THE NEW ZEALAND MEDICAL JOURNAL
Journal of the New Zealand Medical Association

Do pharmaceutical score cards give us the answers we seek?

(Commentary on Wonder and Milne in the same issue of the *Journal*
Wonder M, Milne R. Access to new medicines in New Zealand and Australia. N Z Med J. 2011;124(1346). http://journal.nzma.org.nz/journal/124-1346/4966)

Peter Moodie, Scott Metcalfe, Matthew Poynton

Abstract

Few countries can afford to fund all pharmaceuticals for all of their people all of the time, and the current international economic climate brings this into clearer focus. Various agencies have tried to solve the problem in different ways, varying from funding a restricted list that applies to the whole population, to funding most medicines but with a significant part charge, or as in the United States, funding for only selected groups and leaving others to fend for themselves other than in an emergency.

For countries like New Zealand and Australia who have universal health coverage but restricted (and different) lists of funded pharmaceuticals, comparisons of those lists can occur, but are problematic.

Comparisons need to be interpreted with caution as systems and policies vary between countries.

That one country funds more new medicines than the other is one thing, but the more important questions are whether one country gets more health gains and more value for precious health dollars than the other.

Difficulties with international comparisons

There are many reasons why health costs in general, and pharmaceutical expenditure in particular, are rising and at a rate where many countries now recognise they are unsustainable.[1] In terms of managing pharmaceutical expenditure over the last 18 years, New Zealand's Pharmaceutical Management Agency (PHARMAC) has by international comparisons been successful.[2,3] However, that success has not come without criticisms from both within and outside the country.

It is therefore very important to ensure that the financial success of PHARMAC has not been at the expense of health gain, and one way to do this is by way of inter-country comparisons.[4,5] An apparent natural comparator for New Zealand is Australia, as both countries have universal health care systems with roughly similar types of populations. Both have well-developed pharmaceutical regulatory systems, and funding systems which appear similar but have fundamental differences.

In particular, New Zealand has a budget which is set annually by the Minister of Health on the advice of PHARMAC, district health boards (DHBs) and the Ministry of Health.[6] Decisions about such resource allocation are appropriately made by the Government of the day. By comparison Australia has the ability to seek more funding when it sees fit—a difference that should not be underestimated. The two countries

also have very different co-payment systems, where in New Zealand the cost per item is much less than Australia.[7] *

Making comparisons appears simple, but they can come up with results that appear valid but tell us little. For example, an audit undertaken by the Karolinska Institute on the use of oncology therapies in various countries (and sometimes quoted when looking at New Zealand's funding[8]) was quickly discredited for both its methodological flaws and inappropriate conclusions.[9,10] (See endnote †.)

A new comparison of New Zealand and Australia

To make useful comparisons, we need to ask a number of more detailed questions about the reasons for funding or not funding a particular medicine, including:

- What framework was used for making the funding decision?
- Was there any harm done by taking longer to fund a particular medicine in one country rather than another? Indeed was it ultimately an advantage to take the extra time?
- Was the particular medicine good value for money compared with other options?
- Were there alternative therapies available which were more cost effective?

With these sorts of questions in mind, Michael Wonder and Richard Milne in this issue of the *Journal* (http://www.nzma.org.nz/journal/124-1346/4966 [8]) have undertaken a detailed and systematic analysis comparing the extent and timing of new pharmaceutical funding decisions between Australia and New Zealand. They make a number of good points, particularly highlighting the fact that many patients cannot afford to pay for medicines out of their own pockets and that therefore both countries have comprehensive and universal pharmaceutical benefits schemes.

Accounting for differences?

However, while the lists in the Wonder and Milne article[8] are comprehensive, there are differences in the way some medicines are funded in the two countries, and other issues, that have not been addressed.

