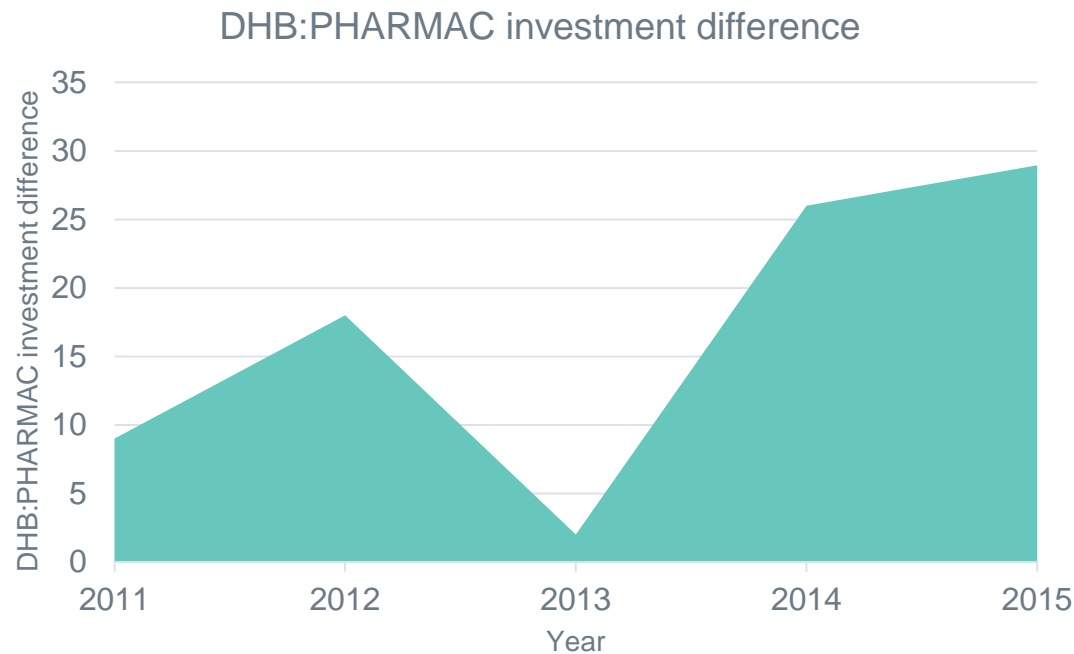


Cancer in New Zealand

Epidemiology, Survival
Rates and Access to
Medicines



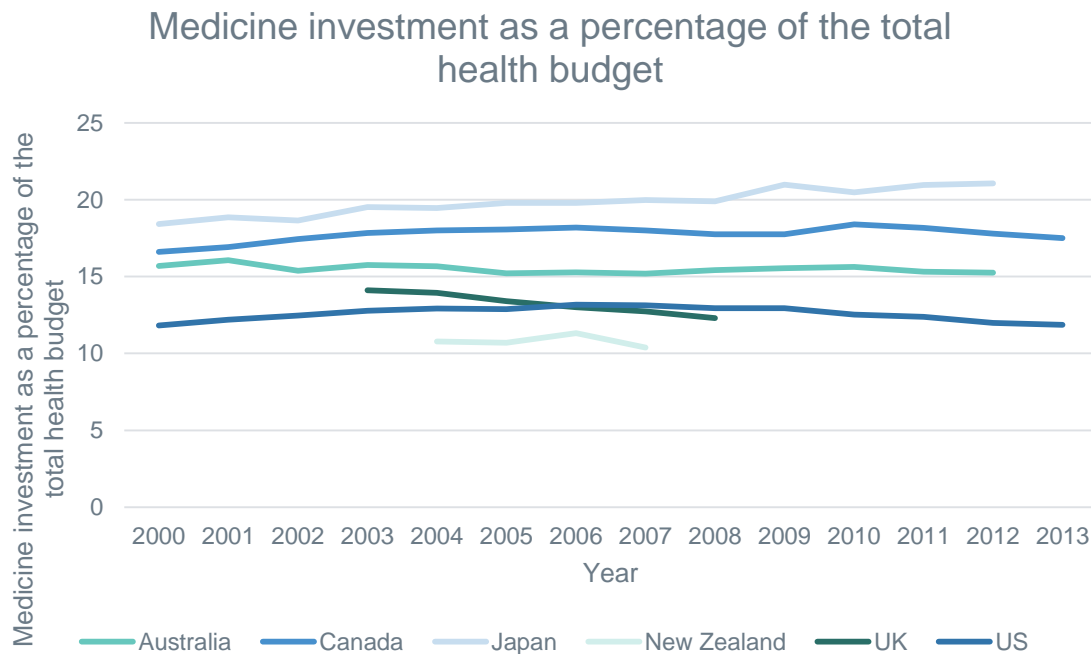
The growth in year-on-year healthcare investment is up to 29 times higher than for medicines



Source: PHARMAC and New Zealand Treasury Vote Health Report

Why the discrepancy?

