



Plan to Develop Resident Medical Oncology and
Haematology Services based in Tauranga

Bay of Plenty District Health Board

2008



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Acknowledgement and thanks for the contribution of the Regional Cancer Centre medical staff that have supported the concept as well as the many BOPDHB staff and services that contributed to the development of this service.

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Executive Summary

The Midland Cancer Network on behalf of Bay of Plenty and Waikato District Health Boards has facilitated and co-ordinated the development of this plan following endorsement of a Request for Change proposal to the Midland GM planning and funding forum.

The plan outlines the framework, service requirements, costs and implications for the establishment of a sustainable resident medical oncology/haematology service in the Bay of Plenty (BOP), based at Tauranga Hospital. The BOP resident medical oncology/haematology service would include continuation with the outreach service at Whakatane Hospital and continue to link in with the Regional Cancer Centre, based at Waikato Hospital under the umbrella of the Midland Cancer Network.

BOPDHB has successfully recruited a medical oncologist who commenced 21 January 2008. The plan details the BOP resident medical oncology/haematology service phasing which would initially be one full time medical oncologist and in close succession, appoint a second medical oncologist and one haematologist, and supporting resources.

The plan has utilised recommendations and findings from the Non-Surgical Cancer Treatment Service Plan for the Midland Region (Barber, 2004) and the associated Implementation Plan (Scanlan L. & Hewitt J., 2005). Tauranga Hospital currently functions at a level three on role delineation framework and on a population basis. This plan supports developing cancer and associated services (based on AMWAC guidelines) towards level four of the role delineation framework. The plan also progresses workforce development towards the recommended levels of medical oncologists and haematologists for the Midland region (Barber, 2004).

This plan provides a regional model and framework for developing oncology services that DHBs can utilise when submitting proposals / business cases. Each DHB has a mechanism and responsibility for addressing service development components for capital, budgeting and recruitment of resources and contracts.

The plan has two indicative timeframes that overlap:

- Phase one - 21 January 2008 – 30 June 2008
- Phase two - March 2008 – 31 December 2008

A high level ongoing work plan is included in the plan to work through detailed service components.

BOPDHB has endorsed the business case for a resident haematology / oncology service based at Tauranga with strong collegial links to Waikato DHB. An application was made to the funding and management committee of BOPDHB in March 2008 for funding in support of the business case. The committee approved the application.

Waikato planning and funding portfolio manager has been advised by BOPDHB planning and funding portfolio manager of contract volume changes. Waikato planning and funding portfolio manager has discussed and worked through this with the Waikato provider arm.

The Midland Cancer Network sub group non-surgical cancer treatment work group will monitor and report on the progress of implementation.

It is recommended that this plan be endorsed and implementation as outlined continue.

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Introduction

This plan outlines the framework, service requirements, costs and implications for the establishment of a sustainable resident medical oncology/haematology service in the Bay of Plenty (BOP), based at Tauranga Hospital. The BOP resident medical oncology/haematology service would include continuation with the outreach service at Whakatane Hospital and continue to link in with the Regional Cancer Centre, based at Waikato Hospital under the umbrella of the Midland Cancer Network.

In June 2004, the provider arm within Bay of Plenty District Health Board (BOPDHB) budgeted for the appointment of a Medical Oncologist position based at Tauranga Hospital. Recruitment to the position has taken time for three key reasons;

1. Recruitment difficulties due to a limited number of medical oncology specialists in the national and international market
2. Only recruiting to a sole practitioner position
3. To date there has been no resident medical oncology/haematology service framework that outlines how the BOPDHB and the Regional Cancer Centre would initially support a sole practitioner, as well as having a detailed and a phased medium term plan to implement all the service requirements to support a fully developed and sustainable resident medical oncology/haematology service to ensure that there isn't a sole practitioner service developed.

BOPDHB has successfully recruited a medical oncologist who commenced January 2008. The business case details the BOP resident medical oncology/haematology service phasing which would initially be one full time medical oncologist and in close succession, appoint a second medical oncologist and one haematologist, and supporting resources. It is anticipated this process will take between one to three years.

BOPDHB has endorsed the business case for a resident haematology / oncology service based at Tauranga with strong collegial links to Waikato DHB. An application was made to the funding and management committee of BOPDHB in March 2008 for funding in support of the business case. The committee approved the application.

The retention of the medical oncologist and long term success of resident oncology/haematology services at BOP is dependant on continual support and infrastructure - from the key stakeholders; BOPDHB (provider and funder), Regional Cancer Centre, Waikato DHB and the Midland Cancer Network.

Cancer services are complex and affect the individual's journey from prevention to diagnosis, treatment and palliative care. The role of the oncology team is more than just secondary services; the resident team will be working with a range of staff and community to advance the provision of cancer control strategies and services for the BOPDHB.

Background

Cancer control is an organised and systematic approach to the reduction of cancer incidence, morbidity and mortality. The New Zealand Cancer Control Strategy (Strategy) (Ministry of Health 2003) provides a framework for reducing the incidence, impact and inequalities of cancer along the whole cancer control continuum. The New Zealand Cancer Control Strategy: Action Plan (Action Plan) (Cancer Control Taskforce 2005) outlines in detail how the Strategy's objectives be achieved. This business plan predominately relates to Goals 3 and 5;

Goal 3: Ensure effective diagnosis and treatment of cancer to reduce morbidity and mortality

Goal 5: Improve the delivery of services across the continuum of cancer control, through effective planning, coordination and integration of resources and activity, monitoring and evaluation.

The Midland DHB CEOs group determined that the Non-Surgical Cancer Treatment Plan for the Midland Region (MRNSCTS plan) (Barber J. 2004) would form the framework for the development of adult medical oncology, radiation oncology and haematology services. In relation to this the MRNSCTS plan recommended that DHBs should consider the options in relation to the site of service delivery. Resource recommendations also included increasing the number of haematologists with the option of one haematologist to be based in the BOP and increasing the number of medical oncologists with the option of two medical oncologists to be based in the BOP.

In response to the MRNSCT plan, in 2004 the provider arm of BOP budgeted for the appointment of a Medical Oncologist position based at Tauranga Hospital.

In December 2004 the Midland Region endorsed a project to scope requirements, implications, and focus on activities related to operational planning and implementation of the MRNSCTS plan. A key component of this work was the development of a Midland region non-surgical cancer treatment role delineation model that provides a benchmark of the current level of services for each DHB hospital and provides a guideline for DHBs planning future service development (Scanlan L. Hewitt J. 2005). The role delineation model identified that Tauranga Hospital based on its population size could move to a level four service (appendix one).

A common theme and priority at a national and regional level is the formation of managed regional clinical networks. In November 2005 the Midland DHB CEO group endorsed the formation of the Midland Region Non-Surgical Cancer Treatment Services Operations Network and subsequently in October 2006 the formation of the Midland Cancer Network (MCN) (Hewitt J. 2006). The MCN work plan includes continued implementation of the MRNSCTS plan.

The MCN jointly with key stakeholders prepared a request for change proposal (RFC) for the Midland GM Planning and Funding forum. The RFC was supported in principle to develop a model of care and business case that promotes an integrated resident medical oncology / haematology service based at Tauranga with support from the Regional Cancer Centre and MCN.

Request for Change - Option Analysis

The RFC identified that there are only two feasible options that could be considered:

1. Maintain the status quo
2. Develop a resident medical oncology / haematology service at the BOPDHB supported by the Regional Cancer Centre and Midland Cancer Network.

