



# Midland Medical Oncology Service Plan 2013 - 2018

**MIDLAND CANCER NETWORK**

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<b>Author</b>	Lu-ana Ngatai
<b>Position</b>	Project Manager, Midland Cancer Network
<b>Email</b>	Lu-ana.Ngatai@waikatodhb.health.nz
<b>Phone</b>	027 7779877

#### Version Control

Version	Date	Author	Notes
V0.1	12/09/2013	L Ngatai	<ul style="list-style-type: none"> <li>This is the first draft of the Midland Medical Oncology Service Plan for feedback by 23/09/2013</li> </ul>
V0.2	02/10/2013	L Ngatai	<ul style="list-style-type: none"> <li>This is the second draft of the Midland Medical Oncology Service Plan which includes the future state and priority initiatives for 2013/14 and out years</li> </ul>
Final			<ul style="list-style-type: none"> <li></li> </ul>

#### Distribution List

Version	Name	Purpose
Version 1 & 2	GMs planning & funding and cancer portfolio managers	<ul style="list-style-type: none"> <li>Distributed to this group as a first draft of the Midland Medical Oncology Service Plan for feedback by 23/09/2013</li> </ul>
Version 1 & 2	Chief operating officers and service managers	<ul style="list-style-type: none"> <li>Distributed to this group as a first draft of the Midland Medical Oncology Service Plan for feedback by 23/09/2013</li> </ul>
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#### Sign Off Process

Date	Process	Purpose
26/10/2013	Midland Cancer Network Workshop	<ul style="list-style-type: none"> <li>To determine future state and key priority areas for 2013/14 and out years</li> </ul>
30/09/2013	Final report and CE Memo	<ul style="list-style-type: none"> <li>Distributed to Midland CEs</li> <li>Delayed sign-off until November CEs meeting 05/11/2013</li> </ul>
31/10/2013	Report to Ministry of Health	<ul style="list-style-type: none"> <li>Due to delay, draft final report will be sent to the Ministry by 31 October with final report sent post November CEs meeting 05/11/2013</li> </ul>

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## **EXECUTIVE SUMMARY**

The Ministry of Health contracted the Midland Cancer Network to facilitate the development of the Midland Medical Oncology Services Plan by 31 October 2013. This is a priority recommendation of the *Medical Oncology National Implementation Plan 2013/14* (Ministry of Health) and the Midland Regional Services Plan 2013/14.

The Medical Oncology National Implementation Plan has three work streams being:

1. service configuration programme
2. workforce programme
3. service quality programme.

The Medical Oncology National Implementation Plan programme has three initiatives in progress which will require the region to review and update the Midland medical oncology service plan. These are the:

1. SMO review to provide guidance of alternative clinical and non-clinical roles in medical oncology
2. development of a oncology nursing knowledge and skills framework
3. publication of the new national tumour standards and regional stocktake of services and review against the standards.

The aim of this plan is to develop the Midland and local DHBs model of care that will ensure the delivery of high quality, consistent and sustainable medical oncology services that meet the anticipated service demand.

### **Midland medical oncology services**

Midland has a regional service model comprising two hubs and spokes.

- Tertiary hub - Waikato Regional Cancer Centre based in Hamilton. Provides regional 24/7 acute and consultation service, inpatient services, combined chemotherapy/radiation therapy service. District chemotherapy provided both at Waikato and Thames hospitals. If required will provide complex chemotherapy for Midland Cancer Network DHBs at Waikato Hospital. In addition Waikato Regional Cancer Centre provides outreach specialist visiting services to Thames, Rotorua, Gisborne and Tauranga hospitals. Waikato Hospital also has tertiary level oncology pharmacy specialists. Provides clinical trials and research.
- Secondary hub - Tauranga Hospital Cancer Centre. Provides outreach specialist services to Whakatane Hospital, in hours acute and consult liaison service. Chemotherapy is provided at Tauranga and Whakatane hospitals. Provides clinical trials.
- Spoke – Rotorua Hospital has a chemotherapy unit. The Rotorua chemotherapy nurses provide outreach chemotherapy services at Taupo Hospital.
- Spoke – Gisborne Hospital has a chemotherapy unit. Waikato Regional Cancer Centre provides adult medical oncology services to Tairāwhiti DHB effective 1 July 2013.

### **Midland medical oncology future state**

The Midland Cancer Network Executive Group and medical oncology stakeholders met in September 2013 to discuss the future state of Midland medical oncology services. In principle, there was support for a regional approach for improving medical oncology services. To move to managing medical oncology and/or other cancer services on a regional basis would require transformational change with a clear pathway for such a change. At this point in time resources are at capacity.

Affordability was viewed as a major issue therefore an incremental continuous improvement approach was to be taken. The Midland medical oncology future state would support:

- equitable and timely access for patients
- evidence-based best practice that enables good quality patient care
- sustainable and affordable services
- collective regional network and continuous quality improvement approach.

To achieve this state we will:

- establish a Midland Medical Oncology Work Group (with a clinical chair) that will lead and oversee the implementation of the Midland Medical Oncology Service Plan. This work group will sit within the Midland Cancer Network governance framework
- continue to support regional service planning with improvement initiatives linked to the regional services plan and DHB annual plans
- promote regional standardised patient pathways, protocols/guidelines and information wherever possible
- support incremental workforce development
- strengthen linkages and work programmes with other services along the cancer continuum
- support the national medical oncology implementation plan priorities; align the regional and local medical oncology work programme to national recommendations.

### **2013/14 action plan**

In addition to the national plan initiatives in progress, the Midland 2013/14 key actions include:

- establishment of a Midland Medical Oncology Work Group to oversee the implementation plan
- review and update the Tairāwhiti and Waikato DHB contract agreement for 2014/15 (partnership between Tairāwhiti and Waikato DHBs)
- Gisborne hospital has a project in progress to develop an ambulatory cancer hub under medicine management (currently surgery) including an upgrade to the chemotherapy facility
- Bay of Plenty recruits 0.5 FTE SMO resource for 2014/15 and manages service change with Waikato DHB
- exploring opportunities to increase Lakes outreach service for 2014/15
- exploring opportunities for Bay of Plenty to adopt Waikato/Lakes and Tairāwhiti chemotherapy protocols
- Waikato to continue progressing the regional cancer centre facility improvement project
- updating new census data in the regional medical oncology 'pipeline' and more detailed data analysis to explore if there are equity issues
- exploring opportunities for Map of Medicine to house regional chemotherapy protocols.

Once the Midland Medical Oncology Service Plan is approved the 2013/14 action plan will commence 1 November 2013.

## 1. INTRODUCTION

### 1.1 Background

In 2011 the Ministry of Health (MoH) commissioned Cranleigh Health Limited to develop *New Models of Care for Medical Oncology*<sup>1</sup> (the Cranleigh report). The new models of care report was commissioned following growing concern from the DHBs, regional cancer networks and wider sector around the anticipated future growth in demand for medical oncology services and the constraints of current resourcing capacity to deliver to this increasing demand. The Cranleigh report describes new medical oncology models of care that will enable affordable high quality services to be sustainably provided in the future. From the findings of the Cranleigh report the MoH:

1. established a Medical Oncology Models of Care Steering Group to provide leadership and oversight, and
2. developed an annual National Implementation Plan (2012/13 and 2013/14)<sup>2</sup>.

The majority of activities in the National Implementation Plan are expected to be delivered nationally by the MoH. However recommendations from the national work will flow to regional cancer networks and DHBs for implementation.

The National Implementation Plan (2013/14) has three work streams being:

1. service configuration programme
2. workforce programme
3. service quality programme.

This regional plan aligns with the activities outlined in the workforce work stream. The key priority activities for the national workforce programme in 2012/13 are to:

1. appoint a national clinical lead to develop, with the sector, guidance on alternative clinical and non-clinical roles in medical oncology
2. appoint a national oncology nurse clinical lead to develop, with the sector, the oncology nurse education pathway
3. support DHBs to develop short-term regional plans for medical oncology workforce to increase the capacity of SMOs and oncology nurses, in line with the need indicated by local analysis.

This plan aligns to activity three, however it does also consider as part of the work, the impacts the plan may have on activities one and two.

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<sup>1</sup> Report to the Ministry of Health, *New Models of Care for Medical Oncology*, Cranleigh Health, October 2011 (unpublished)

<sup>2</sup> Medical Oncology National Implementation Plan 2012/13, Ministry of Health, August 2012

## 1.2 Purpose

The Midland Oncology Service Plan will support district health boards in their regional service planning for medical oncology. This will enable the services to identify their immediate priority areas for improvement as they progress towards the model of care proposed by the Cranleigh report (2011).

Specifically, the Cranleigh report recommends:

1. creating a delineated service centre framework that defines service provision in terms of a national four-level, hub-and-spoke model (*refer Appendix 1*)
2. implementing a role delineation framework that identifies the tasks and functions on the patient care pathway that staff other than senior medical officers can provide. This component would include expanded and advanced practice within nursing roles and options for alternative medical staff in hospitals and communities to focus the capacity of medical oncologists at key care delivery points (*refer Appendix 1*)
3. integrating care delivery using a tumour stream framework, which identifies how care will be delivered nationally and regionally, depending on the type of cancer, service standards for different tumour types, complexity of the treatment, and patient presentation.

This plan focuses on the first steps of implementing the national recommendations in the Midland Cancer Network region during the 2013/14 and out years.

1. Midland will work to ensure consistency and alignment with the National Medical Oncology Models of Care Implementation Plan 2013/14 and Cranleigh report vision.
2. Development of a Midland medical oncology service plan that includes:
  - a. an outline of current service configuration
  - b. demographic and outputs data i.e. contract volumes
  - c. current status of workforce
  - d. current issues and opportunities for service improvement
  - e. an improvement plan (based on available resources).

## 1.3 Development of a Midland Medical Oncology Service Plan

This plan was developed between June and October 2013 in consultation with key stakeholders (*refer Appendix 2*) from Bay of Plenty, Lakes, Tairāwhiti and Waikato DHBs.

The plan was developed via the following means:

1. consultation with key stakeholder groups from each of the Midland Cancer Network DHBs
2. overview of existing local and regional oncology workforce
3. overview of current service configuration and service delivery
4. identification of current initiatives that align to the National Oncology Models of Care Implementation Plan 2012/13 and 2013/14
5. identification of local and regional gaps, constraints and opportunities
6. Midland Cancer Network Executive Group meeting on 26 September 2013 with key stakeholders to determine local and regional priority areas for improvement in 2013/14 and out years
7. sign off of the Midland Medical Oncology Service Plan including the service improvement plan by key stakeholders.

## **1.4 Midland Cancer Network medical oncology services**

### **1.4.1 Overview**

The Midland Cancer Network (MCN) DHBs have a two hub and spoke model for medical oncology with Waikato Regional Cancer Centre (WRCC) being the tertiary cancer centre hub with a role delineation of level six. This tertiary hub has a dedicated oncology department with oncology specialists and registrars including a teaching and research role. The delineation includes compliance with the minimum level of support service required for pathology, pharmacy, radiation oncology services and non-surgical, allied health, surgical services i.e. neurosurgery, vascular, upper gastrointestinal, cardiac intervention, diagnostic imaging, nuclear imaging, intensive care unit (ICU), coronary care unit (CCU), dedicated inpatient beds and operating theatre suites.

Tauranga Hospital is the secondary cancer centre hub and has a role delineation level of four. Establishment of a resident medical oncology and haematology service commenced at Tauranga Hospital in 2008<sup>3</sup>. Services include a dedicated ambulatory oncology department service with two medical oncology specialists and one general registrar. The delineation includes compliance with the minimum level of support required for pathology, pharmacy, diagnostic imaging, ICU, CCU and operating suites. Tauranga Hospital also provides visiting specialist clinics to Whakatane Hospital.

WRCC provides adult medical oncology services to Tairāwhiti DHB effective 1 July 2013. Tairāwhiti transitioned to the Midland Cancer Network effective 1 July 2012.

WRCC provides follow-up (FU) visiting clinics for Tauranga, Rotorua, Thames and Gisborne and combined modality treatments (chemotherapy, radiation therapy) and inpatient treatment for all DHBs.

The population for the Midland Cancer Network region is projected to increase by 10% or 79,821 people between 2011 and 2021, to 776,920. Growth is projected to be the highest in Bay of Plenty at 18.5%, followed by Waikato at 11% and then Lakes at 4%. Tairāwhiti is expected to have a decline in their population of -4% over this same period. Detailed information on service configuration and demographics is included in *Appendices 3 and 4*.

### **1.4.2 Medical oncology services**

Medical oncology services are provided by the Waikato Regional Cancer Centre (tertiary) and the Bay of Plenty Cancer Centre (secondary). All medical oncology first specialist assessments take place at either of these two hubs with follow-up clinics (including visiting clinics) and chemotherapy treatments (attendances) being provided closer to where patients live. All combined chemo-radiation treatments and inpatient therapies for the region are provided at Waikato. Medical oncology services work closely with haematology, radiation and surgical oncology services within the region. WRCC medical oncology services are structured in a tumour stream model with each team member specialising in at least 2-4 tumour streams.

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<sup>3</sup> Midland Cancer Network, 2008. Plan to develop a resident medical oncology and haematology service based in Tauranga BOP DHB

Multidisciplinary teams deliver medical oncology services with representation from the following:

1. consultant medical oncologists
2. consultant haematologists
3. registered nurses
4. cancer nurse specialists/cancer nurse coordinators
5. social workers
6. allied health professionals
7. healthcare assistants
8. palliative care/hospice nurses
9. psychologists (Midland does not have representation from this group)
10. pharmacists/ pharmacy technicians
11. dieticians.

These individuals are supported by service managers, team administrators, MDM coordinators and in some cases cancer nurse trackers.

## **1.5 Equity of access**

In Midland, as elsewhere in the country, there are differences in health status related to socioeconomic factors; ethnicity, gender and geography (*refer Appendix 4*). Differences in access to health care services and in the care received have a considerable impact on people's health status and mortality. They are particularly relevant when it comes to providing cancer services. DHBs capture gender, ethnicity, age and domiciliary information that can help us to establish whether or not our Midland Cancer Network DHB populations are getting equity or inequity of access to medical oncology services.

The most prevalent area of inequality for cancer services is widely accepted to be Māori. It is important that as we work together to improve service development, service coverage and access to services that we ensure that we do not widen the inequality gap for Māori.

The level and detail of data in this report is not sufficient to determine any measures of inequality in development, service coverage or access to medical oncology services. Further resourcing will need to be allocated to complete a re-run of the data sets (broken down to ethnicity level) under service volumes. This will occur as part of the 2013/14 work activities. Areas of concern will be identified for the relevant DHBs to address and/or include in future year's programme of work.

## **1.6 Key principles underpinning this plan**

The Midland Cancer Network Executive Group agreed that the following key principles should guide the development and implementation of the Midland Medical Oncology Service Plan and any future aligned work:

1. opportunities to improve equity of access and outcomes will be explored across the patient pathway
2. optimising the patient experience and outcome across the cancer care pathway is central to all that we do
3. revolutionary change is needed in how we work, whilst maintaining current programmes of work and sustaining the existing workforce and service delivery

4. communication with, and the development of relationships with, key stakeholders will ensure effective links between this work and others across the patient pathway
5. a whole-of-system approach will be taken; this will not be confined to oncology alone
6. broad-based, sustainable solutions will be sought for the challenges faced
7. tumour stream models and standards of practice are supported as effective means of delivering and improving services
8. regional governance and collaboration will provide the platform for new models of care
9. changes and innovations will be managed and evaluated in a cost-effective manner and efficiency gains explored where possible
10. the region will actively encourage technology uptake to make best use of clinician's time.

This plan provides direction for regional and local planning activity and aligns to key Government outcomes and Ministerial expectations. Key points of alignment include:

1. developing models of care for a growing and ageing population
2. a whole of system approach will support delivery of better, sooner, more convenient services
3. improving the patient journey through the system and patient safety will be key drivers
4. financial pressures are significant as costs are growing at an unsustainable rate
5. planning sustainable and affordable services for our region is paramount.

## **2. SCOPE OF THIS PLAN**

The Midland Medical Oncology Service Plan includes the following 'in scope' services and activity:

1. Bay of Plenty, Lakes, Tairāwhiti and Waikato (including Thames) district health board's medical oncology services, local and regional
2. all service data is current for 2012/13 financial year (applied to modelling tool "pipeline")
3. all workforce data is current for the 2012/13 financial year
4. the different models of care and workforce for medical oncology and haematology services are noted. The link between these services is important, and will be considered when implementing the improvements identified from this plan
5. implementation commences 1 November 2013.

### **2.1 Medical oncology defined**

Within this plan, medical oncology services includes provision of the following:

1. assessment, communication, planning, implementation and evaluation of care for patients experiencing complex needs in cancer and palliative care
2. prescription, preparation and administration of systemic therapies and supportive treatments
3. working with patients to manage their symptoms, side effects and toxicity of disease and treatment
4. working with patients to assess, understand, implement and evaluate their supportive care needs (physical and psychosocial) throughout their experience of cancer
5. supporting patients identified to be at risk of inequitable access, timeliness and quality of treatment and working with patients and their families.

### 3. MIDLAND SERVICE CONFIGURATION

#### 3.1 Facilities and resources

Table 1 provides a stock take of medical oncology facilities and resources<sup>4</sup> available in each of the hospitals within the Midland Cancer Network region. Narrative related to local facility and resource capacity including demographics is provided in *Appendices 3 and 4*.

*Table 1: Stock take of facilities and resources available in the Midland Cancer Network region*

Hospital facility	Treatment chairs	Treatment beds	Designated inpatient beds	24/7 on-call service	Consulting rooms
<b>Tauranga</b>	17	3 + 2 procedure beds	-	-	5
<b>Whakatane</b>	7	2	-	-	4
<b>Rotorua</b>	9	3	-	-	4
<b>Taupo</b>	4	-	-	-	-
<b>Gisborne</b>	4	8	-	-	2
<b>Hamilton (WRCC)</b>	9	6 <sup>5</sup>	30	Yes	6-9 <sup>6</sup>
<b>Thames</b>	5	-	-	-	2
<b>Tokoroa</b>	-	-	-	-	-
<b>Te Kuiti</b>	-	-	-	-	-
<b>Taumarunui</b>	-	-	-	-	-
<b>Total</b>	<b>51</b>	<b>16</b>	<b>30</b>		

As at 26 September 2013

Of the 67 treatment chairs and beds in the region, 52 are available outside the Waikato Regional Cancer Centre and this aligns to the Ministry of Health better, sooner, more convenient strategy. There are three relatively new chemotherapy units in the region situated at Tauranga, Whakatane and Rotorua hospitals that comply with the generally accepted international treatment space standards of 9m<sup>2</sup> for a treatment chair or bed. In 2013 the Regional Cancer Centre upgraded their outpatient chemotherapy unit. However this upgrade does not meet the internationally accepted standard of 9m<sup>2</sup> per patient when the unit is running at capacity. Included in the upgrade is a specific treatment area for patients, reception area as well as a new licensed pharmacy facility with cytotoxic compounding unit. The main aim of these changes is to assist with better patient flow, allowing nurses better visibility of their patients and improving the patient environment. In 2013/14 management at Waikato have signalled they will look at facility options for the delivery of medical oncology services in the future.

