Pharmaceutical Management Agency

Annual Review
2007

New Zealand Government

PHARMAC annual review

Highlights & key events of 2006-07

We funded 11 new medicines, and made 39 new investments in medicine

At least **2.69 million** people had their medicine subsidised

Subsidised prescriptions increased by **11.8%** to **31.92 million,** an all-time high

Pharmaceutical spending was managed within budget, and rose to **$599.37 million**

The **Seminar Series** continued to provide a valuable contribution to improving clinical knowledge

The **Wise Use of Antibiotics** campaign entered its 10th year, and went digital with computer-animated TV commercials

New investments included treatments for high needs and high priority health areas, such as **heart disease, diabetes, HIV/AIDS, asthma and cancer**

We consulted on, and published, an updated version of the **Prescription for Pharmacoeconomic Analysis,** PHARMAC's guidelines for economic analysis

Internally, we created greater capacity to better manage the many contracts we have with **pharmaceutical suppliers**

The **One Heart Many Lives** campaign expanded into Northland, where cardiovascular disease is a major health concern

We adopted a **vision** and a set of **values** for PHARMAC, with a supporting framework to help guide and measure our performance

In this Review

'**Year**' means year ending June 30.
'**This year**' means the year ended June 30 2007;
'**last year**' means the year ended June 30 2006;
'**next year**' means the year ending June 30 2008.

Unless otherwise stated, all values are in New Zealand dollars

Unless otherwise stated, all references to expenditure are unadjusted for any rebates that may be due or paid by suppliers under risk-sharing agreements

Every year PHARMAC faces new challenges, and last year was certainly no exception.

The spotlight of public interest focused on PHARMAC because of the high-profile media campaigns for expensive medicines, particularly Herceptin, and the Government's Medicines Strategy.

PHARMAC remained focused on its role of prudently managing the country's publicly-funded medicines, and worked to meet its legislative objectives. During the 2006-07 financial year, PHARMAC continued to improve New Zealanders' access to funded medicines while remaining within budget, in addition to producing greater benefits and efficiencies for District Health Boards (DHBs) through its hospital pharmaceutical procurement activities. And PHARMAC continued to develop and implement campaigns that promote the optimal use of medicines.

At the heart of these different strands to PHARMAC's business is our commitment to get the best possible value from health spending. This is a vital theme across the whole health sector. Ensuring that our spending is the best use of taxpayers' money means we won't jeopardise future funding opportunities, nor have people unnecessarily missing out on treatment.

This prioritising is totally centred on the overall welfare of New Zealanders. While managing a budget means we can't fund everything for everyone, it does force a very careful approach to ensure every dollar is spent wisely.

The approach ensures that new medicines become available in an affordable way; sustainability is one of PHARMAC's driving forces.

PHARMAC's primary role is, of course, to manage the country's pharmaceutical expenditure. This year spending was $599.4 million, one tenth of a percent within budget. PHARMAC is legally required to remain within budget and, it is important to remember, any funds not used for pharmaceuticals remain available for DHBs for other projects.

Last year PHARMAC made 39 new investments, including 11 new medicines. The volume of prescriptions grew significantly, reflecting increasing use of medicines, population growth and the impact of Government access policies through the Primary Healthcare Strategy.

PHARMAC continues to contribute to the wider health sector by finding efficiencies in current spending, and continues to help DHB hospitals with national purchasing projects, which underlines the special relationship between DHBs and PHARMAC.

The Medicines Strategy work identified the optimal use of medicines as a key issue, an area where PHARMAC has a strong track record.

The well-established Wise Use of Antibiotics campaign entered a new phase with the use of animated television commercials. The One Heart Many Lives cardiovascular campaign grows from strength to strength – Northland has now embraced the concept, building on the Hawke's Bay successes where innovative approaches have raised awareness and reached men (in particular) at risk of suffering from cardiovascular disease. And this year PHARMAC commenced a new project promoting best practice use of medicines for gastric reflux and heartburn – the Gut Reaction campaign.

All these projects share the theme of making the best use of funded medicines which, in some cases, means more medicines (such as statins for lowering cholesterol levels) or sometimes not using medicines at all. PHARMAC, with its expertise and resources, is well placed to take a lead role in this 'optimal use' area.

I'd like to thank the members of the PHARMAC Board who have all continued to contribute hugely to the success of PHARMAC. There have been some changes on the Board, with Karen Guilliland retiring after six years of outstanding contributions; I'd like to thank Karen and wish her well. We welcome our new Board member, Dr David Kerr, a practicing GP who brings another important clinical perspective.

Finally, I wish to acknowledge the continuing commitment and dedication of PHARMAC's Acting Chief Executive Matthew Brougham, the whole PHARMAC team, and the members of PHARMAC's various advisory committees. It has been a trying and high profile year, which hasn't always been easy. Their collective efforts have been invaluable in working towards providing the best health outcomes for us all.

The PHARMAC Board's chairman Richard Waddel reflects on 2006-07 – a year when PHARMAC faced major challenges and remained focussed on its role.

Significant projects included:

Procurement of bulk intravenous fluids, which mean savings of $1.3 million over five years. Also, supplies of premixed heparin and potassium chloride solutions have been secured, which will be a safety improvement as they reduce the need to mix preparations on the ward;

Radiological Contrast Media, with estimated savings of $1.5 million over five years;

Anaesthetic gases, with savings of $4.1 million over five years;

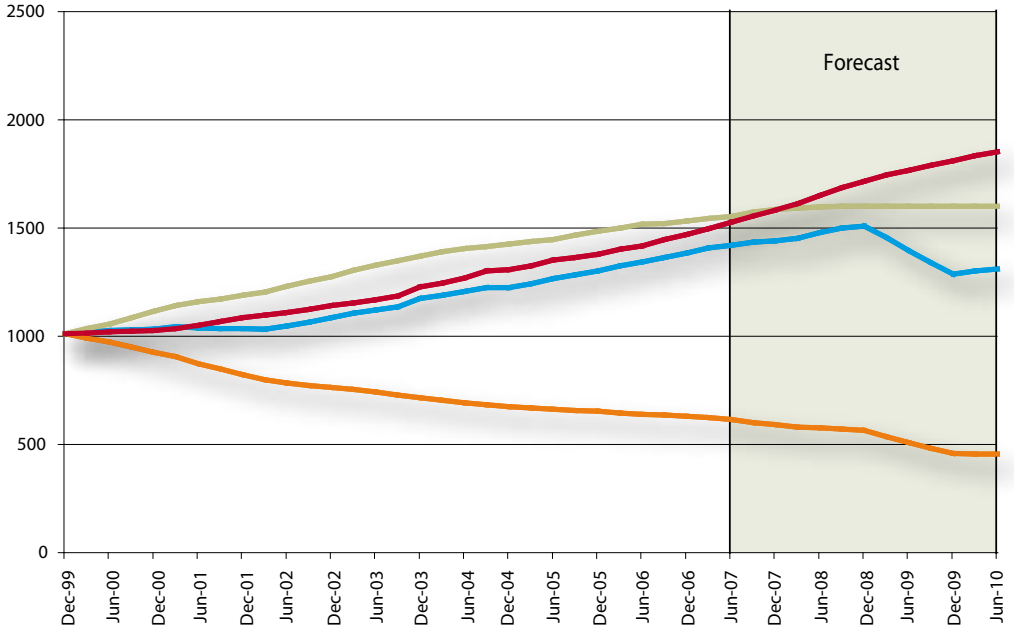
Negotiations for the **national influenza vaccine** programme have produced savings of $900,000 over three years; and

DHBs have asked PHARMAC to investigate national procurement of **orthopaedic prosthetic devices.**

"The Medicines Strategy work identified the optimal use of medicines as a key issue, an area where PHARMAC has a strong track record "

Subsidy, volume, mix and cost indices
Four-quarterly moving averages
Base: four quarters ending June 1993 = 1,000.

Getting more for less:
The subsidy volume and mix indices are like the consumer price index, but for pharmaceuticals. The graph shows that while the amount of pharmaceuticals used, and their cost has been rising, the subsidy index is decreasing.



- **Cost Index** is the drug cost to DHBs ex-manufacturer before GST
- **Subsidy Index** is like the Consumer Price Index but for subsidised pharmaceuticals only
- **Volume Index** is the number of prescriptions multiplied by a standardised measure of the amount prescribed per prescription
- **Mix Index** is the residual from cost index divided by (volume index X subsidy index)

PHARMAC often hears that we're (apparently) more concerned about the budget and money, rather than patients. I've lost count of the times I've heard this criticism, yet it couldn't be further from reality.

It's true PHARMAC observes its budget constraint. That's a legal requirement for us, but PHARMAC is also an instrument of the Government so, to do otherwise would be to take the choice of how to allocate resources away from the rightful owners – the elected representatives of our country. If the statement "PHARMAC cares only about the dollars" really means "it's unacceptable PHARMAC manages the Pharmaceutical Schedule within the budget", we'll wear the criticism. But we'll also (politely) try to point out the errors in this line of thinking.

Most households realise the importance of living within their budget while getting as much benefit as possible (however that benefit is measured). Households may happily make a choice between going out for a family dinner, versus eating in and using the saving to go to the movies later on. Every day we all make dozens of choices to make our hard earned dollars go as far as possible. It's called good housekeeping.

PHARMAC is no different. We're given a budget – and a mandate to derive as much health benefit as possible when subsidising pharmaceutical treatments. In drawing the analogy with good housekeeping, I'm not intending to trivialise the choices confronting PHARMAC. Choosing which or how much of a treatment to subsidise involves the analysis of a wealth of often complex information. My analogy draws attention to what is considered when making these choices. The good housekeeper, in making choices, does not focus solely on cost – that is relatively easy to track; instead the focus is firmly on the relative benefits of competing choices. Which mix of options will provide the greatest satisfaction? Similarly, when doing our job, PHARMAC focuses on the relative benefits of competing options. So, in reality, "it's all about the benefits".

One of our biggest communication challenges is around prioritisation; the core of PHARMAC's role. The term is not popular, partly because it is sometimes incorrectly seen as 'cost focused' or, as noted in our recent stakeholder survey results, 'overwhelmingly fiscal'.

Prioritisation is, however, pivotal in getting the best health for New Zealanders overall. Frankly, it is hard to argue against getting the best health outcomes from available funding, whatever the budget. In essence, good prioritisation means getting more bang for your buck, by selecting things that create high health gains for New Zealanders and rejecting those that don't. Over the long term, good prioritisation means better health with more medicines funded than would otherwise be the case. This has to be good for every New Zealander.

We can't subsidise everything, in the same way that you or I can't afford everything that we see advertised on TV. But in deciding what to fund (and what not to fund), PHARMAC aims to fund the mix that provides the greatest health benefit. Putting this another way, as every dollar spent means a forgone opportunity elsewhere, we aim to minimise the health benefits sacrificed (the "opportunity cost") by the choices we make – like any good housekeeper.

I believe that through PHARMAC's good housekeeping we deliver significantly more health benefits to New Zealanders than a comparable budget would provide in possibly any other country. We continually take opportunities to provide the same pharmaceutical treatments at ever-diminishing prices, and at the same time look for ways to redirect those savings into other potential investments. In this way, as every good housekeeper knows, a greater proportion of the budget can be allocated to purchasing new items and, therefore, increasing benefits. And when we are considering funding new treatments, we endeavour, through careful analysis of the competing options, to maximise health benefits.

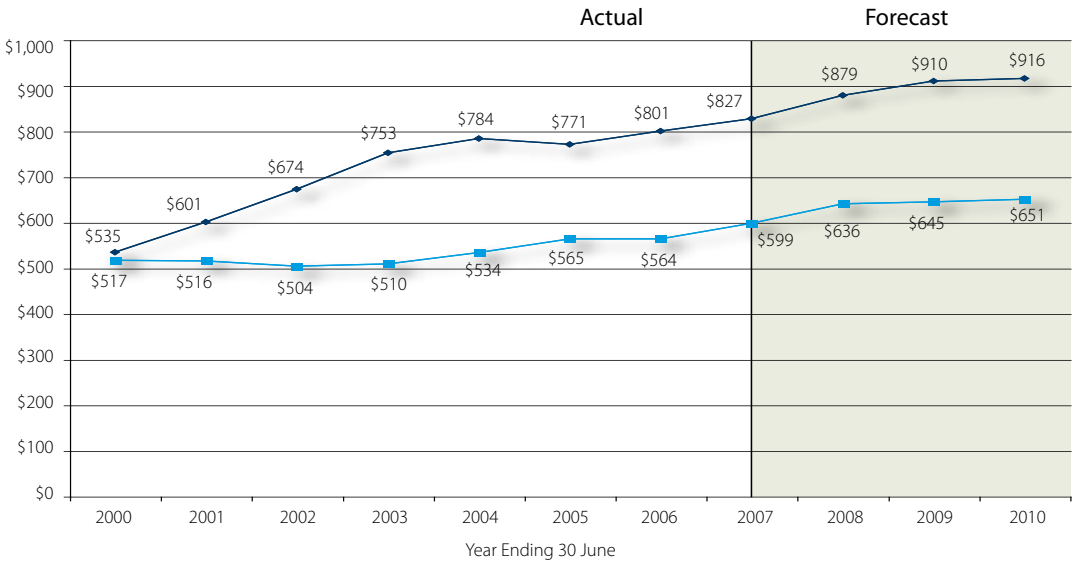
We won't always get it right. The information is complex and there is always a lot of it. In all respects we endeavour to make the best decisions based on the information we have. We don't expect people to always agree with our decisions – quite the contrary, with so many competing options it is inevitable that whenever a decision is made, there will be those disappointed by it.

