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KEY INFORMANTS' PERCEPTIONS OF HOW PHARMAC OPERATES IN NEW ZEALAND

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Objectives: The aim of this study is to examine key informants' perceptions of how the New Zealand Pharmaceutical Management Agency (PHARMAC) operates in New Zealand.
Methods: We carried out qualitative analysis of semi-structured interviews with key informants. We obtained ethics approval from the University of Otago School of Pharmacy, and all participants gave informed consent. We digitally recorded the interviews, which were then transcribed, and coded in NVivo. The data were analyzed by theme using constant comparison methods. Twenty informants who had previously published research or commentary on New Zealand's access to medicines, acted as spokespersons for interest groups, or held positions that gave them key insights into New Zealand's medicines system agreed to participate. Informants were purposefully selected to ensure a wide range of views, including five people working in medicine, four in pharmacy, three Members of Parliament from different parties, and two each from PHARMAC and the pharmaceutical industry.
Results: Respondents saw PHARMAC as an organization that contained medicine costs effectively, was politically neutral, and resistant to lobbying. It enjoyed broad political support and, with extremely rare exceptions, had been allowed to carry out its functions independently regardless of who was in government. As a result of this political stability, the relationship between PHARMAC and the pharmaceutical industry has been improving.
Conclusion: PHARMAC's longevity and increasing influence are largely due to political choices made to prioritize containing pharmaceutical expenditure and to respecting PHARMAC's independence. This may be difficult to replicate in other countries.

Keywords: Pharmaceutical policy, Pharmaceutical economics, Healthcare rationing, New Zealand

"You hate it in Opposition and you love it when you go on the Treasury bench."

New Zealand's public health system aims to provide equitable access to medicines for all residents while containing pharmaceutical spending. This is part of a nationwide, taxpayer funded public health system that provides primary, secondary, and tertiary care. New Zealand residents are eligible for heavily subsidized outpatient medicines, from a list of approximately 2000 medicines listed on the New Zealand Pharmaceutical Schedule (7). The vast majority of medicines on the Schedule only attract a patient co-payment of $3 New Zealand Dollars ($2.2 United States Dollars, 1.7 Euros) per 3 month prescription. All residents are also eligible for inpatient medicines at no patient cost (1;7).

The cornerstone of New Zealand's pharmaceutical strategy is the Pharmaceutical Management Agency (PHARMAC). PHARMAC was established in 1993, and charged with obtaining the best possible outcomes from outpatient pharmaceuticals while staying within a fixed pharmaceutical budget. Between 1994 and 2008, New Zealand's spending on outpatient medicines increased by an average of 2 percent per year, compared with 15 percent in the 1980s. Over same period, total health spending rose by an average of 7.2 percent per year (7). The strategies PHARMAC uses to contain pharmaceutical spending have been discussed in detail by other authors (4;8).

PHARMAC manages a capped yearly budget for all medicines on the Pharmaceutical Schedule. It evaluates the cost effectiveness of new medicines that suppliers want funded, negotiates prices with suppliers, and sets the conditions for funding. PHARMAC also negotiates the prices of many hospital medicines, but does not currently manage hospital medicine budgets or how medicines are used within hospitals (7). However, the New Zealand Government has recently announced plans to bring hospital medicines management

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(assessment, purchasing and guidelines) under PHARMAC's control. PHARMAC will also gradually take over these functions for medical devices (24).

PHARMAC has been held up as a model of how to contain pharmaceutical expenditure while expanding patient access to medicines (7). PHARMAC has also been accused of making medicine switches that harm patients, denying access to lifesaving treatments, and subsidizing generic products perceived as inferior to innovator brands. These criticisms have come from the pharmaceutical industry, patient advocates, and clinicians (3;6;11;21). PHARMAC has vigorously contested these criticisms in peer-reviewed journals and through commissioned reports (5;9;16).

