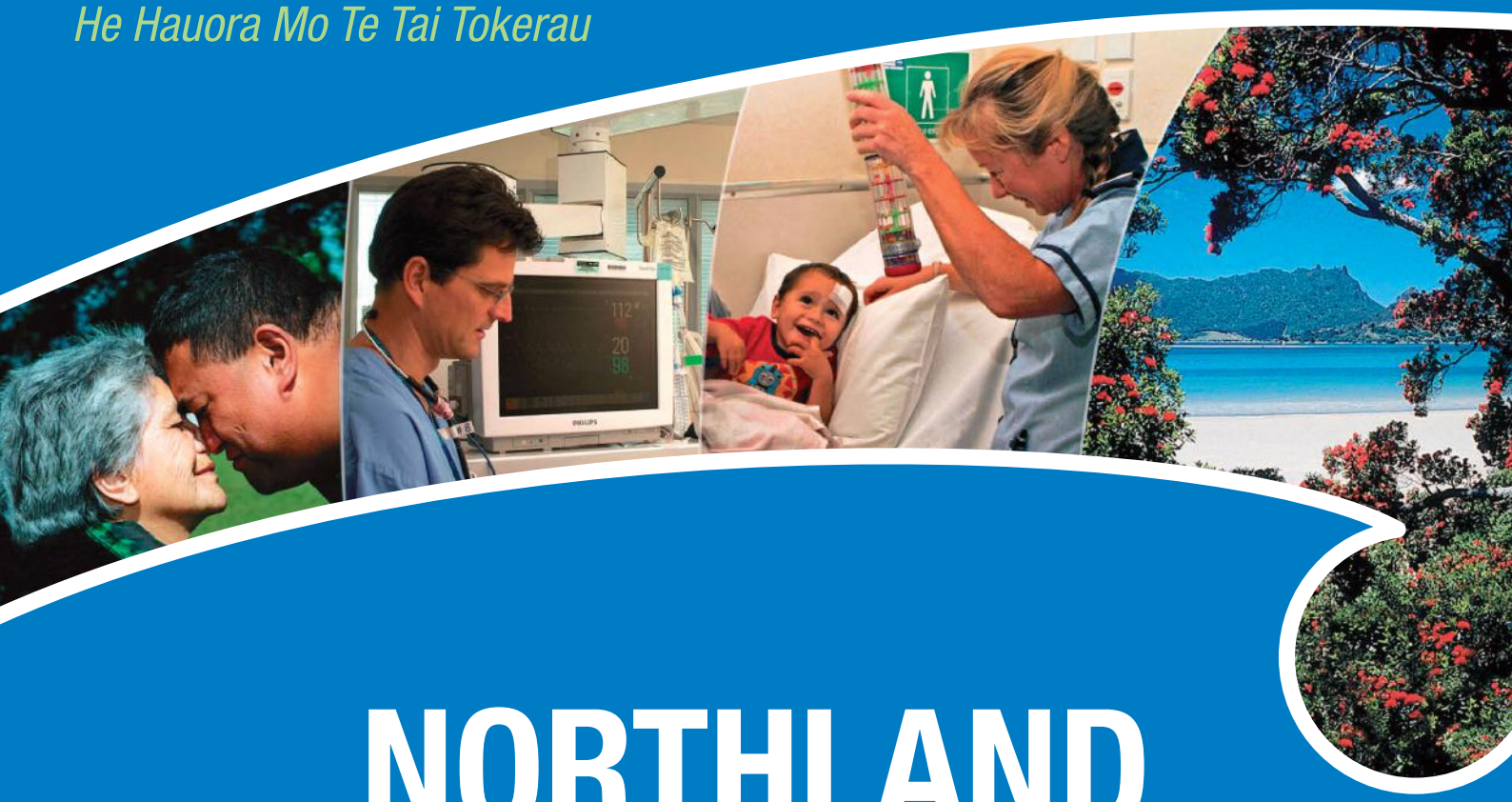
A Healthier Northland

He Hauora Mo Te Tai Tokerau



NORTHLAND HEALTH SERVICES PLAN 2012-2017

July 2012

NORTHLAND DISTRICT HEALTH BOARD

Te Poari Hauora Ā Rohe O Te Tai Tokerau

Prepared by

Health Partners Consulting Group

for Northland District Health Board

June 2012

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Introduction

Messages from the Board Chair and Chief Executive

Kua tawhiti kē tō haerenga mai, kia kore e haere tonu; he tino nui rawa o mahi, kia kore e mahi tonu

He Whakatauki a Tā Hēmi Hēnare

You have come too far, not to go further; you have done too much, not to do more

Proverb: Sir James Henare

Anthony Norman
Board Chair

Many people communicate with me as the Chair of the District Health Board, with comments about the health services provided across Northland. Some people think we should do more for our people so that everyone can enjoy better health and have better health outcomes. Others want the quality and their experience with services to be safer, inclusive of them and their families and appropriate to the culture and values of Northlanders. Yet others want more modern facilities closer to their community or town.

Our role as the Board is to provide the stewardship, set the direction and approve the strategies so that all Northlanders have the opportunity to access good, safe services, in the community and in our hospitals when needed. This Northland Health Services Plan 2012-2017 (NHSP) sets out the strategies we have adopted to deliver these services.

The next 20 years lay out a challenging future, one where the health needs of Northlanders' increase dramatically as a result of our population growing and people getting older, coupled with escalating levels of diabetes, heart disease, cancer and the growing problem of obesity in our children and families.

In addition our capacity to recruit a skilled workforce to our hospitals and community health services will be constrained, our finances, necessary to build and modernise more facilities to meet this projected health demand, even tighter.

The Board has to balance all these competing demands and provide a strong and stable health system into the future so that Northlanders not only want to use our services and feel safe doing so, but importantly will be able to continue doing so.

The Board has approved the direction, Headline Targets, and Headline Actions outlined in the NHSP and importantly, have agreed the performance measures so that we can monitor our progress to a "Healthier Northland".

The Board delegates the implementation of the NHSP to the Chief Executive and Executive Leadership Team and our health partners, Manaia and Te Tai Tokerau PHOs, in conjunction with the Whānau Ora Collectives and a range of external community service providers – pharmacists, aged care hospitals and residences and other non-government organisations and service providers. It's imperative that we all work together and improve service integration so that Northland people get the best service in the right place at the right time by the right people, now and into the future.

Dr Nick Chamberlain
Chief Executive

While working as a GP in Whangarei I always felt accountable and responsible for providing the best care and treatment to all my patients. Nowadays, as Chief Executive, I am accountable and feel responsible for the operational implementation of the NHSP for about 159,000 Northlanders. We have set ourselves six challenging, ambitious but feasible Headline Targets and Headline Actions.

Over the next five years we anticipate intensifying pressures with health targets, the need to improve patient access and better health outcomes, while at the same time improving quality and safety, and maintaining strong performance in productivity and cost containment. This Triple Aim of achieving improvements in population health, patient experience and cost and productivity simultaneously is central to the NHSP and has been agreed to by key clinical and managerial health leaders, right across Northland.

So, with the support of my many colleagues in Northland, I feel energised by the overall goals and Headline Targets and Actions we have set ourselves. We must refocus and increase our efforts to improve access, keep all services in our community and hospital settings safe and at the same time live within our means.

This will not simply be 'more of the same', but rather, will involve some parts of our delivery system needing to be reorganised, funding allocations reviewed and prioritised and new models of care and service delivery adopted.

New technologies and enhanced facilities will assist in the delivery on and achievement of the NHSP, but it is 'people' who will be most critical to the successful implementation of detailed plans that will be developed and which will underpin the NHSP.

I urge all of my over 2,600 staff – our senior medical specialists and resident medical officers, nurses, allied health professionals and all of the staff in support roles throughout our hospitals; all our colleagues in the PHOs, GPs, nurses, community health workers in the community, our providers in the aged care sector and mental health sectors, pharmacists, physiotherapists, occupational therapists, social workers, health educators and health promoters, our Māori providers and Whānau Ora collectives, oral health teams and community providers; in short, everyone involved in the health delivery system in Northland, to not only read and understand this plan, but more importantly, to involve yourself in projects and workstreams arising from the NHSP Outcomes Framework and NHSP Implementation Roadmap.

This is our chance to leave a healthy legacy for the future generations of Northlanders; our mokopuna – grandkids, our tamariki – children, our rangatahi – our youth, to enjoy better health and to be secure in the knowledge that the inequities between Māori and non-Māori which currently exist, will not persist.

Together, let's make sure we reduce the life expectancy gap between Māori and non-Māori, that we reduce unnecessary admissions into hospitals, that we make same-day access to the GP for urgent care the norm and that everyone will recommend the services provided in the community and in our hospitals. To do all this, at the same time we must live within the financial constraints that challenge the nation.

I ask you to support this plan's key messages, targets, actions and measures, so that when we get to the end of this first five-year stage, you can put your hand on your heart and say that you were a part of making a positive difference and we can all celebrate our success with a healthier Northland.

Executive Summary

Overview

Over the next 20 years, the health needs of the Northland population will increase as a result of population growth and ageing, and increasing prevalence of long-term conditions (LTCs). Furthermore, health inequities between Māori and non-Māori may worsen, given the prevalence and impact of LTCs, associated risk factors such as obesity, relative differences in socioeconomic status, and the impact of poor local economy performance (Northland has the lowest GDP of any region in New Zealand).

Northland primary health, community and hospital services face increasing demand pressure. The forecast future escalation in demand will mean services will need considerably increased capacity, but this cannot simply be 'more of the same' if population outcomes are to improve, and inequities are to reduce. The need for change is compounded by medium to long-term forecasts of supply-side constraints in operational and capital funding, and availability of workforce. Some Northland facilities are already at, or approaching, maximum capacity.

Together these factors point to the unsustainability of the Northland health system in its current form. Future-proofing requires different resource allocation patterns, and adoption of new ways of working that improve access, make better use of the available workforce, and improve service performance. New and enhanced facilities and improved use of technologies are also required.

The Northland Health Services Plan (NHSP) describes these future challenges and the responses that will lay the foundation for long-term clinical and financial sustainability. The NHSP has been developed in conjunction with key clinical and managerial leaders from across Northland's health system, together with input from wider stakeholder groups. It builds on existing Northland DHB plans, and learnings from other systems, locally and regionally in New Zealand, and internationally.

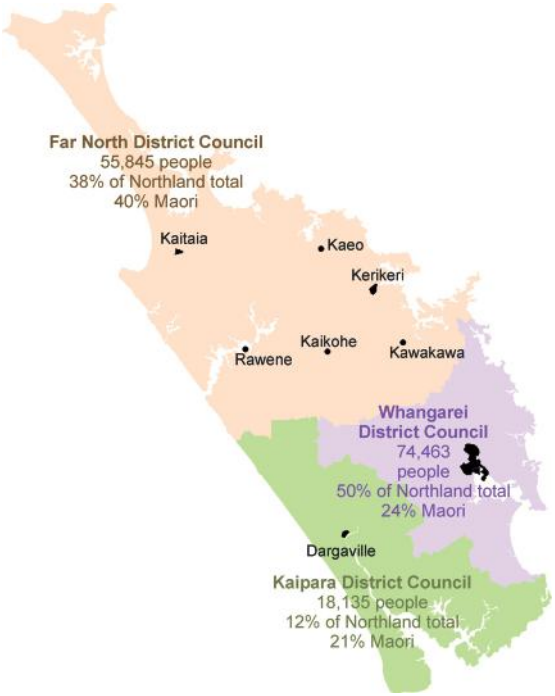
The NHSP has a 20-year horizon, with a particular focus on the early actions that anticipate the intensifying pressures on Northland's health system, reducing the risk of crisis-driven, reactive responses.

An NHSP Outcomes Framework has been developed using the Triple Aim methodology: achieving improvements in population health, patient experience, and cost/productivity *simultaneously*. Six 2017 Headline Targets have been identified and a range of Headline Actions developed to contribute to achieving these targets. The targets are challenging but feasible. They demonstrate the commitment of Northland health sector leaders to making real improvements in the health and care experience of all Northlanders. Importantly they also demonstrate the strong commitment of these leaders to address longstanding health inequities between Northland Māori and non-Māori.

Profile of Northland

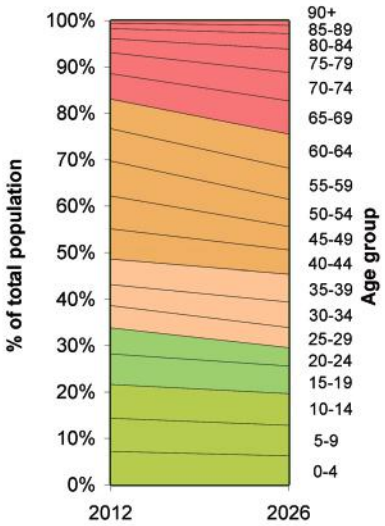
Northland's estimated population in 2012 is 159,160, or 3.6% of New Zealand's population. Māori comprise around 30% of Northland's population. About half lies in Whangarei District (Figure 1).

Figure 1: *Northland population, 2006 Census*



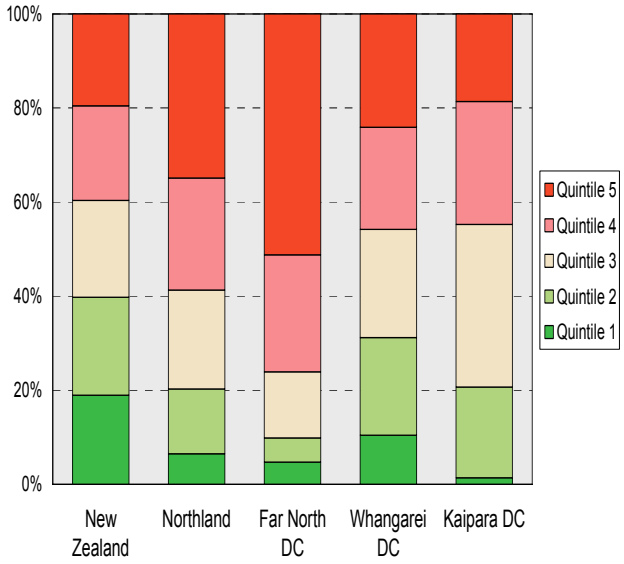
Northland's population is 'ageing' because older age groups are increasing in both number and proportion, while those of children and youth are decreasing (Figure 2). Significant change in the age structure of Northland is projected between 2012 and 2026.

Figure 2: *Northland population ageing – 2012-2026*



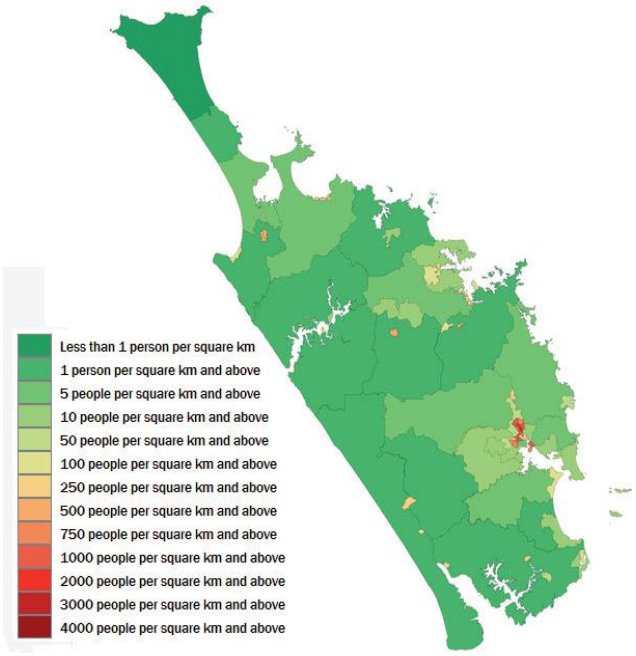
Northland has one of the most deprived populations in the country (Figure 3). Deprivation levels vary across Northland.

Figure 3: *Northland deprivation by area and compared to New Zealand profile* (*Quintile 5 most deprived, Quintile 1 least deprived)*



Northland's only significant urban area is Whangarei, which contains about one-third of its population (Figure 4). The remainder live in small towns (the largest of which are Kaitaia, Kerikeri, Kaikohe and Dargaville at about 5,000 each) and rural areas across the district.

Figure 4: *Northland population distribution*



Northland has many isolated communities; it takes over five hours to travel from Northland's northern to southern extremities and up to two hours west to east (Figure 5).

Figure 5: *Travel times across Northland and to Auckland*

Northland Health Services

Northland has one major secondary care hospital, Whangarei Hospital. A further four district hospitals provide urgent care and acute medical, primary maternity, intermediary, and rehabilitative care (Figure 6).

Figure 6: *Northland hospitals*

Hospitals in Auckland, primarily Auckland City Hospital, provide more specialised (tertiary) services for Northlanders, mainly in cancer and cardiac care. Because of low patient volumes and the specialist skills and equipment required, these cannot be provided in Northland. It takes about two hours to reach Auckland by road from Whangarei (Figure 5).

There are currently 149 GPs and 154 practice nurses across 38 general practices providing primary health care to Northlanders enrolled with the two Northland PHOs, and non-enrolled and non-resident patients.

Northland DHB has 234 contracts with 178 non-government organisations (NGOs) including Māori health providers and Whānau Ora Collectives who provide a wide range of public health, primary health care and community services across Northland.

Note the NHSP uses the following definitions:

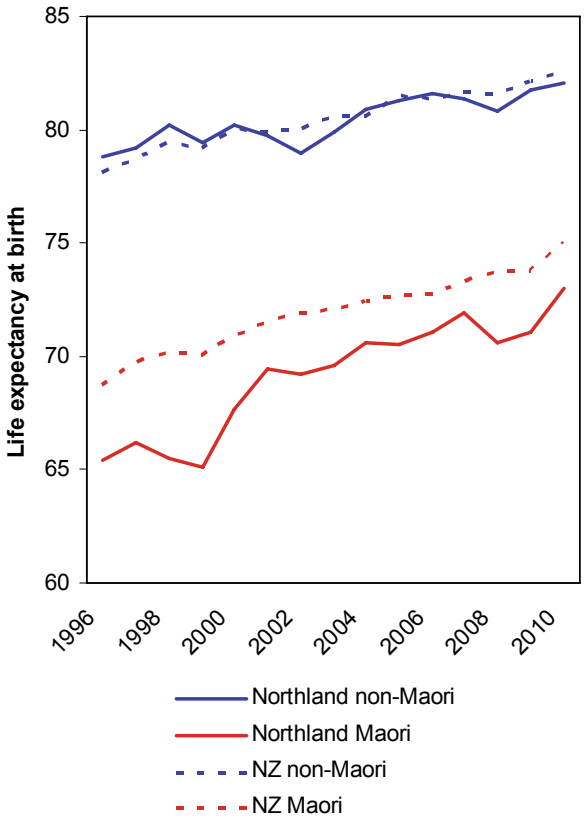
- Primary health care – all *non-hospital and non-specialist* providers that may provide first-level care and prevention services to Northlanders including general practice, Māori health and Whānau Ora providers, community pharmacists, physiotherapists etc
- Primary care – general practice services only which may be provided by GPs or nurses
- Community care – this includes non-first level care services primarily provided as supportive care or diagnostics. This includes aged care, mental health care, district nursing, public health, radiology, and laboratory.

Health Status of the Northland Population

Many health status indicators of Northlanders compare unfavourably with New Zealand averages, particularly for Māori. Of particular note:

- Life expectancy for all Northlanders is lower than national averages, with life expectancy for Māori lower than that of the national Māori population, and much lower than non-Māori Northlanders (see Figure 7)
- Northlanders have higher rates of health risk factors including:
  - Tobacco use – 26% of Northland adults smoke compared with 19% for New Zealand. The smoking rate is extremely high for Māori (55%)
  - Nutrition and physical activity – 30% of Northland adults are obese compared with 19% for NZ. The rate is higher for Māori (47%)
  - Alcohol use – 23% of Northland adults report hazardous alcohol consumption patterns compared with 20% nationally.
- These population factors explain up to 80% of the variance of three key disease groups: cardiovascular disease (CVD), diabetes and cancer together representing more than half the premature deaths in Northland.
- We estimate only 14% of Northland adults lead a healthy lifestyle (that is are non-smokers who exercise, eat 5+ vegetables and fruit per day, are not obese and do not abuse alcohol).
- Of Northland adults, 5.4% are estimated to have CVD – the highest in the Northern Region (Northland DHB together with Waitemata, Auckland and Counties Manukau DHBs).
- For diabetes, 6.9% of the adult population has been diagnosed – second behind Counties Manukau in the Northern Region. Importantly, diabetes prevalence is forecast to increase by 72% from 2009 to 2026.
- In aggregate, 9.4% of Northland's adult population has either CVD or diabetes or both. Around 42% of the health service costs (inpatients, outpatients, Emergency Department (ED), pharmaceuticals and laboratory tests) are consumed by this 9.4% of the population.
- Northland has significantly higher Ambulatory Sensitive Hospitalisation (ASH) rates for Māori compared to all New Zealand Māori, while non-Māori rates are similar to the national average. Māori rates are twice that of non-Māori on an age-adjusted basis. Medical hospital readmissions are also slightly higher than the national DHB average.
- Northland has a relatively high neonatal and infant mortality rate compared with New Zealand, with Māori tamariki rates particularly high. It also has relatively high rates of hospital admissions for infections in children – skin, respiratory – and other conditions linked to socioeconomic conditions, and particularly for Māori tamariki.
- Northland's birth rate is higher than the national average, in particular for Māori. The teenage pregnancy rate is high.
- Northland also has the third highest suicide rate (2004-2008), and third highest rate of female Māori intentional self-harm hospitalisations.

Figure 7: *Northland life expectancy at birth for Māori and non-Māori compared to New Zealand averages*



Service Demand Pressures

Northland health services face increasing demand pressure driven by the health status of the population, and Government and public expectations. Of particular note is strong utilisation growth in:

- Acute medical admissions across all Northland hospitals but in particular Whangarei Hospital. For example, acute inpatient medical admissions increased on average by 3.3% per year between 2007 and 2011 (population growth of 1.2% on average per year over the same period)
- ED attendances, particularly in the absolute number of attendances at Whangarei Hospital. ED attendances have increased on average per year by (Figure 8):
  - 2.5% at Whangarei Hospital over the past five years (13.3% total growth), 3.1% over the last two years (9.7% total growth)
  - 4.2% at Kaitaia Hospital over the past five years (23% total growth), 2% over the past two years (6% total growth)
  - 5.5% at Bay of Islands Hospital over the past five years (31% total growth), 4.6% over the past two years (15% total growth)
- General practice patient consultations. Between 2009 and 2011 primary care utilisation increased by 7.7% per annum (Figure 9).

The significant ageing of Northland's population coupled with the projected large increase in the prevalence of diabetes will exacerbate pressures on services under current service patterns.

For example, if current hospital admission rates and lengths of stay remain the same as they are now, over the next 15 years approximately **140** additional inpatient beds would be required above existing resourced capacity (Figure 10). The major driver of this change is the significant increase in the over-65 years population. Including the projected increase in diabetes prevalence suggests that the equivalent of an extra ward (30 beds) over the next 15 years will be required if changes to models of care are not made – a total of **170 additional beds**. At any one time, around 20% of the inpatient beds occupied by Northlanders will be with people with diabetes.

Figure 8: *Growth in attendance at all NDHB EDs by age, 2007-2011 and projection to 2016*

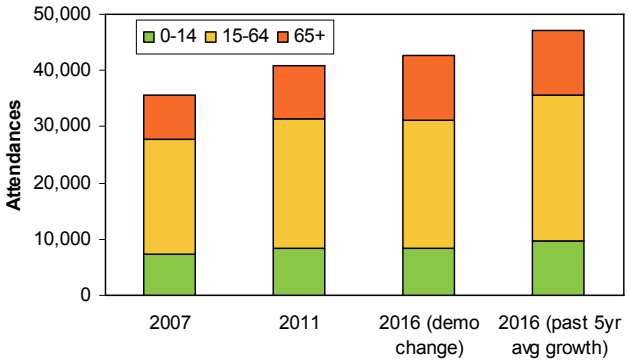


Figure 9: *General practice consultation growth by age 2009-2011 and projections to 2016*

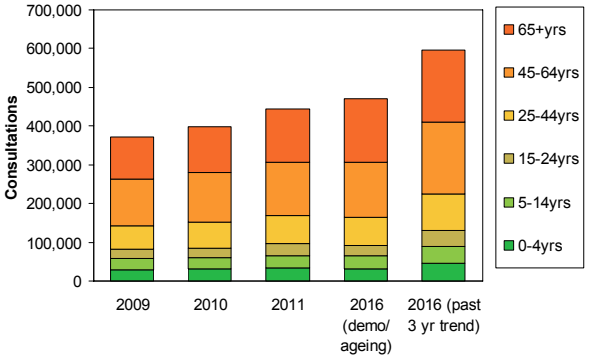
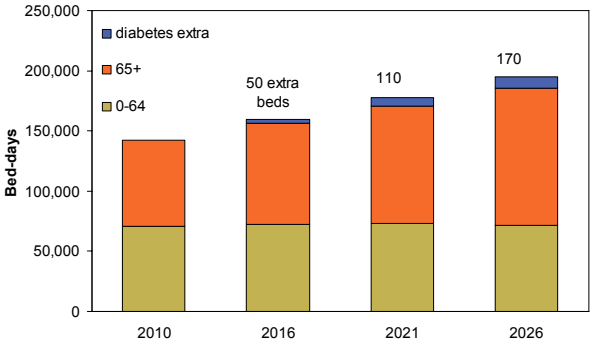


Figure 10: *Inpatient bed-day projections to 2026*



Financial Challenges

Northland DHB (NDHB) is the principal funder of health services in Northland, and is also a major provider of services. As such, NDHB's financial performance is critical for the coverage and delivery of health services in Northland.

Over recent years, NDHB has reported good financial performance, generally breaking even.

However, constraints in new funding increases for DHBs have begun to place significant pressure on NDHB's financial performance.

Base case financial modelling undertaken as part of the NHSP development suggests that NDHB's financial performance will deteriorate considerably from 2013/14 (Figures 11 and 12). The base case modelling assumes:

- Government funding increases will remain constrained over the planning period
- Current utilisation patterns continue, adjusted for population change and an increase in the prevalence of diabetes
- Northland DHB's planned capital development programme proceeds.

The base case modelling makes no assumptions regarding cost savings, including from 'business as usual' (BAU) productivity/efficiency improvements.

In considering options for managing future available funding it is important to recognise that there is no 'magic bullet' that will address the many pressures and future costs that Northland's health system faces. Tackling these pressures and controlling cost growth requires a coherent set of actions implemented over time, actions that assist with moderating future demand for services, and controlling growth in service delivery costs.

The new models of care and prevention needed to moderate future demand and assist to control service delivery costs will, in some instances, require upfront investment and shifts in how Northland's health system currently allocates its funding.

In order to invest there is a pressing need to reduce the current level of projected expenditure and extract savings. This will be a major focus of Year 1 of this plan. It will be challenging but of critical importance to delivery on the NHSP. It will require Northland's health providers to work together and to be prepared to make the tough decisions required to improve value for Northlanders.

Figure 11: *Projected revenue and cost growth (base case)*

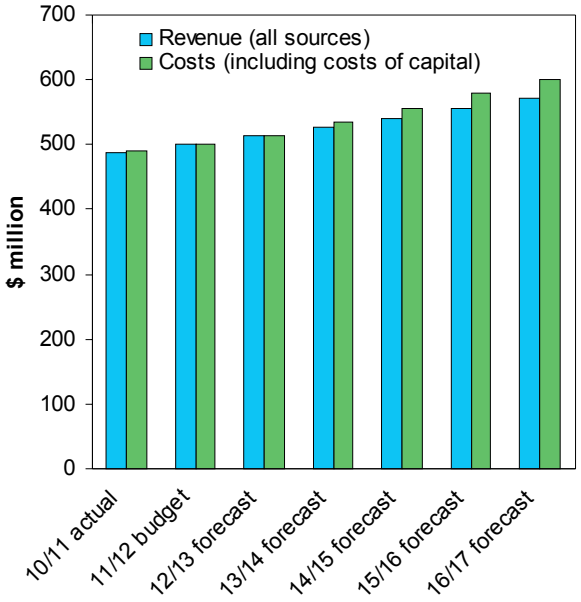
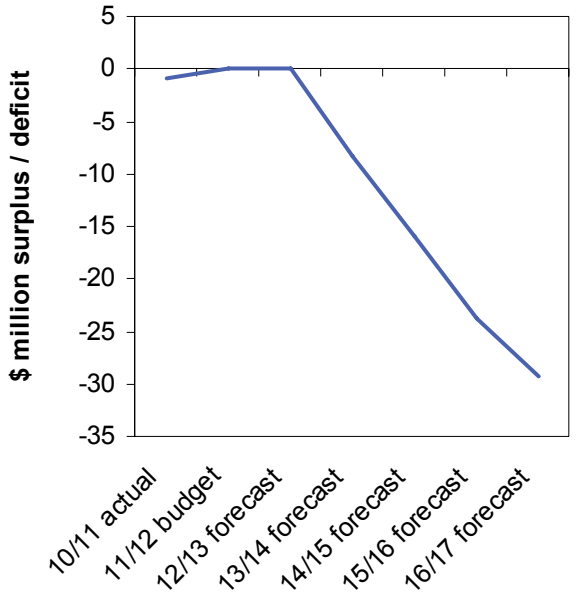


Figure 12: *Projected net financial position (base case)*



SWOT Analysis

The key strengths, weaknesses, opportunities, and threats in the Northland health system are summarised in the table below.

Table 1: *Northland health system SWOT analysis*

Strengths	Weaknesses
Good DHB and PHO working relationship Committed and competent health workforce with a relatively high proportion of Senior Medical Officers (SMOs) Good examples of collective intersectoral action such as the Healthy Homes programme and recent Fonterra-led Milk in Schools programme A vibrant Māori health provider sector and recent development of four Whānau Ora collectives with Government-approved business cases Good working relationship with Māori health providers developed over a long period of time Financial performance has been good in recent years Good performance on most national Health Targets Nearly all Northlanders are enrolled with a Primary Health Organisation (PHO) Good results on the majority of PHO Performance Programme indicators (measures of primary health care service coverage and quality)	Access and outcome inequities between Māori and non-Māori Majority of Northlanders do not lead healthy lifestyles Information systems do not support multidisciplinary teams sharing information General practice urgent and acute care in urban settings is unplanned, with some patients experiencing difficulties in getting same-day access Community pharmacy, allied health and community providers are not well integrated with general practice Specialist service support to primary health care and district hospitals is variable by specialty and specialist Physical capacity constraints being reached in some service areas, and some facilities are not fit-for-purpose Poor performance on national Health Target for diabetes management (good glycaemic control) Renal dialysis volumes have been increasing considerably
Opportunities	**Threats**
Increasing emphasis across public/private sectors on the socioeconomic determinants of health and the contribution that different players can make to address these Further strengthening of existing intersectoral relationships Enhancing clinical leadership to improve quality and productivity *Better, Sooner, More Convenient* primary health care development programme Whānau Ora implementation Iwi commitment to improve the health of their hapu and whānau coupled with Treaty Settlements Information system improvements underway through the Northern Region Health Plan Access to specialist advice through regional clinical network Optimising community pharmaceutical use for Long Term Conditions Enhancing self-management (including via new technologies) and healthy lifestyles	Constrained operating and capital revenue Growing demand (population ageing; long-term conditions; health inequities; public expectations; new technologies) Pressure on workforce (workforce ageing and recruitment) Rural and remote population to serve Broadband penetration low in rural areas Low rate of health literacy Poor public transport Continued poor local economy performance

Meeting the Challenge in Northland

Northland DHB's Vision, Mission and Strategic Priorities

NDHB's vision is "A Healthier Northland". The DHB's mission is to work together with Northlanders in partnership under the Treaty of Waitangi to:

- Improve population health and reduce inequities
- Improve patient experience
- Live within its means.

In undertaking its mission NDHB is guided by the following values:

- People First - Taangata i te tuatahi - People are central to all that we do
- Respect - Whakaute (tuku mana) - We treat others as we would like to be treated
- Caring - Manaaki - We nurture those around us, and treat all with dignity and compassion
- Communication - Whakawhitiwhiti korero - We communicate openly, safely and with respect to promote clear understanding
- Excellence - Taumata teitei (hiranga) - Our attitude of excellence inspires confidence and innovation.

NDHB's vision, mission and values are consistent with the Government's national priorities, and the Northern Region Health Plan's high-level direction.

NDHB has prioritised the following health needs:

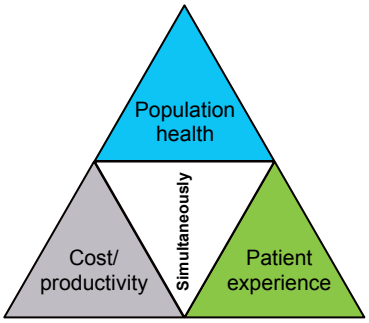
- Long-term conditions
- Older people
- Māori
- Child & Youth
- Oral health
- Mental health
- Lifestyle behaviours
- Social influences.

Achieving Northland DHB's Vision, Mission and Strategic Priorities

The NHSP has a 20-year horizon, and a five-year action plan. The NHSP Outcomes Framework on page 15 outlines the outcomes, objectives, targets and actions that NDHB and its partner health organisations in Northland will work to achieve over the next five years. The Outcomes Framework has been developed using a Triple Aim methodology which groups outcomes by Population Health, Patient Experience, and Cost/Productivity (Figure 13). These outcomes are to be achieved *simultaneously.*

Six 2017 Headline Targets have been set across the Triple Aim outcome areas of Population Health, Patient Experience, and Cost/Productivity. The targets are intended to focus efforts, rather than capture all achievements and associated activity undertaken in these areas. They are intended to be challenging but feasible. They have been set through extensive engagement with Northland sector leaders.

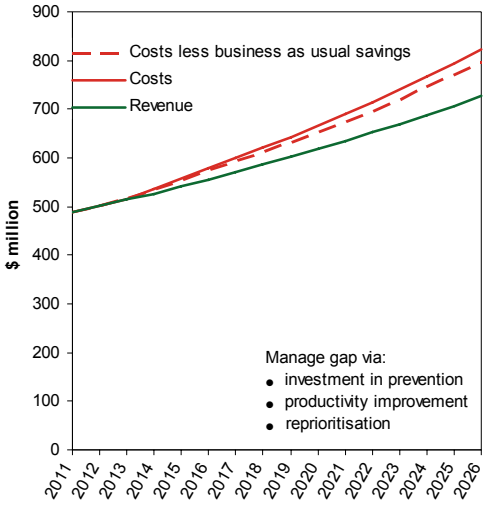
Figure 13: *Triple Aim methodology*



The actions in the first five years are intended to build momentum in Northland's health system towards addressing the intensifying challenges that it faces. They include a focus on assisting Northland's health sector to live within its available funding while improving population health and patient experience. The strategic direction (Figure 14) is:

- Investment in 'upstream' prevention, early intervention and quality
- Productivity improvement and cost control
- Reprioritisation of lower value spending
- Shifting services to lower cost settings.

Figure 14: *Strategy for living within available funding*



Implementing the NHSP

It will be critical that the initial momentum established by NHSP development is translated quickly into implementation planning and then action. Inertia is the greatest threat to the sustainability of Northland's health system. In order to translate the NHSP into action, the following elements will be critical:

Governance

The Northland DHB Board (the Board) is the 'owner' of the NHSP and has adopted the strategies outlined.

Recently the DHB and the Iwi of Northland established a new governance level mechanism, "Hei Mangai Hauora Mo Te Waka A Taonui" – Māori Health Gains Council. This mechanism will provide for appropriate input by Northland Iwi.

Leadership

The Board has delegated the implementation of the NHSP to the Chief Executive and the Executive Leadership Team (ELT).

Input into implementation planning includes PHOs, Māori health providers and Whānau Ora collectives.