We work in a contentious environment, and criticism is to be expected. But criticism should consider what a good housekeeper would - "if we hadn't eaten out at a restaurant, we would have been able to have dinner and go to a movie too." Most critics make their criticism in ignorance of the budget. Good housekeepers don't.

PHARMAC's budget management is all about `good housekeeping', writes Acting Chief Executive Matthew Brougham

Impact of PHARMAC on Drug Expenditure over time

Drug cost (Millions)



The graph shows PHARMAC's influence on pharmaceutical spending. The spending pattern is rising at a slower and more manageable rate than would have occurred without PHARMAC's activity.

Listing changes to the Pharmaceutical Schedule

In 14 years, 1166 new or enhanced products have been listed, access has been widened for a further 238, and 1170 have either been restricted or de-listed

Decisions made								Total since *1994*
Decision type	*00/01*	*01/02*	*02/03*	*03/04*	*04/05*	*05/06*	*06/07*	
New Chemical entity listed	20	7	3	15	9	14	11	180
New Presentation listed	13	11	15	27	14	42	30	334
New Product listed	28	60	45	49	51	49	85	653
Total new listings	**61**	**78**	**63**	**91**	**74**	**105**	**126**	**1167**
Derestriction or expanded access	19	17	7	9	16	24	28	238
Changing access to improve outcomes						1		
Changes that restrict or limit access	6	4	1	2	3	0	0	47
Delistings	135	89	196	72	59	43	38	1170

"I believe that through PHARMAC's good housekeeping we deliver significantly more health benefits to New Zealanders than a comparable budget would provide in possibly any other country"

PHARMAC has been around for 14 years now and it is worth reflecting on the changes that have happened in clinical practice since its establishment.

I try to spend one day a week working in clinical practice, in addition to my work at PHARMAC, so I have a foot in both camps when it comes to seeing what goes into making funding decisions, and the impacts of those decisions in the real world.

So often the focus is on what PHARMAC is doing "right now", but looking back can reveal just how decisions have contributed both to clinical practice and to the public health system as a whole.

It always needs to be remembered that PHARMAC has a budget to work with, and this places a necessary discipline on the decision-making process. I expect that New Zealanders will demand that their taxes are spent wisely and efficiently. To that end PHARMAC steps carefully through its decision making processes to ensure that we make choices that deliver better health for New Zealanders, and at the same time that we obtain the best possible prices for pharmaceuticals.

PHARMAC was set up with the express purpose of managing medicines funding, and at the same time improving access to medicines has been an ongoing focus.

With my PHARMAC hat on, this means the needs of patients are very carefully thought through to make sure that when the next drug dollar is spent, we spend it on improving health and not on new and over-hyped drugs that don't really benefit people beyond what is already available.

These decisions can be looked at from different perspectives and we are always keenly aware of patient-related issues. We don't have to be sick ourselves to take on this role, it might be that we have a relative or close friend who we see suffering. Indeed, it could be that we are being treated for a risk factor where there are no symptoms of ill health at all, such as raised blood pressure or cholesterol levels.

People working at PHARMAC field calls from the public on a daily basis, including specialised staff who manage access to some high cost medicines. They ensure that people requiring high cost pharmaceuticals like beta interferon for multiple sclerosis or imatinib for chronic myeloid leukaemia receive their supplies in a timely and efficient manner. For these staff members regular contact with patients makes them very aware of the realities of serious diseases.

Naturally PHARMAC casts a critical eye over the medicine choices it is faced with, and I believe that what we end up with are good decisions that are of value to patients and sustainable to the sector. A good example is the statin drugs for lowering cholesterol. When these first came on the market they were expensive and there wasn't really good data to show long-term benefit. They were funded, but targeted at those at greatest risk.

PHARMAC was criticised for this decision, but I believe it was the right one. We gave people who most needed them the benefits statins offered, and we ensured the very real risk of blowing the budget with these drugs was managed. If there had been open access to statins in 1998, they would have consumed up to 40% of the available medicines budget. In 2002 we eventually saw both the cost of statins reduce and the evidence for primary prevention for high risk patients develop to the point where they could become more openly available and affordable. They are now used by nearly 300,000 New Zealanders.

We've seen this in other areas too. Proton pump inhibitors for heartburn and stomach ulcers, the selective serotonin reuptake inhibitor (SSRI) drugs for depression, long-acting beta agonists for asthma and atypical antipsychotics are all now part of the pharmaceutical furniture, and widely used and affordable largely through the efforts of PHARMAC.

Often we see pressure for new "wonder drugs" to be immediately funded for everyone. The reality in clinical practice is that when a new medicine becomes available, it takes a while for its use to become widespread – we see this in the prescribing data analysed at PHARMAC. This is true of any new technology or technique in medicine.

Clinicians now recognise that many new therapies should be used cautiously and only if existing therapies are not working. We don't see wholesale replacement of new for old overnight; most practice changes are evolutionary rather than revolutionary. It is that conservative approach which gains the confidence and respect of our patients.

PHARMAC's efforts over 14 years have made a real and positive difference to how doctors do their jobs, writes Medical Director Dr Peter Moodie

The Top 20 Expenditure Groups

Year ending 30 June

$ millions, cost ex manufacturer, excludes rebates and GST

Drug Type	Main Use	2007	2006	2005	2004	2003	2002
Antiulcerants	heartburn, stomach ulcers	**$75.5**	$73.8	$68.6	$64.0	$52.2	$44.1
Lipid Modifying Agents	raised cholesterol (cardiovascular risk)	**$68.8**	$68.2	$60.8	$55.0	$46.1	$40.5
Antipsychotics	Mental health (psychoses)	**$56.9**	$53.4	$48.6	$45.2	$40.9	$36.7
Antidepressants	Mental health (depression)	**$30.6**	$29.7	$27.3	$27.6	$32.8	$28.1
Agents Affecting the Renin-Angiotensin System	Raised blood pressure (cardiovascular risk)	**$29.1**	$26.1	$29.1	$28.4	$23.0	$21.4
Immunosuppressants	Organ transplants, arthritis	**$27.9**	$28.3	$27.8	$19.7	$18.1	$16.1
Antiepilepsy Drugs	Epilepsy	**$27.8**	$24.8	$21.4	$20.7	$19.0	$17.5
Diabetes	Diabetes	**$26.3**	$22.5	$20.6	$19.2	$19.0	$18.6
Beta Adrenoceptor Blockers	Heart disease	**$24.5**	$21.3	$17.6	$11.5	$9.2	$8.0
Inhaled Long-acting Beta-adrenoceptor Agonists	Asthma	**$19.3**	$21.7	$18.6	$14.3	$10.0	$6.0
Analgesics	Pain relief	**$17.2**	$15.7	$14.5	$16.5	$16.9	$15.9
Diabetes Management	Blood glucose monitoring	**$17.1**	$16.3	$19.5	$19.8	$19.4	$18.1
Chemotherapeutic Agents	Cancers	**$16.6**	$13.7	$11.3	$10.9	$5.1	$1.1
Antibacterials	Bacterial infections	**$14.8**	$13.9	$13.9	$13.1	$14.6	$15.4
Calcium Channel Blockers	Heart disease	**$14.5**	$13.7	$13.0	$16.4	$13.8	$13.9
Inhaled Corticosteroids	Asthma	**$13.9**	$14.3	$14.6	$14.9	$20.7	$21.9
Calcium Homeostasis	Osteoporosis	**$13.5**	$11.8	$9.8	$8.3	$7.7	$5.7
Antianaemics	Anaemia	**$13.4**	$11.3	$9.2	$7.0	$4.1	$4.8
Antimigraine Preparations	Migraines	**$12.6**	$13.1	$12.4	$12.2	$11.2	$10.5
Antiretrovirals	HIV/AIDS, viral infections	**$11.5**	$10.4	$8.9	$7.3	$6.4	$5.7

This emphasises the message that just because a drug is new, it doesn't necessarily make it better. Are Proton Pump inhibitors always better than the drugs they replaced? What are the real advantages of SSRIs compared to older classes of antidepressants?

The role of PHARMAC is not an easy one and requires balancing the demand for new medicines, and the needs of patients, with the realities of a finite budget. It might seem cold comfort for those who feel that a new medicine they'd like to see funded hasn't received the tick. But PHARMAC's record shows a history of good funding decisions that really have made a positive difference.

"PHARMAC was set up with the express purpose of managing medicines funding, and at the same time improving access to medicines has been an ongoing focus"

10 years on – an evolution of `Demand Side' management

It started as a quiet conversation in a Wellington office and has become one of PHARMAC's cornerstones.

Managing demand for medicines is an important issue for the medicines system as a whole: how best to ensure that medicines are optimally prescribed and used. Significant resources are wasted each year because this is not achieved; resources that can be better used if this wastage can be avoided.

PHARMAC was set up in 1993 mainly to address pharmaceutical supply-related issues, such as negotiating on price. Thinking about the demand for medicines and how to manage the rapidly-growing prescribing of medicines would need a whole new way of thinking, and tactics that were relatively new in this country.

In 1996 the Regional Health Authorities laid the groundwork for establishing Demand Side management. Until late 1997, the main tool was budget-holding by some Independent Practitioners Associations (IPAs). PHARMAC established a demand side function to support IPA activities and support the implementation of other PHARMAC "supply side" (medicines purchasing) activities. The first Demand Side campaign – Wise Use of Antibiotics – started as an IPA-led project, then PHARMAC took on its management and funding.

In 2000 the Health & Disability Act spelt it out, PHARMAC would promote the "responsible use of pharmaceuticals". The antibiotics campaign saw a rapid shift in prescribing patterns as clinicians bought into the Wise Use message. PHARMAC funded services to provide information to prescribers through the Best Practice Advocacy Centre, and PreMeC, and co-funded the Green Prescriptions programme - prescriptions for exercise, in conjunction with the then Hillary Commission (now SPARC).

Another important role was in providing information to help doctors, pharmacists and patients adapt to changes in medicine, providing information and increasingly sophisticated tools to get the message across.

Next came Asthma Management (1999), information on gout, and diabetes. 'One Heart Many Lives' (2002) focused on heart health … all aimed at raising people's consciousness about the merits of using medicines properly. 2002 also saw the development of PHARMAC's Māori Responsiveness Strategy, which identified priority areas for action to improve the way PHARMAC dealt with Māori health issues (see more on the opposite page).

Celebrities have had their place in the campaigns. Antibiotics has involved a range of well-known figures from TV cook Alison Holst, to then health minister Jenny Shipley, Wellington MP Marian Hobbs, leading doctors and ESR scientists. All Black Carl Hoeft helped launch an asthma campaign in 1999 – an event swamped by the announcement of a coalition government that same day, such are the vagaries of planning for media coverage!

These days there are new tactics, like social marketing, closer co-operation from District Health Boards and other sector groups, and a new name. Demand Side isn't about more or less – it's about addressing the overuse, underuse or misuse of medicines. "Optimal use" is the new catchcry and so the PHARMAC team has changed its name to Access and Optimal Use – more clearly reflecting what PHARMAC does in this important area.

It's still addressing areas of high need, and where medicine usage has gotten out of step with best practice. The new Gut Reaction campaign is a case in point – encouraging people to think about long-term use of Proton Pump Inhibitors (like Losec) when cheaper, just as effective medicines may be just as appropriate.

Karen Jacobs

Project Manager, Access & Optimal Use

Ko Ngati Whatua to iwi
Ko Tutamoe te maunga
Ko Kaihu te rohe
Ko Kaihu to awa
Ko Taita te marae
Ko Watene tautari Watene te tangata
Ko Karen Jacobs taku ingoa
E mahi ana mo te Project Manager Access and Optimal Use team

Karen Jacobs brought her family and English husband back to New Zealand for a better, safer life for her young children. After working overseas for 15 years, life in the UK had become hectic and congested. "Life in New Zealand is perfect," says Karen.

Karen had worked in the pharmaceutical industry in the UK and in Sweden in various sales and marketing roles. An MBA from the University of Warwick was one goal that she enjoyed working toward and achieving, graduating in 1999. Prior to leaving New Zealand in 1990, Karen worked in the health sector as a registered nurse.

"I joined PHARMAC in 2005 and apply my commercial marketing skills to PHARMAC's social marketing; same skills, totally different environment. Campaigns I am presently involved with are the Gut Reaction campaign, One Heart Many Lives and the Wise Use of Antibiotics. The One Heart Many Lives social marketing programme is about reducing cardiovascular risk in Maori and Pacific Island men in their thirties and older. My Dad has heart disease and is one of the lucky ones in that he is now nearly 80 and still going strong."

"I work with some dynamic people. They bring experience and expertise from different disciplines within the health sector.

"Take a look at some of our websites: **www.kickthatbug.org.nz** and **www.gutreaction.co.nz**".

Helping Māori stay well with medicines

PHARMAC's 'He Rongoā Pai, He Oranga Whānau - Whānau staying well with medicines' project is a campaign aimed at promoting the safe use of prescribed medicines for Māori.

The campaign aims to increase the benefits of subsidised pharmaceuticals to Māori by providing education to the Māori health workforce in relation to medication use, and by promoting medications as part of managing overall health. Issues such as access to health services, prescriber behaviour and cultural differences contribute to the lower prescription and uptake rates for Māori compared to non-Māori New Zealanders.

Consultation with Māori identified specific issues on safe use of pharmaceuticals such as storing, sharing and misuse of medicines, with many uncertain about the best use of prescribed medicines.

PHARMAC's focus is on increasing awareness of safe and appropriate ways to use medications, and on promoting medication use, as part of people's overall health care. Māori need to know more about what pharmaceuticals are subsidised, and how best to use and manage the medicines they are on.