In 2012 Waikato upgraded their inpatient facility with a specially designed 6 bed HEPA filtered unit as well as an upgrade of the other 24 rooms. The only designated inpatient beds in the region are at the WRCC. Beds are available at other Midland Cancer Network DHB hospitals under general admission excluding the Waikato 'T' hospitals where patients are transferred to WRCC inpatient facility.

<sup>4</sup> Excludes workforce resource which is covered further in the document under section 5.

<sup>5</sup> Inpatient beds shared with haematology and radiation oncology.

<sup>6</sup> Not all the time, every day of the week

Gisborne hospital has a project in progress to develop an ambulatory cancer hub under medicine management (currently surgery) including an upgrade to the chemotherapy facility.

The 24/7 on call service is provided for the region by WRCC, except for Bay of Plenty where on call is provided by WRCC after 5pm and weekends.

### 3.2 Clinics

*Table 2: Waikato Regional Cancer Centre allocated visiting clinics roster*

Medical Oncology SMOs	Days	Registrar	Clinics	Yearly
<b>Tauranga</b>				
<b>I Kennedy</b>	Friday(fortnight)	Yes <sup>7</sup>	2-3 FU clinics per month	26 <sup>8</sup> FU clinics per year
<b>Rotorua</b>				
<b>L Nagle</b>	1 <sup>st</sup> Friday each month	Yes	2 FU clinics per month	24 FU clinics per year
	2 <sup>nd</sup> Friday each month	Yes		
<b>D Link</b>	1 <sup>st</sup> Friday each month	Yes	2 FU clinics per month	24 FU clinics per year
	4 <sup>th</sup> Friday each month	Yes		
<b>Thames</b>				
<b>M Jameson</b>	Every 3 weeks	Yes	Every three weeks 1-2 FU clinics	17 FU clinics per year
<b>Gisborne</b>				
<b>A Srivastava*</b>	1 <sup>st</sup> Mon/Tues	Yes <sup>9</sup>	2 clinics (FSA & FU) per month with overnight stay	24 FU clinics per year

As at 30 June 2013

\*FSA (6-7) new on site in Gisborne (once a month)

The WRCC plans to deliver 115 visiting clinics for the region in 2013/14 with an expected annual service delivery of approximately 2090-2450 patient attendances (variance in volume depends partly on whether there is a registrar or not). The split of the current roster of visiting clinics across the region is 42% Lakes, 21% Tairāwhiti, 22% Bay of Plenty and 15% Thames.

For the past three years, Lakes DHB has exhausted the WRCC allocated visiting clinic limit<sup>10</sup> and as a result, all overflows of FUs were seen at WRCC by the visiting consultant and others. There are an inadequate number of Lakes clinic days to cope with the Lakes medical oncology demand and current clinics are at capacity.

Lakes 2012/13 FU growth rate for patients seen at Lakes DHB was 11.0% whereas at WRCC the growth rate for Lakes was 38.9%. The Lakes demand is expected to continue to increase in 2013/14 putting pressure on WRCC to provide more capacity either at Lakes or at WRCC. On average Lakes clinics see 22 - 25 patient FUs per visiting clinic (full day) with a registrar assisting.

<sup>7</sup> In 2013/14 most clinics will be without a registrar

<sup>8</sup> Although 26 clinics per year identified, Tauranga advise the actual number is 22 and some of these are without registrar giving an average of 14 patients per clinic.

<sup>9</sup> 1<sup>st</sup> Monday of month is FSA clinic with a registrar and 1<sup>st</sup> Tuesday of month is FU clinic without a registrar

<sup>10</sup> Short term solution over the past two years is to do extra visiting clinics and see more patients per clinic

The visiting outreach service to Thames Hospital recently increased the time slots from 20 to 30 minutes per patient, and as a result the number of patients seen per clinic has decreased.

*Table 3: Bay of Plenty DHB allocated clinic roster*

Medical Oncology SMOs		Registrar	Weekly	Annually
<b>Tauranga</b>				
<b>R North</b>	Monday	0.5 FTE	FSA clinic (4-5 new)	40 clinics
	Tuesday (alternate)	No	FU clinic (16-18 FU)	20 clinics
	Wednesday (alternate)	Yes	FU clinic (18-20)	20 clinics
	Thursday (alternate)	Yes	FU clinic (18-20)	20 clinics
<b>Whakatane</b>				
<b>R North</b>	Tuesday (alternate)	Yes	FU clinic (18-20)	20 clinics
<b>Tauranga</b>				
<b>M Head</b>	Monday	0.5 FTE	FSA clinic (4-5 new)	40 clinics
	Tuesday (alternative)	Yes	FU clinic (18-20)	20 clinics
	Wednesday (alternate)	Yes	FU clinic (18-20)	20 clinics
	Thursday (alternate)	Yes	FU clinic (16-18)	20 clinics
<b>Whakatane</b>				
<b>M Head</b>	Tuesday (alternative)	Yes	FU clinic (18-20)	20 clinics

Bay of Plenty has two resident medical oncologists and one registrar (basic training) covering medical oncology services. FSA clinics are provided at Tauranga Hospital and one FU clinic is held weekly at Whakatane. The consultants see on average 4-5 new referrals each per week (180-200 each annually). Bay of Plenty has an FSA to FU ratio of 1:9.

Bay of Plenty will recruit an additional 0.5 FTE SMO from July 2014 which is expected to increase the number of FSAs completed locally however the FUs are not expected to increase considerably as the 22 visiting FU clinics currently supported by WRCC will be provided by the new 0.5 FTE. No additional nursing or non-clinical resource will accompany the additional 0.5 FTE SMO and there are no known delays in the waiting times for access to medical oncology services at Bay of Plenty<sup>11</sup>. Implanted port and PICC services are provided at the DHB.

WRCC provides Bay of Plenty a visiting medical oncologist service for patients requiring concurrent chemotherapy/radiation therapy. These FSAs (approximately 60-80 annually) take place at WRCC and the FUs occur at Tauranga Hospital. From July 2014, when the new BOP SMO starts, WRCC will still provide some FSAs and FU service coverage but the scope of that coverage is yet to be determined. The WRCC has signalled that the visiting clinic resource is expected to be re-allocated to other areas within the region where capacity constraints have been identified.

*Table 4: Waikato Regional Cancer Centre (WRCC) clinics held at Waikato Hospital*

Medical Oncology SMOs	Registrar	Weekly	Annually
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<sup>11</sup> Advised by BoP Medical Oncology service manager

Medical Oncology SMOs		Registrar	Weekly	Annually
<b>I Kennedy</b>	Monday	Yes	FSA (5 new) $\Delta$	40 clinics
	Tuesday	Yes	FU clinic	40 clinics
	Wednesday	Yes	Acute FU (1/2 day)	40 half day clinics
<b>M Kuper</b>	Monday	Yes	FSA (4 new) $\Delta$	40 clinics
	Tuesday	Yes	FU clinic	40 clinics
	Wednesday	Yes	Acute FU (1/2 day)	40 half day clinics
<b>M Jameson</b>	Wednesday	Yes	FSA (1/2 day) (3 FSA) $\Delta$	40 clinics
	Thursday	Yes	FU clinic	40 clinics
<b>A Srivastava*</b>	Wednesday	Yes	Acute FU (1/2 day)	40 half day clinics
	Thursday	Yes	FU clinic	40 clinics
	Friday <sup>12</sup>	Yes	FSA (3-4 new) $\Delta$	40 clinics
<b>L Nagle</b>	Monday	Yes	FSA (5 new) $\Delta$	40 clinics
	Thursday	Yes	FU clinic	40 clinics
<b>D Link</b>	Monday	Yes	FSA Clinic (5 new) $\Delta$	40 clinics
	Tuesday	Yes	FU clinic	40 clinics

Note: Clinics are full day clinics unless otherwise specified.

\* FSA (6-7) new in Gisborne once a month on site (Monday/Tuesday) refer to Table 2

$\Delta$  Acute new patients are seen in addition to these numbers

WRCC provided 916 FSAs and 4454 FU appointments on site in 2012/13. Previously the WRCC had 4.6 SMO FTE and 4.0 RMO FTE support. Since July 2013 the SMO FTE has increased to 5.6 and the RMO FTE to 4.6 to accommodate the inclusion of Tairāwhiti patients. FSA clinics are planned to accommodate five FSAs per full day clinic based on a 40 week year, and the average number of FUs seen is 20-25 per full day clinic. Waiting times for medical oncology FSAs are within the Ministry of Health targets.

The key constraint for WRCC clinics is the availability of consulting room space which impacts on the number of patients being seen and the frequency of patient follow-ups. There is no flexibility to do extra clinics or see additional patients on non-rostered clinic days due to the lack of clinic room space.

When the facility (Lomas Building) was originally built in the 1980s, provision was for four oncology consultants; today there are 14 consultants and 8 registrars across medical and radiation oncology. To compound this, the service has also lost four clinic rooms in the Meade Clinical Centre building process.

### 3.3 Pharmacy services

#### 3.3.1 Waikato

Pharmacy services are an integral component of a medical oncology service. Waikato DHB employs four pharmacists that work in the oncology area – two pharmacists, who both work part time (0.8 FTE), are deemed “specialist” level pharmacists. These two specialist pharmacists cover both oncology and haematology clinical areas. The pharmacy/cytotoxic compounding unit operates using two additional pharmacists (2.0 FTE) with supporting pharmacy technician staff (2.0 FTE). Each specialist pharmacist covers the other for acute issues only when the other is on leave. The

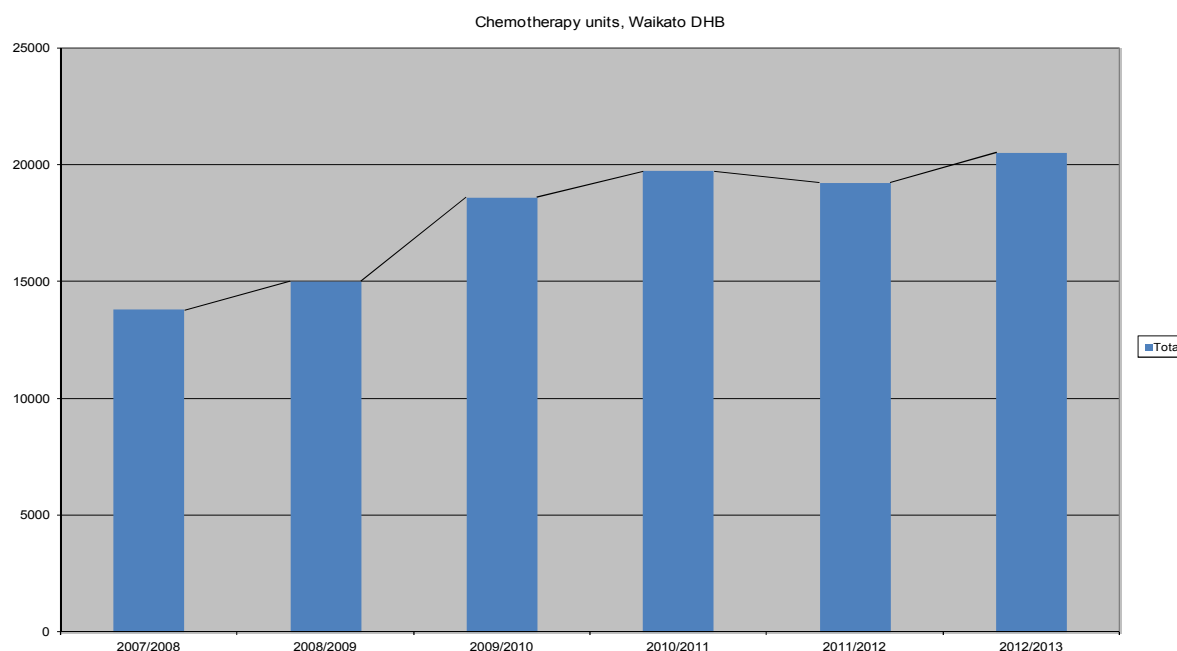
<sup>12</sup> Except 1<sup>st</sup> week of the month when Gisborne clinic on Monday and Tuesday

pharmacy service works with medical oncology and haematology specialists to provide expert on-site sign off and authorisation/clinical checks for all oncology and haematology medications both prescribed and ordered. The service has expertise in supporting adjuvant and metastatic therapies that complement the chemotherapy regimens also. The specialist pharmacist input to the prescribing and checking of chemotherapy and recommendations around appropriate concomitant therapies is where smaller centres may lack expertise.

One of their tasks in collaboration with medical oncology and haematology is the developing and updating of specialist chemotherapy drug guidelines for the whole Midland Cancer Network region. They are also involved in teaching and training of oncology registrars on prescribing and monitoring of chemotherapy and side effects.

The oncology pharmacists provide (via phone) expert advice to pharmacists and GPs located in the wider Midland region. However there is little or no ability within the current pharmacist resource to offer more than a phone service for concerned GPs, pharmacists and patients. The increase in range and complexity (i.e. genetically specific/targeted specific drugs) of new oncology pharmaceuticals, especially oral medication, and the increasing cost requirements and infrastructure to ensure safe medication practices will put strain on the current pharmacy service.

*Table 5: Chemotherapy units of medication at Waikato DHB 2007-2013*



Provision of service to patients leaving outpatient clinics, inpatient services and linking with community providers is minimal. There is therefore the potential to compromise patient treatment standards of care. Pharmacists have an increasingly important role in the management of cancer patients as part of the multidisciplinary team (MDT) and should interact with the patient at various stages their cancer journey. With already stretched workloads, attendance at MDT meetings increases their workload and reduces the amount of time and number of times a pharmacist could interact with the patient. There are numerous studies that show both the cost-effectiveness and cost-benefit of a pharmacist involvement in patient care and these include preventing adverse drug

reactions (drug therapy/second and/or additional therapies – anti-emetic, mouth care, and hydration), reducing costs, optimising drug regimes and improving patient outcomes.

With patient treatment options continuing to change (including treating older patients and thus more co-morbidities), and with the volumes of regimes per patient rising as patients live longer; this has put additional constraints on an already stretched workforce.

### 3.3.2 Aseptically compounded cytotoxic products and services

Baxter Healthcare provides Waikato with an off-site supply of aseptically compounded cytotoxic product from their facility located in Mt Wellington, Auckland. Waikato DHB Pharmacy clinically checks, orders, receipts and then dispenses per patient all compounded products. The pharmacy also provides a limited compounding service for short expiry and urgent requests from an on-site compounding facility. Compounding costs, either Baxter or Waikato are carried as a cost by WRCC and are not part of the national pharmaceutical budget.

Tairāwhiti DHB receives all of their compounded products from Hawkes Bay DHB whereas the rest of the Midland Cancer Network DHBs receive their compounded products from Baxter Healthcare, Auckland.

### 3.3.3 Pharmaceutical cancer treatment drug

Pharmaceutical cancer treatments (PCTs) include drug requirements for community and hospital pharmaceuticals. PCTs are managed nationally including all costs, patents, exception claiming and rebates.

As part of preparing this service plan, Midland DHBs PCT drug analysis for the first eight months of 2011/12 was considered for the top six drugs and costs. There were variations between DHBs and the national averages (*refer Appendices 7 and 8*). Additional resource would be required to undertake in-depth analysis to further understand this further.

## 3.4 Multidisciplinary team meetings (MDMs)

The following table provides an overview of the anticipated number of cancer MDMs in which medical oncologists participate in the Midland Cancer Network region. Those with ticks (✓) are already in place.

*Table 6: Multidisciplinary team meetings across the region*

MDMs	DHBs			
	Bay of Plenty	Lakes	Tairāwhiti	Waikato
Breast	✓	✓Δ		✓
Surgery Pathology	✓			
Urology	✓			
Surgical Meeting		*		
Chest Conference				✓
Endocrine				✓
GI Oncology				✓
Colorectal Pathology				✓
Gynae-oncology				✓
Head and Neck				✓
Lymphoma				✓

Melanoma				✓
Neurosurgery				✓
Urology Oncology				✓
Genito-urinary				✓
Myeloma				✓

Note - no MDMs held at Tairāwhiti DHB – all referred to Waikato DHB or Auckland DHB (gynae-onc only)

\* Not held for the last year - may be disestablished once video conferencing enabled

Δ current set up does not meet MoH guidance for MDM, set up will change from 6/11/2013

Cancer MDMs are part of the philosophy of multidisciplinary care. Effective MDMs result in positive outcomes for patients receiving care and health professionals involved in providing the care and health services overall. The benefits include:

1. improved treatment planning through consideration of the full range of therapeutic options resulting in improved outcomes
2. improved equality of outcomes for patients with cancer
3. more patients being offered the opportunity to enter into relevant clinical trials
4. improved continuity of care and less service duplication
5. improved coordination of services
6. improved communication between care providers with the development of clear lines of responsibility between members of the MDM
7. optimisation of resources, with effective MDMs resulting in more efficient use of time and resources
8. group for approval of expensive imaging modalities.

In 2013/14 the key objectives of the Midland Cancer Network cancer MDM project is to:

1. complete implementation of proof of concept for video conferencing connectivity including re-scheduling of some MDMs to enable clinicians to present their patients at a regional MDM
2. support new MDM Coordinator roles
3. support MDMs to comply with Ministry of Health *“Guidance for implementing high-quality multidisciplinary meetings”* (Ministry of Health, 2012).

### 3.6 Infrastructure and IS

The Midland Cancer Network DHBs do not all use the same information systems. The Waikato, Lakes and Tairāwhiti DHBs all capture their referral and outpatient information through iPM which is their patient management system (PMS), whereas Bay of Plenty DHB has IBA/Web Pas. All PMS systems across the region are on different versions, or different systems to one another, making consistency of information more difficult to achieve.

Chemotherapy treatment data (for outpatient provision only) is captured in the Aesculapius database across the region, however Bay of Plenty DHB has modified their version of this database which makes it difficult to link their version with the Waikato one. WRCC use ARIA as the booking system for chemotherapy treatments whereas Bay of Plenty DHB, Lakes DHB and Thames Hospital include chemotherapy bookings in their PMS. Tairāwhiti has a manual booking system for their chemotherapy patients.

