

It Takes a Team...

Report to the Ministry of Health on a proposed national service improvement plan for gynaecological cancer services

July 2011

Martin Hefford, Nieves Ehrenberg

About Sapere Research Group Limited

Sapere Research Group is one of the largest expert consulting firms in Australasia and a leader in provision of independent economic, forensic accounting and public policy services. Sapere provides independent expert testimony, strategic advisory services, data analytics and other advice to Australasia's private sector corporate clients, major law firms, government agencies, and regulatory bodies.

Wellington Level 9, 1 Willeston St PO Box 587 Wellington 6140 Ph: +64 4 915 7590 Fax: +64 4 915 7596	Auckland Level 17, 3-5 Albert St PO Box 2475 Auckland 1140 Ph: +64 9 913 6240 Fax: +64 9 913 6241	Sydney Level 14, 68 Pitt St GPO Box 220 NSW 2001 Ph: + 61 2 9234 0200 Fax : + 61 2 9234 0201
---	--	---

Canberra Level 6, 39 London Circuit PO Box 266 Canberra City, ACT 2601 Ph: +61 2 6263 5941 Fax: +61 2 6230 5269	Melbourne Level 2, 65 Southbank Boulevard GPO Box 3179 Melbourne, VIC 3001 Ph: + 61 3 9626 4333 Fax: + 61 3 9626 4231
--	--

For information on this report please contact:

Name: Martin Hefford
Telephone: +64 4 915 7593
Mobile: +64 272949132
Email: MHefford@srghealth.com

It takes a team...

This plan is about giving women with gynecological cancers equitable access to the best available assessment and treatment services. We heard again and again in the course of developing the plan that it takes a multidisciplinary team to deliver optimal care that makes a difference; hence the short title: *It takes a team.*

Acknowledgements

We wish to thank the individuals and organisations that voluntarily contributed their time, information and ideas to assist with the development of this plan. In particular we acknowledge the vital contribution made by: the New Zealand Gynaecological Cancer Working group, RANZCOG, the NZ Gynaecological Cancer Foundation, the women who shared their experience of gynaecological cancer with us, the regional cancer network managers and service improvement facilitators, the representatives nominated by the Māori and Pacific health liaison groups from Auckland DHB, and the Cancer Society.

Executive Summary

Purpose

The National Plan for Gynaecological Cancer Services (the Plan) is intended to provide guidance to health service providers, funders and policy makers on the most efficient and effective ways to deliver accessible and equitable high quality care for all of New Zealand women diagnosed with gynaecological cancer. The Ministry of Health commissioned Sapere Research Group to develop the Plan, in close collaboration with the sector and under guidance from a working group nominated by the New Zealand Gynaecological Cancer Group (NZGCG). The Plan:

- describes current demand and provision of gynae-oncology services;
- models future demand for gynae-oncology services;
- identifies methods and recommends options to improve equity, access, effectiveness and efficiency of gynae-oncology service delivery;
- describes the preferred model of care and associated clinically and financially sustainable service delivery configuration; and
- establishes high level goals, activities and targets/measures to reach the preferred model of care.

Burden

Gynaecological cancers make up approximately 10% of all cancer cases and 10% of all cancer deaths in New Zealand¹. In 2008 there were 987 gynaecological cancers registered. Endometrial cancer is the most common gynaecological cancer in the country, followed by ovarian and cervical cancers. In 2007 there were 402 deaths due to gynaecological cancers. The table below illustrates the increase in cancer registrations in 2008, after several years of fairly flat growth, and

projected registrations in 2021 based on demographic factors (population increase, ageing and ethnicity), but excluding the impact of obesity and the effect of cervical screening and immunisations.

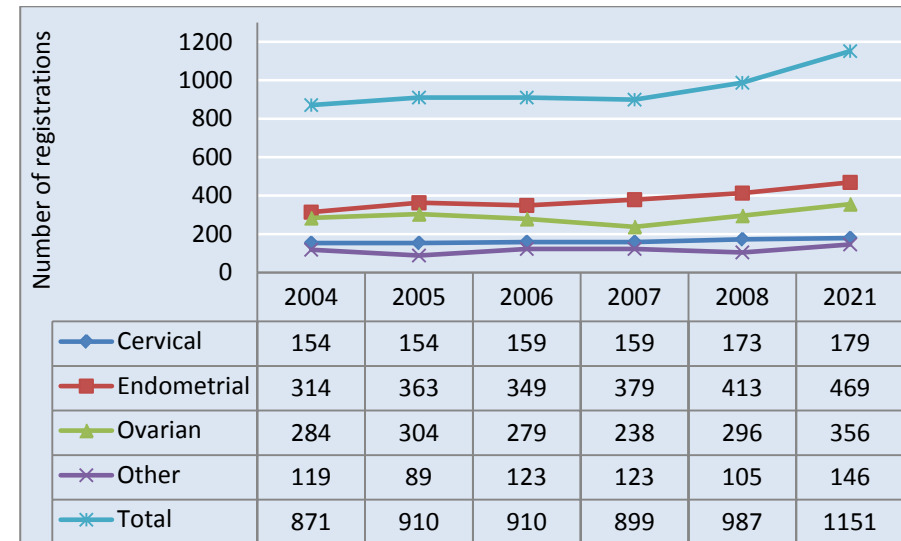


Figure 1 Gynaecological cancer new registrations by type and by year, 2004 – 2021

The average cost of DHB provided services for woman with gynaecological cancer for the 2004-2008 cohort over a 7 year period was \$33,828.

Optimal treatment

There is strong evidence that the surgical care of women with ovarian cancer is best directed by a gynaecological oncologist^{2,3}. We also found increasing evidence that the same may be true for endometrial and cervical cancer patients, particularly those with advanced stages of disease. A recent comprehensive review found on average women

with ovarian cancer treated by a gynae-oncologist as part of a multidisciplinary team live an additional 11 months.

Issues and challenges

We found that access to evidence-based multidisciplinary care is patchy, with workforce shortages and lack of formal referral protocols resulting in many women receiving surgical treatment from local gynecologists rather than through a specialist centre.

We identified the following challenges with current service provision

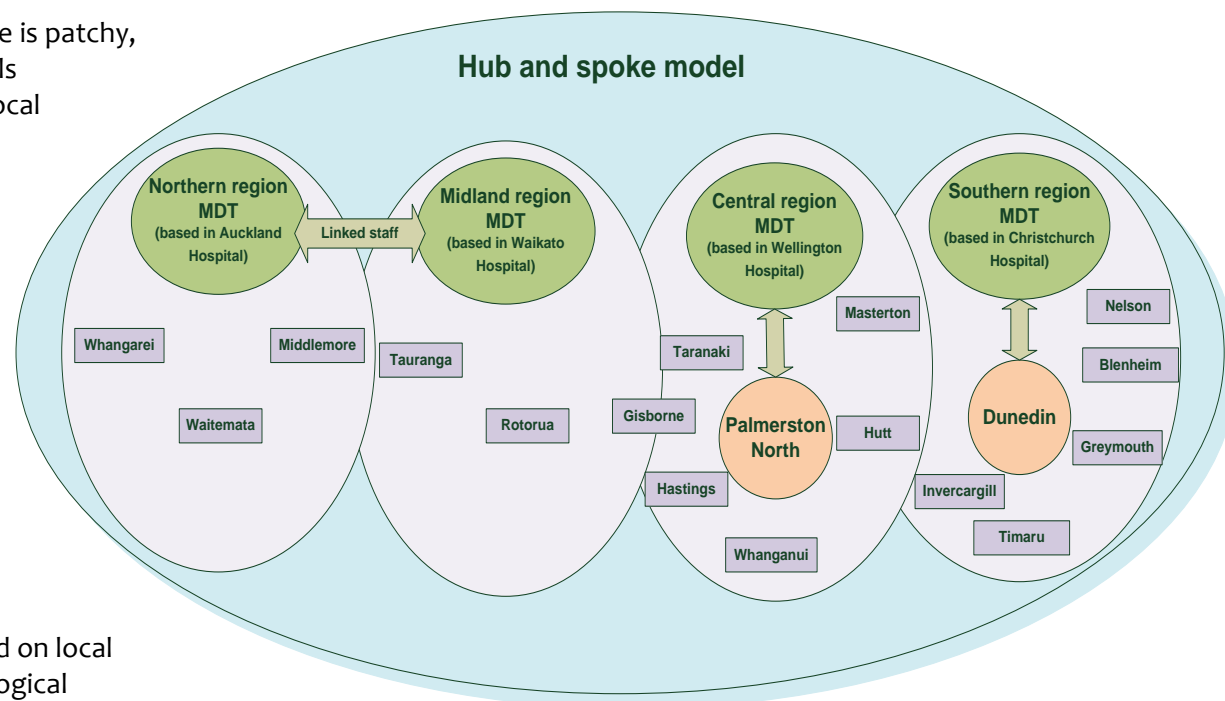
- Building a sustainable workforce
- Achieving equitable access to evidence based services
- Developing a supportive infrastructure
- Aligning the funding and purchasing framework with optimal provision
- Collecting data on quality and outcomes

Future model

In future we propose a national gynae-oncology service based on local centres, regional hubs, and an overarching national gynaecological cancer steering group. Regional Multidisciplinary Teams (MDTs) provide comprehensive gynae oncology care and link in a hub and spoke model to local units. There is strong cooperation between hubs and spokes to ensure all women have equal access to comprehensive care for gynae cancer in their locality where possible. Lead gynaecologists in local units act as link to regional centres and to Multidisciplinary Meeting (MDM) planning.

The diagram below illustrates the preferred four centre hub and spoke model. However, as related in section 5.7, we envisage the Midland and Northern MDTs sharing some medical staff roles to overcome the

Midland diseconomies of scale and critical mass issues – given current cancer region catchment population flows, the Midland region would only just have sufficient new cases to justify a regional hub.¹



Sector views

Responses to a survey of those involved in provision of gynecological cancer services indicated strong support among both medical and non-medical staff for the key elements of the proposed plan for gynae-oncology services.

¹ Note that Tairāwhiti DHB is currently reviewing its tertiary cancer services pathway and a decision on a possible change will be made in 2011. This may have a small impact on the regions' volumes.

Implementation & recommendations

We propose that implementation be clinically led through a mandated gynecological cancer steering group². An indicative set of activities and timeframes is set out in section 6. The key recommendations are that:

the Ministry of Health / NHB

- a) endorse the hub and spoke service model approach to provision of gynecological cancer services in New Zealand;
- b) establish and fund a gynecological cancer steering group (GCSG) as a mandated advisory body for future cancer service development and to lead implementation of this plan;
- c) appoint current working group as the interim GCSG while Terms of Reference, membership and funding arrangements are finalised;
- d) Identify a host organisation (Cancer Network or DHB) for the GCSG;
- e) Over time incorporate evidence based standards of multidisciplinary gynaecological cancer care as part of the national service framework;
- f) Review the purchase framework for multidisciplinary team cancer services;
- g) Monitor DBH progress in implementing equitable access to evidence based services, and if progress is unsatisfactory, designate gynae-oncology as a national service and purchase it through a top sliced funding pool.

the Gynaecological Cancer Steering Group (once established)

- h) Brief key stakeholders on the Plan – including the Minister of Health, the Chairs of the national Chief Medical Officer and

Director of Nursing forums, DHB Chairs and Chief Executive Officers and the national Chief Operating Officer and Planning and Funding management groups;

- i) Establish a website for GCSG and establish links to the Royal Australian New Zealand College of Obstetricians and Gynaecologists' website and others;
- j) Work in a collaborative manner with DHBs, regional cancer networks and professional bodies to implement the plan;

District Health Boards

- k) Waikato DHB engage with the Bay of Plenty, Lakes, Tairāwhiti and Auckland DHB to develop a short and medium term plan and resourcing agreement that provides women in the Midland region access to an MDT hub that meets the standards set out in this plan;
- l) Note that because of critical mass issues the proposed Hamilton hub is likely to require some form of joint employment or other arrangement to share key medical staff between the Northern and Midland MDTs;

Cancer Networks

- m) Work together with the GCSG to implement the hub and spoke model regionally and to monitor outcomes;

the Medical Council of New Zealand

- n) Recognise gynae-oncology as a sub-specialty.

Health Workforce New Zealand

- o) Work with the GCSG and hub DHBs to address the workforce gaps identified in this plan, particularly shortages in gynae-oncologists and gynae oncology nurse specialists.

² We have used the term 'steering group' but note that the final governance arrangements and nomenclature are for the Cancer Programme to determine.

Table of Contents

1 Introduction	1	5.3 Overview of preferred model of care	30
1.1 Purpose	1	5.4 Developing a mandated national gynaecological cancer steering group	31
1.2 Strategic backdrop	1	5.5 Future role & capacity of regional gynaecological cancer centres	32
1.3 Outline of approach	2	5.6 Future role & capacity of local units	34
2 Gynaecological cancers	4	5.7 Options appraisal- how many regional centres?	34
2.1 The burden of gynaecological cancers	4	5.8 Addressing inequalities	37
2.2 The evidence on optimal service provision	12	5.9 Stakeholder views on the proposed model	38
3 Gynaecological cancer services in New Zealand today	16	5.10 Financial implications	40
3.1 Current service delivery configuration	16	5.11 Should this be a national service?	41
4 Issues and challenges	20	6 Implementation plan and change management approach	42
4.1 Building the workforce	20	6.1 Overall approach to implementation	42
4.2 Achieving equitable access to evidence-based services	25	6.2 Tracking progress	42
4.3 Developing a supportive infrastructure	25	6.1 Recommendations	44
4.4 Aligning the funding and purchasing framework with optimal provision	26	7 Appendices	45
4.5 Collecting data on quality and outcomes	26	7.1 Volumes per DHB, per 5 year cohort year, per type	45
5 Positioning services to meet current and future challenges	27	7.2 Literature review	45
5.1 Vision & outcomes	29	7.3 Survey	45
5.2 Integrated patient pathway	29	7.4 Population by region (census data)	46
		8 References	47

1 Introduction

1.1 Purpose

The purpose of the National Plan for Gynaecological Cancer Services (the Plan) is to provide guidance to health service providers, funders and policy makers on the most efficient and effective ways to deliver accessible and equitable high quality care for all of New Zealand women diagnosed with gynaecological cancer.

The Ministry of Health commissioned Sapere Research Group to develop the Plan, in close collaboration with the sector and under guidance from a working group nominated by the New Zealand Gynaecological Cancer Group (NZGCG). The Plan spans the continuum of gynaecological cancer care over a ten year horizon from 2011 to 2021, with a focus on secondary and tertiary services.

The Plan:

- describes current demand and provision of gynae-oncology services;
- models future demand for gynae-oncology services;
- identifies methods and recommends options to improve equity, access, effectiveness and efficiency of gynae-oncology service delivery;
- describes the preferred model of care and associated clinically and financially sustainable service delivery configuration; and
- establishes high level goals, activities and targets/measures to reach the preferred model of care.

1.1.1 Background

Gynaecological oncology is a subspecialty of obstetrics and gynaecology. Evidence shows that women generally have better outcomes if they are treated by a subspecialist trained gynae-oncologist and reviewed by a multidisciplinary team (see section 2.2).

Gynae-oncology services in New Zealand have been identified as a small, vulnerable but essential service for New Zealand women and their families.

Concerned with the evident disparities in access to care and shortfall in specialist skills in the country, the New Zealand Gynaecological Cancer Group (NZGCG) met with the Ministry to seek national engagement for a sustainable model for gynaecological cancer care. The NZGCG is a multidisciplinary group of health professionals committed to the improvement of care for all women with gynaecological cancer in New Zealand.

1.2 Strategic backdrop

- The development of a National Plan for Gynaecological Cancer Services is in line with the Cancer Control Strategy in that the Strategy purports a **move towards defining standards for diagnosis, treatment and care for those with cancer** (goal 3, objective 2) ⁴.
- One of the proposed actions in the Strategy is to **‘develop appropriate templates for the accreditation of cancer treatment services, including gynaecological’** ⁴.
- Another relevant action defined in the Strategy is that **‘initially multidisciplinary and, where necessary, inter-regional care, should be established for the management of... gynaecological cancers’** ⁴

- Better, Sooner, More Convenient proposes (amongst other things) to improve quality of services within existing resources⁵; the National Plan should **focus on how to best provide services within existing resources**.
- Strengthening and/ or **bolstering the workforce** is a common goal throughout the key strategic documents.
- **Reduction of inequalities** is also an important strategic goal. There are inequalities in terms of access to services and in terms of incidence, mortality and survival rates. These are apparent at a regional level and in regards to different ethnic groups. The New Zealand Cancer Registry shows Māori and Pacific women, for example, have a significantly higher incidence rate of endometrial and cervical cancers cancer than non-Māori and non-Pacific women. Māori also have poorer survival rates for cervical and endometrial cancers.
- The Central Region's Technical Advisory Group (TAS), in partnership with the Central Cancer Network, has completed a **Regional Gynae-oncology Report which maps current patient pathways and service delivery**⁶.
- Other Cancer Networks in the country are awaiting completion of the National Plan and CCNs Regional Gynaecology Report to ensure their initiatives and plans are aligned⁶.

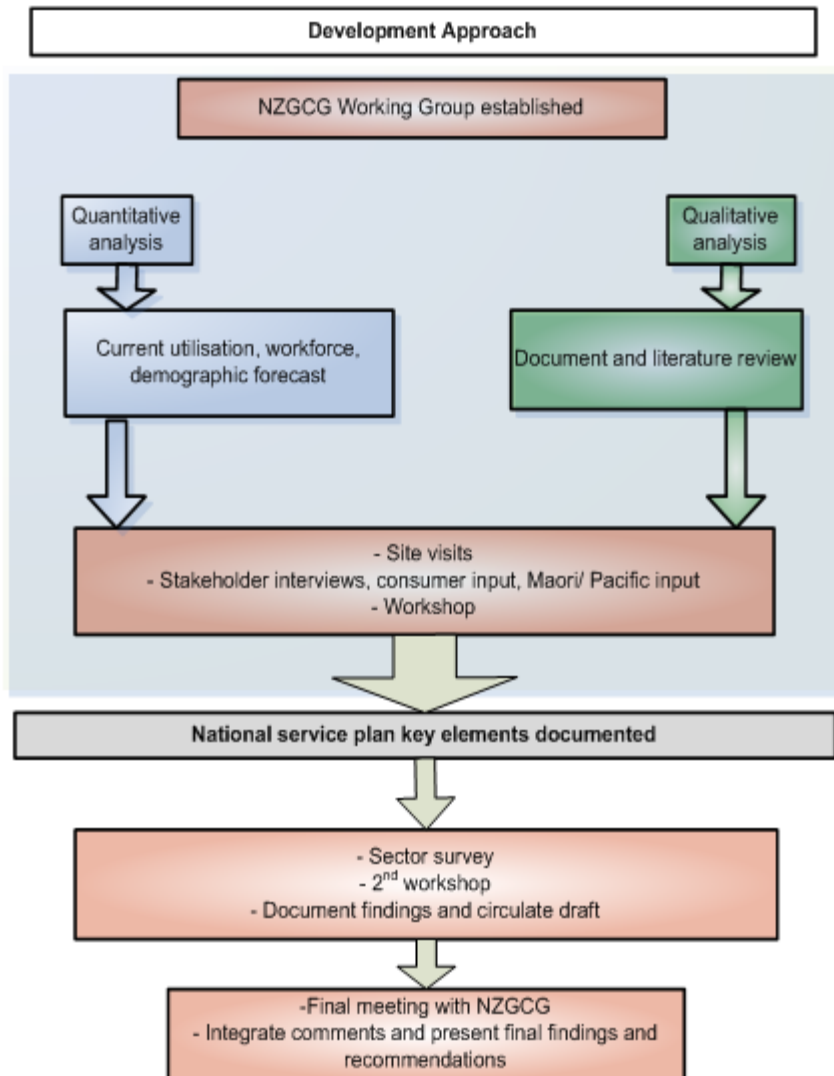
1.3 Outline of approach

Sapere Research Group worked in close collaboration with NZGCG and the sector in order to provide an impartial review of current services and identify the best way to deliver services into the future.