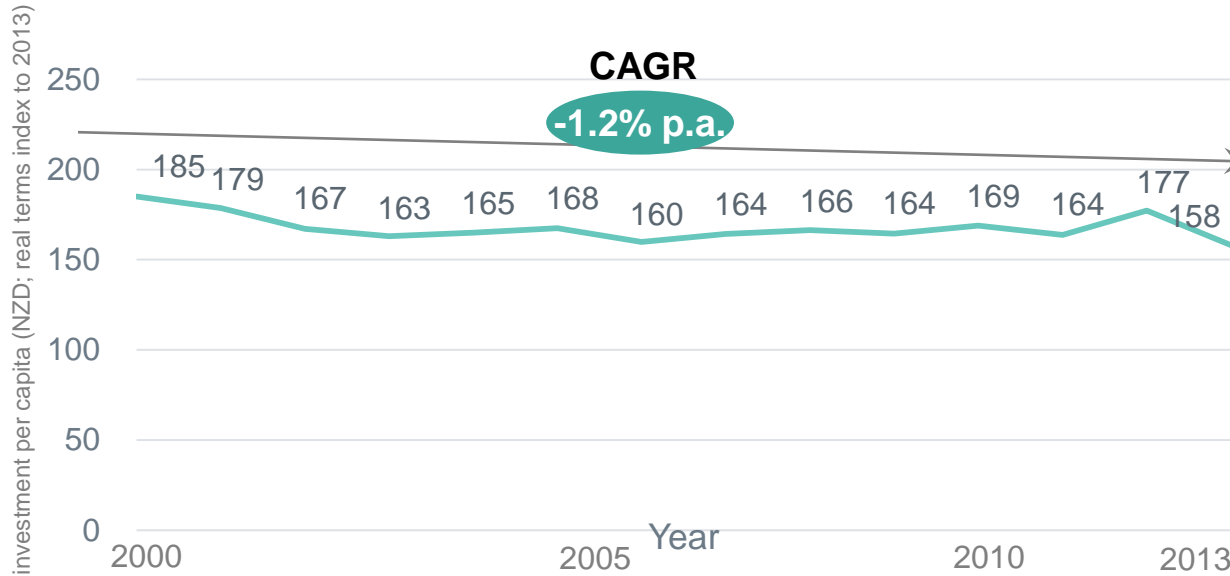
New Zealand invests well below the OECD average on medicines



In 2014 New Zealand invested only 9% of the total health budget compared to the OECD average 16%

Source: OECD (2015), Pharmaceutical spending (indicator). doi: 10.1787/998feb6-en
Vote Health 2014/15 THE ESTIMATES OF APPROPRIATIONS 2014/15 - HEALTH SECTOR B.5 Vol.6

New Zealand's medicines investment per person is decreasing



New Zealand invested 15% less per person on funded medicines in 2013 than in 2000

\$714 m¹ budget
3.86m popn

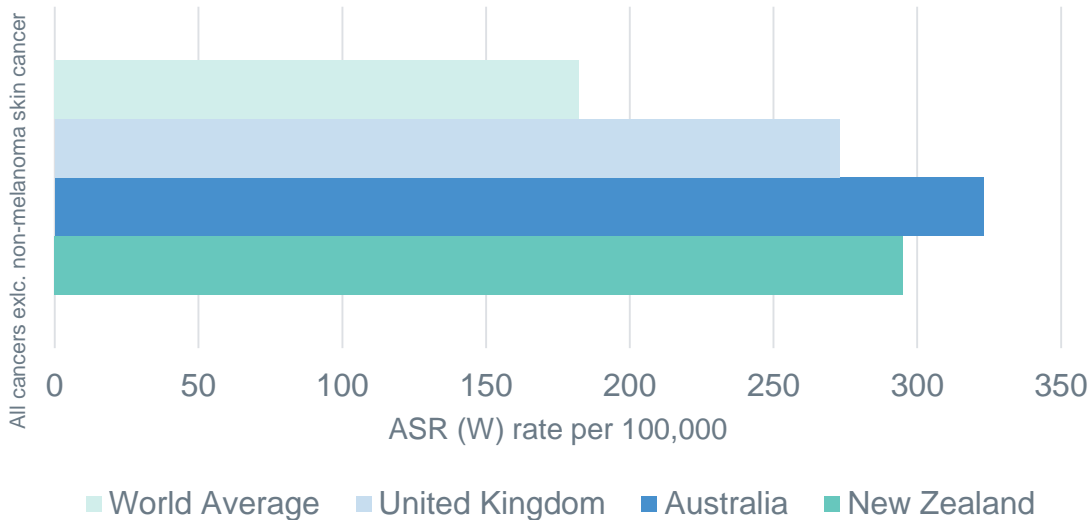
**Overall, 2000 – 2013:
-15% per capita**