Different systems—In the first instance, apart from pharmaceutical cancer treatments (PCTs), therapies in New Zealand used in a hospital setting are funded at the discretion of the individual DHB hospital and not PHARMAC. This particularly applies to infusion therapies. It therefore follows that some of the hospital medicines on the Australian list will not be found on the NZ Pharmaceutical Schedule, including bivalirudin for anticoagulation prior to surgery.

Secondly there are some minor errors including levetiracetam (for refractory epilepsy), which was funded in New Zealand on the Pharmaceutical Schedule through a Special Access scheme before it came off-patent.

Different time periods, metrics and opportunities to fund—Any number of comparisons can be done, and some will favour different views.

For instance, Wonder and Milne have used a long time period to gather their data. However (and if we suspend issues of validity, see below), this was also a time of

significant fiscal constraint for New Zealand. Had they reviewed the last 2 years, where the Government has invested significant new money in pharmaceuticals, the lists would have looked significantly different with some 59 new medicines funded in New Zealand during that period.

Likewise, New Zealand has fewer restrictions and lists more treatments overall than Australia.[7] (See endnotes ‡,§.)

There are also differences between the two countries in opportunities for funding. Pharmaceutical suppliers decide when they will bring products to market in each country, which means Australia and New Zealand may not have the opportunity to fund them at the same time.

The effect of a budget cap and cost effectiveness—Although New Zealand may in some cases be slower to fund a drug than Australia, the reality of a budgetary cap means that extra care must be taken to forecast expenditure and ensure that we are getting true value for money. In fact New Zealand spends half as much per person than Australia does on medicines in the community, and the direct patient costs are less than a quarter.[7] (See endnote *.)

Talk about PHARMAC declining to list "highly cost effective pharmaceuticals" because of a pharmaceuticals budget cap[8] needs some thought. This is not so much because it implies opportunity costs managed by budgeting (which is true[11,12]) but that somehow Australia is funding highly cost-effective medicines that New Zealand is not. The article's Table 3[8] does not state what these medicines are, particularly when many have NZ-funded alternatives, no cost-effectiveness information is provided, and some cost over $100,000 per quality adjusted life year (QALY) in the New Zealand setting.

We well understand the authors' frustration at the lack of available cost-effectiveness information; this is not entirely of PHARMAC's making.[13] ††

Is the size of the list important?—Notwithstanding some data inconsistencies in the article, the more important question relates to the usefulness of the, "my list is bigger than your list" approach for inter-country comparison without a lot more supporting information. For instance in New Zealand there is a reticence to fund "me too" medicines unless there is a financial or other obvious clinical advantage.**

As an example, rosiglitazone (now withdrawn from the market due to safety concerns) was funded in Australia but not in New Zealand; however a similar medicine, pioglitazone, was. Likewise we have two angiotensin II receptor antagonists on the New Zealand Pharmaceutical Schedule (PS) and we can see little extra benefit from the other four funded in Australia.

What really matters?

From an international perspective, the realities of burgeoning health expenditure are beginning to sink in. Many affluent countries are more closely examining ways to not only reduce the growth of expenditure but also to seek ways to identify the best value for money.

The paper by Wonder and Milne[8] adds to the debate.[14] Ultimately however the question is about the quality of health care and the quantity of health gain, rather than

numerical item counts and timecourses. We all agree that trans-Tasman comparisons of health gains from pharmaceutical expenditure invested and forgone may be valuable.[4,5,8,15-19] ‡‡

Competing interests: None.

Author information: Peter Moodie, Medical Director; Scott Metcalfe, Chief Advisor Population Medicine; Matthew Poynton, Health Economist; Pharmaceutical Management Agency (PHARMAC), Wellington

Correspondence: Dr Peter Moodie, PHARMAC, PO Box 10-254, Wellington, New Zealand. Email: peter.moodie@pharmac.govt.nz

Endnotes:

* Standard prescription fees are higher in Australia (up to A$34.20) compared with NZ$3 here for publicly-funded patients—so that Australians pay on average 4½ times the prescription fees of New Zealanders.[7] In addition, proportionately many more prescriptions in Australia will be paid for in full by the patient as they fall under the cost of A$34.20 (note that charge is per dispensing so usually this will provide one month's supply only). Hence Australia's actual prescriptions fees will be likely be much higher than reported.