MOSAIQ, a comprehensive oncology information system that reviews, prescribes, dispenses, treats and documents patient data in a single database solution; and METRIQ, a fully-featured oncology data management system that removes much of the complexity of data collection; follow ups, analysis and reporting are both options now being developed as a single system of data collection for medical oncology in New Zealand.

Midland has not prioritised MOSAIQ and/or METRIQ as part of the Midland Regional Information System Plan (MRISP) capital planning.

### **3.7 Pathology and laboratory services**

Pathology Associates Limited (PAL) is the predominant pathology service provider for the Midland Cancer Network DHBs providing pathology services for all of Bay of Plenty, approximately 92% of Waikato and for all of the Rotorua area. Taupo is serviced by Southern Community Laboratories and Tairāwhiti is serviced by Medlab Central. Sharing of laboratory results regionally is possible for WRCC, Bay of Plenty and Rotorua (although there is difficulty obtaining some results); and for Tairāwhiti results there are customised logins available to access results through Medlab Central. Taupo results can be accessed at Rotorua Hospital by visiting consultants but not from Hamilton.

## 4. SERVICE DELIVERY

### 4.1 Data purpose and confidence

Historical (actual) volumes data for the Midland Cancer Network DHBs are provided in tables 7-14 up to and including the 2012/13 financial year. Projection data includes demographic growth (with age, ethnicity and gender) from 2013/14 to 2020/21. The projections data excludes cancer growth rates and social deprivation rates. Data qualifications for the volume tables are attached as *Appendix 5*. Data was provided by each DHB and has been used to produce the tables below. The majority of the Tairāwhiti data is excluded from this report (except those seen at WRCC) as the data accuracy needs improving. There will be a full set of data available for inclusion in these tables from 2014/15 onwards. The new census data was released in October 2013, and this is expected to have some influence on the projected volume growth. Midland Cancer Network will re-run Tables 7-14 with the new census data as part of the priority initiatives work for 2013/14.

### 4.2 Actual and projected service volumes

*Table 7: Waikato DHB – DHB of Service – Inpatient Services*

Actual volumes							Volume projections based on 2013 fiscal year							
Measure			2009/10	2010/1	2011/2	2012/3	2013/4	2014/5	2015/6	2016/7	2017/8	2018/9	2019/20	2020/1
Discharges by PUC and admit type			530	613	648	625	775	791	806	820	833	847	861	874
M50001	Oncology - Inpatient Services (DRGs)	Acute	520	604	644	621	772	787	803	817	830	844	858	870
		Elective	10	9	4	4	3	3	3	3	3	3	3	3
Growth rate medical oncology			-7.8%	15.7%	5.7%	-3.5%	24.0%	2.0%	1.9%	1.7%	1.6%	1.7%	1.6%	1.5%

Table 7 shows the inpatient volumes delivered by WRCC for the Midland Cancer Network DHBs. There is an anticipated growth expected in 2013/14 for acutes, however caution is necessary as acutes include medical oncology, haematology and radiation oncology patients. It is unclear from this data which of the three groups (or a combination of the three) is driving this anticipated growth.

Table 8: Waikato DHB – DHB of Service – Inpatient services by DHB

Actual		Projections based on 2013 fiscal year											
Measure		2009/10	2010/1	2011/2	2012/3	2013/4	2014/5	2015/6	2016/7	2017/8	2018/9	2019/20	2020/1
Medical Oncology	Waikato DHB	439	483	522	532	667	681	695	708	721	734	747	758
	Bay of Plenty DHB	50	68	66	38	45	46	46	47	47	48	48	48
	Lakes DHB	37	59	53	48	48	49	49	50	50	50	50	51
	Tairāwhiti DHB			2		3	3	3	3	3	3	3	3
	Taranaki DHB		1	3	1	8	8	8	8	8	8	8	8
	Non-Midland DHB	4	2	2	6	4	4	4	4	4	4	4	4

Table 8 shows reductions in inpatients for Bay of Plenty and Lakes DHBs when compared to 2011/12 results with Bay of Plenty having the greatest reduction. Waikato, in comparison, is steadily continuing to increase in volume.

Table 9: Bay of Plenty DHB – DHB of Service - outpatients

Actual		Projections based on 2012/3 fiscal year											
YEAR		-4	-3	-2	0	+1	+2	+3	+4	+5	+6	+7	+8
MEASUREMENT		2009/10	2010/1	2011/2	2012/3	2013/4	2014/5	2015/6	2016/7	2017/8	2018/9	2019/20	2020/1
Medical oncology	FSA	281	305	366	360	368	375	383	390	398	406	415	422
	FU	2,634	3,013	3,229	3,235	3,300	3,365	3,430	3,498	3,564	3,628	3,689	3,745
	<b>Total</b>	<b>2,915</b>	<b>3,318</b>	<b>3,595</b>	<b>3,595</b>	<b>3,668</b>	<b>3,740</b>	<b>3,813</b>	<b>3,888</b>	<b>3,962</b>	<b>4,034</b>	<b>4,104</b>	<b>4,167</b>
Chemotherapy	<b>Total</b>	<b>3,849</b>	<b>4,267</b>	<b>4,450</b>	<b>4,012</b>	<b>4,085</b>	<b>4,155</b>	<b>4,222</b>	<b>4,293</b>	<b>4,370</b>	<b>4,445</b>	<b>4,516</b>	<b>4,581</b>

#### Growth rates

Medical oncology FSA		8.5%	20.0%	-1.6%	2.1%	2.1%	2.0%	2.0%	2.1%	2.0%	2.0%	2.0%	1.8%
Medical oncology FU		14.4%	7.2%	0.2%	2.0%	2.0%	1.9%	2.0%	1.9%	1.8%	1.7%	1.5%	
<b>Medical oncology total</b>		<b>13.8%</b>	<b>8.3%</b>	<b>0.0%</b>	<b>2.0%</b>	<b>2.0%</b>	<b>1.9%</b>	<b>2.0%</b>	<b>1.9%</b>	<b>1.8%</b>	<b>1.7%</b>	<b>1.5%</b>	
<b>Chemotherapy total</b>		<b>10.9%</b>	<b>4.3%</b>	<b>-9.8%</b>	<b>1.8%</b>	<b>1.7%</b>	<b>1.6%</b>	<b>1.7%</b>	<b>1.8%</b>	<b>1.7%</b>	<b>1.6%</b>	<b>1.4%</b>	

#### FSA to FU ratio

Medical Oncology FSA to FU ratio	<b>1:9.4</b>	<b>1:9.9</b>	<b>1:8.8</b>	<b>1:9</b>	<b>1 : 9</b>	<b>1 : 9</b>	<b>1 : 9</b>	<b>1 : 9</b>	<b>1 : 8.9</b>	<b>1 : 8.9</b>	<b>1 : 8.9</b>	<b>1 : 8.9</b>	
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There are no significant BOP FSA or FU variances in the historical (actual) data set except for the FSA increase between 2010/11 and 2011/12. It is suggested that this increase is associated with the recruitment of an additional 1.0 FTE to Bay of Plenty DHB over this period. Chemotherapy rates decreased in 2012/13 by almost 10% compared to 2011/12 while the FSA/FU ratio has stayed at an average 1:9 over four years. In comparison the DHB of Domicile view shows a reduced ratio of 1:7.7. Projection data shows an expected growth rate increase for FSA, FU and chemotherapy of between 1.9 – 2.1% over the next five years. This is only slightly higher than the population based funding formula (PBFF) growth rate of 1.89%. The projected growth rate information could be affected by new census data released in October 2013.

*Table 10 Lakes DHB – DHB of Service - outpatients*

Actual					Projections based on 2012/3 fiscal year							
YEAR	-4	-3	-2	0	+1	+2	+3	+4	+5	+6	+7	+8
MEASUREMENT	2009/10	2010/1	2011/2	2012/3	2013/4	2014/5	2015/6	2016/7	2017/8	2018/9	2019/20	2020/1

Medical oncology	FSA	5	0	2	0	0	0	0	0	0	0	0	0
	FU	731	868	889	987	1,005	1,022	1,040	1,058	1,075	1,089	1,102	1,114
	<b>Total</b>	<b>736</b>	<b>868</b>	<b>891</b>	<b>987</b>	<b>1,005</b>	<b>1,022</b>	<b>1,040</b>	<b>1,058</b>	<b>1,075</b>	<b>1,089</b>	<b>1,102</b>	<b>1,114</b>
Chemotherapy	<b>Total</b>	<b>1,252</b>	<b>1,989</b>	<b>2,044</b>	<b>2,622</b>	<b>2,663</b>	<b>2,709</b>	<b>2,757</b>	<b>2,806</b>	<b>2,852</b>	<b>2,894</b>	<b>2,933</b>	<b>2,956</b>

#### Growth rates

Medical oncology FSA	0.0%	-100.0%	0.0%	-100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medical oncology FU	16.2%	18.7%	2.4%	11.0%	1.8%	1.8%	1.7%	1.7%	1.6%	1.3%	1.2%	1.1%	1.1%
<b>Medical oncology total</b>	<b>16.1%</b>	<b>17.9%</b>	<b>2.6%</b>	<b>10.8%</b>	<b>1.8%</b>	<b>1.8%</b>	<b>1.7%</b>	<b>1.7%</b>	<b>1.6%</b>	<b>1.3%</b>	<b>1.2%</b>	<b>1.1%</b>	<b>1.1%</b>
<b>Chemotherapy total</b>	<b>-23.2%</b>	<b>58.9%</b>	<b>2.8%</b>	<b>28.3%</b>	<b>1.6%</b>	<b>1.7%</b>	<b>1.8%</b>	<b>1.8%</b>	<b>1.6%</b>	<b>1.5%</b>	<b>1.3%</b>	<b>1.3%</b>	<b>0.8%</b>

#### FSA to FU ratio

Medical oncology FSA to FU ratio	1:4.9	1:5.1	1:5.8	1:5.1	1:5.1	1:5.1	1:5.1	1:5.1	1:5.2	1:5.2	1:5.1	1:5.1	1:5.1
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Please note that FSA/FU ratio excludes clinical trial patients treated in Hamilton. The FSA ratio is Waikato FSAs and combined Waikato and Lakes FUs.

FSAs are provided for the Lakes population at WRCC. FU and chemotherapy volumes at Lakes continue to increase with chemotherapy volumes 28% higher than in 2011/12. Projection data is suggesting a declining growth rate in later years it is unlikely that the new census data due will impact these projections greatly. The small volume of FSAs seen at Lakes is most likely attributed to urgent cases.

Table 11: Waikato Regional Cancer Centre (DHB of Service)

Actual					Projections based on 2012/3 fiscal year							
YEAR	-4	-3	-2	0	+1	+2	+3	+4	+5	+6	+7	+8
MEASUREMENT	2009/10	2010/1	2011/2	2012/3	2013/4	2014/5	2015/6	2016/7	2017/8	2018/9	2019/20	2020/1

Medical oncology	FSA	795	796	830	916	934	952	969	985	1,002	1,018	1,034	1,048
	FU	3,478	4,026	4,273	4,454	4,544	4,633	4,717	4,796	4,879	4,962	5,037	5,109
	<b>Total</b>	<b>4,273</b>	<b>4,822</b>	<b>5,103</b>	<b>5,370</b>	<b>5,478</b>	<b>5,585</b>	<b>5,685</b>	<b>5,781</b>	<b>5,881</b>	<b>5,981</b>	<b>6,071</b>	<b>6,157</b>
Chemotherapy	<b>Total</b>	<b>6,889</b>	<b>7,063</b>	<b>6,251</b>	<b>6,602</b>	<b>6,723</b>	<b>6,846</b>	<b>6,962</b>	<b>7,075</b>	<b>7,196</b>	<b>7,317</b>	<b>7,427</b>	<b>7,531</b>

#### Growth Rates

Medical oncology FSA	1.4%	0.1%	4.3%	10.4%	2.0%	1.9%	1.8%	1.7%	1.7%	1.6%	1.5%	1.4%
Medical oncology FU	13.0%	15.8%	6.1%	4.2%	2.0%	2.0%	1.8%	1.7%	1.7%	1.7%	1.5%	1.4%
<b>Medical oncology total</b>	<b>10.6%</b>	<b>12.8%</b>	<b>5.8%</b>	<b>5.2%</b>	<b>2.0%</b>	<b>2.0%</b>	<b>1.8%</b>	<b>1.7%</b>	<b>1.7%</b>	<b>1.7%</b>	<b>1.5%</b>	<b>1.4%</b>
<b>Chemotherapy total</b>	<b>-27.8%</b>	<b>2.5%</b>	<b>-11.5%</b>	<b>5.6%</b>	<b>1.8%</b>	<b>1.8%</b>	<b>1.7%</b>	<b>1.6%</b>	<b>1.7%</b>	<b>1.7%</b>	<b>1.5%</b>	<b>1.4%</b>

#### FSA to FU ratio

Medical Oncology FSA to FU ratio	1:4.4	1:5.1	1:5.1	1:4.9	1 : 4.9	1 : 4.9	1 : 4.9	1 : 4.9	1 : 4.9	1 : 4.9	1 : 4.9	1 : 4.9
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#### By DHB

Waikato DHB	FSA	531	523	588	614	626	639	650	662	674	686	696	706
Bay of Plenty DHB		105	89	69	74	75	77	78	80	81	82	84	85
Lakes DHB		154	181	166	215	219	223	226	230	234	237	240	243
Tairāwhiti DHB		1	1	1	2	2	2	2	2	2	2	2	2
Taranaki DHB		0	1	0	2	2	2	2	2	2	2	2	2
Non Midland DHB		4	1	6	9	9	9	10	10	10	10	10	10
Waikato DHB	FU	3,238	3,810	4,029	4,141	4,225	4,309	4,389	4,465	4,543	4,623	4,693	4,760
Bay of Plenty DHB		120	86	105	108	110	112	114	115	117	118	120	122
Lakes DHB		85	88	95	132	134	137	139	141	143	145	147	149
Tairāwhiti DHB		3	1	2	2	2	2	2	2	2	2	2	2
Taranaki DHB		0	4	0	2	2	2	2	2	2	2	2	2

Non Midland DHB		32	37	42	69	70	71	71	71	71	71	72	73
Waikato DHB	Chemotherapy	6,300	6,586	5,864	6,161	6,276	6,394	6,505	6,613	6,728	6,844	6,949	7,047
Bay of Plenty DHB		346	209	204	221	224	227	230	233	236	241	244	249
Lakes DHB		159	191	140	166	168	170	172	172	174	176	177	178
Tairāwhiti DHB		5	0	6	5	5	5	5	5	5	6	6	6
Taranaki DHB		1	1	1	0	0	0	0	0	0	0	0	0
Non Midland DHB		78	76	36	49	50	50	51	51	51	51	51	52

#### **Growth by DHB**

Waikato DHB	FSA	4.9%	-1.5%	12.4%	4.4%	2.0%	2.0%	1.8%	1.8%	1.8%	1.7%	1.5%	1.5%
Bay of Plenty DHB		-11.8%	-15.2%	-22.5%	7.2%	2.0%	1.8%	1.7%	1.8%	1.5%	1.9%	1.8%	1.6%
Lakes DHB		4.1%	17.5%	-8.3%	29.5%	1.9%	1.7%	1.6%	1.7%	1.5%	1.3%	1.4%	1.1%
Waikato DHB	FU	15.3%	17.7%	5.7%	2.8%	2.0%	2.0%	1.8%	1.7%	1.8%	1.7%	1.5%	1.4%
Bay of Plenty DHB		21.2%	-28.3%	22.1%	2.9%	2.1%	1.4%	1.6%	1.6%	1.2%	1.4%	1.2%	1.6%
Lakes DHB		-35.6%	3.5%	8.0%	38.9%	1.7%	1.9%	1.4%	1.3%	1.9%	1.5%	1.3%	1.2%
Waikato DHB	Chemotherapy	-27.7%	4.5%	-11.0%	5.1%	1.9%	1.9%	1.7%	1.7%	1.7%	1.7%	1.5%	1.4%
Bay of Plenty DHB		-16.4%	-39.6%	-2.4%	8.3%	1.6%	0.9%	1.4%	1.6%	1.3%	1.8%	1.6%	1.7%
Lakes DHB		-54.8%	20.1%	-26.7%	18.6%	1.0%	1.3%	1.0%	0.6%	1.1%	0.9%	0.5%	0.7%

WRCC continues to provide increased volumes of FSAs and FUs on a yearly basis as the tertiary hub. Chemotherapy volumes, although increasing over the past two years, are still less than what was provided in 2009/10 and 2010/11. A contributing factor may have been that medical oncology and haematology volumes were counted as one and or the regimes are becoming more complex. A contributing factor could also be that the proportion of oral therapies has increased and also more FUs being seen by nurses. Annual growth rates are expected to be between 1.8 – 2.0% for the next two years, with the growth rate decreasing to 1.7% from 2016/7 – 2018/9 and further to 1.5% from 2019/20 – 2020/21. Nationally calculated PBFF of 1.89% is tracking in line with the pipeline projections. The new census data may have an impact on the projected growth rates. Of most concern for WRCC is the growth rate of Lakes patients being seen and treated at WRCC and the ability of WRCC to continue to resource this level of growth into the future. It is also important to acknowledge that WRCC medical oncologists have rostered acute time for inpatient consultations in addition to ward rounds. Inpatient consultation volumes are unavailable. Unknown at this time is the volume of Tairāwhiti patients that will be seen at WRCC in 2013/14. The reason/s for the low FSA:FU ratio of 1:4.9 in Table 11 is

unclear and needs further investigation because in comparison the FSA to FU ratio for the DHB of domicile view is 1:6.8 which is considerably higher than the DHB of service ratio.