\$733 m¹ budget
4.63m popn

1. In 2013 dollars. Excluding ~NZD 45M on vaccines for 2013 onwards 2. Excluding inflation (CAGR: 2.5%), indexed to 2013
Source: PHARMAC Annual Reviews; Statistics New Zealand

New Zealand's average cancer rates are over 62% higher than the world average

2012 all cancers excluding non-melanoma skin cancer rates



Source: GLOBOCAN 2012 (IARC)
PHARMAC Pharmaceutical Schedule 2015

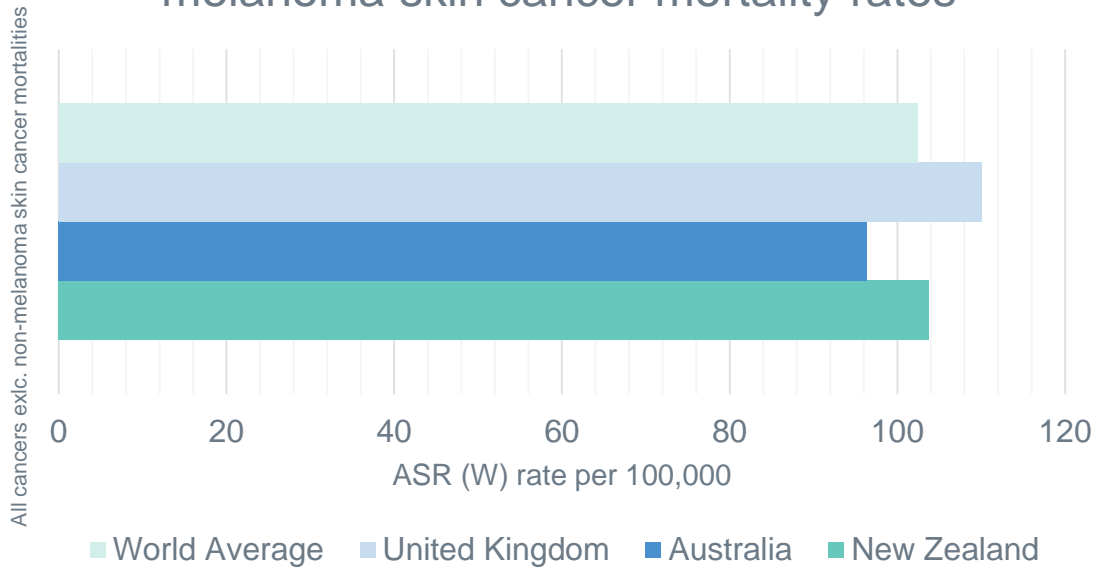
New Zealand has:

- Highest incidence rate of melanoma
- 4th highest rate of colorectal cancer in women
- 9th highest rate of colorectal cancer

- 13th highest rate of all cancers
- 18th highest rate of prostate cancer
- 19th highest rate of breast cancer

New Zealand's mortality rate exceeds Australia's average by 8%

2012 all cancers excluding non-melanoma skin cancer mortality rates

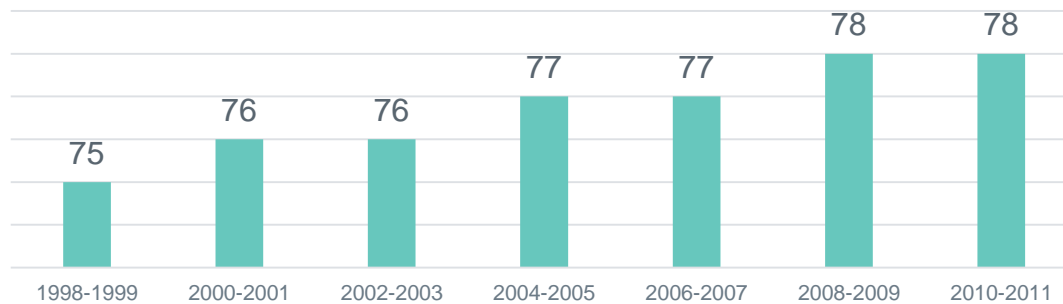


- Colorectal mortality rates are almost double the world average
- Melanoma mortality rates are more than four times the world average