The process was a combination of empirical fact finding / analysis and a participative process, involving regular contact with the expert working group, key stakeholder workshops and an electronic survey to

elicit feedback from the wider sector. The analysis has both informed, and been informed by the NZGCG nominated working group in identifying the key principles for the Plan.

Below we provide a schematic representation illustrating the key work components.



1.3.1 Quantitative analysis

The Ministry of Health Data provided an encrypted but linked set of cohort data, including:

- an extract of all gynaecological cancers from the cancer register from January 2004 to December 2008
- an NMDS inpatient database extract for the same cohort of women (2004 – 2010)
- an extract from the NN PAC database from July 2006 – Dec 2010
- an extract from the death register covering the period 2004- 2008.

Sapere then worked the results into a database for analysis of healthcare activity for that cohort of cancer patients.

The national dataset extracts were augmented by collection of the multidisciplinary team meeting, information from MOH cancer publications, work by the Central region Cancer Network and workforce data from each cancer centre.

2 Gynaecological cancers

2.1 The burden of gynecological cancers

2.1.1 Incidence

In New Zealand, cancer was the leading cause of death for both males and females in 2007, accounting for 29.8% of all deaths¹.

Gynecological cancers are a relatively uncommon and diverse group of cancers. They refer to cancer anywhere in a woman’s reproductive system or genital area. These cancers include:

- Endometrial cancers;
- Ovarian cancers (including epithelial, germ cell and ganulosa cell tumours);
- Cervical/vaginal cancers (including melanomas);
- Vulvar cancers;
- Uterine sarcomas; and
- Gestational trophoblastic disease.

Gynaecological cancers make up approximately 10% of all cancer cases and 10% of all cancer deaths in the country¹. These cancers affect about 915 New Zealand women a year (987 women in 2008). Of these, endometrial (sometimes referred to as uterine cancer) is the most common gynaecological cancer in New Zealand, followed by ovarian and cervical cancers. In 2007 there were 402 deaths due to gynaecological cancers:

- 65 cervical
- 81 endometrial
- 199 ovarian
- 57 other

It takes a team...

In this report we have grouped gynaecological cancers into ‘endometrial’, ‘ovarian’, ‘cervical’ and ‘other’ categories. The graph below illustrates that cancer registrations increased markedly in 2008, after several years of fairly flat growth.

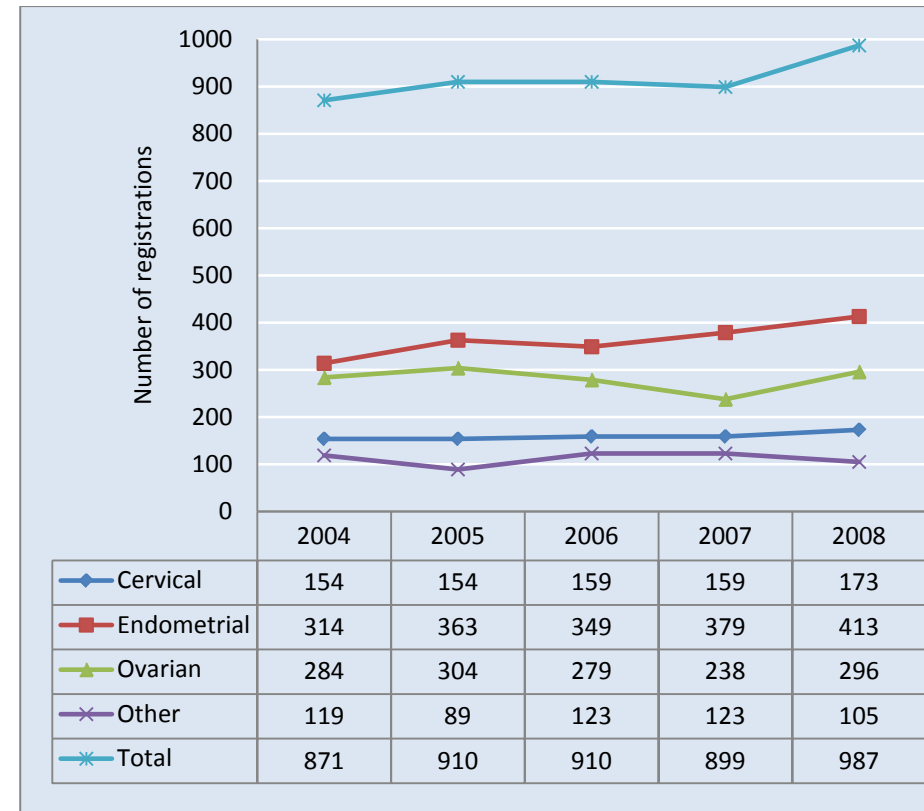


Figure 2 Gynaecological cancer new registrations by type and by year, 2004 - 2008

The gynaecological cancer patient’s journey is complex, often requiring multiple episodes of care over a number of years. As a result, the

annual workload for gynaecological cancer service providers is greater than the number of new registrations.

Incidence increases with age

Gynaecological cancer rates generally increase with age, but each has its own specific incidence curve, with cervical cancer being the flattest and endometrial cancer peaking in the 50 – 80 age range (figures 3 and 4).

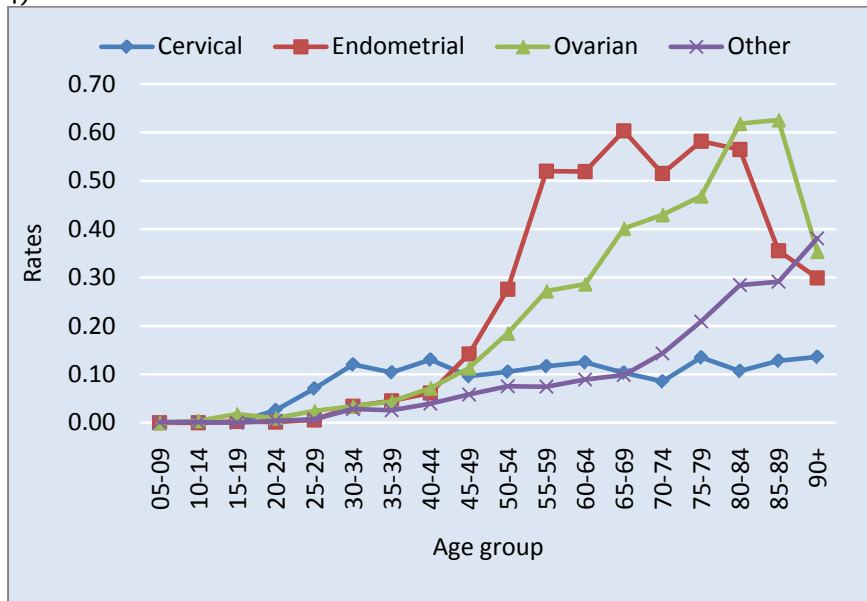


Figure 3 Gynaecological cancer rates per 1000 by age group and type of cancer 2004 – 2008 cohort

With the NZ population ageing rapidly, the positive correlation between incidence and age will drive future increases in presentations of cancers and in recurrences.

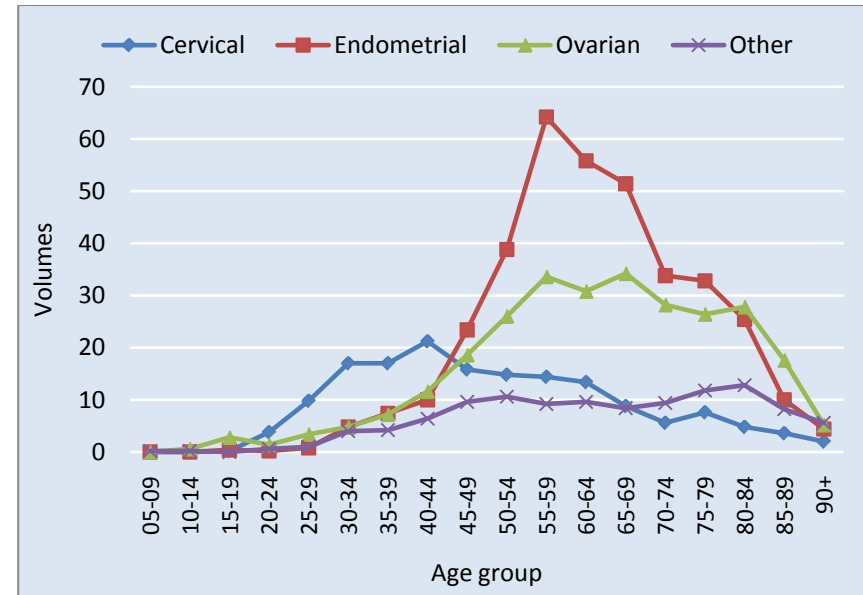


Figure 4 Gynaecological cancer registrations per age group and type of cancer 2004 – 2008 cohort

Ethnicity affects incidence

Māori and Pacific women have a higher age standardised incidence of gynaecological cancers – particularly endometrial and cervical cancers – than non-Māori and non-Pacific women. Asian women have a generally lower incidence – particularly of ovarian cancer and other cancers.

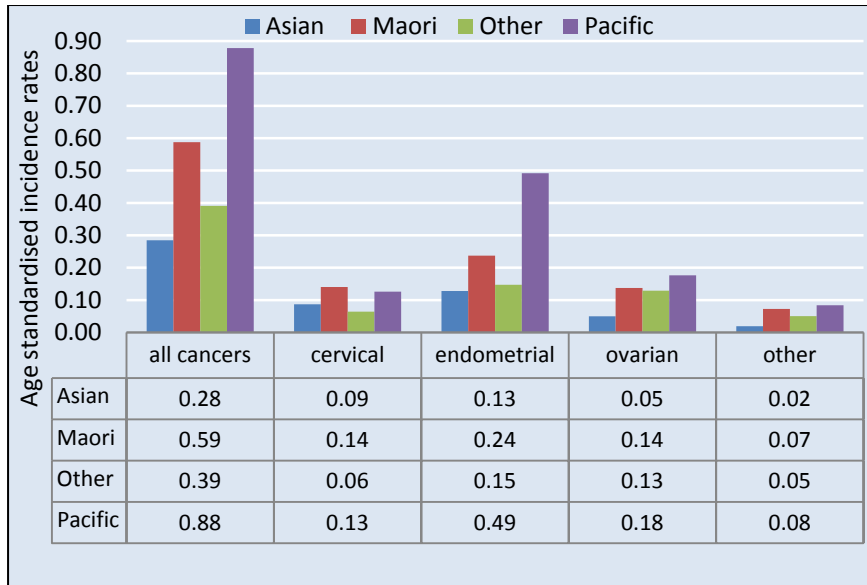


Figure 5 Age standardised incidence rates by ethnicity and cancer types per 1000 population

Figure 5 shows the number of new cancers recorded annually by ethnicity. The majority of gynaecological cancers (76%) occur in the ‘other’ group.

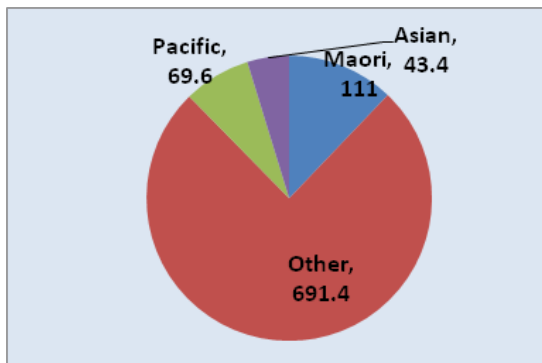


Figure 6 Proportion of cancers by ethnicity

It takes a team...

Stages of cancer at the time of diagnosis

Cancer stage is an important determinant of survival rate – those individuals diagnosed with a distant metastases have a much lower 5 year survival rate than individuals diagnosed when the cancer is confined to the organ of origin. Endometrial cancer is often diagnosed when confined to the uterus and hence has a better survival rate than ovarian cancer – which has often spread beyond the ovaries by the time it is diagnosed.

The number of cancers diagnosed at the stage of distant metastases tends to be higher in the Northern region for Asian women, higher in the Midland region for Māori women, and slightly higher in the Southern region for ‘other’ ethnicities. It is substantially higher for Pacific women in the Southern region. This is shown graphically in figure 7 below.

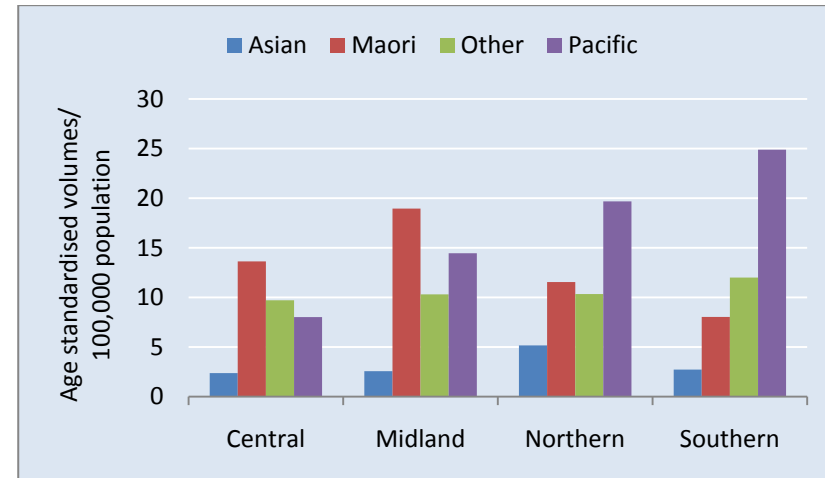


Figure 7 Age standardised rates of all gynae cancers recorded as being distant metastases at time of diagnosis stage by region and ethnicity: 2004 – 2008 cohort

There are considerable differences between ethnicities in the stage of cancer at the time of diagnosis.

Figure 8 shows the stages of cancer at the time of diagnosis by ethnicity for endometrial, ovarian and cervical cancers- we did not include the stages for all other gynaecological cancers.

Ovarian cancer

Women with ovarian cancer tend to be diagnosed at a later stage across all ethnicities, with few differences in stage at diagnosis between ethnicities.

Cervical cancer

Women with cervical cancer tend to be diagnosed when the tumor is localised to the organ of origin. Māori, Pacific and Asian women have a higher proportion of diagnoses when there is distant metastasis.

Endometrial cancer

Women with endometrial cancer are most often diagnosed when the tumor is localised to the organ of origin. Māori and Pacific women have higher rates of this form of cancer at all stages.³

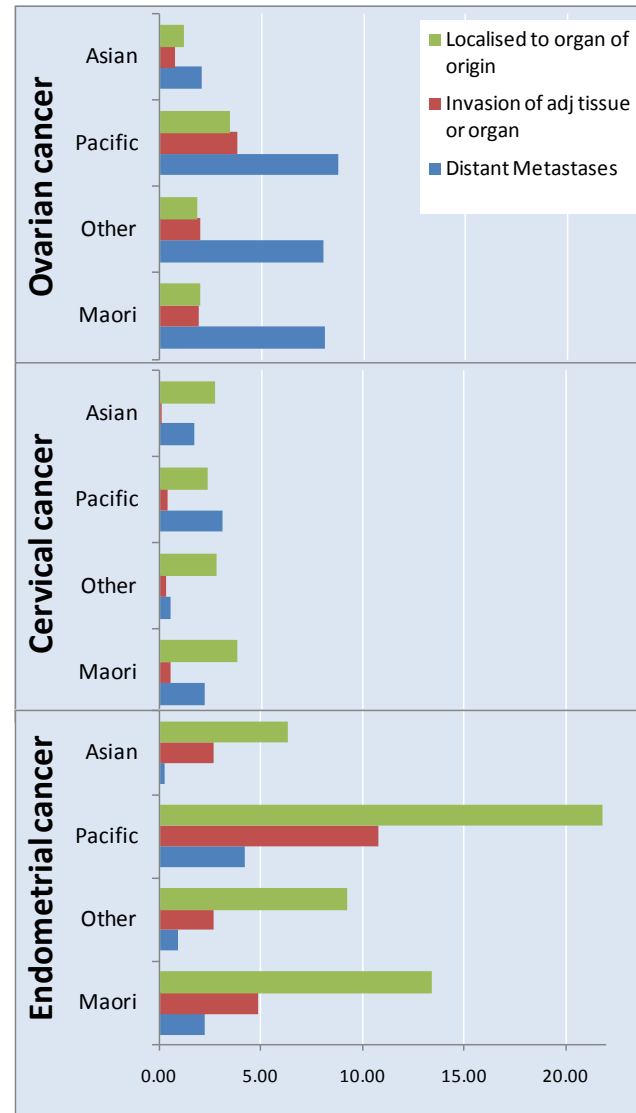


Figure 8 Age standardised cancer rates / 100,000 population for ovarian, cervical and endometrial cancer by stage and ethnicity

³ Note, these rates do not include those cancers with unidentified stages. They are therefore lower than the incidence rates presented in figure 4.

Cancers by region

The Northern region has the greatest number of cancers of each type, driven by its larger population catchment.