*Table 12: DHB of Domicile view*

Actual						Projections based on 2013 fiscal year							
YEAR		-4	-3	-2	0	+1	+2	+3	+4	+5	+6	+7	+8
MEASUREMENT		2009/10	2010/1	2011/2	2012/3	2013/4	2014/5	2015/6	2016/7	2017/8	2018/9	2019/20	2020/1

Waikato DHB	FSA	533	523	589	615	627	640	652	663	675	687	697	707
Bay of Plenty DHB		383	393	430	429	438	447	455	464	474	483	492	501
Lakes DHB		159	181	168	215	219	223	226	230	234	237	240	243
Tairāwhiti DHB		1	1	4	3	3	3	3	3	3	3	3	3
Waikato DHB	FU	3,269	3,850	4,067	4,168	4,252	4,337	4,417	4,493	4,572	4,652	4,722	4,789
Bay of Plenty DHB		2,746	3,090	3,291	3,314	3,381	3,447	3,514	3,582	3,649	3,714	3,776	3,834
Lakes DHB		783	918	969	1,105	1,124	1,144	1,164	1,184	1,204	1,220	1,235	1,248
Tairāwhiti DHB		9	1	8	7	7	7	7	8	8	8	8	8
Waikato DHB	Chemotherapy	6,361	6,640	5,933	6,183	6,299	6,416	6,528	6,636	6,752	6,868	6,973	7,071
Bay of Plenty DHB		4,185	4,463	4,560	4,226	4,302	4,374	4,444	4,518	4,596	4,675	4,749	4,818
Lakes DHB		1,347	2,124	2,162	2,747	2,788	2,835	2,884	2,934	2,983	3,026	3,066	3,090
Tairāwhiti DHB		13	0	18	10	10	11	11	11	12	12	12	13

There is a consistent increasing trend in both FSA and FU volumes across the region. Chemotherapy volumes decreased in 2012/3 when compared to 2011/12 for Bay of Plenty but increased at both Lakes and Waikato DHBs. Tairāwhiti data is incomplete.

*Table 13: DHB of Domicile growth rates*

Actual						Projections based on 2013 fiscal year							
YEAR		-4	-3	-2	0	+1	+2	+3	+4	+5	+6	+7	+8
MEASUREMENT		2009/10	2010/1	2011/2	2012/3	2013/4	2014/5	2015/6	2016/7	2017/8	2018/9	2019/20	2020/1

Waikato DHB	FSA		-1.9%	12.6%	4.4%	2.0%	2.0%	1.8%	1.8%	1.8%	1.7%	1.5%	1.5%
Bay of Plenty DHB			2.6%	9.4%	-0.2%	2.1%	2.0%	1.9%	2.0%	2.0%	2.0%	1.9%	1.8%
Lakes DHB			13.8%	-7.2%	28.0%	1.9%	1.7%	1.6%	1.7%	1.5%	1.3%	1.4%	1.1%
Waikato DHB	FU		17.8%	5.6%	2.5%	2.0%	2.0%	1.8%	1.7%	1.8%	1.7%	1.5%	1.4%
Bay of Plenty DHB			12.5%	6.5%	0.7%	2.0%	2.0%	1.9%	1.9%	1.9%	1.8%	1.7%	1.5%
Lakes DHB			17.2%	5.6%	14.0%	1.7%	1.8%	1.7%	1.7%	1.7%	1.3%	1.2%	1.1%
Waikato DHB	Chemotherapy		4.4%	-10.6%	4.2%	1.9%	1.9%	1.7%	1.7%	1.7%	1.7%	1.5%	1.4%
Bay of Plenty DHB			6.6%	2.2%	-7.3%	1.8%	1.7%	1.6%	1.7%	1.7%	1.7%	1.6%	1.5%
Lakes DHB			57.7%	1.8%	27.1%	1.5%	1.7%	1.7%	1.7%	1.7%	1.7%	1.5%	0.8%

The highest growth rates for FSA, FU and chemotherapy in the region in 2012/13 were at Lakes DHB.

Table 14: DHB of domicile FSA to FU ratio

Actual						Projections based on 2013 fiscal year							
YEAR		-4	-3	-2	0	+1	+2	+3	+4	+5	+6	+7	+8
MEASUREMENT		2009/10	2010/1	2011/2	2012/3	2013/4	2014/5	2015/6	2016/7	2017/8	2018/9	2019/20	2020/1

	Waikato DHB	1:6.1	1:7.4	1:6.9	1:6.8	1:6.8	1:6.8	1:6.8	1:6.8	1:6.8	1:6.8	1:6.8	1:6.8
	Bay of Plenty DHB	1:7.2	1:7.9	1:7.7	1:7.7	1:7.7	1:7.7	1:7.7	1:7.7	1:7.7	1:7.7	1:7.7	1:7.6
	Lakes DHB	1:4.9	1:5.1	1:5.8	1:5.1	1:5.1	1:5.1	1:5.1	1:5.1	1:5.2	1:5.2	1:5.1	1:5.1
	Tairāwhiti DHB	1:9	1:1	1:2	1:2.3	1:2.4	1:2.4	1:2.5	1:2.5	1:2.6	1:2.6	1:2.6	1:2.7

The FSA:FU ratio is an area where access to medical oncology services varies from one DHB to another. The ratio of FSA:FU is highest in Bay of Plenty and lowest in Lakes DHB with Tairāwhiti data incomplete. WRCC has an average 1:6.8 (2012/13) for its population; however the DHB of service view (Table 11) shows WRCC has a lower ratio of 1:4.9 (2012/13). There is no agreed national FSA/FU average to compare this result to.

Table 15: Cancer registrations from 2006 - 2013

DHB	Tumour stream	2006/7	2007/8	2008/9	2009/10	2010/1	2011/2	2012/3	Grand total
Bay of Plenty	Breast	138	151	147	142	151	186	159	1,074
	Cervix	11	10	13	8	2	13	13	70
	Colorectal	201	160	155	181	169	169	179	1,214

DHB	Tumour stream	2006/7	2007/8	2008/9	2009/10	2010/1	2011/2	2012/3	Grand total
	General	5		2	6	3	6	1	23
	Haematology & Lymphoid	101	108	122	115	109	110	100	765
	Melanoma	159	162	205	162	154	144	163	1,149
	Prostate	150	183	160	181	158	207	156	1,195
	Respiratory	99	97	119	139	116	141	118	829
<b>Bay of Plenty total</b>		<b>864</b>	<b>871</b>	<b>923</b>	<b>934</b>	<b>862</b>	<b>976</b>	<b>889</b>	<b>6,319</b>
<b>Lakes</b>	Breast	61	63	62	74	72	74	79	485
	Cervix	4	5	8	7	4	4	4	36
	Colorectal	64	67	62	53	67	74	67	454
	General	1	1	1	2		1		6
	Haematology & Lymphoid	43	35	41	35	43	40	33	270
	Melanoma	55	57	56	39	53	64	64	388
	Prostate	46	73	74	92	72	85	76	518
	Respiratory	51	47	60	50	49	66	55	378
<b>Lakes total</b>		<b>325</b>	<b>348</b>	<b>364</b>	<b>352</b>	<b>360</b>	<b>408</b>	<b>378</b>	<b>2,535</b>
<b>Tairāwhiti</b>	Breast	34	30	18	23	40	23	29	197
	Cervix	1	1	2	2	1	2	1	10
	Colorectal	22	23	22	22	26	21	29	165
	General	1			1		1		3
	Haematology & Lymphoid	27	14	13	22	13	19	19	127
	Melanoma	14	21	23	25	18	21	20	142
	Prostate	21	32	40	61	38	30	39	261
	Respiratory	22	30	34	40	29	24	30	209
<b>Tairāwhiti total</b>		<b>142</b>	<b>151</b>	<b>152</b>	<b>196</b>	<b>165</b>	<b>141</b>	<b>167</b>	<b>1,114</b>
<b>Waikato</b>	Breast	220	232	221	212	213	245	268	1,611
	Cervix	11	10	21	12	19	10	9	92
	Colorectal	256	244	225	259	232	264	257	1,737
	General	3	1	5	2	6	1	2	20
	Haematology & Lymphoid	158	151	144	140	156	136	147	1,032

DHB	Tumour stream	2006/7	2007/8	2008/9	2009/10	2010/1	2011/2	2012/3	Grand total
	Melanoma	184	184	177	152	194	220	199	1,310
	Prostate	227	230	242	291	268	265	276	1,799
	Respiratory	156	147	159	183	176	182	188	1,191
<b>Waikato total</b>		<b>1,215</b>	<b>1,199</b>	<b>1,194</b>	<b>1,251</b>	<b>1,264</b>	<b>1,323</b>	<b>1,346</b>	<b>8,792</b>
<b>Grand total</b>		<b>2,546</b>	<b>2,569</b>	<b>2,633</b>	<b>2,733</b>	<b>2,651</b>	<b>2,848</b>	<b>2,780</b>	<b>18,760</b>

The above cancer registration growth is in line with population growth in the Midland Cancer Network region, and therefore ties in with the pipeline projections out to 2021.

In Cranleigh (2011) the top three nationally identified cancer sites by registration were prostate (15%), breast (13%) and malignant melanoma of the skin (11%). Across the Midland Cancer Network region using the 2012/13 year (table above) the top three cancers are prostate (19.7%), breast (19.2%) and colorectal (19.1%). Increases are in breast, prostate, respiratory and melanoma and decreases are in haematology and lymphoid.

*Table 16: Projected cancer registration volumes 2013- 2021*

DHB	2007/8	2008/9	2009/10	2010/1	2011/2	2012/3	2013/4	2014/5	2015/6	2016/7	2017/8	2018/9	2019/20	2020/1
<b>Bay of Plenty</b>	871	923	934	862	976	889	896	903	909	916	923	930	937	945
<b>Lakes</b>	348	364	352	360	408	378	389	399	411	422	434	446	459	471
<b>Tairāwhiti</b>	151	152	196	165	141	167	174	181	188	195	203	211	220	229
<b>Waikato</b>	1,199	1,194	1,251	1,264	1,323	1,346	1369	1392	1416	1440	1464	1489	1515	1540

Midland Cancer Network registrations comparing 2007/8 and 2012/13 show Lakes (8.6%), Tairāwhiti (10.6%) and Waikato (12.3%) growth rates. Bay of Plenty in contrast had an increase of less than 3%. The projected increase from 2011/12 and 2012/13 suggests 70 more cancer registrations have occurred in the past year.

## 5. MEDICAL ONCOLOGY WORKFORCE DATA

The data collated for the medical oncology workforce tables was provided by each of the Midland DHBs and relates to workforce as at 30 June 2013 (unless otherwise specified). The national registrar trainee data has been provided from the Northern Region Oncology Model of Care Service Plan<sup>13</sup>.

### 5.1 Medical oncology workforce

*Table 17: Senior medical officer workforce*

Senior medical officer workforce as at 30 June 2013						
DHB	Contracted FTE		Number		Vacancies	
	Consultant	MOSS	Consultant	MOSS	Consultant	MOSS
Bay of Plenty	2.0	0.0	2	0	0.5	0
Waikato	4.6	0.0	5	0	0.0	0
Regional total	7.0	0.0	7	0	0.5	0

Previously there were 4.6 SMO FTE at WRCC providing clinical services and 0.4 FTE associated with clinical research. An additional 1.0 FTE commenced in April 2013 to accommodate, in part, the additional work from Tairāwhiti DHB from 1 July 2013 and also the growth occurring at the tertiary hub. Bay of Plenty DHB will increase their SMO FTE by 0.5 FTE by 1 July 2014. All FSAs and FUs for Lakes are provided by WRCC SMOs, with Tairāwhiti having most FSAs provided at Gisborne. Some FSAs, not just combined chemo-radiation FSAs, are provided at WRCC.

*Table 18: Medical oncology registrar positions*

Medical oncology registrar workforce as at 1 July 2013		
DHB	Registrar FTE	Registrar positions
Bay of Plenty	1.0	1 0(general registrar)
Waikato	5.0	5.0
Regional total	6.0	6.0

WRCC has increased RMO FTE by 1.0 from 1 July 2013 to 5.0 FTE in total to accommodate in part the additional work from Tairāwhiti DHB which commenced on 1 July 2013 and growth occurring at the tertiary hub. There is no expected increase in RMO FTE in the next year at Bay of Plenty DHB. WRCC RMOs accompany SMOs to both Lakes and Tairāwhiti DHB visiting clinics, whereas at Bay of Plenty most clinics have RMOs attending.

*Table 19: Medical oncology registrar trainees - stage in training*

Medical oncology registrar trainees – stages in training						
	First year		Second year		Third year	
	Midland	National	Midland	National	Midland	National
Number of trainees	2	5	1	9	0	9

<sup>13</sup> Northern Region Oncology Model of Care Service Plan, 30 June 2013

WRCC has three advanced trainees on staff. Advanced trainees are allowed two years of core training in one tertiary centre and then most trainees go elsewhere (usually overseas) to complete their third and final year. Better job opportunities and salaries tend to make it difficult to re-recruit these trainees once their third year of training is completed. At least 40% of the current New Zealand medical oncology workforce is from overseas (67% of senior medical oncology consultants at WRCC).

The allocation of the number of oncology registrar trainees is determined by the number of FRACP registered consultants the DHB has on staff. While there are six medical oncology consultants at WRCC, only three have FRACP, therefore WRCC are only allowed three advanced trainees at any time. Both Bay of Plenty senior consultants are FRACP registered however the DHB does not have the budget for advanced trainee positions, and have a basic trainee position.

*Table 20: Waikato Regional Cancer Centre – SMO to FSA ratio (2013 -2021)*

Waikato Regional Cancer Centre						
SMO/FSA ratio	Volume	SMO	Volume	SMO	Volume	SMO
	2012/3		2015/6		2020/1	
160	916	5.7	969	6.0	1048	6.6
180	916	5.1	969	5.4	1048	5.8
200	916	4.6	969	4.9	1048	5.2
225	916	4.1	969	4.3	1048	4.7
250	916	3.7	969	3.9	1048	4.2

Tables 20 and 21 are reproductions of the SMO/FSA ratio table in the Cranleigh report<sup>14</sup> with current SMO and volume information. The Cranleigh report suggests that a reasonable caseload target is 180 FSAs per SMO<sup>15</sup>. WRCC delivered to the 200 level in 2012/13 based on a 4.6 FTE level (0.4 FTE being assigned to research). Considering the volume projections data for 2015/16 and 2020/21, and based on the SMO level being 4.6 FTE (given Tairāwhiti data is not yet in the table), WRCC would not have enough SMO capacity to meet demand at 200 or 180 FSA/SMO in 2015/16 and 2020/21. A recommendation of the Cranleigh report was to increase the SMO/FSA ratio to 225<sup>16</sup>.

Key things to consider include:

- whether Lakes DHB FSAs will continue to increase at the current rate
- whether Waikato DHB growth rate will increase more than 2%
- whether Bay of Plenty requires additional capacity support post 2014.

Another view expressed in the Cranleigh report was the number of SMOs per population. In the report New Zealand's average in 2010/11 was one SMO per 101,000 population whereas the Australian average was one SMO per 78,000 population<sup>17</sup>. The Waikato region demographics (2013/14) are estimated at 738,053 (*refer to Appendix 4*) which would suggest 7.3 SMO FTE against the New Zealand average or 9.5 SMO FTE against the Australian average. An average between the two countries (89,500 per population) would suggest the region needs 8.3 SMO FTE now. Current

<sup>14</sup> Cranleigh report *unpublished* (2011) p 47

<sup>15</sup> Cranleigh report *unpublished* (2011) p 46

<sup>16</sup> Cranleigh report *unpublished* (2011) p 50

<sup>17</sup> Cranleigh report *unpublished* (2011) p 29

regional SMO FTE as at 1 July 2013 is 7.6 FTE (which includes the new 1.0 FTE for Tairāwhiti). An additional SMO 0.5 FTE is also available for Bay of Plenty from 2014/15. This leaves a negative variance of (0.2) FTE.

In addition, the new patient (FSA) clinics are generally held on a Monday with some of these clinic days falling on public holidays. This means the number of new patients able to be seen in those weeks is reduced. An alternative option undertaken on occasion by the SMO is to hold additional catch up clinics. For WRCC this is impossible to achieve due to the lack of available clinic room space and other commitments of staff on the other days of the week.

*Table 21: Bay of Plenty Cancer Centre – SMO to FSA ratio*

Bay of Plenty Cancer Centre						
SMO/FSA ratio	Volume	SMO	Volume	SMO	Volume	SMO
	2012/3		2015/6		2020/1	
160	360	2.3	383	2.4	422	2.6
180	360	2.0	383	2.1	422	2.3
200	360	1.8	383	1.9	422	2.1
225	360	1.6	383	1.7	422	1.9
250	360	1.4	383	1.5	422	1.7

Bay of Plenty DHB delivered 180 FSAs per SMO in 2012/13. Considering the volume projections data for 2015/16 and 2020/21 and the increased 0.5 FTE expected in 2014/15 the FSA rate of 180/SMO should be enough to service the population. The above projection is based on all things being equal, however, with the transition of radiation oncology volumes to Bay of Plenty occurring in 2014/15, and the need to review new census data, Table 21 projections maybe on the lighter side.

## 5.2 Medical oncology nursing workforce

*Table 22: Nursing workforce – Midland DHBs current funded FTE for 2013/14*

*(Inpatient, research, outpatient, chemotherapy and cancer clinical nurse specialists (excluding new cancer nurse coordinators))*

DHB	Registered nurse FTE	Enrolled nurse	Health care assistant	Senior nurses	DHB total
Bay of Plenty	7.9	0	0	1.7	9.6
Lakes	4.1	0	0	2.6	6.7
Tairāwhiti - breast/oncology CNS	1.6	0	0	0	1.6
Tairāwhiti - chemotherapy	4.0				4.0
Waikato (WRCC)	48.9	0	4.8	9.6	63.3
<b>Regional total</b>	<b>66.5</b>	<b>0</b>	<b>4.8</b>	<b>13.9</b>	<b>85.2</b>

Note: this table excludes the recently appointed cancer nurse coordinators

Within the WRCC volumes there are ward nursing staff that service haematology, medical and radiation oncology; oncology outpatients, nurses supporting both medical and radiation oncology; chemotherapy day stay nurses staffing medical oncology and haematology; clinical trials (all clinical trials nurses are chemotherapy certificated) and cancer clinical nurse specialists tumour specific areas that work across surgical and medical services. Bay of Plenty DHB nurses include 1.3 FTE

servicing haematology (malignant and non-malignant patients). At Lakes DHB there are two nurses at proficient level with other staff working towards this. Lakes have 1.6 FTE generic cancer clinical nurse specialists, one of whom is Māori. At Tairāwhiti there are 1.6 FTE breast/oncology clinical nurse specialists.

At Waikato the clinical nurse specialists include lung cancer<sup>18</sup> 1.4 FTE, adolescent and young adult 1.0 FTE, haematology 1.0 FTE, gynaecology 0.5 FTE, lower GI 1.0 FTE, head and neck 1.0 FTE, urological 0.5 FTE, breast (including screening) 2.0 FTE.

