



Report to:  
**PHARMAC**

**INDEPENDENT REVIEW OF THE  
CASTALIA REPORT ON NEW ZEALAND  
PHARMACEUTICAL POLICIES**

Prepared by  
**Kel Sanderson**  
**Mark Goodchild**

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# Independent Review of the Castalia Report on New Zealand Pharmaceutical Policies

<b>1 Overview .....</b>	<b>2</b>
<b>2 Health spending .....</b>	<b>4</b>
2.1 International comparisons .....	4
2.2 Changes in health spending .....	7
<b>3 Pharmaceutical spending .....</b>	<b>9</b>
3.1 Historical changes in spending .....	9
3.2 Future changes in spending .....	11
<b>4 Health outcomes .....</b>	<b>14</b>
4.1 Mental health examples .....	16
4.2 Cardiovascular examples .....	18
<b>5 References .....</b>	<b>21</b>

# 1 Overview

This report was completed by BERL and is an independent review of the Castalia report entitled 'New Zealand Pharmaceutical Policies'. The review was commissioned by PHARMAC, who required BERL to undertake a high-level assessment of the analyses and conclusions contained in Castalia's report.

PHARMAC makes the decision on whether or not a registered pharmaceutical product is subsidised by the Government. PHARMAC negotiates agreements with suppliers for these subsidised pharmaceutical products. This arrangement enables PHARMAC to exercise a degree of monopsony power in relation to pharmaceutical prices. PHARMAC uses a range of strategies in negotiating pharmaceutical prices including, in some instances, the strategies of sole supply tendering and reference pricing.

Sole supply tender is used for a single molecule listed on the pharmaceutical schedule. The logic is that sole supply tender will encourage potential suppliers to offer their best price. A supplier's alternative is to offer their unsubsidised brand to consumers. Depending on the price suppliers charge and consumers 'willingness to pay', suppliers may risk losing market share if they take this alternative course.

Referenced pricing is applied to a therapeutic group (pharmaceuticals with the same or similar therapeutic effect). The subsidy is based on the lowest priced pharmaceutical in that group and applied to all pharmaceuticals in that group. The logic here is that suppliers that offer their product at a higher price will risk consumers choosing the lower priced product, again, depending on their preferences and 'willingness to pay'.

Pharmaceutical purchasing agencies throughout the world have adopted various practices in relation to reference pricing, and - more broadly - in the extent to which they exercise their monopsony powers. For example, the Pharmaceutical Benefit Scheme (PBS) in Australia does not use sole supply tendering. The PBS also applies reference pricing in a different manner to PHARMAC, although this difference is thought to be marginal and certainly not a difference in relation to patient access to subsidised pharmaceuticals.

Castalia argues that PHARMAC has been overly restrictive on the range of pharmaceuticals that it subsidises, and that some strategies (sole supply tendering and reference pricing) have contributed to this restriction. According to Castalia, these strategies have had little impact on prices, while PHARMAC's policies have led to poorer health and disability outcomes.

Castalia makes three main claims in their report:

1. The share of health expenditure accounted for by pharmaceuticals has declined in New Zealand compared to other countries, because PHARMAC has been too restrictive on the range of pharmaceuticals that it subsidises. This 'restriction' includes the strategies of sole supply tendering and reference pricing.
2. The restriction on subsidised pharmaceuticals has caused more expensive (and less effective) non-pharmaceutical treatments to be adopted in New Zealand. The result is poorer health and disability outcomes, and higher overall health care costs.
3. The removal of restrictions (including PHARMAC strategies above) would increase the cost of providing subsidised pharmaceuticals by less than 20 percent. Castalia suggests that there may only be a 10 percent increase in the cost of subsidised pharmaceuticals.

BERL has reviewed the evidence that Castalia presents to support each of these three main claims. Our conclusions are that Castalia's claims are based on incorrect and inadequate analyses, invalid or highly questionable assumptions, and/or are simply speculative statements rather than evidence-based conclusions.

Castalia does not present any form of causal evidence that New Zealand's pharmaceutical policies have led to poorer health outcomes. Castalia also fails to incorporate the benefits from PHARMAC - as a monopsony purchaser - in securing lower pharmaceutical prices for public consumption. This aspect of current policy settings is simply assumed not to exist, and is a significant failing in Castalia's report.

Overall, Castalia's report does not present a sound or logical basis upon which to draw any conclusions about the design of pharmaceutical policies in New Zealand.

## 2 Health spending

The first key claim made by Castalia is that New Zealand's spending pattern on health care has diverged significantly from that of other OECD countries, because PHARMAC has been too restrictive on the range of pharmaceuticals that it subsidises.

BERL has found numerous errors, omissions, and other analytical failings in the evidence presented by Castalia including that:

- Castalia's cross-country estimates are incorrect - and appropriate (correct) comparisons indicate that there has not been a significant divergence;
- Castalia offers no evidence that the composition of health spending in New Zealand is, in fact, different from other countries given any explanatory variables that determine the cross-country differences;
- Castalia makes sweeping assumptions that non-pharmaceutical health spending has been inefficient or sub-optimal; and
- Castalia's claim that PHARMAC has not secured lower pharmaceutical prices (and thus positively influenced the pattern of health spending) is mere speculation, based at best on anecdotal evidence from drug companies.

The following sections (2.1 and 2.2) address the claims made by Castalia in terms of health spending patterns. Section 3.1 in the next chapter addresses Castalia's claim in relation to PHARMAC and pharmaceutical prices.

### 2.1 International comparisons

Castalia argues that the impact of restrictions on pharmaceuticals in New Zealand can be seen in aggregate expenditure statistics. Their claim is that pharmaceutical spending as a proportion of health spending in New Zealand has fallen from 14.5% in 1996 to 10% in 2002, while the OECD average in this respect has stayed at about 15%. Castalia also suggests that the proportion for New Zealand has since fallen to 8% in 2005.