Effective communication with Māori health workers, patients, and their whanau, is a top priority for PHARMAC – helping them understand, by showing that we understand. It's a big project, but it's very rewarding for PHARMAC's Māori health team.

We've developed a pilot health workforce education programme run in areas like Waitangi, Taranaki, Rotorua, and Auckland. Our target audience for the programme is Māori community health workers, and Māori primary care nurses – the front line in health.

There's been positive feedback from the pilot programme with 77% of course participants interviewed agreeing that the course added value to their work. Individual comments included:

"I am more aware of what's available (subsidised medications), I have more information for our people"

"I don't think it has changed my practices, because if you want to get technical about it we work by best practice anyway. It's certainly changed my attitude for perhaps the way I would approach certain issues... I wouldn't say that it has changed my practice"

"I am more aware of what's available (subsidised medications), I have more information for our people"

"I always thought of them (PHARMAC) as legal drug peddlers who didn't really care much about people. But after doing this course … the PHARMAC lady … she just reinforced that they are there to help, they're not just somebody you ask for an authority number"

One of the real tangible results of the campaign will be resources for Māori consumers of subsidised medicines and looking at things like bilingual patient medication cards, DVDs, an 0800 helpline, and links to local pharmacists.

"We're taking nothing for granted – making sure people really do know PHARMAC's role; highlighting specific Māori health issues like diabetes, heart disease and obesity; educating people about the role of medicines; making sure we communicate effectively, accepting it's a slightly different culture; avoiding too much medical language which can be baffling to laypeople"

Mereana Wilson – Māori Health Analyst

"We'll have succeeded when Māori primary care nurses and health workers are familiar enough with the Pharmaceutical Schedule, to know which medicines are subsidised and can discuss these with their clients. We also want more Māori consumers to be aware of their entitlements in relation to subsidised medicines and understand how best to use medicines properly – and safely."

Pharmaceutical investments in 2006-07 – new patients, new spending, better health

Each year, PHARMAC invests millions of new dollars in pharmaceuticals and works to ensure these produce better health for New Zealanders. When looking at the impact on patients, we express health gain in terms of Quality Adjusted Life Years, a standard pharmaco-economic measure that enables comparisons to be made between different medicines that do different things. This is one of PHARMAC's decision criteria, outlined on page 27.

PHARMAC added 11 new products and 30 new presentations of existing products to the Pharmaceutical Schedule during 2006/07. These included treatments for the heart (clopidogrel, pravastatin), asthma (fluticasone with salmeterol combination inhalers), diabetes (insulin glargine), and HIV/AIDS (atazanavir, tenofovir, emtricitabine, enfuvirtide, combination abacavir with lamivudine).

Access was widened to a further 28 medicines. These included extending treatments to more patients who had epilepsy or bipolar disorder (lamotrigine), cardiovascular risk and heart failure (carvedilol), diabetes (pioglitazone, insulin aspart and lispro, insulin isophane animal), asthma (budesonide with eformoterol combination inhalers), node positive early breast cancer (paclitaxel), Prader Willi syndrome (growth hormone), and anaemia from cancer chemotherapy treatment (erythropoietin beta).

In addition to new listings and expanded access, two of the new presentations listed this year (candesartan 32 mg tablets, nevirapine oral suspension) also produced health gains over previously funded treatments.

More people treated

New spending decisions in 2006/07 saw an estimated 19,700 new patients treated with these subsidised medicines. These numbers will increase significantly in coming years, as many of the new medicines listed had not yet been subsidised for a full year. The largest numbers of new patients were 5,140 using clopidogrel by June 2007 (eight months following listing), followed by combination asthma inhalers (4,050 by June – 11 months), and with 3580 new patients using insulin glargine.

In the first full year of these decisions being implemented, PHARMAC estimates that there would be 33,000 new patients using these medicines – including 7000 new patients using clopidogrel and 6100 new users of combination asthma inhalers. Total expenditure over 12 months for these decisions would be $12.5 million.

Health gains from funding decisions

PHARMAC also assesses the health gains obtained through its investments, and measures outcomes in quality adjusted life years (QALYs).

We've highlighted the impact of seven of the most significant decisions from 2006-07 here:

- **insulin glargine for diabetes;**
- **enfuvirtide for HIV/AIDS;**
- **clopidogrel for cardiovascular risk;**
- **tenofovir for HIV/AIDS;**
- **paclitaxel for node positive early breast cancer;**
- **growth hormone for Prader Willi syndrome; and**
- **pioglitazone for diabetes.**

Investing in these seven medicines led to 9300 new patients being treated in 2006-07, at a cost of $5.6 million. These patients gained the equivalent of 246 full years of extra life (i.e. QALYs). This included 160 QALYs for clopidogrel and 65 QALYs for insulin glargine. After 12 months, these medicines should provide 309 QALYs for 11,500 patients, costing $7.0 million.

Costing new investments

In 2006/07 new investments and widening of access cost $9.0 million. The largest new investments in terms of cost were the listing of clopidogrel, costing $3.3 million over 8 months, insulin glargine ($1.6 million, 11 months), and changes to combination asthma inhalers (further costs of $1.5 million net, 11 months).

In addition, this spending was matched by potential nominal savings elsewhere in the Pharmaceutical Schedule or the rest of Vote:Health of $2.5 million. This equated to nominally saving $45 for every $100 spent on these medicines. This included $2.0 million nominal savings for clopidogrel and $310,000 for paclitaxel (breast cancer). After 12 months, nominal savings should reach $3.4 million.

These figures do not include the health benefit and savings which would have been gained from other investments; many decisions had no cost, or were savings decisions which did not require such information for a positive decision to be made.

Numbers of patients
from specific PHARMAC investment decisions, 2006/07

Decision	Month of implementation	Estimated no. new patients by June 2007	Estimated no. new patients by 12 months' implementation
New listings			
insulin glargine	July 2006	3,584	3,600
candesartan - tab 32 mg	August 2006	1,641	1,800
fluticasone with salmeterol[2]	August 2006		
enfuvirtide	September 2006	4	4
nevirapine - oral suspension 10 mg per ml	September 2006	9	10
clopidogrel	October 2006	5,143	7,000
atazanavir	November 2006	114	170
pravastatin	November 2006	22	30
abacavir with lamivudine	January 2007	94	200
ferrous fumarate with folic acid	January 2007	868	1,900
emtricitabine	April 2007	76	145
tenofovir	April 2007	129	145
alendronate with cholecalciferol	June 2007	611	6,200
Relistings			
phenelzine	November 2006	139	160
Access widening			
budesonide with eformoterol[2]	August 2006		
goserelin	August 2006	162	162
bupivacaine	September 2006	7	10
oxypentifylline	September 2006	93	100
paclitaxel	September 2006	129	140
insulin aspart, lispro, isophane animal	September 2006	239	280
growth hormone for Prader Willi syndrome	October 2006	5	5
cyclizine	December 2006	281	700
carvedilol	February 2007	413	990
lamotrigine	February 2007	259	1,250
pioglitazone	April 2007	316	600
midazolam	May 2007	1,320	1,320
net effects of improving access to asthma medicines[2] - new listing of fluticasone with salmeterol, widened access to budesonide with eformoterol combination inhalers:			
ICSs and LABAs	August 2006	4,054	6,096
Total		**19,712**	**33,017**

NB: ICS = inhaled corticosteroids; LABA = long-acting beta agonist

"New spending decisions in 2006/07 saw an estimated 19,700 new patients treated with subsidised medicines"

In addition, access was widened to erythropoietin beta (December 2006), nifedipine (September 2006), acetylcysteine (September 2006), apomorphine (September 2006), interferon alpha-2a/2b (September 2006), total parenteral nutrition (September 2006), ursodeoxycholic acid (September 2006), fluoxetine (November 2006), buspirone (June 2007), mianserin (June 2007), spermicide applicators (September 2006), glycerol (swallowing agent) (February 2007), asthma spacer devices and masks (March 2007), and hydrocortisone with wool fat and mineral oil (March 2007). For these 14 investments, patient numbers at this stage were no higher than predicted had investments not been made, so numbers are not estimated.

Notes:

1. Patient numbers have been estimated from HealthPAC data, based on maximum monthly use for the year ending June 2007 beyond expected levels had investments not been made.

2. Changes to the availability of asthma medicines in 2006/07 have been the listing of fluticasone with salmeterol combination ICS/LABA inhalers (Seretide) and widened access to budesonide with eformoterol combination ICS/LABA inhalers (Symbicort).

NB: ICS = inhaled corticosteroids; LABA = long-acting beta agonist

From August 2006 to June 2007, listing Seretide and widening access to Symbicort has been associated with:

- 6900 fewer patients for fluticasone (-13500scripts);
- 1000 fewer patients for eformoterol (beyond swapping to salmeterol) (-2300);
- 20 fewer patients for salmeterol (than expected from increases since salmeterol widening) (-40);
- 1010 fewer patients for Symbicort (despite widening) (-2800); and
- 6980 extra patients for Seretide (13900).

These numbers suggest a net decrease of -900 patients on ICSs including combination products (-0.3% fewer ICS patients), but 5000 extra patients using LABAs including combinations (7% extra LABA patients).

Therapeutic Group Review

The impact of the Government's access policy changes were the biggest factor driving an 11.8% increase in prescribing during 2006-07.

New Zealand had its largest increase in subsidised prescriptions for a decade in the last financial year, with an 11.8% rise. This means an additional 3.3 million prescriptions that, after analysing the data, can be directly linked to the Government's Primary Healthcare Organisation (PHO) access policies (including cheaper doctor visits and reduced medicine co-payments). The biggest contributing factor was the final stage of the Government's access policy roll-out in 2006-07, increasing eligibility for people aged 45-64. In earlier years, the policy had been rolled out to people aged 65 and over (2004), 18-24 (2005) and 25-44.

PHARMAC estimates these changes to access policies alone led to an increase of 1.4 - 1.8 million prescriptions, compared with the previous financial year.

Influence of access policies on prescription numbers.

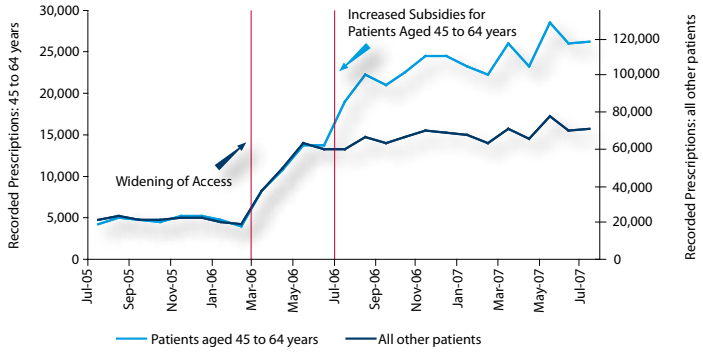
Year	Patient age	No. Increased Recorded Prescriptions (millions)
2004/05	65 and over	1.18 - 1.77
2005/06	18 to 24	0.13 - 0.17
2006/07	45 to 64	1.43 - 1.83

Overall, the contributing factors to the increase in prescribing were:

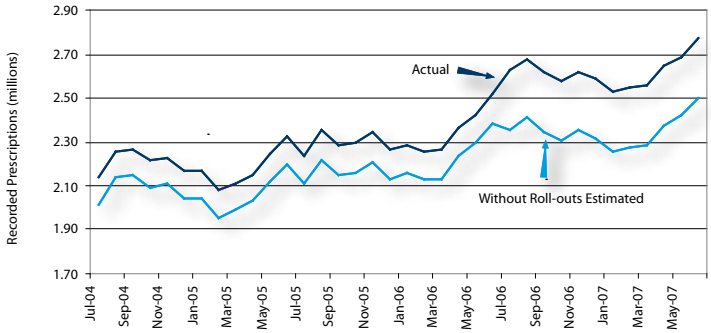
- **Changes in access policies (45-64 years) 45%**
- **Underlying prescribing growth 22%**
- **Growth in low dose aspirin 19%**
- **Population growth 13%**
- **New investments in 2006-07 1%**
- **Other factors 1%**

The graph below, of recorded aspirin prescriptions, illustrates the increase in recorded prescriptions following increased subsidies for patients aged 45-64.

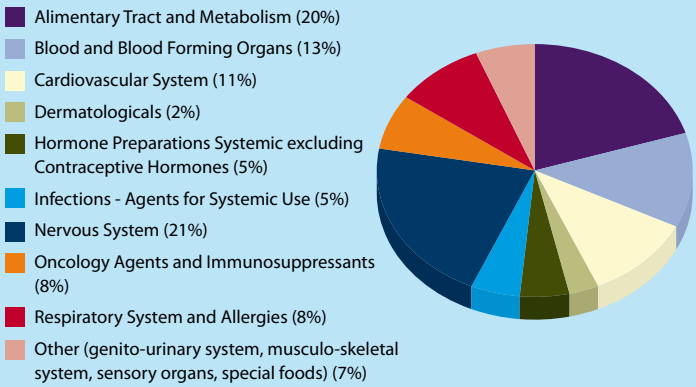
Recorded Prescriptions for Low Dose Aspirin



Impact of the Roll-out of Primary Health Care Funding on Recorded Prescriptions



Investment by Therapeutic Group



New investments

During the year PHARMAC made 39 new investments, with 11 new medicines and widened access to another 28. Significant investments were made for diabetes, asthma, HIV/AIDS, cancer and heart disease – all areas of high health need where new pharmaceutical technologies are becoming available.

