

ASSETFUTURE

Empower Tomorrow

HEALTHCARE IN NZ: INDUSTRY VIEWPOINT

Overview

New Zealand's healthcare system performs relatively well overall when compared to other nations, but there are significant inequities in access and outcomes.

New Zealand's health care system ranks well against other OECD countries in terms of life expectancy with both male and female life expectancy being slightly greater than the average.

However, Maori males live 4.8 years less and Maori females live 4.4 years less than OECD averages.

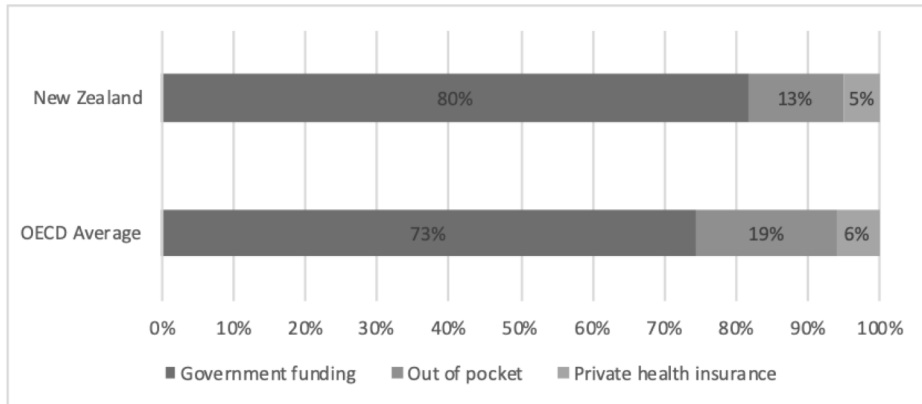


With healthcare largely government funded, New Zealand spends less than other countries when measured by cost per person as shown in the table below.

	New Zealand	OECD average
Health expenditure as a share of GDP	9.5%	8.9%
Government share of total health expenditure	80%	73%
Out of pocket of current health expenditure including private health insurance	18.0%	27.4%
Per capita spending	US\$3,328	US\$3,453

Source: OECD, Stats NZ, World Bank

Compared to other countries, New Zealand tends to have a higher proportion of health expenditure from government sources as illustrated in the diagram below. This funding is largely sourced through general taxation.



The health system in New Zealand is overseen by a central minister and the Ministry of Health. Approximately 75% of Government health funding is channelled through 20 geographically distributed District Health Boards (DHBs), which are responsible for planning, delivering and funding services in their districts.

The remaining funding is largely distributed to national services such as mental health.

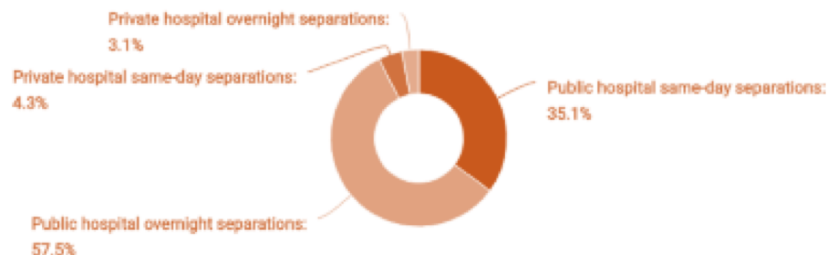
Private hospitals complement the public health system and are funded through health insurance payments and out-of-pocket patient fees. Private health insurance revenue has **gradually increased** in recent years and is expected to continue to grow. However, insurance membership has decreased as a percentage of the population.



While there has been a focus on strengthening primary healthcare to reduce demand on hospitals, there seems to be room for further improvement.

Hospitals

Public hospitals account for **92.6%** of hospital revenue while private hospitals account for **7.4%** as illustrated in the diagram below.



