Review of Canterbury Regional Cancer & Blood Service
Oncology Outreach to Upper South Island DHBs

2012
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Executive Summary and Recommendations

A Case for Change

Increasing workloads and changing work patterns arising from changes in cancer incidence, prevalence and increasing treatment complexity, have introduced steadily compounding risks to safe and effective service provision in the regions served by the Canterbury Regional Cancer & Blood Service. This review of Oncology Outreach to the Upper South Island DHBs indicates that:

- Configurations of services to Nelson Marlborough are meeting current need, but monitoring and close liaison with NMDHB is required to ensure ongoing adequacy.

- Current configurations of services are insufficient to ensure that the needs of patients in the South Canterbury and West Coast catchments can be appropriately met. This is indicated by:

  - Increasing numbers of patients needing specialist follow up who cannot be accommodated within the outreach site clinics currently provided
  - Increasing numbers of patients being required to travel for assessment (especially first specialist assessment [FSA]) as they cannot be accommodated within the outreach site clinics currently provided
  - Specialist Oncologists have growing concerns that safe practice is compromised by;
    - Reduced time-per-patient in clinics;
    - The increasing volumes of patients per clinic, which are often over-loaded and leave no time between patients for dictation or co-ordination of required follow on activities;
    - Increasing proportions of patients with unmanaged symptoms;
    - Lack of available local resident medical resource (RMO or SMO) to non-surgical Oncology services in the outreach sites;
    - Lack of appropriate levels of awareness of the needs of oncology patients within generalist workforces of outreach hospitals;
    - Variable approaches to the development and deployment of Oncology nurse resources;
    - Limited ability to influence treatment delivery approaches and resourcing in outreach hospitals.
    - Disseminated co-ordination of clinics, often reliant on outreach site nurses to co-ordinate bookings and clinic schedules, and a lack of an overall view of demand and capacity.

Access to First Specialist Assessment (FSA) continues to be timely across the districts, but has been achieved only by redirection of many patients to the Christchurch Centre. As a result of increasing complexity of treatments and patient acuity, clinics are now ‘follow up’ heavy, often to the point of saturation, resulting in deferred follow up of all but the most urgent Follow Up patients.

Whilst positive relationships exist between CDHB SMO’s and outreach district SMO’s it does not appear that the approach to inter-district service provision to date has facilitated dialogue, commonality of expectation, or effective collaboration at a ‘DHB to DHB’ relationship level.

Funding mechanisms produce fluctuation in cost and revenue, and are based on episodic care events rather than reflecting the intensity of resources required for appropriate case management.
It is therefore timely to consider what, if any, changes should occur to better provide non-surgical cancer care to the involved DHBs’ populations.

**Option One – Maintain status quo**

**Description**
No change from current configurations and delivery

**Strengths**
- No cost to implement

**Weaknesses**
- Continuation of the current issues facing the service.
- CDHB clinicians believe the current situation exposes them to unnecessary clinical risk and withdrawal from service is a possible consequence.
- Inconsistent service provision and inequality of care across the districts.
- No uniformity in standard of care.
- No clinical governance or leadership for Oncology services beyond the CRC&BS Canterbury catchment area.
- Difficulty accessing services across DHB boundaries, reducing flexibility in service provision.
- Collaborative planning, risk mitigation and problem resolution are not enabled.
- Certainty of supply and demand not assured, for example the changes to local provision of Medical Oncology FSA at SCDHB (changes in supply of services), and the unknown impact of increased C&CDHB provision at NMDHB (possible reduction in demand for CDHB provided services).
- Robust interfaces required with other hospital services to ensure safe and appropriate care not enabled.
- Will not meet projected increase in demand for service.
- Provides no integrated view of demand for First Specialist Attendance (FSA) or Subsequent Attendance (follow up).
- A cohesive structure to allow adoption of the ‘New Models of Care for Medical Oncology’ is not enabled.

**Option Two – Maintain status quo plus Service Level Agreement**

**Description**
No change from current configurations and delivery. This agreement could also involve a detailed service framework for delivery of chemotherapy treatment at SCDHB and WCDHB under supervision of the regional cancer centre, to establish the minimum requirements for safe provision. Critical linkages to other services would be defined within the Service Level Agreement (e.g. access to Specialist Palliative Care Services).
Strengths
- No cost to implement
- Renegotiation of agreement would force periodic review of appropriateness and adequacy of service provision

Weaknesses
- Continuation of the current issues facing the service.
- CDHB clinicians believe the current situation exposes them to unnecessary clinical risk and withdrawal from service is a possible consequence.
- Inconsistent service provision and inequality of care across the districts.
- No uniformity in standard of care.
- No clinical governance or leadership for Oncology services beyond the CDHB Canterbury catchment area.
- Difficulty accessing services across DHB boundaries, reducing flexibility in service provision.
- Collaborative planning, risk mitigation and problem resolution are not enabled.
- Will not meet projected increase in demand for service.
- Provides no integrated view of demand for FSA or Follow Up.
- A cohesive structure to allow adoption of the ‘New Models of Care for Medical Oncology’ is not enabled.
- Ongoing need for renegotiation of agreement.
- Agreement addresses only one component of care (number of clinics to be supplied per year) and does not recognise the increasing need for follow on activities associated with patient complexity and acuity.

Option Three – Establish service provision on a ‘whole of population’ basis

Description
An integrated regional service, providing Medical and Radiation Oncology outpatient and treatment services to the populations of shareholder DHBs. Funding is based on agreed mechanisms, and a consolidated budget is managed by a single management structure. This structure includes a Regional Service Manager, Regional Clinical Leader, and Regional Nurse Leader. Governance mechanism is representative of all shareholder DHBs. Service planning and monitoring occur collaboratively. All patients have services provided according to their assigned clinical priority, regardless of their place of residence. Outpatient assessment and follow up services are provided as close to their place of residence as is practicable within available resources. Treatment services are provided as close to patient place of residence as is safe and practical. When a patient cannot be seen at the centre closest to their residence to meet the timeframes indicated by their clinical status they will be offered an appointment at the next regional centre clinic in accordance with their assigned clinical priority. Patients requiring sub-specialised oncology assessment may be assessed at the regional centre initially, then have their treatment supervised by the visiting oncologist in their home DHB once a treatment plan is established. A single point of referral receipt, triage, regional waiting list and common patient database support this service. All patients have the opportunity for multidisciplinary team input into their treatment plan. All patients have their non-surgical cancer care provided by clinicians who have been credentialed by
the regional cancer centre. Each point of delivery is resourced with adequate resident medical resource to support the safe provision of care. All nursing staff participate in education programmes and a facilitated inter-district nursing network to ensure consistency of best practice, knowledge sharing and continuing professional development. Planning for nursing aligns with the direction of New Models of Care for Medical Oncology.

The multidisciplinary team includes medical staff, oncology nurses (including chemotherapy delivery, community nursing, Clinical Nurse Specialists, Clinical Nurse Educator), complex care co-ordinators, radiation therapists, physicists, oncology counsellors, social workers, Allied Health staff, and administrative and clerical support staff.

**Strengths**

- Collaborative planning and monitoring undertaken and resource applied on basis of population need
- Maximum flexibility enabled to ensure timely access to service components
- Clinical governance and leadership enabled
- Economies of scale
- Mitigation of clinical risk via adequate provision of resources
- Consistency of service provision
- Workforce development opportunities enabled across districts
- Critical mass to aid sustainability and viability
- Cross cover opportunities enabled
- Widens training opportunities (e.g. rural oncology nursing, registrar placement)
- May aid recruitment and retention of staff
- Single referral entry point, single regional waiting list management and booking processes resulting in efficiencies, and ensure equity of access across the districts.
- ‘Stakeholders’ (i.e. DHBs) become ‘Shareholders’ – paradigm shift potentially offering improved relationships
- Certainty for DHB’s with regard to supply and costs
- Improved standard of care through agreed practice guidelines, shared knowledge and outcome monitoring
- Services are delivered as close as practically possible to patients’ homes.
- Would allow development of processes and capabilities to enable accelerated implementation of components of ‘New Models of Care for Medical Oncology’.

**Weaknesses**

- Additional costs for implementation (not assessed)
- Time for implementation (not assessed, but unlikely to be less than 9 to 12 months)
- Possible need for investment in infrastructure at delivery sites
- Possible need for increase in staff to provide additional clinics in districts remote from the regional cancer centre
- Increased central administrative support requirements to enable centralised administrative processes
- Possible negative perceptions from staff at outreach sites.
There are three separate organisations currently purchasing oncology services from the CDHB. Their needs and resources vary markedly. From the information provided to this review it is clear that the populations of West Coast and South Canterbury DHBs could achieve significant benefit from an approach based on Option 3.

Nelson Marlborough is something of an outlier in these considerations. They are fortunate to have two medical oncologists (1.0FTE total) available for their population, and have established dual provision of Radiation Oncology, which provides patients with the choice of radiation treatment in Wellington or Christchurch. NMDHB flagged their concern that Medical Oncology in this region is also under pressure from increasing treatment and case complexity, and indicated that this was an area that would need more support soon.

The Steering Group were unable to unanimously identify a preferred option, or mix thereof.

The recommendations made reflect;

- The need to provide formalised agreement to underpin service delivery currently and in the medium term, noting that limited service agreements are currently in place. The coverage of these agreements is limited to visiting clinician outpatient activity only, without consideration of the need for locally provided medical support for Medical Oncology patients (West Coast and South Canterbury) or of the resources required to provide effective case management of Medical Oncology patients on active treatment.
- Current issues for which there are no clear basis in agreement to aid resolution.
- The need to consider all the options for future delivery of high quality, equitable, sustainable and cost effective services.
Recommendations

Objectives

- Improved long term viability of the Oncology Outreach Services.
- Identify the service components required for a comprehensive Oncology service.
- Recommend a regional service delivery model(s) including which components of the service that may be delivered by the DHBs involved including the function and responsibilities of each outreach site that is appropriate for each DHB.
- The operational review of regional oncology services will take into account the current project work underway by Ministry of Health on medical oncology and palliative services as they may relate to this regional service.

Issues

- Growing demand through population ageing
- Growing cancer incidence and prevalence
- Service provision in areas remote from CRC&BS
- Local access and population based service delivery
- Increasing demand for and shortage of Medical Oncologists
- Regional approach to service provision
- Assurance of clinical safety
- Patient-centred care and co-ordination
- Provision of adequate facilities and equipment
- Training and support for oncology nurses
- Increasing complexity of treatments and patient acuity
- Inequity of access to radiotherapy across the regions
- Monitoring of service delivery and patient outcomes
- Funding and governance
- Clinical leadership

Recommendations

1. That the leadership of the Canterbury, Nelson Marlborough, South Canterbury and West Coast DHBs agrees in principle to the need for an integrated regional approach to oncology services in the upper South Island in the future.

2. That a steering group with representation by all the associated DHB’s be established to;

   2.1 Address the immediate need for an agreement to describe and underpin inter-district service delivery in the medium term, facilitated by;

       2.1.1 Establishing and oversee a working group with representation by all the associated DHB’s to develop a Service Level Agreement, linked to a ‘Peripheral Chemotherapy Service Framework’ (refer page 56) to be developed for Medical Oncology, with particular
emphasis on remediation of current gaps and issues (identified in recommendations 2.1.2 to 2.1.5 below);

2.1.2 Consider the need for sufficient SMO resource to provide Medical Oncology clinics at South Canterbury DHB, to address the issue of pressure for Follow Up and to provide First Specialist Assessment at this site;

2.1.3 Consider provision of Radiation Oncology outpatient clinics at South Canterbury DHB to minimise the requirement of patients to travel to Christchurch for Follow Up and to provide opportunity for some FSA to be provided at this site;

2.1.4 Canterbury DHB and South Canterbury DHB collaborate to enhance the quality and safety of clinical services for Oncology patients;

2.1.5 Canterbury DHB work with West Coast and South Canterbury DHB’s to consider provision of resident medical support to non-surgical Oncology activity, and in particular for provision of services to Oncology patients outside of visiting clinician times.

2.2 Explore and agree governance and funding mechanisms that will support future regional delivery in the upper South Island;

2.3 Oversee the development of a model of care (noting that for Medical Oncology this will involve the implementation of the Cranleigh Health ‘Models of Care for Medical Oncology’1) and an operational delivery framework which upholds the principle that services should be provided as close to patients’ homes as is safe and practical;

2.4 Oversee development of a comprehensive resource plan to ensure resource requirements are enabled, to include medical staff (sufficient to provide FSA and Follow Up to patients at their DHBs of Domicile), oncology nurses (including chemotherapy delivery, community nursing), complex care co-ordinators, radiation therapists, physicists, oncology counsellors, social workers, Allied Health and administrative and clerical support staff.

2.5 Oversee development of a nursing development plan which considers the development of knowledge, roles and scopes of practice to enable the determined model of care (e.g., development of knowledge to enhance nursing support of Radiation Oncology patients);

2.6 Oversee development of an Information Systems Strategy for Oncology services, within the context of National and South Island Alliance IS directions and initiatives (e.g. South Island Clinical Cancer Information System), to include:

- Enable visibility of demand and clinic capacity across the regions;
- Enhanced co-ordination of Radiation and Medical Oncology outpatient clinics at Outreach sites
- Standard processes and systems to provide consistent timely and efficient referral management and booking functions;
- Appropriate visibility of all relevant clinical information to clinical staff across the regions, to enhance clinical safety.

2.7 Develop a strategy to guide the expansion of Telehealth services across the districts, to include guidance for identification of patient suitable for this type of consultation. Strategy should include technical and facilities requirements at all sites, provision of dedicated administrative support for co-ordination of Oncology Telehealth, data capture of Oncology Telehealth activity, training requirements for clinicians to ensure optimal benefit and patient experience, provision of clinician resource to attend to patient when physical assessment is required as part of a Telehealth consultation.

2.8 Oversee development of an operational plan with a 5 to 10 year horizon.
Objectives and Methods

Rationale

The context for a review of Oncology Outreach provided by the Canterbury Regional Cancer & Blood Service includes work undertaken to address service provision across the upper South Island. A programme of work to establish service provision on a Service Level Agreement (SLA) basis has not been able to be progressed to completion, and highlighted that for Medical Oncology services in particular, the SLA approach did not reflect the realities of service provision, including the necessary interfaces with treatment services in the outreach centres. It was this imperative that initially formed the basis of a planned review. The scope of the review was subsequently expanded to encompass all the outreach centres serviced by Canterbury Regional Cancer & Blood Service, including NMDBH, WCDHB and SCDHB and covers the non-surgical cancer services and Medical Oncology treatments. This occurred in recognition of increasing workloads and changing work patterns arising from changes in cancer incidence, prevalence and increasing treatment complexity, and the potential fragility of service provision by traditional delivery methods. Currently, service provision to Outreach centres is not defined in any agreement or memoranda, and no formal framework exists to support or enable collaborative planning, collaborative management of emergent risk to provision, or resolution of issues.

A number of national and regional initiatives provide further context for this review. At a national level, a New Model of Care for Medical Oncology has been proposed, and the sector is currently waiting for clarification and guidance on implementation. This review presents an opportunity to consider how best to prepare the upper South Island services to adopt the proposed model. At a regional level, there is work occurring towards implementation of a South Island wide clinical cancer information system, development of infrastructure and processes to establish cancer Multi Disciplinary Meetings (regional and supra-regional) as standard of care, and tumour stream mapping to identify opportunities for improvement of cancer care by tumour stream (e.g. lung, bowel) and to implement national standards of service provision.

The focus of this review will be on the operational delivery of the outreach service delivered by Canterbury District Health Board. However it is recognised that governance and funding mechanisms that support the operational structure are of critical importance to successful implementation and ongoing delivery.

Objectives

The Steering Group defined the objectives of this review as:

- Improved long term viability of the Oncology Outreach Services.
- Identify the service components required for a comprehensive Oncology service.
- Recommend a regional service delivery model(s) including which components of the service that may be delivered by the DHBs involved including the function and responsibilities of each outreach site that is appropriate for each DHB.
- The operational review of regional oncology services will take into account the current project work underway by Ministry of Health on medical oncology and palliative services as they may relate to this regional service.
Underlying Principles

The underlying principles for service delivery are to:

- Maintain appropriate levels of service delivery for the population served
- Maintain access to local services within financial and operational constraints
- Improve utilisation of existing services
- Enable cost-effective service configurations across the region
- Enable timely response to risks associated with increased demand or reduced capacity to deliver services

Methods

An Independent Facilitator undertook the development of this review. Development involved the following steps:

- Review of current level, mix of, and access to upper South Island DHB non-surgical cancer treatment services
- Identification of what works well and what are the key issues and opportunities for patients and providers
- Summarised options for future service delivery model options that would provide reliable, sustainable, equitable and clinically acceptable access to treatment services across the upper South Island DHBs.
- Consideration of the impact of projected demographic changes and changes in cancer incidence on service delivery in the next three years.
- Consideration of ongoing staff development and training issues.