It is important to recognise that such trends, even if substantiated, do not indicate anything about causality. Such trends could be caused by a number of factors including, for example, by PHARMAC being able to secure lower pharmaceutical prices, and/or by improved levels of spending in other areas of the health sector.

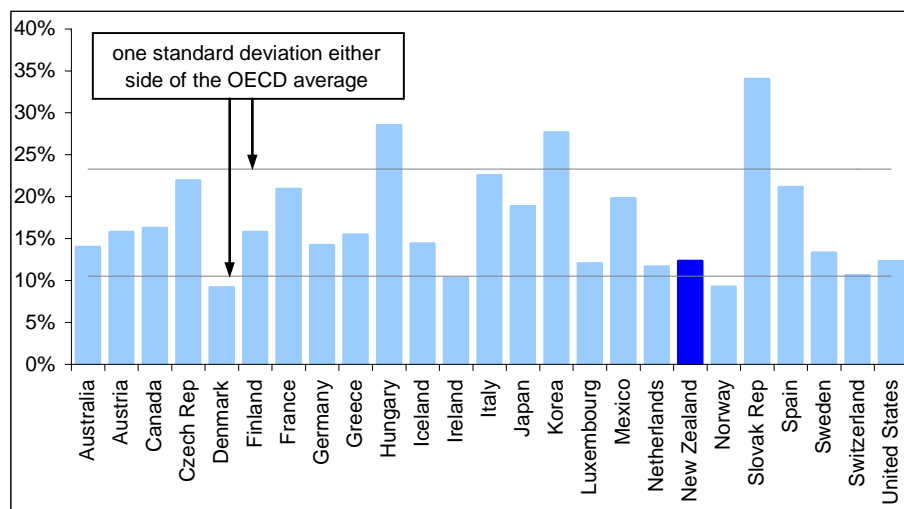
BERL has reviewed the data presented and has found several basic errors and omissions. Using the references cited by Castalia, BERL has calculated that the correct proportion for New Zealand in 2002 should be 12.5% not 10% as reported by Castalia. The actual change between 1996 and 2002 is therefore less than half of what Castalia reports.

In addition, Castalia provides no reference for their estimate of 8% in 2005 and so this claim cannot be independently substantiated. The source data cannot have been the OECD or the Ministry of Health, as these agencies have not yet published statistics for 2005. There is no indication that Castalia's 2005 estimate is consistent with previous ones for 1996 and 2002.

Most significantly, Castalia's estimate for 2005 refers to 'public' expenditure. This is different in concept and measurement to the 'total' expenditure statistics in 1996 and 2002, because total expenditure is the sum of public and private expenditure. The exclusion of private spending clearly invalidates and biases the comparisons. Castalia have not made a 'like with like' comparison of health spending over time.

The OECD average is also a poor comparator to use in this instance, because there is a wide variation in health spending patterns for the member countries as shown in Figure 2.1. The proportion ranges from 9.2% in Denmark through to 34.0% in the Slovak Republic. The proportion for New Zealand is contained within one standard deviation of the OECD average indicating that the difference from this average is unlikely to be statistically significant.

**Figure 2.1 Pharmaceuticals as a proportion of health spending in 2001<sup>1</sup>**



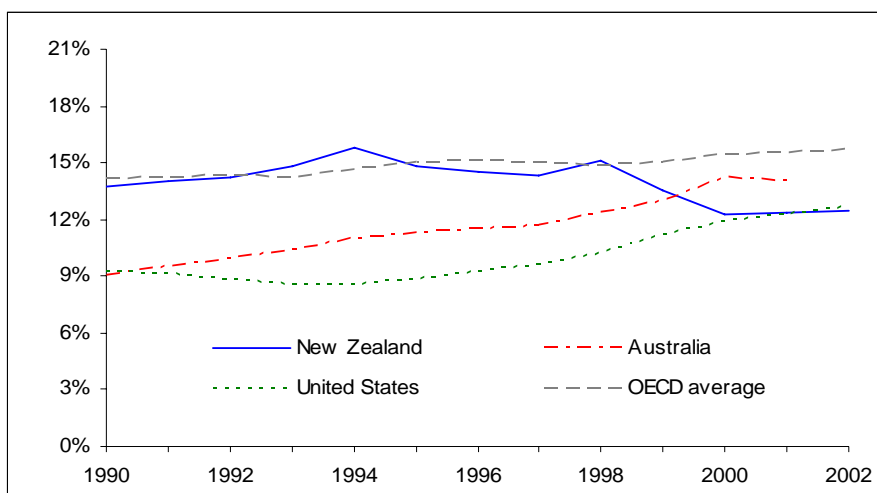
<sup>1</sup> Data sources: OECD and Ministry of Health.

The data also suggests that New Zealand (at 12.3% in 2001) is most similar to the United States (also at 12.3%) in this respect. There are also six other OECD countries that have proportions lower than New Zealand - Denmark at 9.2%, Norway at 9.3%, Ireland at 10.3%, Switzerland at 10.6%, Netherlands at 11.7%, and Luxemburg at 12.0%.

In more fundamental terms, there are a host of potential explanatory variables that determine the cross-country differences. This includes macro-economic variables as well as structural factors within the health sector of each country. A major failing of Castalia's report is that no attempt is made to assess the variables that determine cross-country differences. Thus, there is no evidence that New Zealand's pattern is different from other countries given the variables that determine these cross-country differences.

Castalia also makes a broad comparison between New Zealand and Australia in 1996 and 2002 with the inference that New Zealand has acquired a culture of 'extreme fiscal restraint'. Figure 2.2 below shows the relevant trends for New Zealand, Australia, the United States and an OECD average since 1990.<sup>2</sup>

**Figure 2.2 Pharmaceuticals as a proportion of total health spending**



Note these countries are all within one standard deviation of the OECD average and so the differences are unlikely to be statistically significant. In general terms, New Zealand appears to have tracked the OECD average of about 14-15% until the late 1990s, when there appears to have been a shift to a new stable level at about 12-13%. This apparent shift could reflect a combination of factors including the success of PHARMAC policies in securing lower prices.