On its own, low dose aspirin, used for cardiovascular risk, accounted for 20% of all the extra prescriptions funded during the year. This was one of PHARMAC's key investments in the 2005-06 financial year. Other medicines or groups with large increases included paracetamol (pain), penicillin class antibiotics (bacterial infections), non-steroidal anti-inflammatory agents (arthritis), antidepressants (depression and pain), and some other medicines used mainly for cardiovascular risk (metoprolol, statins, ACE inhibitors).

The year in numbers

During 2006-07…

Prescribers wrote 31.92 million subsidised prescriptions

At least 2.69 million people had their medicine subsidised

Prescription volumes rose 11.8% (about 3.3 million individual prescriptions)

11 new medicines were funded

Over 12 months, new investments will benefit 33,000 patients and cost $12.5 million

Pharmaceutical spending rose to $599.37 million (0.07% within Budget)

As well as managing the funding that District Health Boards set aside for community pharmaceuticals, PHARMAC assists DHBs to purchase some products used in public hospitals. More detail on Page 24.

PHARMAC also continued working with DHBs on the funding of hospital-administered cancer treatments. Access was widened to the chemotherapy drug paclitaxel for breast cancer, providing access for 550 more patients each year which means increased spending of $12.5 million over five years. In April 2007, funding was approved from 1 July 2007 for a concurrent 9-week course of trastuzumab (Herceptin) for a specific type of breast cancer; the funding will take effect from the 2007-08 year onwards. You can read more about this decision on Page 22.

Rachel Grocott

Health Economist & Team Leader, Assessment

What's a typical day at PHARMAC? Health economist and team leader Rachel Grocott reckons that's it's difficult to define, as the work can be so varied - especially because of her two distinct roles. She's been at PHARMAC five years now; after graduating in economic honours at Otago University, she joined the Health Funding Authority, and then moved to the Ministry of Health.

"I'm passionate about PHARMAC's objectives (health outcomes and value for money). Working at PHARMAC is a great opportunity to make a real difference and use my skills in a field that really interests me. I love the variety of work, as well as the responsibility."

"A big part of my work is doing cost-utility analysis – providing information on which pharmaceuticals offer the most health gains from a limited budget. Cost-effectiveness is one of PHARMAC's decision criteria, so it is important these analyses are done correctly and in a timely manner".

It's harder finding time for her lunchtime gym work out now, so weekends have become even more important; Rachel likes to escape from Wellington with her husband in pursuit of their love of extreme sports and tramping.

Brian Roulston

Analyst

Moving to the health sector was a major change of direction for economic statistician Brian Roulston, more used to measuring our Gross Domestic Product for Statistics NZ. His switch to PHARMAC meant relocating to Wellington – quite a step for this self-confessed one-eyed Cantabrian. After one year in the capital, he's now enjoying the lively, international atmosphere and the city's notoriously itinerant population; he's not quite so keen on the way PHARMAC's offices wobble in the wind.

"Pharmaceuticals are a fascinating subject for a statistician, with so many difficult questions and being able to explore data before turning it into information that helps find the answers. Often answering one question simply leads to more questions and that prompts some lively debates, especially because we all have such different backgrounds. I don't have a health background, but I do understand statistics and analysis, and I like contributing to evidence-based solutions that provide good foundations for decisions. That's very satisfying."

At the weekends, Brian makes the most of Wellington's geography, bliss for someone who likes exploring on foot or mountain bike. He's clearly no longer quite so one-eyed about his home city, confessing it's hard to beat going out to Wellington's Heads on a blustery day.

Top 20 most prescribed medicines

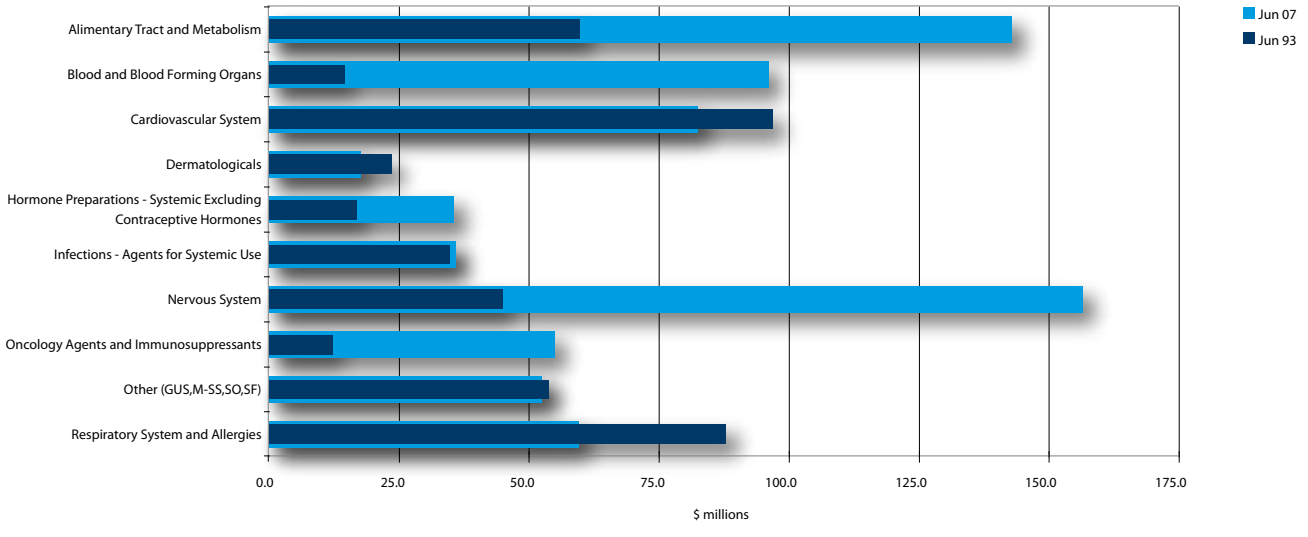
Year ending June 2006

Most commonly prescribed subsidised drugs. Note: This does not include non-subsidised prescriptions (i.e. those paid for by the patient or those where the cost falls under the patient co-payment).

Chemical Name	Prescriptions	Main use	06' rank
paracetamol	**1,591,743**	*pain relief*	**1**
aspirin	**1,111,765**	*prevents heart attack and stroke (cardiovascular risk)*	**8**
simvastatin	**1,090,342**	*impaired cholesterol (cardiovascular risk)*	**2**
omeprazole	**1,037,611**	*heartburn, stomach ulcers*	**3**
amoxycillin	**806,138**	*bacterial infections*	**5**
amoxycillin clavulanate	**795,469**	*bacterial infections*	**4**
metoprolol succinate	**770,770**	*raised blood pressure, heart disease*	**6**
salbutamol	**713,288**	*asthma symptoms*	**7**
diclofenac sodium	**475,596**	*pain/arthritis*	**13**
cilazapril	**465,972**	*raised blood pressure (cardiovascular risk)*	**11**
frusemide	**427,796**	*heart failure*	**9**
bendrofluazide	**422,538**	*aised blood pressure (cardiovascular risk)*	**15**
quinapril	**418,024**	*raised blood pressure, heart disease, diabetes*	**12**
fluticasone	**410,313**	*prevents asthma*	**10**
prednisone	**410,161**	*steroid treatment for asthma attacks, arthritis etc*	**14**
zopiclone	**402,617**	*insomnia*	**17**
calcium carbonate	**377,527**	*osteoporosis*	**18**
felodipine	**358,340**	*raised blood pressure, heart disease*	**16**
thyroxine	**350,428**	*underactive thyroid gland*	**20**
flucloxacillin sodium	**338,515**	*bacterial infections*	**19**

Changes in Therapeutic Group Expenditure

The graph below shows increases and decreases in expenditure within the major therapeutic groups since 1993. There have been significant increases in the areas of Alimentary Tract and Metabolism (mainly treatments for gastric ulcers and heartburn), Blood and Blood Forming (mainly the cholesterol-lowering statins), nervous system (primarily mental health treatments), and oncology and immunosuppression (mainly cancer treatments). Decreases in respiratory (mainly asthma) and cardiovascular treatments reflect price reductions in those groups, as use has risen substantially since 1993.



Wise Use of Antibiotics

PHARMAC's longest-running public health campaign marked its 10th year with the first-time use of television advertisements to promote the campaign's messages to a wider audience. Three computer-animated TV commercials were aired on free-to-air TV and directly transmitted into doctors' surgeries via Health TV. A version was also adapted for Māori TV.

The campaign returned to its roots with three key messages:

- **Antibiotics don't do colds and flu**
- **If in doubt check it out,**

And if an antibiotic is prescribed:

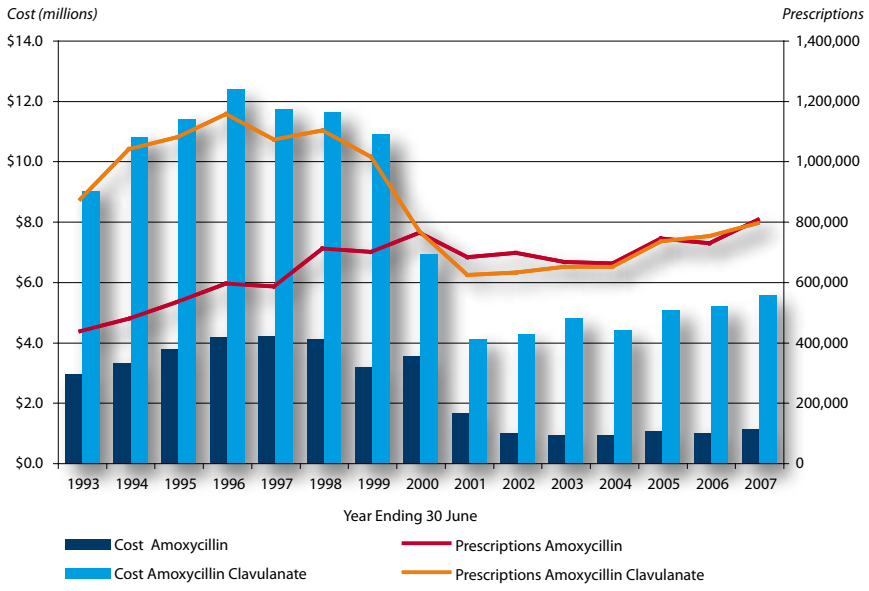
- **Take the lot no matter what.**

Evaluation of the previous year's campaign showed the key messages continue to gain traction, but pockets of misunderstandings underline the need for the campaign to continue.

At the beginning of the year, PHARMAC also completed work to secure supplies of pandemic antibiotics for any influenza pandemic, with stock to be held and managed through DHB hospital pharmacies.

The graph below shows prescriptions for both broad and narrow-spectrum antibiotics increased slightly in 2006-07, reflecting the overall pattern of increase for all medicines. This is most likely due to more people having their prescriptions funded through the roll-out of reduced co-payments for patients.

Antibiotics



HIV/AIDS

Improving New Zealanders' access to HIV treatments was a major theme in 2006-07. Five new treatments were added to the Pharmaceutical Schedule, including the first of a new type of HIV medicine, a fusion inhibitor.

The five new treatments are:

Atazanavir (Reyataz) – a more convenient once-a-day protease inhibitor with fewer metabolic side effects.

Enfuvirtide (Fuzeon) – the first fusion inhibitor, a new class of medicines, used to treat people with the most advanced stages of HIV/AIDS.

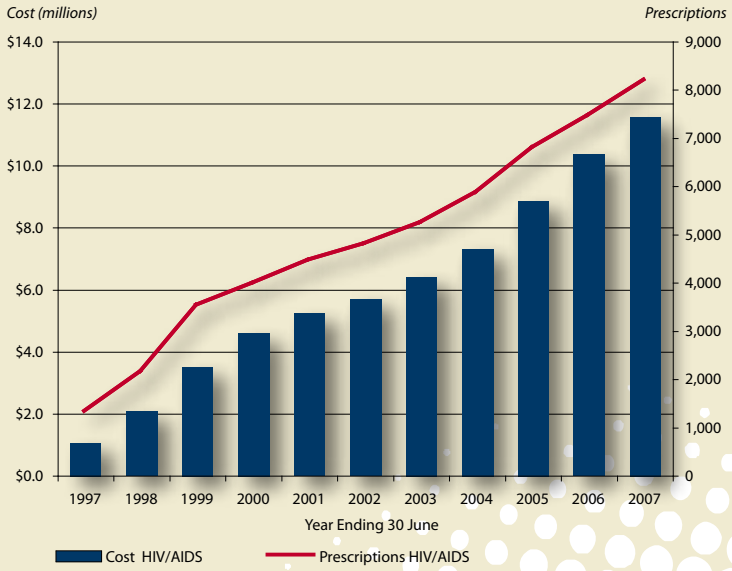
Tenofovir (Viread) – another nucleotide reverse transcriptase inhibitor.

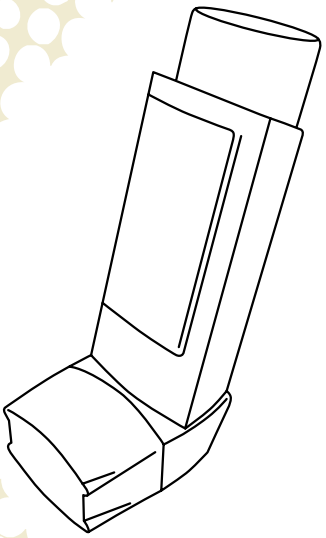
Emtricitabine (Emtriva) – used in combination with Tenofovir.

Kivexa -- a combination of abacavir and lamivudine.

About 980 people are treated with subsidised HIV medicines, with expenditure in the region of $9 million per year.