These were achieved by:

- Stakeholder interviews (face to face, telephone, and cluster meetings)
- Sourcing and analysing data from the DHB’s involved, Statistics New Zealand, Ministry of Health
- Review of background and contextual materials from a range of sources

Limitations

This review has been developed using a number of assumptions:

- Progressive increases in the incidence of cancer
- Progressive increases in the prevalence of cancer
- Increased complexity of care
- Population as estimated (for 2011) and projected (for 2016) by Statistics New Zealand
- The number of incident cases of cancer in the involved DHB catchments 2008 to 2016 based on actual cancer registrations in 2008
- The proportion of cancer population requiring radiation or chemotherapy
- The maximum workloads and minimum staffing ratios for associated disciplines
Determining future demands based upon currently available data and current service provision levels is problematic due to the following factors:

- Referral rates cannot be determined from the data provided, as referral management processes to allow patients to be seen either in their DHB of domicile or at the regional cancer centre result in duplicate recording. Each DHB provided encrypted NHII data to preserve patient confidentiality, and this precluded data matching across the four datasets. Further, it is possible that patients seen in Christchurch initially then in the outreach sites subsequently, may have an FSA recorded at both sites.

- Patients referred to Oncology can have two FSA’s recorded, one to Radiation Oncology and one to Medical Oncology, thus complicating FSA data. Analysis of the FSA activity at the Christchurch CRC&BS centre in 2009/10 revealed that 16% of the total patient FSA had another FSA in the other non-surgical Oncology specialty.

- There are data integrity issues for CDHB chemotherapy data from 2009/10 due to data coding issues.

- The impact of the 2010 and 2011 earthquakes on the usually resident population numbers in Canterbury is not yet known, as many residents still await decisions as to the status of properties and land. The Statistics New Zealand 2011 estimated population referenced in this review may differ markedly from the actual population. The impact over time of ongoing seismic activity in the region on population number, distribution and structure is unknown. Similarly, population drift to neighbouring regions may alter the number, distribution and structure of their populations. Nelson Marlborough anecdotally report an increase in PHO enrolments of about 1000 people, and increased numbers in aged care facilities, in the period post earthquakes.

- Analysis of FSA and FU volumes for the last three full financial years revealed anomalies in the 2010/11 period, with significant reductions in the numbers of FSA provided compared to the preceding two years. The decrease was evident across the regional catchments. CDHB had requested that referrers direct some Radiation Oncology patients to other centres in this period (firstly to mitigate capacity issues, then as a result of the earthquakes and limited patient accommodation whilst undergoing radiation therapy). The very similar reduction in Medical Oncology numbers may reflect patients requiring concurrent radiation and chemotherapy, referred for treatment elsewhere. Figures for the first half of the 2011/12 year indicate that volumes are trending back towards 2009/10 levels. The 2010/11 figures are considered to be too anomalous to be useful in projections or planning.

- Staffing benchmarks that use FSA or New Patients per Medical Oncology SMO per year are of limited usefulness, by virtue of the fact that FSA alone is an unreliable indicator of workload. The SMO to FSA benchmark of 1:180 is now accepted to be non-reflective of trends towards increasing treatment complexity, increased use of multiple lines of treatment, and increased numbers of patients with greater acuity as a result of increased interventions. Nor does this benchmark allow for the effects of variable registrar support or extensive regional commitments. Radiation Oncology SMO indications are based on a benchmark of 225 FSA per SMO per year. This is derived from the RANZCR recommendation that Radiation Oncologists manage no more than 225-250 radiotherapy courses in one year, and was indicated as broadly correlating to FSA. Accordingly, when these benchmarks are referenced in this report they should be interpreted as broadly indicative measures only.

- This review scope did not include Haematology as a consideration. Nursing workload discussed in this report does not take into account the support provided by Oncology nurses to Haematology patients.
A further limitation exists in relation to the definition of regional Oncology Service provision with Outreach centres.

For the purposes of this review the term ‘Outreach’ is used to describe First Specialist Assessment and Follow Up services provided by CDHB Specialist Oncologists to populations of NMDHB, WCDHB and SCDHB, whether these services are provided in the DHB of patient domicile or at the Christchurch CRC&BS centre. Current chemotherapy delivery services in Outreach districts are not considered to be Outreach services, as the staffing, resourcing, funding and quality assurance controls of these areas is beyond the control or influence of the tertiary centre, despite chemotherapy being prescribed by CDHB clinicians.
**Background**

**Cancer in New Zealand**

New Zealand, along with many other countries, has an increasing number of people who are developing cancer, mainly due to population growth and ageing. Cancer is now the leading cause of death for males and females in New Zealand, accounting for 29.2% of deaths from all causes in 2008.

In 2008, 20,317 cancers were registered in New Zealand, with 52% of the registrations for males. Between 1998 and 2008 the number of registrations increased by 22%. Registration rates decreased by 2% over this period, from 351.4 per 100,000 of population in 1998, to 344.0 per 100,000 of population in 2008. This was due to growth in population and to changes in the population age structure.

The overall incidence of cancer is predicted to increase, from 344.0 per 1000,000 of population in 2008 to 403.0 in 2016. These predictions do not take into account the predicted growth in population or changes in structural ageing relative to the forecasting period. When the effects of these factors are superimposed upon the base predictions a more substantial increase in cancer burden is projected. While some the incidence of some cancers is expected to decrease (breast cancer in the under 45 years age group, colorectal cancer in all age groups other than 75 years+) or to increase very slowly (prostate cancer) the overall number of registrations for these cancers will increase disproportionately to incidence rates, demonstrating the offsetting effects of a growing and ageing population.

The prevalence of cancer will increase as gains in reduced mortality are realised. Since the 1980’s the ‘All Adult Cancer’ mortality rate has shown an overall decline. This decline is expected to continue but at a faster rate than for the last two decades, reflecting gains in cancer survival due to earlier detection and intervention, and improved treatments for some cancers. Patients will require access to oncology services for longer periods than has been the case historically, and interventional requirements will increase as a result of declining mortality.

**Regional Service Provision**

The Canterbury Regional Cancer & Blood Service based in Christchurch provides specialist Haematology, Medical and Radiation Oncology services to the populations of Canterbury, West Coast and South Canterbury. For the CDHB catchment population the majority of services are provided at Christchurch Public Hospital, with some outpatient clinics and chemotherapy delivery occurring at Ashburton Hospital. Radiation Oncology services are provided to Nelson Marlborough. Outreach clinics are held in Nelson (Radiation Oncology), Blenheim (Radiation Oncology), Grey mouth (Radiation and Medical Oncology), and Timaru (Medical Oncology). Patients from these DHB’s are also provided with First Specialist Assessment and Follow Up within the Christchurch centre, to varying extents from one DHB to another.

The framework for regional service provision between CDHB and the outreach centre DHB’s has not been well defined. A recent attempt to do so via Service Level Agreements has not been able to be finalised, and gave rise to concerns that this approach is not well suited to the nature of Medical Oncology service provision. The ‘regional’ service lacks many components that would support optimal provision across the Outreach catchment, and is particularly vulnerable to change in demand for, or capacity to provide, services in all catchment areas.

A significant opportunity exists to establish service provision which is reliable, equitable and clinically acceptable.
Ministry of Health / DHB Health Objectives and Guidelines

This review has been developed in cognisance of the relevant Ministry of Health strategies and DHB objectives relating to cancer services.

NZ Cancer Control Strategy

The New Zealand Health Strategy\(^4\) includes reducing the incidence and impact of cancer as one of 13 population health objectives for the Ministry of Health and District Health Boards to focus on for action. The New Zealand Cancer Control Strategy\(^5\) is the first phase in the development of a comprehensive cancer control programme for New Zealand, promoting a planned, co-ordinated and integrated approach across prevention activities, early detection (particularly screening), treatment and rehabilitation.

The overall purposes of the strategy are to:

- reduce the incidence and impact of cancer
- reduce inequalities with respect to cancer.

The goals of the New Zealand Cancer Control Strategy are to:

1. reduce the incidence of cancer through primary prevention
2. ensure effective screening and early detection to reduce cancer incidence and mortality
3. ensure effective diagnosis and treatment to reduce cancer morbidity and mortality
4. improve the quality of life for those with cancer, their family and whanau through support, rehabilitation and palliative care
5. improve the delivery of services across the continuum of cancer control through effective planning, co-ordination and integration of resources and activity, monitoring and evaluation
6. improve the effectiveness of cancer control in New Zealand through research and surveillance.

Cancer Control Programme - National Cancer Programme Work Plan 2011/12

Focus areas of this work plan are:

**Wait Times:** All people get timely services

**Access:** All people have access to services that maintain good health and independence

**Quality:** All people receive excellent services wherever they are

**Financial Sustainability:** All services make the best use of available resources

Key Performance Indicators and Initiatives address waiting times for treatment, tumour stream approach to standardising models of care and treatment pathways, increasing the percentage of lung and bowel cancer patients reviewed at multidisciplinary team meetings by DHB and ethnicity, cancer screening programme targets, and development of regional cancer data management systems, amongst others.
**New Models of Care for Medical Oncology**

“The proposed model serves to provide a long term direction for future service delivery and has been developed in conjunction with the Medical Oncology Work Group and significant stakeholder input. The model contains three interdependent components. These are:

- A delineated service centre component that defines the expected service delivery levels into a four level hub-and-spoke model. It describes the services provided, minimum resourcing and support requirements expected at each level;
- A role definition component that delineates and defines the future roles, tasks and functions of the key clinical and non-clinical staff groups on the medical oncology treatment pathway. This includes endorsing a broader scope of practice for specialist nursing and introduces alternative medical staff in hospitals and communities to increase the medical oncologist capacity at key care delivery points; and
- A tumour-based component that describes how services are linked, potential sub-specialisation approaches and the role of a possible subspecialty national hub and spoke model based on different tumour types.

To support this model of care, a number of key enablers are also recommended:

- Developing national treatment guidance, standards and protocols with defined escalation and specialist access processes and supporting tools to enable information sharing and access.
- Implementing an appropriately coordinated national and regional MDM framework to support treatment planning and care delivery across multiple locations;
- Developing and implementing accreditation standards and credentialing systems to ensure centres can safely and effectively provide care;
- Developing and implementing regional and national medical oncology training processes to reduce duplication of efforts and support the devolution of care to other clinicians (e.g., national standards, protocols and training programmes to support greater care management by specialist nurses, Medical Officers of Special Scale or General Practitioners); and
- Aligning the DHB funding framework to improve the national and regional focus on care delivery in the proposed model.”

**DHB Specific Objectives**

**Nelson Marlborough Annual Plan 2011/12**

“5. REGIONAL COLLABORATION

The Government expects regional collaboration to develop significantly in 2011/12 through regional plans and development of back office functions across DHBs. NMDHB will continue to be actively involved in supporting and implementing regional service plan improvements for both the South Island and our regional services providers located at Capital & Coast DHB and Hutt DHB.”

**South Canterbury Annual Plan 2011/12**

“2.3 Local direction - bringing it all together”
The South Canterbury DHB will work closely with other SI DHBs in the South Island Alliance to deliver initiatives at the local level to achieve the regional plan commitments. Key initiatives in South Canterbury will include:

- Improving performance and delivering to Health Targets
- Continuing development of clinical leadership across primary and secondary services
- Bedding in current initiatives in secondary services including, discharge by 11am, productive series, discharge planning and production planning
- Development of Pathways across the primary and secondary continuum
- Development of oncology and palliative care services
- Local initiatives in response to regional alliance planning and decisions”

South Canterbury DHB Local Cancer Plan 2010 -2013

GOAL 3: ENSURE EFFECTIVE DIAGNOSIS AND TREATMENT OF CANCER TO REDUCE MORBIDITY AND MORTALITY

<table>
<thead>
<tr>
<th>Objective</th>
<th>Actions</th>
<th>Who</th>
<th>When By</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized &amp; simplified processes to improve clinical pathways for cancer patients</td>
<td>• Develop and implement patient centred tumour stream pathways- lung cancer, bowel cancer</td>
<td>Southern Cancer Network(SCN) supported by South Canterbury Local Cancer Network(SCLCN)</td>
<td>December 2012</td>
<td>Southern Cancer Network - development SCDHB - implementation within existing funding resources</td>
</tr>
<tr>
<td></td>
<td>• Develop a service model which incorporates a navigator function from diagnosis to post treatment (including survivorship)</td>
<td>SCDHB Secondary &amp; Primary &amp; Community Services</td>
<td>July 2011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Review and update clinical pathways to ensure formalized processes for shared care/support of South Canterbury children with cancer</td>
<td>SCN CDHB SCDHB Secondary Services</td>
<td>July 2011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Review and update clinical pathways to ensure formalized processes for shared care/support of South Canterbury adolescents &amp; young people with cancer in line with the National AYA Service Specifications (2009)</td>
<td>SCN SCDHB Secondary services</td>
<td>July 2011</td>
<td></td>
</tr>
</tbody>
</table>
Review of CRC&BS Oncology Outreach to Upper South Island District Health Boards - 2012

<table>
<thead>
<tr>
<th>Objective</th>
<th>Actions</th>
<th>Who</th>
<th>When By</th>
<th>Funding</th>
</tr>
</thead>
</table>
| Improved communication & collaboration    | • Collaborate with SCN, tertiary cancer centres (CHCH, Dunedin) and primary care providers to improve functioning of multidisciplinary teams. Multidisciplinary teams to include all relevant staff.  
• Establish Service Level Agreements for secondary and tertiary cancer service providers funded by SCDHB | SCN SCDHB Secondary & Primary & Community services  
Tertiary centres (Canterbury & Southern DHBs)  
SCDHB Secondary CDHB Southern DHB | July 2011 | SCDHB SCDHB |
| Infrastructure supports best practice service delivery | • Timaru Hospital facilities upgrade- including chemotherapy and day patient facilities  
• Increased utilization of Timaru hospital video conferencing facility with CHCH specialists - regular sessions to be scheduled | SCDHB Secondary services | By December 2012 | SCDHB |

Canterbury DHB Annual Plan 2011-12

“Cancer

Why is this important?
Cancer is the second highest cause of death and a major cause of hospitalisation in New Zealand. While cancers attributable to tobacco smoking are expected to decline with declining tobacco consumption, cancers related to poor diet, lack of physical activity and rising obesity levels are on the increase. At least one third of cancers are preventable, and the impact and death rate of cancer can be reduced through early treatment and management.

Meeting the Minister’s Expectations
100% of people who need radiation oncology treatment will receive it within four weeks of first specialist assessment.

Where do we want to be?
We aim to enhance capacity and reduce waiting times for cancer treatment to continue to meet the health target. In line with this commitment, a fourth linear accelerator is scheduled to be operational at the end of October 2011, with planning underway for an additional radiation therapist and three additional student medical radiation therapists each year to ensure that future staffing needs are met. Additional radiation oncologist, medical oncologist and radiation oncology medical physicist positions have already been filled. To monitor health target compliance, the DHB will report to the Ministry of Health weekly on the waitlist and plan four weeks ahead for bookings. Supporting the work of the Southern Cancer Network to develop standardised care across the region is an important focus for our clinicians. Canterbury will lead the extension of Telehealth videoconferencing to the West Coast and South Canterbury DHBs to support cancer services within these DHBs. The Oncology, Haematology and Palliative Care departments have come together to form the Canterbury Regional Cancer and Blood Service to enhance the integration of cancer services.”
**HOW WE’RE GOING TO GET THERE – OUR PERFORMANCE STORY 2011/12**

<table>
<thead>
<tr>
<th>OBJECTIVE</th>
<th>ACTION</th>
<th>EVIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meet clinical guidelines and reduce waiting times for radiation treatment.</td>
<td>Install the fourth linear accelerator.</td>
<td>The fourth linear accelerator is operational by end of October 2011.</td>
</tr>
<tr>
<td>To improve access to timely treatment for patients.</td>
<td>Expand radiation treatment workforce.</td>
<td>100% of patients needing radiation treatment receive it within 4 weeks of first specialist assessment.</td>
</tr>
<tr>
<td></td>
<td>Ensure weekly prospective monitoring of radiation treatment waiting list.</td>
<td></td>
</tr>
<tr>
<td>Support palliative care services.</td>
<td>Establish a Specialist Palliative Care Governance Group to facilitate sharing of information and other resources between the Canterbury DHB and Nurse Maude Specialist Palliative Care services.</td>
<td>Evaluation of the 2 year Liverpool Care Pathway pilot by August 2011.</td>
</tr>
<tr>
<td>To provide flexible, consistent care to meet the needs of palliative patients.</td>
<td>Improve patient information flows between the CDHB and Nurse Maude Specialist Palliative Care services.</td>
<td>&gt;20 ARC facilities trained to provide the Liverpool Care Pathway.</td>
</tr>
<tr>
<td>Align strategic activity across the South Island.</td>
<td>Participate in the South Island Regional Alliance and support the implementation of the Southern Regional Cancer Network Work Plan.</td>
<td>A better regional perspective on cancer services improves effectiveness and ensures equity.</td>
</tr>
<tr>
<td>To make the most effective use of resources and workforce and ensure equity of access for our populations.</td>
<td>Implement the South Island Clinical Cancer Information System to share data on outcomes and service utilisation to improve service provision and enable informed service planning and development.</td>
<td>Clinical Cancer Information System in place Q4 2011/12.</td>
</tr>
</tbody>
</table>

A proposal is being developed to establish a North Canterbury Health Hub at Rangiora to provide specialist clinics, by mid 2013. Medical Oncology has been identified as one of the services accessed by North Canterbury residents at significant volumes. Chemotherapy delivery may be considered at this site.