<sup>2</sup> Data source: OECD and Ministry of Health. The OECD average is calculated by BERL.

## 2.2 Changes in health spending

Castalia claims that the shift in New Zealand's pattern of health expenditure (as in Figure 2.2 above) has been caused by restrictions on access to subsidised pharmaceuticals. Castalia's argument is that this 'restriction' has led to lower pharmaceutical expenditure than otherwise would be the case, and by more expenditure in other areas of the health sector than would otherwise be necessary.

In the first instance, this claim is dependent on pharmaceutical price trends as discussed in section 3.1. However, some of the change in health spending may also be due to increased non-pharmaceutical expenditure with improved health outcomes. This source of change is not addressed by Castalia, and their claim requires some sweeping assumptions to hold. The main assumption is that pharmaceuticals are a close substitute for other forms of health care. Clearly, this assumption does not hold because there are areas where pharmaceuticals cannot meet the health needs of the population. The other assumptions are that changes in health sector spending involve:

- No changes in the composition of demand for health services. This is unlikely given the demographic factors that determine health demand such as ageing, ethnicity, lifestyle, and other variables that affect the population's health risk.
- No changes in the availability, cost, and effectiveness of different health interventions. This is also unlikely given advances in technologies relating to diagnosis and treatment (eg key-hole surgery). There is also no reason to assume that even in instances where pharmaceuticals are an alternative that they are necessarily more effective or less costly.
- No new initiatives that have improved health outcomes. This is unlikely because there have been a host of investments including, for example, increased funding to reduce surgery waiting lists. There have also been new practices adopted such as the shift from institutional to community care for people with intellectual disabilities and mental illnesses.

It is clearly invalid to assume that these factors have not had an influence on the pattern of health spending in New Zealand over the past five to ten years. These considerations are omitted from Castalia's discussion and analysis, representing a major failing in the report.

Table 2.1 shows New Zealand's total (public and private) spending on health care in 1997 and 2002. There are some differences in classification between the two years - namely in community mental health care, which reflects the shift from institutional to community care for people with intellectual disabilities and mental illnesses.

**Table 2.1 New Zealand health expenditure trends, 1997 to 2002**

June years	1997	2002	Change	1997	2002
	\$Mn	\$Mn	\$Mn	% total	% total
Surgical & medical	2,555	3,511	956	34.3	33.0
Mental health	221	374	153	3.0	3.5
Dental	52	98	47	0.7	0.9
Maternity	250	322	73	3.4	3.0
Other	75	286	211	1.0	2.7
Age-related disability	412	581	168	5.5	5.5
Other disability	490	180	-310	6.6	1.7
<b>Institutional care</b>	<b>4,054</b>	<b>5,353</b>	<b>1,298</b>	<b>54.4</b>	<b>50.3</b>
GP, midwife, and specialist	881	1,208	327	11.8	11.4
Diagnostic services	113	153	40	1.5	1.4
Physiotherapy services	101	105	5	1.4	1.0
Laboratory services	160	286	126	2.1	2.7
Other referral services	54	99	45	0.7	0.9
Dental	270	392	122	3.6	3.7
Mental health	0	510	510	0.0	4.8
Medicaments	1,068	1,331	263	14.3	12.5
Other	201	318	117	2.7	3.0
Age-related disability	24	72	48	0.3	0.7
Other disability	48	236	187	0.6	2.2
<b>Community care</b>	<b>2,920</b>	<b>4,710</b>	<b>1,790</b>	<b>39.2</b>	<b>44.3</b>
<b>Public health services</b>	<b>199</b>	<b>224</b>	<b>25</b>	<b>2.7</b>	<b>2.1</b>
<b>Teaching &amp; research</b>	<b>194</b>	<b>277</b>	<b>83</b>	<b>2.6</b>	<b>2.6</b>
<b>Ministry of Health</b>	<b>82</b>	<b>77</b>	<b>-6</b>	<b>1.1</b>	<b>0.7</b>
<b>TOTAL</b>	<b>7,449</b>	<b>10,640</b>	<b>3,191</b>	<b>100.0</b>	<b>100.0</b>

Source: "Health Expenditure Trends in New Zealand". Ministry of Health

The other expenditure classifications do not appear to show any dramatic changes over this period in terms of their respective share of total health expenditure. The proportion of total spending accounted for by 'surgical & medical' treatment has fallen from 34.4% to 33.0%, which contrasts with Castalia's claim that a restriction on pharmaceuticals has led to more invasive and costlier health interventions.

The expenditure statistics alone tell us little about the health benefits that have been derived from this spending, because prices have changed over this period. Lower prices enable greater consumption for every given dollar of expenditure. Castalia attempts to discredit this as a source of change in pharmaceutical spending as discussed in the next chapter.

## 3 Pharmaceutical spending

This chapter reviews several aspects of Castalia's report in relation to New Zealand's pattern of pharmaceutical expenditure. The first aspect is Castalia's claim that New Zealand's pattern of pharmaceutical expenditure is explained by restrictions on pharmaceuticals rather than by PHARMAC being able to secure lower prices. This also relates directly to Castalia's broader argument that it is a restriction on pharmaceuticals that has caused New Zealand's pattern of health spending to diverge from other OECD countries.

The second aspect is Castalia's claim that a removal of restrictions on access to subsidised pharmaceuticals (including strategies such as sole supply tendering) would increase the cost of subsidised pharmaceuticals by less than 20 percent. Castalia suggests that there may only be a 10 percent increase in pharmaceutical expenditure.

### 3.1 Historical changes in spending

Castalia acknowledges that PHARMAC initially achieved lower prices through the adoption of its policies. However, Castalia claims that PHARMAC has not secured better prices than the PBS in Australia since 1999/2000 and conclude that "the price benefits of current policies appear to have been fully captured in the early years of implementation"<sup>3</sup>.