2019 INDUSTRY REVENUE

\$20.1bn

Hospitals in New Zealand
Source: IBISWorld

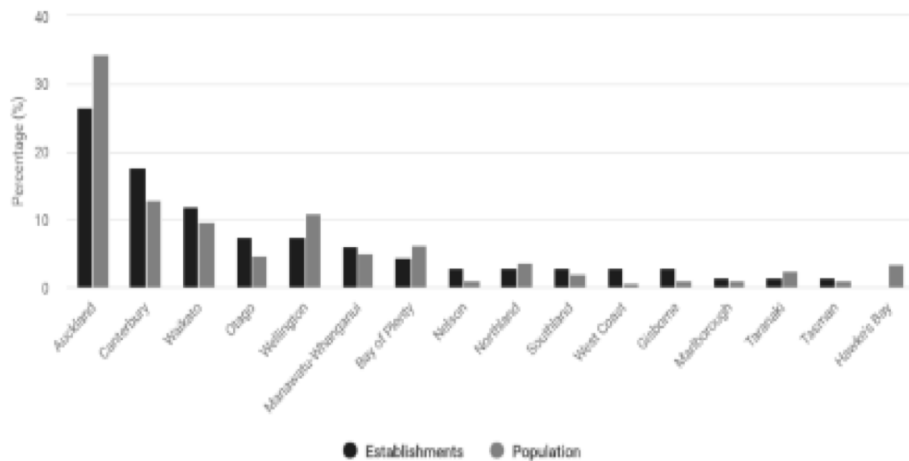
There are **81 public** and **74 private** hospitals certified in New Zealand in December 2019 as listed on the Ministry of Health website. Public hospitals dominate the sector, with the four largest public hospitals accounting for over **30%** of total hospital revenue.

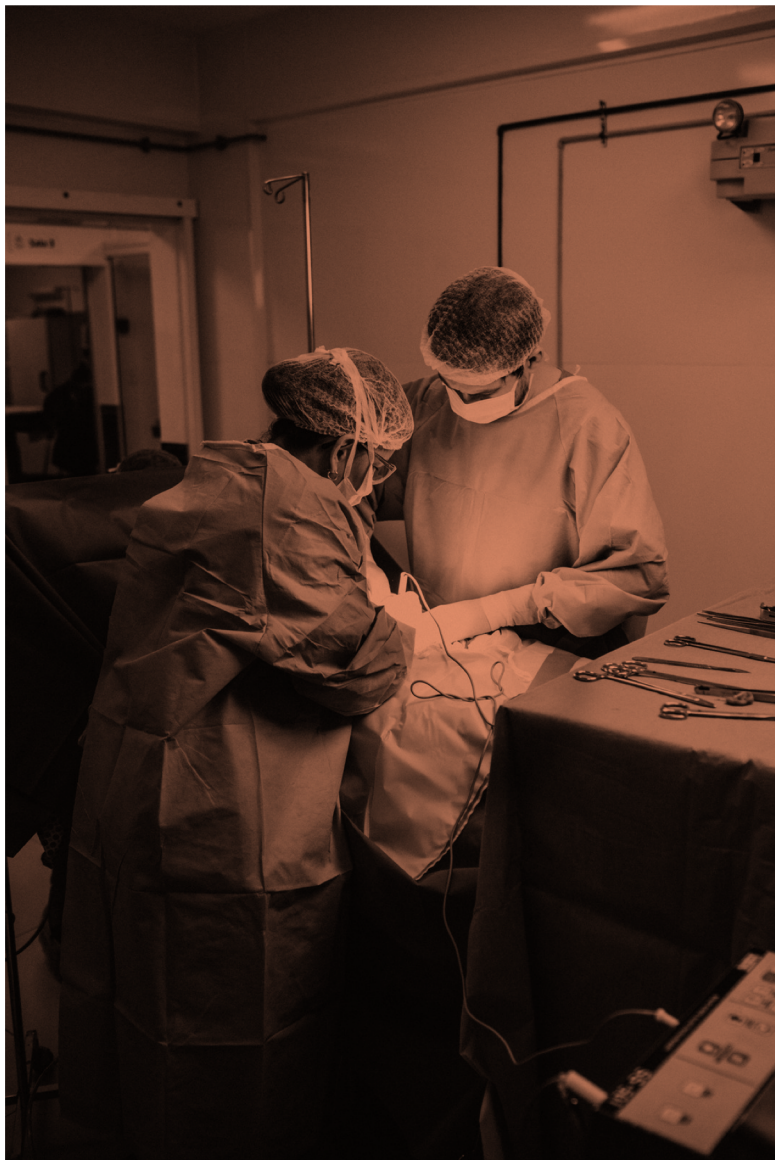


Private hospitals supplement the public system and provide an alternative by enabling patients to choose their doctor for surgery and medical treatments.