HIV/AIDS





Asthma

During 2006-07 there were major changes in the range and availability of asthma inhalers. Most significantly, combination inhalers were made available to many more people with asthma. Combination inhalers include two types of asthma medicine (long-acting beta agonists with inhaled corticosteroids) and are mainly used by people with moderate to severe asthma. Key decisions during the year were:

access was widened to long-acting beta agonist inhalers (Serevent Accuhaler, Oxis Turbuhaler and Foradil);

the Seretide combination inhaler was subsidised; and

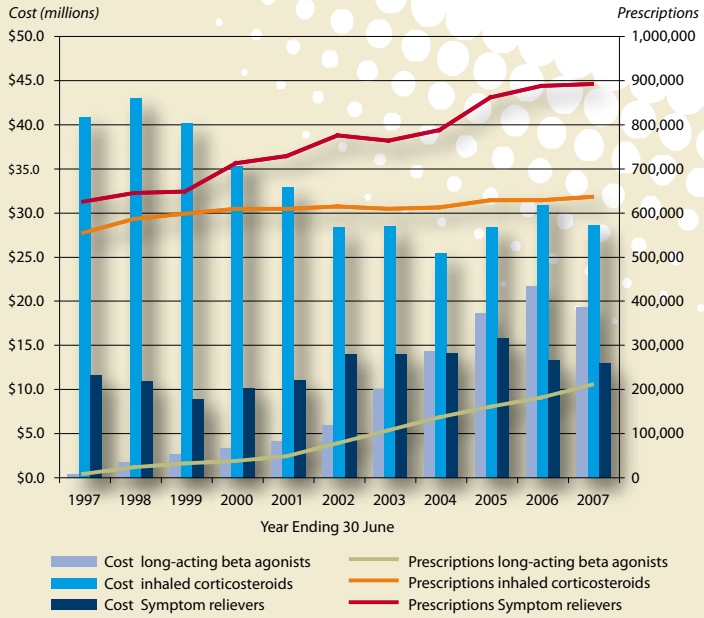
there is wider access to combination corticosteroid and LABA inhalers (Seretide and Symbicort).

The changes represent a significant step forward in the treatment of asthma, including the addition of a combination aerosol inhaler (Seretide) to the available types of dry powder combination inhalers.

About 42,000 New Zealanders use LABAs either on their own, or in combination forms, and the widening of access will lead to significant growth in the number using combination inhalers.

This growth is reflected in the prescribing data for 2006-07, which show long-acting beta-agonists becoming increasingly popular. Meanwhile, prescription numbers for other types of asthma inhalers flattened.

Asthma



Heart disease

PHARMAC's flagship cardiovascular disease campaign, One Heart Many Lives, continued to develop. It is an optimal use campaign aimed at men at risk of developing heart disease, New Zealand's biggest killer. The campaign has a particular focus on Māori and Pacific men, who on average die earlier than other New Zealand men, and under-use available medicines.

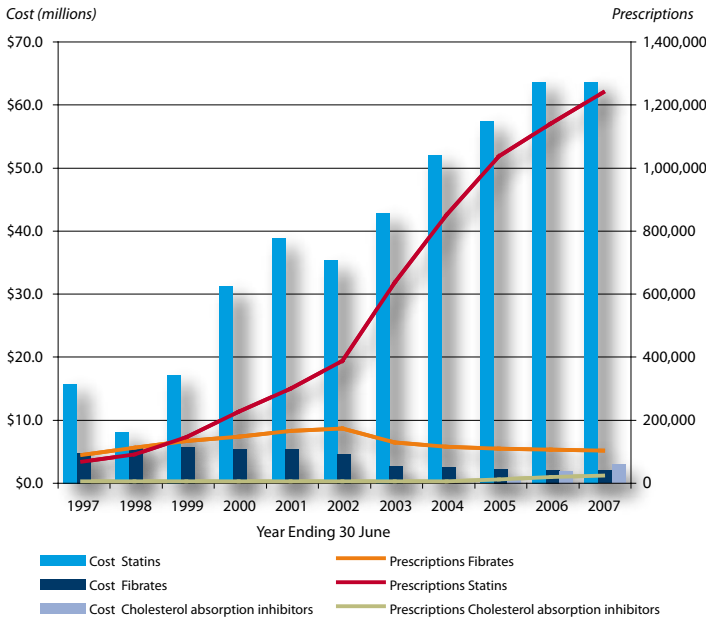
PHARMAC's partnership with the Hawke's Bay DHB has built on the successful start to the campaign in the 2005-06 year, and the campaign has now expanded into Northland, where there is a 14 year mortality gap between Māori men and the New Zealand average. We also continued to follow the progress of Hastings man Tamati Davis (above), who has changed his life and lost more than 100kg.

The Northland campaign was developed in partnership with the local DHB, iwi and health providers with a community launch in Kaitaia in April 2007, featuring free heart checks, and a performance by the pop group Ardijah (Ardijah's frontman Ryan Monga is a role model for the campaign locally, having successfully lost and kept off weight through changes to his diet and lifestyle).

Medicine funding changes for heart disease included listing clopidogrel (Plavix), to help prevent blood clots developing in people who have had heart surgery. It's an investment of about $7 million per year, benefiting 7000 people in the first year.

Access was also widened to the beta blocker carvedilol , to benefit more people with heart failure.

Cholesterol management



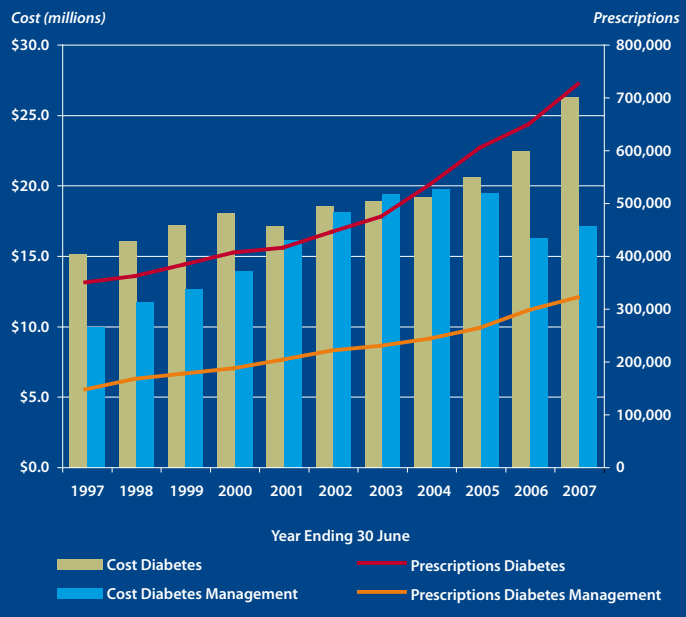
Diabetes

PHARMAC worked with BPACNZ and Diabetes NZ to develop resources to help people manage their diabetes. Lifestyle choices are emphasised as part of the One Heart Many Lives cardiovascular campaign because, in addition to reducing people's cardiovascular risk, reducing weight and lifestyle changes can reduce the risks of developing Type 2 diabetes.

About 30,000 New Zealanders use insulin, either on its own or in combination with other diabetes treatments. In late 2006 PHARMAC funded insulin glargine (Lantus), a long-acting insulin for people with the most difficulty controlling their blood sugar levels. About 10% will qualify for insulin glargine funding, an investment of $5 million over the next five years.

Approximately 100,000 New Zealanders are thought to have Type 2 diabetes, with the number increasing by up to 10% each year. PHARMAC widened access to pioglitazone (Actos) for people with Type 2 diabetes so it can now be prescribed by GPs as well as specialists, which will make it easier for Māori and Pacific people to access it. The use of pioglitazone is anticipated to double within four years as a result of the changes.

Diabetes

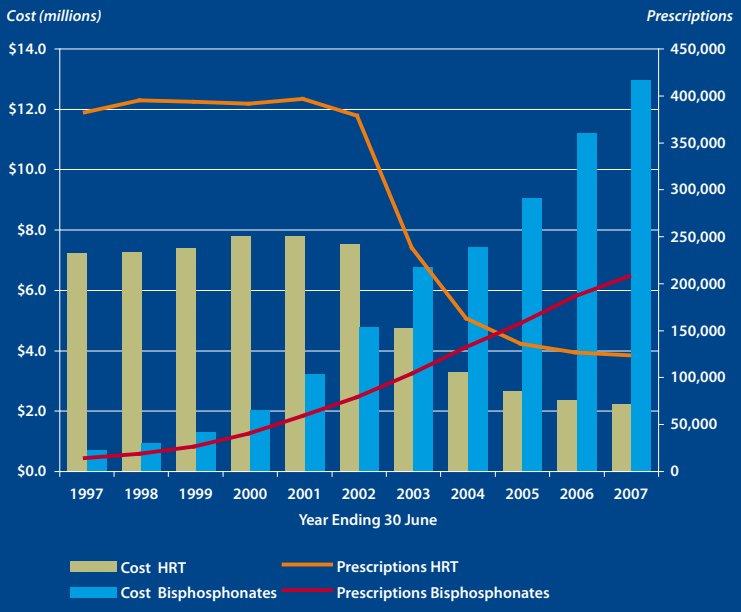


Osteoporosis and HRT

The gradual decline in prescribing of hormone replacement therapy (HRT) continued in 2006-07. Prescribing had declined steeply when two major studies published in 2002 and 2003 raised concerns about the impact of HRT on heart disease and breast cancer, and this declining trend is now flattening out. With 122,000 prescriptions for HRT written in 2006-07, prescribing is now at 30% of the peak prescribing recorded in 2001.

Prescription numbers for bisphosphonates, used to treat osteoporosis, continued an upward trend in the past year. This reflects both underlying growth and a major access widening decision by PHARMAC in 2005-06, the full impact of which was seen for the first time in the last financial year. The growth was mainly driven by an increase in prescribing of alendronate (Fosamax), with prescription numbers growing to 206,000. This in turn drove spending (before rebates) to over $13 million.

Hormone Replacement Therapy and Osteoporosis



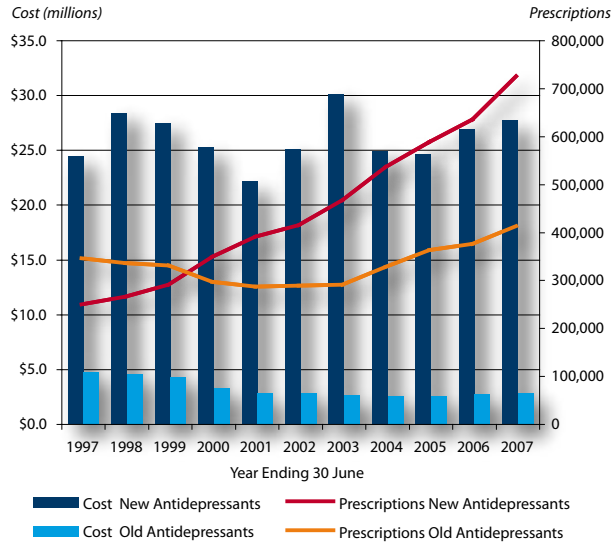
Approximately 100,000 New Zealanders are thought to have Type 2 diabetes and this number is growing by up to 10% each year.

Mental Health

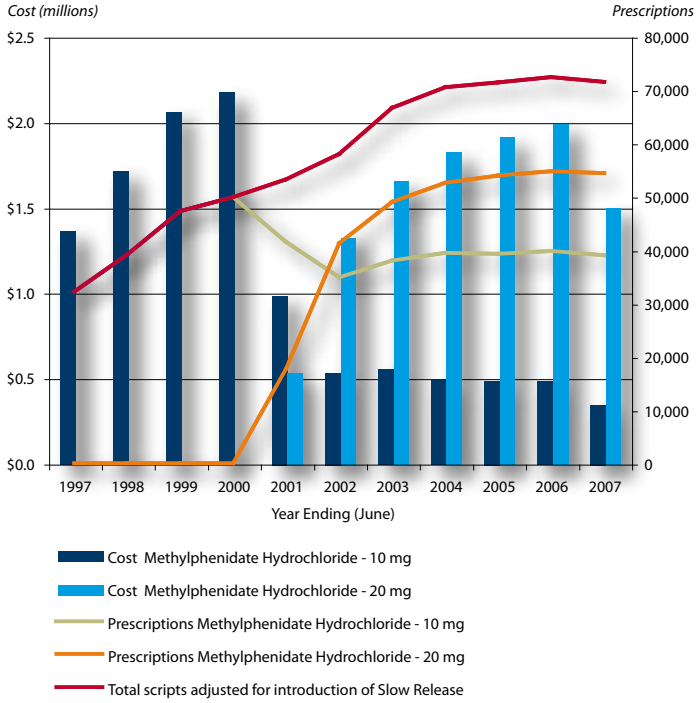
Prices of antidepressants continued to fall, with a generic version of paroxetine leading to increased competition and a subsequent price reduction. This is estimated to mean savings of $45 million over the next three years, a further example of the impact competition can have on prices when medicines come off-patent. PHARMAC worked with BPACNZ and health professional organisations to help health professionals and patients adjust to the brand change.

Paroxetine continues to be one of the most widely-used antidepressants, which overall continued a pattern of strong prescribing growth in 2006-07. Prescription numbers for newer antidepressants (particularly SSRIs) went up by about 90,000 to some 720,000 nationally. Prescriptions for all antidepressants (older agents and newer agents) surpassed 1 million for the first time. This may in part be due to access policy changes meaning that many prescriptions previously paid for by patients, are now being subsidised by the Government.

