



BREVE 9

NPS MEDICINEWISE: IMPROVING MEDICINE AND MEDICAL TEST USE IN AUSTRALIA

Presentation by Jonathan Dartnell and Aine Heaney. August 2015

A series on policies and methods based on presentations for experts. Prepared by CRITERIA, a knowledge network on prioritization and health benefit plans from the Inter-American Development Bank.



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NPS MEDICINEWISE: IMPROVING MEDICINE AND MEDICAL TEST USE IN AUSTRALIA

INTRODUCTION

This Breve is based on a webinar¹ presented by Jonathan Dartnell² and Aine Heaney³, at NPS MedicineWise, on August 18 of 2015, to the members of CRITERIA, the IDB Knowledge Network on Health Benefits Packages and Priority Setting in Health.

The webinar presented the role of NPS MedicineWise in the Australian health system. NPS is a not-for-profit organization whose programs are funded by the Department of Health (Australia). It provides practical tools (such as medicines lists), evidence-based information, and educational activities, with the intention of improving the way health technologies, including how medicines and medical tests, are prescribed

and used.⁴ The webinar focused on the role of NPS in improving the use of medicines in the Australian health care system and shows that the investment in NPS MedicineWise's program has consistently achieved demonstrable improvements in the use of medicines and medical tests. Moreover, it has resulted in improved health outcomes and savings in government expenditure far in excess of the cost of the programs. The NPS model plays an important role in supporting Medicare, Australia's universal health system.

The experience of NPS in promoting the rational use of health technologies is extremely relevant for anyone interested in improving the allocation of scarce health resources to what is most important for the population; even the best and most evidence based allocation of resource decisions at the macro level fail unless prescribers, patients and population in general makes the right decision on what technologies actually to consume.

¹ To access the audio and the PowerPoint files for the presentation of the webinar click here: <http://www.redcriteria.org/webinars/>

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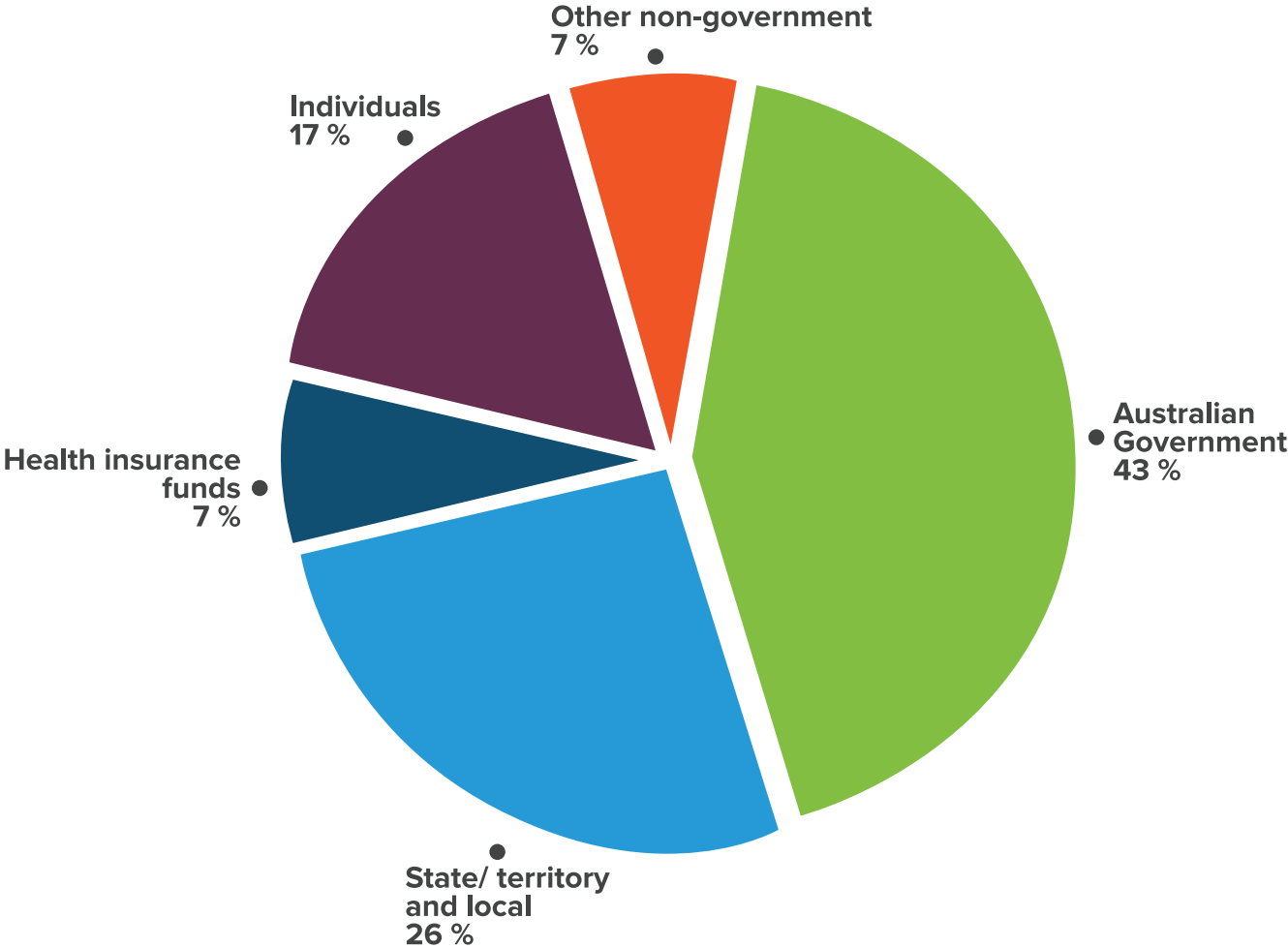
⁴ Wikipedia