**South Island Alliance**

“Regional service planning in the South Island is implemented through active work streams based around priority service areas. These areas have been identified nationally, regionally or locally as ‘clinically vulnerable’, in high demand, or key enablers to support change.

Six service areas have been prioritised: Cancer; Child Health; Health of Older People; Mental Health; Procurement; and Information Technology.

In order to better support regional planning and delivery, the South Island DHBs have adopted a modified Alliance Framework. An Alliance Framework was chosen because it enables the rapid implementation of complex and evolving service models, without disrupting current organisational structures. More importantly, an alliance takes relationship contracting to a higher level, where the participants remove barriers to getting the right thing done by eliminating misalignment of organisational interests for the good of the system.

The South Island Chief Executives have formed an Alliance Leadership Team to take responsibility for coordination of regional health service planning under an Alliance Governance Board consisting of the Chairs of the five South Island DHBs. The South Island Alliance Charter, implementation framework and concept of good faith are outlined in the South Island Health Services Plan.

Formal service level alliances will be formed and resourced for each of the priority service areas to support the South Island to respond to immediate challenges and pressures in the coming year.
Under Lead Chief Executives and a South Island Alliance Management Team, each service level alliance will be responsible for establishing its long-term strategic objectives and plan of action.\textsuperscript{6}

The **Southern Cancer Network** advances the South Island Alliance objectives in respect of the cancer continuum of care. The regional network’s three strategic directions for 2009-2014 are to:

- Share knowledge and information to enable informed decision making;
- Facilitate regional service quality improvement leading to better, sooner, more convenient services; and
- Support innovation and infrastructure development to reduce inequalities and build capacity and capability.

A number of work streams currently being progressed have particular relevance to this review.

**South Island Clinical Cancer Information System (SICCIS)**

It has long been recognised that the clinical data required to support improvement in cancer care processes and outcomes is lacking. Such data that does exist relates only to the rates of incidence and mortality, and is several years old before it is available for use. This project seeks to leverage off systems convergence which has occurred across the three radiation treatment centres in the South Island. This has created an opportunity to expand system capability to effectively provide a repository for a range of clinical data relating to cancer care, including Medical Oncology interventions. It will provide clinicians, planners and funders of cancer services, and cancer research with quality clinical data and will enable monitoring of cancer instances, treatment outcomes, and nationally agreed key performance indicators across the South Island.

Interfaces with Patient Management and Clinical Systems will ensure a single view of patient information.

**Medical Oncology Wait Times Project**

This project aims to improve Medical Oncology service delivery and reduce wait times for cancer patients. The three work streams to achieve this are identified as:

1. Collecting and reporting on Medical Oncology Wait Times.
2. Development and implementation of a core set of Medical Oncology chemotherapy prescriptions and e-prescribing for the South Island within MOSAIQ.
3. An integrated referral system.

It is noted that targeted shorter wait times for radiation treatment, whereby no patient requiring radiation treatment should wait longer than four weeks from assessment to commencement of treatment, except where it is clinically necessary they do so, have been required since January 2011. Performance against this target is reported by DHBs monthly.

**South Island Multidisciplinary Team Meeting (MDM) Project**

The project goal is to provide equitable access to high quality, multidisciplinary and timely decision making on treatment planning and care for patients across the South Island.

Project aims are:

- To identify and implement an information technology solution that will improve the quality, efficiency and effectiveness of the current tertiary and secondary MDM.
- To enable clinicians from the provincial hospitals the option to participate and link to the tertiary MDM resulting in improved collegiality, more efficient treatment decision making and a reduction in geographically based inequalities.

**Southern Cancer Network Modelling of Linear Accelerator Requirements for the South Island 2012 – 2026**

LSI Consulting Ltd has produced a model to investigate future linear accelerator requirements to meet projected demand for Radiation Oncology treatment in the South Island. Using 2011 as base year, the model runs to 2026.
Current Situation and Issues

Population

The total population to which Canterbury Regional Cancer & Blood Service provides Oncology services is 731,890, according to the Sub-national Population Estimates at 30 June 2011 released by Statistics New Zealand in October 2011. It must be noted that the Census which was to occur in March 2011 has been deferred until 2014, in the wake of the February 2011 earthquake in Canterbury.

Predicted changes to the total populations served by CDHB cancer treatment services between 2011 and 2016 are identified in Figure 2. These projections are based on the medium series projections from 2006 Census data by Statistics New Zealand, and population estimates for 2011, also prepared by Statistics New Zealand. As previously identified, the extent to which population projections will be impacted by the 2010 and 2011 earthquake events in Canterbury are not known. However, according to these projections it is anticipated that both the West Coast and South Canterbury populations will decrease by small amounts (2% and 1.3% decreases respectively), while the Nelson Marlborough population is expected to increase by 4,800 (3.5% growth). The Canterbury region population is anticipated to increase by 4.6%, and the total combined populations by 3.6%, over this period. These projections were made prior to the earthquakes which have seen some movement in population, inwards and outwards, from Canterbury. The extent to which the ‘usually resident’ population will change once Canterbury people have clarity around the future of their homes is unknown.

Changes to the population age structures are more significant than population growth. It is recognised that the risk of developing cancer increases with age. Fifty-six percent of all cancer registrations in 2008 occurred in people aged 65 and over\(^3\). Over the forecast period it is anticipated that the total increase in the combined regional population aged 65 years or more be 19.7%, equating to an additional 22,200 people in this age group. As a proportion of total regional population, the group aged 65 years+ will increase from 15.4% to 17.7%.
Table 1 – Proportion of Populations Aged 65 Years+, 2011 and 2016

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMDHB</td>
<td>16.79%</td>
<td>19.93%</td>
</tr>
<tr>
<td>WCDHB</td>
<td>15.84%</td>
<td>19.12%</td>
</tr>
<tr>
<td>CDHB</td>
<td>14.44%</td>
<td>16.52%</td>
</tr>
<tr>
<td>SCDHB</td>
<td>19.89%</td>
<td>22.73%</td>
</tr>
</tbody>
</table>


By 2016, it is projected that 51.8% of the total combined regional population will be aged 45 years or more.

Figure 2 - Projected Changes to Total Populations by DHB Area, 2011 to 2016


Figure 3 - Projected Populations Aged 65 Years+, by DHB Area, 2011 to 2016


The 2006 Census showed the male and female proportions of population to be 49% and 51% respectively for NMDHB, CDHB and SCDHB. The proportion was 51% and 49% respectively for the WCDHB.

Based on the Subnational Population Estimates for 2011, in Canterbury 73.1% of the total DHB population is concentrated within the Christchurch City Territorial Authority area, closest to the tertiary Oncology centre. Nelson Marlborough population is quite evenly distributed across the three Territorial Authority areas, with 32.6% within the Marlborough District serviced by Wairau Hospital in Blenheim, and a total of 67.4% of population within the Nelson City Territorial Authority area (33.0%) and Tasman District Territorial Authority area (32.6%), serviced by Nelson Hospital.

West Coast population is also quite dispersed. The West Coast DHB catchment is comprised of three Territorial Authority areas – Grey District, Buller, and Westland. Population concentration within the Grey District, where the Grey Base Hospital is located at Greymouth, is 42% of the total. Approximately 30% of the total population is located within the Buller Territorial Authority area, which includes Westport where a small hospital is located. About half of the Buller population is ‘usually resident’ within Westport. Approximately 27% of the West Coast population is usually resident within the Westland area, and this population is widely dispersed throughout an area of 11,400km². The largest concentration of population in this area is at Hokitika, where the ‘usually resident’ population is comprised of some 3,100 of the total Westland area population of 8,600. Grey Base Hospital is the nearest hospital to this population. The distance between Haast and Greymouth is approximately 317 km.

In South Canterbury, approximately 79% of the total DHB population is ‘usually resident’ within the Timaru District Territorial Authority area, closest to Timaru Hospital.

**Incidence**

Cancer accounted for 29% of deaths in 2008 in New Zealand, making it the leading cause of death in that year. There are approximately 20,000 new cancer registrations each year, with the highest rates of incidence occurring for those in the middle and older age groups. Ethnicity and deprivation factors have been shown to be major influences on incidence and mortality rates, evidencing population inequalities in disease burden.

The Ministry of Health published the report ‘Cancer in New Zealand - Trends and Projections’ in 2002, in contribution to the NZ Cancer Control Strategy. Incidence and mortality rates were modelled and projected out to the early 2010’s, based on historical registration data.

The report identified an increasing cancer burden in New Zealand, with one-third of the increase in incidence explained by increase in risk, and two-thirds attributable to population growth and structural population ageing. Incidence was expected to increase by 7% for males between 1996 and 2011 to an age standardised rate of 510 per 100,000. Female incidence for the same period was expected to increase by 6% to an age standardised rate of 450 per 100,000. The Ministry of Health report published in 2011, ‘Cancer: New registrations and deaths 2008’, revealed that the age standardised rates of registration previously predicted had not been realised. Between 1998 and 2008 the actual number of new registrations increased from 16,605 to 20,317, or 22%. Once adjusted for age and population growth (by calculating age-standardised rates), the registration rate decreased slightly over this period, from 351.4 per 100,000 population to 344.0 (a decrease of 2%).
An updated companion report to ‘Cancer in New Zealand - Trends and Projections’ was published in 2010, and identified that “Overall, the risk of cancer is projected to stabilise over the coming decade (2006–2016) for males and actually decline, by about 11%, for females. Nevertheless, the burden of incident cancers will still increase, by about 29% for males and 12% for females, as a result of demographic trends (increasing size and older age structure of the New Zealand population).”

Five leading sites accounted for 62% of all registrations in 2008. The impact of projected age standardised rates of cancer registrations for these cancer sites for the populations served by the CRC&B have been calculated below.

Table 2 - National ASRs for top 5 cancers (by cancer registrations 2008) and projected ASRs at 2016, and predicted cancer registrations by DHB 2011 and 2016

<table>
<thead>
<tr>
<th></th>
<th>Prostate</th>
<th>Colorectal</th>
<th>Breast</th>
<th>Melanoma</th>
<th>Lung</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>National ASR 2008</td>
<td>103.3</td>
<td>44.75</td>
<td>93.3</td>
<td>40.2</td>
<td>30.5</td>
<td></td>
</tr>
<tr>
<td>National Projected ASR 2016</td>
<td>112</td>
<td>53.9</td>
<td>121</td>
<td>49</td>
<td>34.15</td>
<td></td>
</tr>
<tr>
<td>Predicted Cancer Registrations NMDHB 2011^</td>
<td>70.81</td>
<td>62.61</td>
<td>66.57</td>
<td>56.24</td>
<td>42.67</td>
<td>298.90</td>
</tr>
<tr>
<td>Projected Cancer Registrations NMDHB 2016**</td>
<td>78.48</td>
<td>77.08</td>
<td>88.25</td>
<td>70.07</td>
<td>48.83</td>
<td>362.71</td>
</tr>
<tr>
<td>NMDHB % change</td>
<td>10.82%</td>
<td>23.12%</td>
<td>32.56%</td>
<td>24.59%</td>
<td>14.45%</td>
<td>21.35%</td>
</tr>
<tr>
<td>Predicted Cancer Registrations WCDHB 2011^</td>
<td>16.68</td>
<td>14.75</td>
<td>15.68</td>
<td>13.25</td>
<td>10.05</td>
<td>70.42</td>
</tr>
<tr>
<td>Projected Cancer Registrations WCDHB 2016**</td>
<td>17.51</td>
<td>17.19</td>
<td>19.69</td>
<td>15.63</td>
<td>10.89</td>
<td>80.91</td>
</tr>
<tr>
<td>WCDHB % change</td>
<td>4.94%</td>
<td>16.57%</td>
<td>25.52%</td>
<td>17.97%</td>
<td>8.37%</td>
<td>14.90%</td>
</tr>
<tr>
<td>Predicted Cancer Registrations CDHB 2011^</td>
<td>254.43</td>
<td>224.94</td>
<td>239.18</td>
<td>202.07</td>
<td>153.31</td>
<td>1073.91</td>
</tr>
<tr>
<td>Projected Cancer Registrations CDHB 2016**</td>
<td>291.63</td>
<td>286.42</td>
<td>327.93</td>
<td>260.39</td>
<td>181.47</td>
<td>1347.84</td>
</tr>
<tr>
<td>CDHB % change</td>
<td>14.62%</td>
<td>27.34%</td>
<td>37.11%</td>
<td>28.86%</td>
<td>18.37%</td>
<td>25.51%</td>
</tr>
<tr>
<td>Predicted Cancer Registrations SCDHB 2011^</td>
<td>28.54</td>
<td>25.23</td>
<td>26.83</td>
<td>22.66</td>
<td>17.20</td>
<td>120.46</td>
</tr>
<tr>
<td>Projected Cancer Registrations SCDHB 2016**</td>
<td>30.18</td>
<td>29.65</td>
<td>33.94</td>
<td>26.95</td>
<td>18.78</td>
<td>139.50</td>
</tr>
<tr>
<td>SCDHB % change</td>
<td>5.77%</td>
<td>17.50%</td>
<td>26.51%</td>
<td>18.91%</td>
<td>9.23%</td>
<td>15.81%</td>
</tr>
</tbody>
</table>


Figure 4 – Predicted Adult Cancer Registrations (Age Standardised Rate per 100000) for Leading Cancer Sites 2011 and 2016 - Nelson Marlborough DHB


Figure 5 - Predicted Adult Cancer Registrations (Age Standardised Rate per 100000) for Leading Cancer Sites 2011 and 2016 - West Coast DHB

Figure 6 - Predicted Adult Cancer Registrations (Age Standardised Rate per 100000) for Leading Cancer Sites 2011 and 2016 - Canterbury DHB

Figure 7 - Predicted Adult Cancer Registrations (Age Standardised Rate per 100000) for Leading Cancer Sites 2011 and 2016 - South Canterbury DHB

The registrations for ‘All Adult Cancers’ has been modelled using the same base population and national All Adult Cancers ASR projections.

Figure 8 - Predicted Adult Cancer Registrations (Age Standardised Rate per 100000) for ‘All Adult Cancers’ 2011 and 2016

![Graph showing predicted cancer registrations for different DHBs.](image)


A review of cancer registration rates by DHB for the period 2006 to 2008\(^9\) showed that of the DHBs pertinent to this review only Canterbury had a rate which was significantly different to the national rate, after controlling for different age structures within each DHB.

Figure 9 - Total cancer registration rates by DHB region, 2006–2008

![Graph showing cancer registration rates by DHB region.](image)

A comparison of projected incidence rates (ASR ALL Adult Cancers) with CDHB-provided First Specialist Assessment volumes show considerable variation from one DHB area to another, but demonstrate consistency from 2008/09 to 2009/10. The volumes recorded for the 2010/11 year are considered to be anomalous. Further discussion of this can be found on page 13.

Table 3 - Comparison of Canterbury Oncology FSA's Provided, to Projected Incidence per DHB Population, 2008/09 to 2010/11

<table>
<thead>
<tr>
<th></th>
<th>CDHB</th>
<th>NMDHB</th>
<th>SCDHB</th>
<th>WCDHB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008/09 Incidence</td>
<td>1693</td>
<td>469</td>
<td>191</td>
<td>111</td>
</tr>
<tr>
<td>2008/09 FSA</td>
<td>1917</td>
<td>257</td>
<td>264</td>
<td>173</td>
</tr>
<tr>
<td>FSA Less 20%</td>
<td>1534</td>
<td>206</td>
<td>211</td>
<td>138</td>
</tr>
<tr>
<td>FSA as % of Incidence 2008/09</td>
<td>91%</td>
<td>44%</td>
<td>111%</td>
<td>124%</td>
</tr>
<tr>
<td>2009/10 Incidence</td>
<td>1757</td>
<td>485</td>
<td>196</td>
<td>114</td>
</tr>
<tr>
<td>2009/10 FSA</td>
<td>1999</td>
<td>312</td>
<td>272</td>
<td>162</td>
</tr>
<tr>
<td>FSA Less 20%</td>
<td>1599</td>
<td>250</td>
<td>218</td>
<td>130</td>
</tr>
<tr>
<td>FSA as % of Incidence 2009/10</td>
<td>91%</td>
<td>51%</td>
<td>111%</td>
<td>113%</td>
</tr>
<tr>
<td>2010/11 Incidence</td>
<td>1822</td>
<td>502</td>
<td>201</td>
<td>118</td>
</tr>
<tr>
<td>2010/11 FSA</td>
<td>1715</td>
<td>147</td>
<td>216</td>
<td>114</td>
</tr>
<tr>
<td>FSA Less 20%</td>
<td>1372</td>
<td>118</td>
<td>173</td>
<td>91</td>
</tr>
<tr>
<td>FSA as % of Incidence 2010/11</td>
<td>94%</td>
<td>29%</td>
<td>107%</td>
<td>97%</td>
</tr>
<tr>
<td>Average FSA as % of Incidence for 2008/09 and 2009/10</td>
<td>91%</td>
<td>48%</td>
<td>111%</td>
<td>119%</td>
</tr>
</tbody>
</table>

Notes:
Incidence rates are the average of calendar years predicted, except for 2008/09 where is average of the 2008 known rate and 2009 predicted rate.
FSA less 20% - it is estimated that 20% of patients will have an FSA in Radiation and Medical Oncology. To provide an estimate of New Cancers (incidence) the total number of FSA has been calculated as 20% less than FSA numbers. Analysis of CRC&BS data for the 2009/10 period showed that 17% of patients with FSA provided at the CRC&BS centre had dual specialty FSA in that period.
The NMDHB ‘FSA as % of Incidence’ values are low as they do not account for Oncology FSA provided by NMDHB Medical Oncology or C&CDHB Radiation Oncology.
Not included - patients whose cancer is treated by surgery alone, patients referred directly to private non-surgical oncology.
The average FSA as % of Incidence has been calculated over the years 2008/09 and 2009/10 only, as 2010/11 volumes are considered to be anomalous.