The location of hospitals is strongly influenced by the population. Most industry establishments are located in Auckland and Canterbury, which account for almost **45%** of hospitals and about **47%** of the population. Other factors affecting hospital locations include the age distribution of the population, household incomes, government health policies and birth rates.

Distribution of Establishments vs Population

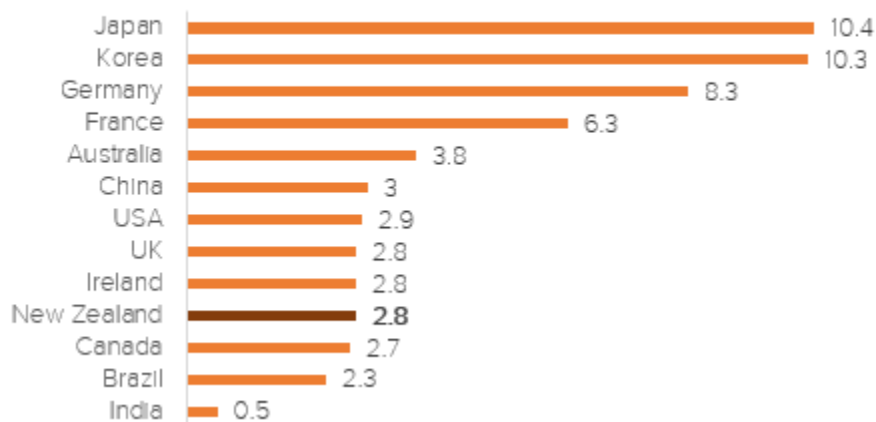




Hospital beds

There is a total of 9,805 beds in the certified public hospitals in New Zealand which is supplemented with an additional 1,784 beds in non-government hospitals. OECD figures in 2012 show New Zealand had 2.8 beds per 1,000 people - the same as Ireland and United Kingdom - but well below leaders Japan, on 13.4, Korea, 10.3, Germany 8.3 and Australia 3.8.

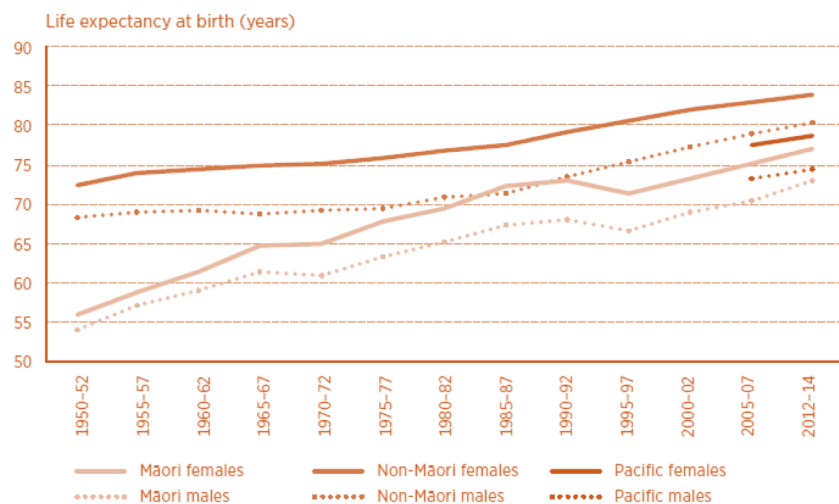
Hospital beds per 1000 people, 2012



Pressures on the healthcare system

Aging population pressures

New Zealanders are living longer, leading to a change in the nature and an increase in the occurrence of health and social services required to maintain people healthy and independent.



Source: Complete New Zealand Period Life Tables – time series summaries: Life expectancy by age and sex, 1950–52 to 2012–14 from Statistics New Zealand.

The implication of the aging population is two-fold. Older patients will require higher levels of care and will become more likely to have multiple health conditions to deal with. Chronic diseases are becoming more prevalent, which often require hospital care to manage such illnesses.

Dementia is a prime example where the number of dementia sufferers is expected to rise from around 48,000 in 2011 to around 78,000 in 2026. Terminal illness, more prevalent in the elderly often requires palliative care, which mainly takes place in hospitals.

High Obesity Rates

Another issue putting pressure on the health system are the high obesity rates in New Zealand. The 2018/19 New Zealand Health Survey revealed that 30.9% of adults (aged 15 and over) were obese. This rate was much higher for Pacific adults at 66.5% and Maori adults at 48.2%. New Zealand is ranked second highest in child obesity in the OECD with 39% of New Zealand kids classified as obese or overweight.