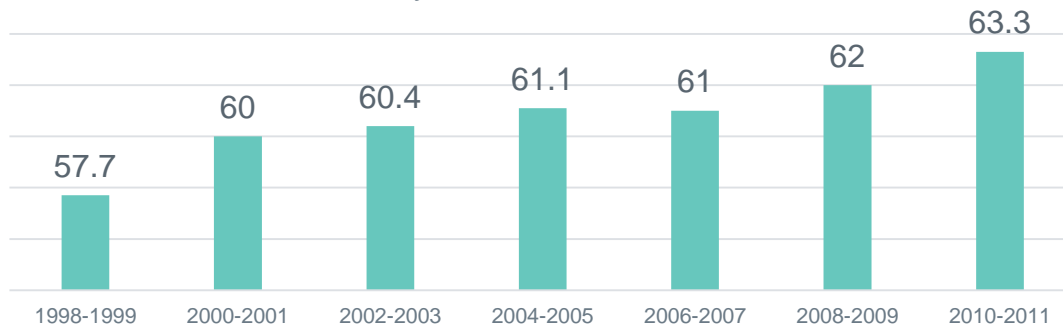
- New Zealand mortality rates exceed the overall world average

While survival is improving, New Zealand's survival rates are less than Australia and US

One-year relative survival %



Five-year relative survival %



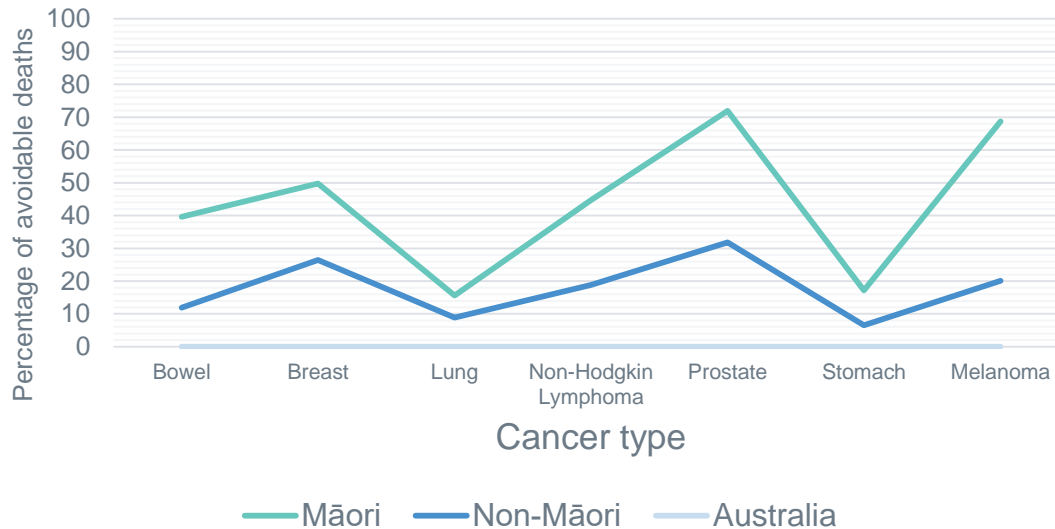
Source: Ministry of Health. 2015. Cancer patient survival 1994–2011. Wellington: Ministry of Health.
Aye et al, NZMJ, 2014
US Cancer Society, Facts and Figures, 2014

- Australia's one-year relative survival rate is 4.5% higher than New Zealand

- Australia's five-year relative survival rate is 4% higher than New Zealand
- US' five-year survival rate is 5.6% higher than New Zealand

Compared to Australia, New Zealand has much higher rates of avoidable cancer deaths

Avoidable cancer deaths compared to Australia



Avoidable deaths are particularly high for Māori

“The avoidable deaths in NZ may reflect a combination of earlier diagnosis, faster access to treatment and more effective therapy in Australia”*

Graph depicts the percentage of avoidable cancer deaths using Australia as the baseline.
Distribution of avoidable deaths by tumour site and ethnicity
Source: Sanford et al, How Many Cancer Deaths could New Zealand Avoid if Five-Year Relative Survival Ratios were the same as in Australia? Australian and New Zealand Journal of Public Health, 2015*

