatol. non-Acute Geri., Ext. Burns
Source: HIE

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Appendix 1: RPA/IRO Cancer-Related Activity X Selected SRGs 2010

Selected SRGs	Separations	Beddays	Ca Related Separations	Ca as % of Selected Separations	Ca Related Beddays	Ca as % of Selected Beddays	Ca Related Beds @85% Occupancy	Pub Pats	Private Pats	% Private Ca Patients
11 Cardiology	2235	9132	60	2.7	496	5.4	1.6	43	17	28.3
12 Interventional Cardiology	1832	7217	13	0.7	109	1.5	0.4	11	2	15.4
13 Dermatology	171	651	26	15.2	136	20.9	0.4	21	5	19.2
14 Endocrinology	452	2071	60	13.3	315	15.2	1.0	38	22	36.7
15 Gastroenterology	2599	9843	273	10.5	1863	18.9	6.0	196	77	28.2
16 Diagnostic GI Endoscopy	731	1556	44	6.0	116	7.5	0.4	32	12	27.3
17 Haematology	1174	7337	624	53.2	6423	87.5	20.7	400	243	38.9
18 Immunology & Infections	1045	4511	75	7.2	686	15.2	2.2	48	27	36.0
19 Medical Oncology (incl Rad Onc)	1160	7884	1096	94.5	7572	96.0	24.4	849	249	22.7
21 Neurology	1852	6382	55	3.0	505	7.9	1.6	35	20	36.4
22 Renal Medicine	677	3565	85	12.6	877	24.6	2.8	67	18	21.2
24 Respiratory Medicine	2377	15342	204	8.6	1796	11.7	5.8	145	59	28.9
25 Rheumatology	185	692	0	0.0	0	0.0	0.0	0	0	0.0
26 Pain Management	349	687	7	2.0	20	2.9	0.1	4	3	42.9
27 Non Subspecialty Medicine	1257	3406	52	4.1	292	8.6	0.9	31	21	40.4
41 Breast Surgery	395	948	262	66.3	784	82.7	2.5	151	111	42.4
42 Cardiothoracic Surgery	833	7254	195	23.4	1384	19.1	4.5	174	21	10.8
43 Colorectal Surgery	1186	8651	254	21.4	3933	45.5	12.7	148	106	41.7
44 Upper GIT Surgery	867	5814	198	22.8	2050	35.3	6.6	134	64	32.3
45 Head & Neck Surgery	201	695	74	36.8	379	54.5	1.2	54	20	27.0
46 Neurosurgery	1320	9748	150	11.4	1811	18.6	5.8	86	65	43.3
47 Dentistry	30	64	0	0.0	0	0.0	0.0	0	0	0.0
48 Ear, Nose & Throat	765	1249	35	4.6	123	9.8	0.4	23	12	34.3
49 Orthopaedics	3924	20126	176	4.5	2060	10.2	6.6	111	85	48.3
50 Ophthalmology	803	1179	23	2.9	66	5.6	0.2	14	9	39.1
51 Plastic & Reconst. Surgery	1367	4232	681	49.8	2376	56.1	7.7	453	228	33.5
52 Urology	1823	6507	369	20.2	2879	44.2	9.3	280	89	24.1
53 Vascular Surgery	864	7280	16	1.9	352	4.8	1.1	11	5	31.3
54 Non Subspecialty Surgery	2667	11490	225	8.4	2291	19.9	7.4	131	95	42.2
61 Transplantation	141	3924	15	10.6	517	13.2	1.7	15	0	0.0
63 Tracheostomy	315	11393	56	17.8	2404	21.1	7.7	38	18	32.1
71 Gynaecology	3610	6021	208	5.8	946	15.7	3.0	125	83	39.9
81 Drug & Alcohol	815	3344	5	0.6	51	1.5	0.2	5	0	0.0
82 Psychiatry - Acute	812	12002	4	0.5	205	1.7	0.7	4	0	0.0
85 Non Acute Geriatric	2	11	1	50.0	8	72.7	0.0	1	0	0.0
86 Palliative Care	6	71	6	100.0	71	100.0	0.2	5	1	16.7

88 Definit. Acute Ger. Medicine	353	2137	17	4.8	175	8.2	0.6	10	7	41.2
99 Unallocated	226	1844	22	9.7	422	22.9	1.4	19	3	13.6
TOTAL	41421	206260	5666	13.7	46493	22.5	149.9	3912	1797	31.7

SRGs omitted: Obstetrics, Defn. Paeds, Rehabilitation, Maintenance, Renal Dialysis, non-acute Psychiatry, Qualif. Neonates, Unqual. Neonates, Perinatology, non-Acute Geriatrics, Ext Burns
Source: HIE