### 5.3 Cancer nurse coordinators

Table 23: Cancer nurse coordinator workforce

DHB	Cancer care co-coordinators FTE	Type (Generic, tumour specific)
Bay of Plenty	2.1 FTE	Generic, lung cancer – 0.4 FTE generic is based in Eastern Bay of Plenty
Lakes	1.0 FTE	Generic
Tairāwhiti	1.0 FTE	Generic
Waikato	4.5 FTE	Equity and access, lower GI, non-specific tumour, melanoma and neurology, myeloma and lymphoma
Regional total	8.6 FTE	

Table 23 outlines the number of new cancer care coordinators employed as part of the new 2012/13 funding received from the Ministry of Health. Each DHB has fully recruited to these new positions. Prior to the new funding being available, DHBs already provided cancer nurse specialist/cancer care coordinator roles and these staff worked across tumour streams and/or in generic positions.

### 5.4 Nursing students

Table 24: Nursing students

DHB	Nursing students FTE	Nursing student numbers
Bay of Plenty	1.0 FTE	3 students per year
Lakes	0.0 FTE	
Tairāwhiti	0.0 FTE	
Waikato	0.0 FTE	
Regional total	1.0 FTE	

Bay of Plenty has regular medical oncology nursing students for 6-8 week placements up to three times a year. In both Waikato and Lakes there are regular nursing student placements but these students are not specific to oncology, rather oncology is part of their orientation. Tairāwhiti has no dedicated nursing students for oncology. Recruitment of nurses into the area of medical oncology is challenging according to all Midland Cancer Network DHBs, and good workforce planning is necessary to ensure there are enough oncology-specific nurses coming through to meet the demand of the increasing number of patients.

<sup>18</sup> Lung cancer CNS positions sit within the Respiratory Service at Waikato Hospital.

## 5.5 Oncology pharmacists

Table 25: Oncology pharmacists

DHB	Medical oncology pharmacist FTE	Pharmacy (other) FTE
Bay of Plenty	0.0	0.5 FTE
Lakes	0.0	0.0
Tairāwhiti	0.0	0.0 FTE
Waikato	0.8 FTE	0.8 FTE
Regional total	0.8 FTE	1.3 FTE

WRCC has one pharmacist with an oncology pharmaceutical PhD and the second has completed a post graduate diploma in clinical pharmacy and has now specialised within the oncology area. The total FTE of these two pharmacists is 1.6 FTE (0.8 FTE each). Two other pharmacists have recently been employed to operate within the newly developed satellite pharmacy and cytotoxic compounding unit. WRCC provides phone support to other pharmacists in the region and also advice to medical staff, and they are involved the drug guideline development and teaching of registrars and nursing staff. Tauranga and Rotorua hospitals each have a pharmacist, with special interest, on site and provide a technician each for Whakatane and Taupo hospitals. Their main function is to dispense the compounded chemotherapy products. Neither pharmacists nor technicians are specific to medical oncology at Bay of Plenty or Lakes. Tairāwhiti has four pharmacists but none dedicated to oncology.

## 5.6 Allied health workforce

Table 26: Allied health workforce

DHB	Occupational therapists FTE	Physiotherapists FTE	Other (please specify) FTE
Bay of Plenty	0.0 FTE	0.0 FTE	Social workers 1.0 FTE = 2 people (0.5 FTE each)
Lakes	0.0 FTE		Social worker, OT, physiotherapist, chaplains as and when required but not dedicated to oncology
Tairāwhiti	0.0 FTE	0.0 FTE	Social worker 0.5 FTE, dietetics as required, speech language therapist if required
Waikato		1.0 FTE	1.2 FTE dietitians, 0.2 FTE social worker, physiotherapist dedicated to ward, chaplains, 1.0 FTE Te Puna Oranga (inpatients & outpatients), Cancer Society as and when required

The Midland DHBs have few dedicated allied health workers assigned to work in medical oncology. For the most part, all DHBs access allied health services for medical oncology patients as and when required.

## 5.7 Non-clinical workforce

Table 27: Non-clinical workforce

DHB	Team Administrator	Cancer tracker	MDM Coordinator
Bay of Plenty	1.5 FTE		0.5 FTE
Lakes	0.5 FTE	0.2 FTE (fixed term until Dec 13)	0.5 FTE
Tairāwhiti	0.0 FTE	0.3 FTE until June 2014	
Waikato	14 FTE	1.0 FTE until March 2014	2.0 FTE

Waikato DHB, as the tertiary provider, has a greater non-clinical workforce with 3.0 FTE receptionists shared between medical oncology and radiation oncology as well as 1.0 FTE clerical support for the Chemotherapy Outpatient Department. There are 6.0 FTE clinical typists allocated to medical oncology and radiation oncology and 2.0 FTE unit administrators allocated to medical and radiation oncology, haematology and palliative care. There is a 1.0 FTE medical oncology booking clerk and 2.0 FTE MDM coordinator who works across all services.

Tairāwhiti non-clinical workforce is distributed across the outpatient administration team and medical typists. There is no ring fenced FTE.

## **6. SERVICE COMPONENTS AND LINKAGES**

### **6.1 Clinical guidelines, protocols, tumour standards**

As part of the Waikato and Tairāwhiti Cancer Transition project the chemotherapy drug guidelines have been updated. Chemotherapy protocols have yet to be updated and this remains a risk to the region. A key issue with development of guidelines and protocols is how to maintain version control. There is no whole of region mechanism to share clinical protocols or drug guidelines between DHBs.

Although Bay of Plenty uses Aesculapius for outpatient prescribing they do not have access to the WRCC chemotherapy protocols and drug guidelines. This highlights the need for discussions around supporting the implementation and ongoing maintenance of standardised regional protocols such as chemotherapy protocols and febrile neutropenia protocols at each Midland Cancer Network DHB.

Some regional guidelines and protocols include:

- Lippincott procedures which is accessed by nursing staff
- Map of Medicine which is expected to be published for primary care by the end of 2013 and for secondary and tertiary care by 1 April 2014
- Midland standardised chemotherapy nursing certification framework has been implemented regionally with local sign off
- Implementation of national tumour service standards has commenced with lung cancer stocktake and gap analysis. Over the next few years regional review against the following new national tumour standards will occur for:
  - breast
  - bowel
  - gynaecological cancer
  - head and neck and thyroid cancer
  - melanoma
  - lymphoma
  - myeloma
  - sarcoma
  - upper gastrointestinal cancer.

### **6.2 Palliative care**

An essential and critical component to an integrated and comprehensive medical oncology service is the ability to access, link and work with local multidisciplinary palliative care services in both

specialist and primary palliative care. When there is a gap in specialist and/or primary palliative care this can have an impact on medical oncology services. The Midland Cancer Network region has palliative care services set up in each of the DHBs with palliative care forums held at Lakes, Bay of Plenty and Waikato quarterly and Midland-wide six monthly. There have been lots of changes within Midland palliative care.

Tairāwhiti has undergone a palliative care services review and is implementing changes to their model of service, however there needs to be additional effort into palliative care services at Tairāwhiti to strengthen the links and support with medical oncology services.

In 2012/13 the cancer network facilitated a specialised palliative care services project in partnership with Health Waikato and Hospice Waikato. The result of this project was a Waikato Hospital consult liaison service (to align with New Zealand practice) and services devolved from the hospital to Hospice Waikato i.e. outpatient clinics, community care, Liverpool Care Pathway lead, aged care residential link nurse, community inpatient symptom management. WRCC medical oncologists have noticed an increase in workload due to the changes with the inpatient service not yet fully transitioned. There is also no clinical pharmacy input into this service.

Waipuna Hospice, in partnership with Tauranga Hospital, has commenced development of a hospital based palliative care service.

Rotorua Hospital has a lead physician training to become a palliative care specialist.

### **6.3 Radiation oncology**

Radiation and medical oncology services are linked for the management of adjuvant treatment and the national cancer health target is a measure of timely access to radiation therapy and chemotherapy for this particular group of patients.

Midland has a new radiation oncology entrant starting in 2014, namely the Kathleen Kilgour Centre (KCC) based at Tauranga Hospital. This is a private radiation oncology provider for the BOPDHB population who will provide radiation oncology services to both private and public clients. To assist with the transition of Bay of Plenty patients accessing WRCC services to the new service, a Waikato and BOP Radiation Oncology Transition Project is in progress. The aim is to develop one regional service with two providers. The project will be developing a new model of service, with a supporting governance structure.

The Bay of Plenty DHB medical oncology service will lease some office space within the new KCC facility.

### **6.4 Supportive care**

There are limited psychological assessment services available at WRCC, with no specialist resource available to medical oncology patients, leaving a huge gap in service provision. In the past there was 0.2 FTE clinical psychologist in WRCC, but this disappeared in 2012. Now, other than community based counselling sessions (provided by a social worker) and funded by the Waikato/BOP Cancer

Society, there is no access to psycho-oncology services through the DHB. Access to this service is also an issue for the wider Midland Cancer Network region.

The Midland Cancer Network has developed an online supportive care service directory. There is a need to review and update this directory to ensure adequate information is available for patients, family/whānau and health professionals. Patient information needs to be standardised for the region.

## **6.5 Clinical trials**

Wherever possible, cancer patients are offered the opportunity to participate in research projects and/or clinical trials. Quality research underpins obtaining better outcomes for people with cancer. Clinical trials are an essential component of the process of finding better treatments for cancer and there is evidence that people who participate in clinical trials have better outcomes. Well conducted clinical trials set a high standard of practice for the participating centre and have been proven to be cost effective. At Bay of Plenty access to clinical trials is growing, but is constrained by lack of resources and no isolator to compound short expiry clinical trial drugs. At Lakes and Tairāwhiti access to clinical trials is through WRCC, however, access has become more and more restrictive as trial sponsors have become less receptive to running clinical trials at peripheral sites, due to stringent clinical trial requirements. Patients are required to travel to WRCC for FU assessments and treatment if they wish to participate in clinical trials. Also the costs and administrative requirements to run a clinical trial have increased and have become more demanding, requiring increasing staff resources and time from individual investigators.

## **6.6 Diagnostic imaging**

Prior to the Ministry of Health PET-CT boost funding, Midland DHBs access to PET-CT was unacceptably below evidence-based best practice. Waikato DHB is the lead contract holder for PET-CT for the Midland DHBs through an agreement with Hamilton Radiology. Tairāwhiti at times also utilise Pacific Radiology, Wellington. There are national PET-CT clinical criteria. Midland PET-CT referrals are triaged and reviewed for the region via the Midland PET-CT variance committee based at WRCC. A regional PET-CT framework has been developed for each DHB, supported by a database to capture necessary data for six monthly reporting and planning.

Diagnostic imaging at Lakes is available both publicly and privately with the key issues being:

- meeting the imaging timeframes for patients urgently referred with a high suspicion of cancer, particularly for referrals to CT
- increasing frequency of repeat imaging for oncology is adding pressure to CT scanner lists
- changes in referral demand occurring without appropriate consultation with imaging providers doesn't allow for appropriate resource planning in radiology i.e. workforce planning.

Although these are considered issues by Lakes DHB, as a DHB access to these diagnostics is prompt. These issues are more likely due to the increasing demands probably reflecting the increasing cancer service needs in Lakes DHB.

At Bay of Plenty while obtaining echograms can be an issue at times, overall access to diagnostic imaging is within MoH guidelines and criteria.

At WRCC access to diagnostics is varied with CT being available within criteria and timeframes, whereas ultrasounds take longer. All MRIs are contracted out privately and the waiting time for an MRI is very long. A constraint for faster cancer treatment timeframes is the waiting time for MRIs which is constrained in itself by the amount of accessible funding available for MRIs. From a workforce perspective there are not enough radiologists in the region and in particular at Waikato DHB. Sub-specialisation of radiologists at the tertiary centre has also meant that some tests are re-run (repeats) to allow sub-specialised radiologists better test information in respect to particular cancer types.

Recruitment and retention of radiologists at Tairāwhiti is part of their issues for access to diagnostics with the key constraint being MRIs.

## **6.7 Haematology (Lymphomas)**

Within Midland DHBs lymphoma management is shared between medical oncology and haematology services. WRCC provides visiting haematology clinics at Lakes, Tairāwhiti and Bay of Plenty and provides autologous stem cell transplant therapies undertaken by medical oncologists and haematologists. In Tairāwhiti all lymphomas are managed by the haematologist.

In the past, Bay of Plenty had employed a haematologist and this role supported the work of the two resident medical oncologists. With the current haematologist vacancy at Bay of Plenty, all intermediate and high lymphomas are being seen by the Bay of Plenty medical oncology department putting strain on this service.

In WRCC lymphoma services are provided by both medical oncology and haematology services (and radiation oncology). Medical oncology and haematology share low and high grade lymphoma. Haematology treats highly aggressive lymphoma such as Burkitt lymphomas.

## **6.8 Other clinical services**

Waikato vascular and radiology services have a delay in the waiting times for implanted ports and PICC lines respectively. These delays have affected waiting times for oncology treatments. A Waikato business case for a nurse-led PICC line service (led by an oncology nurse) has been approved and will commence soon. Radiation oncology waiting times affect the medical oncology treatment waits.

Allied health services are available as and when required at each of the DHBs in the region, but there are very few allied health services dedicated specifically to medical oncology, or in fact the wider oncology service. A key gap in medical oncology service provision identified by the WRCC clinicians (there is no access in the region) is access to psycho-oncology services.

Genetic testing is provided for the midland region via Auckland. At this time there are no plans to establish this service at Waikato hospital.

## SUMMARY OF THE CURRENT SERVICE GAPS, CHALLENGES AND OPPORTUNITIES

Table 28: Gaps, challenges and opportunities

District	Gaps, challenges and opportunities
<b>National direction required</b>	<b>Challenges</b> <ul style="list-style-type: none"> <li>To determine what the FSA/FU ratio should be (per tumour type)</li> <li>To determine what the SMO/FSA delivery ratio should be</li> <li>To determine whether there will be a national oncology information system, with a clear pathway and capital funding to support</li> <li>To determine whether there will be a national real time patient tracking system</li> <li>To determine national medical oncology standards</li> <li>Update national medical oncology prioritisation criteria to align new information from the recently developed national tumour standards</li> <li>How to manage affordability and sustainability</li> <li>Integration for the cancer continuum</li> </ul>
<b>Regional</b>	<b>Gaps</b> <ul style="list-style-type: none"> <li>Regional service planning for medical oncology</li> <li>Regional workforce planning</li> <li>Regional repository for shared clinical guidelines/protocols and resource and responsibility for maintenance of these</li> <li>Map of Medicine</li> <li>Regional psycho-oncology assessment tool and psycho-oncology service</li> <li>Supportive care services and directory</li> <li>A standardised regional patient information management system for medical oncology</li> <li>Regional review - medical oncology component of the national tumour standards</li> <li>Project resources to support regional and local DHB quality improvement initiatives</li> <li>Medical oncology information system development – Midland strategic vision, plan and pathway aligned with Regional IS Plan</li> <li>MDM video conferencing connectivity</li> <li>Standardised chemotherapy protocols and drug guidelines</li> <li>Strengthening and developing oncology pharmacy services with regional oversight and training/support provided.</li> <li>Regional genetic testing service at Waikato hospital</li> </ul> <b>Opportunities</b> <ul style="list-style-type: none"> <li>Regional Cancer Service. Regional funding and management of medical oncology services. Need to determine the guiding principles and pathway for moving to a regional model of service delivery</li> <li>Regional governance model for medical oncology</li> <li>Regional SMO model of service, regional RMO training model of service</li> <li>Reduce the region's multiple laboratory/pathology providers</li> <li>Review equity of access in FSAs across the region proportionate to population</li> <li>Identify how many new patients are seen per DHB and per population and</li> </ul>

District	Gaps, challenges and opportunities
	<p>what the ideal number is</p> <ul style="list-style-type: none"> <li>• Review active vs. monitoring or observational follow-ups</li> <li>• Oncology care has improved outcomes for patients therefore review how many people are moving into palliative care</li> <li>• Review impact on change of model of treatment and does the ratio change e.g. when herceptin became funded</li> <li>• Development of a regional oncology pharmacy model of care that will service the Midland Cancer Network region</li> <li>• Pharmacists providing input into development of regional oncology drug treatment protocols and communicating these out to the DHB and Midland service providers</li> <li>• Promotion of standardised regional patient information resources (pharmacy)</li> </ul>
<b>Bay of Plenty</b>	<p><b>Gaps</b></p> <ul style="list-style-type: none"> <li>• There is no dedicated inpatient service available in the Bay of Plenty region</li> <li>• Insufficient junior medical oncology staff</li> </ul> <p><b>Challenges</b></p> <ul style="list-style-type: none"> <li>• Developing advanced training programme in future years</li> <li>• Clinic space at Tauranga Hospital is anticipated to be at capacity by 2016</li> <li>• Two SMOs at present. This is insufficient to deliver 24/7 on call cover out of hours</li> <li>• Having a small workforce and distance</li> <li>• One general registrar allocated between 2 SMOs means limited cover can be provided</li> <li>• No shared data between regions causes communication delays</li> <li>• At times insufficient nursing staff to assist with new patients and follow-up clinics</li> <li>• Workload management – maintaining follow-up of patients and numbers of new patients</li> <li>• Back-up availability for service with limited SMO resource capacity</li> <li>• It is well documented that the incidence of cancer increases with age. The age of the population of Bay of Plenty needs to be considered. The population in the Bay of Plenty has a high percentage in the over 65 (60% &gt;65). There are increasing new treatment modalities now offered to this group that would not previously have been offered and also an increase in the complexity of treatments offered.</li> <li>• An increase in clinical trials in the Bay of Plenty will also increase the projected number</li> <li>• There is only one CNS generic role and one tumour specific CNS role for lung</li> <li>• Oncology pharmacy is under-resourced and is a major gap to delivering a timely service</li> <li>• There is no easy access to physiotherapy, occupational therapy or lymphoedema assistance in the Bay of Plenty. Patients often have to wait a considerable time to receive needed assistance</li> <li>• Whakatane oncology has no allocated reception/administrative assistance in Whakatane Hospital</li> <li>• Implementation of useful MDM meetings due to constraints caused by lack of appropriate information technology</li> </ul>