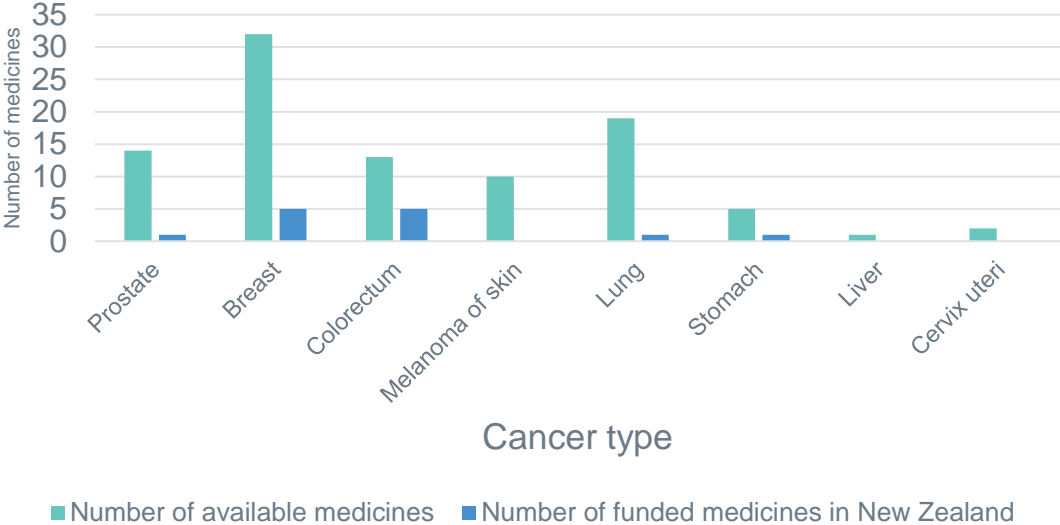
Out of 13 countries, New Zealand has the lowest ranking for access to cancer medicines

Access to medicines post-diagnosis	Canada		Switzerland		Australia		UK		Germany		Norway		Sweden		New Zealand	
	2009	2013	2009	2013	2009	2013	2009	2013	2009	2013	2009	2013	2009	2013	2009	2013
Cancer <5 years	12	9	6	2	10	12	11	7	4	3	9	4	7	6	13	13
Cancer 6-10 years	11	10	2	7	9	9	8	12	6	5	12	11	10	8	13	13
Cancer >10 years	10	10	5	11	12	6	9	4	4	9	11	13	8	5	13	8
Cancer hormones	10	12	9	13	11	11	5	9	3	8	8	4	7	3	13	6

Comparison of cancer medicines access for 13 countries – 2008/09 and 2012/13 ranked 6 to 13
 Source: Office of Health Economics, Richards Report 2014

New Zealand only funds 14% of highly effective available medicines for the 8 most prevalent cancer types

Number of cancer specific medicines vs medicines funded in NZ

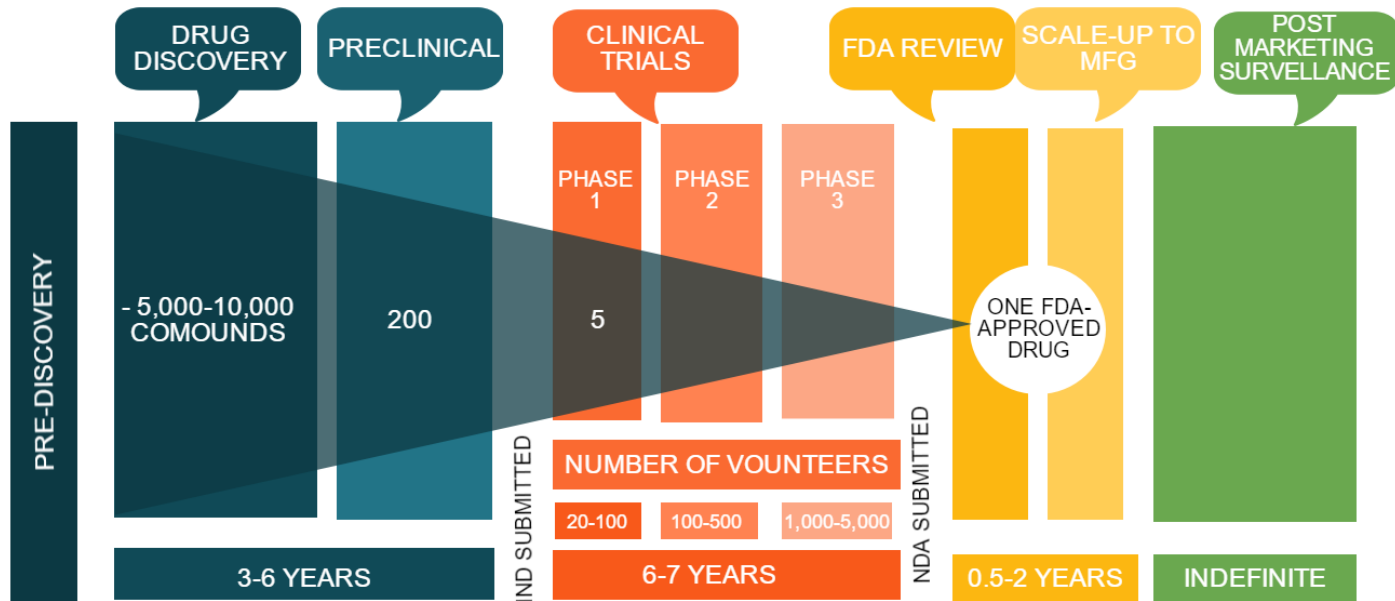


In some cases NO cancer specific medicines are funded in New Zealand

Data is not inclusive of chemotherapy and radiotherapy treatment
Source: GoodRx Inc 2015, PHARMAC