The evidence Castalia presents to support this claim is contained entirely in the statement that "interviews with pharmaceutical companies suggest that the price differential is likely to have remained largely unchanged in the last 3 to 4 years, although we have been quoted examples of New Zealand getting some very good deals on specific drugs"<sup>4</sup>. This carries very little evidentiary weight in BERL's opinion, and there are a large number of associated questions including:

- That there is no indication that the drug companies interviewed are capable of making an accurate assessment in this respect, or that their assessments were unbiased;
- Castalia does not identify the pharmaceuticals that, according to the drug companies, New Zealand gained 'good deals' on;

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<sup>3</sup> Page 16, Castalia.

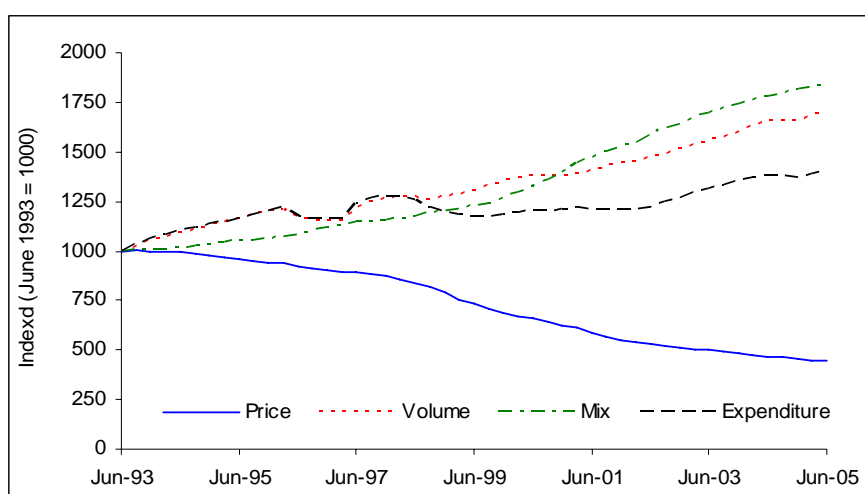
<sup>4</sup> Page 12, Castalia.

- Castalia does not discuss why PHARMAC gained these ‘good deals’ but PBS did not; and
- Castalia does not discuss the significance of the ‘good deals’ in terms of consumption and expenditure patterns in the New Zealand market.

Clearly, the last two points are relevant because it may be that the ‘good deals’ were due to PHARMAC’s strategies or may have had an impact on aggregate price levels. Overall, BERL regards Castalia’s claim on the price differential between New Zealand and Australia as anecdotal-based speculation rather than an evidence-based conclusion.

Figure 3.1 shows the historical trend in subsidised pharmaceutical expenditure based on PHARMAC’s price, volume and mix indices. Although there are no equivalent indices for PBS in Australia, the figure does highlight several key trends. The PHARMAC price index has declined on average by 8.5% per annum between 1999 and 2004. This compares to a decline of 6.0% per annum between June 1994 and June 1999. These actual price trends contrast with Castalia’s suggestion that the price benefits of PHARMAC’s policies were captured during the early years of implementation.

**Figure 3.1 Trends in subsidised pharmaceutical spending**



Castalia also fails to recognise that rebates paid to PHARMAC have increased significantly in the period assessed. Rebates reduce the effective price of subsidised pharmaceuticals, and in the past few years have increased from about \$20 million to more than \$130 million.

The other main trend shown in Figure 3.1 is that consumption as measured by PHARMAC’s volume index has continued to increase. The volume index has risen by 4.8% per annum between 1999 and 2004, compared to 3.6% per annum between 1994 and 1999. This is in

contrast with Castalia's claim that a restriction on access is responsible for New Zealand's pattern of pharmaceutical and health expenditure in recent years.

Castalia's also presents a comparison of new products listed for subsidy by PHARMAC and PBS, which indicates that PHARMAC has listed fewer new products than the PBS between 1999 and 2004. However, the comparison contains no information about how the difference has contributed to either consumption or expenditure in New Zealand or Australia. The difference may be small in terms of therapeutic effect or have contributed little in terms of the existing portfolio of listed pharmaceuticals. For example, the relevant purchasing agency, or consumers, may have simply substituted the newly listed products for 'old' ones.

It is BERL's overall conclusion that Castalia's claim has not been supported by any form of evidence. Castalia does not present factual evidence that PHARMAC has failed to secure lower prices, while there is evidence to the contrary. Castalia presents no evidence that the pattern of pharmaceutical spending in New Zealand is due to a restriction on access. To simply note that PHARMAC has listed fewer products for subsidy than PBS is not evidence that this difference is responsible for pharmaceutical spending patterns.

### **3.2 Future changes in spending**

Castalia claims that the removal of restrictions on subsidised pharmaceuticals in New Zealand would increase the cost of providing subsidised pharmaceuticals by less than 20 percent. Castalia suggests that there may only be a 10 percent increase in expenditure. In the first instance, BERL notes that Castalia does not specifically identify what 'restrictions' would be removed although it is evident that this includes certain PHARMAC strategies such as sole supply tendering and reference pricing. The fact that Castalia does not explicitly state or define what changes they envisage is a significant failing in their analysis and conclusion.

Castalia draws on evidence from two studies to claim that the current price difference in relation to subsidised pharmaceuticals in New Zealand and Australia is about 20 percent. This conclusion is incorrect, and Castalia's subsequent analysis is fundamentally flawed because of this. The two studies calculate pharmaceutical price differences in different countries based on a 'basket' of pharmaceutical products, and in each study this basket was based on pharmaceutical consumption volumes in the reference country not in New Zealand. The Australian Productivity Commission (the authors of one of the studies) states that "as the bilateral comparisons are based on Australian consumption patterns, conclusions about

relative price levels across countries cannot be drawn”<sup>5</sup>. Yet, this material is used by Castalia specifically to draw such conclusions.