It is imperative that clinicians, including general practitioners and medical specialists, as well as clinical leaders from other health disciplines are actively engaged in developing and leading changes in the models of care and service delivery outlined in the Outcomes Framework and Implementation Road Map.

Action Planning

The NHSP Outcomes Framework (page 15) establishes six Headline Targets and agreed Headline Actions using the Triple Aim methodology. Implementation plans for each of the headline actions will be developed over the next six months, supported by actions related to the enablers. A sense of the sequencing of actions is provided by the Implementation Roadmap (page 17).

Managing Implementation/Monitoring

A programme coordinator will be identified to coordinate and report on action planning progress. A comprehensive KPI framework will be developed to track improvements and trends over time.

Clinical and Stakeholder Engagement

Critical to successful implementation of the NHSP is the need for ongoing active support and participation from clinical leaders. An engagement programme will be designed so that the front-line workforce support the plan's key messages, targets, actions and measures.

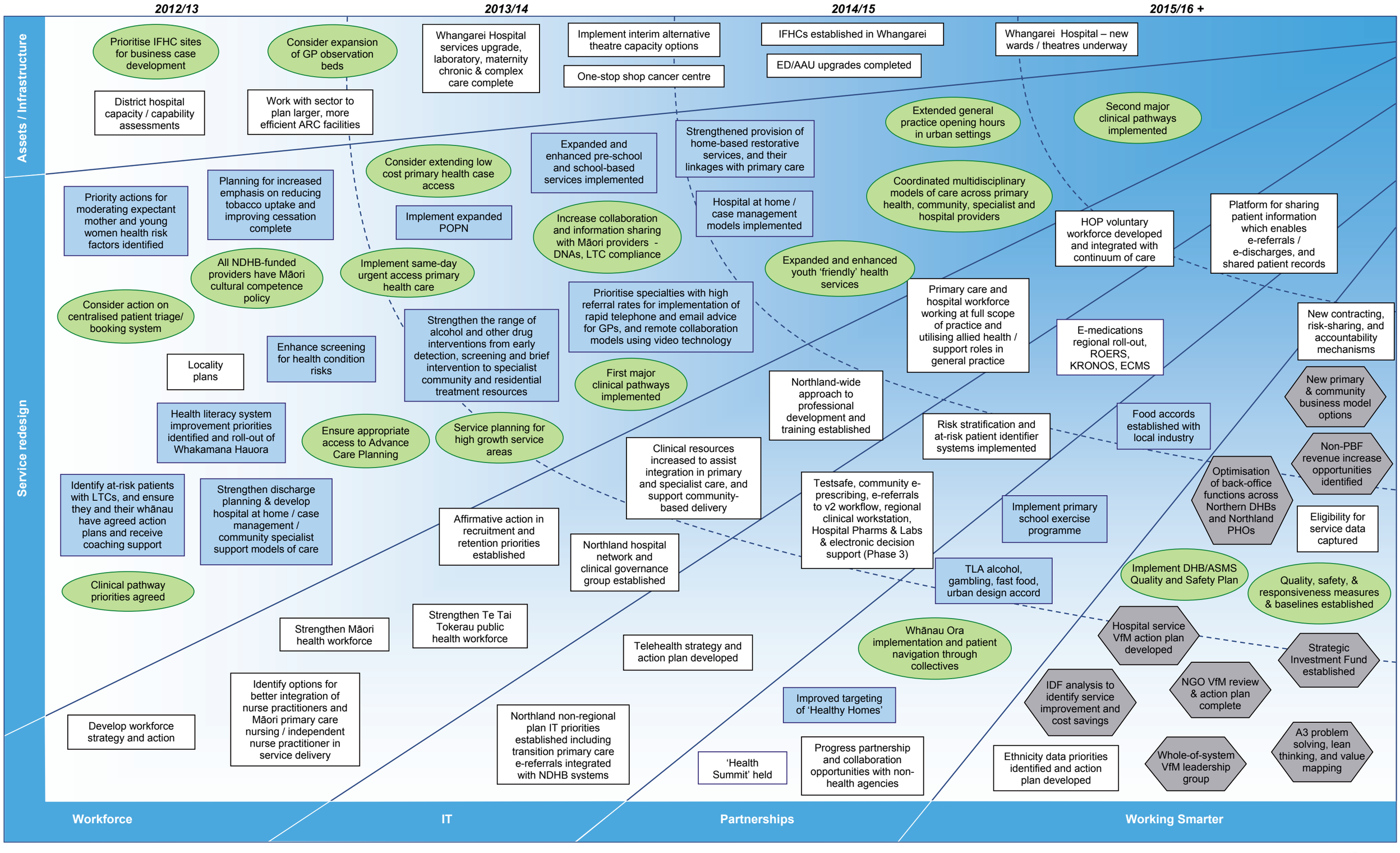
Elaboration on the above points can be found on pages 59-60.

NHSP Outcomes Framework

Outcome Areas	Population Health		Patient Experience		Cost/productivity	
Northland Outcome Goals	Improving the health of Northlanders and reducing health inequities		Patients and whānau experiencing clinically and culturally safe, good quality, effective, efficient and timely care		The Northland health system living within available funding by improving productivity and prioritising resources to their most cost effective uses	
2017 Headline Targets	Life expectancy gap between Māori and non-Māori is reduced by 2 years	Unplanned hospital admissions for Northlanders are reduced by 2,000 annually by 2017	Every Northlander with urgent health needs has same-day access to primary care	> 95% of patients report they would recommend the service provided	Value for money savings of $5 million achieved against projected cost increases every year	Northland hospital labour productivity benchmarks in top five of DHBs
Objectives	i Increasing the number of Northlanders who are health literate and living healthy lifestyles, with a particular focus on improving Māori health outcomes ii Increasing availability of and access to services in primary and community settings, particularly urgent, intermediary (step-down), and restorative services iii Improving primary care access to specialist advice to support community-based care		i Ensuring patients and whānau are supported throughout their care pathways with early interventions to address health needs and risks, and link with social services ii Providing patients and whānau with access to more personalised health services including active involvement in their own care planning iii Ensuring Northland health organisations operate with cultural competence		i 'Working smarter' to reduce duplication and waste ii Ensuring service investment and provider performance demonstrates value for money iii Strategic investment in new models of care, service innovations, and capacity development	
Headline Actions	- Develop Locality Plans for the four Northland localities included in the NHSP (Whangarei, Far-North, Mid-North, Kaipara - includes Mangawhai & South East Kaipara) - Increased emphasis on reducing tobacco uptake and increasing cessation, with a particular focus on Māori and primary care delivery - Increased focus on expectant mothers and young people in health risk factor prevention strategies (tobacco, obesity, alcohol/drug, mental health) - Enhance screening for health condition risks, particularly diabetes and CVD, with a specific aim of 100% for Māori from age 35 - Collective intersectoral action to address determinants shaping health outcomes with a strong emphasis on community action including local Food Accords with industry, TLA alcohol/gambling regulations, commercial use permits (fast food outlets), urban design (eg 'active' transport), improved targeting of the 'Healthy Homes' initiative across Northland, and the roll-out of primary school exercise programmes like 'Project Energise' - Strengthen the health literacy of people with long-term conditions (and their whānau) through system improvements and programmes such as Whakamana Hauora (Stanford model) - Enhance and expand pre-school and school-based health services into institutions with high Māori rolls/deprivation, with a particular emphasis on integrated models of care (medical, nursing, social). Key priorities: skin infections, sore throats, (rheumatic fever prevention), anxiety, depressions and alcohol/drug addiction and youth suicide plus sexually transmitted infections (STIs) - Strengthen discharge planning and pilot follow-up clinics and other models of care to reduce readmissions, with an emphasis on older people and Māori with long-term conditions - Strengthen provision of home-based restorative services, and their linkages with primary health care - Prioritise specialties with high referral rates for implementation of rapid response telephone and email advice for general practitioners, and development of remote collaboration models using video technology - Identify patients with long-term health conditions at risk of hospital admission and ensure they have agreed action plans, and receive coaching support based on a Whānau Ora framework - Develop better support for lower dependency patients by increasing specialist support in the community setting, for example, through implementing 'hospital at home' and telecare models - Expand Primary Options Programme Northland (POPN) to reduce GP referrals, support diversion of ED self-referrals, and support early discharge and transition to new model of integrated primary health care (see *Patient Experience*) - Strengthen the range of alcohol and other drug interventions from early detection, screening and brief intervention to specialist community and residential treatment resources		- Roll out new model of integrated primary health care including: ▪ Whānau Ora implementation and navigation through the Whānau Ora Collectives ▪ Prioritise Integrated Family Health Centre (IFHC) sites for business case development ▪ Implement same-day urgent access appointments across all general practices ▪ Extended general practice opening hours available in urban settings with a particular focus on improving access for under-6s, Māori and other high needs populations ▪ Develop coordinated multidisciplinary models of care across primary and community providers (inclusive of Whānau Ora Collectives) and specialist services, with a focus on integrated, culturally competent care particularly for long-term conditions ▪ Expand and enhance youth 'friendly' and community services, and wrap-around services with emphasis on whānau/family and youth suicide prevention ▪ Shared information environment across primary health, community, specialist and hospital services ▪ Consider expansion of GP observation beds ▪ Consider action on a centralised patient triage and booking system ▪ Support primary care-led low cost access to general practice services - Strengthen patient quality and safety programmes (prevention strategies and measurement) – including medication review, infection control, fall reductions: ▪ Over first two years pilot initiatives in primary care to improve patient safety and reduce harm ▪ Over the first two years implement Global Trigger Tools across DHB hospital services, and develop action plans and accountabilities for reducing rate of adverse events ▪ Over next two years measure and improve cultural safety and responsiveness - Design, implement and monitor clinical pathways for priority conditions (including diabetes, CVD, COPD, elective surgery, dementia, schizophrenia) with a focus on improving quality of care, efficiency and equity of access between Māori and non-Māori - Ensure appropriate access to advance care planning as per Northern Region Health Plan - All NDHB-funded provider organisations will have a policy on Māori cultural competence, and maintain plans to ensure their staff are culturally competent - Implement Joint NDHB/ASMS Quality and Patient Safety Improvement Plan - Increase collaboration and information sharing with Māori Providers to decrease 'did not attends' (DNAs) and to improve long-term conditions management compliance - Service planning for high growth areas such as obstructive sleep apnoea, macular degeneration, bariatric surgery, urology		- Establish 'whole-of-system' productivity and cost savings leadership group tasked with identifying and implementing ongoing actions, with particular focus on reducing unwarranted clinical variation and achieving administrative savings via shared services/process improvements - Undertake value for money review of hospital services including cost effectiveness of clinical interventions with a focus on high cost interventions, A3 problem solving, lean thinking and value mapping initiatives - Undertake value for money review of all NDHB procured services - Undertake detailed analysis of inter district flows to explore opportunities for service improvement and cost savings - Demonstrate alternative models of primary and community care including new business models, staffing, employment and performance incentive arrangements that make better use of available resources - Develop Strategic Investment Fund to shift DHB funding to population health programmes, prioritised services and models of care with an emphasis on supporting cost-effective (evidence-based) primary and community models of care - Optimisation of 'backroom' functions across Northern region DHBs and Northland PHOs - Identify opportunities to increase Population Based Funding and non-Population-Based Funding (PBF) revenue by >5% per annum - Work with community providers to maximise census registrations	
Performance Measures ***(all relevant measures to be reported separately for Māori and non-Māori)***	- Increase in Northlanders' life expectancy - Decrease in the gap in life expectancy between Māori and non-Māori in Northland - Locality Plans in place by the end of 2012 - Achieve national, regional, and district service and coverage targets - Increase on-time immunisation coverage - Increase in proportion of babies born with a 'healthy' birthweight (2,500 to 4,500 grams) - Decrease in proportion of expectant mothers with one or more lifestyle health risk factors - Increase in number of babies born between 37 and 42 weeks gestation - Increase in detection/treatment of antenatal and postnatal depression - Decrease in sudden unexplained death in infancy (SUDI) rate - Decrease in Ambulatory Sensitive Hospitalisations (ASH) particularly for Māori, people with long-term conditions, and children - Decrease in 28-day hospital readmission rate - Decrease in number of rheumatic fever cases - Decrease in proportion of daily smokers in adult population (particularly Māori women and expectant mothers) - Increase in proportion of children and adults who exercise regularly and have a healthy BMI - Increase in number of Healthy Housing referrals and interventions for high needs populations/whānau - Decrease in the percentage of clients in specialist mental health services who would have been in the service for longer than one year - Increase in the number of identified people with diabetes with good glyacemic control - Increase percentage of Northlanders screened for CVD, diabetes, specific cancers especially Māori - Increase in the number of Māori with >15% risk of cardiovascular disease on appropriate preventive medication - Increase in referrals for treatment (mental health and addiction) – primary health care and specialist services - Decrease in prevalence of sexually transmitted infections (STIs) - Increase proportion of older people receiving Home-Based Support Services compared to Aged Residential Care - Decrease rate of growth in dementia beds - Increase proportion of registered Māori cancer patients accessing specialist treatment services in Northland - Increase percentage of Northlanders with long-term conditions who are health literate		- Achieve national, regional, and district waiting time targets - Develop prioritised number of IFHCs in Northland by 2014 - Decrease in ED presentations that could have been prevented or managed in primary and community settings - Decrease in number of patients reporting use of ED because they couldn't get a same-day general practice appointment - Decrease in youth ED use - Decrease in average ED length of stay - Decrease in percentage of patients who return to ED within 48 hours - Achieve target number of cost-effective primary and community models of care and service reconfiguration innovations - Increase in primary health care workforce to population ratio - Increase in ratio of nurse to GP consults in primary care - Increase in Māori primary health care access rates - Increase in percentage of mental health specialist consultations/liaison to primary care - Decrease in patient waiting times for first specialist assessments (FSAs) and elective procedures - Decrease in number of adverse hospital events - Decrease in number of medication adverse events - Decrease number of in-hospital falls causing serious injury and pressure injuries - Decrease in proportion of outpatient and elective surgery 'did not attends' (DNAs) - Increase in number of patients and whānau involved in shared care - Achieve target number of Whānau Ora assessments and referrals for targeted population - Increase in recorded advance care plans as per Northern Region Health Plan DHB targets - Increase percentage of NDHB-contracted providers with cultural competence policies - Increase percentage of Māori employed in respective services - Improved patient and whānau satisfaction with care - Increase in number and range of patients whose care follows evidence-based clinical pathway - Decrease in infection rates - Decrease number of patients with mild renal failure progressing to dialysis		- Achieve Annual Plan financial performance targets - Achieve healthAlliance savings targets - Contain hospital (inpatient and outpatient) costs to within target growth - Increase in weighted output per full time equivalent (FTE), inpatient and outpatient - Reduce in-hospital average length of stay (ALOS) - Increase in percentage of surgery performed on day of admission - Increase in the percentage of elective surgery done as day surgery - Increase in Case Weighted Discharges per theatre - Increase in ratio of nurse to GP consults in general practice - Achieve PHO Performance Programme and other primary/community care performance targets - Increase in proportion of NDHB expenditure allocated to prevention and primary/community services - Increase non-PBF revenue by >5% per annum	
Enablers (span Outcome Areas)	*Workforce Capacity and Capability*	- Whole-of-system workforce strategy and action plan developed - Northland-wide approach to professional development and training with a focus on Clinical Leadership, Improvement, Change Management	- Primary care and hospital workforce (GPs, nurses, allied health, health care assistants etc) working at full scopes of practice and utilising allied health and support roles within general practice - Strengthened multi-disciplinary teams in primary and community care with a particular emphasis on improved integration/coordination between community pharmacy and primary care	- Development of primary and community care capacity to better meet future demands - Health of older people voluntary services developed and supported to be integrated with the continuum of care	- Clinical resources increased to assist integration of primary and specialist care, and support community-based delivery (eg community paediatrician, geriatrician, internal medicine) - Northland hospitals network established to support closer linkages between the district hospitals and Whangarei Hospital	- Affirmative action in the recruitment and retention processes to adequately reflect the make-up of the population of Northland - Improve the integration of nurse practitioners and locally trained Māori primary care nursing/independent nurse practitioners into Northland health services. - Strengthen the Northland public health workforce - Strengthen the Māori health workforce
	Information Services & Technology	- Regional Information System Implementation Plan priorities achieved including Careconnect, hospital laboratories and pharmacies, single clinical repository, community e-prescribing, e-referrals, safe medication management, and single regional clinical workstation	- Primary care 'e-referrals' integrated with NDHB information management system - Platform for sharing of patient records implemented	- Telehealth plan developed, and prioritised initiatives implemented (online patient portals, video conferencing, phone/txt/email consultations, txt/email reminders, at-home tele-monitoring and alert systems, tele-support and coaching)	- Risk stratification and at-risk patient identifier systems implemented	- Ethnicity data captured to enable analysis and monitoring of disparities between Māori and non-Māori - Eligibility for service data capture improved
	Assets & Infrastructure	- Implement Site Master Plan immediate stages - Progress to Stage 2 of the Site Master Plan (ED/Acute Assessment Unit)	*Whangarei Hospital:* - Determine desired medium and long-term inpatient capacity - One-stop-shop cancer outpatients centre with full complement of staff and integrated support and care services	- Implement interim alternative theatre capacity options - Bay of Islands Hospital upgrade and IFHC development	- Reconfigured primary and community centres which as IFHCs provide a broader range of integrated primary, community, support and specialist services	
	Partnership & Community Development	- Territorial Local Authorities (TLAs)	- Whānau Ora collectives - Iwi, hapu, and whānau	- Ministry of Social Development (MSD), Housing New Zealand, Ministry of Education, Ministry of Justice, NZ Police	- Family Start (MSD)	- Other Northland community organisations such as schools and Sport Northland
	Working Smarter	- Performance measurement improvement including patient reported outcome measures and population vs. performance (provider) metrics	- Clinical engagement and networks	- Data-mining, risk profiling and predictive modelling	- New contracting, risk-sharing, and accountability mechanisms, including outcomes-based flexible funding, results-based accountability framework (population vs. performance metrics), and performance incentives	- Robust new initiative business case development, prioritisation, post-investment evaluation, and Locality Plan development

NHSP Implementation Roadmap

An indicative Implementation Roadmap has been developed for key initiatives proposed in the NHSP. Given the constrained funding environment in which Northland's health system is operating, review of this Roadmap will be needed to prioritise initiatives and agree implementation timeframes throughout the planning period.
Key: BLUE Rectangles (Population Health), GREEN Ovals (Patient Experience), GREY Hexagons (Cost/Productivity), and WHITE Rectangles (Enablers)



Section 1: The NHSP Planning Context

NHSP Scope and Objectives

Background

In 2005/06 Northland DHB (NDHB) developed a Clinical Services Plan (CSP) outlining the services to be delivered by its hospital and community services (Provider Arm) until 2025, with more detailed actions for the first five years. That plan provided valuable direction for the DHB through identifying:

- The NDHB hospital and community services needed for Northland people in the future
- The current service delivery model and location of services
- Current service delivery challenges
- The future service delivery model and location of services
- Regional service delivery implications
- The models of care that are needed for the services to be effective, well integrated, seamless and holistic.

Development of the 2012 Northland Health Services Plan updates and builds on the CSP, and better reflects the full scope of NDHB's accountability for the health of the Northland community. It takes a 'whole-of-system' approach to health services planning, and is informed in particular by Government policies (including Better, Sooner, More Convenient; and Whānau Ora), and the Northern Region Health Plan[1]. The NHSP's focus is on services that are, or could be, funded by NDHB[2], and the initiatives that could be planned and actioned with partner organisations in Northland.

NHSP Objectives

NDHB has three key objectives in developing the NHSP:

1 To describe the strategic direction for delivery of integrated health services across Northland to the year 2031 (a 20-year horizon), with an emphasis on actions to be taken in the next five years

2 To describe future models of care across the care continuum, and to plan for the shape, size, setting and location of service delivery for Northland residents, and for inter-district patients accessing care within Northland

3 To identify the implications of the NHSP for capacity planning, including facilities, workforce and information technology.

NHSP Design Features

The NHSP has a number of design features:

- Building on the existing NDHB strategic direction
- Taking a 'whole-of-system' service continuum approach
- Taking a population health perspective, with a focus on reduction of health inequities
- Identifying areas where collaborative intersectoral action can support the achievement of improved health outcomes, including incorporation of the Government's Whānau Ora policy
- Supporting the Government's Better, Sooner, More Convenient policy through a preference for community-based service delivery where this can be achieved efficiently and effectively, and better coordination of primary health and community health services
- Linkages with the Northern Region DHBs' collective planning, and Ministry of Health (MoH)/National Health Board (NHB) national planning
- Focusing planning resources on a limited number of services prioritised because of their strategic importance, and updating and fine-tuning existing planning for the other services
- Reflecting NDHB's commitment to health promotion, prevention of ill health, and early detection and intervention strategies to support improved health outcomes
- Strengthening of service integration through a focus on the interface between services, and between components of services
- Identifying the 'default' or 'base case' impact of growing demand on the clinical and financial viability of Northland health services, and 'headline actions' that will strengthen its sustainability
- Identifying the organisational infrastructure that will be required to support these actions.

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[1] *2011/12 Northern Region Health Plan. Available at http://www.ndsa.co.nz/LinkClick.aspx?fileticket=9jPfQglLjkk%3D&tabid=100*

[2] *The NHSP's scope therefore includes support services for older people as part of the wider Health of Older People service. It does not include either support services for people with disabilities or health protection, as these remain funded by the Ministry of Health. However, the NHSP does cover health promotion services (primary prevention) even though the Ministry has funding responsibility, as these are considered critical to achieving NDHB's mission and vision*

National Context

Legislation and other requirements

The responsibilities of District Health Boards are established by the New Zealand Public Health and Disability Act 2000 (the Act). This legislation was amended in 2010. In the context of NHSP development, the significant change made at that time was in requiring that any plan developed by DHBs must now consider[3] the wider context of:

- Local, regional, and national needs for health services
- How health services can be properly coordinated to meet those needs
- The optimum arrangement for the most effective and efficient delivery of health services and
- How a DHB that is a party to the plan is to operate in a financially responsible manner.

As well as complying with the Act and its amendments, DHBs are also guided by three governmental health system strategies: New Zealand Health Strategy, Māori Health Strategy, and the Primary Health Care Strategy. Although these strategies have to some extent been overtaken by more recent Government policy, they continue to provide an overarching strategic direction for the New Zealand health sector.

There are also a number of important central Government entities that have a strong role in shaping the DHB operating context and performance expectations, including:

- The NHB which is responsible for the funding, planning, and monitoring of DHBs including annual funding and planning processes
- The Health Quality & Safety Commission which is responsible for leading and coordinating quality and safety improvement initiatives across public and private sector health and disability providers
- Health Workforce New Zealand which has overall responsibility for planning and development of the health workforce to ensure that staffing issues are aligned with planning on delivery of services and that the health workforce is fit for purpose
- Health Benefits Limited which is responsible for leading and coordinating improvements in administrative, support and procurement services in the health sector
- National Health Committee which is charged with providing independent advice to the Minister of Health on the cost-effectiveness of health services
- PHARMAC which is responsible for the management of the community pharmaceuticals budget and whose role has been expanded to include hospital pharmaceuticals and some medical devices.

Government priorities

The National-led Government presented its health policy in Better, Sooner, More Convenient (BSMC)[4] in 2007. The Minister of Health notifies priorities in his annual Letter of Expectations to DHB chairs.

The Government requires DHBs to focus on the following:

- **Clinical and financial sustainability**: operating within allocated funding, and taking specific actions to improve performance
- **Primary health care**: delivery of BSMC services, closer to home, with integration of primary health and secondary care, and delivery of an increased range of services in community settings. The aim is to reduce pressure on hospitals and improve the patient experience
- **Regional collaboration**: greater collaboration amongst DHBs to address prioritised vulnerable services, and achieve efficiencies through shared services for back-room functions
- **Health of older people**: prioritisation of investment to ensure that health and support needs of older people are met, in the context of population ageing
- **Clinical leadership**: an important contributor to improved patient care, strengthened workforce, and implementation of BSMC
- **Health targets**: ongoing improvement in prioritised performance areas, which include hospital EDs; elective surgery; radiotherapy; immunisation; smoking; and diabetes and CVD
- **Youth mental health**: alongside improvements in school-based services and increased expectations placed on schools to ensure the wellbeing of students, the Government has provided extra funding for improved primary mental health care, introduced new wait-time targets for Child and Adolescent Mental Health Services and is implementing a new Whānau Ora approach.

[3] The amendment is reflected in the connection of the HSP with Government policies and priorities and the Northern Region Health Plan, and with consideration of its implications for financial sustainability of the Northland health system

[4] *New Zealand National Party (2007)* Better, Sooner, More Convenient: Health Discussion Paper. *Available at* http://www.national.org.nz/files/__0_0_health_lowres.pdf

Regional Context

As noted previously, changes in 2010 to the legislation governing DHBs now require them to work collaboratively to develop regional service plans, which provide the strategic context for planning by individual DHBs. NDHB is part of the Northern Region (together with Auckland, Counties Manukau and Waitemata DHBs). The NHSP is strongly linked with the Northern Region Health Plan 2012/13.

The mission of the Northern Region DHBs is:

"To improve health outcomes and reduce disparities by delivering Better, Sooner, More Convenient services. We will do this in a way that meets future demand whilst living within our means."

It is based on the Triple Aim philosophy of simultaneously:

- addressing population health
- delivering quality of patient experience; and
- considering cost and productivity.

The Northern Region DHBs have identified[5] three strategic priorities for regional action:

- **First, Do No Harm**: a clinically-led campaign to develop a patient safety culture and accountability for quality and safety initiatives in hospitals, residential care, and primary health care
- **Life and Years**: action in the areas of diabetes, CVD, cancer, and health of older people to reduce disease incidence, and close the life expectancy gap for Māori and Pacific people. The initial focus will be on consistency in clinical pathways, and on improving performance in key outcome areas
- **The Informed Patient**: introduction of Whānau Ora assessments and case management for Māori, Pacific and high needs whānau; and advance care planning to give patients, their families and clinicians the opportunity to jointly plan end of life care.

Regional service planning priorities are identified, based on their clinical and/or financial vulnerability. The Northern Region DHBs are also working collectively to deliver on the national Health Targets.

Regional work is underway to strengthen collaboration in the key enabler[6] areas of information systems, workforce, and facilities development (including Integrated Family Health Centres and Whānau Ora Centres). The Northern Region will support transformational change by strengthening of regional governance, clinical leadership, and clinical networks.

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[5] 2011/12 Northern Region Health Plan. Available at http://www.ndsa.co.nz/LinkClick.aspx?fileticket=9jPfQglLjkk%3D&tabid=100

[6] The term 'enabler' is used in the NHSP to describe areas where infrastructure development is required to support the desired changes in patient-centred service delivery.

The Health Needs of Northlanders

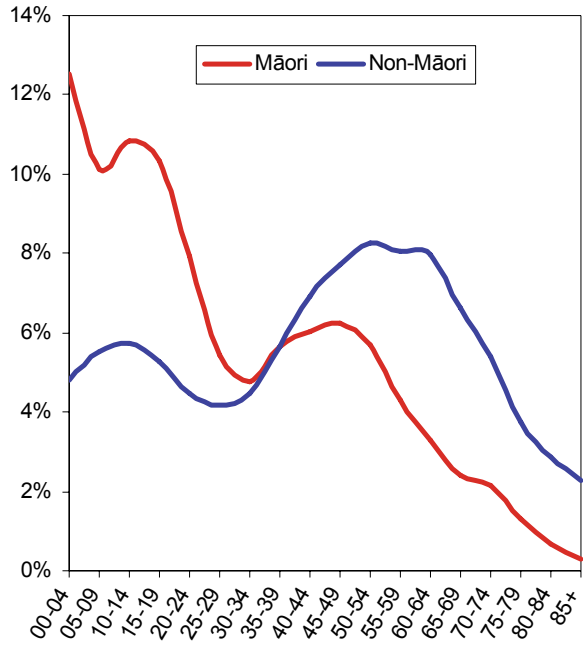
Planning for future Northland health services is guided by the forecast health needs and priorities of the population. To inform development of the NHSP, a Northland Health Needs Assessment[7] was produced, which summarises the available demographic, epidemiological and utilisation information into key areas of emphasis, highlighting areas where health needs are changing and a service change response is also likely to be needed.

Demographic Profile

Northland's population is estimated to be around 159,160 in 2012, or 3.6% of the national population. Māori and European/Other ethnic groups comprise the vast majority of Northland's population.

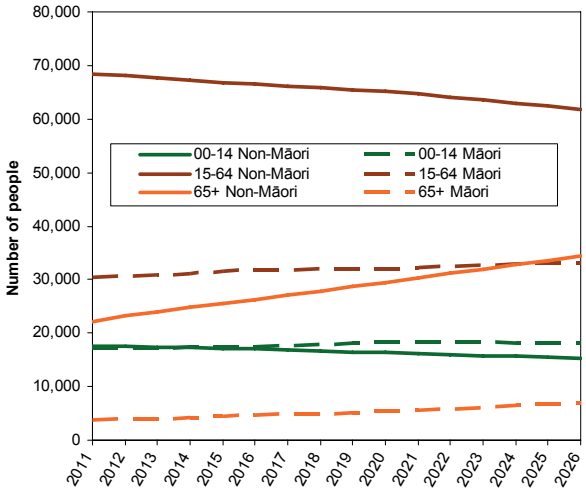
Māori make up a significantly larger proportion of the population in Northland (30%) compared with Māori in the national population (15%). The population age profiles of Northland Māori and non-Māori differ markedly, with Northland Māori being a much younger population (Figure 15).

Figure 15: *Northland Māori and non-Māori population age structure (2011 estimates)*



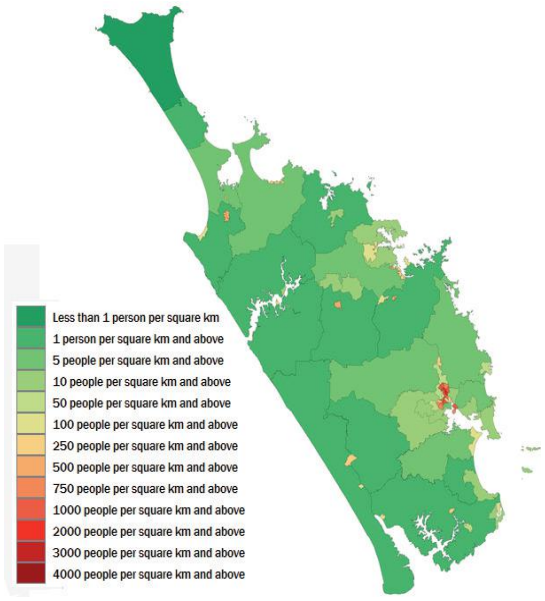
The Northland population is projected to grow at 0.5% per annum over the next 15 years (2011-2026), a slower rate than for New Zealand as a whole (around 1%). Northland's population is ageing, with the highest percentage increase for 2006–2026 occurring in the over-65 years group (102%). The proportion of Northland's population that will be aged over-65 years by 2026 is higher than for New Zealand's population as a whole (24% vs. 19%). Figure 16 shows growth rates by age group and ethnicity for Northland's population.

Figure 16: *Northland population estimated at 2011, medium projections to 2026*



Population density is a key factor influencing patterns of health service delivery, access, and population health outcomes in Northland. The majority of Northland is very sparsely populated, as shown in Figure 17. Overall 49% of the population live in areas defined as 'rural', compared with 14% for New Zealand as a whole.

Figure 17: *Northland population density – resident population per km²*



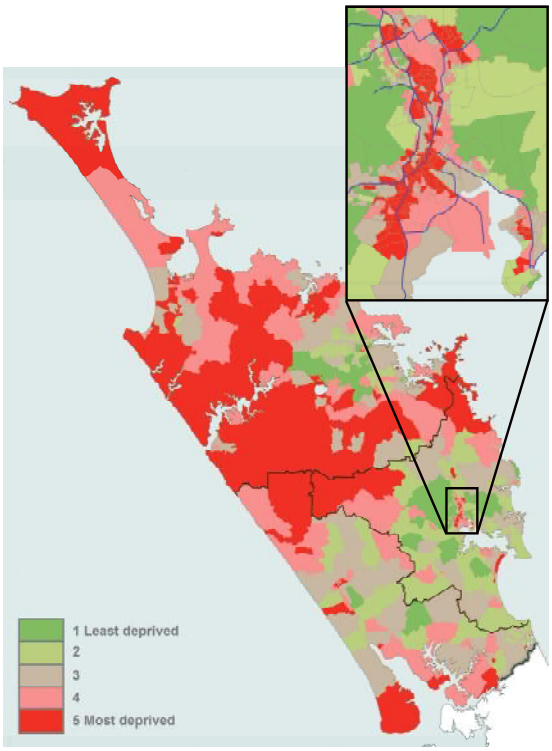
[7] *See Appendix 3.*

Socioeconomic Profile

Socioeconomic conditions are strongly associated with population health outcomes. Northland currently has the lowest regional GDP in New Zealand ($1 billion lower than the second lowest region and $1.5 billion lower than the national average). Compared to national socioeconomic measures, Northland's population is significantly disadvantaged, most notably Māori and rural populations:

- Compared with the New Zealand average, in Northland there are more people (17%, about one in six) living in areas of highest deprivation, than in areas with a low socioeconomic deprivation. Northland has 33% of its population living in high deprivation areas compared to the national average of 20%. Importantly, deprivation levels vary across Northland as shown in Figure 18.
- Northland has the lowest number of working age people in paid employment in New Zealand (58% compared with the national rate of 64%).
- Youth unemployment is also high, with around 6% of Northland 18 to 24 year olds receiving the unemployment benefit. Māori males aged 25 to 34 years account for the largest proportion of the Northland population receiving the unemployment benefit, with almost 1 in 5 receiving the benefit.
- Northland has the highest proportion of people with low incomes (25% compared with the national rate of 18%).

Figure 18: *Deprivation levels across Northland*



Housing conditions are also strongly associated with socioeconomic conditions and therefore population health outcomes. Many Northlanders live in substandard housing, with this often being a long-term situation.

Substandard housing is likely to be greater in Māori and rural communities. For example, in 2009 it was estimated that there were approximately 2,000 substandard houses in Northland/Te Tai Tokerau. Housing cost affordability is also an issue given Northland's low median earnings/income rates. Demand for state housing is high. Access to affordable housing is not equal for all Northlanders, with some geographic areas such as Kawakawa, Moerewa, Kaikohe, and Kaitaia having shortages of available housing.

Health Risk Factors

Modifiable health risk factors impact on health and wellbeing, potentially leading to a range of poor health outcomes such as cancer, diabetes and CVD, which result in premature mortality and/or long-term morbidity, and significant health care costs. The National Health Survey 2006/07[8] points to the key modifiable population health risk factors: smoking, nutrition and physical activity, and alcohol use.

Tobacco

Smoking is the single greatest avoidable cause of mortality and morbidity in New Zealand. Northland rates are higher than the national average, creating a significant prevention opportunity. Māori rates in particular are extremely high (significantly above the average for New Zealand), with more than half of all Northland Māori adults having a regular tobacco intake.

Nutrition and Physical Activity

Northland had similar rates of fruit and vegetable intake, and of maintaining regular physical activity, as the New Zealand average. However, as this means only half the adult population are covered there is much to do here, as evidenced by the overweight and obesity figures. Overweight rates (BMI 25 to 29) were similar to the national average while obesity rates (BMI 30+) were significantly higher for Northland adults with 29.5% having a BMI of 30 or greater. With the 36% that are overweight, around two-thirds of Northland's adult population face adverse health effects from their diet and physical activity. The problem is particularly acute for Māori (46% obese in Northland, 77% overweight or obese) and Pacific

[8] *The most recent Health Survey. Another is underway at present.*

people (71% and 95%), that is, only 23% of Māori and 5% of Pacific people are of normal weight[9]. The impact this has on diabetes is discussed below.