The relationship between PHARMAC and the pharmaceutical industry has been openly adversarial in the past. The industry has made official submissions to the New Zealand Government seeking changes to PHARMAC's powers (such as the delegating of cost-effectiveness analyses and budget management to different bodies), and questioned whether PHARMAC's decisions are worsening New Zealanders' health outcomes (6;21). The industry has also mounted legal challenges that sought to limit PHARMAC's powers, such as its exemption from anticompetitive provisions in the Commerce Act. Neither of these avenues have been successful (7). As noted above, PHARMAC's role and influence have been expanding.

Potential challenges to PHARMAC may also come from outside New Zealand. The New Zealand Government is currently negotiating the Trans-Pacific Partnership free trade agreement, an agreement that includes the United States. New Zealand could potentially face pressure to modify PHARMAC during the negotiations (18). It is worth noting Australia's Pharmaceutical Benefits Scheme underwent significant changes following the signing of the Australia-United States Free Trade Agreement (10).

While both success and censure have been discussed in detail (3;6;7;11), there has been relatively little analysis of how and why PHARMAC has been able to operate effectively in New Zealand for almost two decades. This is especially important for other countries looking to New Zealand for lessons on controlling pharmaceutical expenditure.

In the present study, we interview twenty key informants working in New Zealand politics, health care, pharmaceutical industry, public service and academia. Our findings show PHARMAC's longevity is due to factors that might be difficult to replicate in other countries, such as a sustained political consensus around the need to contain medicine costs, and to respecting PHARMAC's operational independence.

METHODS

Objective

To examine key informants' perceptions of how PHARMAC operates in New Zealand.

Participant Selection

We obtained ethics approval from the School of Pharmacy, University of Otago. We initially generated a list of types of organizations to be included, such as political parties, industry, government agencies, health professionals, health economists, and consumer groups, and then using our knowledge of the pharmaceutical policy area, identified people from these groups who would be suitable key informants. (Individuals who had published research or commentary on the medicines system, acted as spokespersons for stakeholder groups, or held positions that gave them important insights into the medicines system). They were purposefully selected to ensure inclusion of a range of professional groups and positions, and opinions on the medicines system. This resulted in a list of 32 people.

We presented ourselves as independent researchers who were not affiliated with PHARMAC, the pharmaceutical industry or any particular patient or advocacy group. Our goal was to gain a further understanding of New Zealand's pharmaceutical system, developing on earlier quantitative research we had done (1;23). We made it clear that we were neither defending the status quo nor advocating for any change in it.

Respondents were initially contacted by using their work E-mail addresses or the E-mail address on their professional Web pages. (This allowed us to include the participant information sheets, and gave respondents an opportunity to consider the proposal before having to respond). Those who did not respond to the initial E-mail were sent a second E-mail to the same address, followed by a telephone call to a work telephone number or a number listed on a professional Web page.

Twenty informants agreed to take part in the interview. The characteristics of the informants are shown in Table 1.

The twelve who declined to participate were broadly similar to those who did take part, and included medical practitioners, Members of Parliament (as with the Members of Parliament who did participate, those who declined came from both the Government coalition at the time and the Opposition) and a health economist. The most common reasons for declining was not having time, and not being able to agree a mutually acceptable time for an interview.

Interviews

All except two of the interviews were conducted face to face, with the remainder by telephone because a suitable time for a face-to-face interview could not be arranged. The interviews were semi-structured, focusing on common topics, but with the freedom to pursue additional topics of interest as they came up.

The interviews were not anonymous, but the interviewees were aware that the results were nonattributable (no interviewees would be quoted by name or have a position attributed to them by name without their express written position). All interviewees agreed to this.