The main failing is that the price differential between New Zealand and Australia will be quite different when the bilateral comparisons are based on New Zealand consumption volumes. In addition, the effective price differential (ie prices including rebates) has widened since the Productivity Commission’s report was published.

Castalia’s subsequent analysis focuses on the causes of the apparent pharmaceutical price differential between New Zealand and Australia. Castalia’s conclusion is comprised of two key statements.

Castalia’s first key statement is that “where New Zealand has been able to achieve lower prices than Australia, this ability is more likely to be derived from the relative isolation of the New Zealand market and the conscious decision in New Zealand not to support a domestic pharmaceutical industry”<sup>6</sup>. The implication is that PHARMAC and its supply-side strategies have had little to do with the price differences between New Zealand and Australia. This implication is contained in Castalia’s second key statement that “the specific New Zealand practices - such as sole tendering of supply and other restrictions - appear to contribute relatively little to the price level achieved in New Zealand”<sup>7</sup>.

The two statements underpin Castalia’s claim that the removal of restrictions on subsidised pharmaceuticals in New Zealand would involve an increase in expenditure of less than the 20 percent price difference between New Zealand and Australia. The methodology used by Castalia to arrive at this conclusion is incorrect, and the conclusion is ultimately driven by questionable assumptions or assertions rather than by the presentation of evidence.

Castalia’s first statement about ‘relative isolation’ is in fact an assertion that a supplier faced with similar regulatory regimes in New Zealand and Australia may offer differing prices in the two markets. For this assertion to hold, factual evidence that the demand characteristics between the two markets are significantly differently would need to be established. Castalia would have had to show that consumers in one market (relative to those in the other market) were significantly different in terms of their responsiveness to pharmaceutical price changes.

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<sup>5</sup> Page XXIII. International Pharmaceutical Price Differences. Productivity Commission. Australia. 2001.

<sup>6</sup> Page 15, Castalia.

<sup>7</sup> Page 15, Castalia

Castalia presents no such factual evidence, and therefore their first key statement is merely a hypothesis.

Castalia's second key statement about the impact of 'PHARMAC practices' on prices is also merely an assumption, and wholly dependent on the first key statement. The statement also runs contrary to standard economic theory in relation to monopsony behaviour. Castalia presents no factual evidence showing the relative impact of any of the factors that are identified in their two key statements.

From a broader perspective, the methodology that is adopted by Castalia in this analysis is fundamentally flawed. The current price differential between New Zealand and Australia will be different from that claimed by Castalia, and in any event the price differential at this aggregate level does not necessarily incorporate the changes that might occur. For instance, the removal of certain strategies may have a disproportionate impact on aggregate prices. The main limitation in this respect is that Castalia has made no attempt either to explicitly state what changes in policy they envisage, or to estimate the contribution that the strategies have made to pharmaceutical expenditure.

The actual expenditure implications of the policies that are advocated by Castalia are all but impossible to establish. And in any event, the logic of doing so depends on the evidence that current policies have led to poorer health outcomes. BERL reviews this aspect of Castalia's report in the next chapter, and concludes that the claim is simply based on speculation rather than evidence-based conclusions. Castalia's analysis essentially boils down to an argument that PHARMAC should be subsidising more pharmaceutical products and brands with little or no additional therapeutic effect, presumably at a higher overall cost to the public.

## 4 Health outcomes

Castalia claims that a restriction on access to pharmaceuticals has caused negative health outcomes, and that the costs associated with these outcomes are in the hundreds of millions of dollars per annum. The costs include the use of costlier non-pharmaceutical interventions, and losses associated with greater levels of illness and disability.

Castalia does not present causal evidence that pharmaceutical policies have led to poorer health outcomes, or costlier interventions in New Zealand. Instead, Castalia's approach is to make superficial comparisons of health outcomes between New Zealand and Australia, and then to suggest that policies may have contributed to the apparent differences.

This approach is inadequate for making the conclusions that Castalia have made because there is not indication that pharmaceutical policies have had any contribution towards the difference in health outcomes (ie there is causal connection). There are always likely to be differences in health outcomes between New Zealand and Australia because of underlying differences in the demographic, economic, social and environmental characteristics of the two countries. Castalia's approach will incorrectly attribute some of the impact from these drivers of health outcomes to pharmaceutical policies.

The approach is also inadequate because it is not possible to isolate the relative impact (on the assumption that an impact exists) of pharmaceutical policies on health outcomes. Therefore, Castalia's claim that these costs are in the order of 'hundreds of millions of dollars per year' is simply unfounded speculation.

Castalia's claims in relation to end-stage renal failure are a case in point. The conclusion in Castalia's report is that "reductions in end-stage renal dialysis which could be achieved with more emphasis on earlier pharmaceutical-based interventions, may alone generate tens of millions of dollars of net savings"<sup>8</sup>. This conclusion is based entirely on the speculative statement that differences in failure rates between the two countries "may reflect early evidence of a worsening of treatment in risk factors, such as management of elevated cholesterol or hypertension, in New Zealand since the divergence of pharmaceutical practice in the late 1990s"<sup>9</sup>.

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<sup>8</sup> Page 30, Castalia.

<sup>9</sup> Page 25, Castalia.

In fact, there is no indication that the failure rates are statistically different because the trend is similar in both countries and is likely to reflect common demographic trends. In the unlikely instance that the trends are statistically different there is no definite indication that this is due a difference in pharmaceutical policies. Castalia also makes no attempt to quantify the magnitude of the potential health benefits from different 'interventions', or the relative cost of these interventions. Castalia does not even specify what these interventions would be. Given the absence of such evidence, BERL believes that such claims are pure speculation.