Option one of maintaining the status quo has already been identified as not a best practice or desirable option as outlined in the Non-Surgical Cancer Treatment Services Plan for the Midland region (Barber J. 2004) and associated Implementation Plan (Scanlan L. Hewitt J. 2005) and BOP Medical Oncologist business case (Voon P. 2004).

Option one does not champion best practice or support patients and family / whanau continuity of care and access care as close to home as possible. Recent data from

Ministry of Health Public Health Intelligence Unit (PHI) 'Cancer Trends and Projects' indicated the steady increase in cancer registrations in BOPDHB is consistent with the observed population increase in older age groups in this DHB' (4.1% annual growth between 1999 and 2004 as opposed to the national average of 1.6%). The growing population and increase in cancer will place increasing pressure on existing resources resulting in capacity issues at the Regional Cancer Centre. The complexity of cancer treatment and the current method of providing the service through Waikato DHB does not allow the development of a more cohesive cancer service for the BOP. The role of a multidisciplinary team, led by cancer specialists will be pivotal to the success of the service.

BOPDHB has already endorsed the request for change in principle and this is recognized in the recent success of recruiting of a medical oncologist. The proposal in 2004 was for a single oncologist with no consideration for infrastructure to support the success of this position. The option of status quo will make it difficult to retain a sole medical oncologist as it is not recommended that they work in isolation, and indeed no suitable candidate has been attracted to the vacancy in three years. The recently employed medical oncologist has taken on the position based on the premise of developing and implementing this business case.

Option two to develop a sustainable resident medical oncology / haematology services based in Tauranga, BOPDHB as part of the Midland Cancer Network is now discussed.

The Current Service Delivery

Service Standard Requirements

Although current medical oncology / haematology services are met through Waikato, the model of care is episodic and specialist driven with little to no involvement of multidisciplinary team from the local BOP scene. This is due to the current dependency on Waikato staff for direction.

DHBs are required to fund (via Population Based Funding Formula) health services to its respective population, irrespective of which DHB provides delivery of the service. The service should be delivered:

- With an emphasis on multidisciplinary care to ensure that services are effective and efficient, and fulfill the needs of patients and their families and other non-professional carers;
- As close to the patients' home as is feasible; and
- Ensuring quality and safety in all aspects of patient care.

This business plan aims to meet each of these principles.

The AMWAC (Australian Medical Workforce Advisory Committee) 1998.7 report considers a resident service for medical oncology that is close to an urban centre requires a population catchment of over 80,000. They also recommend the following FTE:

Medical Oncology	1.02 FTE :100,000
Haematology	0.58 FTE :100,000

Based on the population at BOPDHB, this would translate to the following:

Table 1: BOP DHB Medical Oncologist/Haematologist Requirements 2006 and 2011

Required Workforce	2006	2011
Medical Oncologist	1.99 FTEs	2.19 FTEs
Haematologist	1.13 FTEs	1.24 FTEs

This business plan recommends the appointment of a minimum of two medical oncologists and one haematologist at BOP in two phases as it recognises there are financial and logistic issues with recruitment and implementation.

As previously indicated Tauranga Hospital currently functions at a level three on role delineation state (appendix one) and on a population basis it needs to work towards level four for cancer services.

The endorsed Midland NSCT Implementation Plan (Scanlan L. & Hewitt J., 2005) recommended 5.9 fte medical oncologists in 2006 and increasing to 7.6 fte by 2011. The Regional Cancer Centre currently has 5 fte medical oncologists. This paper works towards the recommended level of medical oncologists for the Midland region.

Identifying haematologist workforce requirements is more complex as indicated in the Midland NSCT Implementation Plan (Scanlan L. & Hewitt J., 2005). The MRNSCT Plan (Barber, 2004) recommended for the region 5.7 fte haematologist in 2004 with a minimum increase to 6 fte by 2011. The Regional Cancer Centre currently has 3.8 fte haematologists. This paper works towards the recommended level of haematologists for the Midland region.

This business plan will support the establishment of a resident service within the BOP and the endorsed level of specialist medical oncologists and haematologists for the Midland region.

Resource Requirements & Level of Service

The following summarises phase one and two human resource requirements and the level of service that will be provided. This is followed by an overview of minimum service components needed to support the phase one and two (based on AMWAC guidelines refer appendix two) and any implications.

Phase One: Resident Medical Oncology Team Requirements

- Appointment of first medical oncologist 1.0 FTE (Dr Richard North commenced 21 January 2008 and the position is in the provider's budget)
- 1.0 FTE registrar (position budgeted in provider arm)
- House officer (if inpatient support is required, the service will utilise the General Medicine house surgeon, therefore already budgeted)
- Social worker utilise current resources under General Medicine (already budgeted)

- 0.4 FTE administration support (typing and booking)
- Certified chemotherapy nurses – this service is already in place within the Day Unit (requires no additional budget)
- Cancer care co-ordinator (generic) – this position is already budgeted within the medical services
- Breast cancer care co-ordinators – these positions are already budgeted under the surgical services

In summary the BOP provider arm has meet the human resource requirements for phase one.

Phase one establishment of the resident medical oncology service will enable:

- Medical oncology first specialist assessments (FSA) in Tauranga and continuation of FSA clinics at Waikato. The BOP medical oncologist FSA target will be 220 FSAs per annum with the remaining FSAs provided at Waikato as per the current arrangement. This will mean that the bulk of BOP FSAs will be provided for those who live within the BOP domicile area
- Subsequent attendance - currently almost all subsequent attendances are undertaken at BOP (Tauranga or Whakatane). The BOP medical oncologist will see a number of these follow ups, rather than the visiting specialists
- Waikato continuation of visiting medical oncology and haematology outreach clinics (at reduced levels), radiation oncology visiting clinics
- As the RCC medical oncologists reduce outreach visiting clinics at BOP the resource will be utilised to meet increased demand across the region and continued focus to reduce waiting times
- Continuation of current level and flow of chemotherapy services at both Waikato and BOP
- The resident medical oncologist will be able to:
 - provide supervision of patients on chemotherapy, including review of patients prior to starting treatment
 - commence establishing a limited inpatient oncology service based at Tauranga Hospital
 - advice to other specialists on the management of cancer related issues
 - work with GPs in the community on treatment options and prevention strategies
 - work with primary providers and community to manage at risk patient groups and provide clinical input into the local development of cancer control strategies including local priorities to reduce health inequalities in cancer services
 - support the development of multidisciplinary team (MDT) approach. It is recognised that the cancer control multidisciplinary team approach is an evolving model of care that integrates services and health professionals for the management of cancer patient's care along the continuum

- The resident medical oncologist will work with colleagues at the Regional Cancer Centre in Waikato for peer support at least one full day per fortnight.

Phase Two: Resident Medical Oncology / Haematology Team Requirements

This phase has been endorsed to commence and needs to start as soon as possible for two key reasons;

- Recognition that the lead time to recruit to medical specialist positions (medical oncologist and haematologist) can be lengthy and this would;
- Impact on the lead solo practitioner (first medical oncologist) from a retention and practice perspective needs consideration.

Appointment of the following additional BOP staff is required in phase two;

- Second medical oncologist 1.0 FTE
- First haematologist 1.0 FTE
- Administration support (typing and booking) 1.0 FTE
- Second registrar 1.0 FTE (rotating position one through medical oncology and one through haematology)
- Allied Health 0.5 FTE – it is anticipated that additional allied health will be required. It is recommended that the requirements are ascertained after six months of commencement of phase two
- House Surgeon 0.5 – 1.0 FTE – it is anticipated that additional house surgeon will be required¹. It is recommended that the allied health requirements are ascertained after six months of commencement of phase two
- Resident medical oncologist / haematologist to be colocated to facilitate team approach to service development.