Alcohol Use

Northland adults had a higher rate of hazardous alcohol consumption than the national average, however, the rate is not statistically significant.

Healthy Lifestyles

Five behaviours are known to be linked to major chronic diseases: tobacco use, hazardous alcohol use, physical activity, fruit and vegetable consumption (a marker of a healthy diet), and obesity. A healthy lifestyle was defined as reporting (in the Health Survey) all five healthy behaviours. Only 13.6% (1 in 7) of Northland's adult population were considered to be living a healthy lifestyle based on these five factors. Males fared worse than females (11.6% compared with 15.6%), and Māori fared worst of all (6.5%).

Cardiovascular disease (CVD) and diabetes

The Northern Region Health Plan 2011/12 estimated CVD prevalence, and showed Northland to have the highest rates in the Northern Region (CVD here includes coronary heart disease, cerebrovascular disease and peripheral vascular disease) with 5.4% of the population, or 12.3% of the people aged 45 and over, having diagnosed CVD. Māori have twice the CVD rate of non-Māori, age-adjusted, driven by smoking rates and obesity.

Around 35% of inpatient costs for Northland DHB were due to the 5.4% of the population with CVD. Note that these costs relate to all conditions these people have, not just CVD, but CVD clearly has a huge financial impact on NDHB.

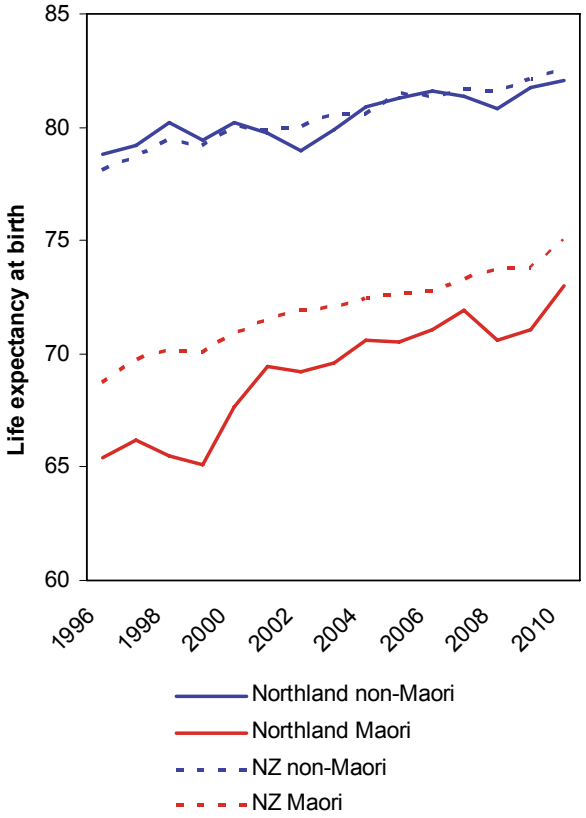
The Northern Region Health Plan 2011/12 also estimated diabetes prevalence and costs for the Northern Region. Nearly 7% of Northland adults are estimated to have diabetes. The Northland diabetes prevalence is forecast to increase by 72% from 2009 to 2026; in part through ageing and ethnicity trends, but also in part through the developing obesity epidemic.

Northland spends significantly more than other Northern Region DHBs on each person with diabetes ($5,900 per person aged 45 to 64, compared with $4,080 average for the Northern Region). Note that there is significant overlap with CVD, so these figures cannot be directly added to those of CVD above. In aggregate, 14,760 people have either CVD or diabetes or both, with a total spend for Northland in 2009 of $91m, meaning 9.4% of the population has 42% of the costs of those modalities of treatment.

Life Expectancy and Amenable Mortality

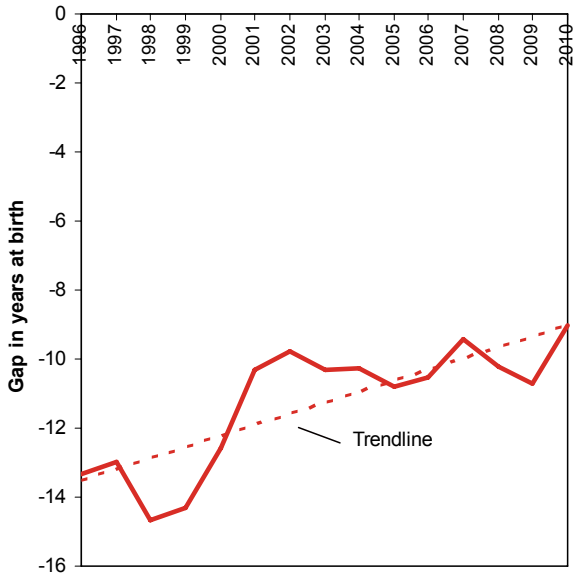
Life expectancy in Northland has risen steadily over the past 15 years at a similar rate to the New Zealand average, gaining over four years (Figure 19). However, it still falls behind New Zealand as a whole, with European/Other figures being very similar, but Northland Māori lagging behind their counterparts in the rest of New Zealand by about two years. Overall the gap in life expectancy between Māori and European/Other in Northland has fallen from 13 years in 1996 to nine years in 2010 (Figure 20).

Figure 19: *Northland life expectancy compared to New Zealand, 1996-2010*



[9] *Note that Māori and Pacific here are being assessed at a BMI cut-off of 30 following the NZHS 2006/07 protocol, rather than 32 as sometimes occurred in the past.*

Figure 20: *Gap between life expectancy of Northland Māori and non-Māori, 1996-2010*



Amenable mortality is a measure of deaths from conditions expected to be responsive to health care. Northland Māori have a threefold higher rate of potentially avoidable mortality than their age-matched non-Māori counterparts, a similar proportion to the national average. The largest drivers of this amenable mortality gap are CVD, diabetes, infant health and cancer (mainly smoking-related).

Health Service Utilisation

General Practice

There are currently 149 general practitioners (GPs) and 154 practice nurses across 38 general practices providing primary care to Northlanders enrolled with the two Northland Primary Health Organisations (PHOs): Manaia (92,700 enrolled people) and Te Tai Tokerau (61,200). Between 2001 and 2010 there was an increase in the number of GPs providing care in Northland. However the number of GP full-time equivalents (FTEs) was the same in 2010 as in 2001 due to a decline in average working hours, in line with the national trend. This decline means that the total of annual productive GP hours in Northland was an estimated 9,000 hours less in 2010 than 2001.

Since 2007 (financial year end), GP and practice nurse consultation numbers have been increasing. Between 2009 and 2011 primary care utilisation increased by 7.7% per annum. GP utilisation has increased by 6.1% and nurse utilisation by 16.5% over this period. Recorded nurse consultations in Northland are slightly higher for most age groups but about the same for people aged over-65. GP consultations are lower in Northland children aged 0 to 4 years, but older ages are not significantly different to New Zealand rates.

Māori and Pacific people are significantly more likely to receive practice nurse consultations at all ages, likely reflecting immunisation, long-term condition management, and other nurse-led services. GP consultation rates are slightly lower for Māori/Pacific people aged under 25 years but significantly higher at older ages. Nurse consultations increase by deprivation quintile, with quintile 5 people (most deprived) utilising these services more. GP consultation utilisation is highest per enrolled person for quintiles 2 to 4, with both quintiles 1 and 5 utilising these services the least.

Based on current GP utilisation by age and Statistics NZ medium population projections, GP utilisation is expected to increase from 443,800 contacts in 2011 to around 517,000 contacts by 2026. Population ageing will see contacts for people aged over-65 years increase significantly as a share of total contacts from 31% to 43%. If the increase in GP consultations recorded from 2009–2011 continues to 2016, then utilisation will increase by more than that anticipated by population growth and ageing.

Community Pharmaceuticals

The number of community prescription items has been increasing steadily over the past five years in Northland, a similar trend to that seen throughout New Zealand. The cost has increased at a slower rate as the average cost per item decreases, in the main due to PHARMAC price setting (medication mix may also play a part). The overall growth in costs is averaging 5.9% a year, or 5% per year per head of population. In 2010/11 community pharmaceuticals made up 7% of NDHB's budget, a decrease from 8% five years ago.

Overall, 43% of the prescription items and 37% of the costs lie in those people aged over-65 years. The largest growth has been for Māori adults and older adults, rising from an average of 9 to 13 items per year for 15 to 64 year olds, and 38 a year for each person aged over-65. Prescriptions for Māori make up 25% of pharmaceutical costs.

Given the high rates of risk factors, chronic disease, acute hospitalisation and premature mortality in Northland's Māori population, this increased pharmaceutical spend is likely to be beneficial. However, given that the expenditure on pharmaceuticals is rising faster than NDHB's funding, it will be important to continue assessing whether this increased expenditure is a worthwhile investment.

Community Laboratory Tests

Community laboratory testing has been growing slightly faster than expected by population growth, at around 3% annually. Detailed growth is not available by age and ethnicity, but based on the

data from the last year available (2009), Māori would appear to be getting less testing than expected for the size of their disease burden (this is similar to the picture in other DHBs). The average person aged over-65 has 16 community laboratory tests a year, at a total cost of $135.

Hospital inpatients

The majority of growth in inpatient care will come from those aged over-65 years. For example, around half the full days spent in hospital (bed days) are currently occupied by people in this age group, and this is set to grow to 66% by 2026, a 2.4% per annum growth rate (Table 2). The number of bed days occupied by those aged 0-64 years is not projected to change significantly. If hospital admission rates and length of stay remain the same as they are now over the next 15 years, approximately 140 additional inpatient beds would be required above existing resourced capacity for Northland.

In addition to population growth and ageing, there will be pressure on inpatient beds from the expected increases in the number of people with diabetes. Northern Region modelling estimates that people with diabetes make up about 21% of bed days and inpatient costs in Northland. The 8,500 Northland people estimated in that modelling to have diabetes in 2009 (making up 6.9% of the adult population) are projected to increase to 14,500 by 2026, a 64% increase (see diabetes section above). This increase in diabetes will generate additional growth of 10,000 bed days over the next 15 years, assuming no change in the rate of admission per head.

Table 2: *Projected total inpatient bed days (all bed types, all Northland) based on impacts of population ageing and diabetes*

Age group	2010	2016	2021	2026	Diff. at 16 yrs	% growth over 15 years	% growth per year
0-64	70,714	72,444	72,729	71,596	882	1%	0.06
Over-65	71,192	83,900	98,204	113,722	42,530	60%	3.17
Diabetes extra	-	+3,337	+6,673	+10,010	+10,010	64%	3.61
Total	**141,906**	**159,681**	**177,607**	**195,329**	**55,675**	**38%**	**2.31**

Source: HPCG. Based on current utilisation of beds by people with diabetes and estimated diabetes growth.

When the impact of diabetes is added to that of older people, the projected growth changes from 31% to 38%, or the equivalent of an extra ward (30 beds) over that time – a total of 170 additional beds. Some of this increase might be absorbable within current capacity, but the avoidance of the remainder will require changes in current models of care.

Ambulatory sensitive hospitalisations

Ambulatory Sensitive Hospitalisations (ASH) are hospital admissions that have the potential to be prevented by effective delivery of services in a primary health care or community setting. These admissions can be influenced by a range of factors including access to high quality affordable primary health care; people's income, age and ethnicity; deprivation; and housing. The ASH indicator is intended as a system-wide measure of access to effective primary health care services and how these services operate alongside those delivered within hospital settings.

Northland has significantly higher ASH rates for Māori compared to all New Zealand Māori, while non-Māori rates are similar to the national average. Note the Māori rates are twice that of non-Māori on an age-adjusted basis.

ASH in children is dominated by infectious disease, particularly respiratory, but also skin (cellulitis) and gastroenteritis. Rheumatic fever/heart disease averages 16 discharges a year. For adults aged 15 to 64 years, around a third of ASH conditions are cardiovascular in origin, with diabetes often an underlying cause and making up a further 9%. Infectious disease still ranks highly.

Emergency Department (ED)

Hospital ED use has been increasing faster in Northland than demographic growth (including ageing) since 2006/07, and growth has been significantly higher than that projected at that time in the Northland Clinical Services Plan. ED attendances have increased on average per year by:

- 2.5% at Whangarei Hospital over the past five years (13.3% total growth), and 3.1% over past two years (9.7% total growth)
- 4.2% at Kaitaia Hospital over the past five years (23% total growth), and 2% over past two years (6% total growth)
- 5.5% at Bay of Islands Hospital over the past five years (31% total growth), and 4.6% over the past two years (15% total growth).

Across all Northland DHB facilities:

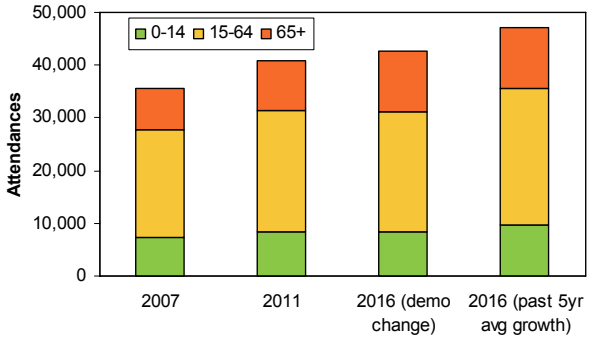
- Triage category 3 attendances have increased at the fastest rate. At Kaitaia and Bay of Islands hospitals they account for the largest number of attendances (46% and 57% of total attendances respectively)
- Triage category 4 attendances account for the largest number of attendances at Whangarei Hospital (48% of total attendances) and have been increasing at a rate of 5% on average per year since 2006/07

- Relatively low priority triage category 5 attendances have been decreasing across all facilities
- Presentations to Whangarei and Kaitaia EDs have also been growing more quickly between the hours of 8pm to 8am (comparable data is not available for Bay of Islands).

Possible drivers of these trends include a change in how people are accessing primary health care, changes in ED attendance behaviour, changes in the health in the community, or changes in threshold levels for coding triage category.

ED attendance growth expected from demographic growth (population and ageing) would amount to 2.8% over the next five years (much ED work is in the younger ages where there is little demographic growth to account for utilisation growth). By way of contrast, if the growth rates that have occurred in the past five years were to continue, an additional 15% growth could be expected (Figure 21).

Figure 21: *All Northland emergency department attendances by age group 2007 and 2011, with alternative projections to 2016*



Maternity

Northland females have one of the highest fertility rates in New Zealand. Data produced for the Northern Region Health Plan shows Northland and Counties Manukau DHBs to have total fertility rates significantly higher than the national average.

Births in public hospitals have increased slightly over the past few years – up 100 since 2006/07 (a 5% increase, or 1.2% a year). While not a large increase, this is higher than the Statistics New Zealand virtually flat projection. Demographic projections for maternity and paediatric services may need to be adjusted to take account of this higher than expected growth. Around half the births are to Māori mothers.

Improvements in maternity outcomes rely on timely and complete antenatal registration and visits. Maternity outcomes including perinatal mortality were generally worse for Māori women in Northland. One preventive example highlighted was smoking during pregnancy, 18.4% of women giving birth had tobacco use recorded in hospital admission data, compared with 15.8% nationally (smoking recording is incomplete, so numbers are distinct underestimates). Obesity in pregnancy will also be driving some of the adverse outcomes.

Health of Older People

Around 5.8% of the Northland population is aged over-65 years and are in aged residential care (ARC) subsidised by the DHB, slightly higher than the national average of 5.5%. This has grown by 4% per year over the past five years, compared with this age cohort estimated to be increasing at 3.3% annually, probably reflecting the increasing average age of people in the over-65 population. For example, the over-85 population grew 46% from 2001 to 2011, compared with 36% for all over-65s. At present around 28% of those aged over-85 domiciled in Northland are in ARC.

Population projections suggest Northland will have a net 120 more residents per year aged over-85 through to 2021, which will mean 30 ARC beds a year at current occupancy rates. NDHB will be looking to maximise 'ageing in place' through increased support for independent living in the community.

The number of Northland residents utilising subsidised dementia residential care has risen over the past five years, though numbers vary from year to year. This represents a 7% increase per annum, which is higher than population growth. Expenditure on dementia care has increased at a similar rate. Northland has only a slightly higher rate of dementia bed utilisation than the Northern Region average currently.

Mental Health

In 2011, 3.63% of the Northland DHB population accessed specialist mental health and addiction services, higher than the national percentage (2.81%). The New Zealand health system goal of 3% of the population being served by specialist mental health services serves as a useful reference point.

Over the last five years there has been 43% growth in people seen in mental health and addiction services. The most dramatic growth has been in people seen in addiction services (92%) and child and youth mental health and addiction services (92%).

It is likely there are further gains to be made by additional investment in mental health services in Northland, including early intervention, community and primary health care support, and a shift in emphasis from pharmaceutical to psychological approaches to therapy. Of particular interest will

be investment in preventive care, particularly at the 0 to 3 year old stage (first 1,000 days).

Some indicators of child and youth mental health in Northland suggest that significant further gains will be possible:

- Relatively high rates of youth suicide: during 1990-2006, a total of 73 Northland young people aged 15 to 24 died as the result of suicide
- Over half the young people aged 15 to 24 receiving a sickness benefit as at April 2009 did so for psychological/psychiatric reasons.

Child and Youth Health

In 2011 there were an estimated 54,380 children and young people resident in Northland (ages 0 to 24), making up 34% of the Northland population. While this age cohort is not expected to grow significantly over the next 10 years, the health status of the current and future generations of Northland children and young people sets the base for the ongoing health of the Northland population.

Key points identified by the 2009 Paediatric Society review for Northland include:

- Northland has a relatively high neonatal and infant mortality rate compared with New Zealand, with Māori tamariki particularly high. The single largest factor is SUDI (sudden unexplained death in infancy), with interventions around sleep position, reducing second-hand smoke and health education possible
- Relatively high rates of hospital admissions for skin and respiratory infections and other conditions linked to socioeconomic conditions, and particularly for Māori tamariki. Apart from the social determinants (child poverty, housing), better access to primary health care, nutrition (including breastfeeding), and hygiene and other parenting skills are highlighted
- Rare but devastating infections remain an issue for Northland children and youth: meningococcal disease, rheumatic fever, tuberculosis and osteomyelitis. Again Māori tamariki bear the brunt of this
- High rates of teenage pregnancy. During 2003-2007 teenage births were significantly higher for Northland Māori (around 8% of all 15 to 19 year olds each year) compared to European/Other (around 2%), with both groups higher than their counterparts nationally. Data is difficult to compile in this area, but the information presented on terminations of pregnancy and sexually transmitted infections imply a significant issue with unprotected intercourse in Northland youth
- High rates of injury including higher hospitalisation rates (18 versus 14/1000 0 to 14 year olds, and 27 versus 17/1000 15 to 24 year olds), and higher death rates from injury (18 versus 11/100,000 0 to 14 year olds, and 81 versus 56/100,000 15 to 24 year olds for 2001-2005)
- On average, 12 Northland children and young people died as the result of a land transport injury each year from 1990-2005
- Dental caries rates are much higher than the New Zealand average. Lack of fluoridation in reticulated water supplies is an important factor
- Daily and regular youth smoking rates in Northland were higher than in New Zealand based on a national survey of 14 to 15 year olds. More than 15% of youth in Northland smoked tobacco on a regular basis. Alcohol use and marijuana use by teenagers were also high
- Child obesity is an increasing concern, with 12% of Māori children (aged 2 to 14) and 6% of European/Other children measured as obese in the 2006/07 NZ Health Survey. The burgeoning diabetes epidemic has its roots in adolescent nutrition and physical activity.

Section 2: Targets, Outcome, Objectives and Headline Actions

NHSP 2017 Headline Targets

An important component of the NHSP is the setting of Headline Targets to be achieved by 2017. Six targets have been set across the Triple Aim outcome areas of Population Health, Patient Experience, and Cost/Productivity. The targets are intended to focus efforts, rather than capture all achievements and associated activity undertaken in these areas. They are intended to convey the major achievements Northland's health providers will work together to achieve over the next five years. They are intended to be challenging but feasible. They have been set through extensive engagement with Northland sector representatives.

Population Health

Improving the health of Northlanders and reducing health inequities.

Improving the health of Northlanders and reducing inequities between non-Māori and Māori is central to the vision of Northland DHB, Northland PHOs, and the wide variety of health and community organisations operating in Northland.

The two 2017 Headline Targets agreed for the Population Health outcome area are:

- Life expectancy gap between Māori and non-Māori is reduced by two years
- Unplanned hospital admissions for Northlanders are reduced by 2,000 annually by 2017.

Over the past 15 years, Northland's health system has made notable improvements in reducing the life expectancy gap between non-Māori and Māori. The gap has decreased from 13 to 9 years during this period or by about 1.3 years every five years. There is a strong belief among Northland health care leaders that life expectancy should not be determined by which ethnicity a person is or where they live. Therefore in response to the ongoing inequity in life expectancy between non-Māori and Māori, it has been agreed that concerted collective action will be undertaken to reduce the gap in life expectancy faster over the next five years than that which has been achieved previously. This will not be without its challenges, particularly given current socioeconomic conditions, which will impact on Māori communities and their health more significantly than non-Māori.

Northland hospital unplanned admissions have been increasing steadily in recent years, particularly for medical conditions. Some of these unplanned hospital admissions are potentially avoidable by improving prevention, increasing the capability, capacity, and integration of primary health/community services; and improving the care of patients within hospitals and on their discharge.

Delivering on the proposed target is intended to improve population health outcomes while simultaneously improving patient experience and reducing potential cost increases for DHB hospital services.

The target of reducing 2,000 unplanned hospital admissions annually by 2017 will be delivered over the five years. Priority areas will be medical readmissions and ASH rates. Northland medical readmissions are slightly above the national average but considerably higher than some comparable hospitals. They have also been increasing in recent years.

Northland ASH rates, particularly for Māori and children, are higher than national averages suggesting that improvements in prevention and primary health/community service delivery can achieve meaningful results.

Patient Experience

Patients and whānau experiencing clinically and culturally safe, good quality, effective, efficient and timely care.

Patient experience of health services is receiving increasing attention internationally and in New Zealand. Enhancing patient experience is seen as critical in ensuring patient-centred care and improving health outcomes, and can contribute to controlling health care costs. Patient experience refers to the quality safety of service delivery, access to services, and the reliability of services.

The two 2017 Headline Targets agreed for the patient experience outcome area are:

- Every Northlander with urgent health needs has same-day access to primary care
- 95% of patients report that they would recommend the service.

A key measure of the responsiveness of health services is the ability for patients to have timely access to appropriate services when urgent health needs arise. However, sometimes people with urgent health needs, which do not require hospital emergency service-level care, can find it difficult to access same-day urgent primary care services. It is apparent that, particularly in the Whangarei area, some ED attendances would be avoided if same-day urgent primary care services were improved. This requires appropriate triage systems available to and within primary care practices that allocate resources to need, and that sufficient provision of time is available each day to accommodate urgent patient consultations.

Patient-reported measures of satisfaction are increasingly incorporated in health provider performance and quality improvement frameworks such as accreditation. They are considered important for providing information to health providers to help them deliver patient-centred care and improve service quality.

Current measures of patient satisfaction in Northland and nationally are not considered fit-for-purpose. As such, Northland will establish appropriate reporting measures, cognisant of national initiatives, to capture changes in patient satisfaction. These measures will cover all relevant health services provided in Northland and first priority will be on establishing robust baseline measurements. Patient satisfaction improvement will then be incorporated into organisation and management/provider key performance measures to reinforce provider accountability for delivering patient-centred care.

Cost/Productivity

The Northland health system living within available funding by improving productivity and prioritising resources to their most cost-effective uses.

Northland health services are operating in a challenging financial environment. Government annual funding increases to DHBs have been constrained over the past three years and have been signalled by the Ministry of Health to be similarly constrained over the next three years.

At the same time, Northlanders are facing tough socioeconomic conditions that impact on their ability to finance co-payment costs of care. A large proportion of Northland general practices provide very low cost access care but some Northlanders still find cost a barrier to accessing care.

Ensuring the value for money of service investments in terms of delivering improved health outcomes and delivering services for least cost is of paramount importance.

The two 2017 Headline Targets agreed for the Cost/Productivity outcome area are:

- Value for money savings of $5 million achieved against projected cost increases every year
- Northland hospital labour productivity benchmarks in the top five of DHBs.

The combination of increasing population health needs, service cost inflation, and revenue constraint suggests that under current delivery settings Northland DHB will face around a $29 million deficit by 2016/17. Achieving value for money savings of $5 million every year will contribute to the DHB achieving financial breakeven over the five year planning period.

Improving the labour productivity of Northland DHB services will materially contribute to helping deliver value for money savings against potential cost growth. It will also enable a greater quantity of service to be provided to Northlanders within available funding. Currently Northland DHB ranks around eleventh amongst DHBs for its labour productivity (as measured by weighted output per FTE inclusive of outsourced services). Achieving this target will be challenging but important in the context of constrained operating revenue.

NHSP Headline Actions

Population Health

The NHSP's population health objectives are:

1 Increasing the number of Northlanders who are health literate and living healthy lifestyles, with a particular focus on improving Māori health outcomes
2 Increasing availability of, and access to, services in primary health and community settings, particularly urgent, intermediary 'step-down', and restorative services
3 Improving primary care practitioner's access to specialist advice to support community-based care.

Table 3: *Population Health Headline Actions to Achieve NHSP Outcome Objectives and Targets*

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
Increased emphasis on reducing tobacco uptake and increasing cessation, with a particular focus on Māori and primary health care delivery	Smoking is the single greatest avoidable cause of mortality and morbidity in New Zealand. Around 26% of Northland adults smoke compared with 19% for New Zealand. The smoking rate is extremely high for Northland Māori (55%) compared to New Zealand Māori (42%). The large difference between Northland and New Zealand rates particularly for Māori creates a significant prevention opportunity. While there are many good initiatives underway in Northland, they can be better coordinated and made more culturally appropriate for Māori.	Improved coordination of prevention services alongside more culturally appropriate service delivery should have material impacts on smoking rates. In turn this will reduce smoking-related deaths (Northland: 47% of all Māori deaths, and 18% of non-Māori deaths) and smoking-related hospitalisations (1,161 per 100,000 hospitalisations which is 1.5 times higher than the national rate). It is expected that this action is financially neutral over time but that priority and action planning may identify the requirement for upstream investment. We anticipate that such investment would be from reprioritisation of lower value spending.	Increase in Northlanders' life expectancy Decrease in the gap in life expectancy between Māori and non-Māori in Northland Decrease in proportion of daily Māori smokers in adult population (Māori women and expectant mothers)	Priority and action planning to be completed in 2012 with staged implementation from 2013	GM Planning, Māori, Primary & Population Health
Increased focus on expectant mothers and young people in health risk factor prevention	Evidence strongly suggests that expectant mothers' lifestyles can have profound effects on the immediate and future health of	In Northland, Māori have a significantly higher birth rate than non-Māori. They also have significantly higher likelihood of	Increase in Northlanders' life expectancy Decrease in the gap in life	Priority actions to be identified in 2012 with staged implementation planned for 2013 and	GM Planning, Māori, Primary & Population Health

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
strategies (tobacco, obesity, alcohol/drug, mental health, SUDI)	their babies. For example, an expectant mother's nutrition impacts on the birth weight of their baby, in turn increasing the likelihood of chronic disease for that child in their later adult life (CVD, diabetes, cancer). On the basis of this evidence, the Ministry of Health has recently indicated that greater emphasis will be placed on the health of expectant mothers and young women in health risk prevention strategies. Rates of many types of childhood problems, including conduct disorders, tend to be higher amongst families facing sources of social inequality and deprivation, including poverty, welfare dependence, and poorer living standards.	suffering the burden of chronic disease. Moderating Māori expectant mothers' and young womens' lifestyle behaviours should result in significant medium and longer-term health outcome improvements. We expect this action to be fiscally neutral as it is about priority emphasis. We note that the Ministry intends to redirect some national contract funding for this purpose. Any additional DHB investment should be moderate and time-limited. Targeted investment in evidence-based education, prevention, detection and treatment directed towards at-risk children and their families is particularly cost-effective.	expectancy between Māori and non-Māori in Northland Increase in proportion of babies born with a 'healthy' birthweight (2,500 to 4,500 grams) Decrease in proportion of expectant mothers with one or more lifestyle health risk factors Increase in number of babies born between 37 and 42 weeks gestation Increase in detection/treatment of antenatal and postnatal depression Decrease in SUDI rate	out-years	Director Nursing and Midwifery GM Child, Youth, Maternal & Oral Health
Enhance screening for health conditions and risk factors particularly diabetes and CVD with a specific aim of 100% for Māori from age 35	The largest drivers of amenable mortality are CVD, diabetes, and cancer. Together these diseases explain over half of all premature deaths in Northland. Māori Northlanders are over-represented in the prevalence of these conditions and their associated impacts on mortality and health status. Māori also suffer these diseases at much younger ages than non-Māori.	Early identification of health conditions and/or their risk factors enables preventive measures to be taken to ameliorate disease progression. In particular, interventions to the causes of Māori ill-health (and health inequities) that kill fast and which contribute most to the life expectancy gap provide greater leverage to improve population health outcomes and reduce inequities. Increased screening will likely result in both increased screening costs and treatment costs. However, it should reduce downstream costs over the	Increase in Northlanders' life expectancy Decrease in the gap in life expectancy between Māori and non-Māori Increase in percentage of Northlanders screened for priority health conditions and their risk factors with a particular focus on 100% coverage of Māori 35 years and over Increase in the number of Māori people with >15% risk of CVD on appropriate preventive medicine	2012	GM Planning, Māori, Primary & Population Health PHO CEs

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
		medium to long-term. Action costs will need to be estimated during planning.			
Collective intersectoral action to address determinants shaping health outcomes with a strong emphasis on community action including local Food Accords with industry, TLA alcohol/ gambling regulations, commercial use permits (fast food outlets), urban design (including encouraging 'active' travel), improved targeting of the 'Healthy Homes' initiative, and the roll-out of primary school exercise programmes like 'Project Energise'	Internationally it is well recognised that peoples' health-related lifestyles are mediated through their social and environmental context. Only 14% of Northlanders lead a 'healthy lifestyle', with this rate significantly lower for some population groups (Māori, quintile 5) (see Section 1). Many of the social and environmental factors affecting Northlander's health-related choices are outside the direct control of the health sector. Intersectoral action is therefore required to moderate these factors with the aim of enabling Northlanders to lead healthier lifestyles and ameliorating non-lifestyle health risks.	Building on the success of current collective intersectoral action, the expected impact is an increase in the proportion of Northlanders leading healthy lifestyles and amelioration of health risk factors. In turn this would reduce the prevalence of long-term conditions (LTCs), alcohol/drug-related adverse events and reduce Ambulatory Sensitive Hospitalisation (ASH) rates. Associated with these reductions will be cost savings for patients, whānau, and the health system. The costs associated with intersectoral collective action will depend on the scope and nature of collaboration. We note that Waikato DHB's Project Energise cost approximately $2 million (2011/12).	Increase in proportion of children and adults with a healthy Body Mass Index (BMI) Decrease in incidence of alcohol/drug related adverse events Increase in number of Healthy Homes referrals and interventions for high needs populations/whānau Reduce ASH particularly for Māori, people with LTCs and children	Local Food Accords for priority areas (2014) TLA alcohol/gambling regulations and commercial use permits (2013) Improved targeting of 'Healthy Homes' initiative (2012) Roll-out of primary school exercise programme (2014)	GM Planning, Māori, Primary & Population Health GM Child, Youth, Maternal & Oral Health
Strengthen the health literacy of people with long-term conditions (and their whānau) through system improvements and programmes such as Whakamana Hauora (Stanford model)	People with inadequate functional health literacy may have difficulty with managing their LTC, for example, reading and comprehending prescriptions and self-management and follow-up instructions. This can result in poorer health outcomes and associated health costs for both patients/whānau and the health system. A national health literacy survey (2006) found that Māori health literacy rates are significantly	Improving the health literacy of people (and their whānau) with LTCs will result in better patient adherence to care plans, improved self-management, and more timely patient follow-up. In turn, patient health outcomes will improve with slower disease progression and less reliance on health professional services. This will result in better quality of life for patients and reduced care health costs for patients, whānau, and the health system.	Increase percentage of Northlanders with LTCs who are health literate Decrease in ASH for Māori and people with long-term conditions Decrease in the percentage of Northlanders in specialist mental health services who would have been in the service for longer than one year	2012 (Whakamana Hauora) 2013 for other initiatives	PHO CEs (for their respective areas/ populations)

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
	lower than non-Māori. This has significant implications for health outcomes and service costs given that Māori are much more likely to suffer LTCs. This is particularly important in Northland given its large Māori population.	To be determined as project implementation fully scoped. Expected to be less than $50,000 per year.			
Enhance and expand preschool and school-based health services into institutions with high Māori rolls/ deprivation, with a particular emphasis on integrated models of care (medical, nursing, social) Key priorities: skin infections, sore throats (rheumatic fever prevention), anxiety, depression, and alcohol/drug addiction plus sexually transmitted infections (STIs)	The child and youth population in Northland is projected to decline over the coming years, but it remains a priority because healthy children make healthy adults. Children in Northland are also more needy than adults; areas in Northland whose deprivation rating is in the lower half of the scale contain 70% of Northland's adults but 85% of our children. ASH rates for children in Northland, particularly Māori, are higher than national averages. ASH rates are dominated by infectious disease, particularly respiratory, but also skin (cellulitis) and gastroenteritis. Rheumatic fever/heart disease averages 16 discharges a year. STIs are also high in Northland.	The school environment provides a significant opportunity to wrap appropriate services around children (medical, nursing, and social) and to identify and address health needs early and in a comprehensive way (for many children at once and for a range of services for more complex needs). Often the children most in need of health and social care will not receive this in a timely way given whānau circumstances. Therefore expected impacts/ benefits include improved access to services for high need children and youth, improved prevention of infectious disease, and as a consequence, a reduction in ASH rates and cases of rheumatic fever. It also provides an opportunity to provide youth-friendly services for more sensitive issues such as sexual health.	Increase on-time immunisation coverage Increase in referrals for treatment (mental health and addiction) in primary health care and specialist mental health services Increase in number attending Incredible Years programme Decrease in ASH for Māori and for children Decrease in number of rheumatic fever cases Decrease in prevalence of STIs	2012 action planning 2013 implementation	GM Child, Youth, Maternal & Oral Health
Strengthen provision of home-based restorative services, and their linkages with primary health care	Northland's population will age significantly over the next 15 years, which will put pressure on hospital and residential services, including inpatient mental health facilities, as a result of increasing prevalence of dementia. The Government's policy is to support	It is hoped that this will enable older people to enjoy a better quality of life and reduce the need for aged residential care services, and the duration of stay for those that enter this service. Additionally, improved linkage with primary health care would	Increase proportion of older people receiving HBSS compared to ARC Decrease rate of growth in dementia beds	2013 action planning 2014 implementation	GM Health of Older People & Clinical Support

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
	older people to maintain their functional independence in the community for as long as this is clinically appropriate. To enable this requires Home-Based Support Services (HBSS) to focus on maintaining and restoring the functional independence of older people. In some instances, this requires a shift in service culture from 'doing for' to 'doing with' clients. Additionally, improving linkages with primary health care should improve early detection of health needs such that intervention can be more timely, preventing progression to higher levels of acuity.	result in earlier intervention, fewer presentations to urgent/acute specialist and hospital services. Early intervention, ongoing monitoring of physical health, case management, and family support can increase the length of time before people with dementia require residential care and decrease length of stay on admission to hospital. Increased expenditure on HBSS will be required as the number of older people supported in the community increases. Additionally, case management and other services may require increases in staff capacity.			
Strengthen discharge planning and pilot follow-up clinics and other models of care to reduce readmissions, with an emphasis on older people and Māori with long-term conditions; and identify patients with long-term health conditions at risk of hospital admission, and ensure they have agreed action plans, and receive coaching support based on a Whānau Ora framework	Northland DHB has a high rate of medical readmissions that has been increasing significantly over the past few years. While many readmissions are unavoidable due to progression of disease and/or development of new conditions, international and New Zealand research evidence suggests that some readmissions can be avoided by improvements in discharge planning and community follow-up. Additionally, evidence suggests that hospital admissions can be prevented by predictive modelling and case management.	It is expected that medical readmissions will be reduced resulting in improved health outcomes, patient experience, and cost savings. For Whangarei Hospital we estimate potential net savings from a decrease in medical readmissions to be $2.1 million in 2016. We expect that this is fiscally neutral as it relates to process improvements. We note that strengthening discharge planning is a priority of NDHB's Acute Care Reform Programme.	Decrease in 28-day hospital readmission rate	2012-2014	GM Health of Older People & Clinical Support GM Clinical Services GM Mental Health, Addictions & District Hospitals

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
Develop better support for lower dependency patients by increasing specialist support in the community setting, for example through implementing 'hospital at home' and telehealth models	Improved integration of specialists with community/primary health services can extend the scope of health conditions that can be managed in these settings and provide for better prevention of disease progression. This can potentially reduce the demand for hospital-level care resulting in a material impact on health care expenditure. Additionally, international evidence suggests that patient experience is improved.	Reduction in ED self-presentations, and hospital (re)admissions for lower acuity health needs which can be managed in community settings with appropriate specialist support. Additionally, support to district hospitals (eg telehealth) can potentially reduce demand for more specialised hospital inpatient care, referrals to specialist services and/or reduce length of treatment time in specialist settings. Costs dependent on scope and type of initiatives implemented.	Decrease in ASH particularly for Māori and people with long-term conditions Decrease in 28-day hospital readmission rate	2012 action planning and model of care design 2014 implementation	GM Health of Older People & Clinical Support GM Mental Health, Addictions & District Hospitals
Expand Primary Options Programme Northland (POPN) to reduce GP referrals, reduce ED self-referrals, support early discharge and support transition to new model of integrated primary health care (see Patient Experience)	ED utilisation has been increasing significantly in Northland, particularly in Whangarei (see Section 1). Some attendances to Northland EDs can be managed in primary health care if alternative service arrangements are available. POPN currently has a lower volume per 100,000 people than other comparable programmes in the Northern Region. Metro-Auckland DHBs also offer this programme for under 18 year olds (which partly explains differences in programme volumes).	It is expected that an expanded POPN will reduce GP referrals to ED, support ED clinicians to divert lower acuity patients to primary health care where clinically appropriate, and assist improving early discharge by enabling access to a wider scope of services. This will reduce pressure on ED staff enabling them to provide the highest quality of care for patients with more serious health needs. It will also assist the DHB to meet the national Health Target of shorter stays in ED. Current programme budget is $300,000 per year. If Northland were to increase its POPN volumes to levels and efficiencies comparable to Metropolitan DHBs (eg Counties Manukau and Canterbury DHBs), current volumes would need to triple and	Increase in POPN volumes Decrease in ED presentations that could have been prevented or managed in primary health and community settings Decrease in average ED length of stay (contribution to)	2013	PHO CEs GM Clinical Services GM Health of Older People & Clinical Support

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
		we would expect the total cost of the programme to increase to approximately $500,000.			
Strengthen the range of alcohol and other drug interventions from early detection, screening and brief intervention to specialist community and residential treatment resources	Northland adults appear to have a higher rate of hazardous alcohol consumption than the national average (Health Survey 2006/07). It is also estimated that between 3 to 6% of youth use alcohol and/or drugs four times or more per week. These hazardous lifestyle behaviours can have profound effects on individual health and the wellbeing of whānau. Additionally, the health sector costs of these lifestyle behaviours can be significant. For example, the average cost of hazardous drinking to the health sector has been estimated at $371.21 per hazardous drinker (BERL, 2010). There has been significant growth in referrals for specialist addiction services which has placed significant pressure on services. It is noticeable that only a small percentage of referrals for alcohol and drug (AOD) services come through primary health care. A significant proportion of mental health clients have major alcohol/substance abuse problems.	It is well recognised that early detection and treatment of alcohol and drug addictions minimises long-term morbidity. Evidence suggests that screening and brief five-minute intervention in primary care (and EDs) is cost-effective and may have the potential to reduce demand on specialist services. For example, it has been estimated that a $1 investment in general practice alcohol brief interventions may produce a return of $1.74 over three years, while in an ED setting the return for $1 is $2.48 over three years. It is well recognised that a range of strategies to enhance detection and brief intervention, particularly for at-risk groups, need to be developed. These could include telephone triage and brief intervention.	Increase in proportion of referrals for specialist addiction services that are referred from care of Department of Justice Number/range of options developed to provide cost-effective, accessible brief intervention	2013	GM Mental Health, Addictions & District Hospitals

Patient Experience

The NHSP's Patient Experience objectives are:

1 Ensuring patients and whānau are supported throughout their care pathways with early interventions to address health needs and risks, and link with social services
2 Providing patients and whānau with access to more personalised health services including active involvement in their own care planning
3 Ensuring Northland health organisations operate with cultural competence.