District	Gaps, challenges and opportunities
	<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• To develop nurse-led clinics for follow-up especially for oral chemotherapy and simple chemotherapy regimes</li> <li>• To develop a complete and cohesive patient-centred programme of assistance that encompasses all needs of the oncology patient</li> <li>• A nurse coordinator for each patient receiving chemotherapy. Patients are allocated to specific nurses to follow-up their care, symptom management and co-ordination throughout their treatment.</li> </ul>
<b>Lakes</b>	<p><b>Gaps</b></p> <ul style="list-style-type: none"> <li>• Not enough visiting specialist clinics to meet local demand</li> </ul> <p><b>Challenges</b></p> <ul style="list-style-type: none"> <li>• Future growth in demand exceeds contracted volumes and allocated funding</li> <li>• Visiting clinic allocation for Lakes is over capacity.</li> <li>• Lack of available WRCC SMO and RMO resource to provide more clinics to Lakes without good planning and lead in time</li> <li>• Access to patient clinical records</li> <li>• IT system could be improved</li> <li>• Community laboratories information not available</li> <li>• Contracts related to service do not reflect changes in service need</li> <li>• Implementation of MDM meetings due to constraints by lack of appropriate information technology</li> <li>• FCT targets are impacting on demand and capacity and timelines for delivery of service</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Regional Cancer Service i.e. similar to renal</li> <li>• Has clinic space available to assist with capacity constraints in the Midland Cancer Network region</li> <li>• Has capacity to deliver more chemotherapy for other parts of the Midland Cancer Network region</li> <li>• Lead physician concept for Taupo chemotherapy, build Taupo nursing skills for chemotherapy in future years if at sustainable volume</li> </ul>
<b>Tairāwhiti</b>	<p><b>Challenges</b></p> <ul style="list-style-type: none"> <li>• Small population with increasing needs and geographically isolated</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Review of oncology transition of service on 1 July 2013 and continue to develop medical oncology services and service level agreement between Tairāwhiti DHB and Waikato DHB.</li> <li>• Local workforce development – nursing, physician-led, GP/Surgery shared care for follow-up</li> <li>• Improved palliative care service and linkages</li> <li>• Improved information systems</li> </ul>
<b>Waikato</b>	<p><b>Gaps</b></p> <ul style="list-style-type: none"> <li>• Lack of clinic space – it is not feasible to increase number of clinics or acute reviews, but revised scheduling/hours of operation maybe an option</li> </ul>

District	Gaps, challenges and opportunities
	<ul style="list-style-type: none"> <li>• Clinical trials are more and more centred on WRCC</li> <li>• The Waikato specialist palliative care service change to a Waikato Hospital consult liaison service commenced in July 2013. The service model changed July 2013 and now aligns to the rest of New Zealand, but the model of service change needs time to become embedded as everyday practice.</li> <li>• Growth in range and complexity of drugs continues to increase however clinical pharmacist FTE has not grown in line with volume growth of chemotherapy or patient numbers</li> <li>• Waikato Hospital chemotherapy treatment spaces do not comply with the international standard of 9m<sup>2</sup> if used to full capacity (scheduling provides a limited degree of walk around)</li> <li>• Insufficient capacity of current available oncology pharmacists to provide more than a phone service to Waikato rural hospitals, community pharmacists and general practitioners</li> </ul> <p><b>Challenges</b></p> <ul style="list-style-type: none"> <li>• Facilities - oncology building that is already past its use by date. Facilities are outdated and do not meet 21<sup>st</sup> century requirements of a tertiary oncology service</li> <li>• Not enough clinic capacity (increased staff numbers and loss of four clinic rooms with build of Meade Clinical Centre)</li> <li>• Number of chemotherapy chairs and beds has increased slightly in the recent upgrade which is a temporary fix only and won't meet service needs medium term (1-2 years)</li> <li>• Consultant and registrar availability is at capacity</li> <li>• Limited availability of pharmacist resource to adequately cover inpatient services at WRCC</li> <li>• RMO's ability to travel overnight for Tairāwhiti oncology clinics</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Nurse-led clinics for follow-ups especially for oral chemotherapy and simple chemotherapy regimes (already happening for 2-3 years!)</li> <li>• Timely access to PICCs and implanted ports</li> <li>• Minimising preventable adverse events due to simple, intermediate and complex medication regimes</li> <li>• Improve transition of patients back into the community by focusing on improving patient's understanding of the medications and linking with community health providers</li> <li>• Additional oncologist pharmacy resource would enable the service to provide better linkages across the Midland region to ensure consistent practices for handling and administering chemotherapy agents and education to hospital staff involved; management of patients entering into WRCC</li> <li>• Provide a liaison role to the DHB community providers, including education to patients/support groups/community pharmacies/GPs</li> <li>• Linkage of databases to improve access to regional information systems</li> <li>• Pharmacist input into palliative care service</li> </ul>

## **7. FUTURE STATE**

The Midland Cancer Network Executive Group and medical oncology stakeholders met in September 2013 to discuss the future state of Midland Cancer Network medical oncology services.

While there were blue skies transformational change options discussed, the group felt that at this point in time resources were at capacity and affordability was a major issue, therefore an incremental continuous improvement approach would be taken.

From the meeting it was determined that the future state would support:

- equity and timely access for patients
- evidence-based best practice that enables good quality patient care
- sustainable and affordable services
- collective regional network and continuous quality improvement approach.

To achieve this state we will:

- establish a Midland Cancer Network Medical Oncology Work Group (with a clinical chair) that will lead and oversee the implementation of the regional medical oncology improvement plan. This work group will sit within the Midland Cancer Network governance framework
- support regional service planning with improvement initiatives linked to the Midland regional service plan and DHB annual plans
- promote regional standardised patient pathways, protocols/guidelines and information wherever possible
- support incremental workforce development
- strengthen linkages and work programmes with other services along the cancer continuum
- support the National Medical Oncology Implementation Plan priorities, and align the regional and local medical oncology work programme to national recommendations.

## 8. MIDLAND MEDICAL ONCOLOGY SERVICE PLAN 2013/14

Table 29: Priority areas for 2013/14 from the MCN Medical Oncology Working Group meeting on 26/09/2013

Key Focus Area	Initiative	Description deliverable	Timeframe	Responsibility
Service Configuration Programme	1. Establish a MCN Medical Oncology Work Group to oversee implementation plan	▪ MCN Medical Oncology Work Group established	June 2014	MCN/MK
	2. Review and update Waikato/Tairāwhiti SLA for 2014/15	▪ SLA 2014/15	December 2013	SD/TPM/MCN
	3. Explore opportunities to increase Lakes 14/15 outreach service	▪ Lakes fund service to meet demand	December 2013	VR
	4. Waikato Facility Improvement Project	▪ Facility capacity to meet demand	To be determined	Waikato
	5. Gisborne hospital has a project in progress to develop an ambulatory cancer hub under medicine management (currently surgery) including an upgrade to the chemotherapy facility.	▪ ambulatory cancer hub	June 2014	TDH
Work plan programme	1. Participate and support national SMO project and review recommendations, implications and incorporate into future year planning for the region	▪ Clarity of SMO function to be devolved and how it will be implemented	Ongoing	Ministry of Health led
	2. Review National Oncology Nursing Knowledge and Skills Framework. Once published review framework regional implications and incorporate into future year planning	▪ Framework to support development of oncology nurses	December 2013 – January 2014	Ministry of Health led
	3. Bay of Plenty to recruit 0.5 FTE SMO resource for 2014/15 and manage service change with Waikato	▪ Increased SMO resource ▪ Waikato exit BoP outreach service	June 2014	Bay of Plenty/ Waikato
Service Quality Programme	1. Explore opportunities for Bay of Plenty to adopt Waikato/Tairāwhiti/Lakes chemotherapy protocols	▪ Standardised Midland chemotherapy protocols	June 2014	Bay of Plenty/ Waikato
	2. Update census information into pipeline data	▪ Improve future forecasting	February 2014	MCN
	3. Have more detailed data to explore equity issues	▪ Reduce inequalities	June 2014	MCN
	4. MCN review of national lung cancer standards and incorporate any medical oncology findings into future planning	▪ Build medical oncology tumour stream perspective	June 2014	MCN
	5. Explore opportunity for Map of Medicine to house chemotherapy protocols	▪ Single point of access with improved version control	June 2014	MCN/ Health Waikato PMO

## 9. MIDLAND MEDICAL ONCOLOGY PRIORITY AREAS (OUT YEARS 2014-2019)

Table 30: Priority areas for out year's initiatives

Key Focus Area	Initiative
<b>Service Configuration Programme</b>	1. Bay of Plenty monitor facility requirements from 2016 out years
	2. Waikato Facility Improvement Project
	3. Midland video conference/telehealth capability implemented to support medical oncology with MDMs, rural outreach follow-up consultations e.g. Tairāwhiti, Thames, Lakes
	4. Enhance regional oncology pharmacy services, linkages with local and/or community pharmacies
	5. Develop regional medical oncology information systems plan moving forward
	6. Enhance linkages with local palliative care service
	7. Scope opportunities for Bay of Plenty to develop inpatient service, needs to be considered alongside planning and development of resident radiation oncology and haematology services
	8. Scope opportunities to develop psychosocial services to support patients/family (note: more than just medical oncology)
<b>Work planning programme</b>	1. National SMO project recommendations and priorities
	2. National Oncology Nursing Knowledge and Skills Framework recommendations and priorities
	3. Increase Lakes SMO resourcing to meet demand
	4. Explore regional model of service for improving medical oncology registrar training
	5. Review current SMO model of service and identify opportunities
	6. Implement and strengthen lead physician concept for all DHBs that have visiting specialist service i.e. Lakes, Tairāwhiti, Thames
	7. As required, develop Taupo staff chemotherapy/oncology skills
	8. Maximise cancer CNS/nurse coordinators roles/functions within medical oncology continuum
	9. Midland nursing workforce development and extending scope of practice opportunities
<b>Service Quality Programme</b>	1. Midland supportive care services directory for medical oncology reviewed and updated
	2. Develop and standardise medical oncology patient information resources for Midland Cancer Network DHBs
	3. Regional review of national tumour standards for medical oncology component, review findings included into future years planning
	4. Continue development of Midland standardised chemotherapy protocols, administration procedures, chemotherapy certification & framework
	5. Support Midland MDM/Bay Navigator pathway developments
	6. Explore opportunities for PCT drug efficiencies

## 10. APPENDICES

### 11.1 Appendix 1: Excerpt from the new models of care for medical oncology<sup>19</sup>

#### 7.4 Role delineation component

The primary driver in the development of this model component is to better support the scarce medical oncology specialists by recognising and further developing highly skilled and experienced non-SMO clinical staff. This will be relevant for all four levels of centres, but particularly so for level 1 centres.

The overarching principles of this model component include:

- Devolving non-critical tasks and activities to appropriately trained clinical and non-clinical staff
- Supporting clinical staff to work at the top end of their scope of practice
- Developing a centre and regional medical oncology team approach
- Reducing duplication and variation through centralised national and regional resource development
- Maximising the electronic and IT based solutions to support care delivery by other care providers.

Based on international case examples and significant engagement of the medical oncology workforce in New Zealand, the following roles and activities are proposed along the care pathway:

#### Key role and pathway delineation model components

Pathway points	Role and pathway model components
Diagnosis and referral	<ul style="list-style-type: none"> <li>▪ Some of the SMO and other clinical staff workload could be reduced through improved diagnosis and referral standards</li> <li>▪ Currently, it is understood that a number of inappropriate referrals exist, and that with the appropriate standards, care could be devolved and directed to more appropriate clinicians or services</li> <li>▪ Furthermore, frequently referrals have insufficient information and can add to SMO or nursing workloads</li> <li>▪ Therefore, it is recommended that the referring clinicians compile a complete referral with all supporting information as per national standards</li> <li>▪ This referral will be sent in a timely manner to the appropriate MDM or medical oncology service by the diagnosing lead clinician</li> </ul>
MDT	<ul style="list-style-type: none"> <li>▪ Ideally the majority of cancer diagnosis and treatment referrals are discussed at a specialist MDM with attendance by appropriate: <ul style="list-style-type: none"> <li>○ Medical and radiation oncologist</li> <li>○ Radiologist</li> <li>○ Pathologist</li> <li>○ Specialist Nurse</li> <li>○ Surgeon and / or physician and / or referring clinician if not one of the above</li> </ul> </li> <li>▪ Rather than clinical staff coordinating MDMs, these would be supported by dedicated coordinators and national standards, processes and tools.</li> </ul>
Referral receipt and prioritization	<ul style="list-style-type: none"> <li>▪ Rather than SMO prioritisation, a specialist nurse could manage initial screening and work up for common/standard cases as per national standards. Opportunities also exist</li> </ul>

<sup>19</sup> New models of care for medical oncology (Cranleigh Health, October 2011, pp 60 - 62).

Pathway points	Role and pathway model components
	to build this into the MDM and treatment planning processes, complex cases would be assessed by an SMO based on escalation criteria.
Pre FSA	<ul style="list-style-type: none"> <li>A pre-FSA checklist (by cancer type) could be completed by a specialist nurse (links to MDM and referral protocols)</li> </ul>
FSA	<ul style="list-style-type: none"> <li>Assessment (or part of the assessment) of simple, non-complex, standard cases could potentially be devolved to non-SMO clinicians (e.g. a supervised specialist nurse, MOSS or a General Practitioner with training in Oncology).</li> <li>Increasing the nursing and administrative supports at the outpatient clinic appointment (e.g. one nurse per clinician) is expected to reduce the SMO administration burden, increase patient throughput, support a better team approach and improve patient continuity of care (with specialist nursing becoming a familiar first point of contact).</li> </ul>
Post FSA	<ul style="list-style-type: none"> <li>Post-FSA support could be provided by other appropriately trained staff such as enrolled nurses or administrators, thus increasing both SMO and specialist nursing capacity.</li> <li>With the appropriate tools and standards, activities could include counselling, education, pre and post-clinic follow-up activities, clinical administration support (e.g. additional investigations and referrals) and complex needs management</li> </ul>
Education and consent	<ul style="list-style-type: none"> <li>With the appropriate tools and standards, education and patient consent may be devolved to appropriately trained nurses, RMOs or well supported providers in satellite services.</li> </ul>
Booking and scheduling	<ul style="list-style-type: none"> <li>Enrolled or registered nurses or administrative staff could lead patient booking and scheduling.</li> <li>Staff members would be guided by: <ul style="list-style-type: none"> <li>National treatment standards or protocols that define minimum centre support (level 1 – 4)</li> <li>FSA scripts</li> <li>Nurse resourcing (minimum nurse and skill mix per patient ratio) and</li> <li>Treatment time requirements</li> </ul> </li> </ul>
Treatment	<ul style="list-style-type: none"> <li>Specialist nurses could manage treatments as per national treatment standards and local delivery protocols including escalation pathways.</li> <li>Defined minimum post-graduate training and/or experience requirements and resourcing would be needed to safely deliver care in all centres.</li> <li>Minimum clinician supervision support levels would be defined within a medical oncologist is not on site.</li> <li>Additional treatment delivery support can be provided by specially trained and experienced enrolled or junior nurses to improve and enable the specialist nurse to focus on critical specialist tasks.</li> </ul>
On-treatment follow ups	<ul style="list-style-type: none"> <li>Could be partially devolved to qualified registered nurses to manage using standards and escalate as required.</li> </ul>
Complication and symptoms	<ul style="list-style-type: none"> <li>Can be nurse managed via protocols, standards, standing orders and escalation pathways.</li> </ul>
Subsequent cycles and restaging	<ul style="list-style-type: none"> <li>Non-SMO clinicians or nurses could manage and assess non-complex, low risk, standard cycles and / or assist in the restaging process.</li> </ul>
Follow up and discharge	<ul style="list-style-type: none"> <li>Follow-ups may be shared with other specialties or clinical staff (e.g. General Practitioners with an interest in oncology, specialist oncology nurses, and radiation oncologists for specific tumour types).</li> <li>A clearly defined pathway would ensure access to appropriate SMO input when required.</li> </ul>

## **11.2 Appendix 2: Service configuration**

### **11.2.1 Waikato District Health Board**

#### **Waikato Regional Cancer Centre (WRCC)**

The medical oncology service at the WRCC is located in the Lomas Building on the Waikato Hospital campus and is the second largest cancer centre in New Zealand. It covers a current regional population<sup>20</sup> of 738,053 across an estimated geographic area of 48,810 km<sup>2</sup>. Locally the Waikato population is estimated at 373,220 in 2013/14 and covers approximately 35,000 km<sup>2</sup>.

Waikato medical oncology role delineation is level 6 with a dedicated Oncology Department service including supporting an educational role. In addition the regional Oncology Department works together with other oncology specialties to provide a comprehensive cancer service. There are strong links with expert oncology pharmacists. There is also a dedicated oncology/haematology clinical trials unit with strong involvement in clinical trials and research, with input from a dedicated clinical trials pharmacist. The WRCC has an ambulatory chemotherapy suite with 15 spaces housed adjacent to the outpatient clinics, currently configured as seven beds and eight chairs and does not meet the international standards for space (also the newly renovated chemotherapy area does not meet the international standards for space). There is a dedicated 30 bed inpatient ward shared with radiation oncology and haematology services. WRCC provides the 24/7 on call service for the region except for Bay of Plenty which is after hours and weekends. WRCC has resourcing for PICC line and implanted port insertion services. The centre also has a lymphoedema nursing service. All combined chemo-radiation treatments (FUs and treatment) occur at WRCC. In 2013 the specialist palliative care model of serviced changed to a hospital consult liaison model with Hospice Waikato providing all community based ambulatory services.

#### **Waikato Rural Hospitals**

##### **Thames Hospital**

Thames Hospital provides secondary services for a population of approximately 44,600 people and is 108km from Hamilton. The nursing team in Thames is not specialised in oncology and has responsibilities to other services. Nurse-led clinics include chemotherapy infusions and blood transfusions. There is a dedicated chemotherapy day unit built in 2008 which conforms to international standards for space and is configured with five chairs. Chemotherapy is given two days per week and clinics are run by visiting oncologists every three weeks. FSAs are provided at WRCC in Hamilton and FU visits and most treatments occur in Thames. There are no dedicated inpatient beds.

##### **Tokoroa Hospital**

Tokoroa Hospital provides services for a population of approximately 22,800 people in a region that covers more than 180km<sup>2</sup> and is 88km from Hamilton. Nursing staff do not routinely care for chemotherapy patients so patients attend WRCC for clinics and treatments. Tokoroa Hospital provides facilities and delivers blood transfusions on site.

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<sup>20</sup> Data sourced from Health share website – Midland estimated population for 2013/14

### **Te Kuiti Hospital**

Te Kuiti Hospital provides services for a population of approximately 18,870 people spread over 5500km and is 84km south of Hamilton. All registered and enrolled nurses have level 4-6 New Zealand Resuscitation Council core certification but have limited experience managing chemotherapy. Patients attend WRCC for clinics and treatments.

### **Taumarunui**

Taumarunui Hospital provides services for a population of approximately 8,715 people and is 163km from Hamilton. Nurses have very limited experience with managing chemotherapy. Clinics and treatments for these patients are provided by WRCC.