Appendix 1: RPA/IRO Cancer-Related Activity X Selected SRGs 2011

SRG	Selected Separations	Selected Beddays	Ca Related Separations	Ca as % of Selected Separations	Ca Related Beddays	Ca as % of Selected Beddays	Ca Related Beds @85% occupancy	Pub Pats	Private Pats	% Private Patients
11 Cardiology	2099	8839	50	2.4	293	3.3	0.9	37	13	26.0
12 Interventional Cardiology	1694	6659	11	0.6	133	2.0	0.4	6	5	45.5
13 Dermatology	196	735	27	13.8	160	21.8	0.5	25	2	7.4
14 Endocrinology	433	1970	47	10.9	237	31	0.8	31	16	34.0
15 Gastroenterology	2745	11057	250	9.1	1494	13.5	4.8	183	67	26.8
16 Diagnostic GI Endoscopy	722	1791	43	6.0	217	12.1	0.7	28	15	34.9
17 Haematology	1298	9450	703	54.2	7971	84.3	25.7	423	273	38.8
18 Immunology & Infections	1064	4995	105	9.9	878	17.6	2.8	63	42	40.0
19 Medical Oncology	963	6215	921	95.6	6061	97.5	19.5	725	195	21.2
21 Neurology	1930	6820	53	2.7	349	5.1	1.1	41	12	22.6
22 Renal Medicine	746	3093	46	6.2	388	12.5	1.3	33	13	28.3
24 Respiratory Medicine	2453	15792	169	6.9	1664	10.5	5.4	139	30	17.8
25 Rheumatology	127	684	2	1.6	74	10.8	0.2	1	1	50.0
26 Pain Management	275	519	1	0.4	2	0.4	0.0	0	0	100.0
27 Non Subspecialty Medicine	1249	3607	40	3.2	253	7.0	0.8	29	11	27.5
41 Breast Surgery	360	808	245	68.1	662	81.9	2.1	164	81	33.1
42 Cardiothoracic Surgery	840	7347	204	24.3	1493	20.3	4.8	181	23	11.3
43 Colorectal Surgery	1175	8728	252	21.4	3894	44.6	12.6	144	108	42.9
44 Upper GI Surgery	958	6797	249	26.0	2381	35.0	7.7	194	55	22.1
45 Head & Neck Surgery	191	672	79	41.4	431	64.1	1.4	49	30	38.0
46 Neurosurgery	1247	9263	150	12.0	1660	17.9	5.4	92	58	38.7
47 Dentistry	26	63	0	0.0	0	0.0	0.0	0	0	0
48 Ear, Nose & Throat	734	1112	26	3.5	84	7.6	0.3	21	5	19.2
49 Orthopaedics	4046	18444	143	3.5	1532	8.3	4.9	112	31	21.7
50 Ophthalmology	808	1092	34	4.2	100	9.2	0.3	30	4	11.8
51 Plastic & Reconstructive Surgery	1318	4082	620	47.0	2058	50.4	6.6	412	208	33.5
52 Urology	1808	6662	331	18.3	2561	38.4	8.3	253	78	23.6
53 Vascular Surgery	887	7192	19	2.1	379	5.3	1.2	15	4	21.1
54 Non Subspecialty Surgery	2687	12046	237	8.8	2780	23.1	9.0	170	67	28.3
61 Transplantation	140	3465	18	12.9	423	12.2	1.4	18	0	0.0
63 Tracheostomy	309	9919	67	21.7	2112	21.3	6.8	42	25	37.3
71 Gynaecology	3674	6065	188	5.1	879	14.5	2.8	106	82	43.6
81 Drug & Alcohol	769	2524	4	0.5	36	1.4	0.1	3	1	25.0
82 Psychiatry - Acute	883	13199	5	0.6	63	0.5	0.2	5	0	0.0
86 Palliative Care	24	155	19	79.2	125	80.6	0.4	14	5	26.3
88 Def Ger Med	358	2571	14	3.9	188	7.3	0.6	11	3	21.4
99 Unallocated	311	2751	18	5.8	276	10.0	0.9	16	2	11.1

TOTAL	41,547	207,183	5,390	13.0	44,291	21.4	1,42.8	381.6	1,566	29.1
SRCs omitted: Obstetrics, Defn. Paeds, Rehabilitation, Maintenance, Renal Dialysis, non-acute Psychiatry, Qualif. Neonates, Unqual. Neonates, Perinatology, non-Acute Geriatrics, Ext Burns										
Source: HIE										