In addition to phase one development phase two establishment of the resident medical oncology service will enable:

- A sustainable resident medical oncology / haematology service for the BOPDHB
- Increasing complexities of inpatient admissions and a reduction of the need to transfer patients to Waikato
- Better servicing of Whakatane (currently this is only monthly through Waikato)
- Continued development of the cancer control multidisciplinary team approach. Education of medical and nursing staff, joint review meetings with other clinical services, clinical trial involvement, quality and risk management activities

¹ Waikato Hospital Oncology inpatient service has 1 house surgeon : 5 consultants and Haematology inpatient service has 2 house surgeons : 3 consultants – however it is recognised that the complexity at Waikato will remain higher than at Tauranga.

- Continued development of cancer control strategies including implementation of national, regional and local priorities to reduce health inequalities in cancer services
- Enhanced attraction for the setting up of the clinical school at BOPDHB
- Collegial support and service integration.

What this will not provide:

- Autologous bone marrow transplants, these will continue to be provided at Waikato Hospital
- Allogenic bone marrow, these will continue to be provided at Auckland Hospital
- Some visiting haematology clinics from Waikato will continue
- Nuclear medicine will continue to be provided at Waikato Hospital
- Radiation Oncology services, including visiting outreach clinics will continue to be provided by Waikato.

Service Standard Requirements

The following summarises the BOP minimum resident medical oncology / haematology service components needed to support the phase one and two (based on AMWAC guidelines refer appendix two), the service and support requirement links and any implications.

Office / Administration Facilities

It is planned that the multidisciplinary team will have offices with full communications facilities i.e. phone, email, internet and intranet access from the new cancer centres at Tauranga and Whakatane Hospitals. The building of the Tauranga cancer centre has commenced and completion is planned for June 2008. The interim plan for office facilities will be the continuation of current location (Jacaranda House). The Whakatane cancer centre was completed November 2007. It is recommended that the medical oncology / haematology team is colocated to facilitate team approach.

There is video conferencing facility available at Tauranga and Whakatane and there are plans to extend this service to Te Kaha and Opotiki.

Day Unit Services

Tauranga currently has a day unit for procedures and chemotherapy administration supported by fully qualified chemotherapy nurses. It is planned that chemotherapy services will be located in the new Tauranga cancer centre.

Whakatane day chemotherapy unit and has been relocated to the new cancer centre. It is staffed by fully qualified chemotherapy nurses.

Inpatient Services

As part of the BOPDHB Leo Project existing emergency and inpatient facilities have been upgraded to include isolation rooms. Medical oncology / haematology services will

have access to admitting to the medical inpatient services. It is recommended in phase one that the day unit trained chemotherapy nurses administer the inpatient chemotherapy.

Early-mid 2008 the Waikato Oncology Liaison Nurse should work with the BOP nurses to develop a inpatient chemotherapy training and certification programme for the nominated inpatient service. The target is for two chemotherapy certified nurses per morning and afternoon shifts.

General Medicine / Acute Roster

Tauranga has a strong medical service with subspecialists, 24 hour / 7 day week service, teaching and research and support with clinical nurse specialists in most specialities.

The current acute arrangements and roster will remain through the general medicine service. The medical oncologist will not take part in the acute general medicine roster, but can assist General Medicine with inpatient consultations when required. General Medicine will provide out of hours cover for any oncology inpatients during phase one.

Currently Waikato fields medical calls from BOP for opinions and support, this service will continue. For phase one all after hours acute oncological patients will be admitted under the acute general medicine physician, with discussions and support from the medical oncologist or via Waikato's oncology on call services.

In Phase two it is planned that once all three specialists are employed there will be a BOP resident oncology on call service with a 1:3 call with support from Waikato RCC when appropriate.

Outpatient Clinics

It is planned that the multidisciplinary team will have outpatient clinics communications facilities in the cancer centres at Tauranga and Whakatane Hospitals. Tauranga cancer centre is due for completion June 2008 and the interim plan for outpatient facilities will be the continuation of services in current location (Jacaranda House clinics).

The Whakatane cancer centre is opened November 2007 that include offices and outpatient facilities.

The current specialist visiting radiation oncology clinics will continue with no planned change.

Management of Outpatient Referrals

Currently the Regional Cancer Centre has a single point of entry for all referrals. To ensure consistencies in prioritisation and equity of access, in phase one all medical oncology referrals will be managed through Waikato as per the current process.

In Phase two this process is likely to change, however there needs to be close liaison with Waikato RCC to ensure equity of access.

Administration Support

Currently all BOP FSAs are seen at Waikato and all associated typing is done at Waikato. BOP also manages all booking and typing of subsequent visits.

Phase one will transition to an increase of 220 FSAs per annum requiring an additional 0.2 FTE booking clerk and 0.2 FTE typing for Tauranga Hospital. In phase one there

will be no changes to the current specialist visiting medical oncology and / or haematology services.

The current specialist visiting radiation oncology clinics will continue with no planned change for either phase one or two.

Medical Imaging Services

Tauranga Hospital currently has the technology required i.e. 64 slice CT, ultrasound, MRI and interventional and medical imaging expertise i.e. the ability to do ultrasounds and CT guided fine needle aspiration and biopsy. Tauranga Hospital currently provides all of the medical oncology / haematology service medical imaging and the resident service will continue to have the same level of utilisation.

Whakatane has access to CT and ultrasound services.

It is envisaged that as the concept of multidisciplinary teams are formed that there will be a requirement for radiologists to be part of the resident oncology MDT.

Laboratory and Pathology Services

BOPDHB has a level five laboratory and pathology 24 hour / 7 day week services including histology, cytology frozen section. The current level of access to the blood bank with availability of platelets and blood products meet the needs of the service.

It is envisaged that as the concept of multidisciplinary teams are formed pathologists will need to be part of the resident oncology MDT.

Surgical Programme

BOPDHB has an active level five surgical programme especially in general, breast and GI and development of the resident service should have no impact on surgical services. There is access to a 24 hour / 7 day week surgical service supported by teaching and research and clinical nurse specialists.

Multidisciplinary Teams Meetings

As previously mentioned the multi-disciplinary team meetings and approach will evolve as the resident service gets established. MDTs will include: Oncologists (radiation oncologists to phone in), Surgeons, Pathologist, Radiologists, Nurse Care Co-ordinators, Meeting co-ordinators and minute takers. At these meetings liaison nurses would be encouraged to attend. Where appropriate videoconferencing facilities currently available at Tauranga and Whakatane will be used to connect the service within and outside the organisation.

Anaesthetics / Operating theatre / ICU / Pain services

Tauranga has level four anaesthetics / ICU and operating theatre. The pain service is led by anaesthetists. Development of a resident service will not impact on the current services.

Palliative Care

A resident service requires access to specialist palliative care services including access to consultation service with palliative care physicians. BOPDHB has a Palliative Care Strategy and there are plans to employ a palliative care physician 0.3 FTE provider arm and 0.7 FTE Waipuna Community Hospice Trust. Development of the palliative care

physician business case is outside the parameters of this business case but recognises an area that requires links and development.

Allied Health

The resident service will utilise existing allied health services such as dietician, social work with no / minimal impact. In phase two it is anticipated that there will be an increase in allied health input.

Clinical Trials

It is well documented that the quality of care increases when patients participate in clinical trials. The regional ethics committee will assist with development of regional and local clinical trials.