† Although inter-country assessments sound straightforward, the analysis is in fact complex and results must be interpreted carefully. As has been seen in other settings (e.g. the Karolinska Institute report on the uptake of new cancer drugs and cancer survival, cited by the authors), such comparisons can be fraught (the devil being in the detail).

Detailed criticisms of the Karolinska report included incorrect outcome statistics (using not survival but a medley of prevalence and incidence data), incorrect drug usage data, incomparable time periods, reporting bias with mortality, and confounding (e.g. tobacco use).[9,10]

In addition, New Zealand's expenditure on cancer medicines as recorded by that report was undercounted compared with other countries, as DHB hospital pharmaceutical cancer spend was poorly captured at the time.

As was stated by Michel Coleman:

> "In short, the new Karolinska report uses flawed methods to reach flawed conclusions about the link between cancer drug 'vintage' and cancer survival in European countries. …It is neither premature nor petulant to criticize a 75-page report that invents an incorrect method of estimating cancer survival in a single short sentence, gets the wrong answer, models the incorrect results with drug data for a period some 10 years after the patients were diagnosed, and then concludes that low national survival rates are due to poor access to cancer drugs and slow national drug licensing."[10]

‡ The debate about access to pharmaceuticals often focuses around access to the very newest medicines; however, for health outcomes, it is more important that the population at large has access to the entire pharmaceutical armamentarium on affordable and equitable terms. In this respect, New Zealanders enjoy superior access than our neighbours. Any number of comparisons can be done, and some will favour different views. For example New Zealand spends, in total, half as much per person on pharmaceuticals, has direct patient costs of less than a quarter, fewer restrictions, and lists more treatments than Australia.[7]

§ In the 2 years 2009/10[15] and 2010/11[17] PHARMAC funded 59 new medicines and widened access to a further 68, benefitting an average of 180,000 additional patients each year. This level of investment was aided by government injecting a further $100 million (over 2008/09 baseline) into community and cancer pharmaceuticals, with a further $80 million invested in 2011/12 likely to lead to further increases in the number of medicines funded.

** Often new treatments provide little or no health gains over existing funded treatments, and are relatively poor investments compared with other options in the health sector. There are me-toos of little advantage, and others proposals give relatively little added-value for their added costs.

†† The authors mention the availability of cost-effectiveness results for public scrutiny.[8] In fact withholding of such information has been at the request of the industry itself.[13]

‡‡ During 2010/11 PHARMAC funded 39 new medicines for an estimated 176,000 new patients by the end of 12 months' funding, and widened access to 43 listed medicines for 264,000 additional patients.[17]

QALY data are available for 28 of these 82 new and widened access medicines during that year; in the first year these medicines were (or will likely be) used by 174,000 patients (i.e. actual or estimates for 12 months' use following implementation). Taken over their remaining treatment time spans, with consequent probable improvements in quality of life and/or increased life-expectancy, the new medicines for these patients alone will likely give approximately 4800 QALYs over remaining treatment time spans more than from standard current treatments (ranging between 3,800 and 10,700 QALYs, given uncertainties with the estimates of individuals' time span gains and other assumptions). These QALY estimates are discounted at 3.5% per annum.[17]

References:

1. Rawlins MD, Chalkidou K. The opportunity cost of cancer care: a statement from NICE. Lancet Oncol. 2011;12:931-2. http://www.sciencedirect.com/science/article/pii/S1470204511702182
2. Braae R, McNee W, Moore D. Managing pharmaceutical expenditure while increasing access. The pharmaceutical management agency (PHARMAC) experience. Pharmacoeconomics 1999;16:649-60. http://adisonline.com/pharmacoeconomics/Citation/1999/16060/Managing_Pharmaceutical_Expenditure_while.4.aspx
3. Cumming J, Mays N, Daubé J. How New Zealand has contained expenditure on drugs. BMJ. 2010 May 18;340:c2441. http://www.bmj.com/content/340/bmj.c2441.full
4. Raftery JP. Paying for costly pharmaceuticals: regulation of new drugs in Australia, England and New Zealand. Med J Aust. 2008;188:26-8. http://www.mja.com.au/public/issues/188_01_070108/raf10125_fm.html
5. Grocott R, Metcalfe S. Going against the flow: the impact of PHARMAC not funding COX-2 inhibitors for chronic arthritis. N Z Med J. 2005;118:U1690. http://journal.nzma.org.nz/journal/118-1223/1690/
6. Grocott R. Applying Programme Budgeting Marginal Analysis in the health sector: 12 years of experience. Exp Rev Pharmacoecon 2009;9:181-7. http://www.expert-reviews.com/doi/abs/10.1586/erp.09.2
7. PHARMAC. Access to medicines in Australia and New Zealand: a high level Comparison. PHARMAC Working Paper, March 2010 (draft) (comparison as at August 2009).
8. Wonder M, Milne R. Access to new medicines in New Zealand and Australia. N Z Med J. 2011;124(1346). http://journal.nzma.org.nz/journal/124-1346/4966
9. Coombes R. Cancer drugs: swallowing big pharma's line? BMJ. 2007;334:1034-5. http://www.bmj.com/content/334/7602/1034.full
10. Coleman MP. Not credible: a subversion of science by the pharmaceutical industry. Commentary on A global comparison regarding patient access to cancer drugs (Ann Oncol 2007; 18 Suppl 3: pp 1 75). Ann Oncol. 2007;18:1433-5. http://annonc.oxfordjournals.org/content/18/9/1433.long
11. Brougham M, Metcalfe S, McNee W. Our advice? Get a budget! Healthcare Papers 2002;3:83-5. http://www.longwoods.com/product.php?productid=16915
12. Metcalfe S, Grocott R. Health economic assessment: New Zealand in fact has no cost-effectiveness threshold. IJERPH 2010;7:1831-1834. http://www.mdpi.com/1660-4601/7/4/1831/pdf
13. Crausaz S, Metcalfe S. PHARMAC's response on gemcitabine and transparency. N Z Med J. 2005;118:U1741. http://journal.nzma.org.nz/journal/118-1225/1741/
14. Moodie P, McNee W, Metcalfe S. PHARMAC welcomes debate. N Z Med J. 2005;118:U1572. http://journal.nzma.org.nz/journal/118-1218/1572/
15. Annual Report of Pharmaceutical Management Agency (PHARMAC) for the year ended 30 June 2010. Presented to the House of Representatives pursuant to section 150(3) of the Crown Entities Act 2004. http://www.pharmac.govt.nz/2010/10/22/2010%20Annual%20Report.pdf

16. PHARMAC. Funding options that PHARMAC had before it during 2009/10 that were not funded (implemented) during that year. http://www.pharmac.govt.nz/2010/10/22/Unfunded%20proposals.pdf
17. Annual Report of Pharmaceutical Management Agency (PHARMAC) for the year ended 30 June 2011. Presented to the House of Representatives pursuant to section 150(3) of the Crown Entities Act 2004. http://www.pharmac.govt.nz/2011/10/19/10.11%20Annual%20Report.pdf
18. Morgan S, Boothe K. Prescription drug subsidies in Australia and New Zealand. Aust Prescr 2010;33:2–4. http://www.australianprescriber.com/magazine/33/1/2/4
19. Spinks JM, Richardson JR. Paying the right price for pharmaceuticals: a case study of why the comparator matters. Aust Health Rev. 2011;35:267-72. http://www.publish.csiro.au/index.cfm?paper=AH10930