The interview structure was developed by the authors in collaboration, using information from the controversy over access

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Table 1. Characteristics of the Informants

Professional Affiliation	Location	Notes
Medicine (5)	Metropolitan North Island (1), Metropolitan South Island (4)	Specialties: General Practice (2), Oncology (1), Pharmacology (2)
Pharmacy (4)	Metropolitan North Island (2), Provincial North Island (2)	Hospital Pharmacy (3), Community Pharmacy Representative (1)
Members of Parliament (3)	Metropolitan North Island (3)	Government (1), Main Opposition (1), Minor Opposition Party (1)
Public Service (3)	Metropolitan North Island (3)	PHARMAC (2), Medsafe (New Zealand's Medicines regulator) (1)
Pharmaceutical Industry (2)	Metropolitan North Island (2)	
Patient Advocate (1)	Metropolitan North Island (1)	Umbrella group that represents multiple disease advocacy groups
Health Economist (1)	Metropolitan South Island (1)	
Maori Health	Metropolitan North Island	Maori are New Zealand's indigenous people, and have poorer health outcomes than other New Zealanders

Table 2. Major Coding Themes

Major Theme	Sub-Themes
Professional Affiliation	Medicine, Pharmacy, Member of Parliament, Pharmaceutical Industry, PHARMAC, Medsafe, Patient Advocate, Academic, Maori Health
PHARMAC Cost Containment	Contains costs well, too focused on cost containment, doesn't focus enough on cost containment
PHARMAC Processes	Has good processes, has poor processes, processes need improvement
Funding For Medicines	Funding limited, additional funding available
Assessment of medicines for funding	Medicines assessed more strictly than other health spending, medicines assessed equally to other health spending, medicines assessed less strictly than other health spending
Pressures on medicine funding	Cost of new medicines, cost shifting within health system, ageing population, increased number of prescriptions
Relationship between PHARMAC and pharmaceutical industry	Good relationship, poor relationship, relationship needs improvement
New Zealand's access to medicines	Good access to medicines, poor access to medicines, access needs to improve
Equity of access	Equity for all socioeconomic groups, equity for all geographic locations, equity for people who need high cost medicines
Lobbying and public pressure	Can influence PHARMAC decisions, have little or no influence on PHARMAC decisions

to medicines in New Zealand in the peer reviewed literature. This was then iteratively piloted tested on health professionals and researchers (i.e., people who had similar levels of education and command of English as our expected participants, including both first and second language English speakers) to ensure reliability and validity.

The interviews focused on the following topics: what New Zealand does well or poorly when it comes to funding medicines, what New Zealand could learn from other countries (and vice versa), the role of the pharmaceutical industry in providing New Zealanders with access to medicines, the relationship between Government agencies and the pharmaceutical industry, and the effectiveness of patient advocates and other lobby groups in influencing access to medicines.

Data Analysis

The interviews ranged from 25 min to an hour, with interviews around 40 min being typical. Interviews were digitally recorded (and later transcribed word for word by a professional transcriber), with hand written notes being taken to supplement the recordings and as a precaution against recorder failure.

We then coded the data in NVivo to find common themes and areas of disagreement using constant comparison methods, an inductive technique where data are examined critically and constantly for new meanings. The coding was done by the lead author, in consultation with all co-authors. The analysis method included first identifying broad categories such the demographic characteristics of the respondent and the major topic being discussed at the time (for example medicine funding or equity), before identifying sub-categories in each category to create a "tree" structure.

The major coding themes are shown in Table 2 above.

RESULTS

Funding Limits

Almost all respondents said the funding available for medicines was limited. This response came from medical practitioners, pharmacists, academics, public servants, Members of Parliament from all the parties involved in the study, and people working in the pharmaceutical industry. (No-one expressed a

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view there was any large surplus of money in the Government's budget that could go toward medicines). Comments included "We're not a rich country anymore", "We don't have an endless supply of money", "You just have to accept there's a fixed budget and you can't go above that", and "We're a small country with a limited health budget".

Respondents pointed out that the potential demand was unlimited, and public expectations would always exceed what could be supplied. Respondents also pointed out that simply increasing the medicines budget was not the answer, as increasing medicine funding without increasing total health funding would divert money from other services.