A second example is Castalia's statement that welfare dependency "may also be a symptom of relatively higher levels of actual disability in New Zealand, arising in part from poorer access to pharmaceutical treatments"<sup>10</sup>. This speculative statement feeds into the conclusion that the "lower quality of life available to sick people in New Zealand relative to Australia is likely to impose further economic costs in reduced productivity and the additional support required by such people"<sup>11</sup>. Castalia does not establish in their report that pharmaceutical policies have contributed to increased welfare dependency or to a 'lower quality of life' in New Zealand either in absolute terms or relative to any other country. Neither does Castalia separate such impacts from the main causes of increased dependency rates.

The underlying causes of increased numbers of people on a sickness or invalids benefit are, in fact, reasonably well known. These underlying causes include changes in eligibility for NZS and an ageing population; transfers onto the sickness and invalids benefits from other benefit categories due to changes in benefit criteria; and the decision to shift people with intellectual disabilities and mental health illnesses into community-base care. The MSD also notes that most developed countries have experienced large increases in incapacity related-beneficiaries, and so New Zealand is certainly not unusual in this respect<sup>12</sup>.

BERL's task was to present a high-level assessment of the Castalia report. However, the report also contains a large number of factual inaccuracies and superficial 'half-truths', and so the following represents BERL's comments on some of the more obvious inaccuracies.

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<sup>10</sup> Page 21, Castalia.

<sup>11</sup> Page 30, Castalia.

<sup>12</sup> Refer to the Ministry of Social Development (MSD) report entitled 'Growth in numbers of sickness and invalids benefit recipients 1993-2002' released in 2005.

#### 4.1 Mental health examples

Castalia claims that New Zealand's mental health outcomes are comparable to those in Australia, but that spending is higher. Castalia references two separate reports to support this claim but no factual evidence from these two reports is presented. Figure 4.1 provides a comparison of health outcomes (Potential Years of Life Lost) in relation to mental and behavioural disorders from a single and consistent statistical source - namely the OECD.

**Figure 4.1 Potential years of life lost due to mental and behavioural disorders**

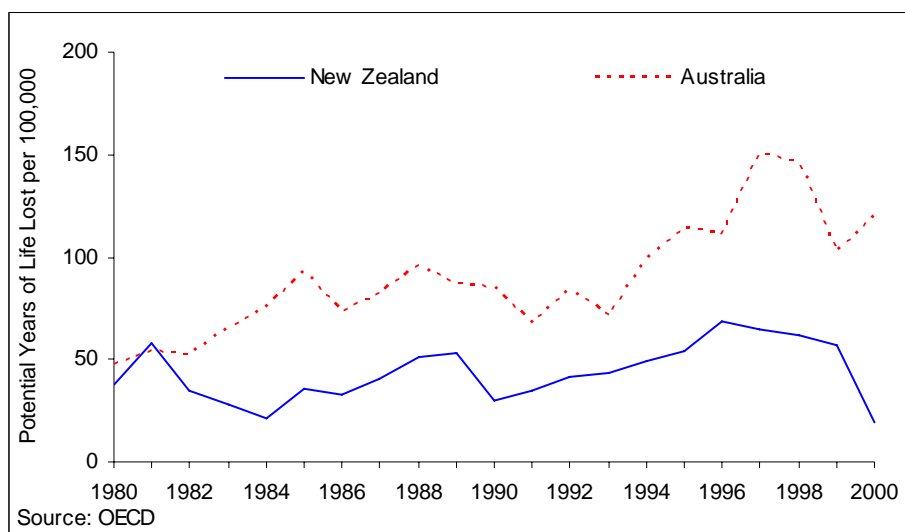
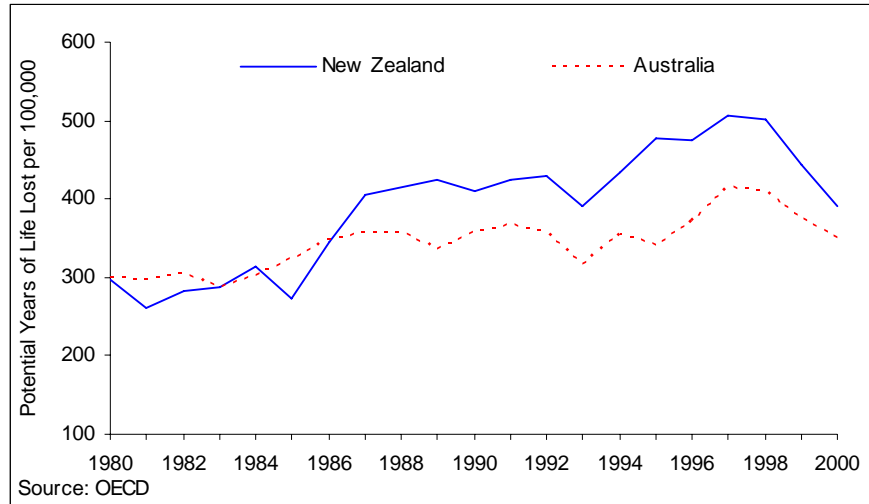


Figure 4.1 shows that New Zealand has enjoyed a lower rate of harm than Australia since 1981 and, in addition, it appears that such outcomes have improved in New Zealand since 1996. This evidence is a clear contradiction of Castalia's unsupported statement.

Castalia did not present the evidence in Figure 4.1 but chose to focus on the OECD data in relation to intentional self-harm. Figure 4.2 shows the rate of Potential Years of Life Lost due to intentional self-harm. This is the same source data that Castalia presents except that the time period is from 1980 to 2000 rather than from 1995 to 2000. The presentation of trends over a longer period of time indicates just how superficial Castalia's analysis was.

In particular, New Zealand recorded a similar rate of loss due to intentional self-harm as Australia until 1987 at which point there appears to have been a divergence between the two countries. PHARMAC was not established until 1993. In addition, the latest two years of data indicates that the rate of intentional self-harm has improved in New Zealand both in absolute terms, as well as relative to the rate in Australia.