Appendix 2: RPA/IRO Projected Surgical Activity for Selected 2009 -2022

SRC	2009					2017					2022					
	Seps	Beddays	% Ca Beddays	Ca Beds @85%	Seps	Beddays	% Ca Beddays	Ca Beds @85%	Seps	Beddays	% Ca Beddays	Ca Beds @85%	Seps	Beddays	% Ca Beddays	Ca Beds @85%
12 Interventional Cardiology	1620	7208	0.6	0.1	1957	8188	0.6	0.2	2210	9198	0.6	0.2				
24 Respiratory Medicine	50	501	51.2	0.8	48	406	51.2	0.7	50	413	51.2	0.7				
41 Breast Surgery	193	631	96.3	2.0	216	585	96.3	1.8	227	577	96.3	1.8				
42 Cardiothoracic Surgery	779	8167	19.3	5.1	830	9237	19.3	5.7	883	9903	19.3	6.2				
43 Colorectal Surgery	543	6439	49.7	10.3	588	6012	49.7	9.6	626	6419	49.7	10.3				
44 Upper GI Surgery	594	4228	38.8	5.3	682	4419	38.8	5.5	730	4559	38.8	5.7				
45 Head and Neck Surgery	170	658	82.8	1.8	220	739	82.8	2.0	238	766	82.8	2.0				
46 Neurosurgery	668	6161	44.4	8.8	800	7859	44.4	11.2	872	8497	44.4	12.2				
48 Ear, Nose and Throat	326	456	19	0.3	350	488	19	0.3	368	502	19	0.3				
49 Orthopaedics	2319	14642	10.5	5.0	2578	16687	10.5	5.6	2850	18180	10.5	6.2				
50 Ophthalmology	84	268	8.7	0.1	79	173	8.7	0.0	88	187	8.7	0.1				
51 Plastic and Reconstructive Surgery	693	4031	59	7.7	725	4434	59	8.4	771	4715	59	9.0				
52 Urology	516	3593	59.1	6.8	534	3073	59.1	5.9	575	3282	59.1	6.3				
53 Vascular Surgery	588	4582	4.7	0.7	629	5182	4.7	0.8	663	5408	4.7	0.8				
54 Non Subspecialty Surgery	1201	8770	26.9	7.6	1248	8129	26.9	7.0	1340	8814	26.9	7.6				
61 Transplantation	122	2331	15.4	1.2	119	2293	15.4	1.1	123	2361	15.4	1.2				
63 Tracheostomy	297	9220	21.8	6.5	340	11483	21.8	8.1	373	12722	21.8	8.9				
71 Gynaecology	981	3404	34.8	3.8	1043	3408	34.8	3.8	1067	3369	34.8	3.8				
TOTAL	12351	89046	26.3	75.5	13593	96422	26.3	81.7	14708	103808	26.3	88.0				

Source: AIM 2010

Appendix 2: Projected Medical Activity 2009-2022

SRG	2009						2017						2022					
	All Beddays	Beds	% Ca Beddays	Ca Beds	Sum of beddays	% Cancer Beds	Beds	Sum of beddays	% Cancer Beds	Ca Beds	Sum of beddays	% Cancer Beds	Beds	Sum of beddays	% Cancer Beds	Ca Beds		
11 Cardiology	8,612	28	4	1.0	8,879	4	29	1.1	4	9,838	32	4	1.2					
13 Dermatology	625	2	31	0.6	603	31	2	0.6	31	626	2	31	0.6					
14 Endocrinology	2,533	8	12	1.0	2,868	12	9	1.1	12	3,245	10	12	1.3					
15 Gastroenterology	5,733	18	19	3.6	5,597	19	18	3.5	19	6,094	20	19	3.8					
17 Haematology	6,997	23	85	19.2	7,198	85	23	19.8	85	7,647	25	85	21.0					
18 Immunology and Infections	4,008	13	12	1.6	5,161	12	17	2.0	12	5,688	18	12	2.2					
19 Medical Oncology	6,090	20	99	19.4	6,136	99	20	19.5	99	6,572	21	99	20.9					
21 Neurology	5,907	19	7	1.3	7,510	7	24	1.6	7	8,158	26	7	1.8					
22 Renal Medicine	2,432	8	12	0.9	2,389	12	8	0.9	12	2,594	8	12	1.0					
24 Respiratory Medicine	14,405	46	13	6.1	15,091	13	49	6.4	13	16,325	53	13	6.9					
25 Rheumatology	1,167	4	9	0.3	856	9	3	0.2	9	862	3	9	0.2					
26 Pain Management	371	1	3	0.0	419	3	1	0.0	3	449	1	3	0.0					
27 Non Subspecialty Medicine	6,118	20	9	1.8	7,883	9	25	2.3	9	8,524	27	9	2.5					
43 Colorectal Surgery	1,465	5	44	2.1	1,412	44	5	2.0	44	1,549	5	44	2.2					
44 Upper GI Surgery	905	3	33	1.0	959	33	3	1.0	33	1,073	3	33	1.1					
46 Neurosurgery	2,025	7	34	2.2	2,376	34	8	2.6	34	2,484	8	34	2.7					
48 Ear, Nose and Throat	405	1	14	0.2	343	14	1	0.2	14	356	1	14	0.2					
49 Orthopaedics	2,651	9	9	0.8	3,097	9	10	0.9	9	3,417	11	9	1.0					
50 Ophthalmology	267	1	8	0.1	280	8	1	0.1	8	297	1	8	0.1					
51 Plastic and Reconstructive Surgery	312	1	57	0.6	251	57	1	0.5	57	261	1	57	0.5					
52 Urology	1,162	4	45	1.7	1,086	45	4	1.6	45	1,145	4	45	1.7					
53 Vascular Surgery	2,396	8	4	0.3	2,699	4	9	0.4	4	2,988	10	4	0.4					
54 Non Subspecialty Surgery	4,149	13	20	2.7	5,092	20	16	3.3	20	5,617	18	20	3.7					
71 Gynaecology	274	1	33	0.3	284	33	1	0.3	33	288	1	33	0.3					