OVERVIEW OF PRESCRIBING IN THE AUSTRALIAN HEALTH CARE SYSTEM

Australia has a universal healthcare system that provides access to medicines, medical tests, medical practitioners and hospital care, delivered through public and private providers. Funding comes from the federal government as well as state governments with small portions coming from health insurance funds and individual contributions (Graph 1).

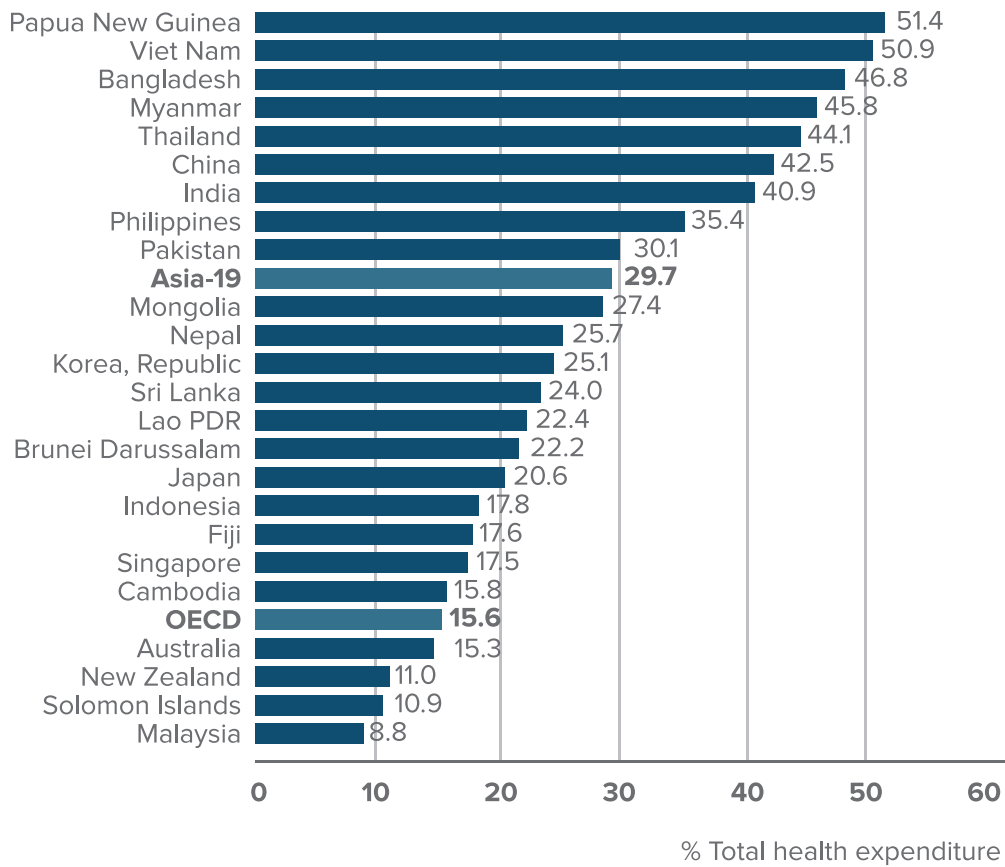
Approximately 9% of GDP goes to health expenditures, which is somewhat similar to many countries in Latin America and the Caribbean, and about 15% of the health care budget is spent on medicines, which is close to the OECD average, but lower than the average of countries in the Asia-Pacific region. (Graph 2)

Graph 1: Who pays?