Antidepressants



ADHD treatments



Geraldine MacGibbon

Therapeutic Group Manager

Geraldine MacGibbon considered studying music at Auckland University, before opting for science. She graduated with a PhD in Neuropharmacology, having a particular interest in pharmaceuticals and how the brain works. But she hasn't abandoned music – she's a mezzo soprano in the NBR New Zealand Opera chorus (most recently in the Wellington production of Turandot), studying under Margaret Medlyn. She's also a keen member of PharmAce, the in-house tennis team that plays fortnightly at Wellington's Renouf Centre.

Geraldine joined PHARMAC about 18 months ago; her job involves so many things, she finds it almost impossible to describe. She's a Therapeutic Group Manager (TGM), responsible for the areas of 'pain and brain': mental health, analgesics, anaesthetics and neurology. TGMs are responsible for processing funding applications, writing the briefing papers for PTAC and attending their meetings, organising the analysis, negotiating with the pharmaceutical companies, writing the Board papers, liaising with Access and Optimal Use team over implementation, working with contract managers and dealing with queries from the public. PHARMAC has six TGMs, and it's long been the organisation's pivotal role.

"Yes, it's hard work, sometimes with great frustrations, but I love my job! I can't believe how lucky I am. It has such variety, and everything has a tangible and visible effect on New Zealanders.

"PHARMAC's management and Board really listen to us, and show they have confidence. The only downside is that it's hard to imagine where I'd go from here.

"Living in Wellington is great too; I'd give it 8/10. That's something from an ex-Aucklander!"

Funding of trastuzumab (**Herceptin**) for breast cancer was one of the year's most significant pharmaceutical issues.

PHARMAC and District Health Boards closely examined funding the 12-month sequential, post-chemotherapy option (supported by most breast cancer campaigners), which would have cost around $25 million and seriously hindered the ability to fund other healthcare. After looking across all the evidence, DHBs and PHARMAC decided not to fund the 12-month course of Herceptin, but to keep it under active review.

PHARMAC sought further advice from its expert clinical committees on a treatment regimen tested in an independent Finnish trial (FinHer, using Herceptin for nine weeks in combination with a taxane drug).

The evidence showed this concurrent approach to be effective, with its effectiveness comparable to longer duration treatments. After further analysis, DHBs accepted PHARMAC's recommendation to fund the concurrent nine-week option.

The concurrent option was chosen because:

It shows comparable clinical benefits to longer courses of Herceptin;

The shorter duration makes it cost-effective;

At $6 million per annum, it is affordable to DHBs; and

It requires fewer infusions and can be delivered by DHBs.

The concurrent nine-week regimen is now fully funded for all women, but an important research question remains. While both short and long duration concurrent regimens demonstrate effectiveness, no trials have been done to demonstrate if one method is superior. PHARMAC has now committed $3.2 million to the international 'SOLD' trial, which will address this question. The trial, which is likely to involve New Zealand women, will begin recruiting patients in 2007-08.

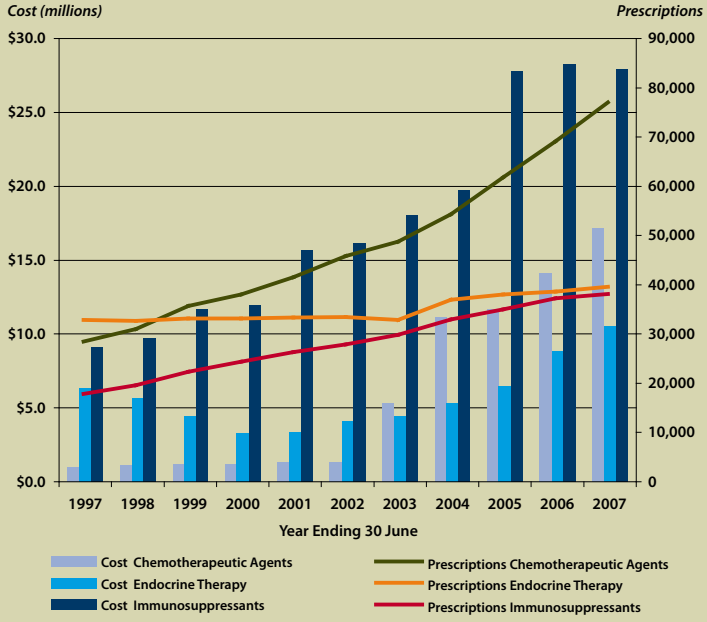
Cancers and transplant drugs

Access was widened to the taxane drug paclitaxel (Taxol) for breast cancer and it's expected up to 550 women will be treated with paclitaxel each year for node positive early breast cancer. PHARMAC estimates the investment will cost an additional $12.5 million over five years. Taxanes are hospital-administered chemotherapeutic drugs that are funded for a number of cancers, including ovarian, fallopian and metastatic breast cancer.

Expenditure on cancer medicines continues to grow strongly, as new medicines are added to the Schedule and their use grows. This is likely to be a continuing pattern for future years, with a number of new agents becoming available to treat a range of cancers, and which can be taken as a tablet which avoids patients having to be treated in hospitals. In addition, these treatments tend to be quite high cost.

PHARMAC is also moving towards managing hospital spending on cancer medicines, so this continues to be an area of high interest for PHARMAC.

Cancer and transplant treatments



The PHARMAC Seminar Series continues to be an important forum for health professionals (doctors, nurses, pharmacists and midwives) and others with an interest in when and how best to prescribe medicines.

The Series has grown since PHARMAC began the initiative in February 2006, with 23 seminars in 2006 and a further nine to 30 June 2007. An independent Board, chaired by Heart Foundation Medical Director Prof Norman Sharpe, provides direction and the subjects of each forum; PHARMAC provides logistical support and funding.

As the seminars are popular and often over-subscribed, some have been run more than once. Topics this year included Infections in Pregnancy, practical tips for managing difficult children, Diabetes and the Ischaemic Limb, and Cardiovascular Disease Risk Assessment & Management.

To date, the seminars have only been held in Wellington, but it's possible the Series will develop into other areas.

Comments from people attending included:

"Delivered what was promised. Excellent day. Enthusiastic presentations by those working in fields."

"Very relevant to my current workforce development, although (it is) in everyone's interest that medicines are being used optimally."

"Covered all of my needs as per programme promised. I would recommend the programme to colleagues in pharmacy, especially those who are completing MUR accreditation."

Seminar Series – an investment in health education

Australian-trained pharmacist Veronica Lehndorf, until recently editor of New Zealand Pharmacy, attended several of PHARMAC's clinicians' seminars; she's still amazed they were funded by the country's drug-buying agency.

"The seminars are a fantastic investment in our on-going education; with excellent speakers who were well-chosen and highly respected by the audience of clinicians, midwives, Māori health representatives and pharmacists. I attended several – treating infections in pregnancy, and when to prescribe antibiotics for example – which were informative and interesting.

"There was nothing like this when I was practising in Australia. The information provided for us to take away was great too, with the speakers' full contact details supplied just in case attendees had follow up questions.

"I've heard so much positive feedback about the seminars. About 80 attended each session and I'd happily recommend them.

"Well-run; well-organised; high-quality presentations. How often do you get that, when someone else is paying?"

Kyle Reid

High Cost Pharmaceuticals Co-ordinator

Kyle Reid is one of PHARMAC's newest staff members; he hasn't even had time to find out about the book club or join the group who pound around the waterfront at lunchtime. He's responsible for co-ordinating applications for high-cost drugs – ones like cerezyme for patients with Gaucher's Disease ($100,000 per patient per year) and pulmozyme for patients with cystic fibrosis ($17,000 per patient per year).

"All the applications go to the panel of medical experts, but PHARMAC does the co-ordination. I love the responsibility, and the autonomy; it's very challenging having so much to think about, especially when it's so important for the patients. I enjoy working in a small organisation, where everyone works together."

Kyle, with his Bachelor of Science in Chemistry and Bachelor of Biomedical Science, is part of the medical team that reports to the Medical Director. He has also assumed responsibility for organising PHARMAC's fortnightly Seminar Series, which provides education for health professionals on a range of current health issues. Demand for these seminars can be high, and current hot topics include cardiovascular risk assessment and diabetes management.

PHARMAC - an agent of DHBs

PHARMAC has a special relationship with District Health Boards, founded in its role of managing the community pharmaceutical budget. PHARMAC's job is, essentially, to act as an agent on behalf of DHBs in deciding which medicines are funded. It manages the funding set aside by DHBs for pharmaceuticals.

This role has expanded since 2002, when PHARMAC was asked to manage national contracting of pharmaceuticals used in public hospitals as well. PHARMAC's involvement has helped to achieve savings through contracting nationally for many hospital medicines. PHARMAC's team of pharmacoeconomic analysts has also been providing an assessment service for DHBs on new pharmaceuticals used in hospitals - the Hospital Pharmaceuticals Assessment Process.

PHARMAC and DHBs have become increasingly interwoven in areas such as hospital purchasing, economic assessment and in funding of Access and Optimal Use projects like One Heart Many Lives. The collaboration on Optimal Use projects has seen PHARMAC and individual DHBs working closely together to develop campaigns that are responsive to the needs of people in particular areas.

PHARMAC's expertise in clinical and economic assessment, and in negotiating contracts and achieving efficiencies through nationwide purchasing, continues to be tapped into by DHBs. In 2006-07, PHARMAC built on work commenced in previous years and secured contracts for products other than pharmaceuticals.

Significant projects included:

Bulk intravenous fluids – savings of $1.3 million over five years. Arrangements include securing a range of pre-mixed heparin and potassium chloride solutions, which are a safety improvement as the need to mix preparations on the wards is reduced;

Radiological Contrast Media - savings of $1.5 million over five years;

Anaesthetic gases – savings of $4.1 million over five years; and

Influenza vaccine - negotiations for the national programme have produced savings of **$900,000** over three years.

"At PHARMAC, people work and play hard; we all have the same goals, so there's no patch protection."

Influenza vaccine

Once again PHARMAC managed the purchasing of influenza vaccine in 2007, with 745,189 doses of influenza vaccine distributed – the second-highest on record. The figures coincide with a slightly lower incidence of influenza during the subsidised campaign season (March to June), picked up at Ministry of Health sentinel sites and reported to ESR; the number of people going to the doctor with influenza-like illnesses peaked towards the end of July.

Hawke's Bay and eastern Bay of Plenty were hardest hit, followed by South Canterbury and Taupo. Overall, according to sentinel site data, the incidence of flu was down, or hit later, than 2006.

Kaye Wilson

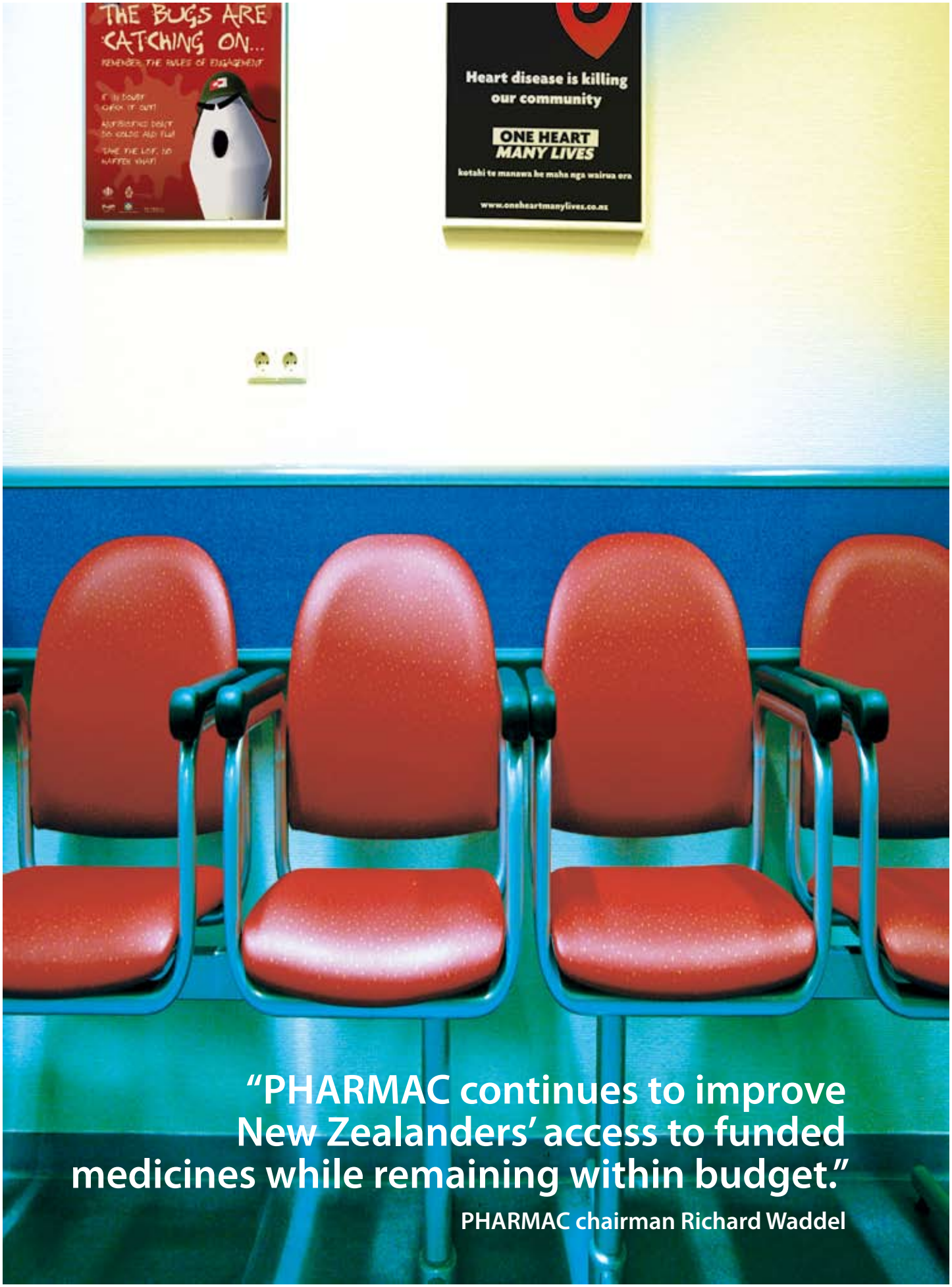
Pharmaceutical Schedule Analyst

According to Google Earth, Kaye Wilson walks 4.6km twice a day; that's 13,000 steps in total, between her house in Kilbirnie and PHARMAC where she strips off her gym gear and dons more corporate garb.