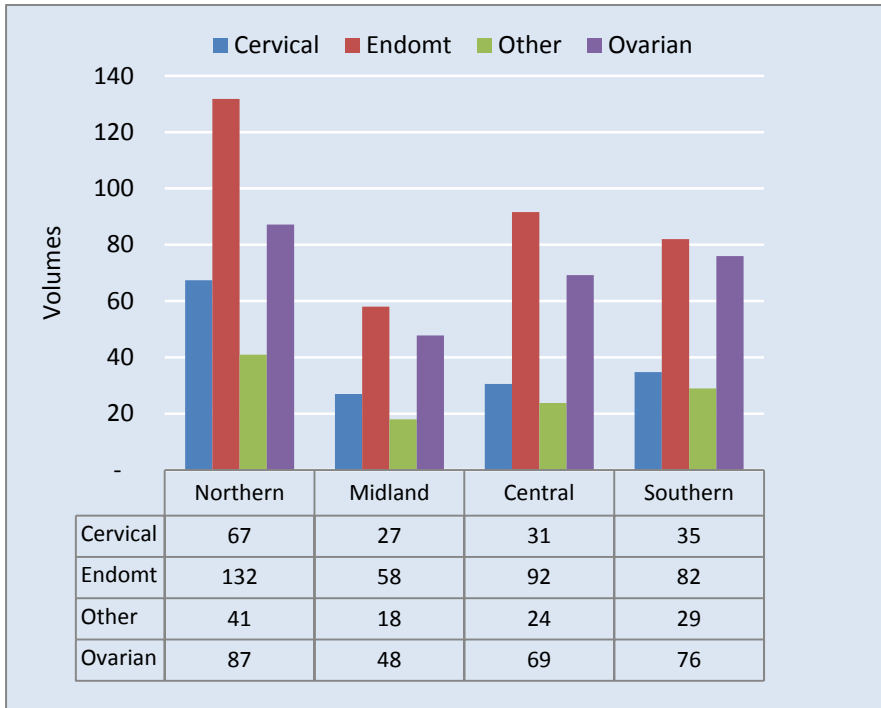


Figure 9 Annual cancer volumes by region and type (based on a 5-year cohort 2004-2008)

There are slight differences in the relative proportions of the different cancer types in each region. The Southern region has some 27% of the ovarian cancers, but only 22% of the cervical cancers. The Central and Northern regions have higher proportions of endometrial cancers. The Northern region has 42% of the cervical cancers, but only 31% of the ovarian cancers.

It takes a team...

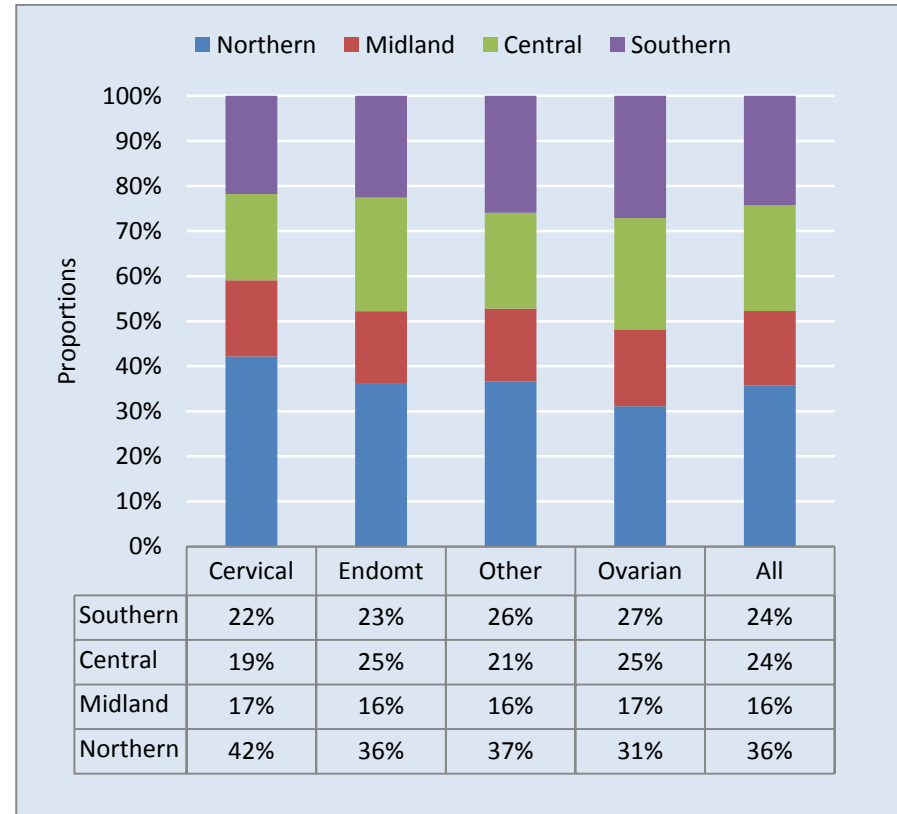


Figure 10 The proportion of each type of cancer in each region (based on a 5-year cohort 2004-2008)

The differences are driven by demographic difference between the regions (particularly age and ethnicity) and interregional differences in cervical screening rates and in obesity rates.

2.1.2 Mortality and survival rates

Figures 11, 12 and 13 show the cumulative relative survival rates at a national level for cervical, endometrial and ovarian cancers respectively⁷. Ovarian cancer has the lowest survival rate overall. The analysis by ethnicity shows that Māori have poorer survival rates for cervical and endometrial cancers, but better outcomes for ovarian cancer.

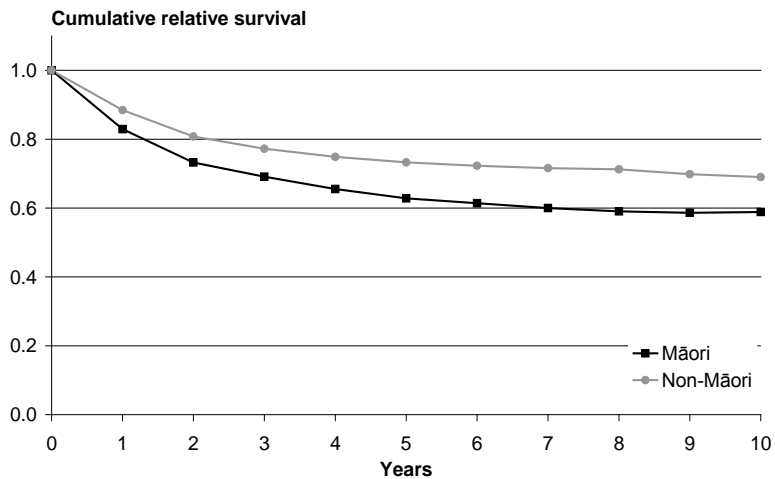


Figure 11 Cervical cancer- cumulative relative survival ratios, by ethnicity

The reason for the improved ovarian cancer survival rate among Māori is unknown.

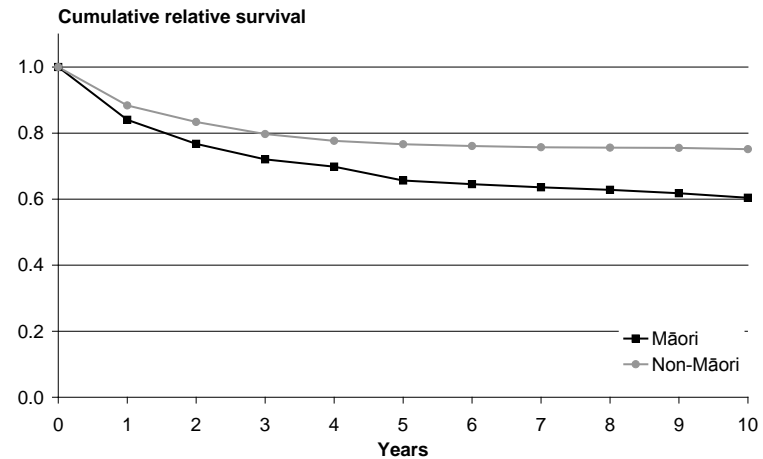


Figure 12 Endometrial cancer- cumulative relative survival ratios, by ethnicity

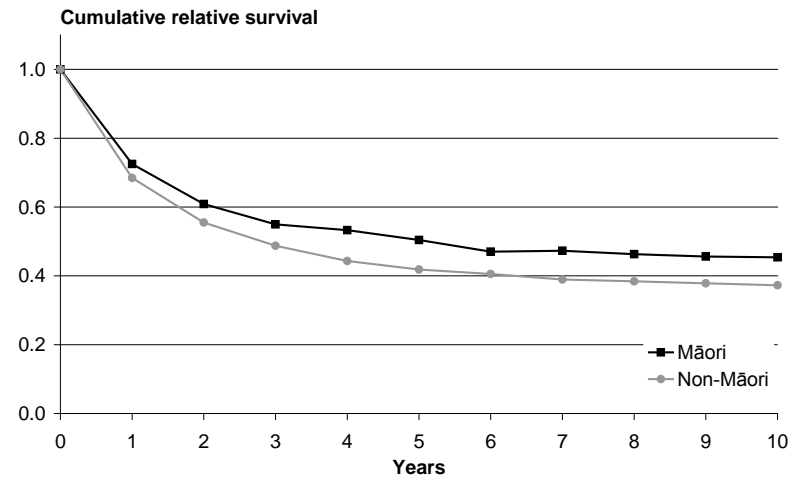


Figure 13 Ovarian cancer- cumulative relative survival ratios, by ethnicity

2.1.3 Future demand for services

We calculated the percentage change in cancer volumes, based on a forecasting model developed. This model took into account demographic change (age, gender, and ethnicity) only and does not reflect any changes in underlying incidence. For this reason, cervical cancer volumes may be overestimated, as any screening impacts are not accounted for. Endometrial may be under forecasted because increases in obesity are not accounted for.

The populations per region used are based on the current cancer networks' catchment areas (see Appendix 7.4).

The diagram below shows the Northern region can expect the highest proportional increases in all cancers over the next ten years, as well as the highest absolute volume increase.

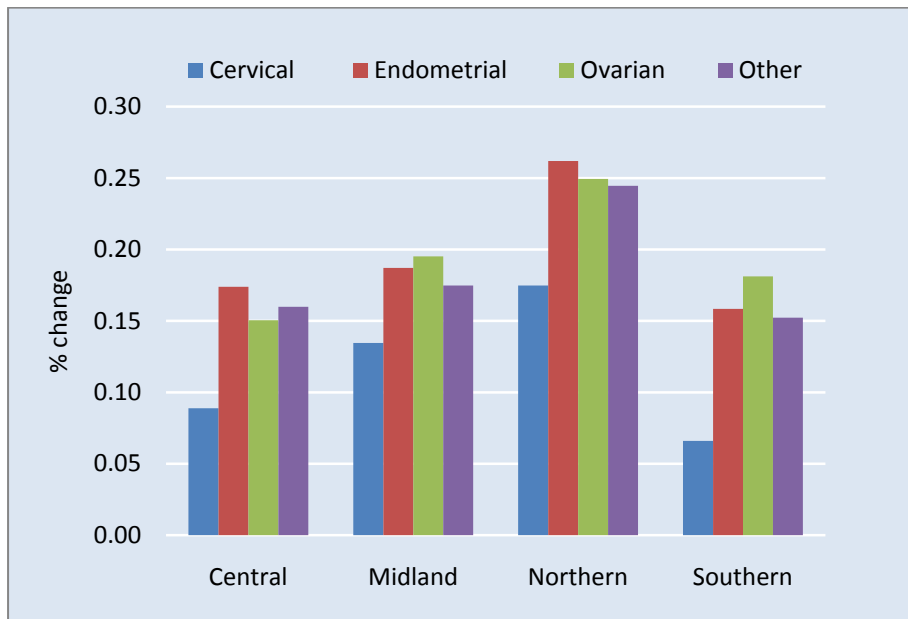


Figure 14 Percentage change in gynae cancer volumes 2012-2021

In terms of raw volume increases per cancer type, the increases seen are below:

Cancer type	2012	2021
Cervical	159	179
Endometrial	389	469
Ovarian	297	356
Other	123	146
All gynae cancers	968	1151

Table 1 Raw volume increases per cancer type

The Ministry of Health projections based on 2004-2008 data projected out to 2014-18, show that for cervical cancer, both the burden (count) and risk (rate) are expected to decrease⁸. This is due to the ongoing effect of the screening programme (insufficient time has elapsed for HPV immunisation to have had a measurable impact on incidence).⁴

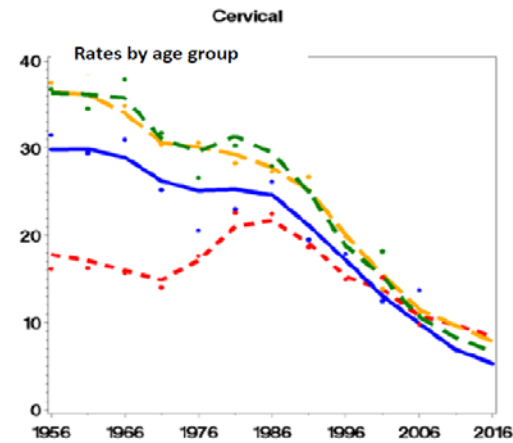
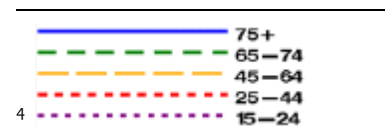


Figure 15 Rates by age group 1956-2016



While the burden of ovarian cancer is expected to increase slightly, the rate (risk) is predicted to fall.

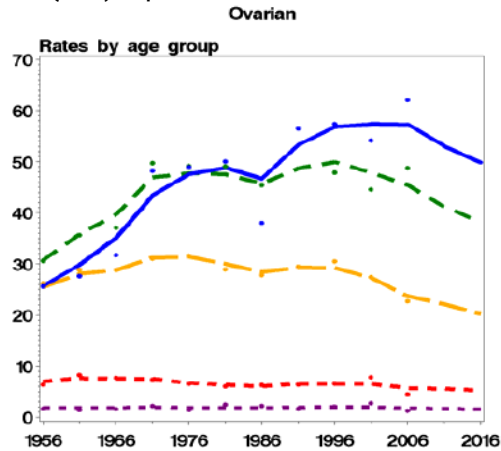


Figure 16 Rates by age group 1956-2016

Endometrial cancer is projected to increase (burden and count). This increase is associated with an increase in obesity and other significant co morbidities in the population, as well as fewer hysterectomies are being performed for benign reasons.

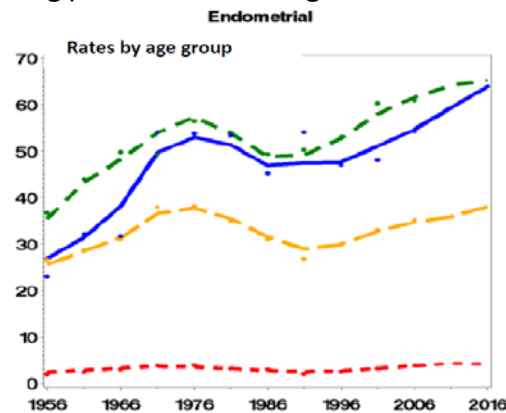


Figure 17 Rates by age group 1956-2016

The reader should note that given the complexity of the interrelationship between the impact of the cervical screening programme, the HPV immunisation programme, the ageing population, the increase in population, changes in ethnicity and changes in lifestyle factors such as obesity, it is difficult to accurately predict rates. The working group noted they had not seen the reductions in cancer volumes predicted above as yet.

2.1.4 Average inpatient and outpatient costs

We calculated average inpatient and outpatient costs per woman. The data we had available to calculate this was:

- **Inpatient:** treatment of any patients diagnosed between 2004 and 2008 (even if treatment took place in consequent years). Costs are expressed in 2010 dollar using the 2010 national price books.
- **Outpatient:** treatment of patients diagnosed between 2006-2008 and treated between 2006 and 2010. Note that, because, outpatient treatments can continue for several years we will have understated the costs to a small extent. E.g. for women diagnosed in 2008 there will be a number still undergoing treatment, the full costs of whom will not be captured in this analysis. Costs are expressed in 2010 dollars.

The interventions priced include all DHB services recorded in NMDS or in NNPA datasets for the patients in the cancer cohort extract. Some of the treatments may have been for non-cancer related treatment.

Figure 18 shows the average cost in 2010 prices of health utilisation from 2004 to 2010 for the women diagnosed in any single year of our 2004-2008 cohort.

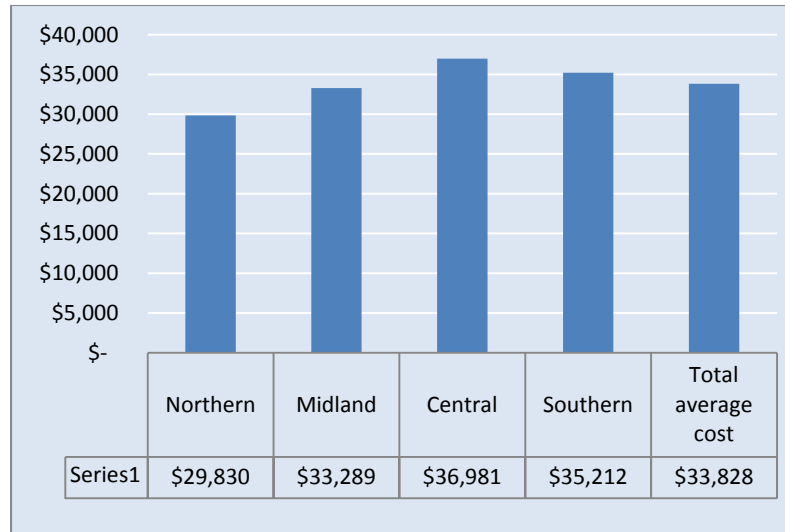


Figure 18 inpatient and outpatient costs per woman per region

The average cost per woman for the 2004-2008 cohort over a 7 year period was \$33,828.

We note that this cost analysis will be of limited use, because we did not have a full five year post diagnosis set of utilisation information for our cohort. The MoH is developing more robust cost of cancer estimates.

2.2 The evidence on optimal service provision

We conducted a brief review of the available peer reviewed and grey literature focusing on evidence for service configurations and models of care. The key points are summarised below, with more detailed information available on request as a separate document.

Surgery is an important determinant of outcome

- Evidence shows survival for women with ovarian cancer is improved when the initial surgery has been done by a gynaecological oncologist. A systematic literature review (2008) including 19 studies found the median survival of patients with advanced disease who were operated on by a gynecologic oncologist was 5 to 8 months longer than that of patients who were operated on by a general gynaecologist⁹.
- The same systematic literature review found that in terms of staging, gynecologic oncologists performed lymph node dissections in patients with FIGO I and II disease more often and cancer staging was more often adequate when done by a gynecologic oncologist than when done by a general gynecologist⁹.
- In terms of debulking, in patients with advanced disease (=FIGO III or IV), debulking procedures were more often optimal when performed by a gynecologic oncologist than when performed by a general gynaecologist. Gynae-oncologists achieved debulking to < 2 cm residual tumor 1.4 times more often than general gynaecologist (95% Confidence Interval (CI) 1.2-1.5)⁹
- Quality of surgery is one of the most important determinants of the outcome in ovarian cancer patients^{10,11}. A meta-analysis by Bristow et al. has shown a 5.5% survival benefit for every 10% increase of optimally debulked tumours¹¹.
- A retrospective cohort study (2011) that followed 616 patients with recurrent ovarian cancer from 1995 to 2009 found that surgeons

with different but complementary areas of expertise might exceed what could be accomplished by either one working independently – emphasising the need for multidisciplinary treatment¹².