However, many respondents commented medicines were assessed more stringently for cost effectiveness than other health investments (including but not only other health technologies), and ideally other investments should be assessed in the same way. This response crossed all sectors, and included politicians from each party. (No respondents expressed a view that medicines were assessed less stringently than other investments.) The United Kingdom's National Institute for Health and Clinical Excellence (NICE) was cited as an example of how to assess other health technologies, although respondents were aware only a small proportion of NICE's evaluations were of technologies other than medicines, and the availability of randomized clinical trials might be limited.

A majority of the respondents, across the range, identified current and future pressures on the limited medicines budget. They most commonly cited the cost of new medicines, for example monoclonal antibodies, oral anticoagulants, and tyrosine kinase inhibitors [such as imatinib, or Gleevec^{R}/Glivec^{R}], of which newer versions were constantly being developed. One respondent commented, "There's now like a son of Gleevec, a grandson of Gleevec, which are even more expensive." Other pressures identified were an ageing population, budgetary silos within the health system (which encourage cost shifting, and increase overall costs), initiatives to lower doctor and prescription fees over the past decade (which increased the volume of prescriptions), and shifting medicines previously sold without a prescription on to the Pharmaceutical Schedule.

Cost Containment

A majority of respondents, across all sectors, said PHARMAC had a strong focus on cost containment, with a few believing PHARMAC focused too much on cost containment. (No one expressed a view that PHARMAC did not care enough about cost containment). They were aware PHARMAC actively managed prices to get the best deals. A respondent gave the example of fluoxetine, which initially cost almost three dollars per capsule but now costs five cents.

While respondents were in agreement that PHARMAC kept prices down and contained expenditure, there was disagreement over the consequences. Some respondents (including medical practitioners, pharmacists, and politicians) believed this was a bonus for patients and the health system, freeing up money for other uses. They expressed views like "we probably get the biggest bang for our buck of any country in the world", "PHARMAC's an outstanding organization internationally in terms of being able to squeeze the most value out of the budget that it's allocated" and "A lot of other countries look at our PHARMAC regime with envy but the battle with the drug companies is quite a big one for them to take on". (It is worth noting that respondents affiliated with the pharmaceutical industry believed PHARMAC's strong focus on cost containment made negotiations somewhat adversarial. However, respondents from both PHARMAC and the pharmaceutical industry spoke of a professional working relationship, and a commitment to working together. This is discussed further in section Relationship between PHARMAC and the pharmaceutical industry).

Other respondents (including other medical practitioners and people working in the pharmaceutical industry) believed that PHARMAC's focus on staying within a fixed budget meant passing up opportunities for investments that could deliver greater health benefits. This group believed that PHARMAC's focus was on "static efficiency" (buying a given basket of medicines for the lowest price possible), rather than keeping up with changes in international best practice. (Cancer medicines were cited independently by an oncologist and a hospital chief pharmacist as an area where New Zealand was falling behind). People in this group spoke of "win-win" opportunities that could benefit both manufacturers of innovative medicines and the public if there was greater willingness to spend. One respondent gave the example of patient access schemes in the United Kingdom, where manufacturers and the health system share the cost of a drug that would otherwise be too expensive.

Lobbying and Public/Political Pressure

Respondents from many sectors including public servants, members of the pharmaceutical industry and health professionals identified PHARMAC's nonpolitical and independent decision making as a strength. Informants recognized PHARMAC was structured as a statutorily independent body, which made it difficult for outside pressure to influence PHARMAC's decisions.

Many of the respondents identified rare cases where the Government of the day had over-ridden PHARMAC's decisions. All of these cited the case of Herceptin^{R} (trastuzumab), where the 2008 new National Party led government funded 52 weeks treatment for early stage HER-2 positive breast cancer, rescinding PHARMAC's earlier decision to only fund a 9-week course. A few respondents cited the case of beta-interferons in multiple sclerosis, where the 1999 Labour Party led government directed PHARMAC to fund this treatment. In both cases, the lobbying succeeded because well organized and media connected patient groups succeeded in influencing the Government, rather than PHARMAC itself. Health professionals, members of the pharmaceutical industry and Members of Parliament showed very

little support for such cases becoming routine. Respondents also thought there would be little political gain from such cases in the future, as favoring one treatment risked a backlash from clinicians and patient advocates working in other areas.