Source: WHO Global Health Expenditure Database; OECD Health Database, 2012

Graph 2: Pharmaceutical expenditure as a percentage of total health expenditure

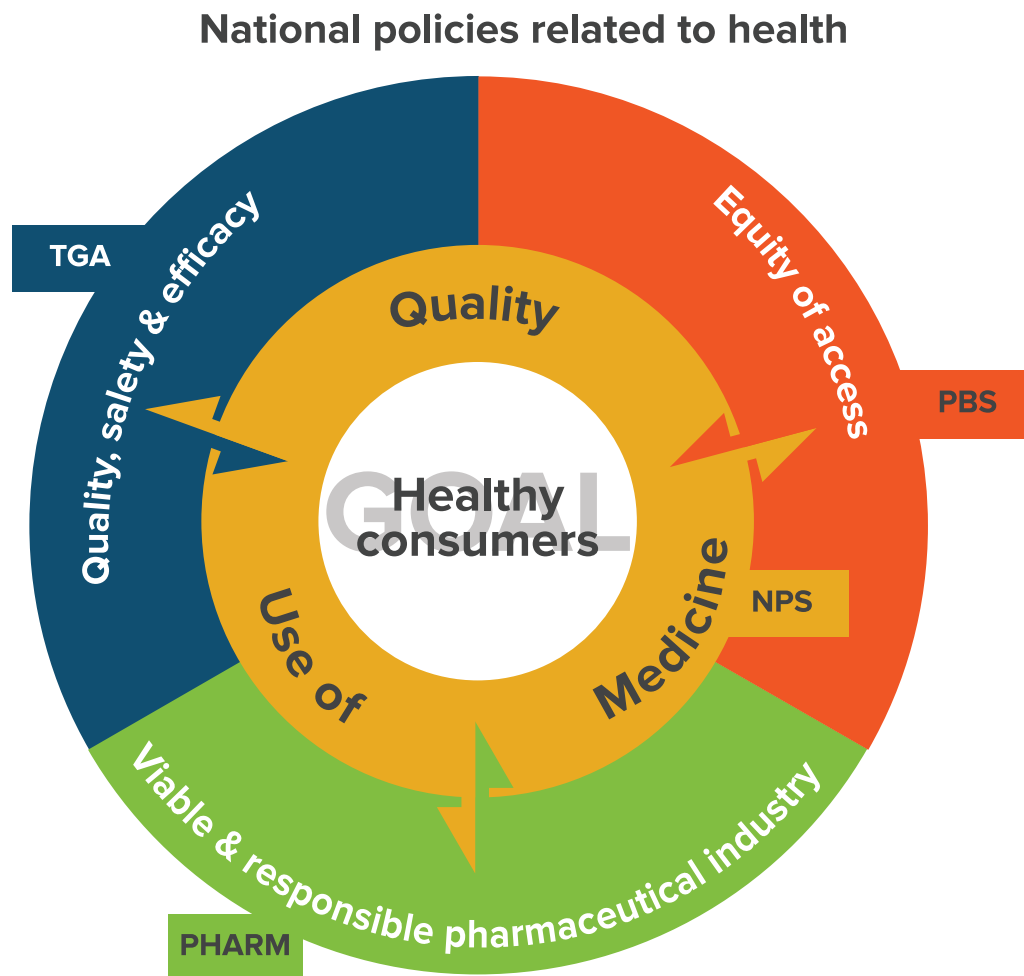


Source: WHO Global Health Expenditure Database; OECD Health Database, 2012

Australia has a National Medicines Policy, depicted in Figure 1. Quality use of medicines and healthy consumers are in the center of the policy. The first pillar of the policy is to provide standards of quality, safety and efficacy of medicines which is achieved and regulated through our Therapeutic Goods Administration. The second pillar of the policy is to provide equitable, timely and affordable access to medicines, which is achieved through the Pharmaceutical Benefits Scheme (PBS). The third pillar is a responsible and viable pharmaceutical industry and the fourth is supporting quality use of medicines. Here is where NPS MedicineWise

comes in, intervening within the interconnections of the policy through a national coordinated approach to appropriate use of medicines.

Figure 1: National Medicines Policy.



National policies related to health

Source: WHO Global Health Expenditure Database; OECD Health Database, 2012

The PBS is an extensive scheme, which provides access to over 750 different drug substances, equating to 2,000 forms for 4,500 different products. In 2013 there were about 200 million prescriptions on that scheme, at a cost of about 9 billion AUD (6.6 billion USD). Patients are required co-payments, the concessional payment is about 6.1 AUD (4.50 USD) and for general patients about 37.7 AUD (27.8 USD).