These unfortunate statistics have led to a high incidence of cardiovascular disease (mainly heart disease and stroke), Type 2 diabetes, musculoskeletal disorders like osteoarthritis, and some cancers (endometrial, breast and colon). These conditions can lead to the need for hospital care.



In addition to hospitalisation, there is an increase in:

- Spend on **pharmaceuticals** due to increased admission or dosage
- Cost of **equipment** to manage overweight people such as beds, wheelchairs and walkers
- Hospital staff **injury** caused when helping patients with mobility

In the absence of recent studies into the cost obesity has on the New Zealand economy, comparisons can be made with research conducted by PwC in Australia in 2012. This research concluded that the direct cost of obesity in Australia in 2011-12 was AU\$3.8 billion.

Extrapolating this figure to the population in New Zealand in 2019, the estimated direct cost to the health care system would be NZ\$845 million.

Direct costs included GP visits, allied health and specialist's visits, hospital incurred costs, pharmaceuticals and weight loss interventions.

Adding to this burden on the health system is the indirect costs to the economy including absenteeism, presenteeism, disability payments, forgone earnings and taxes and unemployment.

These indirect costs were modelled to be AU\$4.5 billion in 2011-12 in Australia, even greater than the direct costs. This makes for a significant burden on the Government to support this significant and growing problem.

Environmental Factors

Much research has been undertaken to quantify the impact that the environment has on patient outcomes whilst in hospital.

Some of the more documented environmental factors include:

- Excessive heat exacerbating the effects of air pollution and increasing the risk of biological hazards.
- A 0.9% increase in mortality for every 1 degree Celsius increase in maximum temperature in Sydney. This affects elderly people in particular as they have a reduced ability to regulate body temperature.

Climate change is predicted to lead to an increase in temperature related deaths by as much as 10% in Queensland and the Northern Territory by the end of the century.

Low UVR exposure can cause vitamin D deficiency which is associated with rickets and osteoporosis.

Poor building ventilation and chemical and biological contaminants can lead to Sick Building Syndrome (SBS) which is known to cause headaches, eye, nose or throat irritation, dry and itchy skin, dizziness and nausea, difficulty concentrating and fatigue.

Dampness and mould can increase respiratory and asthma related health outcomes by 30-52%.

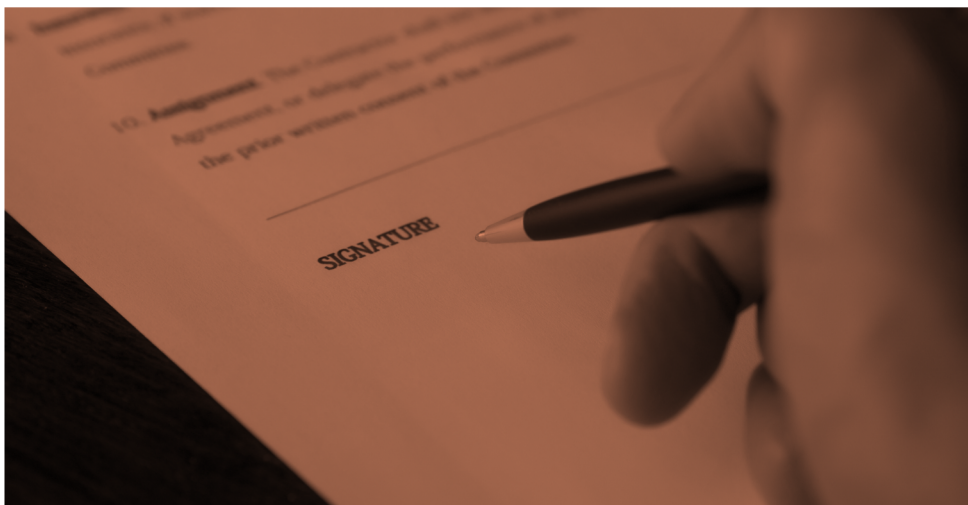
A Government initiative to deal with pressures on funding

New Zealand's Minister of Health has asked the Ministry of Health to develop a National Asset Management Plan (NAMP) by December 2019 to provide a more standardised and rigorous process to prioritise capital investment.