**Figure 4.2 Potential years of life lost due to intentional self-harm**



From a broader perspective, the strategies that appear to concern Castalia the most (ie reference pricing) are not practiced in the area of mental health, and the consumption of new antidepressants and antipsychotics has increased substantially in recent years.

Figure 4.3 shows the growth in prescriptions of subsidised antidepressants in New Zealand since 1993. Prescriptions of new antidepressants have increased from about 97,000 in 1994 to about 526,000 in 2004 or on average by 18% per annum. Prescriptions for antidepressant in total have increased from about 403,000 in 1994 to about 849,000 in 2004 or on average by 8% per annum.

**Figure 4.3 Prescriptions of subsidised antidepressants in New Zealand**

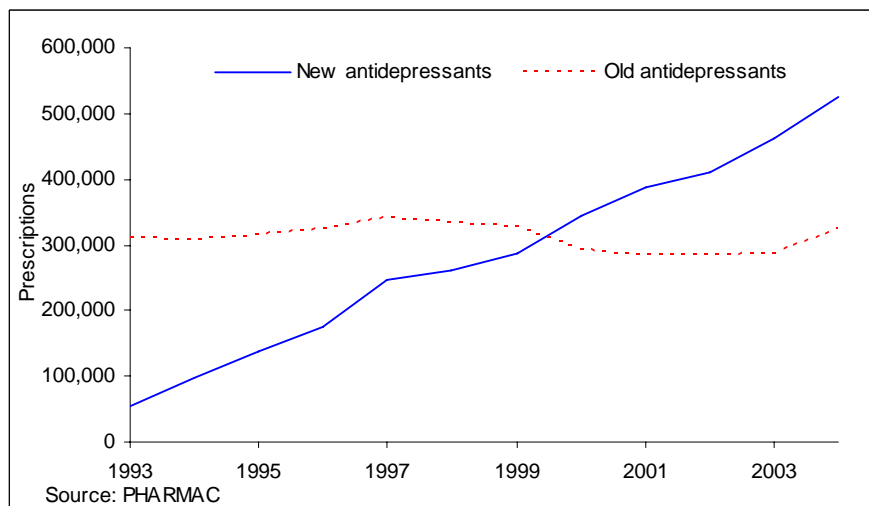
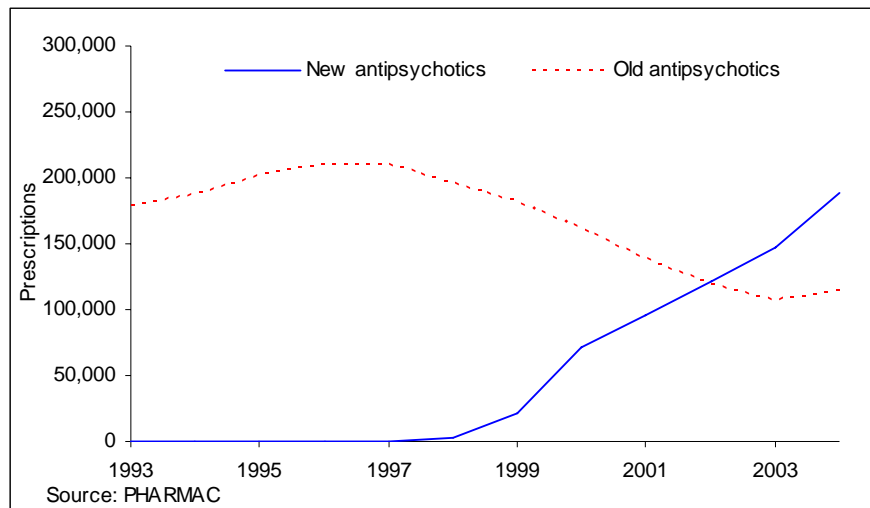


Figure 4.4 shows the growth in prescriptions of subsidised antipsychotics in New Zealand since 1993. This growth has been driven by a rapid expansion in new antipsychotics since 1997, which in part has been substituted for old antipsychotics. However, total prescriptions for antipsychotics have increased from about 188,000 in 1994 to about 303,000 in 2004 or on average by 4.9% per annum.

**Figure 4.4 Prescriptions of subsidised antipsychotics in New Zealand**



Given these trends, it would appear to be difficult for Castalia to sustain the argument that a restriction on access to pharmaceuticals is responsible for poorer mental health outcomes in New Zealand, or that a disparity in access to pharmaceutical treatments is evident between New Zealand and Australia.

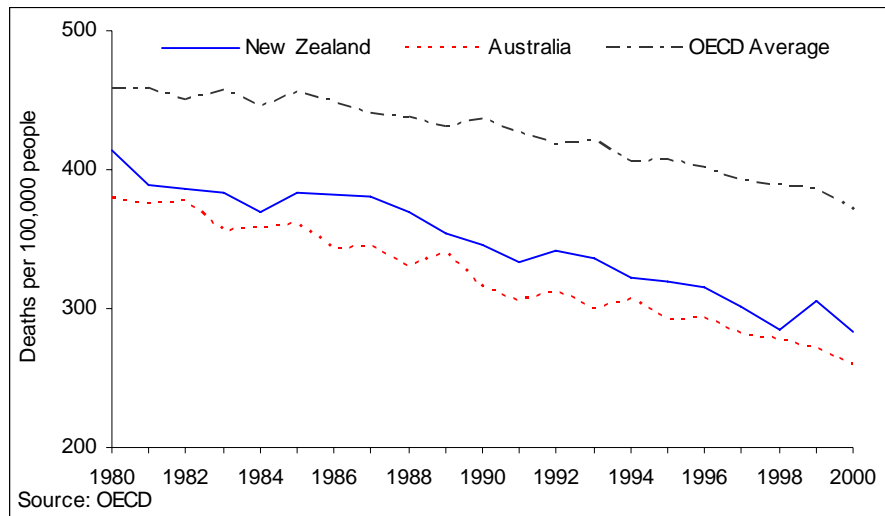
#### 4.2 Cardiovascular examples

The evidence presented by Castalia in relation to the burden of cardiovascular disease has been inaccurately referenced to the OECD<sup>13</sup>. The table, in actual fact, presents data from two separate studies by the Ministry of Health in New Zealand and the Australia Institute of Health and Welfare conducted in 1999 and 1996. The studies use different methodologies and relate to different time periods, and thus are not valid comparisons.