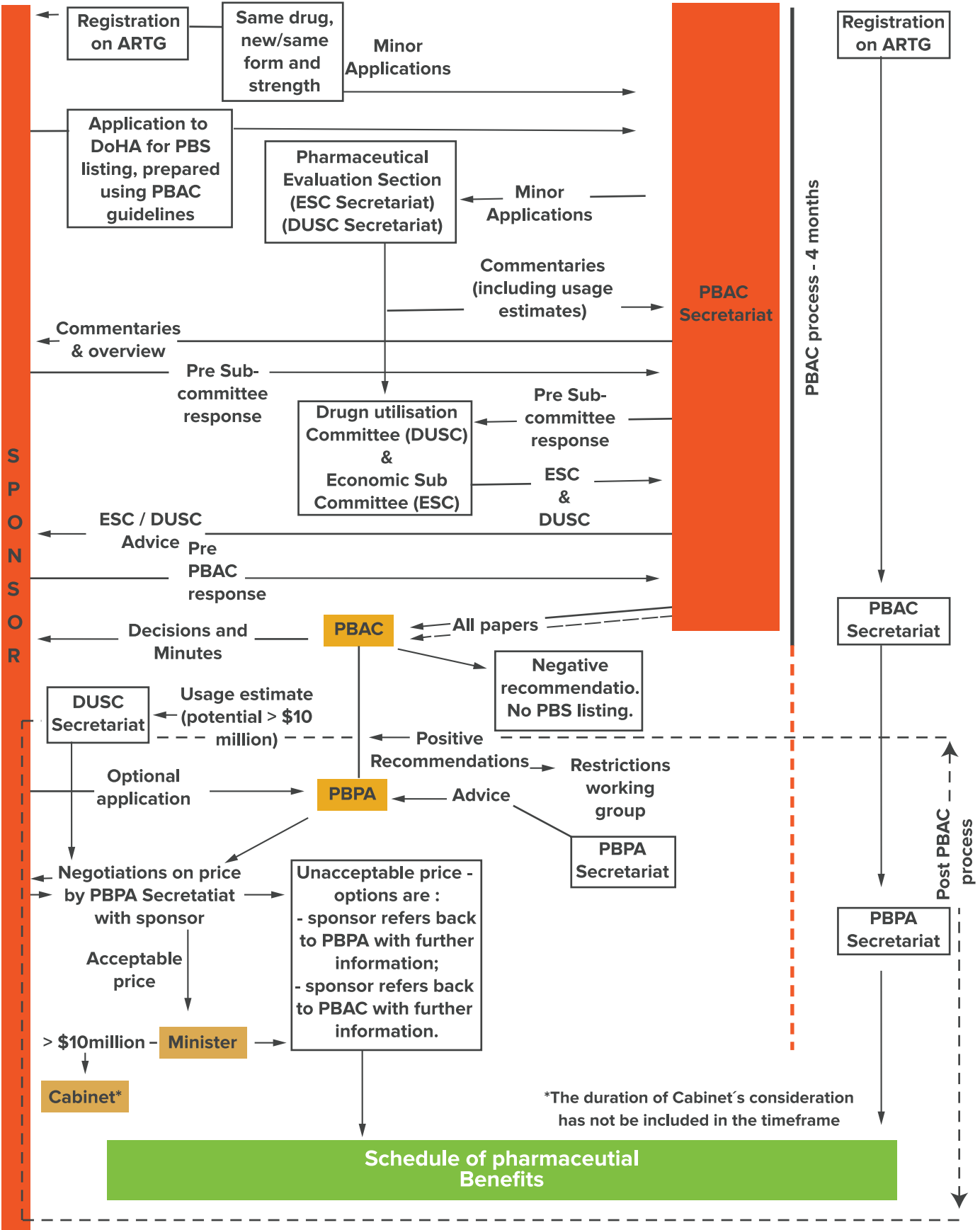
The Pharmaceutical Benefits Advisory Committee (PBAC) is a statutory committee established under the National Health Act in charge of assessment of medicines for reimbursement. The Health Minister cannot list a medicine under the PBS without a positive recommendation from the PBAC. The sponsor, usually the pharmaceutical industry makes requests for listing on the scheme, including type

of listing (e.g. generally available, restricted or prior authorization). To make a recommendation, the PBAC is required by legislation to consider: comparative efficacy and safety, cost-effectiveness and total budget impact. Medicines can be either unrestricted and available to everyone or restricted to specific indications and they may require prior authorization before use, which can be through a streamlined approval, telephone approval or written approval in the most extreme circumstances.

Figure 2 describes the process for listing on the PBS. Once a drug is registered it undergoes an economic analysis, estimates of utilization are made, and the criteria for its use and pricing are negotiated and established. Then the medicine becomes subsidized and is made available for use in the market.