Table 4: *Patient Experience Headline Actions to Achieve NHSP's Outcome Objectives and Targets*

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
Roll-out new model of integrated primary health care					
Whānau Ora implementation and navigation through Whānau Ora Collectives (WOCs)	The Collectives have been supported by Te Puni Kokiri (TPK) to implement the Government's Whānau Ora policy. This will provide a key framework for coordination of intersectoral efforts to improve outcomes for Māori, including at a population level contributing to the NHSP's goal of reducing health inequities and target of closing the life expectancy gap, and at a personal level improving access to well coordinated services for Māori patients and their whānau. The role of 'navigators' to support integration of services tailored to prioritised needs is expected to be a feature of the Collectives' approach.	The Government's Whānau Ora initiative is intended to provide improved integration of public services to wrap-around and address whānau needs in a holistic and culturally appropriate way. Nil additional cost, but reprioritisation of resources may be required	Achieve target number of Whānau Ora assessments and referrals for targeted population Māori primary health care access rates increase Improved whānau satisfaction with care Decrease in the gap in life expectancy between Māori and non-Māori	Implementation of TPK-funded initiatives is now underway by the WOCs. NDHB should continue to lead health sector engagement with the WOCs to identify shared health outcome priorities, and the initiatives that will support them. Work with Māori health providers to clarify their role in delivery of primary health care and community services and improving access for Māori patients and whānau.	GM Planning, Māori, Primary & Population Health
Prioritise Integrated Family Health Centre (IFHCs) sites for business case development	Development of IFHCs is an important direction set within the Government's Better, Sooner, More Convenient policy. IFHCs are intended to support consolidation of primary health care into larger groupings, with the benefits of a	IFHC development is expected to be a key initiative for increasing the capacity of primary health care, through bringing together a larger and broader workforce that can more effectively meet increasing demand for primary health care	Develop prioritised number of Integrated Family Health Centres (IFHCs) in Northland by 2014	During 2012 both Northland PHOs are expected to confirm their prioritised 'early mover' sites for IFHC development. Implementation is likely	PHO CEs

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
	critical mass of workforce, a wider range of services on a single site, decentralisation of some specialist services, and better coordination of services for patients.	services, and reduce acute demand on the hospitals. There are likely to be some transitional costs associated with infrastructure planning and development. New facility capital costs are expected to generally be funded through private sector investment. Services delivered from IFHCs are expected to be funded by a mix of DHB and private funding as currently.		to begin in 2013	
Implement same-day urgent access appointments across all general practices	NDHB hospitals have all been experiencing growth in ED attendance significantly above demographic growth. The large majority of these attendances are during normal working hours. A reason frequently cited by ED attendees is their inability to access their general practice in a timely manner – in other words, the person considered they had an urgent need but this could not be met by their general practice. It is thought that a significant reason for this is inadequate triage in the scheduling of general practice appointments, and that a solution will be to retain 'urgent slots' in each day's appointment book.	This can be expected to reduce self-referrals to ED, as well as increase consumer satisfaction with general practice through better responsiveness to need. There are no expected ongoing aggregate cost increases associated with this action. It requires changes to general practice business models including improved triage. In some instances transitional costs may be incurred, the funding of which will be agreed between different parties on a case-by-case basis.	Decrease in ED presentations that could have been prevented or managed in primary health and community settings Decrease in number of patients reporting use of ED because they could not get a same-day general practice appointment Increase in ratio of nurse to GP consults in primary care	Implementation would begin in 2013, preceded by planning during 2012	PHO CEs
Extended general practice opening hours available in urban settings with a particular focus on improving access for under-6s, Māori and other high needs	The traditional opening hours of general practice, usually 8am to 5pm, Monday to Friday, no longer suit the way of life of many Northlanders. While some individual practices have recognised this, there is now the need to introduce a more deliberately planned approach to extension of opening hours. This	The aim is to increase convenience for patients, thereby improving access and outcomes. It would also contribute to reduction of unnecessary use of hospital EDs. No additional DHB funding would be required, but reprioritisation of PHO Services to Increase Access (SIA)	Decrease in ED presentations that could have been prevented or managed in primary health and community settings Decrease in number of patients reporting use of	Planning would occur during 2012, with implementation from early 2013	PHO CEs

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
populations	is likely to include earlier opening (eg 7am) and later closing (eg 8pm) during the week, and some open clinics in the weekends (eg Saturday mornings). This initiative would rely on a critical mass of general practitioner and nursing staff, and hence be feasible only in larger practices in urban areas.	funding may be required if the initiative could not be supported by capitation, ACC and co-payments.	ED because they could not get a same-day general practice appointment Decrease in average ED length of stay		
Develop coordinated multidisciplinary models of care across primary and community providers (inclusive of Whānau Ora Collectives) and specialist services, with a focus on integrated, culturally competent care particularly for long-term conditions	Professional and organisational factors have long been cited as reasons for gaps and duplication in service delivery, and for patients experiencing poorly-coordinated service delivery. In addition, forecast demand growth and workforce shortages require development of more efficient and effective models of care with new workforce roles and better teamwork. Delivery of services into the home and remote monitoring are likely to increase. Additionally, the cultural competency of service delivery is recognised as important in delivering patient-centred care.	This initiative is expected to contribute to patients experiencing better integrated services, strengthening of primary health care sustainability, reduction in acute hospital attendances and admissions, and improved linkage between mental health and addiction specialists/primary care. This action should be cost neutral or of lower cost overall if professional groups move to working at the top of their scopes of practice. In some instances professional development funding may be required and new/altered staff costs may need to be accommodated within funding via changes in business models.	Achieve target number of cost-effective primary health and community model of care and service reconfiguration innovations Increase in percentage of mental health specialist consultations/ liaison to primary care	PHO-led planning should occur through 2012, with implementation priorities beginning in 2013	PHO CEs
Expand and enhance youth-friendly primary health and community services	Northland has a young population, with a relatively large proportion of youth (generally defined as aged 10 to 24 years), and among these youth a high proportion of Māori, living in homes in high deprivation areas. At least one in every five youth will experience a mental health problem sometime during their adolescence. A significant number of youth participate in binge drinking and 6% of the population are heavy users of alcohol and	Young people in Northland have poor access and outcomes compared with New Zealand as a whole. Increasing health literacy and healthy lifestyles among young people will reduce health risks in their adult years, as well as adverse outcomes in adolescence. Early intervention and access to youth-friendly services will likely ameliorate longer-term health outcomes while reducing use of	Increase in number of people aged 18 to 24 years treated in primary health or community settings Increase in referrals from school-based nurses Increase in referrals to early intervention psychosis service Decrease in number of	Detailed planning for development of enhanced and better integrated youth-friendly services should take place during 2012, with implementation from 2014 Note: consideration will need to be given as to how this action fits with expanded and	GM Child, Youth, Maternal & Oral Health GM Mental Health, Addictions & District Hospitals

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
	drugs. The youth population makes relatively high use of ED. Evidence internationally shows that services tailored specifically for this population deliver better access and outcomes.	emergency and hospital level services. Costs to be established once model of care and any possible facility requirements are established during action planning. Modest investment in a Whangarei youth facility may be required.	ED self-presentations by people aged 18 to 24	enhanced school-based services	
Shared information environment across primary health, community, specialist and hospital services	More effective sharing of health and service information across the patient's provider network is a national, regional and Northland priority. Northland health services will be working closely with the wider Northern Region on this initiative to provide support for 'shared care'. Priorities within this domain are: • e-referrals and e-discharges • clinical pathways, with electronic decision support • sharing of laboratory test results and pharmaceutical dispensing • improved communication between general practice and Māori health providers such that locating relevant providers for respective patients is easier and more timely	Better coordinated services, with improved patient experience, outcomes, and resource use. This will require capital investment which will be determined as initiative is fully scoped.	Developed as part of action planning with appropriate alignment with the Northern Region Health Plan enabler actions and priorities	2014	GM Health of Older People and Clinical Support PHO CEs
Expansion of GP observation and intermediate hospital beds in smaller local facilities under the medical cover of GPs, or specifically trained medical staff	'GP beds' and 'intermediate beds' have long been a feature of care in rural areas, where a short stay in a facility with nursing staff and medical cover from a GP has provided a local alternative to admission to a hospital in a larger urban centre. Admission is generally for a period of 48 hours or	For patients, GP and intermediate beds offer a low intensity, low stress local option, with medical and nursing cover by known staff. For the health system, they offer a less resource-intensive option, and allow secondary care resources to be directed to the patients who need them.	Developed if action is to be implemented	Consideration of this initiative should begin in 2012	PHO CEs Chief Medical Officer GM Clinical Services

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
	less, and provides the opportunity to stabilise and monitor the patient with a less complex acute condition, to ascertain whether a more intensive intervention via transfer is needed, or whether discharge home is possible. They also provide opportunities for earlier transfer from the larger facility, to the local facility, for rehabilitation before transfer home. The development of the Rural Hospital Medicine Pathway within the Royal NZ College of GPs and availability of new relatively inexpensive diagnostic technologies, combined with improved digital communications provides new opportunities to expand 'step-up, step-down' intermediary hospital care. These intermediate beds may be in a district hospital or in an aged residential care facility. The opportunity now is to work with general practice to consider expansion of this model to other district hospitals in Northland and to towns in Northland without district hospitals.	Cost factors to be considered are the marginal increase in staffed capacity and GP cover.			
Centralised patient triage and booking system	A centralised service would provide 24/7 first-line triage to ensure people with health-related needs have those needs addressed or are directed to an appropriate destination. Contact would be via telephone or email. The scope of the centre could encompass scheduling of primary	The proportion of care that is planned would increase with improved satisfaction and outcomes. Administrative costs would reduce. Gaps and duplications between services would reduce. Costs to be established. Over time this initiative could be expected to	Developed if action is to be implemented.	Initial feasibility study completed by December 2012	GM Finance, Funding & Commercial Services GM Clinical Services PHO CEs

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
	health and community care and specialist outpatient appointments; arranging referrals and discharges; follow-up of people who do not attend appointments; escalation of issues and concerns; proactive patient contacts for preventive health services; re-engagement of patients; after-hours triage and advice; arrangement of patient transport. These functions are currently duplicated across many provider organisations, not undertaken systematically, and confusing for patients.	improve system productivity but transitional costs are likely. The funding of any transitional costs can be agreed between different parties once their magnitude has been established and respective party benefits have been estimated.			
Support primary health care-led low cost access to general practice services	Low cost access general practices are those who serve high needs populations, and have agreed with the DHB (as part of a national programme) to limit their patient fees and restrict future increases, in exchange for higher capitation payments. With the consolidation of general practices into larger entities (including through development of IFHCs), the opportunity exists to expand the enrolled population who benefit from low cost access.	Reduction in fees will reduce financial barriers to access general practice services. This will provide more opportunity for preventative health care and reducing the utilisation of hospital emergency and acute services. No cost increase to the DHB, but may require some reallocation of funding by the PHOs or additional capitation funding by the Ministry.	Decrease in ED presentations that could have been prevented or managed in primary health and community settings Increase in number of practices providing very low cost access Improved Māori primary health care access rates	This will be considered in the context of joint PHO/DHB planning in 2012	PHO CEs GM Planning, Māori, Primary & Population Health
Other Patient Experience Headline Actions					
Strengthen patient quality and safety programmes (prevention strategies and measurement), including medication review, infection control, fall reductions: • over first two years	Health service quality and safety has significant impacts on patient experience of care. Poor quality and safety also has significant impacts on the financial performance of health organisations. Estimates suggest that preventable adverse events in the New Zealand hospital sector	The benefits are increased patient and whānau satisfaction with care. We expect that cost savings will be realised which will contribute to the Northland health sector living within its available funding. Costs associated with this action will need to be determined as	Decrease in number of adverse hospital events Decrease number of in-hospital falls causing serious injury and pressure injuries Improved patient and whānau satisfaction with	Baseline measures defined in 2012 and baseline information captured in 2013 Action planning to occur during 2013 with implementation of specific improvement	Chief Medical Officer Director of Nursing & Midwifery Clinical Director Primary Care

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
pilot initiatives in primary health care to improve patient safety and reduce harm • over the first two years implement Global Trigger Tools across DHB hospital services, and develop action plans and accountabilities for reducing rate of adverse events • over next two years measure and improve cultural safety and responsiveness.	cost between $320 and $590 million in 2001. Adverse events can also occur in primary health and community settings. Cultural safety and responsiveness has also been found to have a significant impact on access rates for some ethnic groups, internationally and in New Zealand.	implementation planning is scoped.	care	initiatives from 2014	
Design, implement and monitor clinical pathways for priority conditions (including diabetes, CVD, COPD, elective surgery, dementia, schizophrenia) with a focus on improving equity of access between Māori and non-Māori	Application of evidence-based clinical pathways has been shown to improve patient experience, outcomes and resource use. The pathways span primary health care, diagnostics, referral for specialist advice, hospital admission and discharge, and follow-up.	Specific benefits would be identified at the time that the pathway is adopted, and use of the pathway would be monitored to ensure the expected benefits are realised. We expect that this action is cost saving.	Relevant measures to be developed during project planning	The clinical pathways project will be established in 2012, and development priorities will be identified. The first pathways will be implemented in 2013 Note: needs to align with the Northern Region Health Plan deliverables and timeframes	Clinical Director – Primary Care GM Clinical Services
Ensure appropriate access to Advance Care Planning (ACP) as per Northern Region Health Plan	The objective is to achieve greater patient participation and improved health care through patients being better informed across the full health spectrum; from prevention and early diagnosis to better treatment of disease.	ACP will improve the care patients want, or need, at the end of their lives.	Increase in recorded ACPs as per Northern Region Health Plan DHB targets Improved patient and whānau satisfaction	2012	GM Health of Older People & Clinical Support Director of Nursing & Midwifery

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
All NDHB-funded provider organisations will have a policy on Māori cultural competence, and maintain plans to ensure their staff are culturally competent	Improving Māori health outcomes and Māori experience of the health system will require health provider organisations and their workers to deliver services in a more responsive manner in order to improve access for Māori. A number of Northland's provider organisations already have developed cultural competence policies and are implementing them. The aim is to make this a universal practice amongst all NDHB-funded service providers,– including DHB services.	Provider organisations, their services and their workers will become more sensitive to the needs of Māori patients and their whānau, improving access to services and increasing satisfaction. No additional DHB expenditure is required. Providers will incorporate this within their quality improvement programmes.	Improve patient and whānau satisfaction with care Increase in percentage of NDHB-contracted providers with cultural competence policies Increase in percentage of Māori employed in services Improvement in Māori access rates	Action to begin in 2012, and be completed by June 2014	GM Planning, Māori, Primary & Population Health
Implement Joint NDHB/ASMS (Association of Salaried Medical Officers) Quality and Patient Safety Improvement Plan	The plan is based on a view that Senior Medical Officers (SMOs) and DHB management can work more effectively together to achieve sustained improvements in clinical quality and patient safety.	The plan is intended to improve efficiency and productivity to free up clinical time. This would make more resources available to invest in activities that will deliver better quality and safer services for patients and their families/whānau. To be managed within settlement agreements.	Achieve Annual Plan financial performance targets Contain hospital (inpatient and outpatient) costs to within target growth Increase in weighted output per FTE (inpatient and outpatient) Reduce in-hospital average length of stay (ALOS) Increase in percentage of surgery performed on day of admission Increase in the percentage of elective surgery done as day surgery Increase in cost weighted discharges	2012	Chief Medical Officer GM Finance, Funding & Commercial Services

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
			(CWD) per theatre Decrease in number of adverse hospital events Decrease number of in-hospital falls causing serious injury and pressure injuries Improved patient and whānau satisfaction with care		
Increase collaboration and information sharing with Māori providers to decrease DNAs and to improve long-term conditions compliance	Māori are over-represented among did-not-attends (DNAs) at scheduled outpatient appointments. New approaches are needed to reduce this rate, and Whangarei Hospital will work with Māori providers to identify barriers to outpatient access for Māori, and implement prioritised actions. This is likely to include Māori provider follow-up of the people concerned and their whānau.	This initiative can be expected to reduce the non-attendance rate for Māori, meaning improved access to specialist services and thereby improved outcomes. It will also improve outpatient productivity. There may be some funding increase for Māori providers to increase their capacity to follow up DNAs. Alternatively existing resources may be reprioritised to support this activity.	Reduced total DNA rate Reduced rate of DNAs amongst Māori	2012 action planning 2013 implementation	GM Planning, Māori, Primary & Population Health GM Clinical Services
Services planning for high-growth areas such as obstructive sleep apnoea, macular degeneration, and bariatric surgery	A number of Whangarei Hospital specialties are experiencing high demand growth, including obstructive sleep apnoea, macular degeneration, and bariatric surgery. Planning is required to forecast future demand, identify diagnostic and treatment responses and eligibility criteria, quantify the capacity (workforce, facility space, equipment) required, and develop an implementation pathway and budget. This information will then need to be considered within wider DHB planning and budgeting processes.	Proactive forward planning of specialty services allows deliberate decision-making, and subsequent allocation of operational and capital expenditure. Demand will be increasing for a wide array of publicly-funded services. Service planning generates the information needed to inform prioritisation, and then to scale up services and facilities as determined. If the decision is made to support service expansion, then additional investment will be required.	Developed as part of action planning	2012 action planning	GM Clinical Services

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
	Among the considerations will be whether Whangarei Hospital should provide these services, or whether they should be procured from another DHB or from the private sector.				

Cost/ Productivity

The NHSP's Cost/Productivity objectives are:

1 'Working smarter' to reduce duplication and waste
2 Ensuring service investment and provider performance demonstrates value for money
3 Strategic investment in new models of care, service innovations, and capacity development

Table 5: *Cost/Productivity Headline Actions to Achieve the NHSP Outcome Objectives and Targets*

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
Establish 'whole-of-system' productivity and cost savings leadership group, tasked with identifying and implementing ongoing actions, with particular focus on reducing unwarranted clinical variation and achieving administrative savings via shared services/process improvements	The NHSP has identified a number of major initiatives to lift productivity and reduce costs in order for the DHB to live within its means. This substantial work programme will require strong governance and oversight to ensure the commitment from key leaders across the whole system.	The benefit will flow from having a leadership group with the commitment, power and influence to successfully lead the programme of change. Successful implementation of new initiatives, the consolidation of improvements and systemising new approaches to care delivery will all require leadership and backing from this governance group. No significant costs over and above current operating arrangements. Will require individuals (members) to reprioritise time to commit to this leadership group.	Increase in proportion of NDHB expenditure allocated to prevention and primary health/community services Contain hospital (inpatient) costs to within target growth Achieve healthAlliance savings targets Achieve Annual Plan financial performance targets Develop Strategic Investment Fund	July 2012	DHB Chief Executive
Assess/benchmark NDHB hospital services against value for money measures including cost-effectiveness of clinical interventions with a focus on high-cost interventions	Variation in treatment interventions exists at a unit, department and individual level within hospitals. Understanding this variation and the associated costs to achieve treatment outcomes will be important in highlighting opportunities for improvement.	Evidence is clear that improved value for money and patient outcomes will be achieved where the standardisation of care processes occurs. With the continuing development of new technologies and high cost treatments an environment of review and challenge of the current costs of treatment and patient outcomes will be necessary to optimise value and benefit from existing health resources. Nil costs.	Reduced average length of stay Improved patient satisfaction, reported outcome measures Reduction in readmission rates Improved compliance against established care pathways	January 2013	Chief Medical Officer Director of Nursing & Midwifery GM Finance, Funding & Commercial Services

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
Development of a hospital services value for money action plan which will incorporate lean thinking and value mapping processes.	Providing the right care, in the right place at the right time, will support more efficient and effective delivery of hospital care.	When patients are referred or attend hospitals for treatment they interact with many health professionals, usually have a number of diagnostic tests and undergo a series of treatments. High quality, cost-effective care occurs where these interventions occur in a seamless manner and without duplication/fragmentation. Benefits are reduced average length of stay, streamlined admission, treatment and discharge processes including the need for unnecessary specialist follow-up, and reduced readmission rates. Substantial savings in bed days can be made through ensuring care is provided in a seamless manner (for example 0.5 day reduction in ALOS could achieve bed day savings of $14.0m per annum).	Decrease in average length of stay by 0.5 days after five years Increase in day surgery rate Increase in case weights per theatre Contain hospital (inpatient and outpatient) costs to within target growth	June 2013	Lead GM (COO) Director of Nursing & Midwifery Chief Medical Officer
Undertake a value for money (VfM) review of NDHB contracts with NGO service providers.	There is a need to ensure NGO third-party contracting is optimised to better support the population health outcomes and fiscal targets NDHB faces. An assessment of both the efficiency and effectiveness of contracted services will be undertaken.	The VfM review will highlight where lower value spending can be redirected/reprioritised to higher value spending which will improve health outcomes. Achieving direct savings, so that funds can be shifted to the Strategic Investment Fund, will be an important outcome of this review. One-off cost to undertake review $70k. Ongoing savings target $3 million per year.	Achieve Annual Plan Financial performance targets Achieve reduction in fund expenditure by $3 million to redirect to Strategic Investment Fund Reduce ongoing third party contract cost growth to below demographic growth	Begin July 2012 and complete by Dec 2012	GM Finance, Funding & Commercial Services
Undertake detailed analysis of inter district flows (IDFs) to explore opportunities for service improvement and cost savings	Northland DHB spends $65 million annually with Auckland DHBs. Any VfM review of Northland's own hospital-delivered and NGO-procured services should be accompanied by an appropriate review of services provided to Northland residents by regional DHBs.	A thorough review of IDF volumes has the potential to constrain future demand growth including through more effective referral management processes. There is also the opportunity, with the establishment of clinical pathways through the regional planning process, to provide more services to	Reduce future growth IDF costs to below future demographic growth increases	July – September 2012 (it will be important to commence review promptly to inform 2013/14 Annual	GM Finance, Funding & Commercial Services GM Planning, Māori, Primary & Population Health

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
		Northlanders from Whangarei Hospital, thereby improving local access. The major benefit of such a review is to contain the future growth and cost of IDF services. Nil, other than time and resource. Commitment from clinical champions, analytical and management personnel already employed. Any costs associated with service improvements or required capacity will be dependent on the outcomes of the review.		Plan)	
Demonstrate alternative models of primary health and community care including new business models, staffing, employment and performance incentive arrangements that make better use of available resources	There are significant concerns within the primary health care sector regarding the sustainability of the current primary health care business and clinical delivery model. Workforce shortages along with increasing demand and the need for primary health care to do more is challenging the current operating model.	New models of care where GPs, nursing and allied health work at the full scopes of practice are emerging in other parts of the country. Strongly supported by a shift in services from hospital to community care and complemented by home-based support and social care services, new lower cost models which provide greater benefits in access and outcomes for patients can be realised. There will be costs associated with the establishment of demonstration sites for new models of care. These one-off change management costs should be supported by the Strategic Investment Fund.	Two demonstration sites established Increase in the ratio of nurse to GP consultations in general practice Increase proportion of NDHB expenditure allocated to prevention and primary health/community services Decrease in ED presentations that could have been managed within primary health care	January 2013	PHO CEs
Develop Strategic Investment Fund to shift DHB funding to prioritised services and models of care with an emphasis on supporting cost-	The Strategic Investment Fund will provide Northland DHB with the capacity to support initiatives that will position Northland's health system to achieve agreed population health, patient experience, and cost/productivity goals.	Some upstream investment in key priority areas to support improved population health outcomes. Investment in change management activity to support new lower cost models of care and support to implement this change across	Fund established and budget allocation of $3m (minimum) provided on annual basis Annual plan financial targets achieved	Established by 1 January 2013	DHB CE GM Finance, Funding & Commercial Services

Action	Rationale	Benefits/costs	Performance measures	Implementation	Accountability
effective, evidence-based primary health and community models of care		Northland's health system. The size of the fund will vary in any year, but it is expected that a minimum of $3 million will be required to be redirected to the fund annually.			
Optimisation of back-office functions across Northern region DHBs and Northland PHOs	Achieving savings in non-clinical support services is a priority in order to maintain investment in front-line services. It will also assist in reducing the 'cap' in management and support staff, which is a key Government priority.	Ensuring non-clinical services operate in the most cost-effective manner allows maximum resource to be redirected to front-line service delivery. The consolidation of back-office functions within healthAlliance/HBL will assist in achieving this. Opportunities exist to support Northland PHOs to achieve better efficiencies and value for primary health care providers by also consolidating these functions. Some one-off costs to manage the transition of back-office functions.	Continued reduction in back-office costs as a percentage of total Northland DHB expenditure Annual healthAlliance savings targets achieved	Consolidation of back-office functions is currently in progress Expected date for full consolidation 31 December 2013	GM Finance, Funding & Commercial Services PHO CEs
Identify opportunities to increase non-PBF revenue by >5% per year	Core government funding will remain on a much lower path for the medium term (three to five years). Increasing the revenue base and delivering services at marginal cost increase will assist the viability of Northland DHB.	NDHB's viability will be improved through the earning of additional revenue, establishing support and investment from other funders, Iwi, ACC and Ministry of Justice. Improving outcomes for their population/client groups will also contribute to improved population health outcomes for all Northlanders. Nil expected costs.	Increase non-PBF revenue by >5% per year Achieve Annual Plan financial performance targets Increase ACC revenue	Commence July 2013	ELT

Section 3: Enablers

NHSP Enablers

A range of important enablers will support the three NHSP outcome areas: Population Health, Patient Experience, and Cost/Productivity. These enablers are necessary to achieve the NHSP's outcomes, objectives, targets, and actions. The enablers are:

- Workforce capacity and capability
- Information systems and technology
- Assets and infrastructure
- Partnership and community development
- Working smarter.

Workforce Capacity and Capability

Critical to the successful implementation of the NHSP will be significant changes in how services are delivered, where they are delivered, and by whom. This will require identifying priorities for developing Northland's health workforce capacity and capability to match prioritised demand. This requires innovations aligned with moving towards integrated multidisciplinary teams, and efficient use of resources. It will also require supportive clinical leadership, a culture focused on continuous improvement, and clinical networks to make best use of resources and ensure appropriate provision of services to all communities.

Key workforce capacity and capability innovations to support the implementation of the NHSP will need to be identified in a whole-of-system workforce strategy and action plan. The strategy and action plan should include priority actions for:

- Ensuring the primary health care and hospital workforce (GPs, nurses, community pharmacists, allied health etc) are working at full scopes of practice and utilising allied health and support roles within general practice
- Developing a Northland-wide approach to professional development and training with a focus on clinical leadership, quality improvement, and change management
- Establishing a Northland district hospitals network that supports closer linkages between the hospitals and with Whangarei Hospital, and provides support to developing rural hospital medicine specialist roles
- Strengthening multidisciplinary teams in primary health care and community services with a particular emphasis on improved integration/coordination between community pharmacy and primary health care
- Ensuring primary health care and community services capacity can meet future demands
- Developing health of older people voluntary services and supporting the integration of this workforce with the continuum of care
- Increasing clinical resources to assist integration of primary health and specialist care, and support community-based delivery, eg community paediatricians, geriatricians, general physicians
- Affirmative action in the recruitment and retention processes to adequately reflect the make-up of the population of Northland
- Improving the integration of nurse practitioners and locally-trained Māori primary health care nursing/independent nurse practitioners into Northland health services
- Strengthening the Te Tai Tokerau public health workforce
- Strengthening the Māori health workforce
- New Zealand Nurses Organisation - Safe Staffing = Healthy Workplaces initiative.

Information Services and Technology

Access to timely, robust and relevant information is important for supporting multidisciplinary patient-centred care, resource allocation, quality improvement, and sharing best practice. As part of Northern Region DHB's shared service planning, Northland DHB has a number of information system priorities to achieve including:

- Careconnect
- Hospital laboratory and pharmaceuticals data repositories
- Single clinical repository
- Community e-prescribing
- E-referrals
- Safe medication management (secondary services)
- Single regional clinical workstation, and
- A range of back-office function information systems such as finance.

Achieving these priorities will significantly contribute to the successful implementation of the NHSP actions. Additional information system enablers identified for Northland during development of the NHSP include:

- Primary care e-referrals integrated with NDHB information management system
- A platform for sharing of patient records
- A telehealth plan that identifies service improvement priorities (online patient portals,

video conferencing, phone/txt/email consults, txt/email reminders, at-home tele-monitoring and alert systems, tele-support and coaching)
- Risk stratification and at-risk patient identifier systems
- Ethnicity data captured to enable analysis and monitoring of disparities between Māori and non-Māori
- Eligibility for service data capture improved.

Assets and Infrastructure

Northland DHB has determined that Whangarei Hospital asset upgrades are important for managing future demand, transitioning to new service designs, and improving the efficiency/productivity of service delivery. Northland has developed a Site Masterplan for Whangarei Hospital. This includes:

- Redeveloping Maternity, Laboratory, Chronic and Complex Care facilities (Stage 1), to be implemented during 2012 and 2013
- Redeveloping the ED and implementing an Acute Assessment Unit (Stage 2), in business case development with intended implementation from 2014
- Ward and theatre development (Stage 3) scoped with intended implementation from 2017. Interim alternative theatre capacity options are to be implemented over the business case development phase
- One-stop shop cancer outpatient centre with full complement of staff and integrated support and care services. If funding allows, the centre is to be implemented in 2013.

An important component of the NHSP is shifting services to primary health care and community settings, where appropriate. As indicated in national policy and also PHO-led initiatives aimed at ensuring the sustainability of their services, facility development is required to enable a broader suite of integrated services to be provided in primary health and community settings. This will require Northland DHB and PHOs to work with each other to determine the future service mix to be delivered in these settings, by whom, and where. PHOs will then need to work with their member practices and other community providers to develop robust business cases for facility development and upgrades. Other important partners will include Māori health providers, iwi, community pharmacy, and community allied health providers. We expect that initial facility scoping work would be undertaken in 2012 as part of the Government-required locality plans, which are to be developed in partnership between Northland DHB and Northland PHOs.

Northland has a number of district hospitals that provide primarily urgent, acute medical, intermediary, and rehabilitative care. While significant capacity pressure is being placed on Whangarei Hospital, it is important to assess whether district hospitals are best designed to deliver high quality, cost-effective models of care for their local populations. Important considerations include diagnostic tools available to district hospital clinicians, information system connectivity with Whangarei Hospital (and local primary health care providers) and implementation of telemedicine. In some instances, there may be opportunities to adjust the level of some services provided by specific hospitals to increase capacity for other types of services.

Recent work suggests that larger aged residential care (ARC) facilities can provide a wider range of services more efficiently than smaller facilities. Northland has a mixture of large and small facilities dispersed across the district. It is important to determine whether the current configuration enables efficient service delivery and the full scope of services to be provided to ensure good health outcomes and patient experience.