## **11.2.2 Bay of Plenty District Health Board**

### **Bay of Plenty Cancer Centre**

The Bay of Plenty Cancer Centre based at Tauranga Hospital provides oncology services for the Bay of Plenty region. There are approximately 214,910 people across an estimated geographic area of 10,000sqkm. A purpose built centre opened in October 2008 conforms to international standards for space. There are 17 chairs and three beds as treatment spaces, with five consulting rooms. There are quiet areas for staff and patients and two treatment beds for procedures. All combined chemo-radiation treatments for Bay of Plenty DHB patients (FSAs, FUs and treatments) occur at WRCC.

### **Tauranga Hospital**

There are two resident medical oncologists and one registrar. This service commenced in 2008/09 and has strong links with WRCC. Tauranga Hospital provides visiting medical oncology clinics to Whakatane Hospital once a week. A visiting specialist service is provided by WRCC to support the Tauranga resident medical oncologists. There are no dedicated inpatient beds in the Bay of Plenty region therefore inpatient treatments and combined chemo-radiation treatments are provided by WRCC. On call services are provided after hours and weekends by WRCC. There are no specialist pharmacists available at this site.

### **Whakatane Hospital**

The unit at Whakatane Hospital is purpose built and opened in February 2008. It operates as an outreach clinic of BOP DHB and is 97 km from Tauranga. There is a dedicated chemotherapy day unit which conforms to international standards for space and currently configured with two beds and seven chair treatment spaces. Chemotherapy is given three days per week and there are some clinics run by visiting oncologists from Tauranga once a fortnight as a medical oncology outreach service. There are no dedicated inpatient beds. As per Tauranga Hospital, on call services are provided after hours and weekends by WRCC.

## **11.2.3 Lakes District Health Board**

### **Rotorua Hospital**

Lakes DHB covers a current population of approximately 102,000. The Rotorua portion of this is approximately 70,000. This unit situated at Rotorua hospital operates as an outreach service of WRCC, and is a new purpose built unit that was opened in August 2011. The unit conforms to international standards for space. It currently has three beds and nine chairs. The service is

available five days a week. Nursing staff administer chemotherapy, blood transfusions, and other complex treatments. A visiting oncology service providing FU clinics only (FSAs occur at WRCC) is provided by WRCC four times a month. As a medical oncology outreach service there are no dedicated inpatient beds. Patients presenting with acute oncology related issues are admitted under the general medical team in the first instance in Rotorua. On call services are provided by WRCC. All combined chemo-radiation treatments for Lakes DHB patients (FSAs, FUs and treatments) occur at WRCC. There are no specialist pharmacists available at this site.

### **Taupo Hospital**

This unit, situated at Taupo Hospital, operates as a chemotherapy outreach service of Rotorua Hospital. It covers a current population of approximately 32,000 people and has five treatment chairs (not specific to oncology). “Simple” chemotherapy is provided in Taupo by Rotorua chemotherapy nurses one day a week.

## **11.2.4 Tairāwhiti District Health Board**

### **Gisborne Hospital**

Gisborne Hospital provides services for a population of approximately 46,753 people in a region that covers more than 8351km<sup>2</sup>. Tairāwhiti medical oncology, radiation oncology and haematology transferred to WRCC on 1 July 2013 with a new model of service. Medical oncology services are an outreach service of WRCC. There are 24 full day visiting specialist clinics held annually with 24 hour on call medical service advice available from WRCC via telephone consultation. Inpatient services are also provided by WRCC at Waikato Hospital for acute and complex cases. Some outpatient clinics will be held at WRCC for those patients needing multiple ambulatory attendances. Medical oncology FSAs, FUs and treatments are provided by WRCC in Gisborne. All combined chemo-radiation treatments for Tairāwhiti DHB patients (FSAs, FUs and treatments) occur at WRCC.

## **11.3 Appendix 3: Demographics**

### **Bay of Plenty**

Age Group	Ethnicity				
	Māori	Pacific	Asian	Other	Total
<b>00-24</b>	27,820	1,550	2,925	37,880	70,175
<b>25-44</b>	12,280	795	2,605	32,700	48,380
<b>45-64</b>	10,125	565	1,470	44,570	56,730
<b>65-74</b>	2,235	105	365	19,060	21,765
<b>75+</b>	1,045	45	180	16,590	17,860
<b>Total</b>	<b>53,505</b>	<b>3,060</b>	<b>7,545</b>	<b>150,800</b>	<b>214,910</b>

Bay of Plenty has a forecasted population of approximately 214,910 people as at 2013/14. The eastern and western parts of the district have a very different demographic makeup – some 75% of the population live in Western Bay of Plenty. An estimated 21% of the DHB’s population lives in rural areas, compared to the national figure of 15%. In Western Bay of Plenty, 17% of the population identify as Māori compared with 50% of the Eastern Bay of Plenty population. The population is ageing, and the proportion aged over 65 is 29% higher than the national average. Total

population growth by 2026 is forecast to be higher for the DHB than for the rest of New Zealand. There are two main hospitals in Bay of Plenty, Tauranga and Whakatane.

Life expectancy for the district is close to national average. Key points relevant to the health status of the population include: rates of COPD and cardiovascular disease 10% higher than the national average; higher than national rates of avoidable hospitalisation; and cervical cancer hospitalisations 7.2 times higher for Māori woman compared to the national average.

### Lakes

Age Group	Ethnicity				
	Māori	Pacific	Asian	Other	Total
<b>00-24</b>	18,700	1,160	1,485	15,205	36,550
<b>25-44</b>	8,570	725	1,450	14,320	25,065
<b>45-64</b>	6,775	540	1,010	18,165	26,490
<b>65-74</b>	1,365	95	215	7,345	9,020
<b>75+</b>	590	55	105	5,295	6,045
<b>Total</b>	<b>36,000</b>	<b>2,575</b>	<b>4,265</b>	<b>60,330</b>	<b>103,170</b>

Approximately 103,000 people live in the Lakes DHB region<sup>21</sup>. Māori make up approximately 34% of the population with forecast increases of 11% in the Rotorua Territorial Authority area and 10.5% in the Taupo Territorial Authority area from 2006-2016. Approximately 19% of the population live in rural areas and 31% of the population fall into deprivation quintile 5, showing the highest levels of deprivation. The 2002/2003 New Zealand Health Survey estimates that 50.1% of the Māori population smoke, compared to 25.2% of the non-Māori population.

Babies born in Lakes DHB have the second lowest life expectancy of the Midland region. The DHB has the third highest standardised mortality rate in New Zealand, and the second highest smoking rate of the Midland region DHBs. Other outcomes of concern (where the DHB compares poorly against the national average) include: high obesity rates; cancer mortality; low birth weight babies; oral health; and high rates of ambulatory hospitalisations for older people. Lakes DHB has ambulatory sensitive hospital rates that are substantially higher than the national average, for both Māori and non-Māori.

### Tairāwhiti

Age Group	Ethnicity				
	Māori	Pacific	Asian	Other	Total
<b>00-24</b>	11,315	455	320	5,365	17,455
<b>25-44</b>	5,160	250	283	5,205	10,898
<b>45-64</b>	4,625	215	190	7,020	12,050
<b>65-74</b>	1,045	35	48	2,590	3,718

<sup>21</sup> As above

<b>75+</b>	595	10	28	2,000	2,633
<b>Total</b>	<b>22,740</b>	<b>965</b>	<b>868</b>	<b>22,180</b>	<b>46,753</b>

Tairāwhiti is one of the North Island's most sparsely populated districts, with some 29% of the total population of 46,000 (estimated 2013/14) living in rural areas (compared to 15% nationally). The geography causes significant transportation issues for both patients and travelling clinicians, both within the district (with travel times accentuated by the relatively high proportion of unsealed roads) and for travel to other centres for specialist care not available within the district (with limited availability of direct flights).

Tairāwhiti has a high proportion of the population (48%) identifying as Māori – three times the national average. Overall the population is proportionally young (in comparison with the NZ profile) but the large Māori population is relatively older. This adds further to the significant burden of disease faced, particularly given that Māori tend to develop some conditions related to ageing younger than other groups. The DHB has the highest rate of deprivation in New Zealand, with 65% of the population living in either quintile 4 or 5 deprivation categories. The low paid workforce and a high proportion of irregular, seasonal work contribute to this.

Both males and females have the lowest life expectancies seen in the Midland region and the highest age standardised all-cause mortality rate of all DHBs in New Zealand. Tairāwhiti also has the highest smoking rate of the Midland DHBs and the rate of ambulatory sensitive hospitalisations is substantially above the national average. The district's secondary hospital, located in Gisborne, has the smallest capacity of all of the main Midland DHB hospitals. (There is also a small GP run unit at Te Puia, Te Whare Hauoro o Ngati Porou.) The district has a high volume of FSAs and follow-ups in relation to its population size, at more than 25% above the regional level, related to the burden of disease in the population. Tairāwhiti has some of the best local elective services access nationally, as well as excellent elective access to surgical services to Waikato DHB.

### Waikato

Age Group	Ethnicity				Total
	Māori	Pacific	Asian	Other	
<b>00-24</b>	43,310	4,550	10,315	76,315	134,490
<b>25-44</b>	20,190	2,645	9,005	58,875	90,715
<b>45-64</b>	14,095	1,660	4,920	71,925	92,600
<b>65-74</b>	2,995	410	1,140	27,065	31,570
<b>75+</b>	1,395	235	780	21,435	23,845
<b>Total</b>	<b>81,945</b>	<b>9,500</b>	<b>26,160</b>	<b>255,615</b>	<b>373,220</b>

Waikato DHB has the largest population in the Midland region of around 373,000 (estimated at 2013/14). While Hamilton is a major metropolitan city, the district remains highly rural, with nearly 22% of the population living in rural areas, compared to the 15% national average. Approximately 22% of the Waikato DHB population identify as Māori, compared to the national average of 15%. Waikato Hospital, the largest hospital in the region, is the provider of tertiary healthcare services to the Midland population; nearly half the health staff employed by the Midland DHBs work from Waikato. It also has four rural hospitals and two continuing care facilities and provides regional forensic mental health services from the Waiora Waikato campus.

## 11.4 Appendix 4: Data qualifications

### Midland Cancer Network Medical Oncology Projections

Prepared by Claire Forsythe, Business Analyst, Operational Performance and Support  
22/07/2013

#### Purpose

To provide Pipeline population projections for the Medical Oncology service.

#### Waikato DHB data Qualifications

This model is based on qualifications from the Pipeline Planning Model

Data sourced from the Pipeline database on the CostPro server.

Date is based on discharge data (epDischargeDate) for fiscal year from 1st July to 30th June.

Domicile DHB is the DHB their address is domiciled to. For all non-midland DHB patients I have grouped them into the "Non Midland DHB" group.

Patients with no or overseas as their domicile are included in their place of treatment DHB.

See **Ethnicity lookup table** in **Qualification lookup tables** tab for ethnicity grouping.

#### Inpatients

Data extracted from all inpatient information (ViewInpatients).

Purchase unit code (PUC) specialty Oncology only (puMapHSC = M50).

Inpatient data excludes activity to PUC **MS02009** IV Chemotherapy - Cancer - Any Health Specialty as they are patients getting Chemotherapy treatments with a length of stay less than approximately 12 hours. They are included in the outpatient data.

Elective admit types are External (EX) or Waiting list (WN) admit types all others are Acute (including Arranged Admission and Acute Admission).

Inpatient data is grouped into 3 groups: "Radiation Oncology", "Medical Oncology" and "Other" patients. This is based on Discharge Doctor as discussed with Shelley Donnell (see Inpatient Doctor groupings table in Qualification lookup tables tab). So note the assumption is that all patients discharged under each doctor are those types of patients only for example ALL patients discharged under Michael Jameson are "Medical Oncology" patients.

#### Inpatient projections

Same qualifications as above for Inpatients as well as:

Inpatient projections are based on the 2013 fiscal year only.

Population projections are obtained from Statistics NZ. Projections are broken down to Age group, Sex, Ethnicity and domicile DHB and are applied to the baseline year based on patient demographics. Population % increase or decrease is applied to the baseline year.

#### Outpatients

Data extracted from all patient (Inpatients and Outpatients) information (ViewAllpatients).

Purchase unit code (PUC) specialty Oncology only (puMapHSC = M50).

Because this data includes inpatients and outpatients Inpatient PUC M50001 - Oncology - Inpatient Services (DRGs). Also excludes PUC HS0094 - Oncology - Hostel which are the cancer lodge patients.

See **Outpatient PUC groupings** table in **Qualification lookup tables** tab for PUC groupings.

All outpatient PUCs are included in the first table in All Oncology - OP summary but in the following tables only Medical Oncology and Radiation Oncology First Specialist Assessments (FSA's) and Follow up (FU) appointments are included as well as Chemotherapy patients (PUC MS02009 -IV Chemotherapy - Cancer - Any Health Specialty).

Outpatient summary is based on Ministry of Health (MOH) PUCs as this combined the same PUCs that have changed names over the years.

Outpatient historical data excludes DNA's. Historical data includes Medical Oncology and Radiation Oncology FSA's) and FU data only. Can only go back to 2009 as PUC's were divided into Medical Oncology and Radiation Oncology from then only.

#### Outpatient projections

Same qualifications as above for Outpatients as well as:

Outpatient projections are based on the 2013 fiscal year only.

DNA's are excluded from the projections.

Population projections are obtained from Statistics NZ. Projections are broken down to Age group, Sex and Ethnicity and applied to the baseline year based on patient demographics. Population % increase or decrease is applied to the baseline year.

## 11.5 Appendix 5: Aligned documents

A Workforce Survey of New Zealand Medical Oncologists. The New Zealand Medical Journal. March 2013	Describes the outcome of a 2009 survey of vocationally registered medical oncologists to inform workforce planning and development of models of care. URL: <a href="http://journal.nzma.org.nz/journal/abstract.php?id=5575">http://journal.nzma.org.nz/journal/abstract.php?id=5575</a>
Cancer Control Workforce Stock take and Needs Assessment. Ministry of Health. July 2007.	A high level stock take across the wider cancer continuum from primary prevention to palliative care. The report identifies current workforce status and future projections. URL: <a href="http://www.health.govt.nz/publication/cancer-control-workforce-stocktake-and-needsassessment">http://www.health.govt.nz/publication/cancer-control-workforce-stocktake-and-needsassessment</a>
Medical Oncology National Implementation Plan 2012/13. Ministry of Health. August 2012	Provides high level direction around increasing capacity and improving delivery of medical oncology services. URL: <a href="http://www.health.govt.nz/publication/medical-oncology-national-implementation-plan-2012-13">http://www.health.govt.nz/publication/medical-oncology-national-implementation-plan-2012-13</a>
Medical Oncology Nursing Workforce Forecast Modelling. DHBNZ (undated).	Provides modelling of nursing workforce demand and supply and is aligned to the Cranleigh report. The report explores nursing roles and range of practice, evolutions in treatment and service configuration as context to nursing workforce capability and capacity. URL: <a href="http://www.midlandcancernetwork.org.nz/file/fileid/41072">http://www.midlandcancernetwork.org.nz/file/fileid/41072</a>
Report to the Ministry of Health New Models of Care for Medical Oncology. Cranleigh Health. October 2011	Identifies the key challenges facing medical oncology services and propose a model for future service delivery. These are supported by recommendations for short and medium term actions to address current service pressures and progress towards the proposed model. URL: <a href="http://www.southerncancernetwork.org.nz/file/fileid/40437">http://www.southerncancernetwork.org.nz/file/fileid/40437</a>
National Professional Development Framework for Cancer Nursing in New Zealand 2009.	Provides a framework for registered nurses' professional development and describes nursing competencies that outline the practice expectations of nurses working in cancer control and palliative care. URL: <a href="http://www.nzno.org.nz/LinkClick.aspx?fileticket=qfk8A8llqM%3D&amp;tabid=241">http://www.nzno.org.nz/LinkClick.aspx?fileticket=qfk8A8llqM%3D&amp;tabid=241</a>
Advance Care Planning: A guide for the New Zealand healthcare work force August 2011.	Provides standardised information about advance care planning principles and legislation in New Zealand with the aim of promoting consistency in practice. URL: <a href="http://www.health.govt.nz/publication/advance-care-planning-guide-new-zealand-healthcare-workforce">http://www.health.govt.nz/publication/advance-care-planning-guide-new-zealand-healthcare-workforce</a>

## 11.6 Appendix 6: Aligned initiatives

Initiative	Alignment to this plan
1. Faster cancer treatment programme	This national Ministry-led programme has a number of regional and local initiatives aimed at standardising care pathways and timeliness of services for patients with cancer. Core components of the faster cancer treatment programme include: <ul style="list-style-type: none"> <li>Faster cancer treatment indicators</li> <li>Patient pathway coordination</li> <li>Tumour specific standards</li> <li>Multidisciplinary meetings</li> <li>Cancer nurse coordinators</li> </ul> URL: <a href="http://www.health.govt.nz/our-work/diseases-and-conditions/cancer-programme/fastercancer-treatment-programme">http://www.health.govt.nz/our-work/diseases-and-conditions/cancer-programme/fastercancer-treatment-programme</a>
2. Advance care planning	A national initiative including the development of tools, resources and training to support patients and their families/whānau to access required information across the cancer pathway. URL: <a href="http://www.advancecareplanning.org.nz/">http://www.advancecareplanning.org.nz/</a>
3. New models of care for medical oncology patients	Since the release of the Cranleigh Health report in 2011 the Ministry of Health has established a Medical Oncology Models of Care Steering Group and developed a 12 month implementation plan that outlines priority activities. Current projects within the plan include: <ul style="list-style-type: none"> <li>Guidance for medical oncology – senior medical officer roles in a new model of care (concludes April 2014).</li> <li>Knowledge and Skills Framework for nursing.</li> </ul> URL: <a href="http://www.health.govt.nz/publication/medical-oncology-national-implementation-plan-2012-13">http://www.health.govt.nz/publication/medical-oncology-national-implementation-plan-2012-13</a>

## 11.7 Appendix 7: Pharmaceutical Cancer Treatment Drugs (2012 analysis)

Prepared by Gareth Hudson, Performance Analyst Planning and Funding, Bay of Plenty DHB.

This supplementary paper provides an update of the pharmaceutical cancer treatment (PCT) drug spend by Midland DHBs for the first eight months of 2011/12 fiscal year.<sup>i</sup> An eight-week lag in claims data for Waikato DHB only permits comparisons to February 2012 despite available data for Bay of Plenty, Lakes, Tairāwhiti and Taranaki DHBs.

In addition to analysing gross drug cost this supplementary analysis investigated the patient trends as recorded in the pharmaceuticals data universe for the current fiscal year.