Process to gain PBS listing for registered drugs

Proposed drug



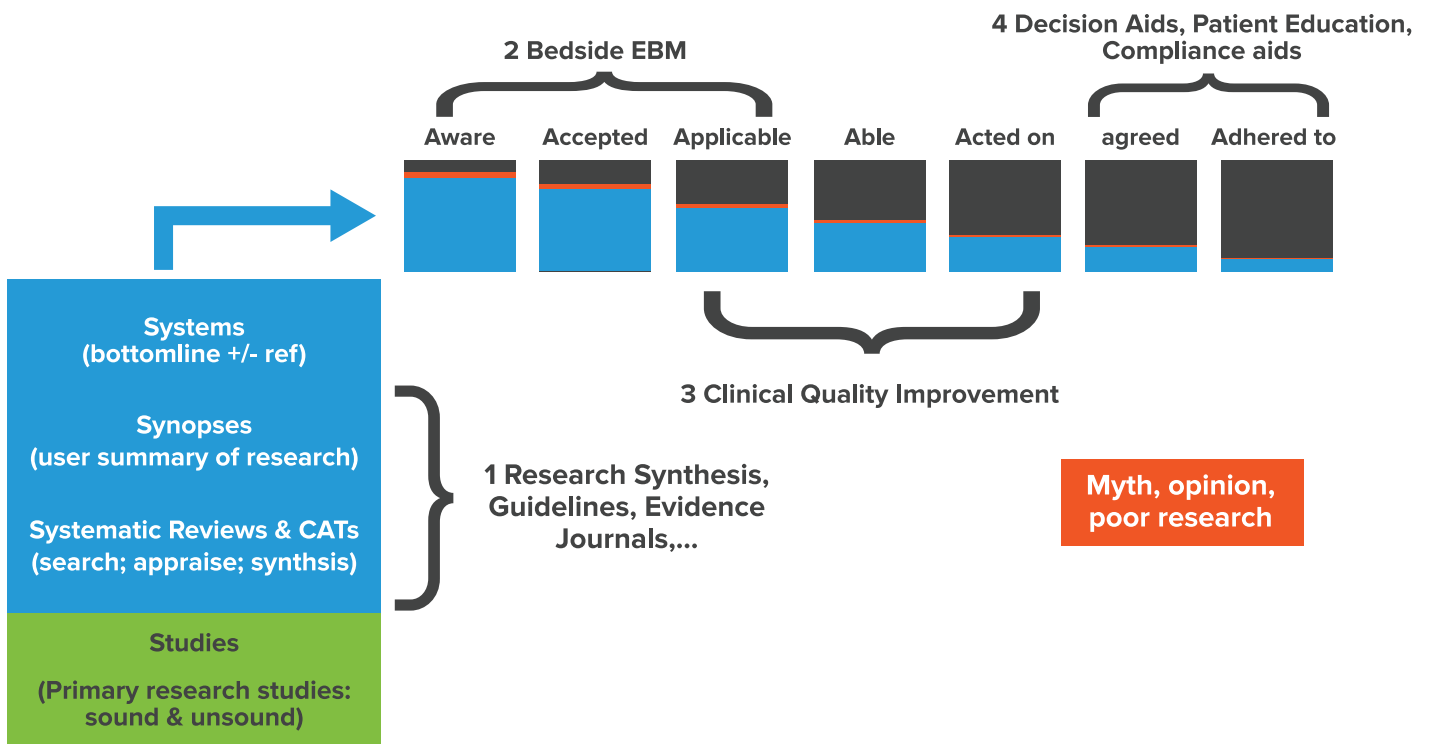
FROM EVIDENCE TO PRACTICE IN PRESCRIBING AND USE OF MEDICINES AND MEDICAL TESTS

Australia is quite well served with good formularies and guidelines. For example, we have an Australian medicine handbook and there is a therapeutic guidelines series of clinical practice guidelines, both for common and uncommon conditions. These are produced by independent non-profit organizations. Yet, availability of good information doesn't guarantee good use or evidence going into practice. So we see many examples of suboptimal prescribing, such as underuse of beta blockers or inadequate dosage of ACE inhibitors for heart failure. There are many examples of over use of medicines,

such as antibiotics for upper respiratory tract infections, benzodiazepines for sleep disorders, antihypertensive and lipid lowering drugs in place of lifestyle modifications. We also see second line before first line therapy, which is the case of using gliptins before metformin.

In Figure 3 the pyramid shows the process of evidence distillation and from the distillation the course towards useful practice recommendations. Implementation of several aspects needs to occur: health professionals need to be aware of that evidence, accept it and be able to apply it to suitable circumstances, and finally act appropriately towards agreement and adherence of the patient to those recommendations. There is a series of cascading steps with diminishing return, which can result in several barriers to the effective implementation of evidence into practice.