Castalia also uses data from the OECD to suggest that there has been a divergence in the death rate from diseases of the circulatory system in New Zealand and Australia. Figure 4.5 shows the actual trends for New Zealand, Australia and an OECD average since 1980.

<sup>13</sup> Table 2, page 24, Castalia.

**Figure 4.5 Death rate from diseases of the circulatory system**



The long-term trends in the death rate from circulatory system diseases in New Zealand and Australia are, in fact, very similar. There have been occasions in the past (such as in 1985, 1991, and 1999) when the difference between New Zealand and Australia has widened but this is far from evidence of any form of divergence in health outcomes. The OECD average is also trending downwards with the data suggesting, at least in the first instance, that both New Zealand and Australia have performed well relative to other OECD countries.

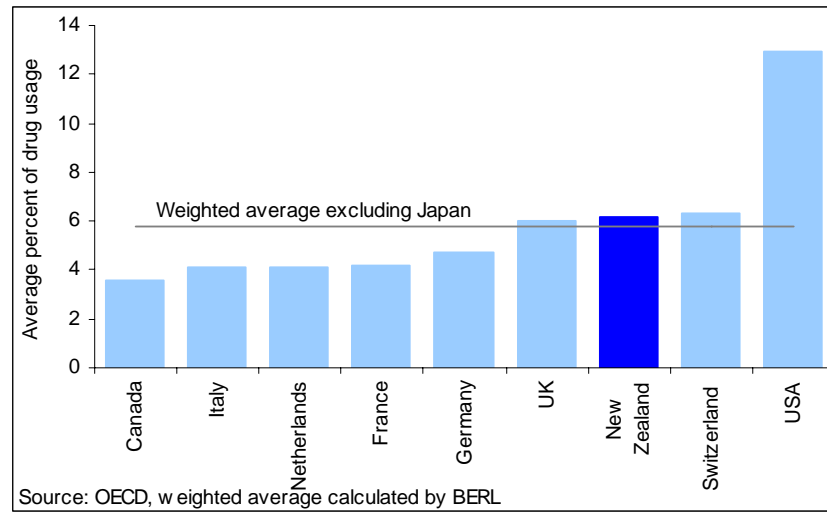
However, Castalia states that “the rate of use for cardiovascular disease remains modest in New Zealand when compared to other OECD countries, including Australia”<sup>14</sup>. This claim is referenced to an OECD report on drug use and expenditure for cardiovascular disease and stroke.<sup>15</sup> In point of fact, this report does not include data on Australia, and more importantly the findings of the report contradict Castalia’s statement about usage.

The findings from the OECD report on drug usage are replicated in Figure 4.6. The average for Japan at 37% is an order-of-magnitude greater than for other countries, and so BERL has calculated an average excluding Japan. New Zealand’s drug usage at 6.2% is a little above the weighted average (excluding Japan), and is higher than the usage for Canada and four of the European countries where the average is about 4.0%.

<sup>14</sup> Page 24, Castalia

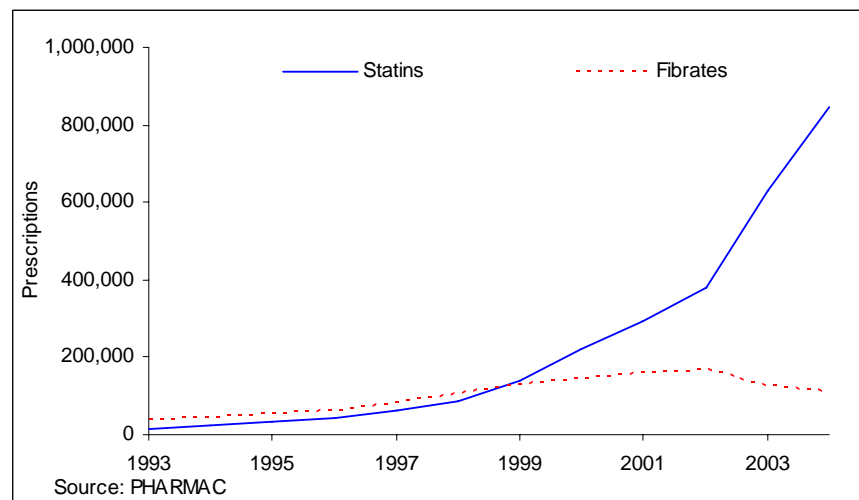
<sup>15</sup> Dickson M and Jacobzone S. “Pharmaceutical use and expenditure for cardiovascular disease and stroke A study of 12 OECD countries”. OECD. 2003.

**Figure 4.6 drug usage from hospital outlets for cardiovascular disease and stroke**



In addition, Figure 4.7 confirms that prescriptions of lipid modifying agents (eg statins and fibrates) have increased significantly over the past decade. Prescriptions for statins have increased from about 23,000 in 1994 to about 844,000 in 2004. The increase in total prescriptions exceeds 30% per annum with this growth occurring in the period since 1999.

**Figure 4.7 Prescriptions of subsidised lipid modifying agents**



## 5 References

<sup>1</sup>Dickson M and Jacobzone S. *Pharmaceutical use and expenditure for cardiovascular disease and stroke: A study of 12 OECD countries*. OECD. 2003.

Sundakov A and Sundakov V. *New Zealand Pharmaceutical Policies*. Castalia. 2005.

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