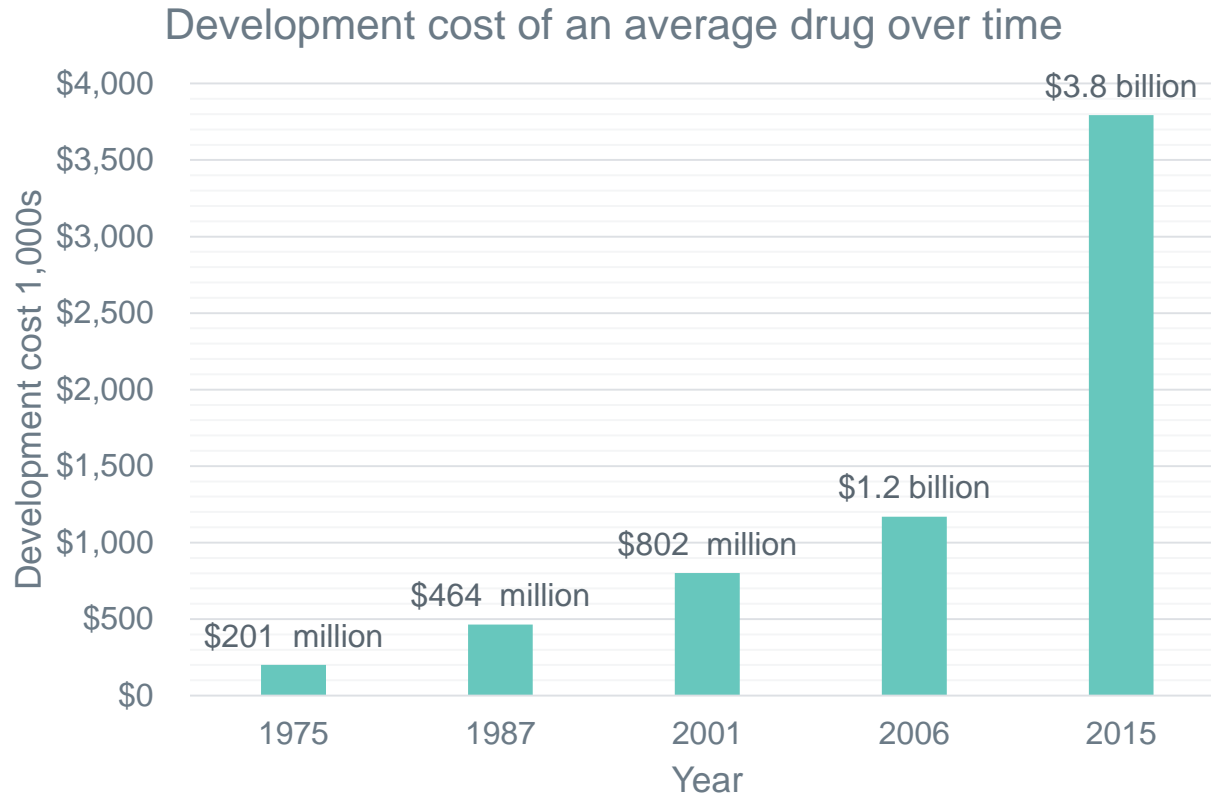
Research and Cancer Costs

It takes an average of 12 years to develop a medicine. Only 12% of drugs entering clinical trials result in approved medicines