Respondents believed lobbying or public pressure had little ability to get a particular treatment funded by PHARMAC. An informant with insight into PHARMAC's processes made it clear the decision-making committees expect the case for funding a treatment to be evidence based. Otherwise, "the pleas fell on deaf ears." This was true regardless of how high profile the disease or how well organized the lobbying campaign. The respondent gave examples of anti-hypertensive, anti-cholesterol, and oncology medicines that did not get funded (despite considerable pressure from clinicians and patient groups) because they only offered a marginal improvement over already funded medicines, and came at a considerable cost.

Relationship Between PHARMAC and the Pharmaceutical Industry

A majority of the respondents identified a good or improving relationship between PHARMAC and the pharmaceutical industry. This came from a broad range of respondents, including medical practitioners, pharmacists, people within both PHARMAC and the pharmaceutical industry, and Members of Parliament. Although other respondents identified tensions or areas of disagreement, none cited a dysfunctional or deteriorating relationship. The general view was that while there were major differences (such as whether or not a fixed medicines budget benefited New Zealanders), both industry and PHARMAC were able to work together in a professional manner. Respondents cited several reasons for this, which we discuss below.

A majority of respondents, including people from PHARMAC, the pharmaceutical industry and Members of Parliament, identified a political consensus around PHARMAC. Respondents saw PHARMAC's decision making as being free from political involvement. PHARMAC's existence was not under threat, and its structure was unlikely to change radically when the Government changed. A key reason for this political support was PHARMAC's success in managing the medicines budget, and the value this had to whichever party or coalition was in power. One respondent commented on PHARMAC that "You hate it in Opposition, and you love it when you go on the Treasury bench". (As noted earlier, pharmaceutical expenditure has grown much slowly under PHARMAC than it did previously, and much more slowly than overall healthcare costs. Other authors have discussed PHARMAC's strategies for containing pharmaceutical expenditure in detail) (4;7;8).

This political stability has consequences for the relationship between PHARMAC and the industry. Respondents indicated that now that its existence is not under threat, PHARMAC is less focused on defending its position, and is making greater efforts to be conciliatory. Respondents also indicated that, for its part, the pharmaceutical industry has accepted that PHARMAC in its current form is here to stay, and is no longer seeking major changes to PHARMAC's role or powers. Respondents commented the relationship was much better than it had been even a few years ago.

This does not mean there are no tensions in the relationship. Respondents working in the pharmaceutical industry voiced frustration that PHARMAC's strong focus on cost containment makes negotiations unnecessarily adversarial. However, respondents both from the industry and PHARMAC spoke of a commitment to working together professionally. An academic who had worked with both parties spoke of being struck by the "enormous amount of goodwill" present on all sides. Respondents indicated both groups are aware of each others' positions, and willing to work together in a pragmatic manner within the political reality that exists in New Zealand.

DISCUSSION

The respondents in this study saw PHARMAC as an organization that contained medicine costs, was politically neutral, and resistant to lobbying. It enjoyed broad political support and (with only the two exceptions of Herceptin and beta-interferons over nearly two decades) had been allowed to carry out its functions independently regardless of who was in Government. As a result of this political stability, the relationship between PHARMAC and the pharmaceutical industry has been improving. However, there were still tensions between PHARMAC and the industry about PHARMAC's focus on cost containment, and concerns about whether New Zealand was falling behind in access to new medicines.

The challenges faced by PHARMAC are not unique. Organizations that determine public funding of medicines will, by definition, have to deny or restrict funding for some treatments. These organizations have to contend with pressure both to approve promising treatments and to contain costs. The organization, for example the United Kingdom's National Institute for Health and Clinical Excellence (NICE), can find itself being simultaneously criticized for being unwilling to fund new medicines and being too generous with public funds (22).