BOPDHB has the ability to utilise the existing BOP Medical Research Trust to assist with oncology / haematology clinical trials. The BOPDHB will need to enter into discussions with the Medical Research Trust and work through the logistics of setting this up. This could commence approximately in June 2008 following establishment of the first medical oncologist into the role he can work in partnership with the Waikato clinical trials team. Besides the benefits to patients with cancer there is the opportunity to increase BOPDHB revenue.

Library Services

BOPDHB has an excellent library facility and service with electronic access to core journals. In phase one the medical oncologist will have access to core oncology journals at the Waikato DHB library.

Pharmacy Services

Tauranga Hospital has level four pharmacy with clinical pharmacists, quality assurance programme and on call service. Implementing a resident service would have no change to the current service.

There would be no change to the compounding of chemotherapy through Baxters.

Waikato holds a software licence for OncSoft. Waikato runs all chemotherapy prescribing through this system that has the ability to standardise and print out prescriptions. It is recommended that BOPDHB adopt the same software to ensure clinical consistency and safety. BOP will need to enter into a contract with OncSoft for an annual licence in phase one. There is the opportunity to explore a regional approach with OncSoft.

BOP has a plan in place to recruit and train clinical pharmacists with an interest in oncology services so that service provision is more comprehensive. Development of this service enhancement business case is outside the parameters of this business case, but notes the value of this initiative. This will be considered as part of the Midland Cancer Network workforce development.

Oncology / Haematology Outreach Service based in Whakatane

The following is required:

Requirements	Yes/No	Comments
An office plus communication facilities	Yes	Part of new Cancer Centre in Whakatane Hospital
Consulting space	Yes	As above
Medical imaging	Yes	CT and ultrasound
Basic pathology services	Yes	
A Day Treatment facility	Yes	Part of new Cancer Centre in Whakatane Hospital
Skilled chemotherapy nurses, district nurses, Hospice nurses and social workers	Yes	
Clerical support to run clinics and do medical typing	Yes	

It is expected that the cancer services at BOPDHB will work with the Regional Cancer Centre as part of the Midland Cancer Network model. This is essential for maintaining peer review, commonality of protocols, discussion on difficult cases and access to radiation oncology.

Contract Analysis

The 2007/08 contract for BOPDHB are as follows:

PUC	Description	Volume
M50002*	FSA	32
M50003*	Follow Up	2900** (2000=medical, 900=radiation)
M5004	Oncology Chemotherapy	3700
M30002	Haematology – FSA	20
M30003	Haematology – Follow Up	1550
M3004	Haematology Chemotherapy	660

*Currently all medical and radiation oncology outputs are counted under these two purchase units

** Estimates only, based on previous year's actual

The proposed changes to the volume are as follows:

PUC	Description	2007/08 Jul-Dec	2007/08 Jan-Jun	2008/09	2009/2010
M50002*	FSA	32	120	220	440
M50003*	Follow Up	2900	3600	4300	4400
M5004	Oncology Chemotherapy	3700	3700	4070	4400
M30002	Haematology – FSA	20	20	170	170
M30003	Haematology – Follow Up	1550	1550	1550	1550
M3004	Haematology Chemotherapy	660	660	750	800

Financial Analysis

The following schedule identifies the revenue inflows and expenditure outflows associated with the two phases of service development and delivery. Two of the key financial differences between the current model of service delivery and that proposed are the redirection of revenue from inter-district flow to localised service delivery through the provider arm and a general increase in revenue requirements as a result of increased capacity.

Across both phases, the net result for the service is a deficit position. However the extent of the deficit drops from 16% of total revenue to 10% by the end of phase two, suggesting improved efficiencies as the service matures. More work is required however to understand and validate this result and whether or not it reflects national pricing or service configuration issues.

Costing information from comparable DHB's is presently limited. An exercise will be undertaken though in conjunction with Waikato DHB during phase two of this project to compare and contrast the cost of haematology/oncology services and whether or not the ideal of local service provision is only achieved by paying a premium above and beyond national pricing.

Financial Analysis Haematology/Oncology Service Costings						
Oncoology Services	Phase One				Phase Two	
Staffing Cost	Unit	FTEs	Pro-rata from Feb 08		FTEs	
Salary / Wages						
Medical Oncologist	\$163,500	1	\$163,500	\$68,125	2	\$327,000
Haematologist	\$163,500	0	\$0	\$0	1	\$163,500
Superannuation	6%		\$9,810	\$4,088	6%	\$29,430
CME	\$8,500	1	\$8,500	\$3,542	3	\$25,500
Call Back/Availability allowance	\$15,000	1	\$15,000	\$6,250	2	\$30,000
Relocation costs	\$25,000	1	\$25,000	\$25,000	2	\$50,000
Advertising costs	\$10,000	1	\$10,000	\$10,000	1	\$10,000
Set up costs(computer/furniture)	\$2,000	1	\$2,000	\$2,000	2	\$4,000
Clerical support(typing/booking)	\$37,000	0.4	\$14,800	\$6,167	1	\$37,000
Cellphone	\$600	1	\$600	\$250	3	\$1,800
Medical registrar	\$85,000	1	\$85,000	\$35,417	1	\$85,000
House Officer	\$70,000	0	\$0	\$0	0.5	\$35,000
Training (RMO)	\$2,000	1	\$2,000	\$833	2	\$4,000
Radiology services	\$130,000	0.2	\$26,000	\$10,833	0.4	\$52,000
Clinical Nurse Specialist	\$75,000	1	\$75,000	\$31,250	1	\$75,000
Total			\$437,210	\$203,754		\$929,230
	Phase One				Phase Two	
Additional Costs (Excludes staffing costs)	Unit	Volume	Pro-rata from Feb 08		Volume	
Oncology Inpatient CWDs	\$2,285.58	20	\$45,712	\$19,047	20	\$45,712
FSAs - Oncology	\$166.08	220	\$36,537.60	\$15,224	360	\$59,788.80
Follow Ups - Oncology	\$144.93	1760	\$255,076.80	\$106,282	2880	\$417,398.40
FSAs - Haematology	\$203.81	0	\$0.00	\$0	150	\$30,571.50
Follow Ups - Haematology	\$167.09	0	\$0.00	\$0	1200	\$200,508.00
Less Health Professional Costs included above				\$0		
Radiologist			-\$26,000.00	-\$10,833		-\$52,000.00
Oncsoft database			\$10,000.00	\$4,167		\$10,000.00
Total			\$321,326	\$133,886	4617.9	\$711,978
	Pro-rata from Feb 08				Phase Two	
Revenue - Additional Only						08/09 Price
Oncology Inpatient CWDs	\$3,740.38	20	\$74,808	\$31,170	20	\$79,706
FSAs - Oncology	\$549	220	\$120,780	\$50,325	360	\$208,771
Follow Ups - Oncology	\$328.47	1760	\$578,107	\$240,878	2880	\$997,546
FSAs - Haematology	\$504.92	0	\$0	\$0	150	\$83,973
Follow Ups - Haematology	\$289.58	0	\$0	\$0	1200	\$349,368
Total Revenue			\$773,695	\$322,373		\$1,719,364
Profit/(Loss)			\$15,159	\$6,316		\$78,156
Overhead (18%)			\$136,536	\$56,890		\$246,181
Total including overhead			(\$121,378)	(\$50,574)		(\$168,025)
			-16%			-10%

Excludes medical staff costs
Excludes medical staff costs
Excludes medical staff costs
Excludes medical staff costs
Excludes medical staff costs
Included in the costs of the OP visit.
Lease of database, approximate only
08/09 Price
\$3,985.32
\$579.92
\$346.37
\$559.82
\$291.14

Implications for BOPDHB

- Reduction in waiting times for local patients waiting for FSA for medical oncology
- Local leadership in the development of cancer control strategies, including working with primary referrers and tertiary centres
- Reduction in the need for travel for most patients to Waikato. However until the second medical oncologist is in place there will still be travel to Waikato for a number of patients
- Opportunities to improve and develop medical oncology and haematology services at BOPDHB. This service will be part of the Midland Cancer Network
- BOP workforce development that integrates with other services.