Provision of Non-surgical Oncology Services
An overview of the service provision currently enabled for, and by, each of the involved DHBs is provided here, inclusive of stakeholder provided information and results of data analysis.

Nelson Marlborough District Health Board

Nelson Marlborough District Health Board currently purchase only Radiation Oncology services from the CDHB, and purchase these services also from C&CDHB (mostly into Wairau Hospital, Blenheim). Dual provision provides opportunities for patient choice (enabling patients to choose a service provider in relation to location of social supports during treatment periods away from home), and to make best use of available capacity at either treatment facility. NMDHB employs two Medical Oncologists and provides Medical Oncology services on its own behalf, except when patients have chemoradiation in Christchurch when the CDHB Medical Oncologists take over the
chemotherapy component of their care. It was identified through the review process that this service is under increasing pressure from increased demand and treatment complexity, and that it was envisaged by NMDHB managers that support for this service would need to be developed in the future.

Nelson Radiation Oncology clinics occur fortnightly, and are provided by two CDHB Radiation Oncology SMOs, who alternate. In Blenheim, a visiting CDHB Radiation Oncology SMO provides monthly clinics, in addition to monthly clinics provided by a C&CDHB clinician. In response to decreased capacity at the Christchurch treatment centre Wairau Hospital clinics have occurred significantly less frequently, and the C&CDHB Radiation Oncologists have increased their provision at this site. Nelson Hospital also introduced clinics by C&CDHB in the same period, to ensure ongoing appropriate access to treatment services. In Nelson, CDHB provided clinic frequency did not reduce over this period, but clinic populations were much smaller than usual.

Table 4 - Total CDHB Radiation Oncology Outreach into NMDHB (includes services provided at Nelson and Wairau Hospitals) 2008/09 to 2010/11

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>Projected 2011/12</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>174</td>
<td>194</td>
<td>11.49%</td>
<td>97</td>
<td>-50.00%</td>
<td>115</td>
<td>18.41%</td>
</tr>
<tr>
<td>FU</td>
<td>213</td>
<td>214</td>
<td>0.47%</td>
<td>99</td>
<td>-53.74%</td>
<td>26</td>
<td>-74.03%</td>
</tr>
<tr>
<td>Ratio 1:</td>
<td>1.22</td>
<td>1.10</td>
<td></td>
<td>1.02</td>
<td></td>
<td>0.22</td>
<td></td>
</tr>
</tbody>
</table>

Table 5 - All Radiation Oncology FSA and Follow Up Provided by CDHB (includes Nelson, Wairau, and Christchurch Sites) 2008/09 to 2010/11

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>2011/12 Projected</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>233</td>
<td>280</td>
<td>20.2%</td>
<td>147</td>
<td>-47.5%</td>
<td>170</td>
<td>15.5%</td>
</tr>
<tr>
<td>FU</td>
<td>249</td>
<td>256</td>
<td>2.8%</td>
<td>120</td>
<td>-53.1%</td>
<td>187</td>
<td>55.7%</td>
</tr>
<tr>
<td>Ratio 1:</td>
<td>1.1</td>
<td>0.9</td>
<td></td>
<td>0.8</td>
<td></td>
<td>1.1</td>
<td></td>
</tr>
</tbody>
</table>

Table 6 - All Medical Oncology FSA and Follow Up Provided by CDHB (Christchurch Site) to NMDHB Patients 2008/09 to 2010/11

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>Projected 2011/12</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>24</td>
<td>32</td>
<td>33.33%</td>
<td>25</td>
<td>-21.88%</td>
<td>27</td>
<td>9.71%</td>
</tr>
<tr>
<td>FU</td>
<td>46</td>
<td>36</td>
<td>-21.74%</td>
<td>27</td>
<td>-25.00%</td>
<td>38</td>
<td>39.68%</td>
</tr>
<tr>
<td>Ratio</td>
<td>1.9</td>
<td>1.1</td>
<td>-21.74%</td>
<td>1.1</td>
<td></td>
<td>1.4</td>
<td></td>
</tr>
</tbody>
</table>

NMDHB patients are also provided with First Specialist Assessment and Follow up consultations at the Christchurch centre, including patients requiring concomitant chemotherapy and radiotherapy.

Visiting CDHB consultants describe the clinics in NMDHB as ‘dream clinics’, and particularly emphasized the quality of Oncology nursing support at both sites. NMDHB clinical staff described service provision by CDHB as superb, and was appreciative of the timeliness of clinics which reduced the need for patients to travel for FSA except in the most urgent situations. Availability of expert opinion was considered to be excellent, but post-treatment letters were often tardy, and
this could be a barrier to providing optimal post-treatment care. Oncology Nurses maintain records of patients who go for treatment, and diary expected return dates so that they can ensure follow up is arranged appropriately. When rural Radiation Oncology patients are referred back from tertiary surgical services in Christchurch they may be discharged back to rural providers, and Nelson Hospital is not advised, or vice versa and the rural nursing services may not be advised. This gap can result in the failure for necessary support services to be put in train.

A decision to discharge back to referrer after a single Follow Up consultation, in order to create capacity for new patients, was considered to be appropriate. Nelson Marlborough has a very stable base of specialists and primary care physicians, and this is considered to have made early discharge safe and appropriate.

‘Telehealth’ consultations are not currently utilised. Consultants travel to the region by commercial flights. The timing of flights has resulted in a clinic which operates between 10:00 a.m. and 3:30 p.m. The extent to which CDHB provided clinic volumes increase as treatment capacity issues are resolved remains to be seen, and the need for longer clinic sessions or extra clinics will need to be reviewed.

Clinic letters are typed in Christchurch. Clinic bookings are managed in Nelson Marlborough, and consultants report that clinic lists are available only 1 or 2 days prior to the clinic. Remote access to clinical systems has been enabled for visiting CDHB Oncologists, and has produced gains in efficiency and enhanced safety in clinical decision making.

Oncology nurses identified that more regular contact with CDHB Radiation Oncology nursing would be beneficial to their practice. All knowledge of Radiation Oncology nursing need was currently obtained via the visiting consultants, and this was subject to the time available to consultants on clinic days.

Nelson Marlborough patients are presented to the Colorectal MDM by proxy. NMDHB Urologists have indicated their wish to present difficult cases to the Urology MDM and this is understood to have been arranged.

Palliative Care services are provided by Hospice, and in Blenheim there are weekly MDT meetings which Oncology Nurses are involved in. Co-location on the Wairau site contributes to seamless transition for patients.

In terms of formalising the arrangement between NMDHB and CDHB for the provision of Oncology Outreach Services, several issues were identified by NMDHB managers. It is considered essential that any agreement provide maximum transparency, and will require a reporting framework to support this. Likewise, joint collaborative planning should be enabled by any agreement, and should include pre-identified review points, including events-based review triggers to ensure timely response to changes in demand or capacity. One stakeholder suggested that increased certainty around levels of provision of FSA and Follow up would be desirable. However another identified the need for maximum flexibility in any agreement to allow for continued timely access for new patients. It was acknowledged that in a dual provider environment it was critical to ensure resource utilisation was not duplicated, and that responsibility for this resided with NMDHB referrers to make sure that patients were able to make an informed choice of provider prior to referral being made.
NMDHB patients are fortunate to be able to exercise a choice in their Radiation Oncology provider. NMDHB managers indicated that increased provision by C&CDHB was an option they would retain. Transparency and data sharing will be crucial to establishing and maintaining agreed service levels.

West Coast District Health Board

Radiation Oncology outpatient clinics are provided at Grey Base Hospital on a monthly basis, by one CRC&BS Radiation Oncology SMO. A Medical Oncology SMO also provides monthly clinics at Grey Base Hospital, with registrar support when available. West Coast patients are also seen in Medical Oncology and Radiation Oncology clinics at the Christchurch centre.

Table 7 - Medical Oncology FSA and Follow Up provided at Grey Base Hospital, 2008/09 to 2010/11, and Projected 2011/12

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% change</th>
<th>2010/11</th>
<th>% change</th>
<th>2011/12 Projected</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>54</td>
<td>42</td>
<td>-22.22%</td>
<td>29</td>
<td>-30.95%</td>
<td>50</td>
<td>72.41%</td>
</tr>
<tr>
<td>FU</td>
<td>300</td>
<td>334</td>
<td>11.33%</td>
<td>332</td>
<td>-0.60%</td>
<td>360</td>
<td>8.43%</td>
</tr>
<tr>
<td>Ratio 1:</td>
<td>5.56</td>
<td>7.95</td>
<td></td>
<td>11.45</td>
<td></td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Notes: For 2009/10, volumes include 3 Telehealth FSA’s, and 67 FU’s
For 2010/11, volumes include 8 Telehealth FSA’s, and 60 FU’s

Table 8 - Radiation Oncology FSA and Follow Up provided at Grey Base Hospital, 2008/09 to 2010/11, and Projected 2011/12

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% change</th>
<th>2010/11</th>
<th>% change</th>
<th>2011/12 Projected</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>35</td>
<td>50</td>
<td>42.86%</td>
<td>34</td>
<td>-32.00%</td>
<td>44</td>
<td>29.41%</td>
</tr>
<tr>
<td>FU</td>
<td>223</td>
<td>198</td>
<td>-11.21%</td>
<td>181</td>
<td>-8.59%</td>
<td>180</td>
<td>-0.55%</td>
</tr>
<tr>
<td>Ratio 1:</td>
<td>6.37</td>
<td>3.96</td>
<td></td>
<td>5.32</td>
<td></td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Notes: For 2009/10, volumes include 2 Telehealth FU’s
For 2010/11, volumes include 1 Telehealth FSA, and 2 FU’s

Table 9 - All Medical Oncology FSA and Follow Up Provided by CDHB (includes Greymouth and Christchurch Sites), 2008/09 to 2010/11, and Projected 2011/12

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>2011/12 Projected</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>97</td>
<td>80</td>
<td>-17.5%</td>
<td>51</td>
<td>-36.3%</td>
<td>98</td>
<td>92.2%</td>
</tr>
<tr>
<td>FU</td>
<td>393</td>
<td>448</td>
<td>14.0%</td>
<td>399</td>
<td>-10.9%</td>
<td>418</td>
<td>4.8%</td>
</tr>
<tr>
<td>Ratio 1:</td>
<td>4.1</td>
<td>5.6</td>
<td></td>
<td>7.8</td>
<td></td>
<td>4.3</td>
<td></td>
</tr>
</tbody>
</table>

Table 10 - All Radiation Oncology FSA and Follow Up Provided by CDHB (includes Greymouth and Christchurch Sites), 2008/09 to 2010/11, and Projected 2011/12

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>2011/12 Projected</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>76</td>
<td>82</td>
<td>7.9%</td>
<td>63</td>
<td>-23.2%</td>
<td>100</td>
<td>58.7%</td>
</tr>
<tr>
<td>FU</td>
<td>266</td>
<td>226</td>
<td>-15.0%</td>
<td>222</td>
<td>-1.8%</td>
<td>308</td>
<td>38.7%</td>
</tr>
<tr>
<td>Ratio 1:</td>
<td>3.5</td>
<td>2.8</td>
<td></td>
<td>3.5</td>
<td></td>
<td>3.1</td>
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</tbody>
</table>
Table 11 – Chemotherapy Attendance Volumes WCDHB, 2008/09 to 2010/11, and Projected 2011/12

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>Projected 2011/12</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Chemotherapy Attendances</td>
<td>319</td>
<td>506</td>
<td>58.62%</td>
<td>516</td>
<td>1.98%</td>
<td>628</td>
<td>21.71%</td>
</tr>
</tbody>
</table>

Telehealth consultations are occurring quite frequently for Medical Oncology, less so for Radiation Oncology. These consultations are now routinely captured by the WCDHB Patient Management System, and it is believed that volumes reported in this review report are likely to be reasonably accurate. Telehealth links are able to be used to see patients at a number of locations on the Coast (including Greymouth, Westport, Haast, Franz Josef, Hari Hari and Reefton) with support provided by Oncology CNS, Rural Nurse Specialists and District Nurses depending on patient location.

Telehealth use has expanded rapidly, but there are concerns that this has occurred without due consideration for the necessary infrastructure to support this. For example, the Oncology CNS’s at Grey Hospital report that straightforward co-ordination of a consultation by this means (when the consultant, the patient and the Telehealth facilities are all available at the indicated time) routinely takes 25 minutes of the CNS’s time. No administrative support has been provided to this, or other areas of clinic coordination (e.g. Oncology CNS’s undertake all clerical/admin tasks associated with clinic bookings and attendances, and chemotherapy bookings and attendances). Nurses feel that SMO provided criteria for identification of patients most suited to Telehealth consultation would be of great assistance. A framework for further use of Telehealth (throughout the Outreach districts) to ensure best use of the resource, and optimal administration processes in support of Telehealth (including a booking system), would provide a more sustainable foundation for this useful tool.

Radiation Oncology patients are not able to be discharged early as in NMDHB or SCDHB, due to the absence of a comprehensive specialist base (some specialties have no permanent representation on the West Coast) or primary physician base sufficient to provide the necessary follow up requirements. As a result, a larger proportion of patients receive follow up in a within-DHB Radiation Oncology clinic than would happen elsewhere in the regions. This is evidenced in Table 6, which shows the ratio of FSA to FU occurring at Grey Hospital to be between 1:3.9 to 1:7 over the last 3 years and the projected current year. When capacity allows, the Christchurch centre will co-ordinate the FSA and a planning CT so that patients travelling from the outreach districts can eliminate another trip to Christchurch before commencing treatment, but this is not always possible.

Visiting consultants fly into Greymouth, and report that in order to provide a full clinic their working day begins at 7:30 a.m. and finishes at 7:30 p.m. The visiting Radiation Oncologist reports that dictation frequently has to be undertaken in his own time.

Within the clinic, appointment times have been condensed to allow all the patients to be seen. Non-complex Medical Oncology patients are often seen in Christchurch, so the Grey Hospital clinics include patients with a high degree of complexity at presentation. The resulting shortened consultation times (30 minutes for Radiation Oncology compared to 45 minutes in Christchurch, and 45 minutes for Medical Oncology compared with 60 minutes in Christchurch) are not considered by SMO’s to be appropriate. Likewise, 15 minute Follow Up timeslots are considered to be too short, and introduce the risk of time-compromised assessment.
Oncologists identified a range of concerns. These are:

- More extensive support required of Oncologists for patients due to the dearth of General Practitioners on the West Coast.
- No Radiation Oncology Nurse resource is available on the West Coast – a Urology nurse is doing PSA follow up for prostate patients but has no experience in Radiation Oncology and late effects.
- Lack of access for clinicians to MDMs and therefore reduced opportunity to upskill in Oncology.
- More Oncologist time supporting initial investigations and work up of patients than in other Outreach districts.
- High turnover of SMOs and high numbers of locums within Grey Hospital reducing opportunities for shared follow up.
- WCDHB laboratory system is available for those oncologists who visit the West Coast, but are not available to other oncologists in Christchurch who see West Coast patients from time to time. There is no alert system for abnormal results, and all results have to be looked up by clinicians rather than being sent as in Concerto IS. This is considered by clinicians to be clinically unsafe.
- Referrals sent to Grey Hospital Central Booking Unit are sometimes slow to be processed, resulting in delays to triage/prioritisation by Radiation Oncologist.
- Referrals not always obvious, often implied within a letter.
- No ability for Oncologists to look at upcoming clinic schedule.
- Citrix based access to WCDHB information systems is slow and cumbersome, resulting in inefficient use of clinician time.
- Clinics often loaded into patient management system immediately before or after the clinic.
- Potential for patients to be lost to follow up.
- Lost clinics if plane doesn’t leave are very difficult to reorganise (it was noted that a full Medical Oncology clinic was able to be conducted via Telehealth on one such occasion).

They identified confidence in:

- West Coast DHB Oncology Nurses
- Continuity of care afforded to patients
- Nurse Maude support for Palliative Care on the West Coast. Two-monthly follow up clinics by Dr. Amanda Landers and Telehealth review of patients are considered very positive steps to reducing the workload for Palliative Care nurses.