For PHARMAC, however, being too generous is not an option. Unlike NICE, PHARMAC has a defined medicines budget, and a statutory duty never to exceed that budget. PHARMAC's responsibilities are defined in law as "to secure for eligible people in need of pharmaceuticals, the best health outcomes that are reasonably achievable from pharmaceutical treatment and *from within the amount of funding provided*" (emphasis added) (20). The law also gives PHARMAC full operational independence in how it manages that budget.

It is interesting to contrast the advantages and disadvantages of PHARMAC's duty to stay within a capped budget (but subsequent independence from the Government of the day) with the situation in Australia. The Australian Pharmaceutical

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Benefits Scheme (PBS) is funded from Australian Federal Government revenue, which potentially gives the PBS the option of making investments that would not be possible with a capped budget. However, decisions made by the PBS are subject to Government approval. This means the Australian Government can (and has) vetoed PBS spending decisions as being unaffordable in difficult economic times (25).

By expressly capping PHARMAC's spending, New Zealand has chosen the certain fiscal benefits of controlling pharmaceutical expenditure over possible long-term health benefits from greater investment in medicines. In addition, New Zealand National Medicines Strategy, unlike Australia's National Medicines Policy or the United Kingdom's Pharmaceutical Price Regulation scheme, does not have supporting the local pharmaceutical industry as one of its objectives (2;19;26).

Last but not least, PHARMAC has enjoyed a political stability that many other organizations would envy. Since PHARMAC was first established in 1993, New Zealand has had coalition governments led by parties from both the centre right and centre left of the political spectrum, and which between them have included virtually all parties represented in the New Zealand Parliament. Despite this, and regardless of the controversy its decisions have caused, PHARMAC has been spared cutbacks or ideologically motivated restructuring. PHARMAC itself may also have contributed to this stability reinforcing by effectively reinforcing the message that it was making the best use of limited funds through journal articles and commissioned reports (5;9;16). The current economic climate and its pressure on public finances may also contribute to this stability.

These factors (a statutory duty to stay within a capped budget, not having a duty to support the pharmaceutical industry, operational independence, and broad political support over an extended period) allow PHARMAC to focus on driving down medicine costs and extract the maximum buying power from its budget. This may explain why PHARMAC has been able to obtain greater cost savings than similar agencies (such as the example of fluoxetine cited by one respondent), despite the relatively small size of the New Zealand market.

The tensions around price negotiations identified by respondents have also been openly expressed in the past, including claims that PHARMAC's strategies were unlikely to deliver sustained cost savings, and that its tendering policies were putting New Zealanders at risk (6;21). This tension is perhaps inevitable given a capped pharmaceutical budget. Unlike many similar organizations, PHARMAC does not use a "cost-effectiveness threshold," where a medicine that demonstrates a given return on spending is likely to be funded (15). This makes price negotiation more uncertain for the industry, which may increase tensions.

The overall good working relationship between PHARMAC and the pharmaceutical industry identified by respondents bodes well for a smooth transition to PHARMAC managing hospital medicines and medical devices. It remains to be seen whether this good relationship will be sustained, especially as PHARMAC applies its evaluation and price negotiation techniques to these areas. The relationship may also be affected if New Zealand comes under pressure to make changes to the way PHARMAC operates as part of free trade negotiations (18). Changes in Australia after the signing of the Australia-United States Free Trade Agreement included a board with industry representation for reviewing listing decisions, and a separate category of medicines that are not subject to reference pricing against generics (10). Similar changes in New Zealand could pose a serious challenge to the current PHARMAC model.

The concern expressed by respondents that New Zealand was 'falling behind' in access to newer medicines is in line with a report to the Minister of Health on New Zealanders' access to high cost and highly specialized medicines (14). Recent international comparisons also show that New Zealand funds fewer and older medicines than countries such as Australia, Finland, the United Kingdom, and the United States (1;23;27). However, PHARMAC has questioned what if any impact these differences have on the health outcomes of the New Zealand population as a whole (17). It should also be noted that other countries also struggle with how to pay for expensive new medicines. Approaches such as greater patient cost sharing in the United States and the establishment of a special "cancer drugs fund" in the United Kingdom—which funds cancer medicines which have been have declared uneconomic by the National Institute for Health and Clinical Excellence (NICE), even under the patient access schemes cited by one of the respondents—have drawn their own criticisms (12;13).