Partnership and Community Development

The population health focus of the NHSP and the multi-factorial nature of many health needs in Northland requires intersectoral collaborative action to address. Pooling expertise and resources across intersectoral partners and aligning planning and action should provide greater leverage to address longstanding social determinants of health in Northland. This will contribute to improving the life expectancy of Northlanders relative to other New Zealanders, and between Māori and non-Māori in Northland. Key intersectoral partners include:

- Territorial Local Authorities
- Whānau Ora collectives
- Iwi, hapu, and whānau
- Ministry of Social Development, Housing New Zealand, Ministry of Education, Ministry of Justice, New Zealand Police
- Family Start (MSD)
- Other Northland community organisations such as schools and Sport Northland.

A key priority will be convening a summit of Northland sectoral leaders to build awareness of the 'burning platform' and identify shared priorities and actions that can be undertaken in partnership.

Effectively involving communities in the design and development of health services can support improvements in population health outcomes and patient experience. Communities often have local knowledge that can assist with providing cost-effective and sustainable services. Additionally, it

can empower communities to take ownership for addressing long-standing, previously intractable issues, producing more sustainable outcomes.

Working Smarter

The health sector is a complex system, which challenges the capability of management and information systems to provide efficient, effective, and responsive services. In this context it is important to harness the knowledge of front-line staff and to ensure that there is good connectivity between management, clinicians, providers, and patients. The former provides increased scope for innovation while the latter helps to encourage patient-centred care and best practice to be shared.

It is also important to ensure that management and front-line staff have the best information on which to base their decision-making. This requires good data capture and the conversion of data into meaningful information. An important trend occurring internationally is the improved capture of patient-reported outcome and satisfaction information. Good capture of this information can provide valuable insights for management and front-line staff to improve service quality, ensure patient-centred care, and allocate resources efficiently and effectively.

Similarly, an important challenge is how to identify patients who are at future high risk of hospital admission, and for whom an early intervention might reduce that risk. This requires making best use of collected data and using this to profile patient risk. There is a variety of approaches that can be used to do this including predictive modelling. Evidence suggests that best practice models can predict hospital admission risk up to around 70% accuracy.

Clinicians and providers seek to provide the best care they can to their patients and populations. However, sometimes the way in which services are contracted can create 'artificial' boundaries between clinicians, providers, and services. At the same time, some contracting processes ask clinicians and providers to focus on 'outputs', which can distract them from focusing on what is most important: improving patient and population outcomes. It is therefore important that purchasing organisations provide the scope for clinicians and providers to focus on outcomes and, where appropriate, encourage integration. But it is equally important that purchasers can measure and monitor progress towards desired patient and population health outcome goals. Results-based accountability contracting is an evidence-based approach that makes a distinction between population health and performance accountabilities. It can assist both purchasers and providers to identify shared outcome priorities, agree respective actions, and clearly define respective accountabilities for results.

It is always important to ensure that service investments represent good value for money and to monitor and evaluate the effectiveness of services. In the current financial environment, it is more important than ever. Robust business case development processes that require strong intervention logics, options development, and well-developed costing are important to give decision-makers confidence in the value of proposed investments. Given many competing demands on scarce resources, well-specified and transparent prioritisation criteria assist decision-makers to assess trade-offs between different investments. They also provide external stakeholders with greater confidence in decisions that are made. Following implementation it is important to evaluate the outcomes of the investment so that learning can be shared.

Important priorities for 'working smarter' therefore include:

- Clinical engagement and networks
- Performance measurement improvement including patient-reported outcome measures
- Data-mining, risk profiling and predictive modelling
- New contracting, risk-sharing, and accountability mechanisms, including outcomes-based flexible funding, results-based accountability framework, and performance incentives
- Robust new initiative business case development, prioritisation, post-investment evaluation, and locality plan development.

Implementing the NHSP

It will be critical that the initial momentum established by NHSP development is translated quickly into implementation planning and then action. Inertia is the greatest threat to the sustainability of Northland's health system. In order to translate the NHSP into action, the following elements will be critical.

Governance

The Northland DHB Board is the decision-maker and 'owner' of the Northland Health Services Plan. The two Northland PHOs, Manaia and Te Tai Tokerau, have also endorsed the NHSP. This is highly significant given the key role that primary health care will play in delivering the NHSP. Recently NDHB and the Iwi of Northland, collectively known as Te Waka A Taonui – Māori Health Gains Council, have established a new governance-level mechanism to assist with providing governance over the achievement of Māori Health improvement and reduction of health inequities between Māori and non-Māori. This new governance mechanism will be used to ensure that Northland Iwi have appropriate input into implementation of the NHSP.

Leadership

The Northland DHB Board has delegated implementation of the NHSP to its Chief Executive, who in turn will ensure accountability across the DHB's Executive Leadership Team (ELT). Members of ELT include DHB executive and clinical leaders, and the chief executives of the PHOs. ELT will carry a collective accountability for NHSP delivery, and individual ELT members will be accountable for leading, planning and implementing each of the headline actions identified in the plan. A programme manager will be identified to coordinate and report on action planning progress.

NDHB has a long history of effective partnering with Māori health and disability providers in designing, delivering, implementing and monitoring health services, and is cognisant of the imperative to ensure a whole-of-system response, of which Māori providers and Whānau Ora Collectives are a part, to achieve the outcome goals of the NHSP. There are a number of partnership relationships at Board, senior management and operational levels which enable engagement with Māori health leadership and will assist the successful implementation of the NHSP.

It is imperative that clinicians, including general practitioners and medical specialists, as well as clinical leaders from other health disciplines are actively engaged in developing and leading changes in the models of care and service delivery outlined in the Outcomes Framework and Implementation Road Map.

Action Planning

The NHSP Outcomes Framework (page 15) establishes six Headline Targets and agreed Headline Actions using the Triple Aim methodology. Implementation plans will be developed for each of the headline actions over the next six months, and for the enablers that will support those actions. While the NHSP Implementation Roadmap (page 17) gives a sense of the sequencing of the actions, it will not be until the individual action plans are developed and the linkages and dependencies between them are identified that specific milestones and resource requirements can be confirmed. It is at that stage, likely to be September 2012, that an overall implementation plan for the first five years of the NHSP will be available for ELT and Board approval. Specific prioritised initiatives will have begun implementation by that time.

Managing Implementation/Monitoring

Following approval, the prioritised actions will be incorporated into the work programmes of the organisations concerned, and existing or new cross-organisational structures used where necessary to guide complex actions. Monitoring and reporting frameworks will be established, so that those accountable for delivery can track progress and input into reports for their own organisations and for the collective accountability of the DHB's ELT. A comprehensive KPI framework will be developed to ensure trends can be tracked over time. Baseline measures will be established and targets set. A clear distinction will be made between population health accountabilities and provider performance accountabilities. The latter will underpin contract performance arrangements and monitoring. Regular dashboard reports will be generated for ELT and the boards of the DHB and PHOs, and to inform communication to the wider Northland health sector.

Clinical/Stakeholder Engagement

An important platform for engagement has been created by:

- Priority planning groups which included a wide range of stakeholders
- Three meetings with Northland general practitioners and pharmacists
- A district hospitals workshop with over 30 participants from all district hospitals and other stakeholders
- Workshop with five Northland Whānau Ora Collectives
- Four locality meetings with health and local government leaders
- 90 Northland health system leaders at the NHSP planning day
- Meetings of the Medical Executive Leadership Team (MELT)
- Meetings of the Service Management Group (SMG)

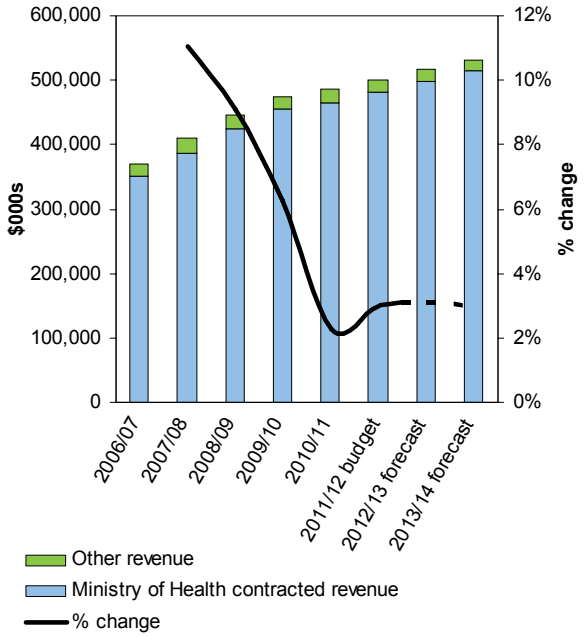
Two critical factors for the successful implementation of the NHSP will be ongoing active support and participation from clinical leaders, and motivation of the 'front-line' workforce. In addition to specific engagement initiatives by individual ELT members in their areas of responsibility, ELT and the Clinical Directors will be designing an engagement programme that will create opportunities for those working in hospital and community settings to have input into action planning and implementation, and to be kept informed of overall progress.

Section 4: Financial Impacts

Financial Impacts

The majority of NDHB revenue comes from Ministry of Health devolved and contracted funding. NDHB revenue growth was significant between 2006/07 and 2009/10 but since then has significantly decreased, primarily as a result of cost containment in the public health system. It is likely that NDHB revenue growth will remain subdued over the next five financial years (Figure 22).

Figure 22: *DHB revenue 2006/07 to 2013/14*



Approximately 53% of available funding in Northland is allocated to NDHB services, most of which is spent on secondary hospital services. An additional 13% of expenditure goes on Inter-District Flows, payments to other DHBs, mainly Auckland, for Northlanders who require tertiary services (more specialised treatment NDHB is unable to provide itself). Almost all the remainder, 33%, is allocated to over 200 contacts with Northland's NGOs (non-NDHB providers). (This analysis excludes governance and executive management costs of 1%.)

Figure 23 provides a snapshot of expenditure on NDHB's own services in 2010/11. The largest service areas by expenditure are:

- Whangarei Hospital surgical services (22%)
- Whangarei Hospital specialist mental health and addiction services (12%)
- Whangarei Hospital medical services (12%)
- District hospital services including acute medical, some surgical and emergency services (10%).

Figure 23: *Northland DHB services expenditure 2010/11*

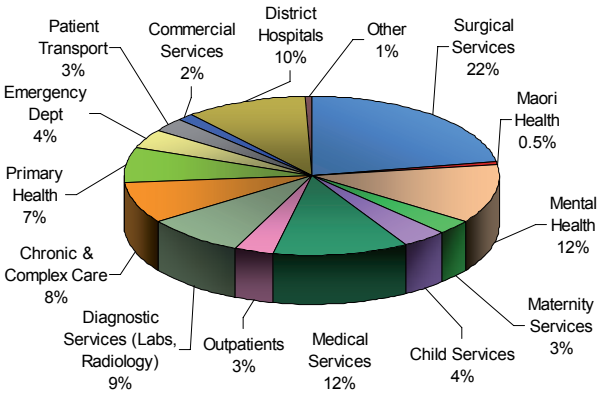
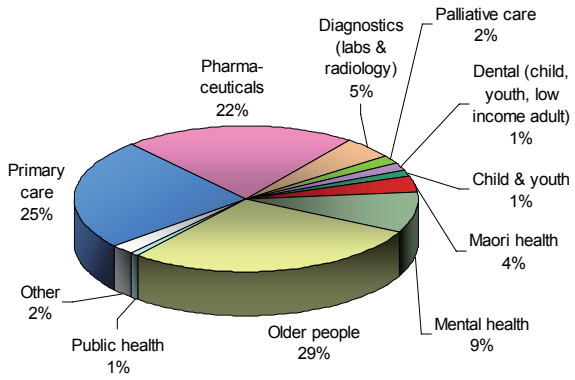


Figure 24 provides a snapshot of NGO services expenditure by service area. The two largest expenditure areas are:

- Health of older people (29%)
- Primary health care providers, primarily for general practice services (25%)
- Community pharmaceutical drug and dispensing costs (22%).

Figure 24: *Northland NGO services expenditure 2010/11*



Financial Modelling Projections

Over the past five financial years Northland has achieved financial breakeven or returned a small surplus. High-level 20-year view and more detailed five-year financial modelling was undertaken to assess base case estimates of NDHB's future financial performance. Modelling used current service delivery and utilisation patterns (age, gender, ethnicity) but adjusted for best estimates of future changes in population and prevalence of disease. Both modelling approaches suggest Northland DHB's financial

performance will deteriorate over coming years under current service delivery configurations.

Importantly, detailed five-year financial modelling suggests deteriorating financial performance from 2013/14 with a net operating deficit of $8 million rising to $29 million by 2016/17 (see Table 6 and Figures 25 and 26).

Key assumptions underpinning the financial modelling are:

- Demographic projections will be in line with forecasts by Statistics New Zealand, with a significant increase in the over-65 age group and reduction in the child population
- The prevalence of diabetes will increase as per Northern Region modelling, and this will have significant impacts on inpatient volumes and costs
- Labour cost increases will be managed within current DHB settlement bargaining parameters
- Caseweight cost increases will be in line with the 2011/12 to 2012/13 uplift
- Labour cost inflation will be in line with recent Treasury Consumer Price Index (CPI) forecasts (adjusted to June years)
- Ministry of Health revenue over the period will be in line with indicative three-year funding signals provided in the 2012 DHB Funding Envelope
- Ministry of Health revenue will increase in line with recent historical trends.

Financial projections are most sensitive to labour cost and revenue assumptions.

Table 6: *Base case financial modelling projections*

$Million	2010/11 Actual	2011/12 Budget	2012/13 Forecast	2013/14 Forecast	2014/15 Forecast	2015/16 Forecast	2016/17 Forecast
Revenue	486.002	500.504	513.808	526.613	540.485	555.119	570.228
Operating Costs	(468.064)	(480.609)	(496.142)	(515.827)	(536.258)	(556.666)	(575.368)
Depreciation	(11.167)	(12.890)	(10.735)	(11.831)	(12.763)	(13.531)	(14.331)
Interest	(1.623)	(1.620)	(1.620)	(1.620)	(1.620)	(2.920)	(4.545)
Capital charge	(5.148)	(5.388)	(5.311)	(5.763)	(5.879)	(5.705)	(5.339)
Surplus/(Deficit)	0	(0.003)	(0.000)	(8.428)	(16.035)	(23.703)	(29.355)

Figure 25: *Projected revenue and costs*

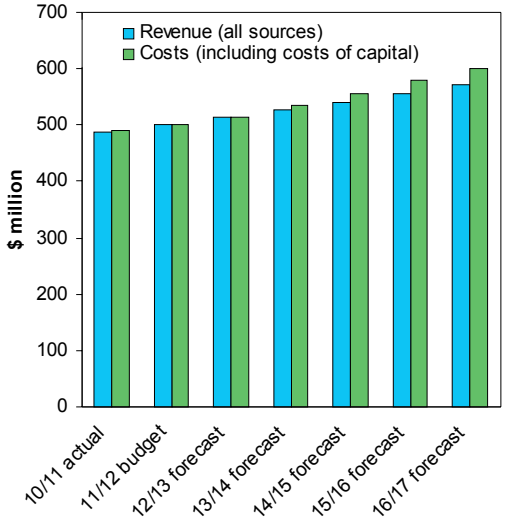
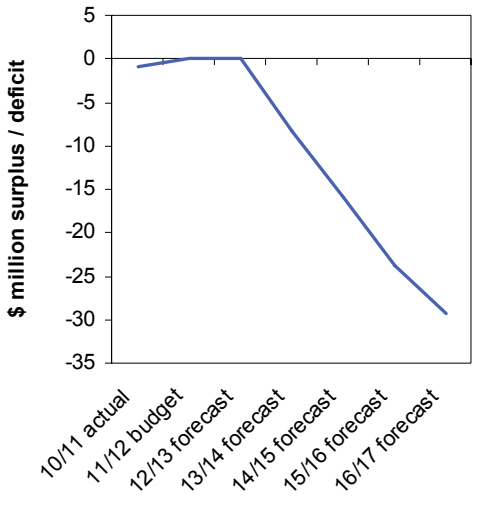


Figure 26: *Projected net financial position*



Options for Managing Within Available Funding

In considering options for managing future available funding it is important to recognise that there is no 'magic bullet' that will address the many pressures and future costs that Northland's health system faces. Tackling these pressures and controlling cost growth requires a coherent set of actions implemented over time (NHSP Implementation Roadmap on page 17); actions that assist with ameliorating future demand for services, and controlling growth in service delivery costs.

It is also important to recognise that while indicative future new Government funding increases are constrained (and significantly less than some earlier years), current Government funding for Northland's health system is around $501 million per year, or approximately $3,150 per Northlander. (Note this does not include patient co-payments, Ministry of Health direct Northland NGO funding, and ACC funding to primary health care). This is a significant investment on the part of Government towards the health of Northlanders.

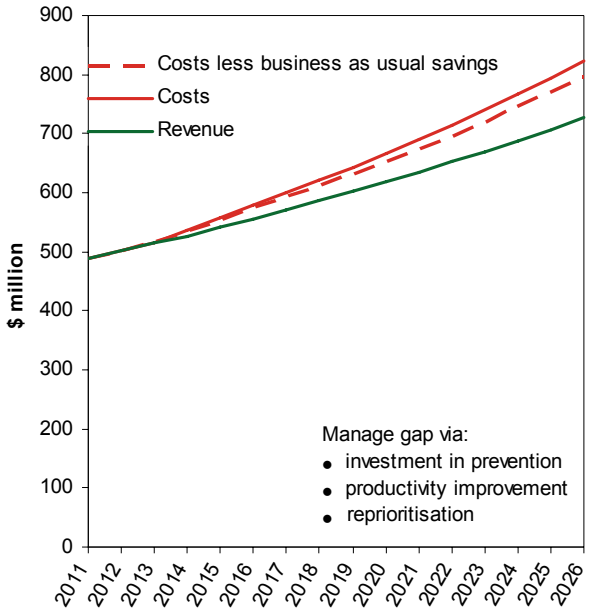
The Northland health system needs to challenge the value of how funds are spent and accept that in some instances existing funding may not be allocated in the best way possible. By identifying options for improving value of spending, funds can be redirected or reprioritised to deliver on key NHSP priorities, producing improved outcomes for Northlanders and creating a more sustainable health system.

NDHB estimates that business-as-usual savings will contribute up to $2 million in annual cost savings against projected cost growth. It is certainly important to ensure these savings are realised but going beyond business-as-usual is critical: a deficit of around $19 million will remain in 2016/17 even if these 'business as usual' savings are realised.

NDHB's strategy for managing within available funding (Figure 27) to achieve financial break-even over the planning period can be summarised as:

- Investment in upstream prevention and early intervention
- Productivity improvement and cost control
- Reprioritisation of lower value spending
- Shifting services to lower cost settings.

Figure 27: *Strategy for managing within available funding*



The NHSP outlines a range of investments that will be funded over the course of the next five years. These investments will be crucial to ameliorating future demand for services. In order to invest there is a pressing need to reduce the current level of projected expenditure and therefore Year 1 of this Plan (2012/13) will have a major focus on extracting savings, ceasing lower value investments and highlighting unwarranted variation for immediate remedial action. Failure to achieve significant savings in Year 1 will undermine the opportunity for future investments in the change required to bring about new models of care to achieve improved population health and patient experience outcomes.

Implementing this strategy will be challenging and so it is essential to build leadership support to deliver on the cost/productivity objectives and targets outlined in the NHSP, and the ambitious change agenda. We will need to work together to achieve these objectives and targets, and be prepared to make the tough decisions required to improve value for Northlanders.

Appendix 1 – Planning, Process & Framework

NHSP Planning Process

The outgoing Chief Executive of Northland DHB commissioned Health Partners Consulting Group (HPCG) to support the DHB and the wider Northland health sector in developing the Northland Health Services Plan (NHSP). Decision authority for the NHSP was to sit with the NDHB Board, with establishment of an Oversight Group comprising DHB clinical and managerial leaders, leaders of the two PHOs, and a representative of the Māori providers to guide the NHSP development.

The planning process followed five phases:

1 Review of current plans, policy analysis, establishment of Planning Framework

2 Review of service areas to differentiate those requiring significant development, from those that need fine-tuning

3 Service planning workstreams to undertake whole-of-system planning across hospital, primary care and community services

4 Compilation of all workstream reports to provide a view across services, localities and facilities. Key implications identified. Board discussion on issues of strategic importance

5 Finalisation of the NHSP and approval.

Planning Framework

The Oversight Group approved a Planning Framework[10] developed by HPCG that included definition of:

- NHSP objectives
- Planning context:
  - planning principles, assumptions and enablers
  - trends in health service design
  - a generic model of care.

Health Needs Assessment

HPCG also produced a Northland Health Needs Assessment[11] to inform development of the NHSP. This summarised the available demographic, epidemiological and utilisation information into key areas of emphasis, highlighting areas where health needs are changing and a service change response is also likely to be needed.

Planning Focus

Given the future health needs and current service configuration of Northland health services, the following were identified as likely to be the key strategic issues to be considered during development of the NHSP:

- **Integration**: how to plan and deliver patient-centred services across traditional service, professional and sector boundaries, in response to the complexity of population and personal health needs.
- **Prevention and Early Intervention**: how to target resources to effective 'upstream' services, to reduce the risk and severity of long-term conditions.
- **Primary Care**: how to develop delivery models that improve access to primary care, strengthen its capacity and ensure its sustainability. One aspect of this will be alignment of clinical services with Whānau Ora models.
- **District Hospitals**: what range of services will be offered (and in particular the scope of diagnostic and inpatient services), and the hospitals' relationship with primary care.
- **Specialist Services**: management of acute demand growth; integration with primary care; specialists travelling to enable people to access services closer to home; and whether more specialised services should be delivered at Whangarei Hospital or remain centralised in Auckland.
- **Health of Older People**: given ageing of the population and associated increase in demand, what is the optimum mix and configuration of support services (home-based support; supported housing; day care; and residential care), and how should these be linked with clinical services?

A number of service areas were prioritised for more detailed whole-of-system planning, while others were addressed through refinement of existing NDHB plans. This prioritisation was not a reflection of intended investment; rather it was about directing planning resources to the service areas that most needed them.

The services selected for more in-depth planning during NHSP development were:

- Primary & Community
- Health of Older People
- Child & Youth
- Diabetes
- Cardiovascular disease
- Cancer
- Role of the district hospitals in acute care.

Planning groups with representation from across Northland's health system were assembled in each of the above service areas (with existing groups being used where their focus and membership was

[10] See Appendix 2 for selected components of the Planning Framework

[11] See Appendix 3

appropriate). Against the backdrop of the Planning Framework, these groups considered strengths and weaknesses of current services; future demand; future model of care options; and priorities for action. This work was complemented by:

- A meeting with representatives of Māori providers and Whānau Ora Collectives
- A meeting on Urgent & Emergency Care attended by hospital staff, GPs, pharmacists, NGOs and allied and other health professionals
- Four locality meetings across Northland (held in Whangarei, Dargaville, Kaikohe and Kaitaia) attended by local service provider and community leaders
- Three meetings with GPs (held in Whangarei, Kerikeri and Kaitaia).

Common Themes

From these meetings, priorities for action were identified (Headline Actions), together with common emerging themes across service areas. These themes were:

- Healthy lifestyle interventions (investing upstream)
- Shared view of patient records
- Telehealth initiatives to support remote practice and self-management
- Improved information capture and analysis for planning and monitoring
- Multidisciplinary teams within service areas and across service settings, eg primary and secondary
- Health professionals working at their full scopes of practice
- New workforce roles
- Integration and collaboration across the continuum of service delivery: primary, allied health, secondary, tertiary
- Targeting resources and activity towards most at-risk and vulnerable populations, eg Māori, frail elderly, high deprivation.

Financial Planning

Concurrent with service planning, work on financial planning was initiated. This had two outputs:

- A 'baseline' analysis, to forecast what the financial result would be for the DHB in each of the next five years if current service trends and investment patterns continued
- An 'intervention' scenario, to forecast the impact on the baseline of the 'headline actions'.

Outcomes Framework

A workshop was then held with the NDHB Board, to familiarise them with work to date, and to seek their guidance on key areas of the NHSP. Particular emphasis was given to:

- Findings from the Health Needs Assessment
- Common themes from service planning
- The baseline financial forecast
- Proposed 'strategic targets' to focus the Northland health system over the next five years.

Feedback from the Board was then used to draft an Outcomes Framework, which was refined with the Oversight Group and then through a workshop with over 90 Northland health system leaders.

This feedback was then used to finalise the NHSP Outcomes Framework, and develop the NHSP Implementation Roadmap.

Planning Framework

A Planning Framework was used to guide NHSP development. Below are selected elements of that Framework.

Planning Principles

Services funded by NDHB will:

- Increase access to integrated community-based health care that is safe, effective and delivered closer to home
- Encourage and support individuals and families to keep well, healthy and active through self-care, and participate in care delivered to them
- Reflect the particular needs of the localities within Northland, and of Māori
- Be based on collaboration between providers within the health sector, and between sectors
- Be delivered through multi-skilled teams of health care and support professionals
- Be of high quality, regardless of the service provider, and incorporate a philosophy of continuous quality improvement, focusing on safety, effectiveness, efficiency, equity, timeliness and patient-centred care
- Ensure that patient/consumer flow through services is planned, seamless, timely and effective
- Offer holistic, coordinated care that meets the needs of individual patients and their family/ whānau
- Foster reduction of population health inequalities
- Live within their share of population-based funding.

Planning Assumptions

Over the next 20 years we assume there will be:

- Modest population growth, and rapid population ageing (compared with New Zealand as a whole). Demand will increase as a result. The proportion of children in the population will decline. Relatively high socioeconomic deprivation and rurality will continue as key features of Northland's population
- Significant growth in the prevalence of long-term conditions, and in particular in the number of people with diabetes, CVD and cancer
- Increased access to strengthened primary care-based health promotion, early intervention and support services that will reduce the demand for specialist treatment services and improve health outcomes
- Increasing availability of new diagnostic, treatment, support and information technology, and use of cost-benefit analysis and managed implementation to ensure appropriate application
- Increased use of telecommunications to allow patient access to health information, their own health records, and 'virtual' consultations with health professionals
- Commitment by health professionals to better integration of services for patients, through breaking down of professional and organisational barriers and use of multi-disciplinary teams and clinical networks
- Strengthened clinical leadership and governance policies, structures and processes
- Greater tailoring of services to meet the particular needs of population groups such as Māori, children and older people
- No significant change in health organisational structures, with retention of the local DHB structure, balanced by regional and national collaboration
- Retention of Primary Health Organisations (PHOs) as the key organising structure for primary and community services, responsible for performance accountability, and service planning and coordination
- Use of alliance structures and processes to align the interests of DHBs and PHOs, and foster integration of primary and specialist services
- No material change in the proportion of health care that is DHB funded
- The need for prioritisation of health care investment
- Achievement of break-even financial results by NDHB
- Continuation of Contribution to Cost Pressure (CCP), demographic adjuster and population-based funding for DHBs
- No significant change to the current configuration of tertiary services
- Increased focus on patient safety, clinical effectiveness and quality improvement
- Changes in workforce mix and roles to respond to shortages in key professional groups and increasing health needs.

Enablers

'Enablers' were identified as areas where infrastructure development would be required to support the desired changes in patient-centred service delivery. These included:

- **Workforce**: supply; training; new roles; teamwork; clinical leadership; recruitment and retention; specialisation versus generalism; ethnicity to match population; reducing reliance on locums; access to training and professional development
- **Transport**: public transport; emergency transport; and mobile services
- **Facility development**: rural hospitals; Integrated Family Health Centres (IFHCs) and Whānau Ora centres
- **Information**: evidence-based practice, protocols and pathways, decision support and shared electronic health records
- **Quality**: a philosophy of continuous quality improvement will become part of the normal way of providing care. This will make a focus on quality and safety one of the key determinants of service provision
- **New technologies**: telecommunications (between clinicians, and with patients); and diagnostic, treatment, and remote monitoring technologies
- **Intersectoral collaboration**: NDHB and other providers will work intersectorally in recognition that addressing many of the determinants of health require participation of other sectors.

Trends in Health Service Design

The New Zealand health system (and other health systems) faces a number of pressures that are predicted to intensify in the future. System responses to the pressures include changes in service configuration and models of care[12]. Change trends include:

- **Health promotion and illness prevention** programmes will target healthy lifestyles, early detection and early intervention. Self-management will be a focus of health care delivery as individuals play a stronger role in

[12] For further discussion of global trends and responses, see Trends in Service Design and New Models of Care: A Review (National Health Board, 2009)

avoiding poor health, in self-management of chronic conditions, and in independent living. Emphasis will be given to home-based delivery of services to address workforce constraints and health inequalities.

- Better integration of **primary care and community services**, supported through the development of IFHCs to improve patient access, and make the best use of the available workforce. IFHCs will feature multidisciplinary teamwork to coordinate care delivery; improved access to specialist diagnostic testing; and delivery of some traditionally hospital-based services.
- Closer relationships of **primary and community care with specialist care**. Collaboration between providers, services, professions and specialty teams will be required to manage growing patient complexity, and to ensure that all options to avoid hospitalisation are utilised. More specialist services will be delivered in primary care settings where these are clinically and financially sustainable. Specialists will support primary care in the management of patients with long-term conditions, and there will be a greater range of easy-to-access options for primary care to avoid patient referral to hospital. Services will be configured for patients to receive earlier intervention to reduce the impact and severity of disease.
- **Hospitals** will be used by patients with higher acuity and complexity, and where care needs cannot be met in community-based settings. Secondary hospitals will focus on strengthening their core clinically-viable services, their relationships with primary care, and their relationships with larger neighbouring hospitals in major metropolitan areas, to address workforce and quality pressures.

Appendix 2 – Stakeholders List

Northland DHB NHSP Engagement Meetings Attendees

Northland DHB NHSP Engagement Meetings Attendees Name	Organisation	Whānau Ora Collectives - NHSP Meeting Kaikohe 8/12/11	Urgent & Emergency Care Workshop - NHSP Meeting Kaikohe, 8/12/11	Locality Meeting - Kaipara 7/2/12	Locality Meeting - Kaitaia 9/2/12	Locality Meeting - Whangarei 13/2/12	Locality Meeting - Kaikohe 23/2/12	Whangarei NHSP Workshop - Barge Park 29/2/12
Dr John Henley	Consultant, Locuming for NDHB		✓					
Dr Steve Allen	Hokianga Health Enterprise Trust							✓
Jeanette Anderson	Manager, Child Health Services, NDHB							
Shirley August	Operations Manager, BOI Hospital, NDHB		✓				✓	
Margarita Bartlett	Ki a Ora Ngatiwai Kaupapa Advanced Nurse Practitioner					✓		
Marion Bartrum	Team Leader, Health Promotion, NDHB							✓
Peter Bassett	North Haven Hospice							✓
Dr Dave Bawden	GP, Whangarei							✓
Belinda Beehre	Business Manager, Health of Older People Services, NDHB							✓
Neil Beney	GM Health of Older People & Clinical Support, NDHB							✓
Dr Win Bennett	GP Liaison, NDHB		✓			✓		✓
Ellie Berghan	Population Health Strategist (Māori), NDHB	✓	✓	✓		✓	✓	✓
Maurein Betts	Mental Health & Addictions, NDHB							✓
Dr Kati Blattner	GP, Hokianga Health Enterprise Trust		✓					
Kathryn Bowmar	Public Health Unit, NDHB							✓
Kay Brittenden	Bush Road Medical Centre					✓		
Margareth Broodkoorn	Director Nursing & Midwifery, NDHB					✓		✓
Marian Brown	Whakawhiti Ora Pai	✓						
Dr Nigel Cane	GP Mid North							✓
Mary Carthew	Director of Nursing & Midwifery Manaia Health PHO							✓
Terri Cassidy	Otangarei Trust	✓						

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Liz Cassidy	Manaia Health PHO							✓
Irene Cate	Occupational Therapy Advisor, NDHB							✓
Dr Nick Chamberlain	CE, Northland DHB			✓	✓	✓	✓	✓
Sandie Cherrington	Team Leader, Health of Older People Services/NASC, NDHB							✓
Erana Clarkson	Maiaorere Disability Support, Ngati Hine Health Trust					✓		
Jenny Coleman	Clinical Manager, Hospice Mid Northland						✓	
Rob Cooper	CE, Ngati Hine Health Trust					✓		
Beth Cooper	Manaia Health PHO							✓
Dr Tim Cunningham	GP, Mansfield Terrace							✓
Margaret Curry	Cancer Society Northland					✓		
Agnes Daniels	Mental Health & Addictions, NDHB							✓
Dr Scott Davidson	GP, Dargaville Medical Centre		✓			✓		✓
Kathryn de Luc	Project Coordinator BSMC, NDHB	✓	✓		✓	✓	✓	✓
Mary Death	North Haven Hospice					✓		
Lauren Demblon	GM, Hospice Mid Northland						✓	✓
Tony Devanney	Regional Manager, St John Northland					✓		
Joyce Donaldson	Finance & Contracting Manager, NDHB							✓
Dr Alistair Dunn	GP, Whangarei							✓
Brent Eastwood	CE, Sport Northland					✓		✓
Christina Edmonds	Tapuhi Clinical Coordinator, Te Poutokomanawa - NDHB							✓
Dr Kyle Eggleton	Clinical Director, Northland PHOs					✓		
Cathy Elkington	Salvation Army Community Ministries					✓		
Debbie Evans	Kaipara Community Health Trust			✓				
Chris Farrelly	CE, Manaia Health PHO		✓	✓		✓		✓

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Dr Graeme Fenton	GP, Moerewa Medical Service		✓			✓		✓
Jo Field	Regional Strategic Planner, Ministry of Social Development					✓		
Lesley Franklin	Associate DONM, NDHB							✓
Janice Gardner	Ngati Hine Health Trust					✓		
Jill Garrett	Quality & Performance Manager, TTT PHO						✓	
Dr Derek Gibbons	GP, Dargaville Medical Centre		✓					
Jenny Gibbs	Manager, Rubicon Youth AOD Service					✓		
Judy Harris	Practice Manager, Dargaville Medical Centre		✓					
Sharon Henare	Kaiarahi Mental Health & Addictions Services, Ngati Hine Health Trust						✓	
Shane Heswall	Pharmacist, Unichem Maunu					✓		✓
Manny Heta	Mental Health & Addictions, NDHB						✓	
Linda Holman	Manaia PHO					✓		
Stephen Jackson	Health Planner, NDHB							✓
Dr Jonathan Jarman	Medical Officer of Health, NDHB							✓
Deborah Johns	Manager, Bream Bay Medical Centre					✓		
Libby Jones	Coast to Coast Trust, Kaipara Community Health Trust			✓				
Carolyn Jones	Northland PHOs, Primary Options					✓		
Mariameno Kapa	Ngati Hine Health Trust	✓						
Dr Bernd Kraus	NDHB		✓					
Fritz Kruse	Pharmacist, Rawene Pharmacy						✓	
Louise Kuraia	Programme Manager, Te Tai Tokerau Whānau Ora Collective	✓				✓		
Marihi Langford	Ngati Kahu Social & Health Services				✓			
Dr Aniva Lawrence	GP							✓

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Marcus Liddell	Pharmacist, Orr's Dargaville Unichem Pharmacy			✓				
Rose Lightfoot	CE, Te Tai Tokerau PHO	✓	✓		✓	✓	✓	
Murray Lints	Northland Community Response Forum & North Haven Hospice					✓		
Queenie Mahanga	Kaiawahi Tapuhi Nursing Services						✓	
Dr Tim Malloy	GP, Coast to Coast Health Care			✓				
Nancy Malloy	Coast to Coast Hauora Trust - Waitemata PHO			✓				
Nikki Marasigon	Kaiarahi Oral Health Services, Ngati Hine Health Trust						✓	
David Marquet	Maungaturoto Rest Home & Maungaturoto Community Trust			✓				
Dr Paula Mathieson	GP, Whangarei							✓
Lynda Matthews	Practice Manager, Te Ha O Te Oranga O Ngati Whatua			✓				
Eruera Maxted	Dietitian, NDHB							✓
Don McKay	Maungaturoto Rest Home & Maungaturoto Community Trust			✓				
Stephen McKernan	Health Partners Consulting Group					✓		
Lisa McNab	Te Hauora O Te Hiku O Te Ika	✓	✓					
Pat Millar	Clinical Services Manager, Whangaroa Health Services Trust		✓					
Dr Andrew Miller	GP, Bush Road Medical Centre							✓
Dr Clair Mills	Medical Officer of Health, NDHB							✓
Errol Murray	Whakawhiti Ora Pai	✓						
Chris Mules	Health Partners Consulting Group			✓		✓		
Louise Muriwai	Maiaorere Disability Support, Ngati Hine Health Trust					✓		
Dr Alan Murray	Clinical Head, BOI Hospital, NDHB		✓			✓		✓

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George Nathan Patuawa	Ngati Whatua Runanga, Kaipara District Council			✓				
Karen O'Keefe	CCU/First do no Harm coordinator NDHB							✓
Yvonne Olson	Clinical Manager, Bush Road Medical Centre					✓		
Robert Paine	CFO/GM Finance, Funding & Commercial Services, NDHB							✓
Jim Palmer	Manager, Te Poutokomanawa - Māori Health Service, NDHB							✓
Tania Papalii	Project Manager HEHA Development, NDHB							✓
Samantha Pohe	Ki a Ora Ngatiwai	✓				✓		✓
Andrew Potts	GM, Clinical Services, NDHB					✓		✓
Ngaire Rae	Manaia PHO							✓
Dr Chris Reid	GP, Kerikeri Medical Centre		✓					
Richard Renwick	Kensington Hospital							✓
Dr Michael Roberts	Clinical Head Emergency Department, NDHB		✓			✓		✓
Cristina Rood	Acute Care Reform Programme Manager, NDHB		✓					
Lyn Rostern	Population Health Strategist (General), NDHB	✓	✓	✓	✓	✓	✓	✓
Rob Sarich	Kaunihera Council of Elders, NDHB			✓				
Amy Savage	Charge Nurse Manager, Diabetes Centre, NDHB							✓
Eric Shackleton	Pharmacist, Shackleton's Pharmacies				✓			
Chris Simper	Age Concern Whangarei					✓		
Neta Smith	Operations Manager, Kaitaia Hospital, NDHB		✓		✓			
Steve Soufflot	Kensington Hospital					✓		✓
Dr Jonathan Sprague	GP, Whangarei							✓
Lynette Stewart	CE, Ki a Ora Ngatiwai					✓		✓
Bronwyn Subritzky-Clark	Home Support North				✓			
Rod Sudlow	Chairperson Kaipara Community Health Trust			✓				

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Michael Sullivan	Programme Manager Child & Youth, NDHB							✓
Jillian Sutherland	Pharmacy Advisor, NDHB							✓
Hemaima Tait	Director of Nursing, Te Tai Tokerau PHO							✓
Marie Tautari	Ki a Ora Ngatiwai	✓						
Andrea Taylor	Diabetes Centre, NDHB							✓
Hamene TeAika-Kopa	GM Hauora Whanui, Ngati Hine Health Trust						✓	✓
Gwen Tepania-Palmer	Ngati Hine Health Trust	✓						
Jen Thomas	Operations Manager, Dargaville Hospital, NDHB		✓	✓				
Antony Thompson	Te Ha O Te Oranga O Ngati Whatua	✓						
Neil Tiller	Mayor Kaipara District Council			✓				
Kim Tito	GM, Planning, Māori, Primary & Population Health, NDHB	✓	✓	✓	✓	✓	✓	✓
Dr Roger Tuck	Clinical Director Child, Youth, Maternal and Paediatrician, NDHB		✓			✓		
Catherine Turner	Population Health Strategist, Northland PHOs						✓	✓
Dr Gerhard Van Blerk	Clinical HOD Medical Staff, Kaitaia Hospital, NDHB		✓		✓			✓
Dr Greg Van der Hulst	GP, Dargaville Medical Centre		✓					✓
Paul Waanders	Whangarei District Council Policy Manager					✓		
Kevin Walters	Manaia PHO							✓
Garry Ware	CE, Whangaroa Health Services Trust	✓	✓			✓	✓	✓
Jeanette Wedding	GM, Child, Youth, Maternal & Oral Health Services, NDHB					✓		✓
Jacqui Westren	Project Manager, Public Health Unit, NDHB							✓
Cherry Wetherill	District Nursing Clinical Nurse Manager, NDHB							✓
John Wigglesworth	CE, Hokianga Health Enterprise Trust	✓	✓			✓		
Luke Williams	Health Partners Consulting Group					✓		

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Peter Woods	Service Manager, NDHB							✓
Sue Wyeth	GM Mental Health & Addictions and District Hospitals, NDHB		✓	✓	✓	✓	✓	✓

In addition to the process and meetings scheduled above, there were priority area reference group meetings held with key Northland DHB and other stakeholders, as follows:

The Northland DHB Chief Executive met with the majority of GPs from both Manaia and Te Tai Tokerau PHOs. These meetings were held at Whangarei on 22/11/11, Kaikohe (Mid-North) on 30/11/11 and Kaitaia (Far-North) on 6/12/11. We also note that Northland Pharmacists attended the Whangarei meeting on 29/11/11.