Source: Shahza Somerville, Jessica Holden Kloda, Applied Clinical Trials, 2015

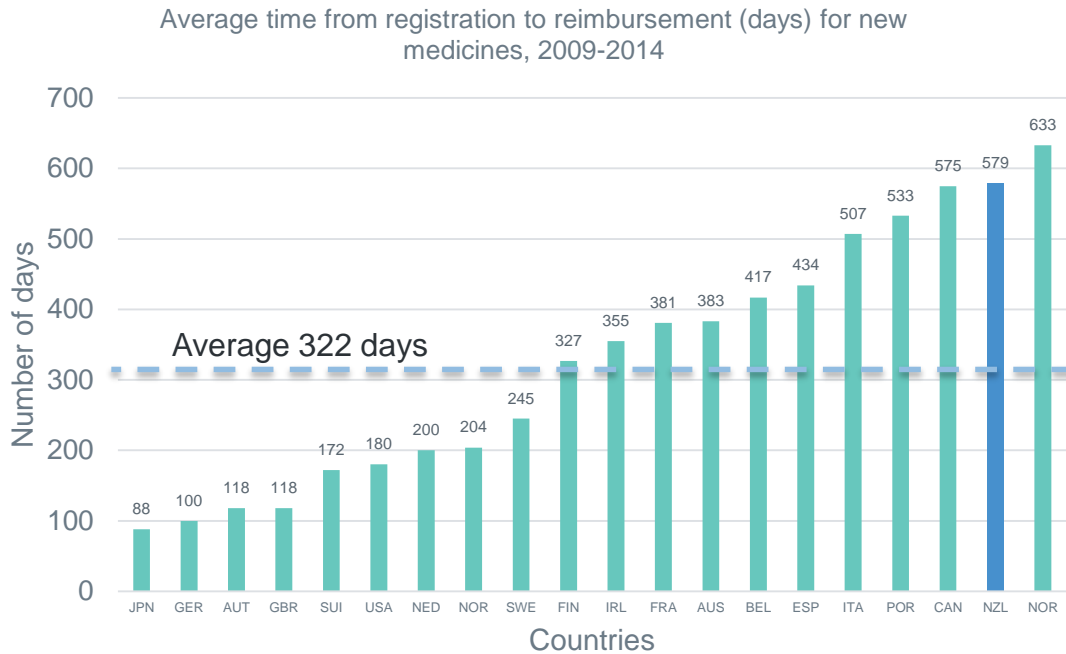
It now costs an average \$3.8 billion to develop a medicine



Source: 2010 Scientific American

DiMasi JA, Grabowski, HG. The cost of biopharmaceutical R&D: is biotech different? Manage Decis Econ. 2007;28:469-479

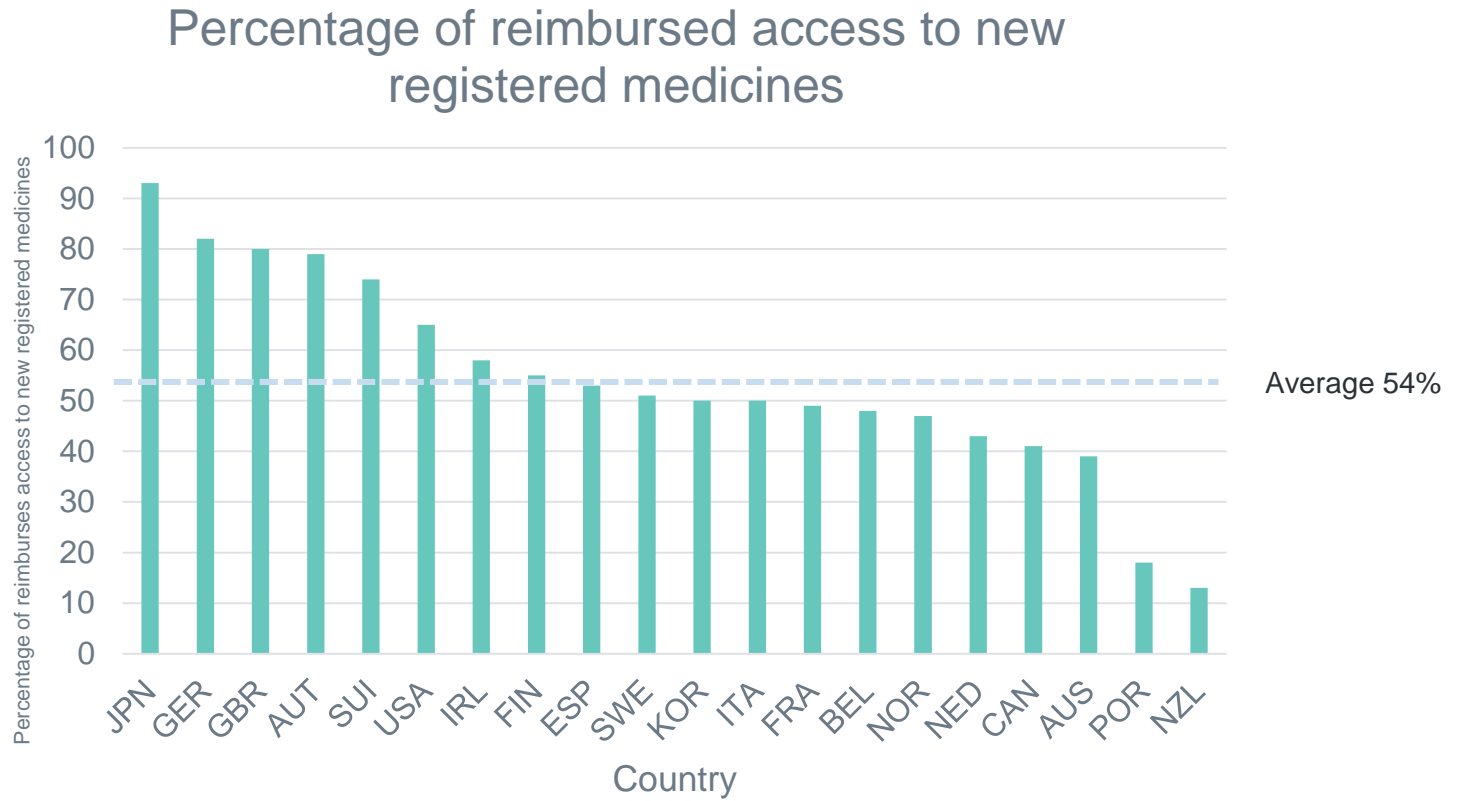
New Zealand lags behind the OECD average for reimbursing innovative medicines by almost a year.