The West Coast Oncology Nurse workforce is small, multi-skilled, multi-tasked and vulnerable. 1.0FTE Oncology CNS’s provides clinic nurse duties, chemotherapy co-ordination and delivery, community assessment and monitoring, triage, and education to West Coast patients. Chemotherapy occurs on two to three days each week. Support for WCDHB Oncology CNS to administer chemotherapy is provided by a District Nurse/Palliative Care/Oncology CNS in Westport and Palliative Care CNS’s in Greymouth, who also provide support in periods of high demand, and cover for annual leave, sick leave and education. Support to Oncology by these individuals occurs only by utilising Palliative Care or District Nursing hours. A limited range of low risk chemotherapy regimens (e.g. 5-Fluorouracil, oral chemotherapy) are delivered in Westport by these CNS. In all, 2.5 FTE are currently chemotherapy credentialed (but 1.5 FTE have primary responsibilities to other roles, notably Palliative Care). 1.0 FTE Registered Nurse has recently been appointed to work in the WCDHB Oncology service until July 2012 when the position will be reviewed. Nurses in both
Oncology and Palliative Care, though not remunerated for 24 hour cover, frequently provide their cellphone numbers to patients, and are available ‘around the clock’. An additional feature of note is that Oncology Nurses at WCDHB are part of the FSA and immediately are “up to speed” with regards to a patient’s needs and concerns, and know what the treatment plan is and what next steps are needed in the patients care. This is considered to offer more efficiency than in the Christchurch clinics where the key bits of information have to be repeated or communicated in another way.

This model of care is recognised by CRC&BS clinicians as offering exceptional continuity of care for West Coast cancer patients. However, it is a fragile model. The unavailability of two nurses would effectively render the service unable to function. The impact of extended work hours and the burden of responsibility for geographically isolated patients with poor access to primary health, or to hospital based services, should not be underestimated. Keeping cancer patients well in this setting requires a high degree of contact, much patient education, and constant reinforcement of that education. This is ameliorated to some degree by the PHO Health Navigators, who liaise between the Oncology service at Grey Hospital, GP’s and patients to ensure patients with cancer are able to access appropriate social and health services, even to the extent of attending appointments in a support role when required by patients. Similarly, the local branch of the Cancer Society provides a range of practical help to patients, and to the West Coast Oncology Service itself. Nevertheless, the nursing workforce remains at risk of over-burden. An analysis of ‘time in lieu’ hours recorded for the Oncology CNS at Greymouth showed that she routinely worked an average of 35.5 hours a month in excess of contracted hours, over the three months for which data was supplied.

Chemotherapy delivery has no dedicated facility within Grey Base Hospital, and can occur in any one (or two, simultaneously) of three rooms. None of these rooms is adjacent to the others. As these rooms are also used by other services, it has been known for chemotherapy patients with cytotoxic infusions running to have been relocated mid-way through treatment if the room was required by another service. The rooms are poorly ventilated, and the smaller of the rooms has been used to accommodate four patients and support people and staff at one time. It is believed unlikely that this space would meet hospital H&DSS Certification requirements (Infection Prevention and Control, Health & Safety, Privacy standards) when used thus. It is understood the WCDHB is at the early stages of a project to redevelop the Grey Base Hospital site, and CRC&BS SMO’s have lobbied for appropriate facilities for cancer patients to be included in plans. In 2011/12 it is projected that approximately 620 chemotherapy attendances will be provided on the West Coast.

Medical Officer support within Grey Hospital is also a concern to nurses. The awareness of the needs of oncology patients is considered to be variable within the Physician workforce, and this situation is exacerbated by a steady stream of locums and lack of continuity in staffing. Nurses suggested that identification of Medical Officer resource within ED to provide some oversight of Oncology services (in a limited ‘Physician to Oncology’ function) would provide benefit to nursing staff, generalist staff, and patients. It was felt that advancing Oncology awareness within the generalist workforce may proceed with more speed if it were clinician led.

Nurse access to information systems during chemotherapy clinics is also poor, with nurses having to leave the delivery area in order to access clinical information systems. Further, with clinical information often going direct to Christchurch there is no visibility of this to Oncology Nurses on the Coast, introducing clinical risk. Access to clinical information when working with patients in the community is also problematic.
Liaison with Canterbury centre nurses is limited. For education there are no formal links or channels of communication. For example, information around novel therapeutics has to be sought by West Coast nurses, when it could easily be distributed by CRC&BS Oncology CNE. West Coast Oncology nurses are not advised of education opportunities within the CRC&BS. There are two nurses waiting to begin training in Chemotherapy delivery, but this has stalled due to the workload of the Oncology CNS who provides training. There is limited support available for this aspect of service development.

There have been historical issues with communication and liaison for patients with Lung cancer and Head and Neck cancers, whereby West Coast Oncology nurses were not advised of patients being sent home post-treatment. Improved liaison has been achieved for Lung cancer patients since the appointment of a Respiratory department based lung cancer CNS in 2009. It is noted that the CRC&BS proposes to develop further Oncology CNS roles, which may potentially be aligned to tumour streams. Such roles have the potential to exponentially improve care co-ordination for patients with complex needs, if inter-district co-ordination is included in the role responsibilities.

Palliative Care services have been supported via Nurse Maude in recent times. Dr. Amanda Landers, Community Palliative Care Physician at Nurse Maude, now provides clinics on the West Coast, and the option of Telehealth is available. A collaborative strategic planning day occurred recently, and several pieces of work seem likely to flow from this. Aligning the Nurse Maude Liverpool Care Pathway facilitator role (which provides support to WCDHB with their implementation of the LCP) with a facilitation role for the ‘Gold Standards Framework’ for Canterbury and West Coast would advance Palliative Care in both regions, and is being discussed.

There are also plans to facilitate experiential learning opportunities, whereby health professionals from the West Coast would spend time with Palliative Care services in Canterbury. As yet this has no funding stream, and will require resourcing to make it happen. Linkages with West Coast General Practitioners are established and regular education and support is provided.

Access to Concerto IS in West Coast, and information sharing in general, was an issue for Dr. Landers, who relies upon the Palliative Care CNS to scan and email information when needed.

**South Canterbury District Health Board**

Currently, Medical Oncology services are provided weekly at Timaru Hospital (mostly Follow Up for patients on chemotherapy, and unwell patients) and at the Christchurch centre (the majority of First Specialist Assessments). All Radiation Oncology First Specialist Assessments and Follow Up are provided at the Christchurch Centre. The decision to accommodate Medical Oncology FSA within clinics occurring at the Christchurch centre was driven by increasing numbers of patients requiring Follow Up, and resulting limited capacity within the clinics held within Timaru Hospital, and a concern that unwell patients and patients on treatment were being under-serviced. In 2011 there was little registrar support available to Medical Oncology, which was a further limitation. SCDHB management expressed concern that the decision to relocate FSA’s to Christchurch was made without adequate discussion with them, and that outreach services appear to be particularly susceptible to both changes in capacity and to clinician preferences.
Table 12 - Medical Oncology FSA and FU provided at Timaru Hospital, 2008/09 to 2010/11 and Projected 2011/12

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>Projected 2011/12</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>124</td>
<td>140</td>
<td>12.9%</td>
<td>38</td>
<td>-72.9%</td>
<td>28</td>
<td>-26.3%</td>
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<tr>
<td>FU</td>
<td>710</td>
<td>808</td>
<td>13.8%</td>
<td>868</td>
<td>7.4%</td>
<td>886</td>
<td>2.1%</td>
</tr>
<tr>
<td>Ratio 1</td>
<td>5.73</td>
<td>5.77</td>
<td>22.84</td>
<td>31.64</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 13 - All Medical Oncology FSA and Follow Up Provided by CDHB (includes Timaru and Christchurch Sites), 2008/09 to 2010/11 and Projected 2011/12

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>2011/12 Projected</th>
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<tr>
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<td>160</td>
<td>14.3%</td>
<td>119</td>
<td>-25.6%</td>
<td>146</td>
<td>22.9%</td>
</tr>
<tr>
<td>FU</td>
<td>750</td>
<td>886</td>
<td>18.1%</td>
<td>898</td>
<td>1.4%</td>
<td>922</td>
<td>2.7%</td>
</tr>
<tr>
<td>Ratio 1</td>
<td>5.4</td>
<td>5.5</td>
<td>7.5</td>
<td>6.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 14 - All Radiation Oncology FSA and Follow Up Provided by CDHB (occurs Christchurch Site only), 2008/09 to 2010/11 and Projected 2011/12

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>2011/12 Projected</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>124</td>
<td>112</td>
<td>-9.7%</td>
<td>97</td>
<td>-13.4%</td>
<td>144</td>
<td>48.5%</td>
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<td>FU</td>
<td>90</td>
<td>102</td>
<td>13.3%</td>
<td>76</td>
<td>-25.5%</td>
<td>243</td>
<td>220.3%</td>
</tr>
<tr>
<td>Ratio 1</td>
<td>0.7</td>
<td>0.9</td>
<td>0.8</td>
<td>1.7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 15 - Chemotherapy Attendance Volumes SCDHB, 2008/09 to 2010/11 and Projected 2011/12

<table>
<thead>
<tr>
<th>Number of Chemotherapy Attendances</th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>2011/12 Projected</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>894</td>
<td>1202</td>
<td>34.45%</td>
<td>916</td>
<td>-23.79%</td>
<td></td>
<td>1262</td>
<td>37.8%</td>
</tr>
</tbody>
</table>

The travelling time between Timaru and Christchurch is about 2 hours by road. The possibility of visiting consultants travelling by plane was looked into, but there was little difference in overall time once travel to and from airports was included. To accommodate a full day clinic clinicians are driven to Timaru and back, most of which time is outside normal working hours. For patients the time to attend in Christchurch will include locating parking and waiting for appointment, and a round trip is likely to approach 6 hours in duration. This is likely to necessitate a day off work for working patients, and their support person. Provision for seeing new patients who are too unwell or frail to travel is made within the Timaru based clinics, as required.

Medical Oncologists report:

- Confidence in the Oncology Clinical Nurse Specialists.
- Appreciation of access to General Surgical services at Timaru Hospital, and particularly to the often faster response to requests (e.g. for biopsy) than is possible at the tertiary centre.
- No Oncologist representation on the South Canterbury Local Cancer Network.
- Heavily oversubscribed clinics, with approximately 15 to 20 Follow Up patients seen per clinic. These are either patients on treatment who must be assessed between chemotherapy cycles, or patients who are unwell (e.g. cumulative toxicity). When new patients were routinely seen
at the Timaru Hospital clinic, Medical Oncologists were able to see patients on active treatment only once or twice throughout the treatment period, with Oncology nurses seeing patients for the remainder of assessments.

- For reasons of safety, it was decided to bring all such patients back into the SMO clinics, necessitating provision of First Specialist Assessments at the Christchurch centre to accommodate this.
- Clinics at Timaru are provided by 3 Medical Oncologists on rotation, resulting in some discontinuity for patients, and resulting in inefficiencies.
- Time allocated to each patient has been reduced to enable all patients who must be seen to be seen within clinics. Times per patient are described as ‘barely enough’. Medical Oncologists consider that this introduces clinical risk from time-constrained assessment.
- Concern that there are an increasing number of patients with unmanaged symptoms as a result of clinic capacity constraints and lack of palliative care support.
- Timaru SMO’s are hesitant to participate in the tumour stream MDM’s via Christchurch, and have instead initiated a local MDT. The local MDT video-conference does not allow review of radiology findings. A pathologist is present but does not have facilities to show histology. Some Medical Oncologists are concerned that South Canterbury cancer patients are not being availed of the same opportunity for Multidisciplinary Team approaches to care as other patients across the districts, and therefore may have different outcomes. Further stakeholder feedback identified value in the secondary service MDT, and considered this to be an opportunity to support General Surgeons’ role in Oncology care, which may not otherwise readily occur.
- Issues with the care of patients with neutropenic sepsis admitted to Timaru Hospital. The Internal Medicine Physician workforce is highly itinerant, and opportunities to develop trust based working relationships are limited by this. In particular, Medical oncologists report issues with non-advisement of their patients being admitted, and therefore not being able to provide specialist oncology input into care.
- Functionality of the service is entirely dependent on the goodwill between visiting Medical Oncologists and the Oncology CNS’s.
- Oncology knowledge is not widely disseminated, with the most comprehensive knowledge residing with the Oncology CNS’s, resulting in vulnerability. In particular there is concern that the nurses responsible for Chemotherapy delivery are not exposed to the broader principles of Oncology nursing, and may lack the depth of knowledge required for appropriate oncolgical nursing assessment. Similarly, it is felt that the two Oncology Clinical Nurse Specialists (2.0FTE) should be credentialed in chemotherapy delivery to ensure a more complete working knowledge to inform effective and appropriate management of patients receiving chemotherapy.
- Concern that Palliative Care services are not meeting need, as evidenced by patients discharged to Palliative Care being re-referred to Oncology for ‘the end-of-life conversation’.
- A lack of confidence in clinical safety assurance for Oncology patients within Timaru Hospital, due to the reasons above.

SCDHB stakeholders report:

- Good levels of clinical collaboration with the Christchurch CRC&BS centre. However the communication for patients discharged to SCDHB Oncology from other services at Christchurch Hospital are poor, with notification of discharge frequently lacking.
- Weekly video-conference between Oncology CNS’s and Oncologist, which aids timeliness of response and co-ordination for patients. It was note that the Oncologists available at video-conference did not necessarily include the same Oncologist providing a clinic in that week, and that communication can be problematic as a result.
• With three visiting Medical Oncologists providing on-site clinics there was some potential for confusion regarding who to contact if needed. The Lead Consultant was not always easily identifiable. Further, as a patient may have received FSA by a non-visiting Oncologist at the Christchurch Centre then subsequently be followed up by visiting oncologists there is added risk to continuity of care.

• Oncology CNS used to provide some Follow Up to well ‘on treatment’ patients, but these patients are now seen in SMO led clinics only. It is felt that these patients could be seen in nurse-provided clinics, with provision of Follow Up guidelines for non-oncologist follow up. This could assist with SMO clinic capacity issues. It was also noted that one of the CNS in Timaru has prior Radiation Oncology nursing experience.

• Chemotherapy delivery occurs within the Day Patient Services Unit, which provides a range of day case services for medical and surgical specialties. The Oncology CNS are located elsewhere on campus, as are the outpatient clinic areas used by visiting Medical Oncologists. Redevelopment of the Day Patient Services area is being planned currently.

• While a total of nine individuals are currently credentialed to give chemotherapy, a core group of three (estimated to equate to 0.8FTE) is responsible for the majority of administrations, with the remainder rostered onto checking duties, and to provide cover as required. The DPS Charge Nurse advised that this consolidation of chemotherapy nurse resource into a core group had been in response to Medical Oncologists’ concern over the ability to maintain skill and competency in such a large group of deliverers, but that this responsiveness had not been acknowledged.

• Timaru Oncology CNS’s are liaising with the Canterbury Oncology CNS with a view to using the Canterbury patient assessment tool in the DPS Unit, to provide greater assurance of appropriate nursing assessment.

• A gap in assessment exists, so that when nursing assessment indicates the need for a medical review there is no dedicated medical resource to provide this. Review is often undertaken by the House Surgeon rostered onto the DPS Unit.

• The lack of a single Medical Officer to provide support to Oncology on a day-to-day basis is considered a risk. Surgeons are ‘active in the background’, and can be approached with concerns. This occurs in preference to using the Physicians, largely locums, and reflects the perception that the level of Oncology awareness within the Physician workforce is low.

• The Clinical Nurse Specialists identify a key component of the CNS role as providing education regarding the needs of Oncology patients to the generalist workforce, to promote more appropriate care when these patients require generalist care.

• The Clinical Nurse Specialists provide clinic nurse duties, hospital based and community assessment and monitoring, triage, and education to South Canterbury patients. They believe that there is little value in their routinely delivering chemotherapy treatments, and that this would negatively impact on the provision of care to patients in the community and on their ability to meet the primary responsibilities of the CNS role.

• Chemotherapy credentialing uses the Canterbury education resources and is signed off by CRC&BS. Education updates are offered by CRC&BS, and new staff spend a day in Christchurch at the regional centre and the private provider there, as part of their orientation to the Oncology service.

• Oncology nurses are not advised of new treatment regimens, and have to research these alone.

• Palliative Care is a recognised gap for SCDHB, and is currently under review, and considered to be a work in progress.

• General Surgeons are aware that access to Oncology FSA is very timely, but do not support provision of Medical Oncology FSA at the Christchurch Centre.
• General Surgeons have established a local MDT involving Canterbury Oncologists and the local Oncology CNS. A number of the patients discussed receive surgical management only, and this ‘virtual Oncology FSA’ reduces the need for patients to be seen in an Oncology clinic.
• A number of patients have their hormonal treatments commenced and managed by Surgeons, in contrast to Canterbury where this activity would be managed by Oncologists.
• Surgeons and Consultant Physician report that almost all inpatient management of unwell Oncology patients is undertaken by Physicians. Surgeons may choose to have current surgical patients on adjuvant chemotherapy treatment admitted under them, should they become unwell through the systemic treatment phase.
• Surgeons support the development of a more integrated Oncology nursing team within SCDHB.
• ‘High regard for the expertise and skill of the visiting Medical Oncologists’ – General Surgeons
• The SCDHB Service Manager indicated that capacity issues may be exacerbated by a tendency for Oncologists to retain patients beyond the point when their Follow Up care could be provided by others. In contrast, surgeons expressed concern that a policy to discharge early was having a detrimental effect on surgical workload. Shared Follow Up arrangements that existed previously were no longer the norm.
• PICC line insertion is currently being done by an Anaesthetist who is very interested in providing this service. There is currently no funding for this, and can occur only when the Anaesthetist is ‘on call’.
• Potential utilisation of Telehealth for patient consultations is recognised. This would require investment, resource and co-ordination to ensure all potential benefits could be realised.
• A Consultant Physician felt the local view that physicians would attend all the cancer MDM’s was unrealistic. Instead, there was a tendency to refer to the Specialist Oncologists for them to present at MDM, and for physicians to be notified of the outcome. It was stressed that while the educational opportunities presented by MDM were valued, regular attendance was unlikely given the nature of the Physician SMO role in a secondary hospital. A further comment related to the placement of video-conference facilities remote from the working environment of physicians, which was identified as a barrier to more frequent participation.
• South Canterbury senior management team concerns regarding the relationship with CDHB. These concerns were:
  o Lack of equity for South Canterbury in the Outreach partnership;
  o Lack of transparency in dealings with CDHB;
  o No opportunity provided for discussion or input into planning for oncology service provision;
  o Lack of clarity regarding how change is to be managed within the Outreach partnership.
• The senior management team regard the review as an opportunity to:
  o Gain a better view of the regional situation and current state;
  o Identify short term improvements which would provide more equitable provision of services;
  o Establish an environment in which a more robust regional model could be implemented.