- Health of Older People (8/11/11)
- Cancer (22/11/11)
- Diabetes/CVD (29/11/11)
- Child & Youth (30/11/11)
- Urgent & Emergency Care (8/12/11) [as outlined in the table above].

A NHSP workshop was held on 29 January 2012 for Northland DHB Board Members and General Managers.

The Northland DHB Chief Executive presented the NHSP to the DHB's Medical Executive Leadership Team (MELT) on 14/03/12 and Senior Management Group (SMG) on 21/03/12.

Appendix 3 – Northland Health Services Plan Needs Analysis

Contents of figures

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Executive Summary

Planning for future Northland health services is guided by the forecast future health needs and concerns of the population they serve. Current service provision, service type, size and location, has been designed in response to past health needs. District Health Boards (DHBs) have a constant need to review service design in the light of measured current need and anticipated future requirements. This a core DHB funding and planning role. This Northland Health Needs Assessment summarises the wealth of information produced for and by the Northland DHB into key areas of emphasis, highlighting areas where health needs are changing and a service change response is also likely to be needed.

The most salient features of the health planning landscape for Northland are the **high proportion of Māori** in the population (32%), the **high rate of relative socioeconomic deprivation** (33% in NZDep06 quintile 5), and the **high proportion of population living in rural areas** (49%). While Northland is not growing as fast as the national population (0.5% per year), it is experiencing **population ageing** such that the over-65 population is growing at 3.4% per year.

These features manifest in a lower life expectancy at birth for Northland residents compared with New Zealand, particularly for Māori. Mediating the poor health results are specific population health factors:

- Tobacco – 26% of Northland adults smoke compared with 19% for NZ. The smoking rate is extremely high for Māori (55%).
- Nutrition and physical activity – 30% of Northland adults are obese compared with 19% for NZ. The rate is higher for Māori (47%).
- Alcohol use – 23% of Northland adults reported hazardous alcohol consumption patterns compared with 20% nationally.

Combining these into a single Healthy Lifestyle indicator, only 13.6% of Northland's adult population is considered to be living a healthy lifestyle. That is, only 1 in 7 Northland adults don't smoke, don't have hazardous alcohol use, are physically active, consume 5+ fruit and vegetables per day (as a marker of a healthy diet), and are not obese.

These population factors explain up to 80% of the variance of three key disease groups, cardiovascular disease (CVD), diabetes and cancer. Of Northland adults, 5.4% are estimated to have CVD – the highest in the Northern Region. For diabetes, 6.9% of the adult population have been diagnosed – second behind Counties Manukau in the Northern Region. At any one time, around 20% of the inpatient beds occupied by Northlanders will be used by people with diabetes. Diabetes prevalence is forecast to increase by 72% from 2009 to 2026. In aggregate, **9.4% of the Northland adult population has either CVD or diabetes or both**. Around 42% of the health service costs (inpatients, outpatients, ED, pharmaceuticals and laboratory) for the DHB are consumed by this 9.4% of the population.

Access to primary and secondary care services across Northland appears good. Recent growth in primary care consultations has been higher than that expected demographically over the past three years. If this continues, then primary care sustainability issues will arise. Pharmaceutical costs are also rising faster than demography, at 5% per head per year.

A specific challenge is emerging for inpatient services, arising from the increases in the older population and those with diabetes. From 2011 to 2026, demand for inpatient beds is projected to be the equivalent of an additional 170 beds across all services.

Other points of note:

- **Maternity:** Northland's high fertility rate continues. Around half the births are to Māori mothers, with high teenage pregnancy rates. Overall birth numbers are not increasing, but there is an increase in those delivering in hospital of 1.2% per year.
- **Health of Older People:** Around 1,400 people (5.8%) of the Northland population aged over 65 are in aged residential care (ARC), with demand pressure equivalent to 30 more ARC beds per year likely if current utilisation rates continue.
- **Mental Health:** Reasonable access to secondary mental health services is noted for Northland as a whole. Attention to early intervention, community support and a shift in emphasis from pharmaceutical to psychological approaches to therapy is likely to pay dividends. Of particular interest will be investment in preventive care, particularly at the 0 to 3 year old stage (the first 1,000 days).
- **Child and Youth Health:** 0 to 24 year olds make up a third of the Northland population, and have relatively high rates of most illnesses, injury, mortality including suicide, teenage pregnancy, dental caries, smoking, alcohol and marijuana use.

Overall, the distribution of Northland DHB funding to the various expenditure areas is consistent with that of other DHBs. While Northland DHB has managed within its available funding over the past five years, there will be increased pressure in out-years arising from increased service utilisation and the likely future funding path for the New Zealand health system. This may limit the capacity of Northland health services to respond to some of the health issues noted above.

Demography

The demographic structure and socioeconomic conditions of a population are major determinants of its health. At the last Census (2006) there were 152,640 people estimated resident in the Northland DHB area, accounting for approximately 3.6% of the national population. By 2011 this is estimated to have risen to 158,250 people.

From the Northland DHB Health Needs Assessment (2008):

"When compared with the national population, in Northland a higher proportion of the population identified with either Māori or European/Other ethnic groups and a lower proportion identified with Pacific and Asian ethnic groups. In contrast to the national picture, the proportion of the population in this DHB residing in urban versus rural areas was split relatively evenly between the two, with only a slightly higher proportion of the population residing in urban than in rural areas.

The population in Northland DHB is not projected to increase as much as the national population.

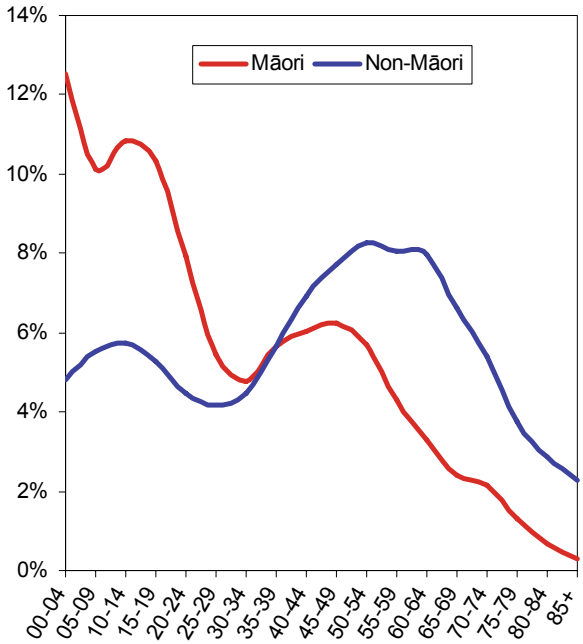
The population is ageing, with the highest percentage increase for 2006-2026 occurring in the over-65 age group (102.0%), and with the under-15 year age group experiencing a decline. The highest percentage increase between 2006-2026 is projected to occur within Māori (26.4%), and to a lesser extent, Pacific (17.2%) ethnic groups. This contrasts with the national trend where Pacific peoples are projected to experience the highest percentage increase.

Compared with the New Zealand average, in the Northland DHB district there are more people (about 1 in 6) living in areas with high scores (NZDep06 decile 10, are more likely to have a low household income, no car, etc) than in areas with a low socioeconomic deprivation score (that is, they are more likely to have a phone, etc)."

Māori make up about 30% of the Northland population (compared with 15% nationally), and have a much younger make-up than the Northland non-Māori population. Figure 1 shows, for Northland Māori and non-Māori, the proportions of people in each population five-year age band.

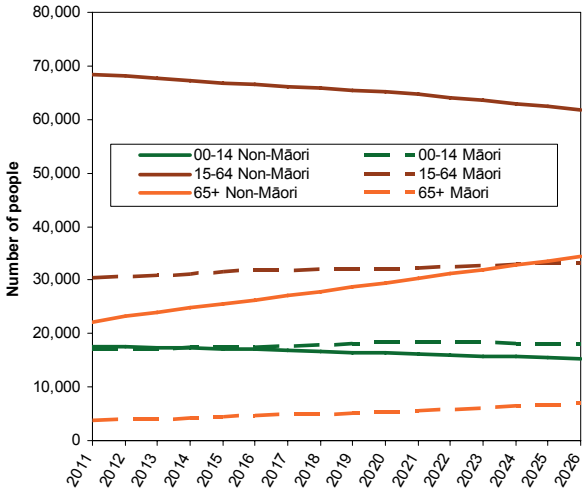
Overall Northland population growth is projected to be 0.5% per annum over the next 15 years (2011-2026). Of particular note however is the large increase expected in the number aged over-65 (Figure 2, Table 1), which is growing at 3.4% per year (4.7% for Māori and 3.2% for non-Māori).

Figure 1: *Northland Māori and non-Māori population age structure (2011 estimates)*



The rate of growth in the over-85 year olds is even higher, with an 81% rise from 2011 to 2026, 9.9% per year for Māori and 3.8% per year for non-Māori.

Figure 2: *Northland population estimated at 2011, medium projections to 2026*



Medium projections based on Statistics NZ as supplied to MoH Nov 2010. Prioritised ethnicity, estimated resident population. (Source: HPCG)

Table 1: *Population change by five-year increments, numerical and percentage change, 2001 to 2026*

Age group	Eth-nicity	Estimated growth		Projected growth			% growth					15 years to 2026	Growth per year 2011 to 2026
		2001-06	2006-11	2011-16	2016-21	2021-26	2001-06	2006-11	2011-16	2016-21	2021-26		
0-14	Māori	-730	80	410	880	-250	-4%	0%	2%	5%	-1%	6.1%	0.4%
	Non-Māori	-245	-830	-605	-860	-775	-1%	-5%	-3%	-5%	-5%	-12.7%	-1.0%
15-64	Māori	1300	1980	1430	470	1040	5%	7%	5%	1%	3%	9.7%	0.7%
	Non-Māori	5030	1410	-1750	-1990	-2860	8%	2%	-3%	-3%	-4%	-9.7%	-0.7%
Over-65	Māori	440	710	890	1040	1340	18%	24%	25%	23%	24%	90.6%	4.7%
	Non-Māori	2645	3000	4100	4030	4030	16%	16%	18%	15%	13%	54.8%	3.2%
Total	Māori	1010	2770	2730	2390	2130	2%	6%	5%	4%	4%	14.3%	1.0%
	Non-Māori	7430	3580	1745	1180	395	8%	3%	2%	1%	0%	3.1%	0.2%
Overall total		8440	6350	4475	3570	2525	6%	4%	3%	2%	2%	6.6%	0.5%

Medium projections based on Statistics NZ as supplied to MoH Nov 2010. Prioritised ethnicity, estimated resident population. (Source: HPCG)

With the 2011 Census being postponed, future projections have increasing uncertainty. One cross-check possible is by using the national health index (NHI)-numbered population. As part of the Northern Region health planning, a 'contact population' was estimated for the Northern Region DHBs. Health datasets (NMDS, NNPAC, MHINC, laboratory, pharmaceuticals, PHO registers and GMS claims) were combined and unique NHIs extracted, then allocated to the DHB with the last known address of that person. For Northland and Counties Manukau DHBs, the contact population was remarkably close to the Statistics New Zealand estimated resident population for that year (Table 2).

Of concern is the relative excess apparent in the population apparently enrolled in PHOs giving a Northland address. In June 2011 there were 161,835 Northland enrollees compared with 159,000 estimated population, a 1.8% excess. There may be an element of double-counting in the PHO figures (people, especially children, re-enrolling may be allocated a new NHI if their surname is misspelt or has changed, or varies depending on which parent takes them) and it is possible that some of the growth is non-residents.

Table 2: *Contact population compared to Statistics NZ (SNZ) estimated population 2009*

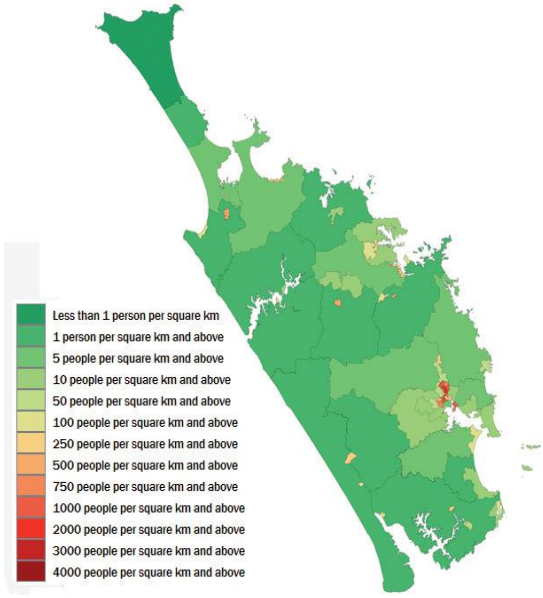
DHB	Contact population 2009				As proportion of SNZ est. pop 2009			
	0-14	15-64	Over-65	Total	0-14	15-64	Over-65	Total
Northland	35,219	98,526	23,550	157,295	1.01	1.01	0.97	1.01
Waitemata	105,992	322,488	59,597	488,077	0.97	0.91	0.98	0.93
Auckland	82,640	285,842	43,368	411,850	1.06	0.88	1.04	0.93
Counties	123,488	306,623	45,196	475,307	1.04	0.97	1.01	0.99
Total Nthn Region	**347,339**	**1,013,479**	**171,711**	**1,532,529**	**1.02**	**0.93**	**1.00**	**0.96**

Source: NRHP planning documents, HPCG table.

These figures suggest population growth in Northland may be slightly higher than that being estimated by Statistics New Zealand. This is supported by births data discussed under maternity (page 101).

Population density is also a key factor influencing health service delivery, access, and population health outcomes. Northland has a sparsely distributed population as shown in Figure 3. Overall 49% of the population live in areas defined as rural, compared with 14% for New Zealand as a whole.

Figure 3: *Northland population density – resident population per km^2*

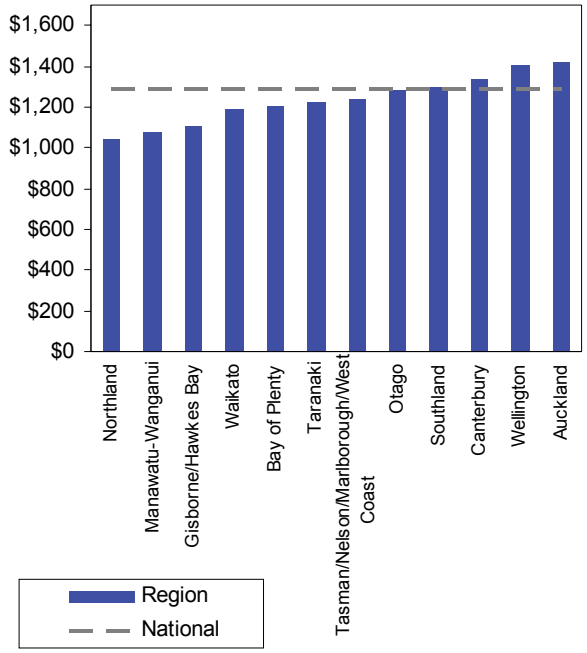


Socioeconomic Context

Socioeconomic conditions are strongly associated with population health outcomes. Compared to national socioeconomic measures, the Northland population is significantly disadvantaged, most notably Māori and rural populations. While the Northland regional economy was performing very well in the mid-2000s[13], the 2008 domestic recession and the impact of the global financial crisis has exacerbated poor socioeconomic conditions in Northland.

Northland has the lowest employment rate in New Zealand as measured by the number of working-age people in paid employment (57.5% compared with the national rate of 63.8%) (DoL Sep 2011 Quarterly Regional Labour Market Report). It has the highest proportion of people with low incomes (25.2% compared with the national rate of 18.1%). This is reflected in Northland having New Zealand's lowest median weekly earnings for employed persons ($660 compared with the national rate of $767) and lowest median weekly household income from all sources ($1,044 compared with the national rate of $1,289) (see Figure 4). Both of these flow from the industry profile of the Northland region and higher rates of welfare support compared to national averages (in September 2011, around 11% receive government benefit assistance compared with 7.5% nationally (MSD Benefit Statistics).

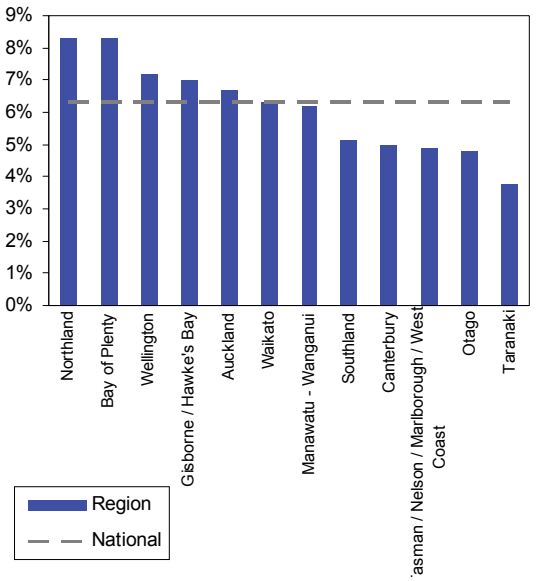
Figure 4: *Median weekly income from all sources by region (June Quarter 2011)*



Source : Statistics New Zealand

As shown in Figure 5, Northland has the highest rate of unemployment in New Zealand (by regional council) (Statistics NZ)[14]. Youth unemployment is also high in Northland, with around 6% of 18 to 24 year-olds receiving the unemployment benefit (actual youth unemployment rate is higher but there is no reliable estimate). Māori males aged 25 to 34 years account for the largest proportion of the Northland population receiving the unemployment benefit, where almost 1 in 5 receive the unemployment benefit.

Figure 5: *Unemployment rates by region (June Quarter 2011) (Household Labour Force Survey)*



Source : Statistics New Zealand

Northland unemployment rates are decreasing in line with national trends. However, employment gains will not be evenly shared across the Northland population, with Māori and rural communities more likely to be unemployed and/or requiring government assistance. Moreover, Northland's economic development profile, significantly lower labour-force participation rate (than the national average), high rates of non-employment-linked government support (eg domestic purpose benefit), and historically lower median wage rates will mean that the proportion of the population with low incomes will remain significant for the foreseeable future.

[13] ASB Regional Economic Scorecards.

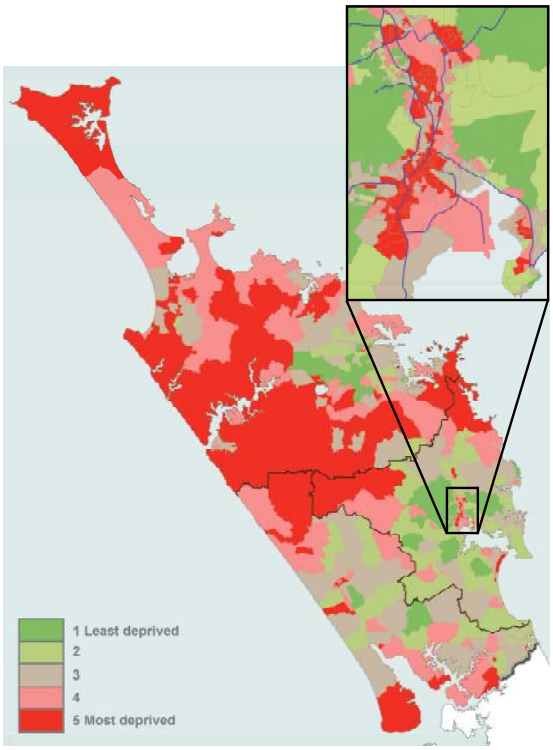
14 Unemployment levels in Northland have increased more quickly than the national average following the global financial crisis. They have begun to trend downwards in line with national movements but are still significantly higher than in early 2008. In March 2008 4.5% of Northlanders were unemployed: in September 2011 8.7% were. Over the same period national unemployment rates increased from 3.7% to 6.6%.

Housing conditions are also strongly associated with socioeconomic conditions and therefore population health outcomes. Many Northlanders live in substandard housing, with this often being a long-term situation. Substandard housing is likely to be greater in Māori and rural communities. For example, in 2009 it was estimated that there were approximately 2,000 substandard houses in Te Tai Tokerau (Housing NZ estimate as quoted by Northland Housing Forum). Housing cost affordability is also a key issue given Northland's low median earnings/income rates. Demand for state accommodation is high. Access to affordable housing is not equal for all Northlanders, with some geographic areas such as Kawakawa, Moerewa, Kaikohe and Kaitaia having shortages of available housing.

Over recent years, increases in average weekly household expenditure have been driven by housing cost, household utility, and food price inflation (Statistics NZ, Household Economic Survey June 2010). Information at a regional level is unavailable but it can be expected that these costs have steadily increased for Northlanders, accounting for a greater share of disposable income, particularly for those on low incomes, given that their incomes are unlikely to have kept pace with inflation. The implication of this is that populations with lower disposable incomes have less to spend on other goods and services like health care.

Compared with the New Zealand average, in the Northland DHB district there are more people (17% or about 1 in 6) living in areas of highest deprivation (NZDep06 decile 10 – more likely to have a low household income, no car, etc) than in areas with a low socioeconomic deprivation score (that is, they are more likely to have a phone, etc). Taking deciles 9 and 10, Northland has 33% of its population living in these areas compared to the national average of 20%. Importantly, deprivation levels vary across Northland as shown in Figure 6.

Figure 6: *Deprivation levels across Northland*



Population Health Drivers

Modifiable health risk factors impact on health and wellbeing, potentially leading to a range of poor health outcomes such as cancer, diabetes and cardiovascular disease, which result in premature mortality and/or long-term morbidity, and significant health care costs. Modifiable health risk factors include:

- smoking
- nutrition and physical activity
- alcohol use.

Data from the National Health Survey 2006/07, as reported in the Northland Health Needs Analysis 2008, is used here to briefly summarise the key population health drivers.

Tobacco

Smoking is the single greatest avoidable cause of mortality and morbidity in New Zealand. Northland rates are higher than the national average, creating a significant prevention opportunity. Māori rates in particular are extremely high (significantly above the average for New Zealand), with more than half of all Northland Māori adults having a regular tobacco intake (Table 3).

Table 3: *Age-standardised prevalence of current daily smokers aged over 15 years, 2006/07*

Ethnicity	Northland	NZ
Māori	55.4%	41.5%
Pacific	34.7%	26.0%
Asian	12.9%	9.6%
European/Other	24.0%	17.9%
Total	**25.5%**	**19.1%**

Source: NZ Health Survey. Bold = significantly higher

Nutrition and Physical Activity

Northland had similar rates of fruit and vegetable intake, and of maintaining regular physical activity as the New Zealand average. However as this describes only half the adult population, there is much to do here, as evidenced by the overweight and obesity figures. Overweight rates (BMI 25 to 29) were similar to the national average while obesity rates (BMI 30+) were significantly higher for Northland adults, with 29.5% having a BMI of 30 or greater (Table 4). With the 36% that are overweight, around two-thirds of the Northland adult population face adverse health effects from their diet and physical activity. The problem is particularly acute for Māori (46% obese in Northland, 77% overweight or obese) and Pacific (71% & 95%). That is, **only 23% of Māori and 5% of Pacific people are of normal weight**[15]. The impact this has on diabetes numbers is discussed below.

Table 4: *Age-standardised prevalence of obesity (BMI 30+) aged over 15 years, 2006/07*

Ethnicity	Northland	NZ
Māori	46.5%	40.1**%**
Pacific	71.0%	61.3**%**
Asian	12.3%	10.6**%**
European/Other	27.0%	23.3**%**
Total	**29.5%**	**25.4%**

Source: NZ Health Survey. Bold = significantly higher

Alcohol Use

Northland adults had a higher rate of hazardous alcohol consumption than the national average, not quite reaching statistical significance.

Table 5: *Age-standardised prevalence rate of hazardous alcohol consumption aged over 15 years, 2006/07*

Ethnicity	Northland	NZ
Māori	31.3	30.9
Pacific	33.1	21.6
Asian	2.7	5.2
European/Other	20.8	20.6
Total	**22.8**	**19.6**

Source: NZ Health Survey.

Healthy Lifestyle

A concerning analysis from the 2006/07 New Zealand Health Survey highlights the population health of Northland. The five behaviours discussed above that are known to be linked to major chronic diseases were selected: tobacco use, hazardous alcohol use, physical activity, fruit and vegetable consumption (a marker of a healthy diet), and obesity. A healthy lifestyle was defined as reporting all five healthy behaviours. Only **13.6%** of the Northland adult population were considered to be living a healthy lifestyle based on these five factors – 1 in 7. Males fared worse than females (11.6% versus 15.6%), and Māori fared worst of all (6.5%). While Northland had similar rates to the New Zealand average, this data

[15] Note that Māori and Pacific here are being assessed at a BMI cut-off of 30 following the NZHS 2006/07 protocol, rather than 32 as sometimes occurred in the past.

underlines the point that little targeting of health lifestyle interventions is needed – virtually the whole population (6 out of 7) will gain benefit.

Cardiovascular disease prevalence

The Northern Region Health Plan 2011/12 estimated cardiovascular disease (CVD) prevalence, and showed Northland to have the highest rates in the Northern Region (CVD here includes coronary heart disease, cerebrovascular disease and peripheral vascular disease) with 5.4% of the population, or 12.3% of the people aged over 45, having diagnosed CVD (Table 6). This is reflected in the significantly higher hospitalisation rates noted in the Health Needs Assessment document.

***Table 6:** Estimated number and percentage of people with CVD, 2009*

DHB	Number	% pop	% over 45
Northland	8,489	5.4%	12.3%
Waitemata	20,121	4.1%	10.5%
Auckland	14,406	3.5%	9.6%
Counties Manukau	17,132	3.6%	10.6%
Total	**60,148**	**3.9%**	**10.5%**

Source: NRHP 2011. CVD = coronary heart disease, stroke and peripheral vascular disease

Māori have twice the CVD age-adjusted rate of non-Māori, which is driven by their higher rates of smoking rates and obesity.

***Table 7:** Estimated annual cost to the DHB of residents of Northland with CVD, 2009*

Service	Northland ($m)	% of service	Northern Region %
Inpatients (incl. day patients)	40.7	35%	30%
Pharmaceuticals	8.9	23%	19%
Laboratory	1.6	16%	12%
Emergency Department	1.4	16%	13%
Outpatient	14.0	30%	23%
Total	**66.6**	**30%**	**25%**

Source: NRHP, 2011

Around 35% of inpatient costs for Northland DHB (own hospital services plus IDFs) were due to the 5.4% of the population with CVD (Table 7). Note that these costs relate to all conditions these people have, not just CVD, but clearly CVD has a huge impact on NDHB.

Diabetes prevalence

The Northern Region Health Plan 2011/12 estimated diabetes prevalence and costs for the Northern Region. Nearly 7% of Northland adults are projected to have diabetes (Table 8). Note that the Northern Region estimates are higher (by around 1,000) than the estimates used by the Ministry of Health in setting Diabetes Annual Review denominators for the Health Targets. The difference mainly arises from those patients not identified by general practices as having diabetes and therefore being eligible for a Diabetes Annual Review. With some practices having up to a 20% turnover per year in patients, it is difficult for even the most diligent practice to 'know' all the people they have with diabetes. The Northern Region Diabetes Clinical Network has accepted the Northern Region estimated figures after they were compared with direct measures of diabetes prevalence from the TestSafe laboratory clinical repository.

***Table 8:** Estimated number and percentage of people with diabetes 2009*

DHB	Number	% pop	% over 15
Northland	8,461	5.4%	6.9%
Waitemata	21,458	4.4%	5.6%
Auckland	21,843	5.3%	6.6%
Counties Manukau	29,786	6.3%	8.4%
Total	**81,548**	**5.3%**	**6.8%**

Source: NRHP estimates, 2011

Northland diabetes prevalence is forecast to increase by 72% from 2009 to 2026, in part because of ageing and ethnicity trends, but also because of the developing obesity epidemic (Table 9).

***Table 9:** Estimated diagnosed diabetes projected to 2026*

DHB	2009	2011	2016	2021	2026	↑%
NDHB	8,460	8,860	10,290	12,250	14,560	72%
WDHB	21,460	22,460	26,380	31,840	38,110	78%
ADHB	21,840	23,090	27,660	33,870	40,220	84%
CMDHB	29,790	31,580	38,280	47,280	55,870	88%
Total	**81,550**	**85,990**	**102,610**	**125,250**	**148,760**	**82%**

Source: NRHP, based on CMDHB system dynamic diabetes model

Northland spends significantly more than other Northern Region DHBs on each person with diabetes ($5,900 per person aged 45 to 64, compared with $4,080 average for the Northern Region) (Table 10). The largest excess comes in the outpatient area, likely due to rates of renal dialysis.

Table 10: *Estimated cost to the DHB of residents of Northland with diabetes, 2009*

Service	Northland $m)	% of service category	Northern Region %
Inpatients (incl. daypatients)	22.8	21%	19%
Pharmaceuticals	9.4	25%	24%
Laboratory	1.7	18%	17%
Emergency Department	0.9	10%	10%
Outpatient	16.1	35%	27%
Total	**50.9**	**23%**	**20%**

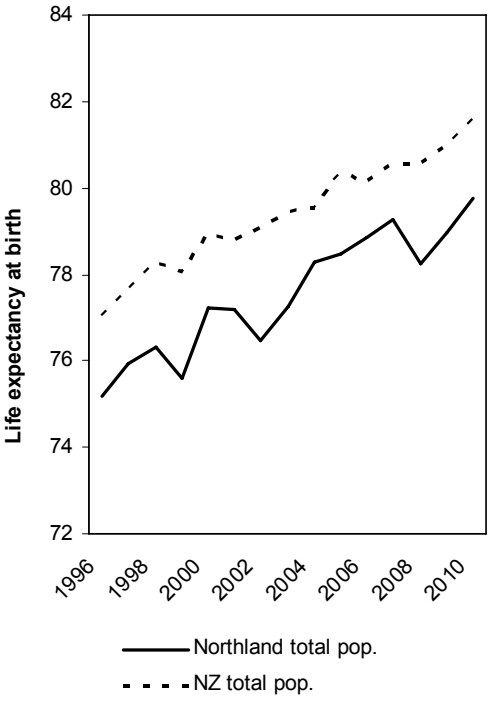
Source: NRHP, 2011

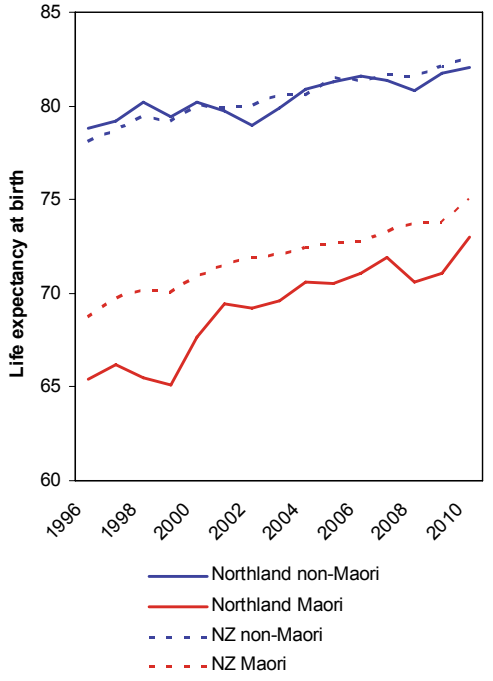
Note that there is significant overlap with CVD, so these figures cannot be directly added to those of CVD above. In aggregate, 14,760 people have either CVD or diabetes or both, with a total spend for Northland in 2009 of $91 million, meaning 9.4% of the population has 42% of the costs of those modalities of treatment.