Average time from registration to reimbursement (days) for new medicines, 2009-2014
Source: IMS COMPARE Report 2015

4 Medsafe approved cancer specific medicines have been waiting for funding for up to 4 years

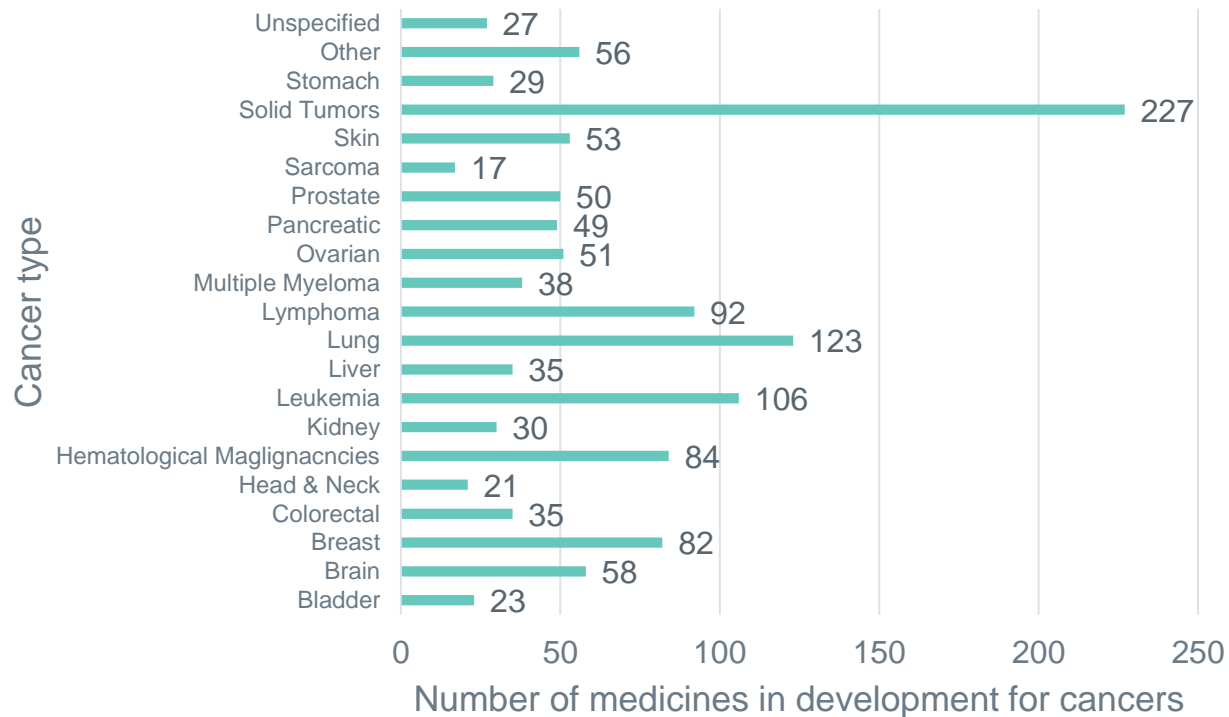
New Zealand ranks last out of 20 comparable OECD countries for access to innovative medicines



Source: IMS COMPARE Report 2015

There are over 800 innovative medicines in clinical testing for cancers

Medicines in development for cancers



Source: American Cancer Society 2015

As an example, innovative medicines have decreased the level of deaths from cancer by 22% in the USA since the 1990s

23 MILLION

Years of life saved due to cancer treatment advances, 1988 - 2000

\$1.9 TRILLION

Value of improved cancer treatment to society based on improved productivity, extended life and other factors, 1988-2000

Better access

to innovative medicines will have a positive effect in New Zealand

Source: DN Lakdawala, et al. "An economic evaluation of the war on cancer" Journal of Health Economics 2015
National Cancer Institute. Surveillance, Epidemiology, and End Results Program 2015

Cancer in New Zealand

Medicines New Zealand is the industry association representing companies engaged in the research, development, manufacture and marketing of prescription medicines.