Monthly expenditure on cancer treatment drugs within the Bay of Plenty DHB averaged \$300,000 for the 2010/11 year. Early indications for the 2011/12 year were of a noticeable acceleration in this monthly cost to \$400,000. This change has not continued into the latter half of 2012 with the most recent months drifting towards similar levels as experienced at the close of 2010/11.

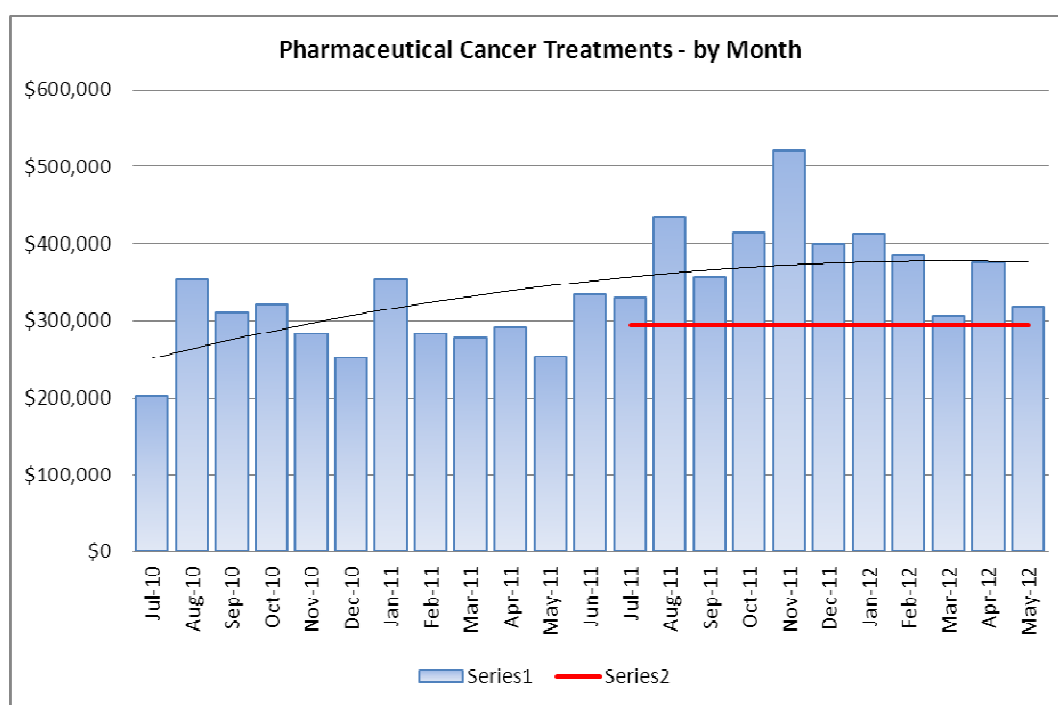


Figure 1: Bay of Plenty DHB Monthly Accounts Payable for PCT Drugs

The highly leveraged cost model for cancer treatment continues to exhibit the characteristics noted in Figure 2 of the February paper, with some minor re-ordering of the YTD cost in second tier drugs. As for the initial paper, the six most expensive oncology agents have contributed 89% (90% by November) of the total PCTs cost for Bay of Plenty DHB:

1. Trastuzimab (48%)
2. Rituximab (25%)
3. Bortezomib (9%)

4. Paclitaxel (3%)
5. Thalidomide (2%)
6. Irinotecan (2%)

Bay of Plenty's proportion is not significantly different to other Midland DHBs across the region with Lakes spending 88%, Tairāwhiti spending 92%, Taranaki 89% and Waikato 83%.

Trastuzumab expenditure for BOP in the first eight months were \$1.463 million – approximately 7/8 of the Waikato DHB cost (4/5 by November). Rituximab cost was \$0.809 million – 1.07 times that of Waikato (1.3 times by November). The Bortezomib cost of \$0.285 million is now 2/3 of Waikato.

Table 1 illustrates the eight-month costs for the six top-tier drugs for Bay of Plenty DHB compared with the four Midland DHBs.

<b>Chemical name</b>	<b>Bay of Plenty</b>	<b>Lakes</b>	<b>Tairāwhiti</b>	<b>Taranaki</b>	<b>Waikato <sup>1</sup></b>
Trastuzumab	\$1,462,687	\$715,226	\$155,339	\$602,063	\$1,694,581
Rituximab	\$809,446	\$317,177	\$134,756	\$273,203	\$756,536
Bortezomib	\$285,319	\$116,753	\$85,163	\$145,957	\$430,316
Paclitaxel	\$93,872	\$37,372	\$4,447	\$15,779	\$102,399
Thalidomide	\$76,860	\$37,296	\$6,524	\$15,008	\$97,020
Irinotecan	\$53,607	\$38,792	\$1,227	\$14,076	\$133,574

<sup>1</sup> YTD data is for 8 months

Table 1: Top 6 PCT Drug costs Jul 2011-Feb 2012

A revised 30 June 2012 forecast position for the high cost drugs noted is estimated to be approximately 80% of the Waikato forecast for the same drugs. This compares with a population proportion at 58% of the Waikato forecast population before allowance for tertiary inflows.

An updated derived cost per 100,000 population for PCT drugs again shows Bay of Plenty at the top of the Midland DHBs. The six drugs noted reflect a forecast cost of \$19.10 per 100,000 for the 12 months to June 2012. Lakes DHB presents the next highest at \$17.87 while the Waikato rate of \$12.82 has lifted since the November estimate with more data available.

The revised contribution of each drug towards this position is illustrated in Table 2.

Chemical name	Bay of Plenty	Lakes	Tairāwhiti	Taranaki	Waikato
Trastuzumab	\$10.25	\$10.44	\$4.91	\$8.08	\$6.23
Rituximab	\$5.35	\$4.19	\$4.43	\$3.74	\$3.28
Bortezomib	\$1.97	\$1.51	\$2.92	\$2.08	\$1.87
Paclitaxel	\$0.65	\$0.57	\$0.13	\$0.21	\$0.44
Thalidomide	\$0.51	\$0.57	\$0.27	\$0.27	\$0.42
Irinotecan	\$0.38	\$0.58	\$0.04	\$0.18	\$0.58
<b>Top 6 Total / 100k</b>	<b>\$19.10</b>	<b>\$17.87</b>	<b>\$12.70</b>	<b>\$14.56</b>	<b>\$12.82</b>

Table 2: Top 6 PCT drug forecast 2011/12 per 100,000 Population

High-cost drugs (defined as greater than \$1000 per script) in the period reviewed were Rituximab, Trastuzumab, Bortezomib, Temozolomide and Cladribine. Thalidomide, while not falling within the high-cost definition is a significant contributor to the YTD position with an average script cost range of \$572 to \$846. Expenditure on Paclitaxel (\$136-\$172) and Irinotecan (\$315-\$381) is driven by higher quantities.

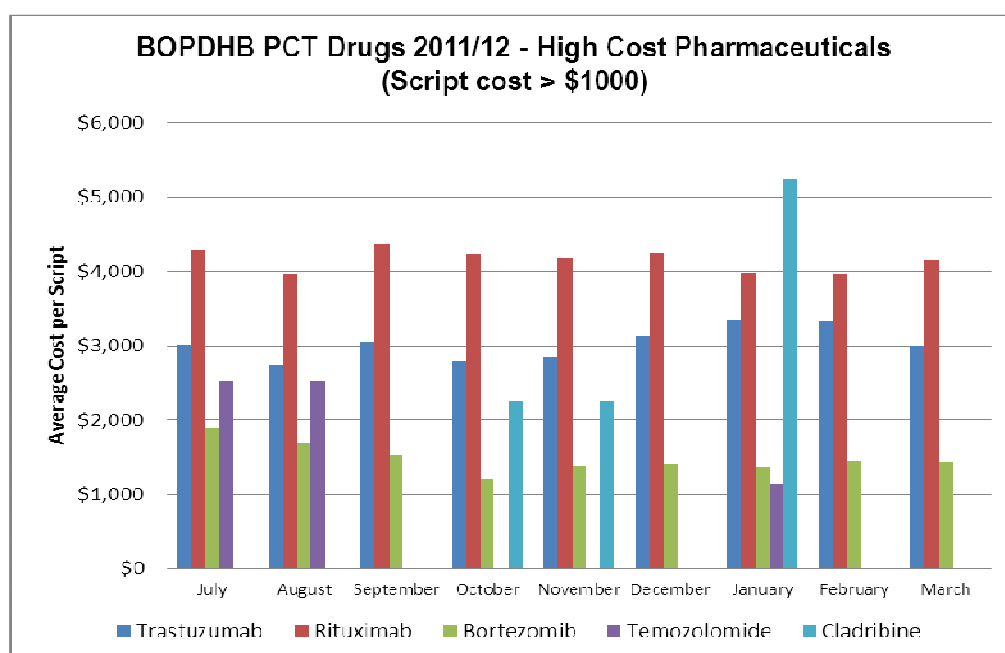


Figure 2: BOPDHB High-cost PCT Drugs > \$1000 per script

## Patient Analysis

Investigation into the 21 month patient numbers prescribed PCT drugs identified that Bay of Plenty DHB has a disproportionately high number of recipients of Trastuzumab (or herceptine - prescribed

for metastatic and early stage breast cancer); Rituximab (for chronic lymphatic leukaemia and Non-Hodgkins leukaemia); Paclitaxel (ovarian cancer / breast cancer / non-small cell lung cancer) and Thalidomide (bone-marrow, after other treatments and newly diagnosed patients over age 65).

Table 3 illustrates that a count of monthly Bay of Plenty domiciled patients prescribed Trastuzumab, Rituximab, Paclitaxel and Thalidomide in 2011/12 is 82%, 112%, 88% and 76% of Waikato domiciled patient numbers. By comparison, the number of Lakes domiciled patients is 42%, 47%, 34% and 47% respectively. Bay of Plenty is above the National DHBs average on every count.

Table 3: Top 6 Drugs – Midland DHBs Average Number of patients Prescribed YTD 2011/12

Chemical name	Trastuzumab	Rituximab	Bortezomib	Paclitaxel	Thalidomide	Irinotecan
Bay of Plenty	31	19	8	28	13	11
Lakes	16	8	3	11	8	9
Tairawhiti	4	3	2	1	1	0
Taranaki	12	6	4	4	2	2
Waikato	38	17	14	32	17	31
National	18	11	7	12	7	6

<sup>1</sup> YTD data is for 8 months

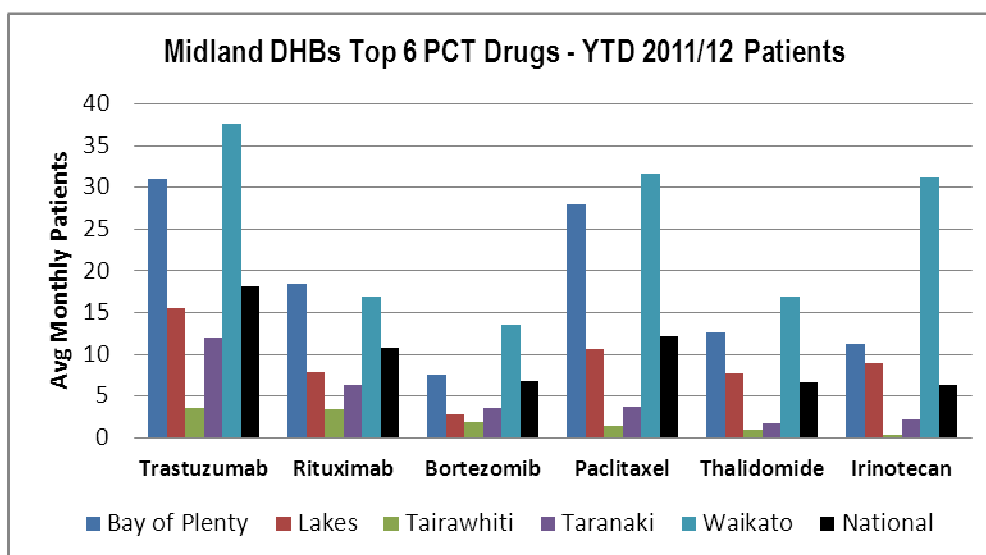


Figure 3: Midland DHBs Patient count for Top 6 PCT Drugs prescribed

This high number of recipients of these drugs favourably swings the average monthly cost per patient below the national average for all DHBs - with the exception of Rituximab.

<b>Chemical name</b>	<b>Trastuzumab</b>	<b>Rituximab</b>	<b>Bortezomib</b>	<b>Paclitaxel</b>	<b>Thalidomide</b>	<b>Irinotecan</b>
Bay of Plenty	\$5,890	\$5,513	\$4,790	\$413	\$762	\$593
Lakes	\$5,734	\$4,911	\$4,962	\$447	\$599	\$526
Tairāwhiti	\$5,394	\$4,906	\$4,416	\$415	\$469	\$153
Taranaki	\$6,266	\$5,478	\$4,712	\$495	\$751	\$1,176
Waikato	\$5,576	\$5,611	\$4,156	\$406	\$716	\$534
National	\$6,226	\$5,348	\$5,382	\$541	\$924	\$573

Table 4: Top 6 Drugs – Midland DHBs Average Cost per Patient YTD 2011/12

Although Bay of Plenty DHB services approximately 4.8% of the 4.424 million estimated national population, the frequency of prescriptions for these six drugs to BOPDHB domiciled patients does not reflect that population spread. In the eight months to February 2012 the number of Bay of Plenty patients receiving prescriptions for these drugs (9.4%) was double the demographic proportion. This figure compares with an average of 8.4% Bay of Plenty domiciled patients for the 21-month period since July 2010.

Table 5 illustrates the disproportionate allocation of monthly patient numbers compared with the other Midland DHBs.

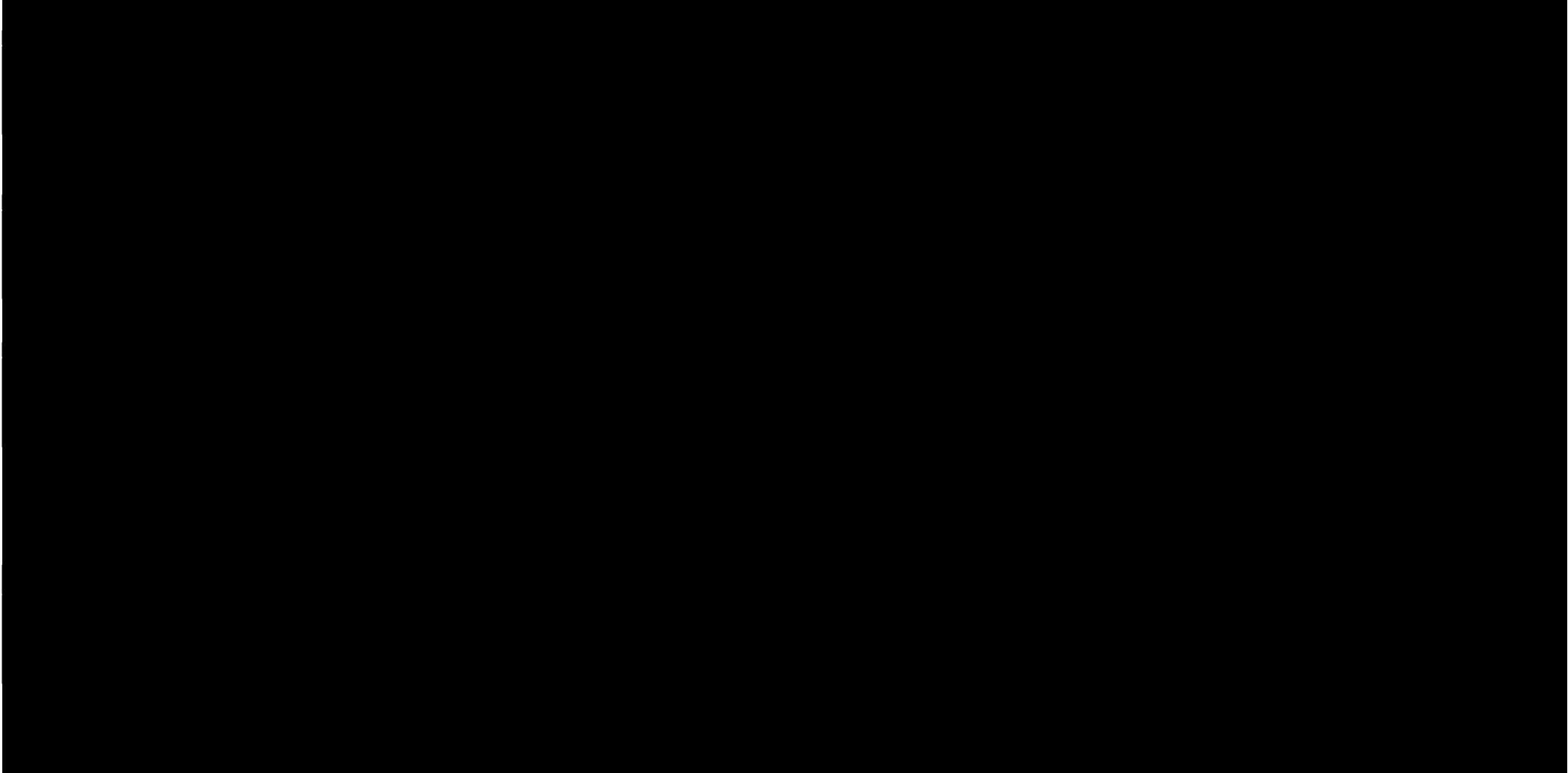
<b>Chemical name</b>	<b>Trastuzumab</b>	<b>Rituximab</b>	<b>Bortezomib</b>	<b>Paclitaxel</b>	<b>Thalidomide</b>	<b>Irinotecan</b>
Bay of Plenty	8.1%	8.2%	5.2%	11.0%	9.1%	8.5%
Lakes	4.1%	3.5%	1.9%	4.2%	5.6%	6.8%
Tairāwhiti	1.0%	1.5%	1.3%	0.5%	0.6%	0.3%
Taranaki	3.2%	2.8%	2.5%	1.5%	1.3%	1.7%
Waikato	9.9%	7.4%	9.4%	12.5%	12.2%	23.5%
National DHBs	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 5: Top 6 Drugs – Midland DHBs YTD % of National Patients Prescribed

Prescription patterns provide further insight into the acuity levels of Bay of Plenty cancer patients, however further investigation is required on the impact of the factors noted below that could potentially influence the treatment characteristics for these patients.

- The demographic dispersion of patients receiving treatment
- The diagnostic characteristics of early and/or late-stage presentations
- Activity associated with the Bay of Plenty Cancer Centre since its inception

**11.8 Appendix 8: Pharmaceutical Cancer Treatment Drugs (2012/13 data)**



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