Life Expectancy and Amenable Mortality

Life expectancy in Northland has risen steadily over the past 15 years at a similar rate to the New Zealand average – gaining over four years (Figure 7). However it still falls behind New Zealand as a whole, with European/Other figures being very similar, but Northland Māori lagging behind their counterparts in the rest of New Zealand by about two years.

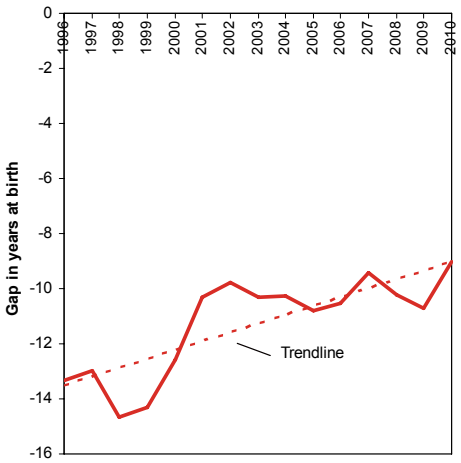
Figure 7: *Northland life expectancy at birth compared to New Zealand, 1996-2010*





Overall the gap in life expectancy between Māori and European/Other in Northland has fallen from 13 years in 1996 to nine years in 2010.

Figure 8: *Gap between Northland Māori life expectancy, 1996-2010*



Source: Dean Papa, CMDHB, 2011. Note 2008-2010 are based on provisional mortality figures

Amenable mortality is a measure of deaths from conditions expected to be responsive to health care. It is calculated using deaths in people under age 75 and its definition has been recently updated for use in Australia and New Zealand. The figures below from the Ministry of Health show the amenable mortality rates per 100,000 for 0 to 74 year-olds for Māori and non-Māori respectively for the 2007 year. Rates are age-standardised to the WHO standard population for males and females combined.

Northland Māori have a three-fold higher rate of potentially avoidable mortality than their age-matched non-Māori counterparts, a similar proportion to the national average (Figures 9 and 10). The largest drivers of this amenable mortality gap are cardiovascular disease, diabetes, infant health and cancer (mainly smoking-related).

Figure 9: *Māori amenable mortality by DHB, ages 0 to 74, New Zealand 2008*

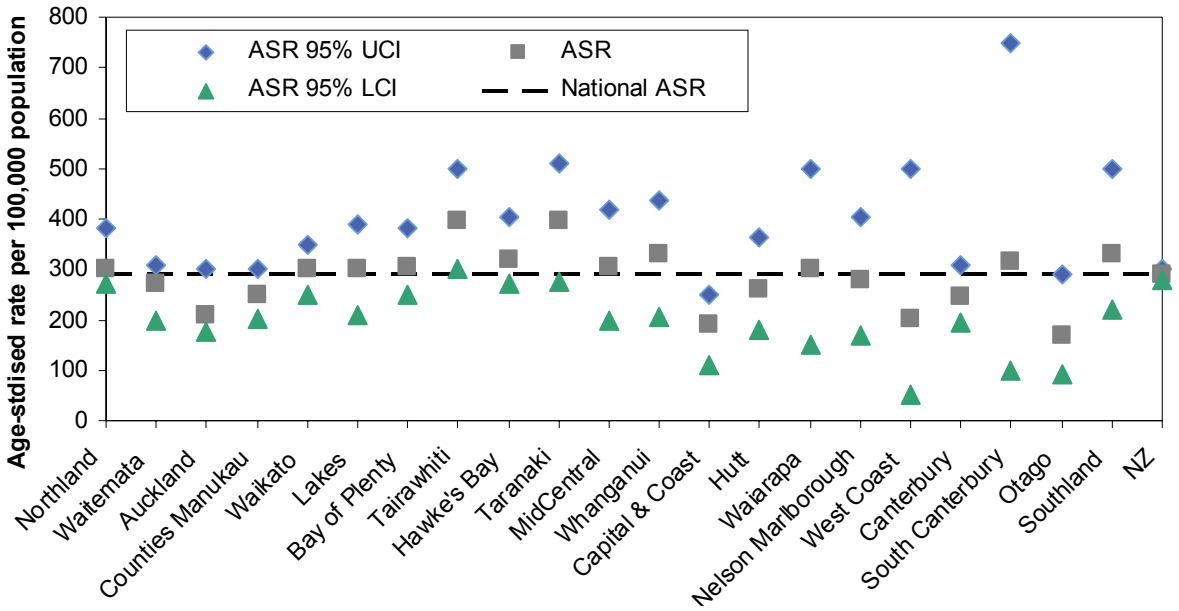
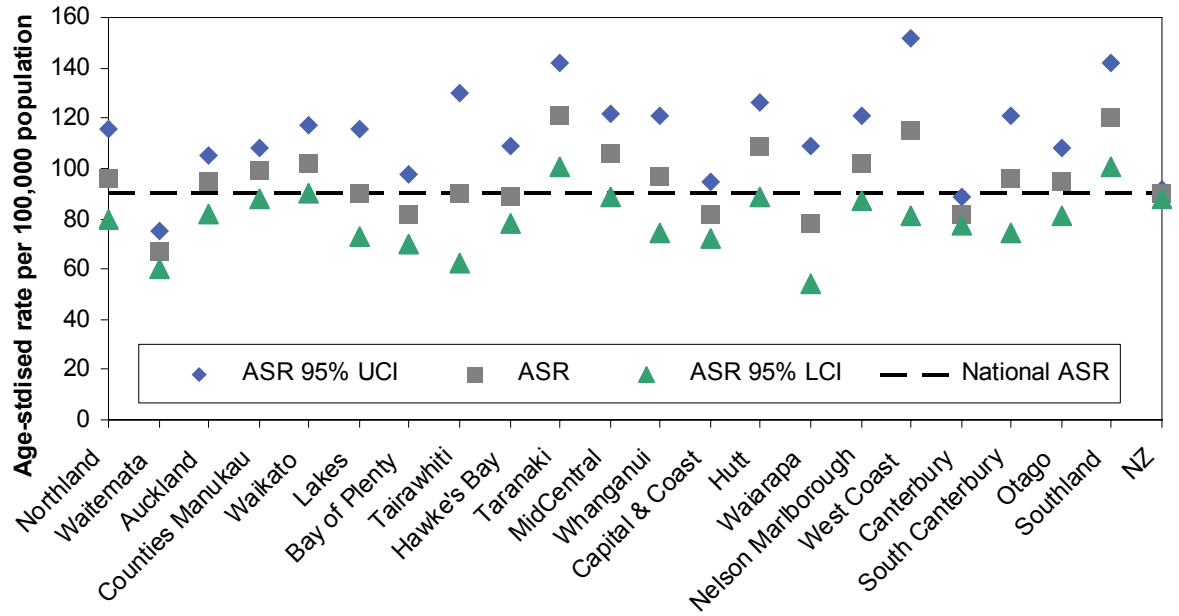


Figure 10: *Non-Māori amenable mortality by DHB, ages 0 to 74, New Zealand 2008*



Source: MoH

Health Care Utilisation

Primary Care

As at October 2011, 153,935 or 98% of Northlanders were enrolled with a Northland Primary Health Organisation (PHO), 92,723 with Manaia PHO and 61,212 with Te Tai Tokerau PHO. There are currently 149 GPs and 154 practice nurses across 38 general practices providing primary care to Northlanders enrolled with Northland PHOs, as well as non-enrolled and non-resident patients.

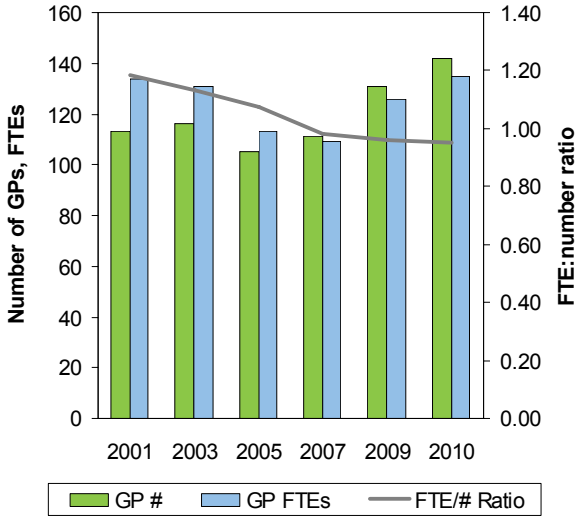
Table 11: *Comparison of GP workforce in Northland and New Zealand*

Area	No.	FTEs	% FTE	Pop.	Panel size (pop/ FTEs)
Northland	149	101	67%	153,935[5]	1,526
NZ	3,532	3,224	91%	4,366,800	1,354

Sources: PHOs, Medical Council Workforce Survey 2010

Between 2001 and 2010 there was an increase in the number of GPs providing care in Northland. However the number of GP FTEs was the same in 2010 as in 2001 due to a decline in average working hours (Figure 11).

Figure 11: *Northland GP numbers compared with FTEs 2001-2010 (select years)*



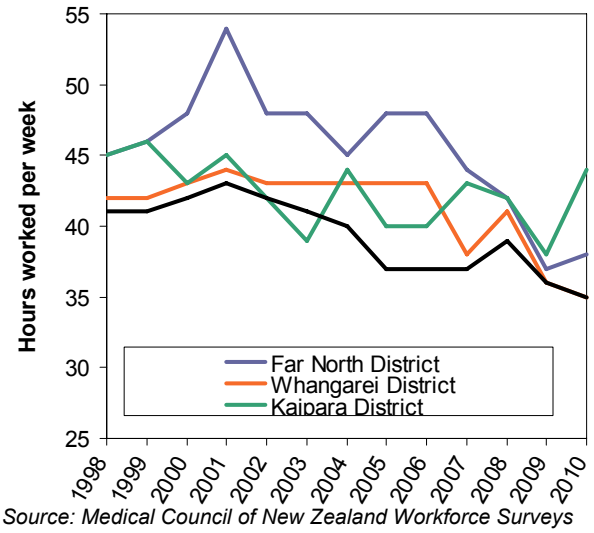
Source: Medical Council of New Zealand Workforce Surveys

Since 2001, with the exception of the Kaipara District, self-reported GP average hours (all work hours) per week have been trending down in line with the national trend (Figure 12).

Despite the increase in the number of GPs providing care in Northland, the decline in average working hours means that total annual productive GP hours were 9,000 less in 2010 than 2001 (Figure 13). These are estimates based on self-reported GP numbers, average hours worked, and assumption of 44 productive weeks per year. They are indicative only.

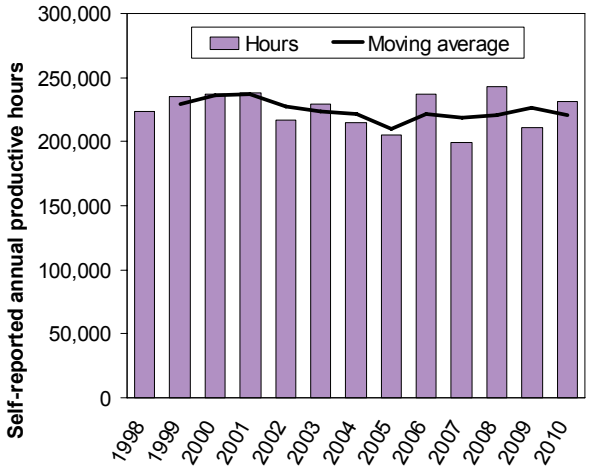
Since 2007 (financial year end), primary care general practitioner and nurse consultation numbers have been increasing, with nurse consultations increasing slightly faster (Figures 14 and 15). Between 2009 and 2011, primary care utilisation increased by 7.72% per annum. General practitioner utilisation has increased by 6.1% and nurse utilisation by 16.5% over this period. In 2010/11, Northland's GP annual utilisation rate was very close to that expected by its share of the New Zealand enrolled population (3.70% and 3.68% respectively), while Northland's nurse utilisation rate was higher than expected (3.70% compare with 4.80%).

Figure 12: *Northland GP hours worked per week by area, 1998-2010*



Source: Medical Council of New Zealand Workforce Surveys

Figure 13: *Northland GP total productive hours available annually, 2001-2010*



Derived from Medical Council of New Zealand Workforce Surveys

Figure 14: *GP and nurse consults in Northland, 2006/07 – 2010/11*

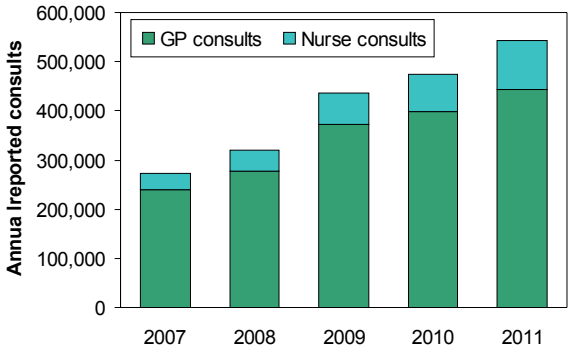


Figure 15: *Nurse to GP consult ratio in Northland, 2006/07 – 2010/11*

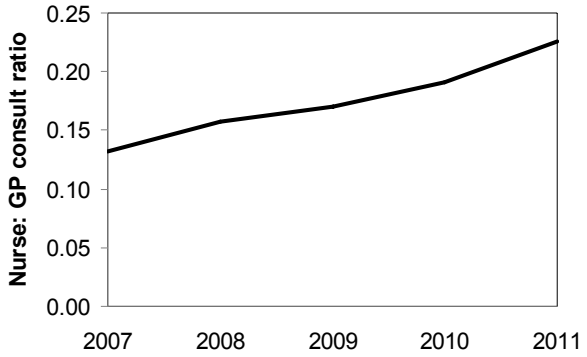


Figure 16 shows general practice consultations per enrolled population by GP and nurse for Northland and New Zealand in 2010/11. Recorded nurse consultations in Northland are slightly higher for most age groups but about the same for people aged over-65. GP consultations are lower in Northland children aged 0 to 4 years, but older ages are not significantly different to New Zealand rates. (Note that this data, extracted from the PHO performance programme, is indicative only because it is acknowledged to be incomplete.)

Figure 16: *Per capita consults per year by age group, Northland compared with NZ, 2010/11*

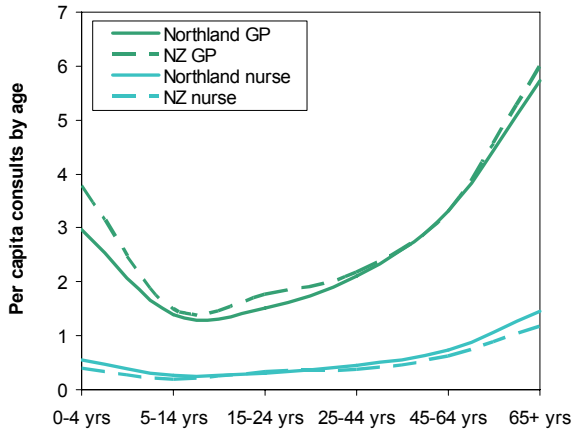
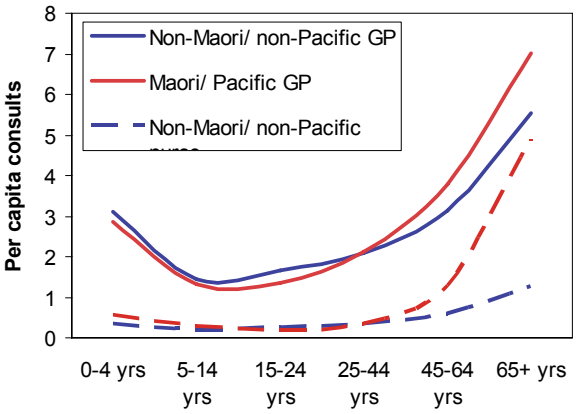


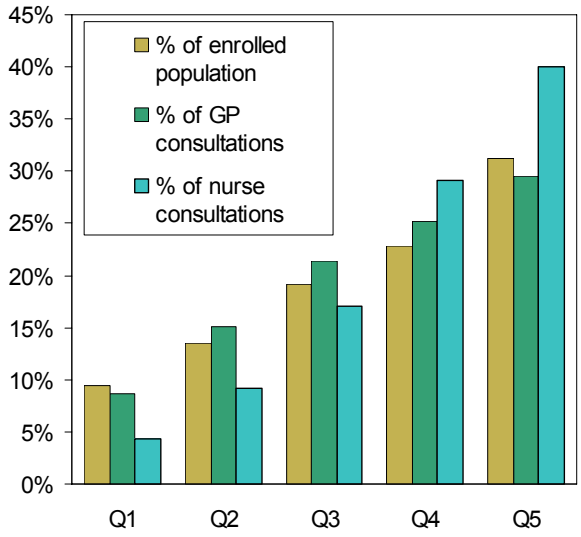
Figure 17 shows GP and nurse consultations respectively in Northland in 2010/11 per enrolled population by ethnicity and age. Māori/Pacific people are significantly more likely to receive nurse consultations at all ages, likely reflecting immunisation, long-term condition management, and other nurse-led services. GP consultation rates are slightly lower for Māori/Pacific people aged less than 25 years but significantly higher at older ages.

Figure 17: *Per capita consults per year in Northland by age group and ethnicity, 2010/11*



Nurse consultations increase by deprivation quintile with quintile 5 people (most deprived) utilising these services more. GP consultation utilisation is highest per enrolled person for quintiles 2 to 4 with both quintiles 1 and 5 utilising these services the least (Figure 18).

Figure 18: *Proportion of consults in Northland by deprivation quintile 2010/11*



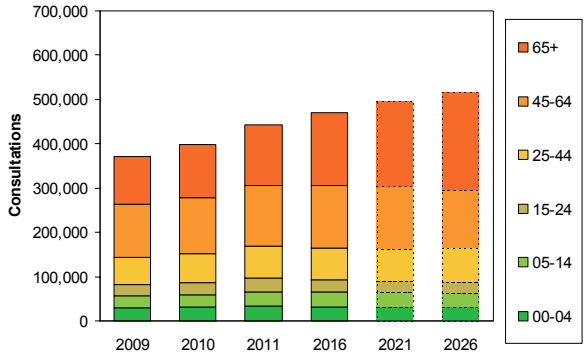
Note: Hokianga primary care utilisation data by deprivation was not available to include

Based on current GP utilisation by age and Statistics NZ medium population projections, GP utilisation is expected to increase from 443,798

contacts in 2011 to around 517,280 contacts by 2026 (Figure 19). Population ageing will see contacts for people aged over-65 increasing significantly as a share of total contacts from 31% to 43%.

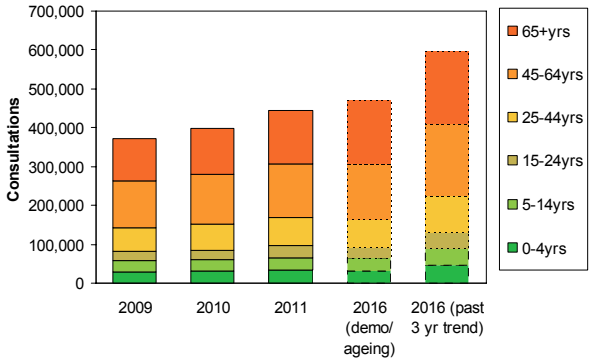
The increase could be more than this however. If the increase in GP consultations recorded from 2009 to 2011 continues to 2016, then, as shown in Figure 20, utilisation will increase by more than that anticipated by population growth and ageing.

Figure 19: *Northland GP consults per year 2009-2011, and projected consults to 2026 based on population growth and ageing trends*



Note: This does not include ACC, private health insurance, employment, or travel immunisation consultations, which are estimated to account for around 20 to 25% of primary care utilisation (but varies significantly across practices). Based on Statistics NZ medium projections.

Figure 20: *Northland GP consults per year 2009-2011, and alternative projections to 2016 based on last three years' utilisation growth*



Community Pharmaceuticals

The number of community prescription items has been steadily increasing over the past five years in Northland, a trend seen throughout New Zealand (Table 12). The cost has increased at a slower rate as the average cost per item decreases, in the main due to PHARMAC price setting (medication mix may also play a part). The overall growth in costs has been averaging 5.9% a year, or 5% per year per head of population. In 2010/11 community pharmaceuticals made up 7% of the NDHB budget, a decrease from 8% five years ago.

Table 12: *Northland community pharmacy 2006/07 to 2010/11*

Financial year dispensed	No of items	Reimbursement cost ($ excl GST)	Cost per item ($)	Population	Scripts per head	Cost per head ($)
2006/07	1,732,039	34,049,448	19.7	153,925	11.3	221
2007/08	1,898,681	35,282,467	18.6	155,010	12.2	228
2008/09	2,048,284	37,013,160	18.1	156,245	13.1	237
2009/10	2,190,248	38,328,395	17.5	157,750	13.9	243
2010/11	2,322,555	41,849,680	18.0	158,985	14.6	263
% change/year	**6.9%**	**5.9%**	**-1%**	**0.8%**	**6.0%**	**5.0%**

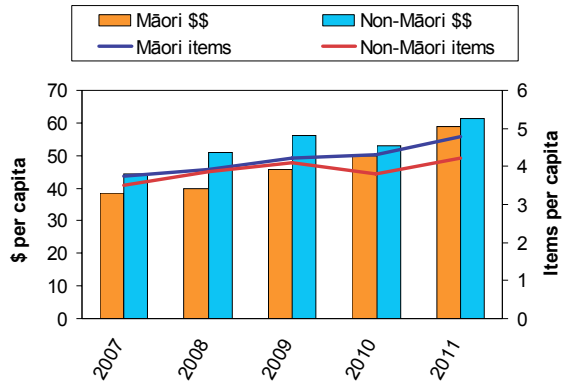
Source: NDSA. Excludes chemotherapy drugs, and excludes rebates. GST exclusive, Northland residents, wherever dispensed.

Overall, 43% of the scripts and 37% of the cost lie in people aged over-65. The largest growth has been for Māori adults and older adults, rising from an average of 9 to 13 scripts per year for 15 to 64-year-olds (Figure 21(b)), and 40 to 50 a year for each person aged over-65 (Figure 21(c)). Prescriptions for Māori make up 25% of pharmaceutical costs.

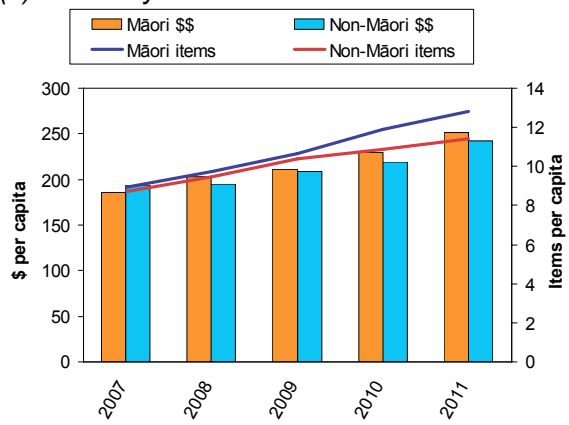
Given the high rates of risk factors, chronic disease, acute hospitalisation and premature mortality in the Northland Māori population, this increased pharmaceutical spend is likely to be beneficial. However, given that the expenditure on pharmaceuticals is rising faster than Northland DHB's Contribution to Cost Pressure adjustment, it will be important to confirm whether this increase was a worthwhile investment. More in-depth work comparing prescribing with disease management guidelines (eg for diabetes and cardiovascular disease) is warranted.

Figure 21: *Northland community pharmaceutical spend 2007 to 2011*

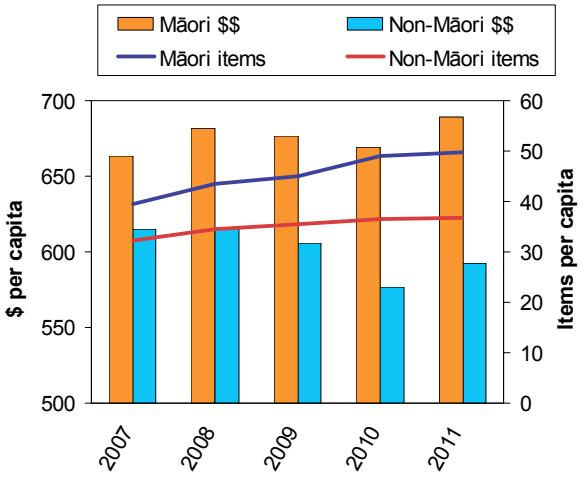
(a) 0 to 14 years



(b) 15 to 64 years



(c) Over 65 years



Source: HPCG

Community Laboratory

Community laboratory testing has been growing slightly faster than population growth, at around 3% per year (Table 13). Detail is not available by age and ethnicity, but based on data from the last year available, 2009, Māori would appear to be getting less testing than expected for the size of their disease burden (this is similar to the picture in other DHBs such as Counties Manukau DHB). The average person aged over-65 has 16 community laboratory tests a year, at a cost of $135 (Table 14).

Table 13: *Northland community laboratory 2006/07 to 2010/11*

Year	Items	Cost ($)	Cost per item ($)	Items per head	Cost per head ($)
2006/07	820,016	7,427,195	9.06	5.33	48.25
2007/08	941,174	8,513,199	9.05	6.07	54.92
2008/09	969,548	8,739,977	9.01	6.21	55.94
2009/10*	1,017,820	9,320,329	9.16	6.45	59.08
2010/11*	1,039,178	9,377,193	9.02	6.54	58.98
Average growth per year	**3%**	**3%**			

Source: NDSA. GST exclusive, Northland residents; 2009/10 and 2010/11 estimated (NHB-provided lab volumes only partially loaded into laboratory dataset)

Table 14: *Northland community laboratory tests per head of population 2009*

Age group	Tests per head of population			Cost per head of population		
	Māori	Non-Māori	Total	Māori	Non-Māori	Total
0-14	0.6	1.0	0.8	7.1	11.3	9.3
15-64	5.0	6.5	6.0	46.1	60.4	56.1
Over-65	15.4	15.9	15.8	122.8	137.3	135.3
Total	**4.2**	**7.4**	**6.4**	**38.0**	**67.2**	**57.9**

Source: HPCG calculation from NDSA data

Inpatients

The majority of growth in inpatient care will come from those aged over-65. For example, around half the full days spent in hospital (bed days) are currently occupied by those aged over-65, and this is set to grow to 66% by 2026. The number of bed days occupied by those aged 0 to 64 is projected to remain stable, while those aged over-65 are projected to grow by 60%, a 2.4% per annum growth rate. If hospital admission rates and length of stay remain the same as they are now over the next 15 years, then the total increase in bed days due to the ageing population is estimated at 31%. Approximately 140 additional inpatient beds would be required above existing resourced capacity, as explained in Table 15.

Table 15: *Northland inpatient projections based on Statistics NZ medium population projections*

Measure	2010	2016	2021	2026	Diff. at 16 yrs		% per year
					No.	%	
Dis-charges	54,785	60,857	65,920	69,966	15,180	28%	1.64
Bed days	141,906	156,345	170,933	185,319	43,413	31%	1.80
WIES	44,383	49,105	53,530	57,230	12,847	29%	1.71

Source: HPCG based on SNZ 2010 projections as supplied to MoH. Includes all inpatient beds across Northland – child/adult/older people/mental health/maternity. Assuming the 43,400 new bed days are managed at 85% occupancy, and assuming all silo effects can be managed, then around 140 extra beds would be being used by 2026 at the current utilisation rates, to cope with the increase in inpatient bed days – about nine a year.

In addition to population growth and ageing there will be pressure on inpatient beds from the expected increases in people with diabetes.

Northern Region modelling estimates that people with diabetes make up about 21% of bed days and inpatient costs in Northland. The 8,500 Northland people estimated in that modelling to have diabetes in 2009 (making up 6.9% of the adult population) are projected to increase to 14,500 by 2026, a 64% increase (see diabetes section).

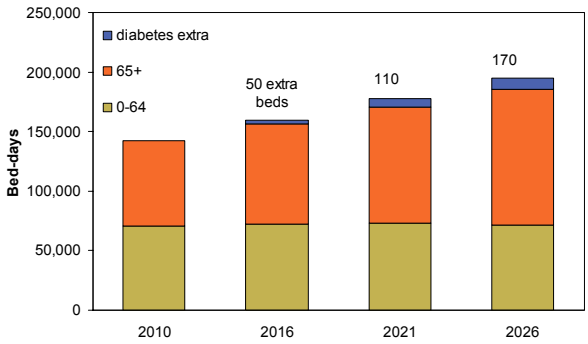
This increase in diabetes will generate additional growth of 10,000 bed days over the next 15 years, assuming no change in the rate of admission per head (Table 16).

Table 16: *Projected total inpatient bed days (all bed types, all Northland) based on impacts of population ageing and diabetes*

Age group	2010	2016	2021	2026	Diff. at 16 yrs	% growth over 15 years	% growth per year
0-64	70,714	72,444	72,729	71,596	882	1%	0.06
Over-65	71,192	83,900	98,204	113,722	42,530	60%	3.17
Diabetes extra	-	+3,337	+6,673	+10,010	+10,010	64%	3.61
Total	**141,906**	**159,681**	**177,607**	**195,329**	**55,675**	**38%**	**2.31**

Source: HPCG. Based on current utilisation of beds by people with diabetes and estimated diabetes growth.

Figure 22: *Inpatient projections – bed days, all bed types, all Northland*



Adding the impact of diabetes to that of the ageing population changes the projected growth from 31% to 38%, or the equivalent of an extra ward (30 beds) over that time – a total of 170 additional beds. Some of this increase might be absorbable within current capacity, but the avoidance of the remainder will require changes in current models of care.

Ambulatory Sensitive Hospitalisations

Ambulatory Sensitive Hospitalisations (ASH) are hospital admissions that have the potential to be prevented by effective delivery of services in a primary care or community setting. These admissions can be influenced by a range of factors including access to high quality affordable primary health care; people's income, age and ethnicity; deprivation; and housing.

ASH was a DHB Health Target in 2007/08 and 2008/09 (financial years), and has since then been a DHB Performance Measure. The indicator is intended as a system measure of access to effective primary health care services, and how these services operate alongside those delivered within hospital settings.

Figures 23 and 24 below show the ASH rates per 100,000 for 0 to 74 year olds for Māori and non-Māori respectively in 2008 (Source: MoH). Rates are age-standardised to the WHO standard population, are for males and females combined, and are directly comparable between the two charts. Northland has significantly higher ASH rates for Māori compared to all New Zealand Māori, while non-Māori rates are similar to the national average. Note the Māori rates are twice that of non-Māori on an age-adjusted basis.

Figure 23: *Māori ASH by DHB across New Zealand, age 0 to 74 age-standardised rates, 2008*

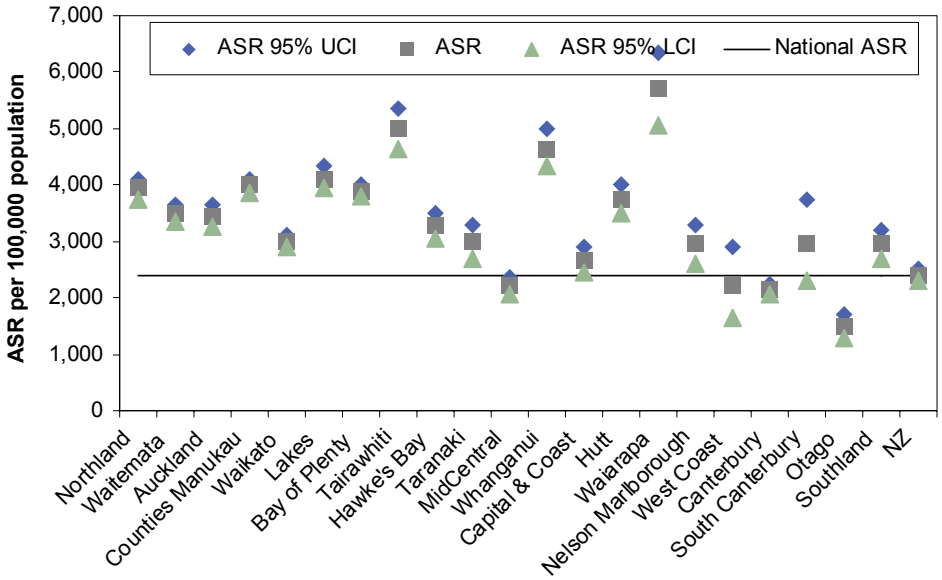
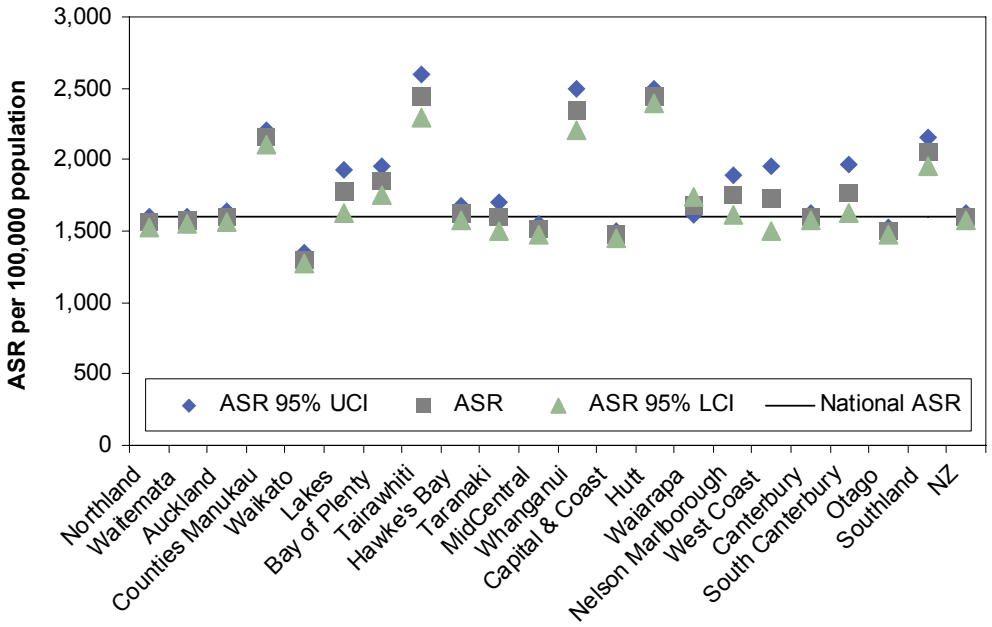


Figure 24: *Non-Māori ASH by DHB across New Zealand, age 0 to 74 age-standardised rates, 2008*



ASH in children is dominated by infectious disease, particularly respiratory, but also skin infections (cellulitis) and gastroenteritis (Table 17). Rheumatic fever/rheumatic heart disease averages 16 discharges a year.

Table 17: *Ambulatory Sensitive Hospitalisations Northland children (0 to 14) 2008-2011 average.*

Condition	Average 2008-11	% of ASH
Respiratory infections	254	23%
Dental	346	31%
Skin conditions	169	15%
Gastrointestinal	167	15%
Asthma	145	13%
Rheumatic fever/ heart disease	16	1%
Other	27	2%
Total	**1,124**	**100%**

Source: NDHB

For adults aged 15 to 64 years, around a third of ASH conditions are cardiovascular in origin, with diabetes often an underlying cause making up a further 9% (Table 18). Infectious disease still ranks highly.