Canterbury Regional Cancer & Blood Service

The Canterbury Regional Cancer & Blood Service based at Christchurch Public Hospital provides specialist oncology services to the population of Canterbury, and the West Coast and South Canterbury DHBs. Radiation Oncology specialist services only are provided to Nelson Marlborough DHB as one of two providers in this district. Medical Oncology treatment services are provided in Christchurch and Ashburton, and for outreach district patients requiring very high risk
chemotherapy or concomitant chemotherapy/radiation therapy. West Coast and South Canterbury DHB’s are responsible for the delivery of Medical Oncology treatment services within their own districts, as appropriate. Outpatient clinics are provided in Ashburton on a monthly basis for Medical Oncology. All radiation treatment is provided at the Christchurch centre.

Table 16 - All Radiation Oncology FSA and Follow Up Provided by CDHB to Canterbury Domiciled Patients, 2008/09 to 2010/11 and Projected 2011/12

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>2011/12 Projected</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>1076</td>
<td>1121</td>
<td>4.18%</td>
<td>981</td>
<td>-12.49%</td>
<td>946</td>
<td>-3.54%</td>
</tr>
<tr>
<td>FU</td>
<td>3125</td>
<td>3358</td>
<td>7.46%</td>
<td>3333</td>
<td>-0.74%</td>
<td>3900</td>
<td>17.01%</td>
</tr>
<tr>
<td>Ratio 1:</td>
<td>2.9</td>
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<td></td>
<td>3.4</td>
<td></td>
<td>4.1</td>
<td></td>
</tr>
</tbody>
</table>

Table 17 - All Medical Oncology FSA and Follow Up Provided by CDHB to Canterbury Domiciled Patients, 2008/09 to 2010/11 and Projected 2011/12

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
<th>Projected 2011/12</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSA</td>
<td>841</td>
<td>878</td>
<td>4.40%</td>
<td>734</td>
<td>-16.40%</td>
<td>833</td>
<td>13.51%</td>
</tr>
<tr>
<td>FU</td>
<td>7042</td>
<td>7221</td>
<td>2.54%</td>
<td>7087</td>
<td>-1.86%</td>
<td>6526</td>
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<td>8.4</td>
<td>8.2</td>
<td></td>
<td>9.7</td>
<td></td>
<td>7.8</td>
<td></td>
</tr>
</tbody>
</table>

Includes FSA and FU provided at Ashburton Hospital

Medical Oncology specialist outpatient services are provided by a 6.1 FTE specialists. In the 2011 year there were three registrars available to this service. Five registrars will support the service in 2012. No registrar during 2011 or 2012 has been in advanced training i.e. all are rotating registrars undergoing basic training.

Radiation Oncology specialist outpatient services are provided by a total of eight specialists. Approval has recently been obtained to write a business case for Radiation Oncologist staffing to be increased by 1.0 FTE.

The CDHB ‘Generic Cytotoxic Self Learning Package’ and ‘IV Cytotoxic Training Programme’ are used by West Coast and South Canterbury DHBs. Nursing education linkages from the tertiary centre into these areas are not particularly evident at the current time.

Nurse provided FSA is currently being piloted at the CRC&BS centre. An Oncology CNS is providing FSA (in a role similar to a registrar) for colorectal patients alongside a Medical Oncology SMO, advising patients of the normal treatment pathway. The SMO maintains responsibility for prescribing the chemotherapy.

Palliative Care services are well established within the CDHB hospital settings, and community palliative care is provided by Nurse Maude. Hospital services are provided by a Specialist Palliative Care Physician and 2.7 FTE palliative nurses, 1.0FTE of which is a Nurse Practitioner role. At Ashburton a physician provides PC services but there is no formal recognition of this component of the role, or the need for sustainability. The integration of the CDHB team and Nurse Maude services is planned. Nurse Maude holds a contract for service provision to the West Coast, and this is provided by a mix of on-site clinics and Telehealth. The CDHB Specialist Palliative Care Physician is also able to provide advice to West Coast staff as required. She is involved in the current review
of SCDHB Palliative Care services. Stakeholders identified a need for an increase in resourcing regionally to support improved capability, linkages, education, and co-ordinated service planning.

**Recent Challenges**

The period following the September 1010 and February 2011 earthquakes saw significant changes in service provision across all districts serviced by the CRC&BS, both planned and unplanned. Analysis of First Specialist Assessment and Follow Up volumes for the last three full financial years evidenced the extent of these changes.

**Table 18 - Total Oncology FSA and FU Demand from CDHB, SCDHB, NMDHB and WCDHB Catchment Areas, 2008/09 to 2010/11**

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>% Change</th>
<th>2010/11</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Oncology FSA</td>
<td>1102</td>
<td>1150</td>
<td>4.36%</td>
<td>929</td>
<td>-19.22%</td>
</tr>
<tr>
<td>Radiation Oncology FSA</td>
<td>1509</td>
<td>1595</td>
<td>5.70%</td>
<td>1288</td>
<td>-19.25%</td>
</tr>
<tr>
<td>Total FSA</td>
<td>2611</td>
<td>2745</td>
<td>5.13%</td>
<td>2217</td>
<td>-19.23%</td>
</tr>
<tr>
<td>Medical Oncology FU</td>
<td>8231</td>
<td>8591</td>
<td>4.37%</td>
<td>8411</td>
<td>-2.10%</td>
</tr>
<tr>
<td>Radiation Oncology FU</td>
<td>3464</td>
<td>3942</td>
<td>13.80%</td>
<td>3751</td>
<td>-4.85%</td>
</tr>
<tr>
<td>Total FU</td>
<td>11695</td>
<td>12533</td>
<td>7.17%</td>
<td>12162</td>
<td>-2.96%</td>
</tr>
</tbody>
</table>

For Medical Oncology FSA, the aggregated rate of change is representative of changes for individual DHB catchments, in the order of:

- A 16.4% decrease in FSA provided to Canterbury domiciled patients between 2009/10 and 2010/11
- A 25.6% decrease in FSA provided to South Canterbury domiciled patients between 2009/10 and 2010/11
- A 36.3% decrease in FSA provided to West Coast patients between 2009/10 and 2010/11
- A 21.9% decrease in FSA provided to Nelson Marlborough patients between 2009/10 and 2010/11

It must be noted that for the majority of Nelson Marlborough Medical Oncology patients a FSA is provided for the purpose of combined chemoradiation therapy. Some Radiation Oncology patients were referred to other radiation treatment centres over this period, and a corresponding reduction in Medical Oncology FSA is to be expected.

It has been possible to project Medical Oncology FSA volumes for CDHB, NMDHB and WCDHB patients for the current financial year. For Canterbury, Medical Oncology FSA are trending back up to 2009/10 levels (tracking to 833 FSA for 2011/12), and for West Coast it is projected that FSA provision will exceed 2009/10 levels (tracking to 98 FSA for 2011/12).

For Radiation Oncology FSA, as previously discussed, the Christchurch centre had asked referring DHB’s to directly refer some patients to other treatment centres (see Appendix 1). This occurred in the first instance in response to reduced capacity as a result of staffing shortages and reduced treatment capacity, and was then extended as a result of accommodation facility shortages for out of town patients on treatment in the period post-earthquakes. From the data reported by the treatment centres nationally, it does not appear that the Radiation Oncology FSA deficit (approximately 300) equates with increased patient courses for curative and palliative treatment at Southern and Capital & Coast centres (see Appendix 2). This, when viewed in the context of the near identical fall in Medical Oncology FSA’s, raises the concern that patients may be missing out on appropriate care.
Over this period the Medical Oncology service did not experience any extended waiting times for FSA, indicating that this was a reduction in demand rather than reduced capacity to deliver. While the contributory factors are not known, it may reasonably be speculated that these may include;

- Population drift away from Christchurch (though reduced demand is evident in the neighbouring DHB areas over this same time period).
- Health concerns being given lower priority by potential patients in the context of extreme social upheaval and uncertainty over their futures. This could result in reduced GP presentations, reduced referral to other CDHB services, and consequently in reduced referral to non-surgical Oncology services.
- People being more inclined (or possibly guided) to opt for radical surgical intervention than to spend extended periods in the hospital environment for chemo or radiation therapy during frequent aftershocks.

As a possible sequel to a natural disaster this has implications for all areas of New Zealand, and is highlighted as an area which would benefit from more thorough investigation.

A significant change which occurred over this same period was the relocation of the majority of South Canterbury Medical Oncology FSA’s from Timaru Hospital to clinics held at the Christchurch Centre. The weekly one-day clinic provided by visiting Medical Oncologists at Timaru Hospital has proven to be insufficient to meet overall need. Follow Up patients, either on active treatment or unwell, now utilise all the outreach resource currently available to Timaru Hospital. It is noted that timely access to FSA has been able to be preserved by providing FSA in Christchurch centre clinics, and this certainly would not have been possible otherwise. This applies equally to patients from the West Coast, and patients whose access must be enabled prior to the next Greymouth clinic are also accommodated within Christchurch clinics.

**Equity**

Several markers of equity for the populations served were assessed from the data provided. The average time patients waited between receipt of referral and provision of non-surgical oncology FSA was calculated for each of the three financial years for which data was provided. Wait times are shown for FSA at the regional centre in Christchurch, and then for all sites, inclusive of those FSA provided in Christchurch. A notable finding is that the average wait time for Medical Oncology patients from SCDHB in 2009/10 increased by five days when the Timaru clinic data is taken into account, reflecting the current limited capacity for FSA to occur at this site. Overall, the data suggests that FSA is being provided with appropriate timeliness across all sites.

*Figure 10 – Average Wait time (days) between Medical Oncology Referral Received and FSA Provided at CRC&BS Centre, by Patient DHB of Domicile, 2008/09 to 2010/11*
Figure 11 - Average Wait Time (days) between Radiation Oncology Referral Received and FSA Provided at CRC&BS Centre, by Patient DHB of Domicile, 2008/09 to 2010/11

Figure 12 - Average Wait Time (days) between Medical Oncology Referral Received and FSA Provided at all sites, by Patient DHB of Domicile, 2008/09 to 2010/11

Note: For NMDHB, includes only Medical Oncology FSA provided by CDHB at the Christchurch centre

Figure 13 - Average Wait Time (days) between Radiation Oncology Referral Received and FSA Provided at most sites*, 2008/09 to 2010/11

* Note: NMDHB patient average wait is for FSA provided at the Christchurch CC&BS only, as referral date data for NMDHB sites activity was not provided for analysis
There is some variation evident in Follow Up practices across the districts. The main driver for this is the availability of specialist or General Practitioner capacity in the patients’ DHB of domicile. West Coast patients receive more Specialist Radiation Oncology Follow Up than patients from Nelson Marlborough or South Canterbury, as there are fewer clinicians to provide appropriate Follow Up on the West Coast. There is an increasing tendency to consider Radiation Oncology a ‘technical service’, with patients returning to referer very soon after the treatment phase, and often after a single Follow Up consultation. By contrast, Medical Oncology has a significantly more longitudinal care trajectory. The significant risks for patients during and after active treatment phases mean a high follow on workload per FSA. Case complexity is a significant factor in the need for appropriate follow on care.

Figure 14 - Rate of Follow Up per Radiation Oncology First Specialist Assessment provided by CDHB, 2008/09, 2009/10 and 2010/11, by DHB of Patient Domicile

![Graph showing rate of follow up per radiation oncology first specialist assessment](image)

Figure 15 - Rate of Follow Up per Medical Oncology First Specialist Assessment provided by CDHB, 2008/09, 2009/10 and 2010/11, by DHB of Patient Domicile

![Graph showing rate of follow up per medical oncology first specialist assessment](image)

It appears that timely access to First Specialist Assessment has been preserved across the districts. Recent staffing constraints and increase in activity arising from demand for Follow Up have required more patient travel to the Christchurch centre, in order to maintain appropriate levels of access. The major issue relating to timeliness of access is for unmet demand for Follow Up. There is no means of assessing the extent of this from data captured in patient management systems.
Anecdotally, it appears that some patients have their Follow Up deferred, sometimes repeatedly, in order to accommodate patients with more urgent need.

The recently completed modelling of Linear Accelerator requirements for the South Island utilises known and extrapolated radiotherapy intervention rates. The 2011 intervention rates for the South Island have been calculated as below:

**Figure 16 – South Island Radiation Therapy Intervention Rates - 2011**

<table>
<thead>
<tr>
<th></th>
<th>2009 Registrations</th>
<th>CAGR (%)</th>
<th>2011 Projection</th>
<th>Total Patient Courses Commencing LINAC 2011 (ROW10Data)</th>
<th>Retreatments @ 35%</th>
<th>New Treatments Commencing (Total less Retreatments)</th>
<th>Calculated 2011 Intervention Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nelson Marlborough DHB</td>
<td>861</td>
<td>2.17%</td>
<td>899</td>
<td>1530</td>
<td>472</td>
<td>105</td>
<td>22%</td>
</tr>
<tr>
<td>Canterbury DHB</td>
<td>2477</td>
<td>2.17%</td>
<td>1503</td>
<td>299</td>
<td>877</td>
<td>104</td>
<td>29%</td>
</tr>
<tr>
<td>West Coast DHB</td>
<td>203</td>
<td>2.17%</td>
<td>209</td>
<td>105</td>
<td>57</td>
<td>104</td>
<td>27%</td>
</tr>
<tr>
<td>South Canterbury DHB</td>
<td>374</td>
<td>2.17%</td>
<td>390</td>
<td>181</td>
<td>118</td>
<td>105</td>
<td>30%</td>
</tr>
<tr>
<td>Southern DHB - Otago</td>
<td>1014</td>
<td>1.66%</td>
<td>1048</td>
<td>631</td>
<td>423</td>
<td>128</td>
<td>40%</td>
</tr>
<tr>
<td>Southern DHB - Southland</td>
<td>145</td>
<td>1.66%</td>
<td>156</td>
<td>90</td>
<td>168</td>
<td>90</td>
<td>36%</td>
</tr>
<tr>
<td>Southern DHB</td>
<td>1055</td>
<td>1.66%</td>
<td>1161</td>
<td>905</td>
<td>591</td>
<td>90</td>
<td>37%</td>
</tr>
<tr>
<td>Christchurch Cancer Centre</td>
<td>3998</td>
<td>2.17%</td>
<td>4122</td>
<td>318</td>
<td>591</td>
<td>318</td>
<td>37%</td>
</tr>
<tr>
<td>South Island</td>
<td>5527</td>
<td>2.17%</td>
<td>5753</td>
<td>861</td>
<td>318</td>
<td>861</td>
<td>31%</td>
</tr>
</tbody>
</table>

*Note: Values 60% Nelson/Marlborough Patients being treated at Canterbury and the remainder in Wellington.*

*Note: Nelson Marlborough Calculation is for all NM registrations.*

*South Island total includes 60% of those registrations.*

*Source: Southern Cancer Network Modelling of Linear Accelerator Requirements for the South Island 2011 – 2026, prepared by LSI Consulting Ltd, 2011.*

The intervention rate is the proportion of cancer patients who receive at least one course of radiotherapy during their cancer journey. International recommendations range between 45% and 52.5%. All the regions served by CRC&BS are currently 30% or less, with NMDHB the lowest at around 22%.

The need to travel is recognised as a barrier to access, and indeed may prove to be a significant burden for some patients. In this dimension of equity, it is clear that equitable access is not currently enabled for all the populations served by the CRC&BS.