She hadn't intended working in the health field, but after training as a primary school teacher, decided the career wasn't for her. Fortunately, her student job in a pharmacy wholesaler opened up a new possibility as a pharmacy technician. Kaye worked her way around Kenepuru and Wellington hospitals, the Ministry of Health and Medsafe – then joined PHARMAC nearly four years ago. She's responsible for the production of the Pharmaceutical Schedule and its regular updates, and her role includes staffing the PHARMAC help line: "I love the challenge of not knowing what's next – we get calls from specialists, GPs, MPs, the Citizen Advice Bureau, radio talk backs and, of course, the public." Kaye's also responsible for analysing hospital drug buying, so PHARMAC can monitor purchasing patterns.

"At PHARMAC, people work and play hard; we all have the same goals, so there's no patch protection. We just get stuck in, always trying to make things better. Yes, we are always concerned about outside perceptions, and we do listen; we really do try to help. The people at PHARMAC are fantastic."

PHARMAC's helpline (0800 00 66 50) operates 9am-5pm.



"PHARMAC continues to improve New Zealanders' access to funded medicines while remaining within budget."

PHARMAC chairman Richard Waddel

Exceptional Circumstances

PHARMAC administers the Exceptional Circumstances programme which enables patients with rare or unusual diseases to access drugs not otherwise subsidised. Access is subject to approval by panels of clinicians, and operates within a sub-set of the pharmaceutical budget. Separate schemes are operated for community (CEC), hospital (HEC), and Cancer (CaEC) medicines.

Community Exceptional Circumstances

In the year to June 2007 there were 715 applications under CEC, of which 505 were new applications and the remaining 210 were renewals. Approvals are generally given for a year. Overall, 41% of initial and 99% of renewal applications were approved. CEC expenditure was within budget at $2.15 million.

Hospital Exceptional Circumstances

HEC has been running since July 2003. This is the mechanism that enables DHB hospitals to fund medicines in the community that are not funded through the Pharmaceutical Schedule. The sole criterion for approval under HEC is that funding the medicine by the DHB hospital is more cost effective for the hospital than the most likely alternative intervention or outcome.

This year HEC processed 1423 Panel applications. Of these 1038 were new applications and 385 were renewals. 86% of initial and 90% of renewal applications were approved over the year.

Cancer EC

Cancer EC was set up in 2005. This mechanism allows DHB hospitals to fund, on application to PHARMAC, cancer medicines that are not funded through the Pharmaceutical Cancer Treatments "basket" – a list of cancer medicines that all DHB hospitals must fund.

There were 44 applications under Cancer Exceptional Circumstances during the year July 2006 to June 2007; of these 42 were approved. An approval under Cancer EC permits the DHB to fund a pharmaceutical for the treatment of cancer from the Hospital's own budget.

Analysing new medicines

During the year a significant piece of work was completed – a fresh look at the Prescription for Pharmacoeconomic Analysis, the `road map' PHARMAC uses to guide how it undertakes pharmaco-economic analysis of medicines

Last year PHARMAC completed a major review of its methods for assessing the cost-effectiveness of new drugs.

The result of the review, version 2 of The Prescription for Pharmacoeconomic Analysis (PFPA), was published in June 2007. This document provides a guide to the way PHARMAC undertakes "cost-utility analysis" - the form of analysis that provides information on the relative cost-effectiveness of a pharmaceutical compared to other funding options.

After receiving expert advice from the pharmaceutical industry, clinicians, consumers and economists from New Zealand and abroad, changes were made to ensure the PHARMAC framework remains international best practice. Consultation tested PHARMAC's thinking on proposed changes and added significant value to the final document.

Publishing the PFPA is an important way for PHARMAC to show just how it goes about its pharmacoeconomic analysis. There are misunderstandings around what PHARMAC does or doesn't take into account (for example, it isn't widely known that PHARMAC takes into account other health sector costs such as hospital treatment, when it looks at the impact of medicines). Making the PFPA publicly available is aimed at helping people understand how PHARMAC undertakes this important aspect of its work, and as guidance to pharmaceutical companies when providing analysis to support funding applications.

The most significant change in the updated PFPA is a reduction in the discount PHARMAC applies when assessing the future value of funding decisions; a 3.5% discount rate will now be used, rather than the previous 8% discount rate. This means high cost medicines with enduring benefits are now more likely to have a

PHARMAC's Decision Criteria

Seeking best health outcomes from the pharmaceutical dollar

PHARMAC's reviews and changes to the Pharmaceutical Schedule are governed by its Operating Policies and Procedures – a public document that is periodically reviewed and consulted on. The document emphasises the importance of basing decisions on the latest research-based clinical information, and it sets out criteria to be taken into account in decisions about the Schedule.

These criteria are:

- the health needs of all eligible[1] people within New Zealand;
- the particular health needs of Māori and Pacific peoples;
- the availability and suitability of existing medicines, therapeutic medical devices and related products and related things;
- the clinical benefits and risks of pharmaceuticals;
- the cost-effectiveness of meeting health needs by funding pharmaceuticals rather than using other publicly funded health and disability support services;
- the budgetary impact (in terms of the pharmaceutical budget and the Government's overall health budget) of any changes to the Pharmaceutical Schedule;
- the direct cost to health service users;
- the Government's priorities for health funding, as set out in any objectives notified by the Crown to PHARMAC, or in PHARMAC's Funding Agreement, or elsewhere; and
- such other criteria as PHARMAC thinks fit. PHARMAC will carry out appropriate consultation when it intends to take any such "other criteria" into account.

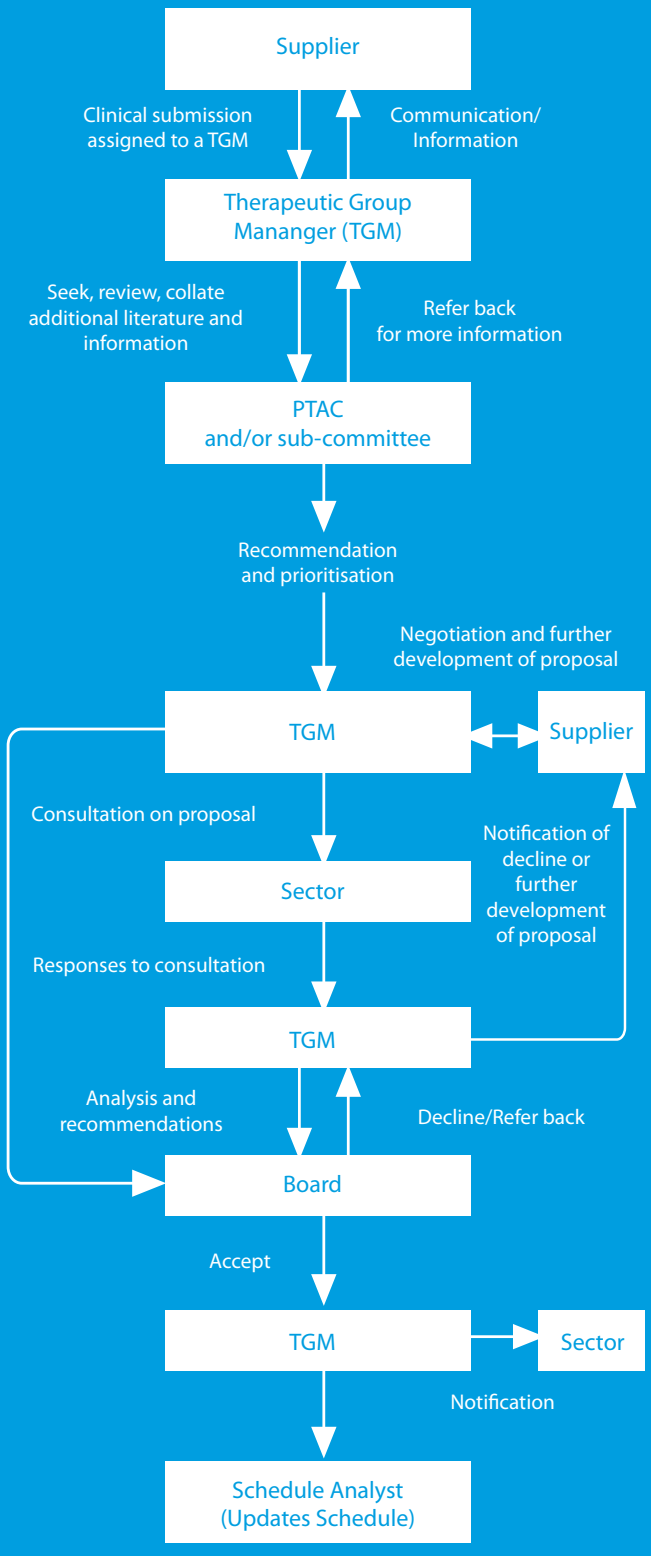
[1] *As defined by the Government's then current rules of eligibility.*

better cost-benefit ratio than under the higher discount. This will impact the priority given to new funding opportunities, although PHARMAC will still take into account other factors (including patient need, total cost and government health priorities) when making funding decisions. In addition to the lower discount rate, PHARMAC's analyses will now take into account the lower cost of generic medicines and direct patient healthcare costs.

Pharmacoeconomic analysis is an important input to PHARMAC's decision-making. Results of cost-utility analysis are considered alongside other criteria such as overall cost, patient need and the health needs of Māori and Pacific People.

Process for listing a new pharmaceutical on the Pharmaceutical Schedule

The process set out in the diagram below is intended to be indicative of the process that may follow where a supplier wishes to list a new pharmaceutical on the Pharmaceutical Schedule. PHARMAC may, at its discretion, adopt a different process or variations of this process.



Hearing from the experts
– PHARMAC's Advisory Committees

PHARMAC's advisory committees provide a range of views from experts in their field, in areas such as clinical use of pharmaceuticals, consumer issues and the use of hospital medicines.

The Pharmacology and Therapeutics Advisory Committee (PTAC) is PHARMAC's clinical advisory committee. Members of the committee are independently appointed by the Ministry of Health, and have expertise in critical appraisal of clinical trial data. Members of PTAC are all practicing doctors and are nominated by their respective professional bodies.

The Consumer Advisory Committee (CAC) provides advice from a health consumer and patient perspective, with nine members bringing diversity and a balance of views to the committee's deliberations. The committee is chaired by Auckland Regional Councillor and health consumers' advocate Sandra Coney. Members are appointed by the PHARMAC Board, and include members with perspectives on women's health, Māori health, pacific people's health, the health of older people, and issues affecting people in isolated locations.

CAC members have become increasingly involved in PHARMAC's interactions with the public, in particular PHARMAC's Access & Optimal Use work. Members have also taken an active role in supporting PHARMAC's work in Māori health.

CAC was consulted on a number of PHARMAC projects, including the development of a refined vision and set of values for PHARMAC, the process for reviewing high cost medicines and PHARMAC's framework for undertaking economic assessments of pharmaceuticals (The Prescription for Pharmacoeconomic Analysis).

Thinking independence

Independence is an important theme for PHARMAC's clinical advisory committee, writes chairman Professor Carl Burgess

It's really important PTAC retains its independence so it can provide PHARMAC with robust advice. Our independence is important to us; it comes with wide responsibility, which we take very seriously indeed.

People do get confused about our role. PTAC assesses drugs for possible funding; we're not responsible for their registration. We compare new drugs with other agents used for the same or similar conditions, then assess whether there are groups of New Zealanders with a particular need. We do take cost into account; this is necessary where there might be minor – or no – benefits over funded compounds.

Sometimes assessment can be difficult because long-term data may not be available or the potential for benefit may be over exaggerated with diminution of adverse effects; that's how it was with Cox 2 Inhibitors (which PHARMAC didn't fund) where our concerns were proved right.

Cholinesterase Inhibitors for Alzheimer's Disease are an interesting drug group – we've consistently turned them down for funding, despite pleas from advocacy groups and the pharmaceutical industry; PTAC is not convinced of their efficacy. Now PHARMAC's British equivalent, NICE, is belatedly coming around to our point of view and there's been an outcry – it's hard to reverse things once a drug is funded which underscores the need to be sure before public funding is committed. One of PTAC's concerns was over the length of the clinical trials; it's okay to have week long trials for agents like antibiotics, drugs which may be only taken for a week; but short studies aren't much of an indication for a long-term problem. The benefit over longer periods of time needs to be demonstrable and, for Alzheimer's drugs we haven't been able to judge their long-term efficacy – or side effects. We recognise there's a major need for something to treat Alzheimer's, so PTAC looks at all possibilities very carefully but to date the drug trials have been poorly designed – PTAC has refused to recommend any of them.

