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.

Why the discrepancy?

Source: PHARMAC and New Zealand Treasury Vote Health Report

Cancer in New Zealand
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%.

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

Overall, 2000 – 2013: -15% per capita

CAGR -1.2% p.a.

$714 m\textsuperscript{1}$ budget 3.86m popn

$733 m\textsuperscript{1}$ 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

Cancer in 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

- 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

Source: GLOBOCAN 2012 (IARC)
PHARMAC Pharmaceutical Schedule 2015

Cancer in New Zealand
New Zealand’s mortality rate exceeds Australia’s average by 8%

- 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

- 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

Aye et al, NZMJ, 2014
US Cancer Society, Facts and Figures, 2014
Compared to Australia, New Zealand has much higher rates of avoidable cancer deaths

Avoidable cancer deaths compared to Australia

Graph depicts the percentage of avoidable cancer deaths using Australia as the baseline.

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”*

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*

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

<table>
<thead>
<tr>
<th>Access to medicines post-diagnosis</th>
<th>Canada</th>
<th>Switzerland</th>
<th>Australia</th>
<th>UK</th>
<th>Germany</th>
<th>Norway</th>
<th>Sweden</th>
<th>New Zealand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer &lt;5 years</td>
<td>12</td>
<td>9</td>
<td>6</td>
<td>2</td>
<td>10</td>
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<td>Cancer 6-10 years</td>
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<td>12</td>
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<tr>
<td>Cancer &gt;10 years</td>
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<td>5</td>
<td>11</td>
<td>12</td>
<td>6</td>
<td>9</td>
<td>4</td>
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<tr>
<td>Cancer hormones</td>
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<td>9</td>
<td>13</td>
<td>11</td>
<td>11</td>
<td>5</td>
<td>9</td>
</tr>
</tbody>
</table>

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

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

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

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

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

Average time from registration to reimbursement (days) for new medicines, 2009-2014

Source: IMS COMPARE Report 2015
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

- Unspecified: 27
- Other: 29
- Stomach: 56
- Solid Tumors: 53
- Skin: 17
- Sarcoma: 50
- Prostate: 49
- Pancreatic: 51
- Ovarian: 38
- Multiple Myeloma: 92
- Lymphoma: 123
- Lung: 106
- Liver: 84
- Leukemia: 21
- Kidney: 35
- Hematological Malignancies: 58
- Head & Neck: 82
- Colorectal: 23
- Breast: 58
- Brain: 23
- Bladder: 227

Source: American Cancer Society 2015

Cancer in New Zealand
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

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.