The present study has some limitations, and the findings need to be considered in light of these. New Zealand has a relatively small population, and the number of people involved in making, commenting on or advocating for changes in pharmaceutical policy is very small. Informants could potentially be identified from their responses, and this may have led to some informants censoring themselves. Informants may also have held back for tactical reasons, such as not damaging commercial relationships or not compromising future advocacy strategies. However, it is worth noting that the majority of informants were initially selected because they acted as spokespersons on pharmaceutical policy for their respective organizations, or had already published research and opinion on this topic. It would have been strange to censor themselves in this study after having already expressed forthright views in public.

The present study is to our knowledge the first to examine the perceptions key informants in medicine, pharmacy, the pharmaceutical industry, the public service and Government have of PHARMAC in a single study. Previous publications have focused on the perspective of one group or on the funding of particular medicines, and have therefore focused on areas of disagreement (3;11;16). The present study identifies many areas of agreement across these varied sectors, while highlighting key differences of opinion.

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CONCLUSION

PHARMAC has been effective in controlling pharmaceutical spending in New Zealand, enjoys broad political support despite controversy, and has an improving relationship with the pharmaceutical industry. However, this is due in large part to political choices to prioritize the control of pharmaceutical expenditure, and to establish and respect PHARMAC's independence. These factors may be difficult to replicate in other countries, and could potentially be affected by agreements New Zealand makes with other countries.

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CONFLICTS OF INTEREST

Rajan Ragupathy has received a grant to author and institution, payment for writing the manuscript, support in kind and salary from New Zealand Government, and is employed by Waikato District Health Board (part of New Zealand's public health system, which includes PHARMAC). The other authors report no potential conflicts of interest.