Implications for Waikato DHB

- Works towards the recommended MRNSCT Plan specialist resource levels
- While limited in phase one, it is anticipated that the waiting times for medical oncology FSA will reduce. This will have impact on the overall regional waiting time to an acceptable level
- As services transition to BOP this will ease RCC medical oncologists to take up other regional workload to meet demand and work towards acceptable waiting times
- Waikato will review the needs of Midland region visiting clinics as per the MRNSCT Operations Network meeting last year to ensure delivery meets their needs.

Implications for MCN

- An integrated and patient focused medical oncology / haematology model of care
- Delivery at point of access
- Workforce development
- Demonstrates working towards meeting national and international best practice
- Achievement of MRNSCT Plan recommendations
- Opportunity to utilise learnings from this process for subsequent regional developments and possible application for other services other than cancer control
- Closer to implementation of the NZ CC Strategy Action Plan
- Demonstrates the MCN meeting service requirements as identified in the Ministry of Health Regional Cancer Networks Crown Funding Agreement.

Implementation Plan

This paper provides a framework for the development of a resident medical oncology / haematology service at Tauranga and visiting specialist service at Whakatane under the umbrella of a regional cancer control service. Each DHB has a mechanism and responsibility for addressing service development components for capital, budgeting and recruitment of resources and contracts.

Phase one has commenced with employment of a medical oncologist and ensuring supporting resources are in place. The following implementation plan supports ongoing collaboration and regional work required. The following timeframes have been allocated for each phase.

Phase one - 21 January 2008 – 30 June 2008

Phase two - March 2008 – 31 December 2008

Action Tasks	Milestones / Measures	Lead Persons
Advertise & recruit 2 nd medical oncologist / haematologist & phase 2 supporting resources once approved	Phase 2 recruitment completed by 31/12/08 Advertising for specialists commenced by March 2008	Peng Voon supported by Jeremy Long (MCN)
Implement an agreed regional chemotherapy prescribing software	Resident service implement OncSoft in by June 2008	Peng Voon / Neil McKelvie
Management of outpatient referrals	Operating plan agreed and implemented by 31/12/08	Peng Voon / Neil McKelvie
Multidisciplinary team meetings support resident service	MDT meetings established by 31/12/08	Peng Voon RCC MDT Coordinator
Clinical trials framework developed for resident oncology service	Operating framework for clinical trials established by 31/12/08	Peng Voon Medical Oncologist Jeremy Long (MCN)
Designated inpatient area supported, trained and obtain chemotherapy certification	Resident inpatient chemotherapy service implemented by 31/12/08	Peng Voon / Neil McKelvie
Compare and contrast the cost of haematology /oncology services and whether or not the ideal of resident service provision is only achieved by paying a premium above and beyond National Pricing	Oncology costs are understood and recommendations identified to address deficits	Mike Agnew / Neil McKelvie

Monitoring and reporting of the implementation plan will occur through the MCN NSCT work group.

Risk and Mitigations

The following key risks and mitigating strategies have been developed.

Risk	Mitigating Strategies
Retention of current BOP medical oncologist	Business plan developed and implemented Collegial support from BOP and Waikato RCC
Inability to recruit 2nd medical oncologist and haematologist	Commence advertising asap Address phase 1 and 2 implementation plan RCC recognised as a positive service at national and international level – continue to promote this
Waikato planning & funding reduce overall IDF that will have contractual and financial implications. Could impact on SMO moral if SMO job description and sizing needs changing	Early agreement of contract volumes with Waikato planning and funding as early as possible
Potential fragmentation of services	MCN continues to take overarching leadership for regional service development through MRNSCT Operations Network COO support Midland strategic forums support proposals

Conclusion

The establishment of a resident medical oncology and haematology service in Tauranga, BOP DHB as part of the Midland Regional Cancer Network is essential. The growing and ageing population, increasing incidence of cancer and Midland Cancer Network needs leadership at local level. The requirements laid out in the proposal of change represent a minimum for a sustainable service.

BOPDHB has endorsed the business case for a resident haematology / oncology service based at Tauranga with strong collegial links to Waikato DHB. An application was made to the funding and management committee of BOPDHB in March 2008 for funding in support of the business case. The committee approved the application.

Waikato planning and funding portfolio manager has been advised by BOPDHB planning and funding portfolio manager of contract volume changes. Waikato planning and funding portfolio manager has discussed and worked through this with the Waikato provider arm.

The Midland Cancer Network Management Group is available to support and facilitate all aspects of implementing the proposal once it has been agreed to by the Midland CEO group and the BOP DHB Board.

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Appendix One – Midland Non-Surgical Cancer Treatment Role Delineation Model

Role delineation is a process that determines the complexity of the clinical activity undertaken by services, a staff profile, equipment, facilities and other support services required to ensure the services are provided safely and are appropriately supported. A role delineation model is used to describe service profile and roles of hospitals in the Midland region. It is also used for guiding the planning and development of new services at the level necessary to ensure sustainability, high quality, safe and effective care.

Development of the role delineation model was a significant achievement for the Midland cancer Network, and it is the understanding of members that the Midland region is the first to develop such a role delineation model in New Zealand. There was no national or international role delineation model that was applicable to the Midland region setting.

A stocktake of non-surgical cancer treatment services and supporting services was completed for each hospital throughout the participatory Midland DHBs. Using the New South Wales role delineation model as a guideline, a Midland Region non-surgical cancer treatment role delineation model was developed. The model is used to describe service profiles, role level for each of the hospital's providing non-surgical cancer treatment services in the Midland region. This provides a benchmark of the current level of services for each DHB hospital and provides a guideline for DHBs planning future service development.

The main determinants of the role delineation model is the availability of:

- Different types of services (chemotherapy administration, clinics provided on-site, radiation therapy)
- Diagnostic equipment (CT scan, MRI, ultrasound and nuclear medicine)
- Professional staff (specialised skills and competencies and leadership)
- Facilities (for chemotherapy administration, day procedures and consulting space).

In overseas model's cancer surgery and population base also feature as determinants of service complexity. Incorporating cancer surgery determinants could be factored in the future. Population base has not been included as a determinant of service complexity. However, reference to population size and predicted number of cancer cases was included to ensure consistency across the region in terms of service levels and that the level is adequate to meet the needs of the catchment population.

A six-level model has been developed. Services are stratified into one of six categories. Table 1 below demonstrates the complexity of non-surgical cancer treatment services provided at the hospitals in the Midland Region based on the role delineation model.