Figure 3: Evidence to practice pipeline



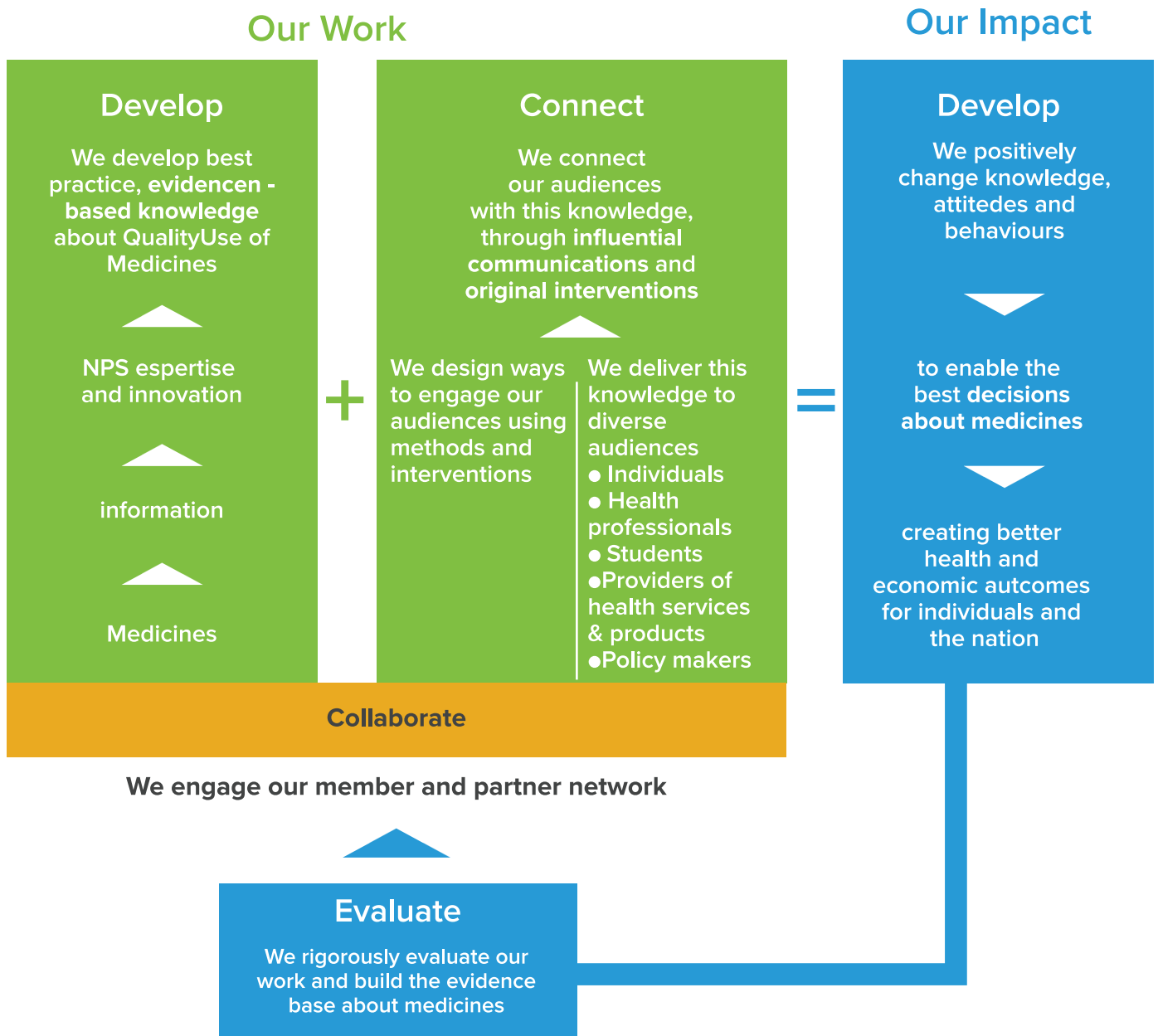
NPS MEDICINE WISE, IMPROVING QUALITY USE OF MEDICINES

Now let's turn towards NPS as an organization and who we are. NPS is a relatively young company, around since 1998. Our purpose ultimately is to achieve better health and economic outcomes for Australia. In the way that we do that we enable people to make better decisions about medicines and other medical choices. The Australian government largely funds us, but we have an independent board, a membership base that directs what we do. Working in partnership with other organizations, we have a fair understanding of what the country requires. We work separately, but cohesively, with both health professionals and consumers.

Our definition for quality use of medicines includes the wise selection of necessary, suitable, safe and effective treatments (including prescription, non-prescription and complementary medicines). To conceptualize our work (figure 4), think about the wealth and enormous amount of evidence that is been developed in medical trials and other research. We know that health professionals are not necessarily well placed to assimilate a lot of information for themselves. We believe we play a role in synthesizing and developing evidence-based knowledge from a distillation through the pyramid on what is the best use for medicines and medical tests. We try to make this information pragmatic in terms of connecting it with our audience to make it influential,

applicable to their everyday life. We make sure we evaluate the impact of what we do and ensure that we change knowledge, attitudes and behavior to have the best decisions applied to medicines and medical tests. We ensure there is always a continuous loop in our learning about the work that we do, our evaluation of our work and the people we most want to affect.

Figure 4: How NPS Work?



The Australian health care system is very interconnected, so there are a range of influences that can be brought on how the system operates and we try to work with all of these systems. Figure 5 depicts the types of approaches that we use throughout the lines of work that we do. A fundamental

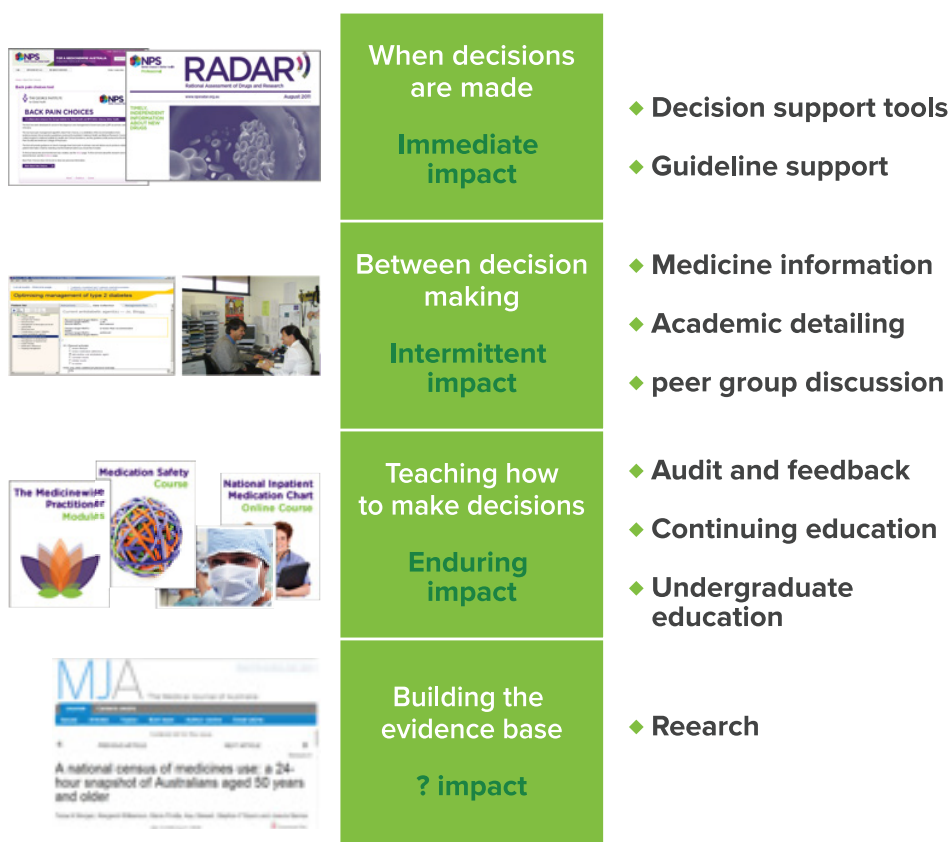
piece of our work is quality improvement, by contributing to the evidence base on how medicines and medical care should be used and using a number of techniques and methods to influence how decisions are made. Our audiences in Australia are wide, involving health professionals and students, engagement with