Grand Total	81,009	261	68.8	285	72.0	310	77.4
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Appendix 3: Data and Cancer Flag Issues

RPA/IRO Selected SRGS 2009				
Selected SRGs	HIE	Flow-Info	HIE	Flow-Info
	Ca as % Seps	Ca % Seps	Ca as % of Beddays	Ca as % Beddays
11 Cardiology	2.8	2.6	4.9	3.7
12 Interventional Cardiology	0.5	0.4	1.3	0.5
13 Dermatology	18.7	22.2	30	31.4
14 Endocrinology	9	10.4	12.2	12.3
15 Gastroenterology	11.5	13.1	19.8	19.4
16 Diagnostic GI Endoscopy	6.4	26.6	15.9	27.4
17 Haematology	52	51.5	85.2	85.3
18 Immunology & Infections	8.2	7.1	16.3	12.2
19 Medical Oncology	92.2	98.4	93.1	98.8
21 Neurology	2.6	3.2	5.6	6.7
22 Renal Medicine	6.1	5.8	11.8	11.8
24 Respiratory Medicine	8.7	8.7	15	13.1
25 Rheumatology	0.6	2	1.3	8.8
26 Pain Management	1.6	1.6	2.6	2.6
27 Non Subspecialty Medicine	4.7	10.2	9.5	9.1
41 Breast Surgery	71.2	86.9	86.9	93.4
42 Cardiothoracic Surgery	23.2	25.2	1.7	18.7
43 Colorectal Surgery	21.3	23.2	44.6	44.0
44 Upper GIT Surgery	20.2	24.3	29.1	33.3
45 Head & Neck Surgery	45.3	69.2	64.6	82.8
46 Neurosurgery	12.5	24.2	22.2	34.3
47 Dentistry	10	10	6	6.0
48 Ear, Nose & Throat	4.7	6.7	12	14.0
49 Orthopaedics	4.1	6.6	8.2	9.2
50 Ophthalmology	4.2	4.7	7.6	7.5
51 Plastic & Reconst. Surgery	53.5	59.6	53.8	57.0
52 Urology	18.1	29.7	39.4	45.5
53 Vascular Surgery	2.3	3.3	4.7	4.4
54 Non Subspecialty Surgery	8.8	11.3	19.2	20.2
61 Transplantation	15.8	15	16.7	15.4
63 Tracheostomy	19.4	17.4	22.3	20.0
71 Gynaecology	4.7	20.2	12.8	33.2
82 Psychiatry - Acute	1.3	1.7	1.1	1.5
86 Palliative Care	92.9	92.9	84	98.0
88 Acute Definitive Ger. Medicine	5.4	4.8	8.3	6.2
99 Unallocated	12.6	18.8	19.4	18.8
Total	13.7	17.9	16.4	24.2

SRGs omitted: Obstetrics, Defin. Paediatrics, Rehabilitation, Maint., Renal Dialysis, non-acute Psychiatry, Qualif. Neonates, Unqual. Neonates, Perinatol. non-Acute Geri., Ext. Burns, Drug & Alcohol

This section addresses planning issues associated with varied estimates of cancer-related activity derived from the usage of the cancer flag in the HIE versus the Cancer flag in Flow-Info. A further associated issue, is that the *aIM*, which projects data forward to 2022 does not have a cancer flag. It is understood that the forthcoming new version of these programs will be compatible. At present this has become a problem in devising the volumes for services.

In the planning therefore, the Flow-Info flag has been applied to the following:

- Outpatient Activity

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- Projections for Future Bed Needs

The HIE Cancer Flag has been applied to the HIE inpatient data.

During the Lifehouse planning process, agreement was reached to use the HIE not Flow Info as the data is more recent (2011 + YTD 2012), it includes the most recent private/public information, it is the unit for ABF funding and interrogation by Attending Medical Officer is possible. It has also been agreed to use the Cancer Flag from the HIE, but always recognising that the cancer percentages for Head and Neck, Urology and Diagnostic GI may need to be discussed and clinician validation sought.