- A retrospective cohort following 18,338 patients from 1988 to 2005 found that women with endometrial cancer treated by gynaecologic oncologists were more likely to undergo staging surgery and receive adjuvant chemotherapy for advanced disease. Care provided by gynecologic oncologists improved the survival of those with high-risk cancers, i.e. in those with stages II to IV disease, the 5-year disease-specific survival of those treated by a gynae-oncologist was 79% versus 73% in group B ($P = .001$)¹³.
- A systematic review including 44 articles found that a positive impact of experience (volume×time) on several outcome variables has been shown in endometrial cancer, cervical cancer, pelvic exenteration, as well as in diseases commonly not treated by gynaecologists¹⁰.
- The same review found that better adherence to standard staging procedures was reported for gynae-oncologists compared with other specialties. The reported rates of up-staging ranged from 16% to 31%¹⁰.

We conclude that there is strong evidence that the surgical care of women with ovarian cancer is best directed by a gynaecological oncologist^{2,3}, and that there is increasing evidence that the same may be true for endometrial cancer patients, particularly those with advanced stages of disease.

Centralisation of care is recommended to achieve critical mass

- In many developed countries centralised care for the majority of cancer patients is now recommended¹⁴.
- A review of published population-based studies of (advanced) epithelial ovarian cancer concluded surgery in a high volume

environment is associated with a higher likelihood of favourable outcomes for patients with advanced-stage epithelial ovarian cancer¹¹.

- This is supported by a retrospective cohort study following a total of 45,929 patients undergoing treatment for FIGO Stage IIIC/IV epithelial ovarian cancer from 1996 to 2005 that found hospital volume ≥ 21 cases/year was significantly predictive of improved overall survival outcome¹⁵. Compared to patients treated at low/intermediate volume hospitals, patients treated at very high/high-volume hospitals were less likely to be treated with neo-adjuvant chemotherapy (OR=0.33, 95% CI=0.18 to 0.50) and with surgery alone (OR=0.77, 95% CI=0.73 to 0.82) versus surgery followed by adjuvant chemotherapy¹⁵.
- A different retrospective cohort study following 1077 ovarian cancer patients treated from 1996 to 2003 in a random sample of Dutch hospitals found the specialisation level of hospitals and the surgical volume of gynaecologists positively influence outcomes of surgery and survival, particularly in terms of the proportion of adequately staged patients (adjusted odds ratio (OR) specialized hospitals 3.9 (95% confidence interval (CI) 2.0-7.6); specialized gynecologists 9.5 (95% CI 4.7-19)). Patients with stage III disease had a higher chance of optimal debulking when treated in specialized hospitals (adjusted OR 1.7 (95% CI 1.1-2.7)) or by high volume gynecologists (adjusted OR 2.8 (95% CI 1.4-5.7)). Concentration of ovarian cancer care thus seems warranted¹⁶.

Multidisciplinary care is recommended

- Outcomes for a woman with ovarian cancer are improved if she is referred to be managed under the care of a Multidisciplinary Care team. Ideally, a woman should be referred to a centre where all aspects of management, including surgery, pathology review,

radiology review, chemotherapy and on-going psychosocial support are available.^{2 17}

- MDT meetings alter the diagnosis in a significant number of cases and therefore affect patient management¹⁸.
- Clinical decision-making and service delivery require sufficient caseload to justify bringing together the scarce specialist skills and facilities necessary to permit effective multi-professional and multidisciplinary care. Hence centralisation and provision of multidisciplinary care are interrelated¹⁹.

The NHS approach to gynaecological cancers may be beneficial

- Recent survival trends in England, more favourable than in those in Wales, suggest the NHS cancer plan, which emphasises centralisation of care and multidisciplinary teams, is having some beneficial effect in England²⁰.
- The NHS plan divides hospital treatment services into two levels – local cancer units and regional cancer centres²¹.
- Cancer Units provide a local rapid assessment service for all types of gynaecological cancers, and treat superficially invasive cervical disease and early cancers of the endometrium. Women with all other tumours (ovarian cancers, later stage endometrial cancers, cancers of the cervix, vulva or vagina) are referred to Cancer Centres following initial assessment at the Cancer Unit, since these tumours are relatively rare or present particular challenges¹⁹.
- Regional cancer centres are expected to cover a catchment population of some 1 million (absolute minimum 600k) people²¹ and to include:
 - 2 gynaecological oncologists
 - Radiotherapy specialist
 - Chemotherapy specialist

- Radiologist
- Histopathologist
- Cytopathologist
- Clinical nurse specialist

- More recently (2009), the Royal College of Gynaecologists and Obstetricians in the UK, proposed the number of gynaecological oncologists should be increased to a maximum of three subspecialists per million population²². This was based on an assessment of the medical workforce planning in Scotland in 2005²³.

Referral practices are also important

- The accepted indication for a referral to a gynaecologist should be that the family doctor wishes to exclude a diagnosis of cancer, not that it is positively suspected²⁴.
- Higher risk of malignancy index (RMI) with multidisciplinary approach will reduce the number of referrals of ovarian masses, thus reducing the stress for patients and workload at the cancer centre²⁵.

There is some evidence on cost effectiveness of centralised care for patients with ovarian cancer

- A study by Bristow et al²⁶ found centralized referral of patients with ovarian cancer to an expert centre was a cost-effective healthcare strategy expert centre strategy was associated with an additional 2.78 QALYs at an incremental cost of \$10,695 but was more cost-effective, with a cost-effective ratio of \$9893 per QALY compared with \$17,149 per QALY for the less experienced centre referral strategy.
- In the Netherlands, current treatment of ovarian cancer patients was compared in three hospital settings (general, semi-specialised,

and tertiary referral hospitals). Treatment in semi-specialised hospital settings appears to be a cost-effective strategy compared to general hospitals (incremental cost effectiveness ratio of EU\$5,700). Mean incremental costs of treatment in tertiary referral centers were EU\$11,800 higher than in semi-specialized hospitals and mean QALYs gain was 0.13, resulting in an incremental cost-effectiveness ratio of EU\$93,700. If the optimal debulking rate in referral centers increased to 70%, the mean difference in QALYs would rise to 0.37 resulting in an incremental cost-effectiveness ratio of approximately EU\$25,000 per QALY gained⁹.

The role of a specialist cancer nurse coordinator is increasingly recognised as key in improving patient pathways

- An evaluation of Australia's Regional Cancer Coordination Project in Victoria (2008) found evidence that the role of regional cancer nurse coordinator has been effective in improving patient journeys and processes and in streamlining referral pathways²⁷. This is aligned with Cancer Control Strategy goals.
- Specialist cancer nurses can be cost effective by reducing, the number of emergency admissions, the length of hospital stay, the number of follow-up appointments, the number of medical consultations and support people to be cared for and die in their place of choice²⁸⁻³⁰.
- An evaluation of the effect of an innovative psychosexual intervention by a clinical nurse specialist in relation to the specific areas of quality of life and sexual function found a positive impact on women's resumption of sexual activity³¹.

Quality of life and psychosocial issues

- Psychosocial interventions can result in lower rates of anxiety and depression, reduced mood disturbances, nausea and vomiting and enhanced knowledge for cancer patients^{2 32}.

Palliative care

Palliative care improves the quality of life of women who face gynaecological cancers and their families, by providing pain and symptom relief, spiritual and psychosocial support from diagnosis to the end of life and bereavement.

Women with advanced gynaecological cancers may benefit from overlapping treatment of cancer with palliative care- the two approaches to management should be complementary, not alternative¹⁹.

Palliative care is often provided in the patient's local community- there needs to be strong collaboration and linkages between tertiary, secondary and primary care. A framework such as the UK's Gold Standards Framework may be a useful starting point for discussions on how to optimise the care for patients nearing the end of life delivered by generalist providers.

New Zealand consumer perspective on what services should look like

The New Zealand Gynaecological Cancer Foundation (NZGCF) helped us organise a focus group discussion and interviews with women with experience of gynaecological cancers. Based on our conversation with these women, we identified the three key elements they would like to see in future gynaecological cancer services. These are:

1. That all women have access to a gynae-oncologist for surgery
2. That there is a point of contact to provide continuity of throughout the journey, including follow-up (e.g. nurse specialist)
3. That there is increased awareness of gynaecological cancer, its symptoms and best practice, at all levels (consumers and providers)

The following are illustrative comments from the interviews and focus groups with women with experience of gynecological cancer.

“We need a one-stop shop where we can get all the necessary information on women cancers- at the moment we have to fish around a lot”

“A lot of women don’t know it is best to have a gynae-oncologist (to perform surgery)”

“You want to be treated by an expert, by the best in the field. It’s your life they’re dealing with”

“At the moment, if someone is given a terminal diagnosis, there is not much support available- access to a palliative care specialist would have been very useful”

“It would be great if every woman could have access to a gynaeonc nurse specialist as a main point of contact- to provide continuity throughout the journey”

3 Gynaecological cancer services in New Zealand today

This section outlines the current service delivery configuration, including:

- Specialist centres
- Patient flows
- Multidisciplinary team volumes

3.1 Current service delivery configuration

3.1.1 Patient flows

Analysis of the 2004 – 2008 cohort extract indicates that many patients receive their gynae-oncology surgery at the local secondary hospital. Figure 19 shows, for instance, that 65% of Bay of Plenty women have their surgery through a local secondary hospital rather than by a trained sub-specialist.

Figures 19 and 20 show the proportion of gynecological surgery for the 2004 – 2008 cohort of women with gynaecological cancer which was delivered locally or regionally. Only flows to the local secondary hospital or to the relevant tertiary referral centre are shown, hence the numbers do not add up to 100%.

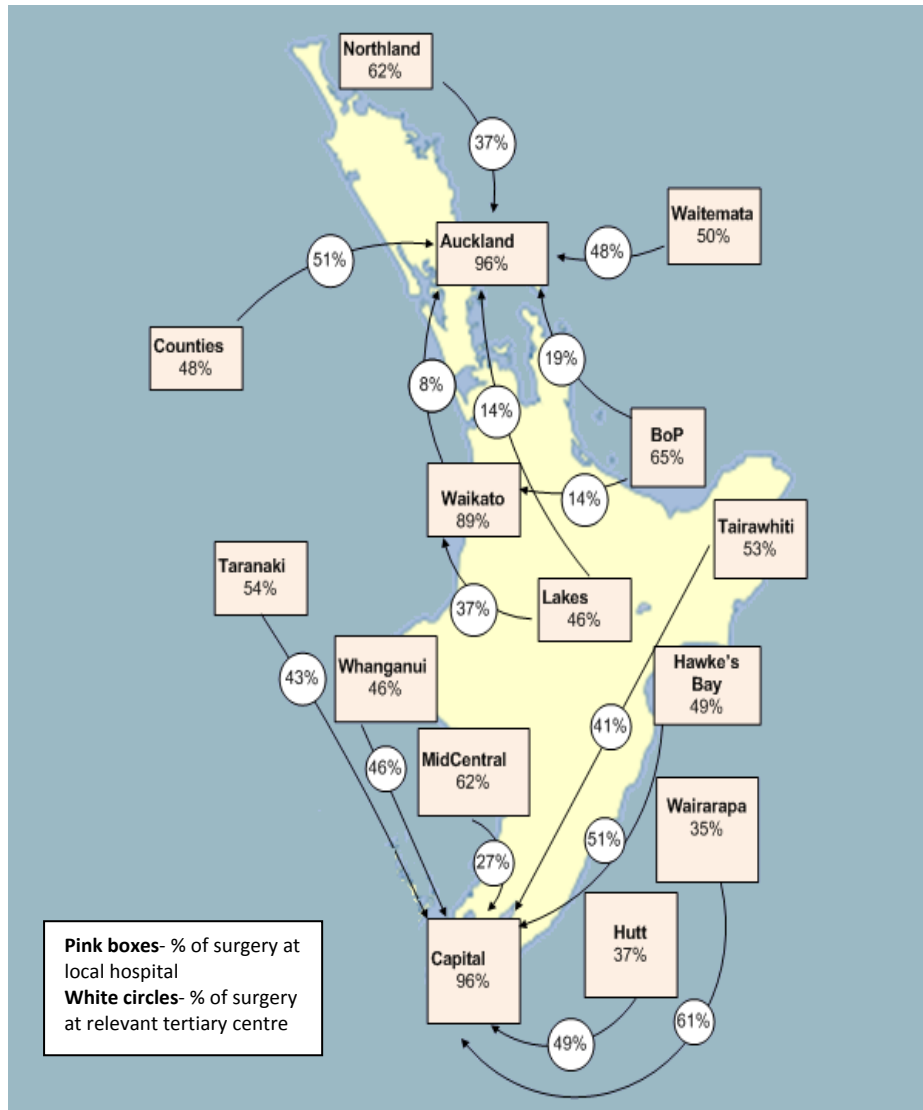


Figure 19 Gynae-oncology surgery proportions provided locally and at the relevant tertiary centre from the 2004-2008 cohort in the North Island.

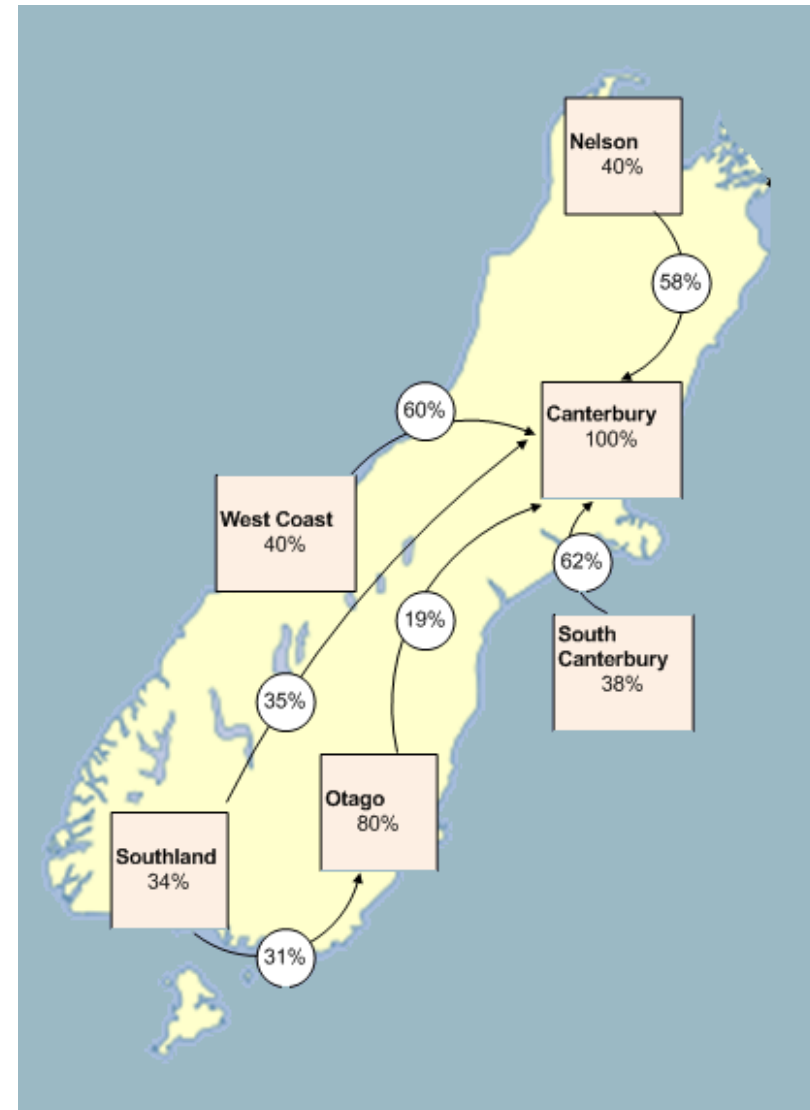


Figure 20 Gynae-oncology surgery proportions provided locally and at the relevant tertiary centre from the 2004-2008 cohort in the South Island.

3.1.2 Specialist centres

There are currently four centres that provide full or partial gynae-oncology services in the country: Auckland, Waikato, Wellington, and Christchurch. The regions these centres cover are described briefly below, with a particular emphasis on gynae-oncology staff availability. The catchment population for each of the regions is based on the Cancer Networks' catchments- this is where patients tend to flow. Details of the full MDT staffing at each centre are shown in the following section.

Northern region specialist centre

The Northern region multidisciplinary team (MDT) covers the greater Auckland metropolitan area and Northland DHB. The MDT is based at Auckland Hospital.

Radiation therapy and specialist medical oncology is also provided at Auckland DHB for this population. The Northern MDT also receives some patient referrals from the Midland region (due to the gap in gynae-oncology provision at Waikato – see below).

The MDT includes three individuals performing the role of a gynae-oncologist:

- One New Zealand trained gynae-oncologist with RANZCOG* qualifications
- One gynae-oncologist with UK qualifications
- One gynae-oncologist 'grandparented' by RANZCOG when the subspecialty training programme was introduced

* Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG)

Midland region specialist centre

The Midland MDT, based at Waikato hospital, covers Waikato DHB and also receives some referrals from other parts of the Midland region. The MDT does not have an accredited gynae-oncologist. Instead, a gynaecologist with an interest in gynae-oncology performs the gynae – oncology surgery at Waikato hospital.

Some women are referred to the Northern MDT for review. Waikato DHB also provides radiation therapy and specialist medical oncology support for women from Waikato, Bay of Plenty and Lakes DHBs.

Central region specialist centre

The central region MDT is based at Wellington Hospital and covers the six DHBs of the central region, plus (some) women from Tairāwhiti and Taranaki DHBs. Women from Capital and Coast, Hutt Valley and Wairarapa DHB will generally receive both their MDT review and surgical, radiological or medical oncology interventions from Capital and Coast DHB. Women from Taranaki, Tairāwhiti, Wanganui, Midcentral and Hawke's Bay usually receive their MDT review from CCDHB, and travel to CCDHB for gynae-oncology surgery and brachytherapy, but receive medical oncology and external beam radiation therapy services from Palmerston North hospital. Brachytherapy is provided by CCDHB to the entire catchment, and, if this component of service is required, then the CCDHB team will also generally provide medical oncology support and external beam radiation therapy.

Currently the gynae-oncologist role is provided by an experienced gynaecologist with a long-standing interest in gynae-oncology who is supported by an interim arrangement of gynae-oncologists from Christchurch attending every second or third MDM.

Wellington provides fortnightly outreach clinics to Hawke's Bay, however, time constraints mean Palmerston North does not receive

clinics. Palmerston North is not currently able to participate in CCDHB's MDMs.

Southern region specialist centre

The Southern region specialist centre is based in Christchurch and serves the South Island catchment. It is the only centre accredited for training by RANZCOG. The service has two RANZCOG- accredited gynae-oncologists and one gynaecologist with an interest in gynae-oncology who works mainly privately.