Table 1: Role Delineation Model Summary of Non-Surgical Cancer Treatment Services provided at Hospitals in the Midland Region

Service Level	Complexity of non-surgical cancer treatment services provided	Bay of Plenty DHB	Lakes DHB	Waikato DHB
Level one	Management of acute conditions and complications			Tokoroa Hospital Te Kuiti Hospital Taumarunui Hospital
Level two	As for level one plus: Chemotherapy administration		Taupo Hospital	
Level three	As for level two plus: Clinics Multidisciplinary management	Tauranga Hospital Whakatane Hospital	Rotorua Hospital	
Level four	As for level two plus: Medical oncology & haematology services Radiation oncology clinics Oncology pharmacy service Multidisciplinary management Supervision of lower-level services within DHB			
Level five	As for level two plus: Medical oncology & haematology services Radiation oncology clinics Oncology pharmacy service Multidisciplinary management Training Clinical trials			Regional Cancer Centre (Waikato Hospital)
Level six	As for level five plus: Paediatric cancer services Specialist Surgical Services Complex haematological support (including sophisticated diagnostic facilities)	Accessed through Auckland DHB	Accessed through Auckland DHB	Accessed through Auckland DHB

There is currently no hospital in the Midland region providing a level four service. However, this paper proposes that a phased approach is taken to develop satellite oncology services at Tauranga Hospital to move from level three to level four over the next five years. For Bay of Plenty DHB this would mean having medical oncologists and haematologists on-site with a supporting infrastructure. With some less acute and less complex cases being treated at Tauranga Hospital the implications for the Regional Cancer Centre also need to be considered. The Midland DHBs access level six services via Auckland DHB; allogenic transplant patients, paediatric oncology, some gynaecology² and other rare cancer cases. The Regional Cancer Centre is not expected to evolve to a level 6 service within the next five years.

Chemotherapy

The model has tightened requirements related to administration of chemotherapy. For hospitals where chemotherapy is administered there must be at least two experienced chemotherapy nurses present when administering chemotherapy for verification purposes. Each hospital should have an additional experienced chemotherapy nurse (3rd nurse) to provide cover for leave and minimise risk should a nurse resign.

Support for chemotherapy nurses must be provided on-site from a designated medical officer with adequate knowledge in cytotoxic medical treatment. The additional expectations that would be placed on medical officers are considered to be within their scope of practice. The medical officers would be supported by protocols, agreed pathways of care and consultant support from the Regional Cancer Centre.

The Multidisciplinary Team

The model demonstrates a multidisciplinary approach to the management of care. As a consequence multidisciplinary management of non-surgical cancer patients is expected to be provided in relation to level three services and above. This means level three plus hospitals must provide multidisciplinary team approach to patients' diagnosis and treatment. For clinicians from outreach centres it will mean participation in multi-specialist meetings. It will also require cross-communications across the region, which could be facilitated through telephone conferences.

Where a hospital acts as a host for a visiting specialist (medical oncologist, radiation oncologist or haematologist) it is expected that there will be appropriately skilled medical officers resident in the area to support the visiting specialists. The resident medical officer should have dedicated time for dealing with cancer patients and be available as required to spend time with the visiting specialist when they are on-site. The resident medical officer must be willing to care and support patients once the visiting specialist leaves town.

² Note: The Midland Cancer Network Plan includes the objective to develop a Midland Gynae-Oncology Model of Care and associated plan 2007-2008.

Appendix Two – Extractions from AMWAC Report 1998.7

Medical Oncology (Tables B78 and B79)

An acceptable specialist medical oncology service is able to diagnose and manage patients with various malignancies, a high level chemotherapy service, undertake all modalities required for palliation, practice a high level of communication skills, and be part of a multi-disciplinary team.

Resident rural medical oncology service

Surgery/office facilities

These are likely to be based at the hospital and include an office with full communication facilities.

Hospital facilities and equipment

Hospital infrastructure requirements are the same for both urban and rural practice and include:

- office facilities
- day procedure and chemotherapy suite
- dedicated inpatient beds (including emergency availability)
- medical imaging (minimum - CAT scanner, nuclear medicine and ultrasound)
- interventional medical imaging expertise
- pathology including cytology, histology and review
- blood bank including blood, platelets etc.

Skilled nursing/allied health and ancillary services

- chemotherapy nurses and palliative care nurses
- social work services and dietitian services
- data manager

Other services required in close proximity

- active surgical program - especially general, breast and gastrointestinal
- access to consults with radiation oncologists and palliative care physician
- ideally there should be two or more specialists resident in any one location to allow adequate professional stimulation, time for recreation, study, conferences etc.

The above level of service provision is consistent with a Level 5 and above medical oncology service as defined by the NSW (1992) Guide to Role Delineation which is expected to provide multi-disciplinary management of oncology patients, including case conferences with radiotherapists (Table C19). It may provide pain management clinics and has links with palliative care services and health promotion services. Support services required include Level 4 anaesthetic, CCU and operating suite services, and access to Level 5 pathology, pharmacy, xray, nuclear medicine and ICU services (Tables C21 through C28).

Regular outreach medical oncology service (Table B79)

The RACP (Medical Oncology) noted that in general a medical oncology outreach service needs to be regular, that a follow-up program needs to be defined with other resident specialists and that the medical oncologist needs to be available for telephone consultations between visits. The infrastructure required for a regular visiting medical oncology service includes an office with proper communication facilities, consulting

space, a day treatment facility, medical imaging and pathology services and a clinical nurse consultant or chemotherapy nurse/s (Table B75).

This level of service provision is associated with a Level 4 medical oncology service (as defined by the NSW Guide) in which services are predominantly provided by general physicians supported by clinics conducted by visiting medical oncologists (Table C19). This level of service requires established links with radiotherapy, palliative care, psychiatric and social work services.

In addition, it requires access to a Level 3 nuclear medicine service, Level 4 pathology and x-ray services and on-site Level 3 operating suite services, Level 4 anaesthetics, ICU and CCU services, and access to a Level 5 pharmacy service (Tables C21 through C28).

MEDICAL ONCOLOGY

Table B76: Definition of an acceptable specialist service in Medical Oncology

- to diagnose and manage patients with various malignancies and to provide a high level chemotherapy service
- to undertake all modalities required for palliation
- to practice a high level of communication skills and to be able to be part of a multi-disciplinary team

Table B77: Population catchment required for a viable specialist service in Medical Oncology

Resident service

- urban practice: 150,000-300,000
- rural practice close to an urban centre: 100,000
- major rural centre remote from urban centre: 100,000

Regular outreach service

- close to an urban centre: 75,000
- remote from an urban centre: 50,000

Factors increasing population requirements

- population profile (youth)
- presence of other service providers

Factors decreasing population requirements

- population profile (elderly)
- follow-up devolved from surgeons
- new effective treatment for common diseases (eg., adjuvant therapy for bowel cancers)
- involvement in palliative care, specialty area (eg., genetic counselling), clinical trials

Table B78: Infrastructure requirements for a sustainable resident specialist service in Medical Oncology

Hospital facilities and equipment required for an urban and rural service

- office with full communication facilities
- day procedure and chemotherapy suite
- dedicated inpatient beds (including emergency availability)
- medical imaging (minimum requirements - CAT scanner, nuclear medicine, ultrasound)
- interventional medical imaging expertise
- pathology including cytology, histology, review
- blood bank including blood, platelets etc.
- active surgical program - especially general, breast, gastro-intestinal
- access to consults with radiation oncologists
- access to consults with palliative care physician

MEDICAL ONCOLOGY continued

Table B78: continued

Skilled nursing/allied health and ancillary staff required for an urban and rural service

- oncology nurse consultant; palliative care nurse
- social worker; counsellors
- dietitian
- data managers

Other services required in close proximity

- as outlined above
- ideally should be two or more persons in oncology practice to have adequate professional stimulation, time for recreation, study, conferences etc.