government stakeholders and the pharmaceutical industry, as well as outreach to consumers and communities

We work very closely with family physicians or general practitioners but we also know we need to work with specialists and people who are involved with medication management such as pharmacists and the nurses who support medication use. When health professionals are in practice we also try to work with them regarding making good decisions on medicines. We have a number of drug and therapeutic information resources that are regularly mailed to clinicians in Australia. We have a publication, *Australian Prescriber* that makes reviews and updates about new drugs and evidence.

We have a publication called NPS Radar, which informs about drugs that are included in the listings, and their benefits, and potential side effects. Other regular mailings provide information on what is happening in the drug landscape. We provide comparative prescribed feedback to clinicians on regular basis and provide reflective activities such as the assessment of own practice in comparison with evidence-based benchmark or their peers. We undertake academic detailing, which delivers face to face tailored messages for clinicians about what best practice is, and is provided by educational facilitators who often are pharmacists but also other health professionals.

Figure 5: NPS interventions and activities



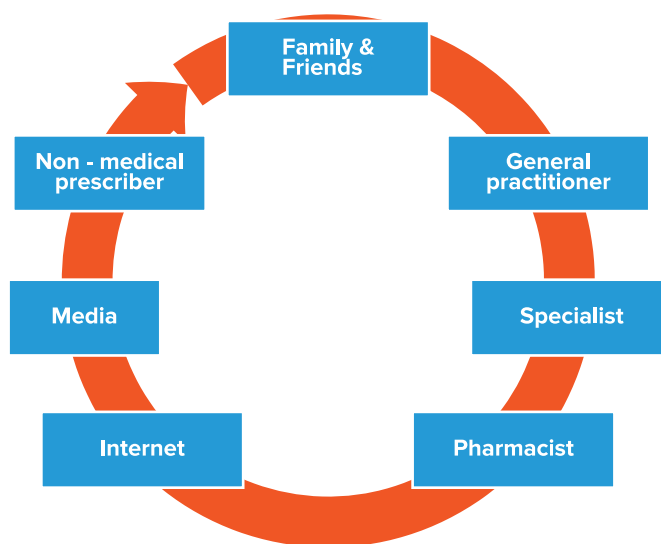
We do a lot of work with pharmacists. We are very lucky in Australia to have a very wide distribution network of medicines that includes private pharmacists, and given they do a lot of face to face, day to day interventions with consumers, they are great partners. We provide them with opportunities to have multidisciplinary case-based meetings and case study discussions, newsletters, patient support materials and other resources that can be used every day to ensure quality of medicines.

We are very active in the early years of and continuing education of health professions' students. We have a national prescribing curriculum which is based on the WHO guide to good prescribing. We aim to get students to be "Practice Ready", preparing them in good prescribing through their undergraduate, so that when they get out to practice they are informed about the nature of drugs, when things work and when they don't, and the costs and benefits of their prescriptions.

In addition, we try to work directly with consumers. We know that consumers have many ways to acquire information about medicines and health through family, friends, and clinicians, but also increasingly doctor Google and group and social media. So we try to utilize many gateways to ensure that best medicines and information are available. We have a number of newsletters and print publications, and tools and resources to help people assess their medicines and medical treatments. Besides that, we also have phone lines support for consumers, so we run two phone lines where people can ask questions about medicines or they can ring up and report intended or unintended consequences of medicines. We capture that information and feed it up to the regulator as part of our obligation to the government. We have tools and apps that can be used on iPads or smartphones to help people have ways to manage their medicines, such as keeping a medicine list receiving reminders to take their medicines or keep records of biomarkers such as blood pressure. We have very good partnerships with many of the media channels in Australia so we work with the

free air television channels. Also, we have good relationships with other websites or other media services, for example a lot of Internet providers to be able to insert content when people are searching for medicines or other medical information. Hopefully, we have "search engine optimization" so we occur very high in people's searching to give them unbiased information. (Figure 6)

Figure 6: NPS Audiences and tools



In between decision-making we also try to influence people thinking and the whole process and we employ a lot of very influential international recognized techniques that are shown and assist to that. But also, we try to be influential where decisions are immediately made; we have a number of ways of both passive and active decision support in Australia. For example, when clinicians are prescribing a medicine or ordering a medical test where there can be a lot of pop ups and reminders on their computer with the latest evidence and influence that decision.