Table 18: *Ambulatory Sensitive Hospitalisations Northland adults (15 to 64) 2008-2011 average.*

Condition	Average 2008-11	% of ASH
Cardiovascular	830	35%
Angina & chest pain	*451*	*19%*
Myocardial infarction	*239*	*10%*
Stroke	*79*	*3%*
Other CVD	*61*	*3%*
Chronic disease	489	21%
Diabetes	*214*	*9%*
Congestive heart failure	*76*	*3%*
Asthma	*89*	*4%*
Epilepsy	*110*	*5%*
Infectious disease	807	34%
Cellulitis	*295*	*12%*
Pneumonia	*161*	*7%*
URT & ENT infections	*56*	*2%*
Kidney/urinary infection	*138*	*6%*
Other infections	*158*	*7%*
Other	238	10%
Total ASH	**2,363**	**100%**

Source: NDHB

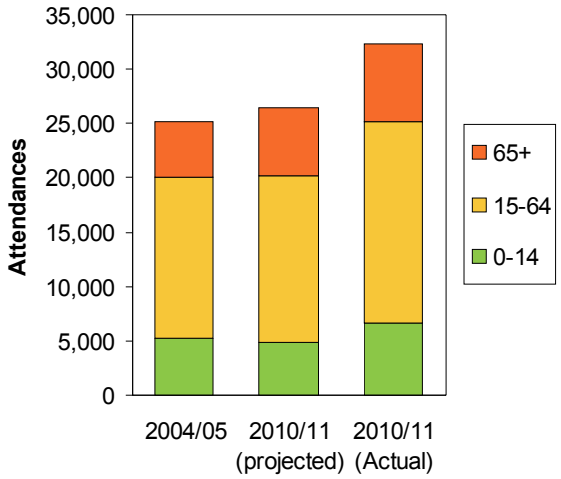
Emergency Department

Emergency Department (ED) utilisation has been increasing faster in Northland than demographic growth (including ageing) since 2006/07, and growth has been significantly higher than that projected at that time in Northland DHB's 2007 Clinical Services Plan (CSP), based on population growth. ED attendances have increased on average per year by (Figure 25):

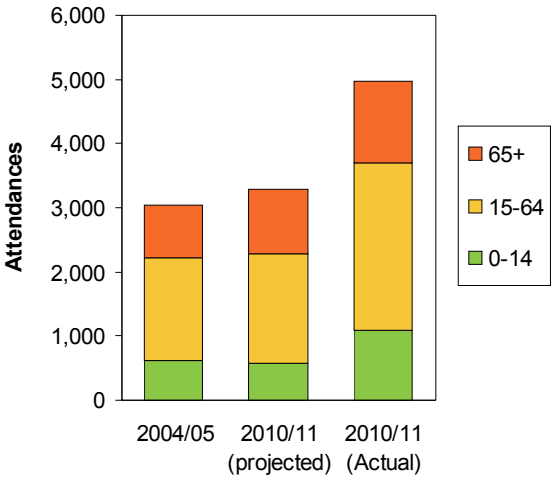
- 2.5% at Whangarei Hospital over the last five years (13.3% total growth), 3.1% over last two years (9.7% total growth)
- 4.2% at Kaitaia Hospital over the last five years (23% total growth), 2% over last two years (6% total growth)
- 5.5% at Bay of Islands Hospital over the last five years (31% total growth), 4.6% over the last two years (15% total growth).

Figure 25: *Emergency department attendances 2004/05 and 2010/11 actual compared with that projected in the 2006 CSP*

(a) Whangarei



(b) Kaitaia



Source: HPCG calculations from NDHB data.

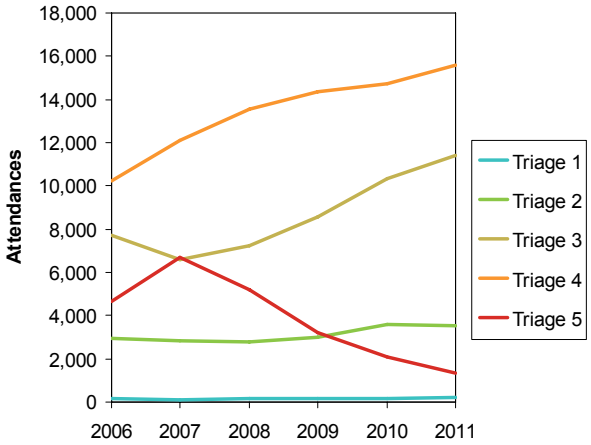
Across all facilities (Figure 26):

- Triage category 3 attendances have increased at the fastest rate. At Kaitaia and Bay of Islands hospitals they account for the largest number of attendances (46% and 57% of total attendances respectively)
- Triage category 4 attendances account for the largest number of attendances at Whangarei Hospital (48% of total attendances) and have been increasing at a rate of 5% on average per year since 2006/07
- Relatively low priority Triage category 5 attendances have been decreasing across all facilities.

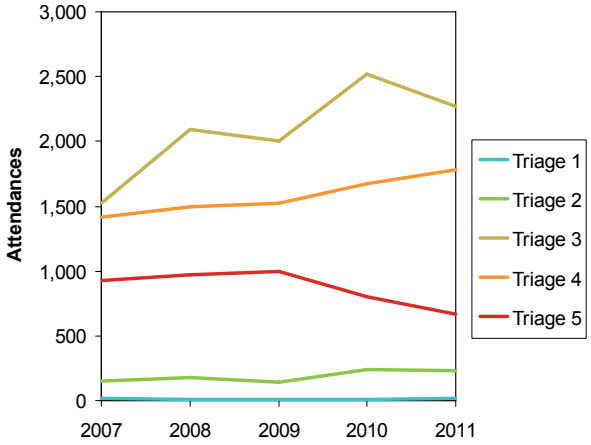
Possible drivers of these trends include a change in the way people are accessing primary care, changes in ED attendance behaviour, changes in the health in the community, or changes in threshold levels for coding triage category.

Figure 26: *Emergency department attendances by triage category 2006/07 to 2010*

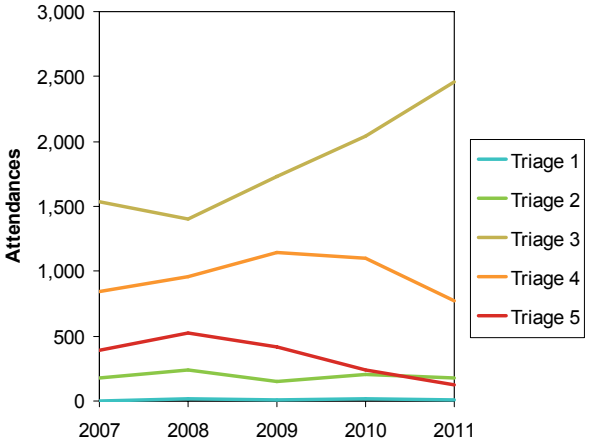
Whangarei



Kaitaia



Bay of Islands



Source: HPCG calculations from NDHB data.

Presentations to Whangarei and Kaitaia emergency departments have also been growing more quickly between the hours of 8pm to 8am (Table 19). (Similar data is not available for Bay of Islands).

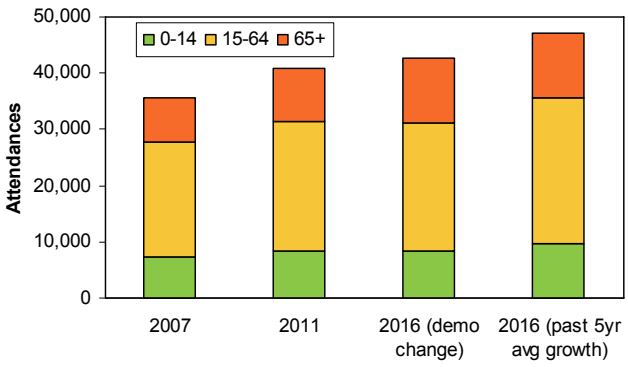
Table 19: *Northland ED growth by time of visit, 2007-2011*

Facility	Average per year growth between 2007-2011		
	8am – 8pm	8pm – 8am	All hours
Whangarei	2.03%	3.82%	2.54%
Kaitaia	3.33%	7.04%	4.23%

Source: HPCG calculations from NDHB data.

Emergency department growth is hard to predict. Demographic growth alone (population and ageing) would contribute 2.8% over the next five years (much ED work is in the younger ages where there is little growth). On the other hand if the growth rates that have occurred in the past five years were to continue, a 15% growth could be expected (Figure 27).

Figure 27: *All Northland emergency department attendances by age group 2007 and 2011, with alternate projections to 2016*



Source: HPCG

Maternity

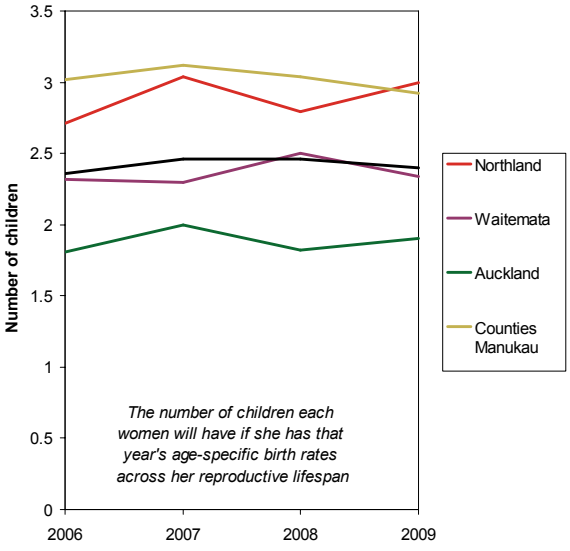
Northland females have one of the highest fertility rates in New Zealand. Data produced for the Northern Region Health Plan show Northland and Counties Manukau DHBs to have total fertility rates significantly higher than the national average (Figure 28). Teenage pregnancy in Māori is higher than in non-Māori.

Figure 28: *Northern Region births and total fertility rates*

(a) Northern Region births 2009, NMDS only

Area	Number of births	% of national total
Counties Manukau DHB	8,421	14%
Waitemata DHB	7,510	12%
Auckland DHB	6,635	11%
Northland DHB	2,089	3%
Northern Region	24,655	41%
New Zealand	60,528	100%

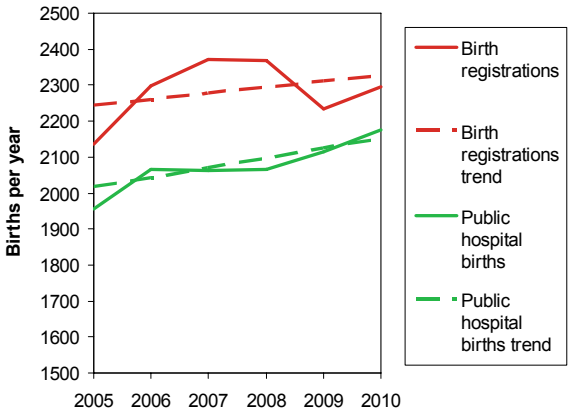
(b) Total fertility rates 2006-2009



Births in public hospitals have increased slightly over the last few years – up 100 since 2005/06 (a 5% increase, or 1.2% a year) (Figure 29). While not a large increase, this is higher than the Statistics New Zealand virtually flat projection. Birth registrations have shown a lesser increase, implying that there is a shift from home/other facilities to public hospitals as a place of delivery. Demographic projections for maternity and paediatric services may need to be adjusted to take account of this higher than expected growth. Around half the births are to Māori mothers.

Improvements in maternity outcomes rely on timely and complete antenatal registration and visits. Maternity outcomes including perinatal mortality were generally worse for Māori women in Northland. One preventive example highlighted was smoking during pregnancy – 18.4% of women giving birth had tobacco use recorded in hospital admission data compared with 15.8% nationally (smoking recording is incomplete, so numbers are distinct underestimates). Obesity in pregnancy will also be driving some of the adverse outcomes.

Figure 29: *Northland births 2005/06 to 2010/11, registered and in public hospitals*



Source: HPCG calculation (note: birth registration 2010/11 estimate

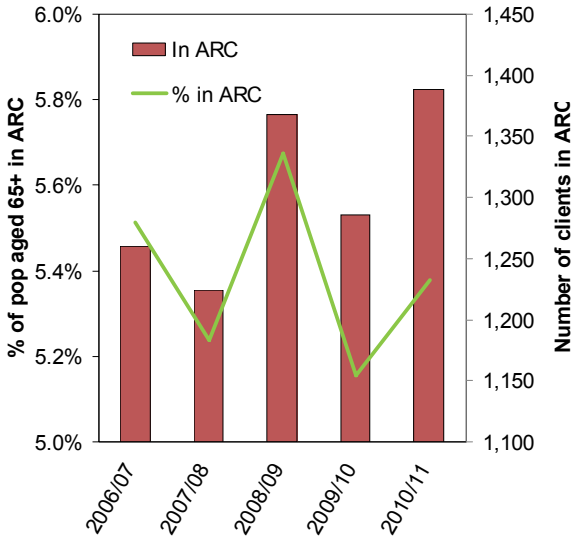
Health of Older People

Aged residential care

Around 5.8% of the Northland population aged over-65 are in Aged Residential Care (ARC) subsidised by the DHB, slightly higher than the national average of 5.5% (Figure 30). This has risen about 2.4% per year over the past five years, compared with the over-65 population estimated to be increasing at 3.3% per year (note the actual increase will not be confirmed until the next Census is undertaken). As the older population ages, ARC bed growth may well outstrip the rate of population growth in the over 65s; the over-85 population grew 46% from 2001 to 2011, compared with 36% for all over-65s.

At present around 28% of those aged over-85 domiciled in Northland are in ARC. Population projections suggest Northland will be adding a net 120 more over-85 residents per year through to 2021, which will add 30 ARC beds a year at current occupancy rates. NDHB should be looking to maximise 'ageing in place' by using home-based care to minimise demands on ARC.

Figure 30: *Number of people in subsidised aged residential care and their percentage of the Northland over-65 population 2006/07 to 2010/11*



Source: HPCG from NDHB data. Part of the increase represented here is likely to be due to the reduction of supply-side restrictions.

Table 20: *Northland older peoples' aged residential care utilisation, 2006/07 – 2010/11*

Financial year	Clients	Bed days	Cost ($000)	Cost per head ($)	Cost per bed day ($)
2006/07	1,260	276,301	20,805	16,512	75
2007/08	1,224	261,714	20,074	16,401	77
2008/09	1,368	280,797	24,047	17,578	86
2009/10	1,286	277,229	24,389	18,965	88
2010/11	1,388	293,865	26,554	19,131	90

Source: National Health Board, based on DHB of service

Home-based support services

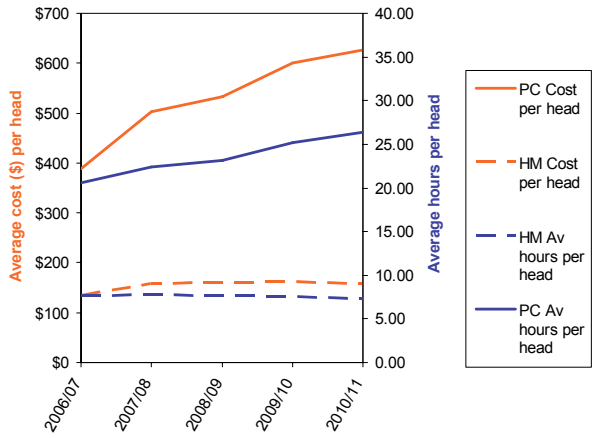
Between 2006/07 and 2010/11, growth in the number of people receiving home-based support services has been contained (Table 21). Total hours however have risen by 22% from 36,091 to 44,251, reflecting a shift towards clients with higher needs. This is consistent with a restorative model of care, reflected in the swing from Household Management to Personal Care over the past five years (Figure 31).

Table 21: *Northland older people average monthly utilisation of home-based care, 2006/07 – 2010/11*

Financial year	Clients	Monthly hours	Monthly cost ($)	Hours per head (avg)	Cost per head ($)
2006/07	2,681	36,091	656,086	13.46	244.73
2007/08	2,683	38,578	827,009	14.38	308.27
2008/09	2,770	41,038	904,309	14.81	326.46
2009/10	2,842	45,166	1,030,837	15.89	362.76
2010/11	2,669	44,251	1,013,171	16.58	379.55

Source: NHB, based on DHB of service

Figure 31: *Northland home-based care: Household Management (HM) services compared with Personal Care (PC) services, cost and hours per client 2006/07 to 2010/11*



Dementia services

The number of Northland residents utilising subsidised dementia residential care has risen over the past five years, though numbers vary from year to year. At face value this represents a 7% increase per annum, higher than population growth (Table 22). Expenditure on dementia care has increased at a similar rate. Northland has only a slightly higher rate of dementia bed utilisation than the Northern Region average currently. (Table 22)

Table 22: *Northland residents in dementia residential care*

Year	Dementia Clients	Derived Cost to NDHB
2006/07	113	$1,973,000
2007/08	148	$2,113,000
2008/09	135	$1,912,000
2009/10	158	$2,326,000
2010/11	161	$2,815,000
Average annual growth	**11** **7%**	**$189,600** **8%**

Includes those not based in a Northland facility

Table 23: *Dementia bed utilisation as at June 2011*

Area	Occu-pied	Con-tracted	Occu-pancy (%)	Pop. Over 75	Rate/ 1000 over 75
NDHB	92	99	93%	10,630	8.7
WDHB	197	215	92%	29,215	6.7
ADHB	250	269	93%	19,050	13.1
CMDHB	104	112	93%	19,130	5.4
Northern Region	643	695	93%	78,025	8.2

Source: NDSA HOP Service Utilisation Report Sept 2011. Figures here represent a snapshot of occupation for that month. Not all dementia patients will be aged over 75, but the derived rate is indicative of the potential demand.

Mental Health

In 2011, 3.63% of the Northland DHB population accessed specialist mental health and addiction services, higher than the national percentage (2.81%). The New Zealand health system goal of 3% of the population being serviced by specialist mental health and addiction services as a useful reference point.

Over the last five years there has been 43% growth in people seen in mental health and addiction services. The most dramatic growth has been a 92% increase of people referred to addiction services and a further 92% growth in Child and Adolescent Mental Health Service (Te Roopu Kimiora) referrals.

It is likely there are further gains to be made by additional investment in mental health services in Northland, including early intervention, community support and a shift in emphasis from pharmaceutical to psychological approaches to therapy. Of particular interest will be investment in preventive care, particularly at the 0 to 3 year old stage 'first 1,000 days'.

Some indicators of child and youth mental health in Northland suggest that significant further gains will be possible:

- Relatively high rates of youth suicide: during 1990-2006, a total of 73 Northland young people aged 15 to 24 years died as the result of suicide
- Over half the young people (aged 15 to 24) receiving a sickness benefit as at April 2009 did so for psychological/psychiatric reasons.

Access to specialist mental health and addiction services has continued to increase each year. Access rates exceed national averages in all services except psychiatric services for older people. Te Roopu Kimiora (Child and Adolescent Mental Health Service) in particular has experienced significant growth in the last year.

NDHB will work with health of older people services to develop an agreed model for the delivery of mental health and addiction services for older people to achieve 3% access rates by 2013, including population growth. (Dementia is discussed under Health of Older People).

Northland does however appear to have a significant group of clients who require ongoing support from specialist mental health services. 23% of clients are long-term clients (sixth highest in NZ), and third highest in relation to the number of long-term clients who were admitted. NDHB will develop clinical pathways for the major psychiatric disorders that are managed within the service to improve both clinical effectiveness and outcomes for those people who present with schizophrenia, bipolar and dementia. Between 25% and 58% of adult clients have co-existing problems.

42% of people accessing the services were Māori. Access rates for Māori to specialist services in NDHB are above the national averages, with the exception of Kuia/Kaumātua. Strategies need to continue to enhance engagement in treatment. It is noticeable however that significantly less Māori access specialist services through primary care.

General practitioners are the most significant referrer for all specialities except alcohol and drug services where the main referrers are Justice services. Māori are less likely to access specialist services via their GP. NDHB will work with primary care to promote the use of screening to enhance the earlier detection of mental illness and alcohol/substance abuse for Māori (both adults and youth). NDHB will work with PHOs, GPs and NGOs to develop a system to ensure all clients with severe mental illness who have been in the service for more than two years, have regular physical assessments by a GP practice.

The demand on acute inpatient services, along with sub-acute units, is rising. Inpatient services are resource-intensive in comparison with community services. A new 25-bed inpatient unit consisting of child and youth, adult and older people services opened in 2011. There needs to be a continued focus on strategies to reduce the demand for acute inpatient services, including respite. The aim will be to increase discharges from the service, with a clear pathway for re-entry when it is needed, and extending the role of community support workers across the age groups and sector.

It is noticeable, however, that the service has a greater proportion of people who have been in the service for more than a year, and a greater proportion of admissions are clients known to the service. The level of deprivation and the higher percentage of Māori in Northland may well contribute to these differences from national averages. It is recognised that the proportion of clients with schizophrenia and drug/alcohol problems in Northland is relatively high. Strategies to better manage clients with significant morbidity and to increase turnover will be major areas of focus over the next year.

It is evident that alcohol and drug misuse is prolific, with 3% to 6% of youth using alcohol and/or drugs four times or more a week. Strategies to enhance detection of significant

substance abuse need to be improved. A number of strategies will be employed to reduce the harm of alcohol and other drug issues by:

- Increasing access rates to AOD services by child and youth
- Increasing identification of AOD issues
- Increasing collaboration, integration and liaison with community support services
- Increasing comprehensive assessments, treatment, therapy, support and care coordination by specialist AOD services
- Development of a reporting schedule to monitor waiting times between referral and assessment of non-urgent referrals, with the aim of 80% waiting less than three weeks and 95% of clients waiting less than eight weeks for assessment.

Investment in NGO-provided mental health and addiction services is being reconfigured in 2012/13 to meet changing demands. These are: ageing population; people living with co-existing problems and co-morbidities; Māori aged 15 to 35 years, and moving intervention upstream.

Child and Youth Health

In 2011 there were 54,380 estimated resident children and young people in Northland (ages 0 to 24), making up 34% of the Northland population. While not expected to grow significantly over the next 10 years, the health status of the current and future generations of Northland children and young people set the base for the ongoing health of the Northland population. The child and youth health reports for Northland, commissioned by Northland DHB from the Paediatric Society of New Zealand, (www.northlanddhb.org.nz/publications/) describe the health needs and outcomes for Northland children and youth in tremendous detail, and are an excellent resource. Key points include:

1 Northland has a relatively high neonatal and infant mortality rate compared with NZ, with Māori tamariki particularly high. The single largest factor is sudden unexpected death in infancy (SUDI), with interventions around sleep position, reducing second-hand smoke and health education possible. Antenatal concerns are noted in maternity above.

2 Relatively high rates of hospital admissions for infections (skin, respiratory) and other conditions linked to socioeconomic conditions, and particularly for Māori tamariki. Long-term sequelae from repeated respiratory infections such as bronchiectasis are noted. Apart from the social determinants (like child poverty and housing), better access to primary care, nutrition, including breastfeeding, and hygiene and other parenting skills are highlighted.

3 Rare but devastating infections remain an issue for Northland children and youth: meningococcal disease, rheumatic fever, tuberculosis, osteomyelitis. Again Māori tamariki bear the brunt of this.

4 High rates of teenage pregnancy. During 2003-2007 teenage births were significantly higher for Northland Māori (around 8% of all 15 to 19 year olds each year) compared to European/other (around 2%), with both groups higher than their NZ counterparts. Data is difficult to compile in this area, but the information presented on terminations of pregnancy and sexually transmitted infections imply a significant issue with unprotected intercourse in Northland youth.

5 High rates of injury. Northland has higher death rates from injury (18 compared with 111/100,000 0 to 14 year olds, and 81 compared with 56/100,000 15 to 24 year olds for 2001-2005) and higher hospitalisation rates (18 compared with 14/1000 0 to 14 year olds and 27 compared with 17/1000 15 to 24 year olds. On average 12 Northland children and young people died as the result of a land transport injury each year from 1990-2005.

6 Dental caries rates are much higher than the New Zealand average. Lack of fluoridation is an important feature here.

7 Daily and regular youth smoking rates in Northland were higher than in New Zealand based on the Action on Smoking and Health (ASH) survey of 14 to 15 year olds. More than 15% of youth in Northland DHB smoked cigarettes on a regular basis. Also high were alcohol use by teenagers and marijuana use.

8 Child obesity is an increasing concern, with 12% of Māori children (aged 2 to 14) and 6% of European/Other children measured as obese in the 2006/07 NZ Health Survey. The burgeoning diabetes epidemic has its roots in adolescent nutrition and physical activity.

9 Significant issues in child and youth mental health are noted (see the mental health section).

10 Action in the youth risk-taking area of work would seem important, impacting on 4, 5, 7 and 9 above.

Funding and Expenditure

Northland DHB has consistently managed within its available funding over the last five financial years. It is forecasting a very modest deficit in out-years (Table 24).

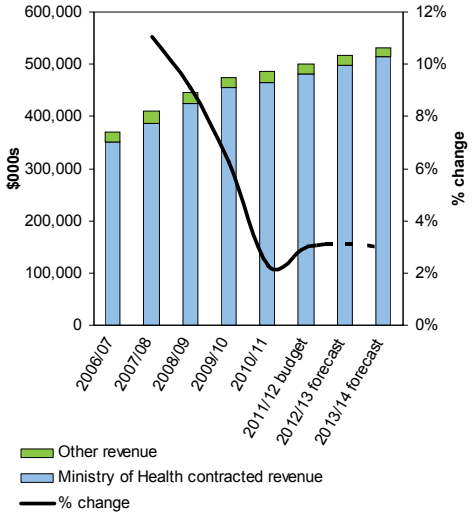
Table 24: *Northland DHB revenue and expenses 2006/07 to 2010/11 and forecast to 2013/14 ($000)*

Financial Year	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12 Budget	2012/13 Forecast	2013/14 Forecast
Revenue	368,965	409,755	447,024	475,105	486,002	500,504	515,871	531,246
Less:								
Operating expenses	354,476	394,155	431,155	455,742	468,064	480,533	493,667	506,817
Cost of capital	13,799	14,859	15,574	18,601	17,938	19,971	22,213	24,458
Equals:								
Surplus/ (Deficit)	**690**	**741**	**295**	**762**	**0**	**0**	**(9)**	**(29)**

Sources: NDHB Annual Reports & District Annual Plans

The majority of Northland DHB revenue comes from Ministry of Health devolved and contracted funding. Following significant revenue growth between 2006/07 and 2009/10, Northland DHB's revenue growth has decreased and is projected to remain around 3% for the next three financial years (Figure 32). The decrease in revenue is primarily a result of cost containment in the public health system. It is likely that revenue growth will remain subdued over the next five financial years.

Figure 32: *Northland DHB revenue 2006/07 to 2013/14*



NDHB allocates approximately 52% of its available funding (excluding governance and executive management costs) to its hospital services, with almost all of the remaining 48% of funding allocated to non-NDHB provider services via the primary and community services arm.

Figure 33 provides a snapshot of Hospital Services expenditure areas in 2010/11. The largest service areas by expenditure are:

- Whangarei Hospital surgical services (22%)
- Whangarei Hospital specialist mental health and addiction services (12%)
- Whangarei Hospital medical services (12%)
- District hospital services including acute medical, some surgical and emergency services (10%).

Figure 33: *Northland DHB services expenditure 2010/11*

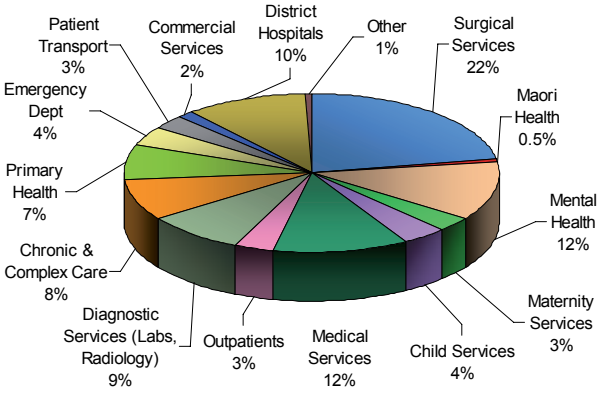
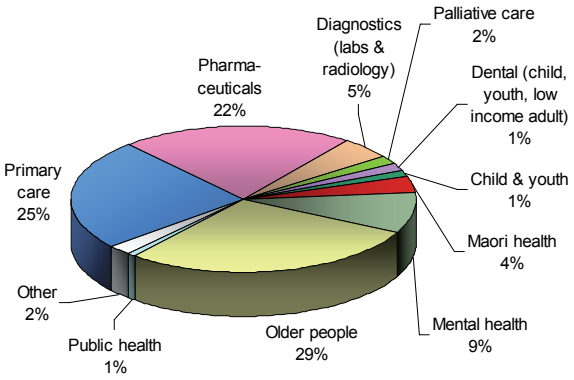


Figure 34 provides a snapshot of NGO expenditure by service area. The three largest expenditure areas are:

- Health of older people (29%)
- Primary care providers, primarily for general practice services (25%)
- Community pharmaceutical drug and dispensing costs (22%).

Figure 34: *Northland NGO expenditure 2010/11*



Workforce

Northland DHB currently employs 1,954 full-time equivalent (FTE) staff across a range of functions (Table 25).

Table 25: *Northland DHB workforce 2010/11*

DHB employees	Headcount	FTEs
Allied Health	567	448
Manage/Admin	458	341
Nursing	1,273	884
Support	89	72
Senior Medical	165	127
Junior Medical (Registrar & HO)	93	82
Total	**2,645**	**1,954**

There are currently 101 FTE general practitioners (GPs) and 111 FTE practice nurses (PNs) providing care in Northland (Table 26).

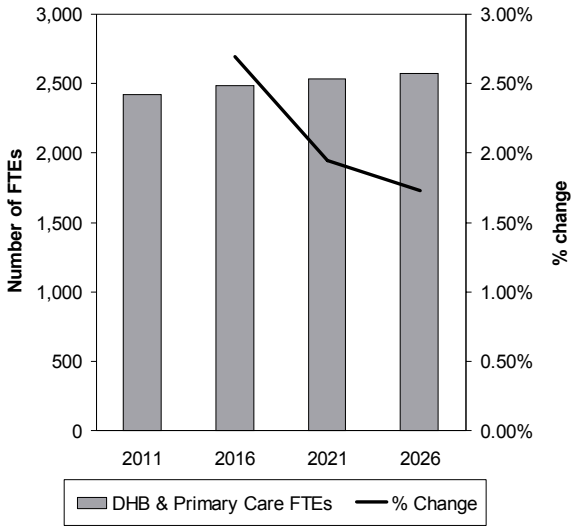
Table 26: *Northland primary care workforce 2010/11*[16]

Primary health care staff	FTEs
GPs (includes locums)	101
Practice Nurses	111
Pharmacists	63
Physiotherapy	74
Midwives	62
Other	33
Total	**444**

There are 11 identified Māori non-government organisations (NGOs) providing health services across Northland. Data gathered from nine of these NGOs show that they employ 665 FTEs, of which 80% identify as Māori and 20% non-Māori. The Māori health workforce comprises GPs, nurse practitioners and other nursing categories, dental therapists, mental health, alcohol and drug workers and Kaiawhina (community health workers), in both regulated and non-regulated roles.

Figure 35 shows projected future supply of DHB and primary health care FTEs between 2011 and 2026. It assumes that Northland's DHB and primary care FTEs comprise the same share of New Zealand's regulated health workforce and that New Zealand's regulated health workforce retains its proportionate share of the working-age population. It shows that while total DHB and primary health care FTEs will increase over the period, increases become progressively less in relative terms.

Figure 35: *Northland workforce current and projected future supply 2011 to 2026*



Sources: NDHB, PHOs, Statistics NZ, NZIER (2004)

[16] Please note that primary health care FTE estimates for those occupational groups other than GPs, PNs, and Community Pharmacists are approximate estimates using high-level national assumptions. They will be revised following further analysis undertaken during the development of the NHSP.

Appendix 4: Glossary of acronyms

Acronym	Meaning
A&D	alcohol and drug
ACC	Accident Compensation Corporation
ACP	advance care planning
ADHB	Auckland District Health Board
ALOS	average length of stay
AOD	alcohol and other drugs
AP	Annual Plan
ARC	aged residential care
ASH	Action on Smoking and Health
ASH	ambulatory sensitive hospitalisation, a subset of avoidable hospitalisations (sometimes also Action on Smoking and Health)
ASMS	Association of Salaried Medical Specialists
BAU	business as usual
BOI	Bay of Islands
BMI	Body Mass Index (a measure of healthy weight)
BSMC	Better, Sooner More Convenient
CBA	cost benefit analysis
CCP	Contribution to Cost Pressure (allowance for inflation)
CE	Chief Executive
CMDHB	Counties Manukau District Health Board
COPD	chronic obstructive pulmonary disease
CPI	Consumer Price Index
CSP	Clinical Services Plan, NDHB planning document from 2007
CVD	cardiovascular disease
CWD	cost-weighted discharge (often referred to as case-weighted discharge)
DHB	District Health Board
DNA	did not attend
DoL	Department of Labour
DONM	Director of Nursing and Midwifery

Acronym	Meaning
ECMS	Enterprise Content Management System, a large file-holding and file-sharing database
ED	Emergency Department
ELT	Executive Leadership Team (of Northland DHB)
FTE	full time equivalent (= 40 hours a week of work time)
GDP	Gross Domestic Product
GM	General Manager
GMS	General Medical Services Benefit (subsidy paid to GPs)
GP	General Practitioner
GST	Goods and Services Tax
Ha	healthAlliance
HBSS	home based support services
HBL	Health Benefits Limited
HEHA	Healthy Eating Health Action
HNA	health needs analysis
HOP	health of older people
HPCG	Health Partners Consulting Group
IDF	Inter District Flows
IFHC	integrated family health centre
KPI	key performance indicator
KRONOS	a business support financial system
LMC	Lead Maternity Carer
LOERS	lab orders and eResults sign-off
LOS	length of stay
LTC(s)	long-term condition(s)
MHINC	Mental Health Information National Collection
MoH	Ministry of Health
MOH	Medical Officer of Health
MSD	Ministry of Social Development
NASC	Needs Assessment and Service Coordination
NDHB	Northland District Health Board

Acronym	Meaning
NDSA	Northern (region) DHB Support Agency
NGO	non-government organisation
NHB	National Health Board
NHI	National health index
NHSP	Northland Health Services Plan
NIF	Northland Intersectoral Forum
NIR	National Immunisation Register
NMDS	National Minimum Data Set, a national collection of public and private hospital discharge information
NNPAC	National Non-Admitted Patient Collection, data on outpatients and ED patients
NRHP	Northern Region Health Plan
PBF(F)	Population Based Funding (Formula)
PHARMAC	Pharmaceutical Management Agency of New Zealand
PHO	Primary Health Organisation
PHN	Public Health Nurse
PHU	Public Health Unit
PMPPH	Planning, Māori, Primary & Population Health
PN	Practice Nurse
POPN	Primary Options Programme Northland
RBA	results based accountability
ROERS	radiology orders and eResults sign-off
SCBU	Special Care Baby Unit
SCOPE	Service Coordination, Primary Care Navigation for Older People in their Environment
SHO	Senior House Officer
SMG	Service Management Group
SMO	Senior Medical Officer
SNZ	Statistics NZ
SOI	Statement of Intent
STI	sexually transmitted infection

Acronym	Meaning
SUDI	sudden unexpected death in infancy (also sometimes sudden unexplained death in infancy)
tamariki	children
TLA	Territorial Local Authority
TPK	Te Puni Kokiri
TTT	Te Tai Tokerau
VfM	value for money
WDHB	Waitemata District Health Board
WHO	World Health Organisation
WIES	weighted inlier equivalent separations, a method of weighting treatment procedures according to their complexity and therefore resource use
WOC	Whānau Ora Collective

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