Surgery/office facilities and equipment

- office with full communication facilities

Table B79: Infrastructure requirements for a sustainable outreach service in Medical Oncology

In general the visits need to be regular, a follow-up program needs to be defined with other specialists and the medical oncologists needs to be available for telephone consults between visits.

Hospital facilities and equipment

- office with proper communication facilities
- consulting space
- medical imaging
- pathology service
- day treatment facility

Skilled nursing/allied health and ancillary staff requirements

- clinical nurse consultants or chemotherapy nurse/s

Surgery/office facilities and equipment

- as outlined above for resident practice

Table C19: Role delineation requirements for a Medical Oncology service by level of clinical complexity (NSW Health Department, 1992)

Level 0-3:	- as for general medicine
Level 4:	<ul style="list-style-type: none"> - as for general medicine Level 4 plus service provided by general physician with interest in medical oncology - may have visiting medical oncologist clinics - established liaison and consultation from radiotherapy, palliative care, psychiatric and social work services - Level 3 nuclear medicine and operating suite services - Level 4 pathology, x-ray, anaesthetics, ICU and CCU - Level 5 pharmacy
Level 5:	<ul style="list-style-type: none"> - as Level 4 plus medical registrar on call 24 hours - appointed medical oncology specialist - access to clinical nurse consultant is desirable - may have teaching and research role - multidisciplinary management of oncology patients, including case conferences with radiotherapists - may have pain clinics - links with palliative care service and participates in health promotion - Level 4 anaesthetics, CCU and operating suite services - Level 5 pathology, pharmacy, x-ray, nuclear medicine and ICU
Level 6:	<ul style="list-style-type: none"> - as Level 5 plus medical registrar on site 24 hours - has oncology department, oncology specialist(s) and oncology registrar - has teaching and research role - Level 4 CCU - Level 5 x-ray and anaesthetics - Level 6 pathology, pharmacy, nuclear medicine, ICU and operating suite services

Source: NSW Health Department (1992) Guide to the Role Delineation of Health Services

Table C20: Role delineation requirements for a Radiation Oncology service by level of clinical complexity (NSW Health Department, 1992)

Level 4:	<ul style="list-style-type: none"> - visiting radiotherapist, working in conjunction with a comprehensive cancer care service - no treatment facilities - QA activities - interpreters as per circular 87/163 - Level 1 pathology, pharmacy, x-ray, anaesthetics and CCU - Level 2 ICU
Level 5:	<ul style="list-style-type: none"> - basic modern radiation oncology department; comprising a minimum of superficial and deep x-ray therapy and megavoltage machine(s) - has intracavity irradiation equipment - may have mould room - access to simulator and some form of computerised planning - has data program for annual recording and monitoring of work undertaken - has radiation oncologists, physicists and therapeutic radiographers

- works in conjunction with, or as part of, a comprehensive cancer service
- access to palliative care Level 5
- formal QA program
- Level 4 anaesthetics, CCU and operating suite services
- Level 5 pathology, pharmacy, x-ray, nuclear medicine and ICU
- Level 6:
 - as Level 5 plus radiation oncology registrar(s)
 - multiple linear accelerators with at least one linear accelerator of 10 to 25 MEV potential with photon and electron capabilities
 - a fully integrated, computer assisted, planning and treatment system with system(s) for verifying precision, planning and treatment modalities
 - remote control intracavity equipment with after loading techniques
 - mechanical workshop and biomedical support facilities
 - may provide training in biomedical engineering, mould room techniques and medical physics
 - has research role
 - located in a principal referral hospital with ready access to subspecialties
 - Level 4 CCU
 - Level 5 anaesthetics
 - Level 6 pathology, pharmacy, x-ray, nuclear medicine, ICU and operating suite services

Table C1: Role delineation requirements for a General Medicine service by level of clinical complexity (NSW Health Department, 1992)

- Level 1:
 - management and appropriate referral by medical practitioner
 - registered nurse in charge on each shift
 - QA activities
 - interpreters as per circular 87/163
 - Level 1 pathology, pharmacy, x-ray, anaesthetics, CCU
 - Level 2 ICU
- Level 2:
 - as for Level 1 plus access to general physician consultation
 - continuing education programs for nurses available specific to the needs of the service
 - access to allied health professionals
 - Level 1 pathology, anaesthetics and CCU
 - Level 2 pharmacy, x-ray and ICU
- Level 3:
 - as for Level 2 plus referral and management primarily by accredited medical practitioners or general physicians
 - 24 hour access to medical officer on site or available within 10 minutes
 - consultations available from other specialists
 - nursing unit manager for general ward
 - some registered nurses having completed or undertaking relevant post-basic studies
 - formal QA program
 - access to health promotion services
 - access to liaison psychiatry
 - Level 2 anaesthetics and operating suite services
 - Level 3 pathology, pharmacy, x-ray, ICU and CCU

- Level 4:
- as for Level 3 plus services provided by general physicians rostered on-call 24 hours
 - may have subspecialty interest/skills
 - medical officers on-site 24 hours
 - has medical registrar
 - has nursing unit manager and experienced registered nurses
 - allied health professionals on-site
 - formal link with Level 4 rehabilitation service
 - Level 2 operating suite service
 - Level 4 pathology, pharmacy, x-ray, anaesthetics, ICU and CCU
- Level 5: - as for Level 4 plus department of medicine
- subspecialists available for consultation
 - has medical registrar on call 24 hours
 - access to clinical nurse consultant for relevant subspecialties is desirable
 - may have subspecialties on site
 - may have teaching and research role
 - has link with Level 5 rehabilitation service including conjoint appointments
 - Level 2 operating suite services
 - Level 4 nuclear medicine, anaesthetics, ICU and CCU
 - Level 5 pathology, pharmacy and x-ray
- Level 6:
- as for Level 5 plus division of medicine with subspecialty departments
 - has medical registrar on site 24 hours
 - has teaching and research role
 - may have statewide role
 - support services as appropriate for subspecialty

Table C2: Role delineation requirements for General Surgery (NSW Health Department, 1992)

- Level 1:
- minor procedures under local anaesthetic in procedures room
 - appropriate referral by medical practitioner
 - registered nurse in charge on each shift
 - QA activities
 - interpreters as stipulated
 - Level 1 pathology, pharmacy, x-ray, anaesthetics and CCU
- Level 2:
- minor diagnostic and therapeutic surgical procedures on good risk patients performed by accredited medical practitioner (ie., a GP appointed to the hospital and to whom specific clinical privileges have been granted) with postgraduate training in surgery
 - anaesthesia given by accredited practitioner in anaesthetics
 - general surgeon available for consultation
 - continuing nursing education programs available specific to the needs of the service
 - may have access to allied health professionals
 - Level 1 pathology and CCU
 - Level 2 pharmacy, x-ray, anaesthetics, ICU and operating suite services
- Level 3:
- as for level 2 plus intermediate surgical procedures on good or moderate risk patients performed regularly by specialist surgeon or by accredited medical practitioner with postgraduate training in surgery