Dunedin provides external beam radiation therapy and specialist oncology services as well as the usual local secondary hospital unit services to the Southern DHB population. Christchurch provides outreach clinics at Dunedin, including both MDM reviews with local MDT, and also performs surgery in Dunedin. A Dunedin-based gynecologist performs to do some gynaecological oncology surgery in collaboration with the MDT.

Privately funded services

Some women fund their treatment themselves, or through private insurance. In Wellington and Christchurch women are seen privately by a gynae-oncologist or gynaecologist with an interest, and will be referred for a public MDT review and then public or private treatment. In Auckland there is a private MDT that reviews private patients. Radiation therapy is also available privately in Auckland.

Stakeholders all agreed that the same expectations of compliance with evidence based standards of care should apply in both the public and private system.

	Northern	Midland	Central	Southern
Catchment population (mill)	1.6	0.7	1.0	1.0
Estimated new cancers / year	327	151	215	222
MDM unique patients / year	623	177	157	421
Accredited training centre?	N	N	N	Y
MDM database?	Y	Y	N	Y
Research centre?	Y	Y	Y	Y
MDT staffing (dedicated FTEs)				
RANZCOG accredited Gynae-oncologists (public)	2.5*	0	0	2
Radiation oncologist	1.5	0.4	1	1
Medical oncologist	1.6	0.6	0.5	0.5
Radiologist	0.35	0.1	1	0.2
Pathologist	1	0.1	0.5	0.2
GO CNS	1	0.5	0	0.8
Other RNs dedicated to gynae	0.6	0	0.5	0.3
MDM coordinator	0.7	0.025	0	0.5

Table 2 Specialist centre summary

The Southern Centre estimate of new cancers and MDM unique patients includes Dunedin's volumes, as patients are discussed in the Southern MDT. Dunedin staff is not included in the MDT staffing estimates.

Note there are gynaecology surgeons with an interest in gynae-oncology that currently fulfill the roles of gynae-oncologists. The

* This FTE includes the gynae-oncologist with UK qualifications. RANZCOG is currently considering other options other than examination to recognise international gynae-oncologists.

numbers and FTEs are not clear and have therefore been excluded from the above table.

Figures shown are FTEs – based on current proportions of cancers. These estimates were provided by each centre at the time of writing this Plan. There may be some inaccuracies based on the difficulties of identifying how much of each clinician’s time is spent on gynae-oncology.

3.1.3 Multidisciplinary team meeting volumes

The table below shows MDM volumes by region in 2010 and 2007. The number of discussions increased in:

- Auckland from 681 in 2007 to 1,351 in 2010
- Wellington from 177 in 2007 to 563 in 2010
- Christchurch from 427 in 2008 to 481 in 2010

	MDM volumes 2010		MDM volumes 2007	
	# of patients	# of case discussions	# of patients	# of case discussions
Auckland	623	1,351	480	681
Waikato	177	342	unavailable	unavailable
Wellington	157	563	160	177
Christchurch	265	481	203*	427*
Dunedin	156	283	unavailable	unavailable

Table 3 MDM volumes

This increase in MDM discussions reflects the increase in demand of services, but also possibly the increased recognition of the value of MDMs.

* volumes from 2008 as 2007 are unavailable

4 Issues and challenges

Based on stakeholder interviews, workshops, consumer feedback and comparison of the current state against the evidence, we identified the following strategic challenges arising from the current service configuration:

- Building a sustainable workforce
- Achieving equitable access to evidence based services
- Developing a supportive infrastructure
- Aligning the funding and purchase framework with optimal provision
- Collecting data on quality and outcomes

This section expands on these issues.

4.1 Building the workforce

4.1.1 Gynaecological oncologists

Gynaecological Oncologists, as described by the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG), are specialists in Obstetrics and Gynaecology, awarded the FRANZCOG, who have then completed a formal three year training program in gynaecological cancer care and have passed the examination for the CGO (Certificate of Gynaecological Oncology).

To remain competent in the comprehensive management of women with a gynaecological malignancy, gynae oncologists need to spend at least 66% of their workload on gynaecological oncology³³. A guideline provided to Sapere by the NZGCG was that a gynae-oncologist needed to see a minimum of 75 new cancer cases per year (on average) to maintain competency.

The specialist gynae-oncology workforce in New Zealand is sparse. There are currently four RANZCOG-accredited gynae-oncologists, and one UK accredited gynae-oncologist. While, there are another four individuals who perform some or all of the functions of a gynae-oncologist, we are short by some 4- 5 individuals of a full set of clinical staff, to meet the UK guidelines of 2 to 3 gynae-oncologists per million population. Only Auckland and Christchurch have RANZCOG-accredited gynae-oncologists.

This shortage is exacerbated by an increase in workload for sub-specialists due to an overall reduction in gynaecological surgical experience in the country.

There is currently no dedicated funding for training available, although there is some access to support for trainees via an advanced trainee fellowship scheme.

Most gynae-oncologists still need to train overseas. Christchurch is the only RANZCOG-accredited centre and there are no trainees there at present. At the time of this report (2011), there were 8 registered gynae oncology trainees in Australia. Two of these are from New Zealand, although it is uncertain if they will return to work in New Zealand after completion of the trainee programme.

Aside from salaries, an element deterring trainees from returning to New Zealand is the lack of recognition for the sub-specialty here - the NZ Medical Council and District Health Boards do not necessarily recognise gynae-oncology as a sub-specialty at present. This has resulted in gynae-oncologists being employed under a general gynaecologist role description, and at times being paid less than general gynaecologists.

This lack of awareness or recognition in the sector of gynae-oncology as a subspecialty, also contributes to many cases that should optimally be referred by gynecologists to subspecialist treatment, according to best practice, being retained by general gynaecologist surgeons.

Further, specialty centres may lack infrastructural supports such as MDM facilities and coordinators, opportunities for research and academic endeavors is limited, DHBs may not allocate sufficient staffing time to MDT meetings, nursing support may be inadequate, and gynae-oncologists may be expected to perform obstetric work and partake in the afterhours roster.

Another recruitment and retention barrier is that new trainees do not wish to be in a sole practice situation - as they might be in Waikato or in Wellington. The centres that could more easily attract gynae-oncologists (Christchurch and Auckland) do not have vacant positions.

RANZCOG currently require UK qualified gynae-oncologists to sit an exam before recognizing equivalence to the Australasian qualification. This is a barrier for some potential UK recruits.

Overall, New Zealand is not an attractive proposition for subspecialty trained gynae-oncologists.

4.1.2 Clinical nurse specialists

Recognition of the role of a clinical nurse specialist in gynae oncology varies by region. There is no definition of a cancer nurse and the role tends to sit across several specialties.

A lack of national data around the number of cancer/oncology nurses working in New Zealand makes it difficult to assess workforce capability and capacity.

A number of DHBs in the Central Cancer Network (CCN) region are currently examining nursing structures in order to refine and clarify existing roles.

The CCN has completed a ‘Specialist Cancer Nursing Discussion Document’ which includes recommendations relating to cancer nursing workforce development and leadership.

4.1.3 Medical oncology

There has been a significant growth in demand for and workload of medical oncology services in the past 10 years which is expected to continue in the future due to a growth in the:

- Cancer registrations, driven primarily by the ageing population
- Chemotherapy treatment options and increased survivorship

This growing demand and increase in clinical complexity is creating significant pressure on the medical oncology workforce, and all services either face space or workforce constraints. The workload pressure is further compounded by medical oncologist vacancies and the duplication of planning and administrative efforts across Medical Oncology services.

To help address these challenges, the MOH commissioned Cranleigh Health to develop a national model of care for medical oncology services. This work has been developed in conjunction with all six Regional Cancer Centres and the Medical Oncology Working Group.

- The proposed model is being finalised through significant stakeholder engagement and includes the following characteristics:
- Maximizing the reach and output of current medical staff with delegation and devolvement of clinical and non-clinical tasks to

appropriately trained nurses, other clinical staff and non-medical staff

- The development of specialised medical oncology nurse roles
- The development of national standards and treatment guidance to reduce duplication of efforts
- The development of a four-tier centre delineation model, based largely on the Ontario model
- As part of this, the implementation of a sub-specialist medical oncology model where appropriate, to help support appropriately credentialed centres through MDMs and out-reach services

The four-tier centre model is summarised below:

Level 1	provides treatment for non-complex, low risk day case chemotherapy
Level 2	provides level 1 treatment with a visiting medical oncologist
Level 3	supports majority of complex daycases, Mon- Fri 9-5 specialist cover
Level 4	provide a comprehensive cancer service, 24/7 specialist cover, all forms of inpatient & day case chemotherapy, conduct research and clinical trials and manage & accredit regional oncology units to deliver treatments

These levels of care appear to be consistent with the hub and spoke levels of care described in this document.

Implementing these new models of medical oncology care will be important to ensure that medical oncologists at the major centres are available for MDMs.

4.1.1 Radiation oncologists

Radiation oncologists specialise in the treatment of cancers using radiation therapy as the main modality of treatment. The Radiation Oncology training is a five year postgraduate diploma programme. In New Zealand the programme requires five years training in oncology, comprised of at least four and a half years in radiation oncology and may include six months in medical oncology, haematology or palliative care.

There are six radiation therapy centres in New Zealand, but only three surgical MDM centres. As a result of this and due to insufficient infrastructural support and coordination, some radiation oncologists (and some medical oncologists) are not often part of the treatment and care planning discussion.

This sometimes leads to a decision regarding treatment being made at an MDM not being relayed to the team providing the service within an appropriate time frame. Another issue is that because some clinicians carrying out treatment are not part of the MDM, there may be disagreements with the MDM's proposed treatment plan.

4.1.2 Other MDT members

Radiation oncologists, radiologists and pathology staff are essential for optimal MDT review and treatment of women with gynaecological cancer. There are two related issues:

1. there must be sufficient FTE available to complete the clinical work involved (reviewing tissue samples or images, developing treatment plans, etc.);
2. the clinical workload needs to be allocated such that one or two pathologists, radiologists, radiation oncologists, take a particular interest in gynae-oncologist and build up specific expertise in that area, and regularly attend the MDM.

The latter issue in turn requires a critical mass of gynae-oncology work to allow a clinician to build up and maintain expertise in this field.

As with medical oncologists, there are recruitment and retention issues for radiation oncologists, radiologists, and pathologists alike.

MDM coordinators are increasingly recognised as valuable to ensuring the meetings run smoothly and without delays. The role seems to be fairly new in some centres and informal in other centres. Regional Cancer Networks are currently working on a proposal to review the MDM coordination role in demonstration sites.

Radiologists

Radiologists acquire and provide a specialist interpretation of the images of the cancer (Xray, CT, MRI, PET scan) to help determine the stage, spread and appropriate treatment course. The New Zealand public system has struggled to retain radiologists, who are able to earn considerably more privately.

Pathologists

Specialist pathological assessment of biopsies, cytologic samples and resection specimens and appropriate imaging is vital to determine appropriate treatment for each patient. Their involvement in the meetings helps reduce errors in the management of gynae cancers, (e.g. over or under treatment).

Currently pathologists will tend to take a lead role based on their interest in gynae-oncology and become informally sub-specialised.

Development of a subspecialty interest in gynae-oncology usually requires overseas travel and attachment to specialist units and this is likely to require additional funding, for example through the continuation of Health Workforce NZ advanced trainee scheme.

The pathology time spent in preparing for MDMs and for issuing review reports is significant and may not be formally recognised or funded.

Laboratory services throughout New Zealand have undergone significant change over the last 15 years and many services are provided from the private sector under contract. The constrained funding means that complex specimens may need further workup in the public sector as part of the assessment for MDT review.

We were informed that the ability to participate in research with clinical colleagues is also constrained due to lack of pathology staffing in both public and private sectors.

Palliative care

Palliative care is an approach to care for a patient with advanced or progressive disease. A variety of interventions (e.g. surgery, psychosocial support), may be necessary to improve quality of life for these women. As a result, all health practitioners have some basic skills in palliative care; the approach does not sit solely in the realm of the palliative care specialists. General practitioners, for example, often provide palliative care to patients.

Complex cases can be referred to specialist palliative care teams around the country. It has been noted that New Zealand lacks a systematic approach and clear guidelines for the management of women with gynaecological cancers.

The gynae-oncology sector stakeholders interviewed recognised palliative care services are an essential part of cancer control.

Supportive care

Supportive care services are defined by the Ministry of Health as: “The essential services required to meet a person’s physical, social, cultural, emotional, nutritional, informational, psychological, spiritual and practical needs throughout their experience with cancer”⁵

⁵ MoH (2010) Guidance for improving supportive care for adults living with cancer in New Zealand

Information obtained during the development of the Plan indicates that access to cancer support resources varies significantly between regions.

Health Outcomes International (HOI), in partnership with the regional cancer networks, is currently completing the national implementation plan for supportive care services. This plan, due for completion July 2011, will focus on the priority areas of care coordination, psychosocial support and information support.

Key to the providing good quality supportive care services is strengthening the regional cancer network infrastructure to improve the integration of services between primary, secondary and tertiary care providers within and across DHBs.

4.1.3 Workforce deficits

The table below compares current service capacity with best practice based on UK guidelines. Figures shown are FTEs – based on current population catchments.

UK ideal cancer centre	Guidelines applied to NZ (by cancer proportion)					
		NZ	Northern	Midland	Central	Southern
Population / %	1 mill	100%	36%	16%	24%	24%
Gynaecological oncologists	2.0	8.6	3.1	1.4	2.0	2.1
Radiation oncologist	1.0	4.3	1.5	0.7	1.0	1.0
Medical oncologist	1.0	4.3	1.5	0.7	1.0	1.0
Radiologist	1.0	4.3	1.5	0.7	1.0	1.0
Histopathologist	1.0	4.3	1.5	0.7	1.0	1.0
Cytopathologist	1.0	4.3	1.5	0.7	1.0	1.0
Clinical nurse specialist	1.0	4.3	1.5	0.7	1.0	1.0

Table 4 Comparison of current service capacity with best practice based on UK guidelines

According to UK guidelines at the lowest end of the spectrum of 2 gynae-oncologists per million population, New Zealand as a whole

should have 8.6 gynae-oncology FTE. At the higher end of the spectrum, according to the latest recommendations that 3 gynae-oncologists per million population would be more appropriate (see section 2.2 on evidence for optimal service provision), New Zealand should have 12.3 gynae-oncology FTEs.

The table below summarises the current workforce deficit in New Zealand- comparing current workforce dedicated FTEs to UK guidelines.

For example, to meet UK guidelines, Auckland would need another 3.7 gynae-oncologist FTE and all of New Zealand would need another 2.4 radiologist FTE. In contrast, Midland has 0.1 more medical oncology FTE than required under the UK guidelines.

Current workforce deficit in NZ						
	UK guideline	NZ	Northern	Midland	Central	Southern
Population (000)	1,000	4,296	1,606	669	1,004	1,017
Gynaecological oncologists	2.0	3.7	0.7	0.9	2.0	0.0
Radiation oncologist	1.0	0.2	0.1	0.1	0.0	0.0
Medical oncologist	1.0	0.9	0.0	0.1	0.5	0.5
Radiologist	1.0	2.4	1.3	0.4	0.0	0.8
Pathologist	1.0	2.3	0.6	0.4	0.5	0.8
Clinical nurse specialist	1.0	1.8	0.6	0.0	1.0	0.2

Table 5 Current workforce deficits

4.2 Achieving equitable access to evidence-based services

All women with gynaecological cancer should have timely and equal access to appropriate multidisciplinary specialist cancer services. This is not currently the case in New Zealand.

It takes a team...

There is strong rationale for improving national coordination and planning of services.

Current access to gynae-oncologists and MDMs varies across New Zealand - there are not enough gynae-oncologists to meet the UK guidelines of 2 gynae-oncologists per million (see evidence in section 2.2). As a result many women are treated by general gynaecologist surgeons.

Some centres rely on one gynae-oncologist to cover the whole region and there is a lack of outreach clinics in some areas (e.g. Palmerston North). Single FTE roles create gaps when the sole clinician takes leave. Given this problem and the lack of collegial support, single FTE services are not considered acceptable or sustainable longer term.

Furthermore, there is no visibility of the percentage of cases are discussed in MDMs, making it difficult to assess whether access is service is equitable and whether it is improving or not over time.

At present no one has the mandate or capacity to agree on the best way to develop and use New Zealand's gynaecological cancer resources. There is no clear decision mechanism to ration access to gynae-oncologists.

This lack of national coherence also means there are no standard set of referral pathways and no nationally agreed clinical guidelines.

Another issue highlighted has been around delays in diagnostic tests – particularly imaging and FSAs. Streamlined and consistent referral guidelines would enable the system to monitor performance against these guidelines.

4.3 Developing a supportive infrastructure

There is widespread agreement that all women should be reviewed by an MDM. However, there is a lack of recognition of the amount of

resources required to run MDMs and the infrastructure to support MDM is inadequate and fragmented within New Zealand. Infrastructure includes everything from improved broadband access, increase number of facilities that support videoconferencing and databases.

This is not a problem unique to gynae-oncology and therefore initiatives to improve MDM infrastructure need to be aligned with the national and regional health IT plans. The regional cancer networks are currently completing projects relating to Lung and Bowel MDM infrastructure development including implementing conferencing solutions, database development and MDM coordination roles. This work, whilst focused on lung and bowel, will support cancer MDM development across all tumour sites.

4.4 Aligning the funding and purchasing framework with optimal provision

Most publicly funded health services in New Zealand are funded through population based funding allocated via DHBs. DHBs then allocate funds to their internal provider arm (particularly for hospital services) and to external providers (e.g. primary care). Services provided by one DHB for individuals residing in another DHB are funded through inter-district revenue flows on a price volume basis using the national price book purchase units (unless agreed otherwise by the DHBs involved). Important national purchase units include:

- First specialist appointments (FSAs) & Follow up appointments
- Case weighted discharges
- Chemotherapy administration
- Radiation therapy administration.

Review of a case by a Multidisciplinary team is not currently a purchase unit, and therefore does not attract inter-district revenue flows. It is implicitly assumed to be an ‘overhead’ cost – covered by the relevant FSA, Discharges, etc. However, there will be many cases where the patient is never actually seen in the tertiary DHB, but a significant amount of workforce resource is used to develop the right treatment plan.

Hence the MDT workload is invisible in the current purchase framework. Some teams plan to begin counting MDM case discussions as virtual FSAs. Given the increasing importance of MDM in cancer provision generally, incorporating them explicitly into the NZ purchase framework (or mandating counting them as virtual FSAs) is appropriate.

The gynae-oncology sector has highlighted the need for funding flows to support optimal clinical service provision. In order to realise this, funding should flow with the patient.

A purchasing framework review would be useful to consistently address these issues.