REFERENCES

1. Aaltonen K, Ragupathy R, Tordoff J, Reith D, Norris P. The impact of pharmaceutical cost containment policies on the range of medicines available and subsidized in Finland and New Zealand. *Value Health.* 2010;13:148-156.
2. Australian Department of Health and Ageing. National Medicines Policy 2000. http://www.health.gov.au/internet/main/publishing.nsf/Content/0241A32640D477CACA256F18004685E4/$File/nmp2000.pdf (accessed April 28, 2012).
3. Begg E, Sidwell A, Gardiner S, Nicholls G, Scott R. The sorry saga of statins in New Zealand- pharmacopolitics versus patient care. *N Z Med J*. [serial on the Internet] 2003. http://www.nzma.org.nz/journal/116-1170/360/ (accessed April 28, 2012).
4. Braae R, McNee W, Moore D. Managing pharmaceutical expenditure while increasing access- the Pharmaceutical Management Agency (PHARMAC) experience. *Pharmacoeconomics.* 1999;16:649-660.
5. Business and Economic Research Limited (BERL). Independent review of The Castalia Report on New Zealand Pharmaceutical Policies. [Online] 2005. http://www.pharmac.co.nz/2006/05/04/040506b.pdf (accessed April 28, 2012).
6. Castalia Strategic Advisors. New Zealand pharmaceutical policies: Time to take a fresh look. [Online] 2005. http://www.castalia-advisors.com/files/14634.pdf (accessed April 28, 2012).
7. Cumming J, Mays N, Daubé J. Analysis: How New Zealand has contained expenditure on drugs. *BMJ.* 2010;340:c2441.
8. Davis P. "Tough but fair"? The active management of the New Zealand drug benefits scheme by an independent Crown agency. *Aust Health Rev.* 2004;28:171-181.
9. Easton B. New Zealand's pharmaceutical policies: A fresh look. [Online] 2005. http://www.pharmac.co.nz/2006/05/04/040506a.pdf (accessed April 28, 2012).
10. Faunce T, Bai J, Nguyen D. Impact of the Australia-US free trade agreement on Australian medicines regulation and orices. *J Generic Med.* 2010;7:18-19.
11. Isaacs RJ, Frampton CM, Kuper-Hommel MJ. PHARMAC's funding of 9 weeks Herceptin: Many assumptions in a high-risk decision. *N Z Med J*. [serial on the Internet] 2007. http://www.nzma.org.nz/journal/120-1259/2676/ (accessed April 28, 2012).
12. Lancet Editorial. New 50 million cancer fund already intellectually bankrupt. *Lancet.* 2010;376:389.
13. Lee TH, Emanuel EJ. Tier 4 drugs and the fraying of the social compact. *N Engl J Med.* 2008;359:333-335.
14. McCormack P, Quigley J, Hansen P. Report to Minister of Health, Hon Tony Ryall- Review of access to high cost, highly specialised medicines in New Zealand. [Online]. http://img.scoop.co.nz/media/pdfs/1005/Review_of_Access_to_High_Cost_Highly_Specialised_Medicines_31_April_2010.pdf (accessed April 28, 2012).
15. Metcalfe S, Rodgers A, Werner R, Schousboe C. PHARMAC has no cost-effectiveness threshold. *N Z Med J*. [serial on the Internet] 2012. http://journal.nzma.org.nz/journal/125-1350/5083/ (accessed April 28, 2012).
16. Moodie P, Metcalfe S, McNee W. Response from PHARMAC: Difficult choices. *NZ Med J*. [serial on the Internet] 2003. http://www.nzma.org.nz/journal/116-1170/361/ (accessed April 28, 2012).
17. Moodie P, Metcalfe S, Poynton M. Do pharmaceutical score cards give us the answers we seek? *NZ Med J*. [serial on the Internet] 2011. http://journal.nzma.org.nz/journal/124-1346/4976/ (accessed April 28, 2012).
18. Moynihan R. New Zealand agency comes under pressure to pay more for drugs. *BMJ.* 2011;342 doi:10.1136/bmj.d3933.
19. New Zealand Ministry of Health. Medicines New Zealand. [Online]. http://www.health.govt.nz/publication/medicines-new-zealand (accessed April 28, 2012).
20. New Zealand Parliament. New Zealand Public Health And Disability Act 2000 [Online] 2000. http://www.legislation.govt.nz/ (accessed April 28, 2012).
21. New Zealand Pharmaceutical Industry Taskforce. Submission on the Towards a New Zealand Medicines Strategy consultation document. Wellington: New Zealand Pharmaceutical Industry Taskforce; 2007.
22. Pearson SD, Rawlins MD. Quality, innovation and value for money: NICE and the British National Health Service. *JAMA.* 2005;294:2618-2622.
23. Ragupathy R, Aaltonen K, Tordoff J, Norris P, Reith D. A 3-dimensional view of access to licensed and subsidized medicines under single payer systems in the United States, United Kingdom, Australia and New Zealand. Pharmacoeconomics (in press). 2011.
24. Ryall T. Government extends Pharmac role. [Online]. http://www.beehive.govt.nz/release/government-extends-pharmac-role (accessed April 28, 2012).
25. Taylor L. Australian govt blocks subsidies of new drugs. PharmaTimes Online [serial on the Internet]. 2011. http://www.pharmatimes.com/Article/11-03-15/Australian_govt_blocks_subsidies_for_new_drugs.aspx (accessed April 28, 2012).
26. The United Kingdom Department of Health. The Pharmaceutical Price Regulation Scheme 2009. [Online]. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_091825 (accessed April 28, 2012).
27. Wonder M, Milne R. Access to new medicines in New Zealand compared to Australia. *NZ Med J*. [serial on the Internet] 2011. http://journal.nzma.org.nz/journal/124-1346/4966/ (accessed April 28, 2012).