- accredited medical practitioner (in anaesthetics) may provide anaesthetic for good risk patients, specialist anaesthetists providing anaesthesia for moderate risk patients
 - has 24 hour access to medical officer/s on site or available within 10 minutes
 - consultation available from other specialties
 - has nursing unit manager for general ward
 - some registered nurses having completed or undertaking relevant post-basic studies
 - access to allied health professionals
 - formal QA program
 - Level 2 pharmacy
 - Level 3 pathology, x-ray, anaesthetics, ICU CCU and operating suite services
- Level 4:
- as for level 3 plus selected major surgical procedures on good or moderate risk patients performed regularly by specialist surgeons and specialist anaesthetists
 - specialists on-call 24 hours
 - has designated medical officers
 - some surgical subspecialties available
 - has nursing unit manager and experienced registered nurses
 - links with oncology, radiotherapy and palliative care services
 - allied health professionals and liaison psychiatry available
 - Level 3 nuclear medicine and CCU
 - Level 4 pathology, pharmacy, x-ray, anaesthetics, ICU and operating suite services
- Level 5:
- as for level 4 plus full range of major diagnostic and treatment procedures on good, moderate and bad risk patients performed regularly by specialist surgeons and specialist anaesthetists
 - has general surgical registrar on call 24 hours
 - access to subspecialties
 - access to clinical nurse consultant is desirable
 - may provide Area service
 - may have teaching and research role
 - usually a major referral hospital with department of surgery
 - Level 3 CCU
 - Level 4 pathology, pharmacy and nuclear medicine
 - Level 5 x-ray, anaesthetics and ICU
 - Level 6 operating suite services
- Level 6:
- as for level 5 plus ability to deal with complex major diagnostic and treatment procedures in association with other specialties
 - has division of surgery
 - has registrars in surgical subspecialties
 - experienced registered nurses on most shifts
 - may have State role in a specific field
 - has teaching and research role
 - usually a principal referral hospital with division of surgery
 - Level 4 CCU
 - Level 5 pathology, pharmacy and anaesthetics
 - Level 6 x-ray, nuclear medicine, ICU and operating suite services

Table C22: Role delineation requirements for a Pharmacy service by level of clinical complexity (NSW Health Department, 1992)

Level 1:	<ul style="list-style-type: none"> - drugs supplied on individual prescription from retail pharmacy, or drugs from a networked Regional or Area public hospital - no pharmacist employed but regular visits from pharmacists associated with provision of the service - visiting pharmacist may participate in Drug and Therapeutics Committee or equivalent - QA activities
Level 2:	<ul style="list-style-type: none"> - as Level 1 plus pharmacist employed on part-time or sessional basis - coordination of drug distribution from community pharmacy or Area source - limited clinical service - may provide patient and staff education - may participate in ward meetings or rounds - has an established and regularly updated pharmacopoeia
Level 3:	<ul style="list-style-type: none"> - as Level 2 with at least one pharmacist employed full time - may also have support staff - pharmacy-controlled drug distribution to in-patients - clinical service includes drug information, drug monitoring, utilisation review, adverse drug reaction reporting - has limited participation in ward meetings and rounds and provides patient and staff education programs - may have limited manufacturing services - formal QA program - may be involved in domiciliary/community care - may provide outpatient service
Level 4:	<ul style="list-style-type: none"> - as Level 3 plus more than one permanent full time pharmacist plus support staff - pharmacist on-call for emergency advice - director of pharmacy involved in Drug (or Pharmacy and Therapeutics) Committee - non-sterile manufacturing service with facilities provided to Standards Association of Australia (SAA) requirements (<i>probably can remove for satellite at BOP DHB</i>) - may have sterile manufacture which follows Good Manufacturing Practice (GMP) standards - may provide pre-registration training
Level 5:	<ul style="list-style-type: none"> - as Level 4 plus provides regular drug information service and bulletins - participation in ward rounds or meetings - must have outpatient service - has staff development and training program for pharmacy staff - sterile manufacturing and IV admixture service including cytotoxic drugs if clinical unit present in hospital - facilities to standards of SAA - code of GMP standards followed - may supply to other Area hospitals - clinical trial support for research activities in hospital
Level 6:	<ul style="list-style-type: none"> - as Level 5 plus extensive involvement in research, clinical trials, clinical review

- provides pre- and post-graduate pharmacy training
- has pharmacist on call 24 hours

Table C25: Role delineation requirements for a Pathology service by level of clinical complexity (NSW Health Department, 1992)

Level 1:	<ul style="list-style-type: none"> - no on site pathology service - blood and specimen collecting service, 24 hours per day, seven days per week - collection of specimens controlled by, and responsibility of, a NATA accredited laboratory - QA activities
Level 2:	<ul style="list-style-type: none"> - as Level 1 plus crossed matched blood available within one hour and blood storage facilities on site
Level 3:	<ul style="list-style-type: none"> - as Level 2. - a range of urgent test readily available, including haemoglobin, blood gas analysis, Na, K - formalised quality assurance program in accordance with NATA and RCPA requirements - keeps infection control records and monitors them
Level 4:	<ul style="list-style-type: none"> - as Level 3 plus basic pathology service on site - has formalised department of pathology with medical director - performs range of service as in 3 plus defined range of routine tests for a single hospital or group of hospitals - has blood bank with on-site cross matching - cytology and frozen sections are available on campus - locally managed, but with formal link to large laboratory - 24 hour on-call service
Level 5:	<ul style="list-style-type: none"> - as Level 4 plus large pathology department providing 24 hour on site service - has full-time medical director and more than one pathologist - may provide services for other hospitals (Group Laboratory) - divided into common subsections, e.g. biochemistry, haematology etc.; each subsection has trained technicians in charge - may have pathology registrar - may have teaching and research role - full involvement in infection control
Level 6:	<ul style="list-style-type: none"> - as Level 5 - all or most pathology subsections represented, each with medical director in charge - may provide State referral service - has teaching and research role - has pathology registrar - immunology and virology may be available on campus

Appendix Three – SWOT Analysis

Strengths

The strengths of establishing this satellite service are:

1. Elevation of Tauranga Hospital to a role delineation status of 4.
2. Better access of patients to medical oncology and haematology care through
 - i. First specialist assessment at Tauranga or Whakatane Hospital
 - ii. Dedicated staff onsite
 - iii. Inpatient facilities with appropriately skilled staff
 - iv. Increase multi-disciplinary team activities and access for patients to the multi-disciplinary processes
3. Increase profile of Tauranga Hospital with better chance for reaching the goals of: establishing a Clinical School, registrar teaching and training and attraction of staff to the region
4. Increase onsite support to the oncology nurses as well primary providers
5. Stepping stone for attracting other specialist staff and to the establishment of a satellite radiation facility.
6. Implement government and local priorities for cancer control including prevention, diagnosis, treatment and palliation

Weaknesses

1. The cost of elevating Tauranga Hospital to the required level 4 status will have a financial impact. However most of these costs are only one-off
2. The attraction of staff so that the satellite unit can grow
3. Possible isolation from the tertiary centre, although this is only a theoretical geographical issue

Opportunities

1. Improved chances of achieving a clinical school at Tauranga Hospital with greater access to clinician teachers
2. A broader scope of training for registrars
3. An increased profile in research
4. Improved patient care through the multi-disciplinary process and
5. Regular peer review and audit activity.
6. Reduced chemotherapy wastage because of more frequent ability to assess patients onsite.
7. The possibility of including Tairāwhiti in the Midland cancer delivery services as the number and expertise of cancer specialists in the region expand
8. Strong links to the Regional Cancer Centre
9. Implement cancer control strategies
10. Lead primary care providers and patients in treatment options
11. Reduce duplication – patients and GPs have one-stop shop for advice and care

Threats

1. Losing staff if support services are not well established prior to getting a medical oncologist onsite.

2. The onerous responsibilities on the single practitioner including providing day to day responsibilities may appear onerous to any potential applicants
3. Feelings of 'isolation' from the main cancer centres. However with strong support from Waikato Cancer Centre, this would not be an issue
4. The possible threat of a "big-brother" approach. The current Midland network has been set up to reduce these barriers. Therefore this should not be an issue