4.5 Collecting data on quality and outcomes

Quality or outcome data on gynaecological cancers is not consistently collected around the country- there is no nationwide agreement on appropriate minimum datasets/ metrics for measuring service and treatment effectiveness. New Zealand needs to collect an appropriate limited set of process and outcome measures to track our performance in providing optimal treatment for women. The logical domains of performance should cover access, equity, conformance with evidence based guidelines and patient satisfaction.

5 Positioning services to meet current and future challenges

An intervention logic approach was used to consolidate the key outcomes sought by the Plan. The approach is illustrated below:

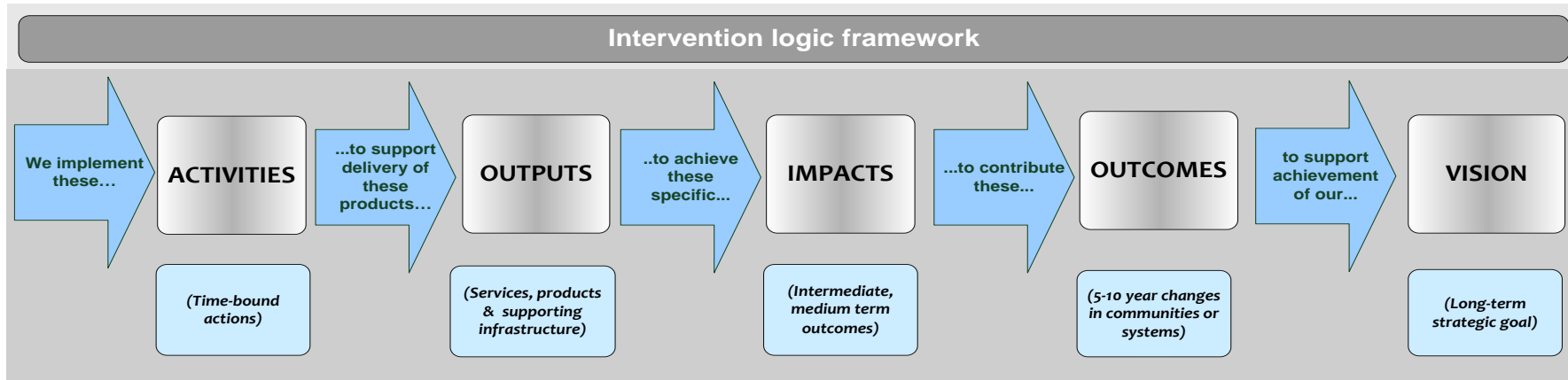


Figure 21 present the outcomes framework for the development of gynaecological cancer services in New Zealand

The framework is intended to logically link the interventions that are proposed in the plan with outcomes and vision we aim to achieve. The section provides more detail on the proposed vision, outcomes sought and the model of care and actions we proposed to achieve the vision.

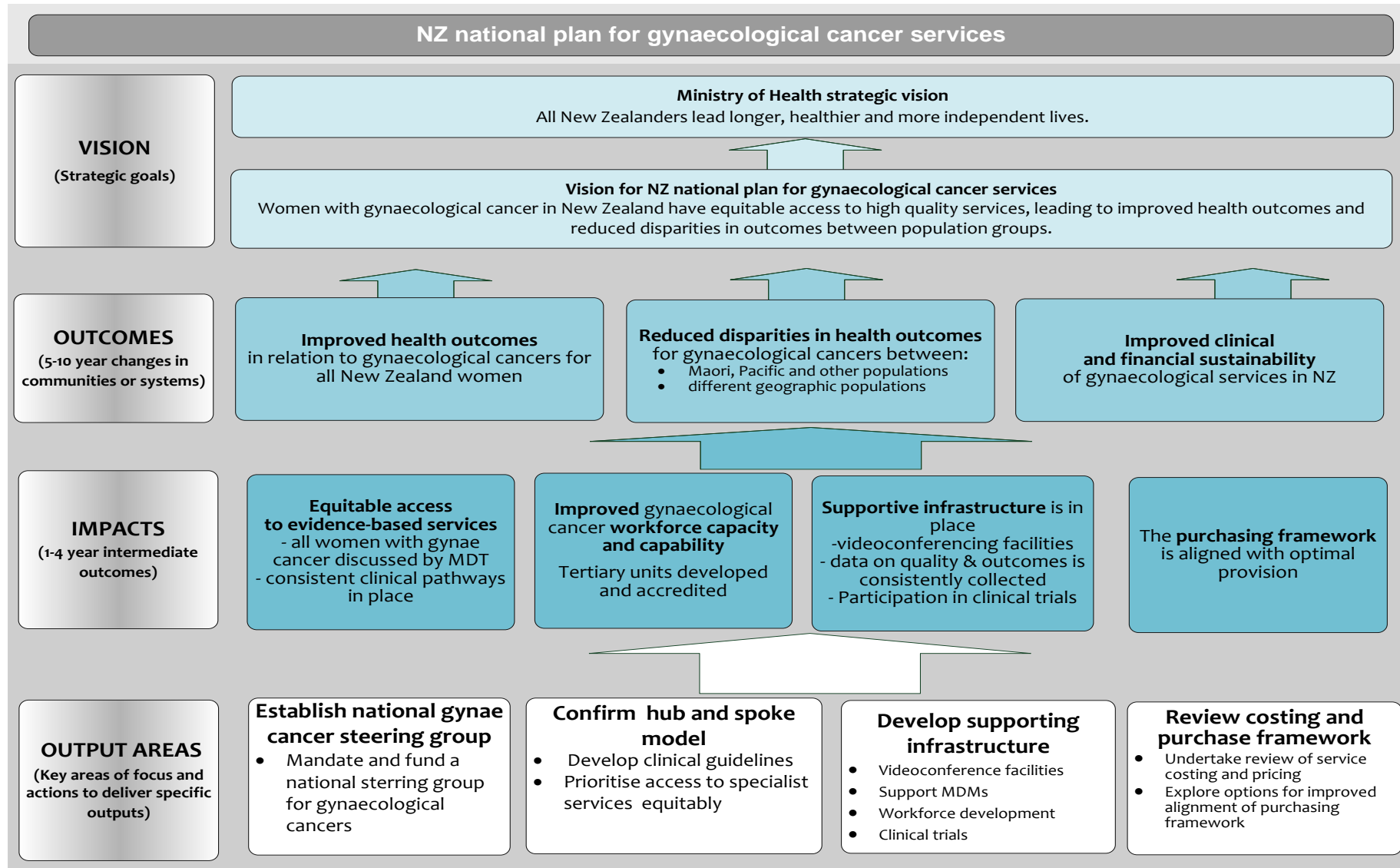


Figure 22 outcomes framework

5.1 Vision & outcomes

The vision guiding this plan is that:

“Women with gynaecological cancer in New Zealand have equitable access to high quality services, leading to improved health outcomes and reduced disparities in outcomes between population groups”

The high level outcomes we seek to achieve by implementing this plan are:

- Improved gynaecological cancer health outcomes
- Reduced disparities in health outcomes
- Improved clinical and financial sustainability

5.2 Integrated patient pathway

All women with gynaecological cancers should have access to a seamless continuum of care. Every woman’s pathway will be determined by their particular diagnosis and treatment plan, as decided through a MDM, to meet their individual needs effectively.

Figure 23 illustrates a high-level patient pathway.

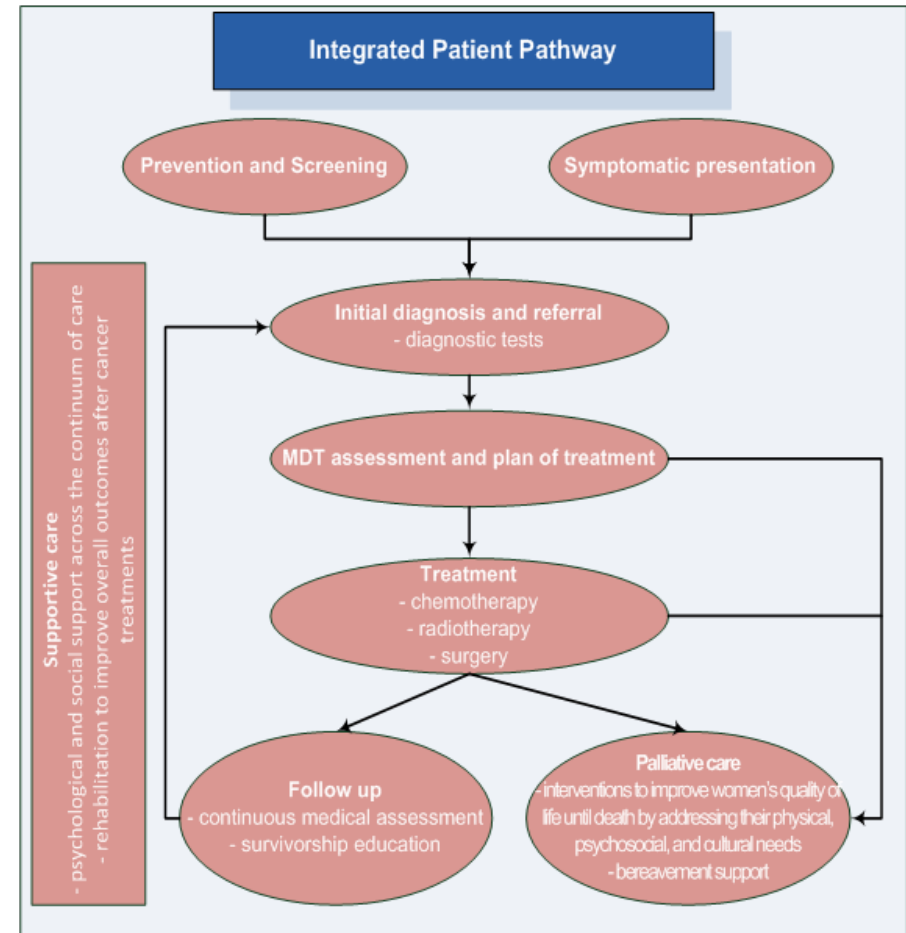


Figure 23 Integrated Patient Pathway

5.3 Overview of preferred model of care

In future we propose a national gynae-oncology service based on local centres, regional multidisciplinary hubs, and an overarching national gynaecological cancer steering group. Regional centres provide comprehensive gynae oncology care and link in a hub and spoke model to local units. There is strong cooperation between hubs and spokes to ensure all women have equal access to comprehensive care for gynae cancer in their locality where possible. Lead gynaecologists in local units act as link to regional centres and to MDM planning. The key components are shown in the schematic below.

The diagram below illustrates the preferred four centre hub and spoke model. However, as related in section 5.7, we envisage the Midland and Northern MDTs sharing some medical staff roles to overcome the Midland diseconomies of scale.

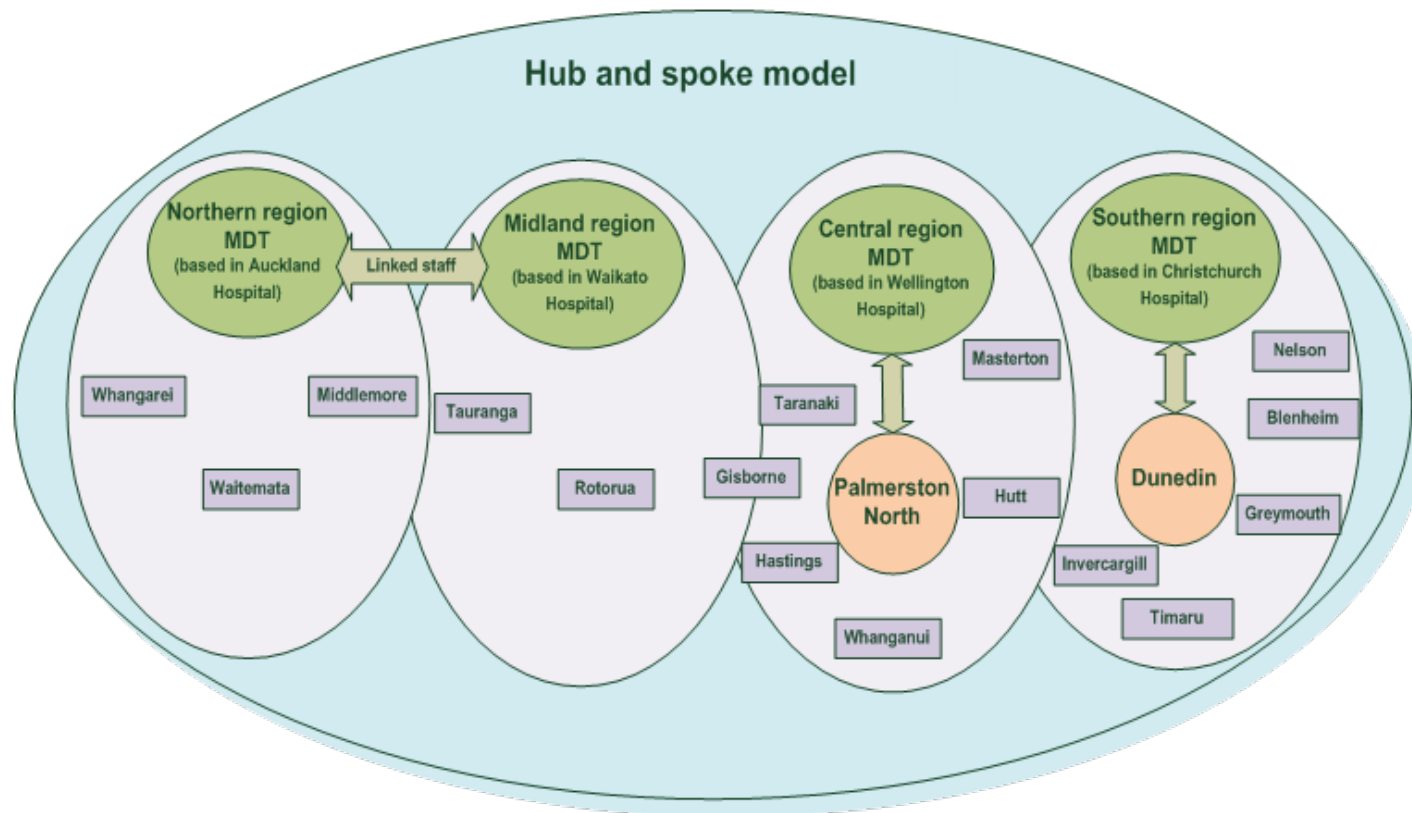


Figure 24 Preferred hub and spoke model

5.4 Developing a mandated national gynaecological cancer steering group

Each gynaecological cancer service acts independently at present, and no one has the mandate or capacity to identify the best way to develop and use our gynaecological cancer resources. To address this we propose the development of a mandated national gynaecological cancer steering group (GCSG).⁶

5.4.1 Objectives

To facilitate best practice care of all women with gynaecological cancers in New Zealand by leading and providing clinical oversight of the implementation of the National Plan and by providing advice on service and treatment issues to the Cancer Control Steering Group.

5.4.2 Functions

The GCSG would function as an oversight network as defined by the National Health Board in 2010, where multiple provider organisations are linked by a clinical network.

“A clinical network is established at national, regional or sub-regional level to provide consistent clinical governance including appointment of a network clinical leader; and movement toward consistent quality assurance activities, prioritisation rules, clinical pathways, referral guidelines and treatment protocols, with associated service audit. The

⁶ There was agreement that this group needs to be mandated centrally and that it needs to fit within the overall NZ cancer control framework. However, there was considerable discussion on the right terminology in order to avoid confusion. Options include ‘network’ (in line with the child cancer network), or tumour stream board and working group (in line with the Lung and Bowel cancer tumour streams). Final governance arrangements and nomenclature will be determined by the Cancer Programme as part of its approach to implementation.

network makes recommendations to the national or regional funder(s) and the host provider DHBs as appropriate, and provides an annual work programme and report.”

The GCSG specific functions include:

- Leading the implementation of the National Plan, making best use of the available resources and to achieving ongoing improvements in gynecological cancer services.
- Supporting the development of shared care arrangements between regional cancer centres (see section 5.7.1) and cancer units (see section 5.7.2)
- To advise DHBs, MOH and clinicians on optimal screening, diagnosis and treatment of women with gynaecological cancers in New Zealand
- To advise on the best use of the available staff and other resources, including prioritizing access to scarce resources
- To issue clinical guidelines and protocols describing preferred patient treatment pathways and access / referral criteria
- To promulgate standards for regional treatment centres and local cancer and secondary care units, and to audit delivery against those standards and to accredited those meeting standards
- To review data and report on equity of access and treatment outcomes
- To advise on workforce development

The GCSG would sit within the cancer control governance framework and would be closely linked to each of the regional cancer networks.

5.4.3 Secretariat

The GCSG would be supported by a (part time) Clinical Leader role, and a (part time) Administration/ Coordination role. This administrative infrastructure would need to be funded through the MoH, in a manner similar to the Child Cancer Network.

5.4.4 Membership

The GCSG would comprise a clinically focused group of individuals representing key sub-specialties and the four regions. The GCSG members would have access to an expert advisory group.

GCSG members would be appointed by the National Clinical Director of Cancer, together with the NZGCG, following an appropriate process to seek nominations for the clinical and other representatives through the relevant college or DHB.

The Clinical Leader would be appointed through an ‘expression of interest’ process led by the Ministry of Health.

The Administrative support role would be a national role in terms of accountability, but will be provided regionally.

The Administration / Coordination role would be appointed by the GCSG’s host (whether it is a DHB or a regional cancer network).

5.4.5 Governance and accountability

The GCSG would report to the Cancer Control Steering Group. The Cancer Control Steering Group provides governance for the Cancer Control Programme, a national programme that covers the Ministry of Health, National Health Board, District Health Boards (DHBs); and regional cancer networks activity to implement the Government’s priorities for cancer and the New Zealand Cancer Control Strategy.

5.5 Future role & capacity of regional gynaecological cancer centres

The important regional cancer centres functions include:

- providing specialist gynae-oncology surgery
- hosting the regional multidisciplinary team (MDT)
- convening and coordinating multi-disciplinary conferences (MDMs), and ensuring all women in the region have timely access to the MDM
- referring patients whose surgical treatment can be safely provided at local level back to their local surgeon
- providing consultation & liaison services to secondary and sub regional centres
- ensuring regional information flows and patient pathways are in place and understood by key stakeholders

Regional gynaecological cancer centres require the following capacity in order to provide evidence based treatment.