**Figure 17 - Proportion of West Coast and South Canterbury Patients Required to Travel for Medical Oncology FSA at CRC&BS**

Currently all Radiation Oncology Follow Up for South Canterbury patients is provided only at Christchurch, with no Radiation Oncology outpatient clinics occurring at Timaru.
Each DHB manages its referrals within different Patient Management Systems. All referrals are sent to CRC&BS for triage and clinical prioritisation. Referrals for patients to be seen at the Christchurch centre, rather than at the Outreach district clinic, are recorded and bookings made. The referral is sometimes, but not in all cases, also recorded by the originally receiving DHB. Some referrals are made directly to a specific Oncologist, and the DHB of patient domicile can be unaware of the referral or appointments arranged at the Christchurch centre. West Coast patients to be seen in Christchurch have all their hard copy information sent to Christchurch Hospital, resulting in gaps in information available to West Coast Oncology nurses. Waiting list management and appointment bookings are managed in three different locations, using three different systems, and there is consequently no single cross-district (regional) view of waiting patients, clinic capacity, patients on active follow up, or patients on active treatment. The ability to provide such a view within local systems is variable across the districts. The diverse and disparate administrative processes and systems currently in place to support the ‘regional’ service do not enable equitable access to services regardless of patient domicile. ‘Concerto IS’ is now common to Canterbury, South Canterbury and Nelson Marlborough, and is planned for the West Coast, and is regarded as a positive step in the right direction. Further benefits are expected from the eventual deployment of the South Island Clinical Cancer Information System (SICCIS), currently under development.

Another dimension of equity relates to the quality of care. In recent years, the benefits of multidisciplinary approaches to cancer care outcomes have resulted in the increased use of Multidisciplinary meetings to formulate treatment and care plans for patients, and to provide opportunities to review care. Tertiary tumour stream based MDMs are now considered ‘standard of care’ within the Christchurch specialist population. The South Canterbury surgeons’ decision to create a local MDM at Timaru Hospital rather than to utilise the depth and breadth of tertiary expertise available via Christchurch MDMs is of concern to some CRC&BS Oncologists. They believe that South Canterbury patients are not being afforded a similar standard of care as patients from Canterbury, and that this represents a risk in terms of equity of patient care and outcomes. Another Oncologist viewed the local MDM as a positive and achievable means of supporting General Surgeons in their role in the management of cancer patients. This stakeholder saw potential for greater involvement of physicians in the local MDM, and increased administrative support to maximise efficiency. It is noted that The Southern Cancer Network MDM Project aims to provide NMDHB, WCDHB and SCDHB surgeons and physicians with the option to participate in the tertiary MDM, in addition to the benefits provided to patients and clinicians by local MDT.
**Major Themes**

**Capacity and Capability**

Increasing patient and treatment complexity have resulted in pressure on capacity within the traditional SMO led clinic structure. The increased need for follow on care has reduced capacity for routine follow up of patients and First Specialist Assessment in the West Coast and South Canterbury Medical Oncology clinics. This has been mitigated for FSA by accommodating patients in CRC&BS Christchurch clinics for FSA. The access to appropriate follow up presents the major challenge at this time.

Workforce capabilities across the districts to alleviate this pressure are variable. CNS provided FSA at the CRC&BS centre for non-complex colorectal patients is occurring, on a pilot basis. Nurse provided assessment of patients between chemotherapy cycles used to occur in Timaru, but all patients on treatment are now assessed in the visiting consultant Oncologists’ clinics.

Telehealth usage has reportedly increased rapidly for West Coast patients. It would appear that this has resulted in increased workload for the Oncology nurses there, and that uptake is variable across individual clinicians. No evidence was found of a strategic framework for expanded use of Telehealth, and there does not appear to have been any plan to ensure:

- Adequate resource to co-ordinate consultations.
- SMO resource allowance to undertake Telehealth consultations.
- Data capture.
- Training for users.
- Physical location of facilities to ensure accessibility and patient confidentiality.

Telehealth patient consultations are not being used in South Canterbury or Nelson Marlborough.

Using the 1:180 SMO:FSA benchmark used often in discussions of Medical Oncologist numbers (and in recognition of all the attendant limitations, discussed on page 13) the indicative Medical Oncologist SMO requirements of the three districts (Canterbury, South Canterbury and West Coast) can be modelled. NMDHB component relates only to the CDHB provided Medical Oncology resource.

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>2010/11</th>
<th>Average FSA/Year</th>
<th>SMO FTE for Average FSA rate</th>
<th>SMO FTE for 2009/10 FSA rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDHB</td>
<td>841</td>
<td>878</td>
<td>734</td>
<td>818</td>
<td>4.5</td>
<td>4.9</td>
</tr>
<tr>
<td>NMDHB</td>
<td>24</td>
<td>32</td>
<td>25</td>
<td>27</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>SCDHB</td>
<td>140</td>
<td>160</td>
<td>119</td>
<td>140</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td>WCDHB</td>
<td>97</td>
<td>80</td>
<td>51</td>
<td>76</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.9</td>
<td>6.4</td>
</tr>
</tbody>
</table>

*Note: Based on 1.0 FTE SMO per 180 FSA*
Table 20 - Radiation Oncology FSA Provided to CDHB, NMDHB, SCDHB and WCDHB - Indicative SMO Requirements at 1:225 Ratio

<table>
<thead>
<tr>
<th></th>
<th>2008/09</th>
<th>2009/10</th>
<th>2010/11</th>
<th>Average FSA/Year</th>
<th>SMO FTE for Average FSA rate</th>
<th>SMO FTE for 2009/10 FSA rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDHB</td>
<td>1076</td>
<td>1121</td>
<td>981</td>
<td>1059</td>
<td>4.7</td>
<td>5.0</td>
</tr>
<tr>
<td>NMDHB</td>
<td>233</td>
<td>280</td>
<td>147</td>
<td>220</td>
<td>1.0</td>
<td>1.2</td>
</tr>
<tr>
<td>SCDHB</td>
<td>124</td>
<td>112</td>
<td>97</td>
<td>111</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>WCDHB</td>
<td>76</td>
<td>82</td>
<td>63</td>
<td>74</td>
<td>0.3</td>
<td>0.4</td>
</tr>
</tbody>
</table>

|          |         |         |         |                  | 6.5                         | 7.1                           |

The current staffing establishment for Medical Oncology within the CRC&BS is 6.1FTE. The level of demand arising from the South Canterbury DHB catchment is now considered to be greater than that which can be effectively provided by visiting consultant services alone (indicated here as 0.9 FTE).

The proposed changes to scopes and advanced practice for Oncology Nurses holds much promise for sustainable Oncology services in the future. The CRC&BS provides access to its’ cytotoxic education packages across the districts, all readily available from a website (http://www.cdhb.govt.nz/cytotoxic/iv.htm). No evidence was seen during this review of a regionally focussed nursing support structure, whereby the necessary development of Oncology nurses across the districts to support the aims of the ‘New Models of Care for Medical Oncology’ could be driven and facilitated.

The West Coast Oncology nursing resource is extremely stretched, and this presents some risk to the sustainability of the service. Expansion of nursing scope, and therefore workload, has implications for resourcing.

**Equity**

As demonstrated the CRC&BS has managed to maintain timely access to first specialist assessment services across the districts. Equity of access to appropriate follow up presents the major challenge at this time. Capacity releasing initiatives are not yet evident, beyond the initiatives and changes to provision which have already occurred;

- Telehealth consultations on the West Coast.
- CNS FSA pilot in CRC&BS.
- Early discharge facilitated for Radiation Oncology patients where this is supported by a sufficient specialist base.
- South Canterbury Medical Oncology FSA relocated to CRC&BS centre.

Equity of access is also impacted by the dispersed and disparate processes and systems used to provide administrative management of referrals, waiting lists and bookings.

The proportions of FSA provided by CDHB Oncologists for each of Radiation Oncology and Medical Oncology show considerable variation across the regions. This has been assessed for CDHB, SCDHB and WCDHB patients below, and indicates lower access to Radiation Oncology for patients from South Canterbury and West Coast than for Canterbury patients.
Table 21 - Radiation Oncology and Medical Oncology Proportion of Total FSA Provided, by DHB of Domicile

<table>
<thead>
<tr>
<th>DHB</th>
<th>Radiation Oncology 2008/09</th>
<th>Medical Oncology 2008/09</th>
<th>Radiation Oncology 2009/10</th>
<th>Medical Oncology 2009/10</th>
<th>Radiation Oncology 2010/11</th>
<th>Medical Oncology 2010/11</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDHB</td>
<td>56.13%</td>
<td>43.87%</td>
<td>56.08%</td>
<td>43.92%</td>
<td>57.20%</td>
<td>42.80%</td>
</tr>
<tr>
<td>NMDHB</td>
<td>90.66%</td>
<td>9.34%</td>
<td>89.74%</td>
<td>10.26%</td>
<td>85.47%</td>
<td>15.70%</td>
</tr>
<tr>
<td>SCDHB</td>
<td>46.97%</td>
<td>53.03%</td>
<td>41.18%</td>
<td>58.82%</td>
<td>44.91%</td>
<td>55.09%</td>
</tr>
<tr>
<td>WCDHB</td>
<td>43.93%</td>
<td>56.07%</td>
<td>50.62%</td>
<td>49.38%</td>
<td>55.26%</td>
<td>44.74%</td>
</tr>
</tbody>
</table>

Standards of Care

Concerns over variable standards of care and clinical safety have not been resolved. The ability to raise these concerns in a collaborative solutions-focused environment appears limited. The issue of access to an Oncology aware medical resource in Outreach sites has been identified for both West Coast and South Canterbury.

In prescribing chemotherapy a Medical Oncologist should also be able to ensure a consistent environment and workforce for delivery of chemotherapy. For chemotherapy delivery the CRC&BS currently does not specify standards to be met by the services they prescribe into, and has limited ability to influence these factors or to gain awareness of the relevant quality assurance processes of the Outreach partner. It is noted that under the ‘New Models of Care for Medical Oncology’ framework tertiary services will be required to establish credentialing processes for peripheral chemotherapy delivery sites.

Regional Service Planning

Opportunities for a collective approach to regional service planning do not exist. There is a notable absence of:

- Agreed service levels
- Review mechanisms
- Defined outreach partner responsibilities (standards, facilities, workforce, etc)
- Monitoring and reporting requirements
- Collaborative planning requirements
- Issue identification and resolution processes
- Risk management

While this review process originated from the need to establish Service Level Agreements with Outreach partner sites, it is apparent that this method of arranging for the supply and funding of Oncology services is not reflective of the true nature of service provision. The robust interfaces required with other hospital services to ensure safe and appropriate care, and the need for a highly specialised workforce in all Outreach districts, require a comprehensive and collaborative approach.

A possible exception is the provision of Radiation Oncology outreach services into Nelson Marlborough, where this is largely delivered as a ‘technical service’, with discrete episodes of care as an adjunct to specialist surgical management.

Some Outreach partners voiced concern at the lack of equity they feel in the relationship with CRC&BS. It was also perceived that Outreach was regarded as something extra, outside core
business for CRC&BS, and that as such it was particularly vulnerable to changes in resource or clinicians’ preferences for place of delivery.

Clinical Governance & Leadership
The current configuration of services does not enable clinical governance principles to be applied. Likewise, clinical leadership for all aspects of provision of non-surgical cancer care (regardless of the patient’s domicile or place of service delivery) is not supported by current arrangements across the districts.
Indicated Future Demand

The scope for this review required consideration of the impact of projected demographic changes and changes in cancer incidence on service delivery in the next three years.

A projection of these requirements has been attempted, using the following assumptions:

- DHB specific relativity of past volumes to projected incidence rates (refer Table 3);
- Proportion of FSA for each of Medical and Radiation Oncology, based on the CDHB domicile rate evidenced by analysis of volumes 2008/09 and 2009/10 – 56% Radiation Oncology and 44% Medical Oncology applied for CDHB, SCDHB and WCDHB. Proportional rates of 89% Radiation Oncology and 11% Medical Oncology have been applied for NMDHB (reflective of the CDHB provided volumes 2008/09 and 2009/10);
- 20% of patients will have FSA in both Medical and Radiation Oncology clinics;
- Populations as Projected to 2016, calculated at a steady rate of change per annum for the years between 2012 and 2015 (Subnational Population Estimates: At 30 June 2011, Statistics NZ);
- Incidence as Projected to 2016 (National ASR All Adult Cancer, both sexes) calculated at a steady rate of change per annum for the years between 2012 and 2015 (Cancer Projections: Incidence 2004-08 to 2014-18. Wellington: Ministry of Health);
- All else remaining equal – e.g. indications for intervention. Note: Cranleigh Health indicate that treatment rates (and workload) are likely to increase in the period to 2026 as a result of new therapies and expanded indications for existing therapies, with treatment indication rising from 29% of cancer registrations in 2010 to 41% by 2026. The forecasting model used by Cranleigh Health is unable to inform the short term (3 year) horizon required by this review, but it should be noted that indicated demand may be affected by decisions to introduce therapies currently not available or expanded indications for existing therapies over this 3 year period;
- CDHB and C&CDHB proportions of Radiation Oncology FSA provided to NMDHB remain static.

### Table 22 - Anticipated Demand for CRC&BS Provided Medical Oncology and Radiation Oncology FSA for CDHB Domicile Patients - 2012/13, 2013/14, 2014/15

<table>
<thead>
<tr>
<th>CDHB Domicile</th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDHB Total</td>
<td>2101</td>
<td>2179</td>
<td>2242</td>
</tr>
<tr>
<td>Medical Oncology</td>
<td>924</td>
<td>959</td>
<td>987</td>
</tr>
<tr>
<td>Radiation Oncology</td>
<td>1176</td>
<td>1220</td>
<td>1256</td>
</tr>
</tbody>
</table>

### Table 23 - Anticipated Demand for CRC&BS Provided Medical Oncology and Radiation Oncology FSA for NMDHB Domicile Patients - 2012/13, 2013/14, 2014/15

<table>
<thead>
<tr>
<th>NMDHB Domicile</th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMDHB Total</td>
<td>305</td>
<td>313</td>
<td>320</td>
</tr>
<tr>
<td>Medical Oncology</td>
<td>34</td>
<td>34</td>
<td>35</td>
</tr>
<tr>
<td>Radiation Oncology</td>
<td>272</td>
<td>278</td>
<td>285</td>
</tr>
</tbody>
</table>

### Table 24 - Anticipated Demand for CRC&BS Provided Medical Oncology and Radiation Oncology FSA for SCDHB Domicile Patients - 2012/13, 2013/14, 2014/15

<table>
<thead>
<tr>
<th>SCDHB Domicile</th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCDHB Total</td>
<td>279</td>
<td>283</td>
<td>288</td>
</tr>
<tr>
<td>Medical Oncology</td>
<td>123</td>
<td>125</td>
<td>127</td>
</tr>
<tr>
<td>Radiation Oncology</td>
<td>156</td>
<td>159</td>
<td>161</td>
</tr>
</tbody>
</table>
Table 25 - Anticipated Demand for CRC&BS Provided Medical Oncology and Radiation Oncology FSA for WCDHB Domicile Patients - 2012/13, 2013/14, 2014/15

<table>
<thead>
<tr>
<th>WCDHB Domicile</th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>WCDHB Total</td>
<td>174</td>
<td>177</td>
<td>180</td>
</tr>
<tr>
<td>Medical Oncology</td>
<td>77</td>
<td>78</td>
<td>79</td>
</tr>
<tr>
<td>Radiation Oncology</td>
<td>98</td>
<td>99</td>
<td>101</td>
</tr>
</tbody>
</table>

The total number of CRC&BS Provided FSA, as currently provided by the CRC&BS to these populations, is anticipated to increase to 3031 in the 2014/15 financial year. This represents an increase of 10.4% between 2009/10 and 2014/15.

Table 26 - Anticipated Demand for CRC&BS Provided Medical Oncology and Radiation Oncology FSA - 2012/13, 2013/14, 2014/15

<table>
<thead>
<tr>
<th></th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total FSA</td>
<td>2859</td>
<td>2952</td>
<td>3031</td>
</tr>
<tr>
<td>Medical Oncology</td>
<td>1157</td>
<td>1196</td>
<td>1228</td>
</tr>
<tr>
<td>Radiation Oncology</td>
<td>1702</td>
<td>1756</td>
<td>1803</td>
</tr>
</tbody>
</table>

Table 27 – Comparison of Actual FSA Provided by CRC&BS to Regional Population 2009/10 with Anticipated Demand for FSA 2014/15

<table>
<thead>
<tr>
<th></th>
<th>2009/10</th>
<th>2014/15</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total FSA</td>
<td>2745</td>
<td>3031</td>
<td>10.40%</td>
</tr>
<tr>
<td>Medical Oncology</td>
<td>1150</td>
<td>1228</td>
<td>6.76%</td>
</tr>
<tr>
<td>Radiation Oncology</td>
<td>1595</td>
<td>1803</td>
<td>13.03%</td>
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</table>

Table 28 – Anticipated CDHB Provided Medical Oncology FSA 2014/15, CDHB, NMDHB, SCDHB and WCDHB - Indicative SMO Requirements at 1:180 Ratio

<table>
<thead>
<tr>
<th></th>
<th>2014/15</th>
<th>Medical Oncology SMO FTE Indicated Requirements for 2014/15</th>
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</thead>
<tbody>
<tr>
<td>CDHB</td>
<td>987</td>
<td>5.48</td>
</tr>
<tr>
<td>NMDHB</td>
<td>35</td>
<td>0.20</td>
</tr>
<tr>
<td>SCDHB</td>
<td>127</td>
<td>0.70</td>
</tr>
<tr>
<td>WCDHB</td>
<td>79</td>
<td>0.44</td>
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</tbody>
</table>

|          | 6.82    |

It should be noted that the assumed proportions of Medical Oncology FSA and Radiation Oncology FSA utilised in Table 28 and Table 29 differ from that shown in Table 19 and Table 20, and assumes more equitable access to the oncology specialties by 2015. The indicated Medical Oncologist SMO value for SCDHB is lower in this model than indicated in the recent volumes based model, as a result of the proportion of Medical Oncology FSA reducing from 56% to 44%, and the proportion of Radiation Oncology FSA increasing from 44% to 56.
Table 29 - Anticipated CDHB Provided Radiation Oncology FSA 2014/15, CDHB, NMDHB, SCDHB and WCDHB - Indicative SMO Requirements at 1:225 Ratio

<table>
<thead>
<tr>
<th></th>
<th>2014/15</th>
<th>Radiation Oncology SMO FTE Indicated Requirements for 2014/15</th>
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</thead>
<tbody>
<tr>
<td>CDHB</td>
<td>1256</td>
<td>5.58</td>
</tr>
<tr>
<td>NMDHB</td>
<td>285</td>
<td>1.27</td>
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<tr>
<td>SCDHB</td>
<td>161</td>
<td>0.72</td>
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<tr>
<td>WCDHB</td>
<td>101</td>
<td>0.39</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>7.96</strong></td>
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**Approaches to Inter-district Service Provision**

**Southern Blood & Cancer Service - Integrated Regional Service Model**

In 2007 the Oncology and Haematology services of the then Otago District Health Board and Southland District Health Board were amalgamated as a single integrated regional service entity, known as the Southern Blood and Cancer Service. The decision to amalgamate the services was made in recognition of the need for provision of sustainable clinical services across the Otago and Southland regions in the face of increasing sub-specialisation of clinical services and the increasing scarcity of a skilled workforce.