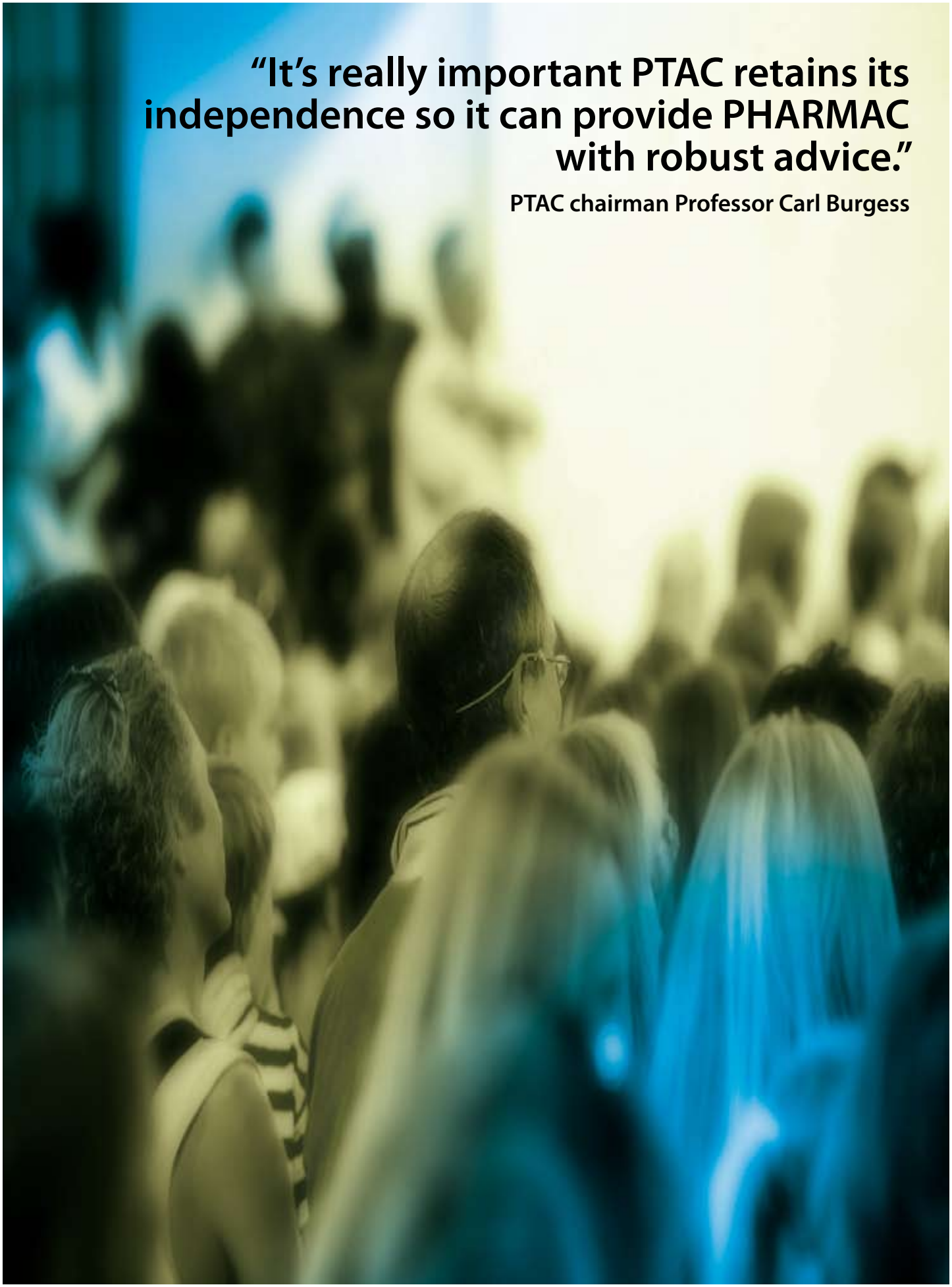
Nowadays there's talk about fast-tracking drug registration and funding to get new agents on the market; but many of us don't think that's a good idea; we're firm believers in having adequate clinical trials where safety is included in addition to efficacy. When we're assessing new drugs, we know the submitting company will provide data supporting their drug, so we always access independent data to provide a balanced opinion.

PHARMAC doesn't always take our advice, and I guess that is the price of being independent. We're well aware our role is only advisory; our views are considered very seriously but there are other important aspects where we don't get involved, like the commercial aspects, such as price negotiations.

People have to realise there are always financial limits. New Zealand is one of the few developed nations with an overt budget for pharmaceuticals and we do accept that in our deliberations.

All in all, chairing PTAC is hard work, but it is also rewarding.

Carl Burgess chairs PHARMAC's Pharmacology & Therapeutics Advisory Committee (PTAC). He is Professor of Medicine & Clinical Pharmacology at the University of Otago, Wellington.



"It's really important PTAC retains its independence so it can provide PHARMAC with robust advice."

PTAC chairman Professor Carl Burgess

Directory

The PHARMAC Board

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Richard Waddel BCom, FCA, AFInstD

Directors
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Adrienne von Tunzelmann MA (Hons), Master of Public Policy
Karen Guilliland RM, RGON, MA, MNZM (resigned)
Kura Denness (Te Atiawa) MBA CA
David Moore (Ngai Tahu) MCom, Dip Health Econ (Tromso), CA

Pharmacology and Therapeutics Advisory Committee (PTAC)

Chair
Prof. Carl Burgess MBchB, MD, MRCP (UK), FRACP, FRCP, physician/ clinical pharmacologist

Deputy Chair
Dr Paul Tomlinson BSc, MBChB, MD, MRCP, FRACP, paediatrician

Committee Members
Dr Ian Hosford MBChB, FRANZCP, psychiatrist
Dr Sisira Jayathissa MBBS, MD, MRCP (UK), FRCP (Edin), FRACP, FAFPHM, Dip Clin Epi, Dip OHP, Dip HSM, MBS, physician
Dr Peter Jones BMedSci, MB, ChB, PhD, MRCP (UK), FRACP, physician
Dr Jim Lello BHB, MBChB, DCH, FRNZCGP, general practitioner
Dr Peter Pillans MBBCh, MD, FCP, FRACP, physician / clinical pharmacologist
Dr Tom Thompson MBChB, FRACP, physician
Dr Jim Vause MBChB, DipGP, FRNZCGP, general practitioner
Dr Howard Wilson BSc, PhD, MB, BS, Dip Obst, FRMZCGP, FRACGP, general practitioner

PTAC Subcommittees
Analgesic - Dr Howard Wilson (chair, PTAC, general practitioner) Dr Peter Jones (PTAC, physician), Dr Rick Acland (anaesthetist), Dr Jonathan Adler (palliative care specialist), Dr Bruce Foggo (palliative care specialist), Dr Lindsay Haas (neurologist), Dr Geoff Robinson (physician), Dr Jane Thomas (paediatric anaesthetist).

Anti-infective - Dr Paul Tomlinson (chair, PTAC, paediatrician), Dr Steve Chambers (infectious disease specialist), Dr Iain Loan (general practitioner), Dr Richard Meech (infectious disease specialist), Dr Mark Thomas (infectious disease specialist), Dr Howard Wilson (PTAC, general practitioner).

Cardiac Stents - Dr Tom Thompson (chair, PTAC, physician), Dr Mark Webster (cardiologist), Dr Patirck Kay (cardiologist), Dr Gerry Devlin (clinical director), Dr Scott Harding (cardiologist), Dr Dougal McLean (cardiologist), Carol Foote (nurse manager - cardiology), Sally Johanssen (procurement specialist).

Cardiovascular - Dr Sisira Jayathissa (appointed chair, PTAC, physician), Dr Malcolm Abernathy (cardiologist), Dr Lannes Johnson (general practitioner), Dr Stewart Mann (cardiologist), Dr Richard Medlicott (general practitioner), Dr Miles Williams (cardiologist).

Cancer Treatments (CaTSoP) - Prof Carl Burgess (chair, PTAC Chair, internal medicine physician), Dr Bernie Fitzharris (oncologist), Dr Peter Ganly (haematologist), Dr Vernon Harvey (oncologist), Dr Tim Hawkins (haematologist), Dr Andrew Macann (radiation oncologist), Dr Anne O'Donnell (oncologist), Dr Lochie Teague (paediatric haematologist/ oncologist).

Diabetes - Dr Tom Thompson (chair, PTAC, physician), Dr Paul Tomlinson (PTAC, paediatrician), Pat Carlton (diabetes nurse specialist), Dr Nic Crook (endocrinologist), Dr Tim Kenealy (general practitioner), Dr Peter Moore (physician), Dr Bruce Small (general practitioner), Dr Jim Vause (PTAC, general practitioner).

Dialysis Fluids - Dr Sisira Jayathissa (chair, PTAC physician), Neil Aitcheson (materials manager), Dr John Collins (nephrologist), Noreen McCullam (dialysis centre nurse), Dr Krishan Madham (nephrologist), Karin Norman (dialysis centre nurse), Assoc Prof Johan Rosman (renal physician).

Mental Health - Dr Ian Hosford (chair, PTAC, psychiatrist), Dr Jim Lello (PTAC, general practitioner) Dr Crawford Duncan (psychiatrist), Dr Jan Holmes (general practitioner), Dr Verity Humberstone (psychiatrist), Prof Richard Porter (psychiatrist), Prof John Werry (psychiatrist).

Neurological - Dr Tom Thompson (chair, PTAC, physician), Dr Alistair Dunn (general practitioner), Dr Lindsay Haas (neurologist), Dr Ian Hosford (PTAC, psychiatrist), Dr William Wallis (neurologist), Dr Peter Bergin (neurologist).

Ophthalmology - Dr Tom Thompson (chair, PTAC, physician), Dr Neil Aburn (ophthalmologist), Dr Rose Dodd (general practitioner), Dr Steve Guest (vitreo retinal surgeon), Dr Allan Simpson (ophthalmologist).

Respiratory - Dr Jim Lello (chair, PTAC, general practitioner), Prof Carl Burgess (PTAC chair, internal medicine physician), Dr John Kolbe (respiratory physician), Dr Ian Shaw (paediatrician), Dr John McLachlan (respiratory physician).

Special Foods - Dr Paul Tomlinson (chair, PTAC, paediatrician), Dr Simon Chin (paediatric gastroenterologist), Kerry McIlroy (dietician), Jo Stewart (dietician), Moira Styles (dietician), Dr John Wyeth (gastroenterologist).

Tender Medical - Dr Paul Tomlinson (chair, PTAC, paediatrician), Dr Jim Lello (general practitioner), Dr Tom Thompson (physician), Ms Sarah Fitt (pharmacist), Dr Grant Howard (intensive care specialist), Geoff Savell (pharmacist), Andrea Shirtcliffe (pharmacist), Dr David Simpson (haematologist).

Consumer Advisory Committee (CAC)

Sandra Coney (chair, women's health advocate, Auckland), Vicki Burnett (mental health consultant, Auckland), Sharron Cole (national trainer, Parents Centres, Wellington), Matiu Dickson (Te Runanga o Kirikiriroa chair, Hamilton), Dennis Paget (Grey Power, Blenheim), Paul Stanley (General Manager, Waipareira Trust), Kuresa Tiumalu-Faleseuga (social services consultant, Levin), Te Aniwa Tutara (Māori health manager, Waitemata DHB), Heather Thomson (health manager, Te Aroha, eastern Bay of Plenty).

Hospital Pharmaceuticals Advisory Committee (HPAC)

Ian Winwood (chair, clinical co-ordinator pharmacy services, Southland), Sarah Fitt (pharmacy manager, Auckland DHB), Neil Aitcheson (materials manager, MidCentral DHB), Paul Barrett (pharmacy services manager, Canterbury DHB), Jan Goddard (manager pharmacy services, Waikato DHB), Lesley Hawke (Service Manager of Pharmacy, Counties Manukau DHB).

Panels

Exceptional Circumstances Panel
Dr Howard Wilson (chair, general practitioner, pharmacologist), Dr Mel Brieseman (Medical Officer of Health, Christchurch) Dr Paul Tomlinson (paediatrician, Southland DHB), Dr David Waite (physician, Capital & Coast DHB), Dr Sharon Kletchko (manager funding and planning, Nelson Marlborough DHB), Dr Andrew Herbert (consultant gastroenterologist, MidCentral DHB).

Cystic Fibrosis Advisory Panel
Dr John Kolbe (respiratory physician), Dr Ian Shaw (paediatrician), Dr Richard Laing (respiratory physician), Dr Cass Byrnes (paediatrician).

Gaucher Treatment Advisory Panel
Dr Callum Wilson (metabolic consultant), Dr Ruth Spearing (consultant haematologist), Dr Clinton Pinto (musculoskeletal radiologist).

Multiple Sclerosis Treatment Advisory Panel
Dr Ernie Willoughby (neurologist), Dr David Abernethy (neurologist), Dr Alan Wright (neurologist)

PHARMAC Management Team

Chief Executive
Wayne McNee BPharm, MPS, PG Dip Clin Pharm (Dist)
– on secondment to Department of Prime Minister and Cabinet

Acting Chief Executive
Matthew Brougham MSc (Hons), Dip Health Econ (Tromso)

Medical Director
Dr Peter Moodie BSc, MBChB, FRNZCGP

Peter Alsop
Manager, Corporate & External Relations

Steffan Crausaz
BPharm, MSc, MRPharmS
Manager, Funding & Procurement

Rachel Mackay
BA, NZIMR
Acting Manager, Schedule & Contracts

Marama Parore
(Ngati Whatua, Ngati Kahu, Nga Puhi)
Acting Manager, Access and Optimal Use

Rico Schoeler
Acting Manager, Analysis & Assessment

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