5.5.1 Workforce

- Minimum of 2 RANZCOG-accredited gynae-oncologists (or equivalent qualification recognised by GCSG) – these are to be excluded from the general obstetric call roster
- Minimum of 1 FTE (2 staff) medical oncology and should have expressed interest in gynae/ required to attend MDMs.
- Minimum of 1 FTE (2 staff) radiation oncologist (including brachytherapy experience) and should have expressed interest in gynae/ required to attend MDMs.
- Clinical Nurse Specialist (1 minimum, 2 ideal)

- Pathologist with a special interest/ experience (2 staff minimum)
- Radiologist with a special interest/ experience (1 staff minimum, but 2 desirable)
- MDM coordinator & database administrator

5.5.2 Infrastructure

- Access to MDM room able to display three sets of images simultaneously (high resolution radiology images, high resolution pathology images, and patient notes);
- Local access to theatre, ward beds, ICU/HDU, chemotherapy delivery service, external beam radiation, brachytherapy
- Supported MDM database
- Research (ability to take part in international trials)
- Data collection and audit
- Ideally all centres should have the capacity to provide training for gynae oncologist (or advanced gynaecological surgery training modules)
- Access to psychosocial and psychosexual counseling
- Timely linkages to palliative care services for patients with locally advanced cancers and metastatic disease
- Access to social work services, allied health services including physiotherapy, dietician, where appropriate
- Access to culturally appropriate care coordination services, interpreters and counselors/social workers
- Enhanced videoconference access to local secondary and subregional services – including simultaneous display of pathology,

radiology and case notes subject to this infrastructure being developed nationally

Regional centres (when fully staffed) are expected to provide outreach clinics to subregional centres at a minimum of monthly.

5.5.3 Multidisciplinary team meetings

It is widely agreed that discussing all women in an MDM is an essential element of the service model and critical to achieving the best treatment outcomes for women with gynaecological cancers.

MDT members need to have expertise and a demonstrated interest in gynae-oncology, often within a broader field of specialist practice.

It is essential that a sub-specialist lead the MDT approach and that this be available to all patients. This team should liaise closely with designated gynaecologists at the local units.

The MDT must be adequately resourced to undertake the following responsibilities and should:

- Specify and document who will be the primary treating specialist
- Fully document the agreed care plan
- Circulate the agreed care plan to all relevant members of the team
- The progression of care within the MDT should be coordinated ensuring that the patient and all care givers understand their responsibilities for delivering this care.
- The GP should be informed of the planned treatment and their role in this plan

5.6 Future role & capacity of local units

Every secondary care hospital could provide gynae local unit services.

The unit functions include:

- Providing timely, comprehensive information to the regional multi-disciplinary conference (MDM)
- Providing 24/7 local gynaecology assessment and treatment services, including surgical treatment of cancers by appropriately credentialed surgeons on advice from the MDM
- providing consultation & liaison services to primary care providers
- ensuring local information flows and patient pathways are in place and understood by key stakeholders.

5.6.1 Workforce

- Minimum of a lead gynaecologist with an interest in major surgical gynecology practice taking responsibility for liaising with the regional centre and join MDMs
- Specialised nurse support working closely with the lead gynaecologist
- May have radiation and medical oncology
- Palliative care services
- Data collection and audit in line with centres

5.6.2 Infrastructure

- Local units should have the ability to videoconference in to regional centre MDMs.

5.6.3 Subregional cancer treatment units

There are two regional cancer centres outside the four main centres - Palmerston North and Dunedin. They provide external beam radiation

therapy and specialist oncology services in addition to the usual local secondary hospital unit services. Clinicians at these centres will often provide much of the cancer care for women with gynecological cancers – therefore it is important that they are involved in MDMs regards their patients. This can be achieved either by having outreach MDMs at those centres, or by involving them in the regional MDM via videoconference.

5.7 Options appraisal- how many regional centres?

A case could be made for anything between one and six regional gynae cancer centres. The options, along with the key points of interest in relation to each, are set out below.

Option	Key points
One centre based in Auckland	<ul style="list-style-type: none"> • Would employ some 9 FTE gynae-oncologists, • Gives the service critical mass • Enables gynae-oncologists to pursue areas of particular interest • Increased travel burden for patients & their families, and for G.O.s • Increased transaction costs & interface issues as radiation therapy and chemotherapy would continue to be given in the local / regional centre. • Disrupts current service arrangements for the South Island • ADHB would need to invest heavily in the required human and capital resources.
Two centres based in CHCH and Auckland	<ul style="list-style-type: none"> • ADHB would employ 5 G.O.s and cover the Northern and Midland region (2.3 million population) • CDHB would employ 4 G.O.s and cover the Central and Southern regions (2 million population) • Gives each service critical mass • Recognises current reality in that only these two

Option	Key points
	<ul style="list-style-type: none"> centres have subspecialty recognised GOs Easier for the two current centres to recruit than for smaller centres increased travel burden for patients & their families, and for G.O.s increased transaction costs & interface issues as radiation therapy and chemotherapy would continue to be given in the local / regional centre.
Three centres based in CHCH, Wellington and Auckland	<ul style="list-style-type: none"> AKL would employ 5 G.O.s and cover the Northern and Midland region (2.3 million population) CHCH and Wellington would each employ 2 G.O.s and cover the Southern and Central regions respectively (1 million pop each) increased travel burden for Midland patients & their families, and for AKL G.O.s some transaction costs & interface issues as radiation therapy and chemotherapy would continue to be given in the local / regional centre.
Four centres: CHCH, Wellington, Hamilton and Auckland	<ul style="list-style-type: none"> AKL would employ 3 G.O.s and cover the Northern region (1.3 million) Hamilton would employ 2 GOs and cover the northern Midland region (0.7 million population) CHCH and Wellington would each employ 2 G.O.s and cover the Southern and Central regions respectively (1 million pop each) Midland service lacks critical mass (less than 1 million pop)
Six centres: CHCH, Dunedin, Wellington, Palmerston North, Hamilton and Auckland	<ul style="list-style-type: none"> AKL would employ 3 G.O.s and cover the Northern region (1.3 million) The other five centres would each cover populations of between 286,000 (Dunedin) to 700,000 (Hamilton/CHCH) and would employ between one a two GOs each. The five smaller services would lack critical mass, and would likely not be clinically or financially sustainable.

Note that the regional populations in this report are based on the four cancer network catchments rather than the usual DHB regions. The differences are in the Central and Midland regions, where the Taranaki and Tairāwhiti DHBs are part of the Midland region for most services, but part of the central cancer network, because they receive their specialist medical and radiation oncology services from Palmerston North.

The four centre model is preferred by the gynaecological cancer working group for the following reasons:

- Each centre can provide a comprehensive range of services including high and low dose brachytherapy (once GOs are employed)
- Each centre currently runs an MDT
- Fits with the referral pathways for most other cancer services.
- Avoids, as much as possible, fragmented treatment and care planning between centres.

This would give the caseloads volumes & populations shown in table 6. We have calculated the required gynae-oncologist staffing based on the UK guideline of 2 FTE per million population.

Table 6 Estimates for new cancers and required gynaecological oncologist workforce in 2021

Region	2010 estimates			2021 estimates		
	Pop'n million	New cancers / year	G.O. wkfrce	Pop'n million	New cancers / year	G.O. wkfrce
Northern	1.6	327	3	1.9	434	3.8
Midland	0.67	151	1.5	0.73	186	1.5
Central	1.02	215	2	1.06	263	2.1
Southern	1.0	222	2	1.1	268	2.2

However, while the four centre model is the preferred approach from the working group, and results in least dislocation for women, there are critical mass and service development issues that may make it difficult to achieve except through interregional partnerships – this issue is discussed further below.

5.7.1 Critical mass issues

With current catchment populations, the Midland specialty service only just reaches the required minimum threshold for two gynae-oncologists (75 new cases per year), and just reaches the UK guideline of 600,000 as a minimum population. This lack of critical mass will impact on the financial and clinical viability of the Waikato based MDT, in that:

- It will be difficult for the various MDT members (pathology, medical oncology, radiology, CNS, etc, to see enough cases to develop and maintain their expertise; and
- If standards are to be maintained, then the full range of MDT services will be required, but for a population that is substantially less than in the other centres – likely resulting in a significantly higher cost per case.

The best way to address the critical mass issue is likely to be a joint arrangement of some kind between the Auckland hospital based MDT and the Waikato based MDT. This might take the form of joint appointments of keystone staff members to both Auckland and Waikato, with a brief to work across the two centres. Such an arrangement would assist in managing the projected increase in workload in Auckland, would make recruitment to Waikato easier, and would reduce the financial burden on the Midland region. It would also avoid having fragmentation between the surgical oncology components of the service, and the other portions of the MDT treatment such as medical oncology, radiation oncology and nursing care.

The recent agreement between Capital and Coast DHB and Canterbury DHB for shared provision of pediatric oncology service in Wellington may provide a useful template for an agreement between ADHB and WDHB.

The nature of any shared staff arrangement would need to be worked out between the two hubs. Establishing such a joint arrangement will take time and commitment from senior staff, and should be supported by the GCSG.

5.7.2 Service incubation

It is substantially easier to recruit an additional clinician to a well established team with a strong track record, the ability to provide cover, infrastructure and collegial support, than it is to recruit to a new or less well supported role. Hence it will be much easier for Auckland DHB and Canterbury DHB to recruit additional gynae-oncologists than for Capital and Coast DHB and Waikato DHB to recruit to gynae-oncologist roles. The issue for Waikato is enduring and is dealt with under the critical mass section above. For Capital and Coast DHB the issue is more transitional, as Capital and Coast DHB has similar critical mass to Canterbury DHB but does not have the same stable track record or well established supportive environment conducive to recruitment.

A clear plan for gynae-oncology provision at Capital and Coast DHB might go some way to addressing the issue. If this is not successful, then we recommend discussion between Canterbury DHB and Capital and Coast DHB to see whether it might be possible for Canterbury DHB to recruit one or two additional gynae-oncologists, based either in Wellington or Christchurch, but working as part of both the Christchurch and Wellington MDTs.

5.8 Addressing inequalities

Inequalities in gynaecological cancer survival are evident in the data. The causes for this are varied⁷ and include:

- **Stage of the cancer at the time of diagnosis:** This is a strong predictor of outcome. Guidelines need to address methods for earlier detection of gynaecological cancers. Socioeconomic disparities in stage may arise as a result of inequalities in access to screening and primary care. Barriers to access to care include the fee payable for general practitioner visits, including those in which cervical smears are taken.
- **Individual patient characteristics, such as risk behaviours:** Different risk behaviours may in part explain some disparities in cancer survival by different socio-economic groups. For example, obesity and smoking may contribute to the incidence of some cancers.
- **Co-morbidities: The existence of another condition** may limit the treatment choices available to patients and therefore indirectly affect survival. Such co-morbidities may include diabetes and chronic respiratory disease.

Data from the Cancer Registry shows cancer has a disproportionate impact on Māori and on Pacific Island peoples, both in terms of incidence and survival (other than ovarian cancers in Māori).

Ensuring that the cancer control continuum addresses Māori needs and expectations is a priority for the New Zealand Cancer Control Strategy.

⁷ Jeffreys, M., Sarfati, D., Stevanovic, V., Tobias, M., Lewis, C., Pearce, N., Blakely, T. Socioeconomic Inequalities in Cancer Survival in New Zealand: the role of extent of disease at diagnosis. *Cancer Epidemiol Biomarkers Prev* 2009;18(3). March 2009

In order for gynaecological cancer services to address the identified disparities it needs to:

- Acknowledge the right of Māori and Pacific women to equality in health status
- Continue to involve Māori and Pacific Island peoples in decision-making
- Initiate the Equity Intervention model – to ensure equity issues are identified, actions planned and implemented, and monitoring and evaluation frameworks agreed
- Promote Māori and Pacific workforce development

Efforts need to focus on decreasing the incidence of endometrial cancer for Māori and Pacific women, taking into consideration the context of whānau/fono centred care.

An evaluation by Health Outcomes International for the Ministry of Health of the Community Cancer Support Services Pilot Projects found that kaupapa Māori models of care appear to increase service acceptability amongst Māori, and fill gaps in the provision of culturally appropriate cancer services.

There is also evidence around culturally appropriate care coordination services improving the patient experience- this includes providing support for Māori by Māori, linking patients with culturally appropriate services (e.g. kaumatua) and helping providers understand and appreciate cultural needs, tikanga and traditions.

Language barriers should be addressed by providing relevant interpretation services.

A number of specific Māori health frameworks have been developed to provide a structure for addressing the quality of service delivery to Māori in the areas of health promotion, screening, support and rehabilitation services, treatment services, and palliative care provision.

The role of the Māori and Pacific representatives in the GCSG Expert Advisory Group should be to monitor the GCSG’s activities against a framework akin to the lung and bowel cancer taskforce framework and provide advice and recommendations on reducing inequalities in treatment and outcomes for all women with gynaecological cancers. This framework should be agreed early-on with the GCSG.

The Māori representative should work closely with the Māori Equity Advisory Group and existing and developing Māori Leadership Groups to ensure that frameworks are in place but also that there is meaningful participation of Māori throughout the implementation of this plan.

An important activity will be for the Māori and Pacific representatives to support GCSG in identifying quality measures that can be used to indicate progress against the plan’s objectives.

5.9 Stakeholder views on the proposed model

A survey was sent on the 21st of April to:

- Gynaecologists
- Staff with a substantial role in gynaecology services (gynaecologists, medical oncologists, radiation oncologists, pathologists, cancer nurse specialists, other nurses, allied health support services, palliative care services, MDM coordinators, team leader service manager)

- New Zealand Gynaecological Cancer Foundation Board and Management
- Cancer Networks (management, boards, cancer service improvement facilitators)
- District Health Boards (Chief Medical Officers, Chief Operation Officers, Planning and Funding, Directors of Nursing)

The goal of the survey was to elicit feedback from everyone in the sector with a specific interest in gynaecological cancer on the key characteristics of the desired future state of services.

The recipients had the opportunity to pass the survey to other interested individuals, hence a response rate cannot be calculated. 64 individuals responded, with about half of the occupations provided being medical staff. The breakdown of respondents is shown in figure 25.

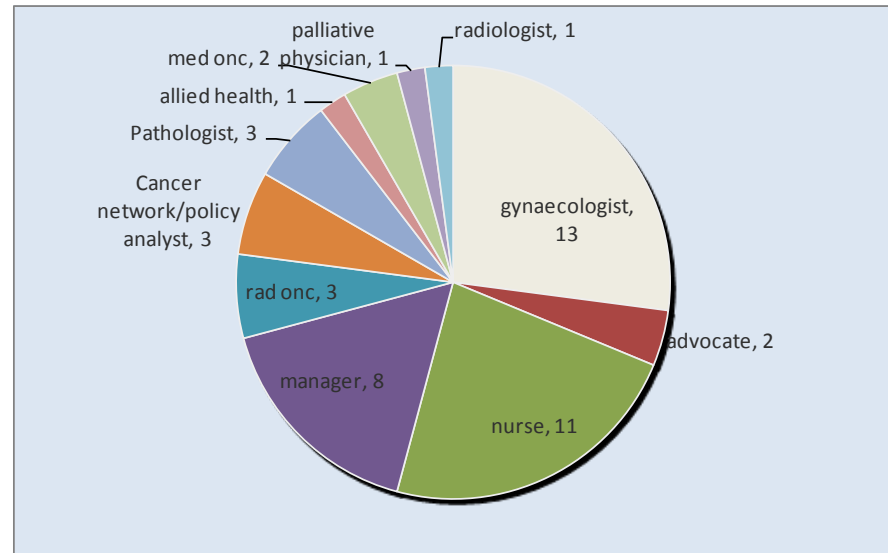


Figure 25: Survey respondent roles

A further 16 respondents did not provide their occupation/role.

The survey format involved presentation of a draft future model of care, with opportunity for the respondent to either strongly agree, agree, tick unsure, disagree or strongly disagree, with aspects of the proposed approach. Respondents could also provide comments. The full text of the survey and responses is provided in the appendix. As shown in figure 26, overall respondents were in favour of the proposed core elements of new service configuration and model of care.

Do you agree... ?

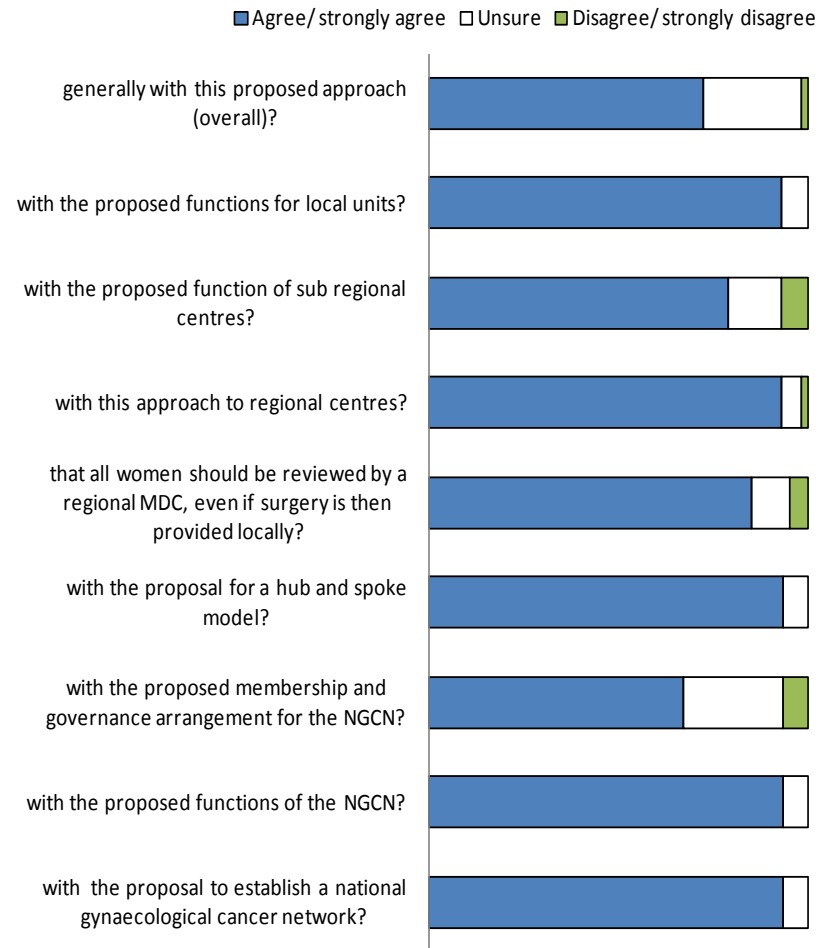


Figure 26: Summary survey responses to elements of the new model of care

Most comments were supportive of the overall model. Typical comments included:

- “... this concept (establishing a national gynaecological cancer network) sounds great as it will be one way of ensuring that all women have access to standardized treatment from a team of experts”
- “We already operate a hub and spoke model between West Coast and Canterbury. I think this works well for the women with appropriate access to quality care and where possible care close to home. We follow our gynae oncs advice regarding management and utilise their MDT to identify best treatment for our patients”
- “Makes sense given the geography and population issues in New Zealand Will allow women access while remaining closer to home”
- Regarding the approach to regional centres: “This sounds an excellent approach to provision of best care”
- “what is proposed sounds familiar (to the UK) and long overdue for New Zealand”

Major caveats expressed in a few responses included:

- Concern that the proposed configuration is too prescriptive: “Intent is good but mandating certain staff mix and levels is always fraught”
- Concern that proposed resource levels are too low: “Need more than 2 gynae oncologists per million people covered”
- Wanting to be sure that the proposal is integrated with other cancer initiatives/concern about resourcing: “Currently similar proposals are underway for Lung & bowel cancer. The cancer sector cannot support additional initiatives at this time”
- Concern that the draft plan is too medically and particularly gynaecology focused: “Radiation & Medical oncologists have a

significant role in driving the Gyne-Oncology services & it seems that the people writing this document are trying to underestimate their role.”