The model includes the following components:

- A tertiary regional cancer centre offering Radiation Oncology, Medical Oncology and Haematology specialist outpatient, treatment and inpatient services. Specialist services are provided by three Radiation Oncologists, four Medical Oncologists, and three Haematologists.
- An Oncology and Haematology unit at Southland Hospital offering chemotherapy treatments, and Radiation Oncology, Medical Oncology and Haematology outpatient clinics, provided by the resident Physician to Oncology (Medical Oncology and Haematology only) and regularly visiting oncologists.
- Outreach clinics held in the rural trust hospitals in Oamaru (Radiation Oncology), Balclutha (Radiation Oncology) and Dunstan (Radiation Oncology and Medical Oncology). Central Otago Health Services Ltd funds a Medical Officer to work as a ‘clinical assistant’ in the oncology clinics at Dunstan Hospital. This initiative has effectively provided registrar type support to Oncology services at this site, and is credited with aiding the development of local knowledge of the needs of Oncology patients.
- Provision of outpatient clinics at the Dunedin centre for any regional patients who cannot be accommodated within local clinics in accordance with the timeframes required by their clinical prioritisation.
- Oncology CNS role combined with Complex Care Co-ordinator role.
- Nurse led Adjuvant Therapy Follow Up clinic provided at Southland Hospital.
- Chemotherapy also delivered at three rural trust hospitals. These services are provided as specified in a Service Level Agreement, and in accordance with a ‘Peripheral Chemotherapy Service Framework’. This framework establishes the requirements of SB&CS with regard to:
  - The training, credentialing and competency maintenance requirements for chemotherapy delivery staff (signed off by SB&CS Clinical Nurse Educator). Participation at one of two education update days each year (sessions provided by SB&CS) is also required.
  - The chemotherapy regimens that may be administered by each hospital (utilising a two tier delineation model).
  - The environmental requirements for the delivery area (audit undertaken by the Regional Cancer Centre).
  - The minimum levels of Medical Officer support that must be available to support safe chemotherapy delivery, and be available to Oncology patients outside of scheduled Oncology clinic times.
  - The minimum communication requirements for ensuring regional Oncologists are aware of patients who become unwell, or are admitted to rural trust rust hospital inpatient areas.
- A single point of referral receipt and management, waiting list management and clinic booking via a centralised administration team at the Dunedin centre (change management process was undertaken).
A set of business rules to ensure that earliest access is enabled according to assigned clinical prioritisation regardless of patient domicile.

Common Information Systems (Patient Management System, Pathology results, Radiology results, etc) across all sites.

A single operational manager and clinical leader. Each of the two main chemotherapy delivery sites retains a local Charge Nurse Manager. Operational reporting lines were changed for staff from the Southland unit (to Otago based Service Manager), but professional lines of accountability and employer remained as before implementation of the unitary service.

The service was established 2 years before the subsequent merger of the DHB’s. The funding model for establishment of the service was based on PBF share.

The primary objective of the service is to provide a regional Oncology and Haematology outpatient service framework that supports and enables:

- Equitable access to service components;
- Services to be provided as close as practicable to patients’ place of residence;
- Transparency of process;
- Optimal utilisation of available resource; and
- Sustainability of service provision for the population of Otago and Southland.

This model has been offered for consideration because it utilises multiple approaches to delivery of services within its structure:

- SMO led FSA and Follow Up
- Physician to Oncology FSA and Follow Up
- MOSS ‘clinical assistant’ working alongside visiting consultant Oncologists in clinics
- Nurse-provided Follow Up for defined groups of patients
- Some services provided under Service level Agreement, with reference to a Peripheral Chemotherapy Service Framework to ensure appropriate provision of service and interfaces to support Medical Oncology considerations.

Key to this model is the establishment of a single point of entry for referrals, and a single regional waiting list for each of the sub-specialties.

A perceived weakness in this model as it currently functions is the lack of an integrated Oncology nursing team. The nurse groups in Otago and Southland remain distinct, and joint education activities are not evident. There is no regional focus to the only Clinical Nurse Educator role, which is resident in Otago. Each CNM works independently, and reports separately to the Service Manager. By contrast, the linkages between the tertiary centre nursing group and the nurses of the rural trust hospitals are more robust.

The service still faces some internal challenges from the perception of it having been a ‘takeover’. The benefits to patients were, however, apparent even within the first three months of operation. Post-implementation reviews at 3 and 12 months showed the gains that had been made for patients.

The following is an extract from “Southern Blood and Cancer Service - A Three Month Post Implementation Review” prepared by the Service Manager, Gary Reed. The integrated service commenced operations on December 3rd 2007:
**Southland DHB Average Wait Times for ‘Semi-urgent’ FSA Appointments (Weeks)**

<table>
<thead>
<tr>
<th>Sub specialty</th>
<th>May 07</th>
<th>September 07</th>
<th>February 08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haematology</td>
<td>17.5</td>
<td>14.8</td>
<td>7.42</td>
</tr>
<tr>
<td>Medical oncology</td>
<td>4.0</td>
<td>4.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Radiation oncology</td>
<td>6.5</td>
<td>5.4</td>
<td>4.0</td>
</tr>
</tbody>
</table>

*Note: Recommended wait times for Semi-urgent gradings for all specialties is 4 weeks*

It is important to note that the service faces the same challenges as are currently being experienced by CRC&BS, with the Southland Hospital clinic capacity being largely consumed by follow up for patients on treatment or unwell. As has happened with SCDHB patients, virtually all FSA arising from this area is currently accommodated within clinics at the regional centre in Dunedin, in order to meet follow up patients’ needs and to preserve timely access to FSA for new patients.

A chief consideration for a more co-ordinated and integrated service configuration must be the need for congruence and compatibility with the model for Medical Oncology described in ‘New Models of Care for Medical Oncology’ prepared by Cranleigh Health. The comprehensive set of recommendations, including service components by delineated centre definitions, will need to be referenced by any service structure by which non-surgical cancer treatment services are provided to the population of the upper South Island.

There may be reluctance to engage in redesign of service configurations whilst the specific enablers to allow progressive implementation of the Cranleigh Health model are unknown. The findings of this review suggest that ‘doing nothing’ in the short term is not a viable option, and taking appropriate steps now may ensure easier implementation of model components.
Appendices

Appendix 1 – Request for Referral to Other Treatment Centres (Letter of 28/5/2010)

28 May, 2010

Cc: John North – Clinical Leader Radiation Oncology, SDHB, PB 1921, Dunedin
Cc: Shaun Costello – Clinical Director Medicine and Emergency Service and Clinical Director Southern Cancer Network, SDHB, PB 1921, Dunedin
Cc: Bernie Fitzharris – Clinical Director Southern Cancer Network
Cc: Margaret Bunker – Planning & Funding, CDHB
Cc: Rob Hallinan – Clinical Manager Radiation Oncology, CDHB
Cc: Lisa Brennan – Service Manager Haematology / Oncology / Palliative Care, CDHB
Cc: Margaret Hill – GM Planning & Funding South Canterbury DHB
Cc: Christine Nolan – GM Clinical Services South Canterbury DHB, PB 911, Timaru
Cc: David Chrisp – GM Planning & Funding SDHB, PB 1921, Dunedin
Cc: Leanne Illingworth – Senior Contract Manager SDHB, PB 1921, Dunedin
Cc: Elizabeth Chesterman – Chief Executive, Cancer Society, Canterbury-West Coast Division

Mr Ian O'Loughlin,
Chief Medical Officer,
South Canterbury District Health Board,
Private Bag 911,
TIMARU

Dear Ian,

Thank you for your help earlier this year in facilitating the radiation treatment of South Canterbury patients in Dunedin. My letter of 13 January suggested that the arrangement continue until 30/4/2010, but in fact the contract negotiated by the Planning and Funding offices of the Canterbury District Health Board, the South Canterbury District Health Board and the Otago/Southland District Health Board applies until the end of May.

Since early February about twelve South Canterbury patients have been referred for treatment in Dunedin. This, together with a similar arrangement for Marlborough patients to be treated in Wellington and the commencement of private radiotherapy in Christchurch, has had a positive effect on waiting times in Christchurch. However, some patients are still waiting longer than the Ministry of Health target of six weeks.

I would be grateful if we could continue the arrangement until the end of July. By that time the private St George's Cancer Care Centre is expected to be at full capacity and Christchurch Hospital's new linear accelerator will have been operational for more than a month. We will reassess the effects on waiting times in mid-July.

In the meantime, we would ask that patients continue to be referred to Dunedin for radiotherapy, except

- those requiring concurrent chemoradiotherapy (e.g. for preoperative treatment of rectal cancer),
- men with prostate cancer being treated initially with neoadjuvant hormone therapy, who will not need radiotherapy until later in the year, and
- patients who have previously received radiotherapy in Christchurch.

I would be grateful if you would circulate this letter to Timaru Hospital specialists.
With best wishes,

Yours sincerely,

[Signature]

Iain Ward  
Clinical Director, Radiation Oncology  
Christchurch Hospital
Appendix 2 – Request for Referral to Other Treatment Centres (Letter of 11/8/2010)

11 August 2010

Cc:  John North – Clinical Leader Radiation Oncology, SDHB, PB 1921, Dunedin
Cc:  Shaun Costello – Clinical Director Medicine and Emergency Service and Clinical Director Southern Cancer Network, SDHB, PB 1921, Dunedin
Cc:  Bernie Fitzharris – Clinical Director Southern Cancer Network
Cc:  Margaret Bunker – Planning & Funding, CDHB
Cc:  Rob Hallinan – Clinical Manager Radiation Oncology, CDHB
Cc:  Lisa Brennan – Service Manager Haematology / Oncology / Palliative Care, CDHB
Cc:  Margaret Hill – GM Planning & Funding South Canterbury DHB
Cc:  Christine Nolan – GM Clinical Services South Canterbury DHB, PB 911, Timaru
Cc:  David Chrisp – GM Planning & Funding SDHB, PB 1921, Dunedin
Cc:  Leanne Illingworth – Senior Contract Manager SDHB, PB 1921, Dunedin
Cc:  Elizabeth Chesterman – Chief Executive, Cancer Society, Canterbury-West Coast Division

Mr Bill Taine,
Chief Medical Officer,
South Canterbury District Health Board,
Private Bag 911,
TIMARU

Dear Bill,

Thank you for your continuing help in facilitating the radiation treatment of South Canterbury patients in Dunedin.

I write to ask that South Canterbury patients continue to be referred to Dunedin for radiotherapy until further notice, except

• patients who have previously received radiotherapy in Christchurch and
• patients who require concurrent chemotherapy with their radiotherapy (e.g. for preoperative treatment of rectal cancer).

We are currently recruiting additional staff so that we can operate our linear accelerators for extended hours and a business case to install an additional linear accelerator is currently before the Canterbury District Health Board. We expect that these measures will allow all patients, including those from South Canterbury, to be treated within the Ministry of Health waiting time targets.

As before, I would be grateful if you would circulate this letter to Timaru Hospital specialists.

With best wishes,

Yours sincerely,

Iain Ward
Clinical Director, Radiation Oncology
Christchurch Hospital
Appendix 3 – National Linac Treatment Data Reports, August 2010 to December 2011
Appendix 4 – SLA Template

Microsoft Office Word Document
### Appendix 5 – List of Stakeholders Engaged

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amanda Landers</td>
<td>Specialist Palliative Care Physician, Nurse Maude, Christchurch</td>
</tr>
<tr>
<td>Bill Taine</td>
<td>Chief Medical Officer, SCDHB</td>
</tr>
<tr>
<td>Brendon Anderson</td>
<td>Radiation Oncologist, CRC&amp;BS</td>
</tr>
<tr>
<td>Bridget Robinson</td>
<td>Medical Oncologist, CRC&amp;BS</td>
</tr>
<tr>
<td>Bronwyn Marshall</td>
<td>Practice Manager, CRC&amp;BS</td>
</tr>
<tr>
<td>Chris Harrington</td>
<td>Radiation Oncologist, CRC&amp;BS</td>
</tr>
<tr>
<td>Chris Montgomery</td>
<td>Specialty Clinical Nurse, NMDHB</td>
</tr>
<tr>
<td>Christine Nolan</td>
<td>General Manager Secondary Services, SCDHB</td>
</tr>
<tr>
<td>Danielle Smith</td>
<td>LTC Health Navigator Coordinator, West Coast PHO</td>
</tr>
<tr>
<td>David Gibbs</td>
<td>Medical Oncologist, CRC&amp;BS</td>
</tr>
<tr>
<td>Dean Harris</td>
<td>Medical Oncologist, CRC&amp;BS</td>
</tr>
<tr>
<td>Debra Hamilton</td>
<td>Charge Nurse Manager, Medical Day Unit &amp; Oncology Outpatients, CRC&amp;BS</td>
</tr>
<tr>
<td>Dee Dolby</td>
<td>Oncology CNS, WCDHB</td>
</tr>
<tr>
<td>Desma Dawber</td>
<td>Oncology CNS, SCDHB</td>
</tr>
<tr>
<td>Donna McCann</td>
<td>Service Manager Medical Group, SCDHB</td>
</tr>
<tr>
<td>Floss Dynes</td>
<td>Manager Outpatient Booking Office, Timaru Hospital, SCDHB</td>
</tr>
<tr>
<td>Gavin Wilton</td>
<td>General Surgeon, SCDHB</td>
</tr>
<tr>
<td>Graeme Roadley</td>
<td>Clinical Director General Surgery &amp; General Surgeon, SCDHB</td>
</tr>
<tr>
<td>Iain Ward</td>
<td>Clinical Director, Radiation Oncology, CRC&amp;BS</td>
</tr>
<tr>
<td>Jan Wiechern</td>
<td>Oncology &amp; Palliative Care CNS, District Nurse, Buller, WCDHB</td>
</tr>
<tr>
<td>Jane Wright</td>
<td>Oncology Nurse, Ashburton Hospital, CDHB</td>
</tr>
<tr>
<td>Jenny Kenning</td>
<td>Cancer Society, Greymouth</td>
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<tr>
<td>Jim Edwards</td>
<td>Medical Oncologist, CRC&amp;BS</td>
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<tr>
<td>Karen Francis</td>
<td>Oncology CNS, SCDHB</td>
</tr>
<tr>
<td>Kate Grundy</td>
<td>Specialist Palliative Care Physician, CDHB</td>
</tr>
<tr>
<td>Kath Christmas</td>
<td>Specialty Clinical Nurse, NMDHB</td>
</tr>
<tr>
<td>Lisa Brennan</td>
<td>Service Manager Oncology, CDHB</td>
</tr>
<tr>
<td>Maree Johnston</td>
<td>Oncology Nurse, CRC&amp;BS, Former Oncology Nurse at WCDHB</td>
</tr>
<tr>
<td>Margaret Hill</td>
<td>General Manager Strategy, Planning &amp; Accountability, SCDHB</td>
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<tr>
<td>Mark Jeffery</td>
<td>Clinical Director, Medical Oncology</td>
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<td>Mary Marr</td>
<td>Oncology CNS, WCDHB</td>
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<td>Maureen Frankpitt</td>
<td>Nurse Manager, Community Services and Primary Health South. WCDHB</td>
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<tr>
<td>Nicky Topp</td>
<td>Director of Nursing, CDHB</td>
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<td>Peter Bramley</td>
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<tr>
<td>Rae Goodwin</td>
<td>Secretary to Medical Oncologists, NMDHB</td>
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<tr>
<td>Rosey Wilson</td>
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<td>Medical Oncologist, NMDHB</td>
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<tr>
<td>Steve Williams</td>
<td>Radiation Oncologist, CRC&amp;BS</td>
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<tr>
<td>Vicki Low</td>
<td>Clinical Nurse Manager Day Patients, SCDHB</td>
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References