The NAMP will also enable the Government to make more informed decisions and to better prioritise remediation work and plan for new facilities especially in times of constrained funding.

The NAMP will require collection and management of information about the hospitals' assets including:

- Asset condition
- Fitness for purpose
- Demand
- Capacity



In response to this request, the Ministry of Health undertook a study to determine if a national asset register was required. A sample of DHBs took part in the study that resulted in the conclusion that the overall asset management maturity in the sector was 'basic'.

A high level review of system solutions for the National Asset Register was also undertaken, with some of the key findings of these reviews including:

- Only 1 out of the 10 DHBs sampled had developed levels of service for the assets
- Most asset management plans did not reflect current practices and not integrated with other planning documents
- Management of clinical equipment was much better than buildings and infrastructure
- The methodologies used by DHBs to assess building condition varies considerably
- Storage of building and infrastructure information is across multiple registers and varies from formal asset management systems to spreadsheets and paper systems

While there was a positive level of support from the DHBs for a NAMP and National Asset Register, there was considerable scepticism, based on the failures of previous nationally driven projects, about the feasibility of delivering the National Asset Register for critical assets, particularly in the given timeframe.

How AssetFuture can help deal with these future pressures

AssetFuture is a cloud-based asset intelligence platform that provides a highly data driven means of forecasting operating and capital funding required to maintain health facilities and equipment to a pre-determined condition and risk level. The data analytics can not only determine the baseline funding required over the life of the assets, it can also assist with balancing condition and risk in an environment where funding is constrained.

This is especially important to healthcare providers struggling for sufficient funding to suit their needs and minimise the cost of maintaining facilities. Predictive analytics helps reduce the cost pressures placed on the health care sector, maximising the ability for each organisation to continue to provide much needed and increasing services to the community.

Asset Register

At the core of the AssetFuture platform is a comprehensive asset register containing:

- a unique identifier for each asset in the portfolio
- a location identifier within the asset hierarchy as well as a geographical reference
- the current condition of each asset
- the criticality of each asset to achievement of the organisation's objectives
- levels of service required for each asset based on its criticality
- activities required to maintain the asset over its lifecycle including to the determined level of service
- the future financial, risk and condition implication of each of these activities

Name	Start Date	Item	Age	Cost	Status
Administration Medical Imaging Work Room	MedicalImaging	16	2019	100	Active
Administration Medical Imaging Office	MedicalImaging	16	2019	100	Active
Medical Medical Imaging Scan Room	MedicalImaging	16	2019	100	Active
Medical Medical Imaging Scan Room	MedicalImaging	16	2019	100	Active
Medical Medical Imaging Charge Room	MedicalImaging	16	2019	100	Active
Administration Medical Imaging Waiting	MedicalImaging	16	2019	100	Active
Medical Special Treatment	Special	20	2019	100	Active
Storage Health Store	Health	16	2019	100	Active
Medical Health Gym	HealthGym	20	2019	100	Active
Medical Health Cabinet 1	HealthCabinet	8	2019	100	Active
Medical Health Cabinet 2	HealthCabinet	8	2019	100	Active
Administration Health Store	Health	16	2019	100	Active
Administration Health Office	Health	16	2019	100	Active
Administration Emergency	Emergency	20	2019	100	Active
Administration Admin General Office	AdminGeneralOffice	16	2019	100	Active
Administration Admin Office	AdminOffice	16	2019	100	Active
Administration Admin Office	AdminOffice	16	2019	100	Active
Administration Admin Office	AdminOffice	16	2019	100	Active
Administration Admin General Office	AdminGeneralOffice	16	2019	100	Active

The platform could form the basis of the **National Asset Register** and the data analytics required to produce the NAMP.

Asset Management Plan

The platform is used as a primary input source to an Asset Management Plan or NAMP as described by the Ministry of Health. These Asset Management Plans optimise asset related outcomes based on stakeholder expectations and a given funding level by prioritising investment where it is most needed. This maximises patient outcomes as well as satisfaction levels with services provided.

Asset Information Management

AssetFuture also works with organisations to maximise the benefits associated with using the platform. This can include carrying out an Asset Information Management Maturity Assessment in order to identify process improvements to the way asset information is managed across the business. AssetFuture can then work with the organisation to develop an Asset Information Strategy, which is essentially a road map of prioritised activities to carry out improvements identified during the assessment.