5.10 Financial implications

This plan requires additional resources to support implementation. In particular, resources are required to support the operations of the proposed gynaecological cancer steering group. Based on the experience of the Child Cancer Network, we have estimated the required resource at \$100,000 per annum, covering:

- Salaries (plus 20% overhead) for Clinical Leader and Administration/Coordination role
- Secretariat support
- Cost of meeting rooms and catering
- Some travel costs and minimal fees (e.g. for NGO/ consumer reps.)

There are also implications for the allocation of resources between DHBs, as patients are referred to the service able to provide the most appropriate care. These implications will need to be considered by DHB regional planning groups and the NHB.

Given the current cost of care for women with gynaecological cancer, and the likely life expectancy and quality of life gains, we consider that the resource implications should be marginal.

The greatest financial impact is likely to be in the Midland region, as that is where the largest investment and change are required. This will be a matter for the Midland DHBs, in discussion with Auckland DHB, to consider. We note that the demographic growth in the Northern region will put pressure on facilities and resources there – making a diversion of current IDF flows to Hamilton, in line with an agreed development plan, and possible joint medical appointments, a potentially viable option. Patients flowing to Hamilton rather than

Auckland would bring their IDF flows with them. At the same time, gynae-oncologists working at both Hamilton and Auckland would be exposed to a greater number of new cases per year, and could help relieve the pressure from a growing population on ADHB staff.

5.11 Should this be a national service?

Gynae-oncology shares a number of characteristics with other services that have been designated as national services (Clinical Genetics, Paediatric Pathology, Paediatric Metabolic Services, Paediatric Cardiology and Paediatric Cardiac Surgery):

- A small vulnerable workforce
- High end tertiary service
- Variable access across NZ currently
- Evidence that specialist centres achieve better outcomes

Hence it may well be appropriate for gynae-oncology to be planned and funded directly by the NHB through a Population Based Funding top slice. We recommend in the first instance that the NHB monitor progress in implementing this plan and particularly in achieving equitable access to evidence based services, culminating in a formal review process in 2013. If progress is not satisfactory, the NHB could then recommend that the Minister of Health designate this a national service.

6 Implementation plan and change management approach

6.1 Overall approach to implementation

Development of a detailed approach to implementation is the responsibility of the Ministry of Health and the Cancer Control Steering Group, once they have decided whether and to what extent to accept the recommendations in this report. However, we offer these thoughts regarding implementation.

The process of developing this plan has been clinically led and as inclusive as possible within a limited timeframe. We consider that the implementation process should also be clinically led and inclusive.

The implementation can usefully be divided into three (somewhat overlapping) phases. The Approval Phase involves taking the plan through various approval stages, in order to get sign off and buy in to the approach. The Development stage involves progressive implementation of the important elements of the proposed service configuration. Once the major service components are in place, the Bedding-in Phase involves ongoing review of performance against evidence based practice standards.

A vital early implementation milestone is establishment of a mandated gynaecological cancer steering group and confirmation of the hub and spoke model. Early discussions between ADHB, Waikato DHB and the rest of the Midland region to determine the most appropriate way to deliver MDT services for the Midland region are also important. This may involve joint recruitment and service delivery plans between Auckland and Waikato DHBs to address the medium term diseconomies of scale affecting the development of a hub based at Waikato Hospital

It takes a team...

6.2 Tracking progress

There are a range of potential quality measures that can be used to indicate progress against the plan's objectives. The overall outcome measures is 5 year survival rates by ethnicity, by cancer type and by region. Some potential interim impact measures are set out below

- # of centres with access to appropriate videoconferencing facilities
- % of total women with gynae cancer discussed at MDMs (by ethnicity, cancer type & region)
- % of women (total, by ethnicity, and by region) with ovarian cancer that have surgery by a gynae-oncologist
- % of women (total, by ethnicity, and by region) with endometrial cancer that have surgery by a gynae-oncologist
- % of women (total, by ethnicity, and by region) with cervical cancer that have surgery by a gynae-oncologist
- % of cases that comply with agreed standard timeframe (e.g. from MDT discussion to commencement of treatment)
- % of patients deferred from MDM due to lack of complete patient information
- Participation rate of MDT core members (or covers) in meetings
- % of MDT core members with a cover arrangement
- Participation rates in clinical trials (annually)
- % of gynae oncology nurses that have completed specialised studies
- # of qualified gynae oncologists as compared to best practice

An overall roadmap for implementation of *It takes a team* is set out over page.

Roadmap for <i>It takes a team...</i>			
Focus areas	2011/13 - approval phase	2013/15 - development phase	2016 / 2026 - bedding in phase
Equitable access to evidence based services	<ul style="list-style-type: none"> ✓ Establish clinically led gynaecological cancer steering group and administrative support, including host organisation ✓ Confirm hub and spoke specialty model, including standards for regional, subregional and local centres (role delineation model) 	<ul style="list-style-type: none"> ✓ Waikato & ADHB develop plan for MDT recruitment and service delivery to the Midland and Northern regions ✓ CDHB & CCDHB develop joint GO staff recruitment and incubation strategy ✓ Hubs audit themselves against the standards and to develop a plan to address gaps ✓ National referral and treatment guidelines developed between regional, sub-regional and local service providers. 	<ul style="list-style-type: none"> ✓ Hub & spoke performance reviewed against national referral and treatment guidelines ✓ GCSG to accredit centres meeting all requirements ✓ Regional credentialing of local gynecology surgeons ✓ Ongoing review of standards against emerging information of evidence based practice
Workforce development	<ul style="list-style-type: none"> ✓ Workforce gaps and training requirements confirmed with Health Workforce New Zealand and DHBs hosting regional centres 	<ul style="list-style-type: none"> ✓ CNS roles established in hubs – with a common role description ✓ Recruitment to CCDHB vacancy (may be thru CDHB) ✓ Recruitment to joint Midland / ADHB role(s) 	<ul style="list-style-type: none"> ✓ At least three New Zealand centres accredited for training
Supporting Infrastructure	<ul style="list-style-type: none"> ✓ Work with regional cancer networks & other tumor boards to establish national MDM videoconference development plan ✓ Confirm preferred process and outcome measures ✓ Develop consistent MDM dataset 	<ul style="list-style-type: none"> ✓ Implement video conference network and revise MDM meeting to incorporate distributed clinical team at subregional and local centers ✓ Test outcome and process measures (consistent definitions and collection processes) ✓ Start collating MDM data nationally to support care delivery and service quality monitoring 	<ul style="list-style-type: none"> ✓ GCSG compiles quarterly report showing DHB/regional performance against agreed standards and measures.
Align purchase framework with optimal provision	<ul style="list-style-type: none"> ✓ Timetable review of MDT services purchase framework in national workplan 	<ul style="list-style-type: none"> ✓ Review MDT purchase framework 	<ul style="list-style-type: none"> ✓ Implement review findings
	...to deliver these outputs in 2011/12...	Working towards these medium term impacts...	To contribute to these outcomes ...
Measuring progress	<ul style="list-style-type: none"> ✓ Clinical steering group established with terms of reference approved by Dec 2012 [MoH] ✓ standards for specialty hubs confirmed by June 2012 [MoH] ✓ GCSG confirms training requirements, quality measures, and MDM dataset by June 2012 	<ul style="list-style-type: none"> ✓ Work force gaps identified in this report are progressively reduced ✓ All treating clinicians able to be involved in MDM (via videoconference) ✓ All women with gynae cancer discussed at MDMs. 	<ul style="list-style-type: none"> ✓ All centers have full MDT staffing ✓ Quality measures show: <ul style="list-style-type: none"> - improved survival over time - reduced disparities between major population group and regions - improved timeliness of treatment

6.3 Recommendations

We recommend that:

the Ministry of Health / NHB

- a) endorse the hub and spoke service model approach to provision of gynecological cancer services in New Zealand;
- b) establish and fund a gynecological cancer steering group (GCSG) as a mandated advisory body for future cancer service development and to lead implementation of this plan;
- c) appoint the current working group as the interim GCSG while Terms of Reference, membership and funding arrangements are finalised;
- d) Identify a host organization (Cancer Network or DHB) for the GCSG;
- e) Over time incorporate evidence based standards of multidisciplinary gynaecological cancer care as part of the national service framework;
- f) Review the purchase framework for multidisciplinary team cancer services;
- g) Monitor DBH progress in implementing equitable access to evidence based services, and if progress is unsatisfactory, designate gynae-oncology as a national service and purchase it through a top sliced funding pool.

the Gynaecological cancer steering group (once established)

- h) Brief and engage with key stakeholders on the Plan – including the Minister of Health, the Chairs of the national CMO and DON

forums, RANZCOG, Health Workforce NZ, the Cancer Control Council, the Medical Council, DHB Chairs and CEOs and the national COO and Planning and Funding management groups;

- i) Establish a website for GCSG and establish links to the RANZCOG website, and other
- j) Work in a collaborative manner with DHBs, regional cancer networks and professional bodies to implement the plan;

District Health Boards

- k) Waikato DHB engage with the BOP, Lakes, Tairāwhiti and Auckland DHB to develop a short and medium term plan and resourcing agreement that provides women in the Midland region access to an MDT hub that meets the standards set out in this plan;
- l) Note that because of critical mass issues the proposed Hamilton hub is likely to require some form of joint employment or other arrangement to share key medical staff between the Northern and Midland MDTs;

Cancer Networks

- m) Work together with the GCSG to implement the hub and spoke model regionally and to monitor outcomes;

the Medical Council of New Zealand

- n) Recognise gynae-oncology as a sub-specialty.

Health Workforce New Zealand

- o) Work with the GCSG and hub DHBs to address the workforce gaps identified in this plan, particularly shortages in gynae-oncologists and gynae oncology nurse specialists.

7 Appendices

7.1 Volumes per DHB, per 5 year cohort year, per type

Volumes of cancers per year					
DHBname	Cervical	Endometrial	Other	Ovarian	Total
Auckland	20.6	37.2	12.8	23	93.6
Bay of Plenty	10	20	6.2	16.4	52.6
Canterbury	18.4	38	13.2	35.8	105.4
Capital and Coast	7	22.4	4.6	21.6	55.6
Counties Manukau	21	44.2	10.8	23.4	99.4
Hawke's Bay	5	19.2	5.4	11.8	41.4
Hutt	3.6	10.2	3.4	7.8	25
Lakes	4	7.4	1.6	7.4	20.4
MidCentral	5	15	2	11.2	33.2
Nelson Marlborough	5.8	11.8	4.6	8	30.2
Northland	7.4	13.6	5.6	9.8	36.4
Otago	4	16.4	5.8	17.4	43.6
Overseas	0.4	0.2	0	1.8	2.4
South Canterbury	1	5.8	1.2	5.2	13.2
Southland	3.8	7.8	3.4	7	22
Tairāwhiti	2.2	4.6	1.4	3.2	11.4
Taranaki	3.6	9.6	2.6	7.6	23.4
Waikato	13	30.6	10.2	24	77.8
Wairarapa	1	5.4	1	2.4	9.8
Waitemata	18	36.6	11.8	29.2	95.6
West Coast	1.8	2.2	0.8	2.6	7.4
Whanganui	3.2	5.2	3.4	3.6	15.4
Total	159.8	363.4	111.8	280.2	915.2
	17%	40%	12%	31%	100%

7.2 Literature review

Available on request from Nieves Ehrenberg. Email address: nehrenberg@srgexpert.com

7.3 Survey

Available on request from Nieves Ehrenberg. Email address: nehrenberg@srgexpert.com

7.4 Population by region (census data)

The populations by DHB (Statistics NZ 2006 census medium projections to 2009 calculated by DHB for the MoH) are shown below grouped into the regions as currently aggregated by cancer network. Note that the Midland region normally includes both Tairāwhiti and Taranaki, but these two DHBs currently access their oncology and radiation therapy services from Midcentral DHB, and their gynaecological cancer surgery and multidisciplinary team review services from CCDHB.

Region	DHB	Population	Total by region
Northern	Northland	155,785	
	Waitemata	525,260	
	Auckland	446,785	
	Counties Manukau	477,915	
			1,605,745
Midland	Waikato	358,570	
	Lakes	102,650	
	Bay of Plenty	207,935	
			669,155
Central	Tairāwhiti	45,910	
	Hawkes Bay	153,885	
	Taranaki	107,578	
	MidCentral	166,350	
	Whanganui	63,328	
	Capital and Coast	285,380	
	Hutt Valley	142,220	
	Wairarapa	39,713	
Southern	Nelson Marlborough	136,130	
	West Coast	32,108	
	Canterbury	496,845	
	South Canterbury	55,317	
	Otago	186,020	
	Southland	110,585	
			1,017,005
	Total		4,296,268

8 References

1. Ministry of Health. Cancer: New Registrations and Deaths 2007. Wellington: Ministry of Health, 2010.
2. Australian Cancer Network and National Breast Cancer Centre. Clinical Practice Guidelines for the Management of Women with Epithelial Ovarian Cancer. Camperdown, NSW: National Breast Cancer Centre, 2004.
3. Junor EJ HD. Specialist gynaecologists and survival outcome in ovarian cancer: a Scottish National Study of 1866 patients. *Br J Obstet Gynaecol* 1999;106(11):1130-6.
4. Cancer Control Taskforce MoH. The New Zealand Cancer Control Strategy: Action Plan 2005–2010. 2005.
5. NZNP. Better, Sooner, More Convenient: Health Discussion Paper. 2007.
6. Central Region's Technical Advisory Group (TAS). Regional Gynaecology Report (Unpublished draft), February 2010.
7. Ministry of Health. Cancer Patient Survival Covering the Period 1994 to 2007. Wellington: Ministry of Health, 2010.
8. Ministry of Health. Cancer Projections: Incidence 2004–08 to 2014–18. Wellington: Ministry of Health, 2010.
9. Vernooij F. Is Centralisation of Ovarian Care Warranted? A Cost Effectiveness Analysis. *Ovarian Cancer Treatment in the Netherlands: the effect of care provider on the outcomes of treatment between 1996-2003*: Utrecht University, 2008.
10. du Bois A, Rochon J, Pfisterer J, Hoskins WJ. Variations in institutional infrastructure, physician specialization and experience, and outcome in ovarian cancer: a systematic review: Elsevier, 2009:422-436.
11. Verleye L, Vergote I, van der Zee AG. Patterns of care in surgery for ovarian cancer in Europe. *European Journal of Surgical Oncology* 2010;36 Suppl 1:S108-14.
12. Burton E, Chase D, Yamamoto M, de Guzman J, Imagawa D, Berman ML. Surgical management of recurrent ovarian cancer: The advantage of collaborative surgical management and a multidisciplinary approach. *Gynecologic Oncology* 2010;120(1):29-32.
13. Chan JK, Sherman, A.E., Kapp, D.S., Zhang, R., Osann, K.E., Maxwell, L., Chen, L.M., Deshmukh, H., . Influence of Gynecologic Oncologists on the Survival of Patients With Endometrial Cancer. *Journal of Clinical Oncology* 2011.
14. Woo YL, et al.,. Centralisation of Services for Gynaecological Cancer. *Cochrane Review* 2010.
15. Bristow RE, Palis BE, Chi DS, Cliby WA. The National Cancer Database report on advanced-stage epithelial ovarian cancer: Impact of hospital surgical case volume on overall survival and surgical treatment paradigm: Elsevier, 2010:262-267.
16. Vernooij F, Heintz APM, Coebergh JW, Massuger LFAG, Witteveen PO, van der Graaf Y. Specialized and high-volume care leads to better outcomes of ovarian cancer treatment in the Netherlands: Elsevier, 2009:455-461.
17. Junor EJ HD, Gillis CR. Management of ovarian cancer: referral to a multidisciplinary team matters. . *Br J Cancer* 1994;70:363–70.
18. Cohen P, Tan AL, Penman A. The Multidisciplinary Tumor Conference in Gynecologic Oncology-Does It Alter Management?, 2009:1470.
19. NHS Executive. Guidance on Commissioning Cancer Services: Improving outcomes in gynaecological cancers, the manual, 1999.
20. Rachet B, Maringe C, Nur U, Quaresma M, Shah A, Woods LM, et al. Population-based cancer survival trends in England and Wales up to 2007: an assessment of the NHS cancer plan for England: Elsevier, 2009:351-369.
21. Expert Advisory Group on Cancer to the Chief Medical Officers of England and Wales. Calman-Hine Report: A Policy Framework for Commissioning Cancer Services: NHS Executive, 1995.

22. Royal College of Obstetricians and Gynaecologists. The Future Workforce in Obstetrics and Gynaecology- Full Report. London: RCOG Press, 2009.
23. Royal College of Obstetricians and Gynaecologists Scottish Committee. The Future of Obstetrics and Gynaecology in Scotland: Service Provision and Workforce Planning. London: Royal College of Obstetricians and Gynaecologists, 2005.
24. Crawford SM. Opportunities for better cancer outcomes missed in UK primary care, 2009:2.
25. Raza A, Mould T, Wilson M, Burnell M, Bernhardt L. Increasing the effectiveness of referral of ovarian masses from cancer unit to cancer center by using a higher referral value of the risk of malignancy index. *International Journal of Gynecological Cancer* 2010;20(4):552.
26. Bristow RE, Santillan A, Diaz Montes TP, Gardner GJ, Giuntoli, II, Robert L, et al. Centralization of care for patients with advanced stage ovarian cancer: Wiley Online Library, 2007:1513-1522.
27. Stowers M, Williams M. Improving the cancer patient journey: the impact of a regional cancer coordination model, 2008:5-11.
28. Royal College of Nursing. Specialist Nurses: Changing lives, saving money, 2010.
29. Leary A BN, Darlison L, Guerin M.,. An analysis of Lung Clinical Nurse Specialist workload and value. *Cancer Nursing Practice*.
30. Macmillan Cancer Support. Demonstrating the economic value of co-ordinated cancer services. An examination of resource utilisation in Manchester Manchester: Macmillan Trust, March 2010.
31. Maughan K, Clarke, C.,. The effect of a clinical nurse specialist in gynaecological oncology on quality of life and sexuality. *Journal of Clinical Nursing* 2001;10 (2):221–229.
32. Walton LM, Reeve, J., Brown, P.M., Farquhar, C.M., . Gynaecologic cancer patients' needs and experiences of supportive health services in New Zealand. *Psychooncology* 2010;19(2):201-8.
33. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Certification in Gynaecological Oncology: training program handbook 2011. Victoria, Australia: RANZCOG, 2011.