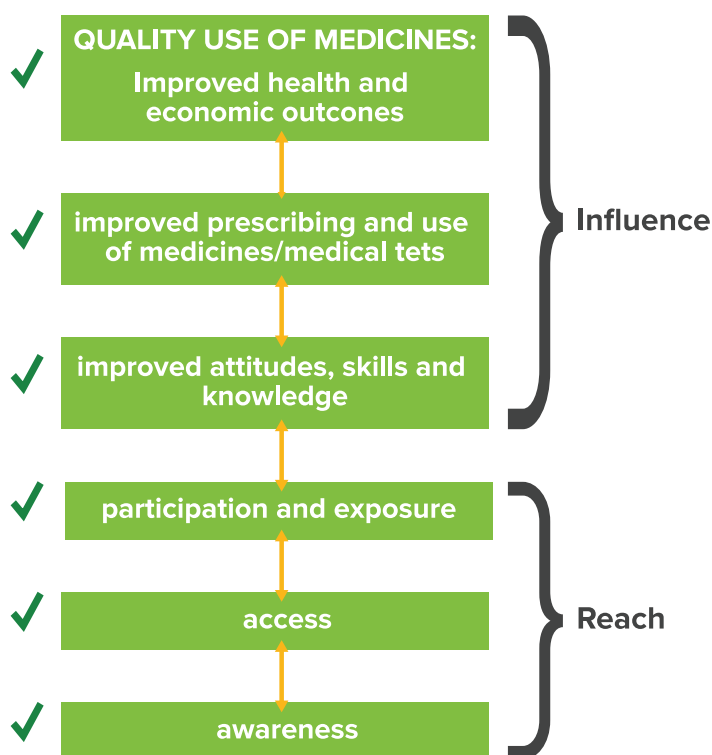
Again, we try to get involved in very important public health issues, such as antibiotic resistance. As part of the international antibiotic awareness week that takes place each year in November, we execute a campaign around the overuse of antibiotics both with consumers and clinicians. This year we were very lucky to get involved with a new initiative, which is a short-film competition for young filmmakers that make excellent, interesting and very funny short videos on YouTube (**Antibiotic resistance, Pick Up, antibiotics don't be a jerk**). It has been very successful in terms of reaching young people and getting them interested in the topic of antibiotic resistance.

EVALUATING NPS MEDICINE WISE'S IMPACT

NPS real purpose for existing is to deliver national programs, which have a clear, strategic objective to improve consumption of medical drugs. The general approach that we take in developing national programs is, while keeping focus on the consumer, to identify clinical issues that are important to health professionals, assess the gaps and barriers between practice and what is actually happening, and enable clinicians to change their practice. We create evidence-based messages, very simple messages about how to change practice. And we deliver these messages across disciplines through a range of interventions as those already described. It is important for us to learn from our programs, but also to evaluate if we have made a difference.

Within our evaluation framework, we must make sure professionals and audiences are aware about the different products and services that we make available; that they have access to them in an appropriate way; that they participate in those activities and are exposed to the program messages. Thus, we can determine through different surveys and other techniques if attitudes, skills and knowledge have changed (Figure 7).

Figure 7: What we need to achieve: evaluation hierarchy



On the other hand, it is critical to determine whether or not we make an actual difference on the prescribing practice or use of medicines, and ultimately, if we have been able to improve health outcomes. This can be better understood through an example of one of our programs. The Dementia program was delivered between 2008-2011, with the objective to improve

management of dementia, in particular the use of cholinesterase inhibitors, memantine, and antipsychotics. The audience included general medical practitioners, community pharmacists, nurses working in aging care, and consumers and their careers. The main program messages were the uses of non-pharmacological strategies for all stages of dementia. It is known that the benefits of cholinesterase inhibitors and memantine are quite small, and some patients will not respond, and adverse effects are common. Therefore, the patient should be monitored and there should be an objective assessment of the effectiveness of cholinesterase inhibitors and memantine. There has to be a plan to review medications regularly as well as opportunistically. Patients and their careers should be counseled on the limited benefits of drug therapy. In addition, the program had messages for residential age care,

through a trial for withdrawal of antipsychotics if no clear benefits were seen. The program developed targeted information resources, made case studies available, facilitated small group case based discussions and provided interactive multi-disciplinary workshops and also made academic detailing visits to general medical practitioners across the country.

Pictogram 1 gives a summary of the Dementia program. There were 37% of registered GPs actively participating in the program (there were also many pharmacists and nurses). The program achieved positive changes in knowledge; and participation satisfaction; a significant reduction in the rates of prescribing as well as reduction in antipsychotic use, and savings to the PBS.

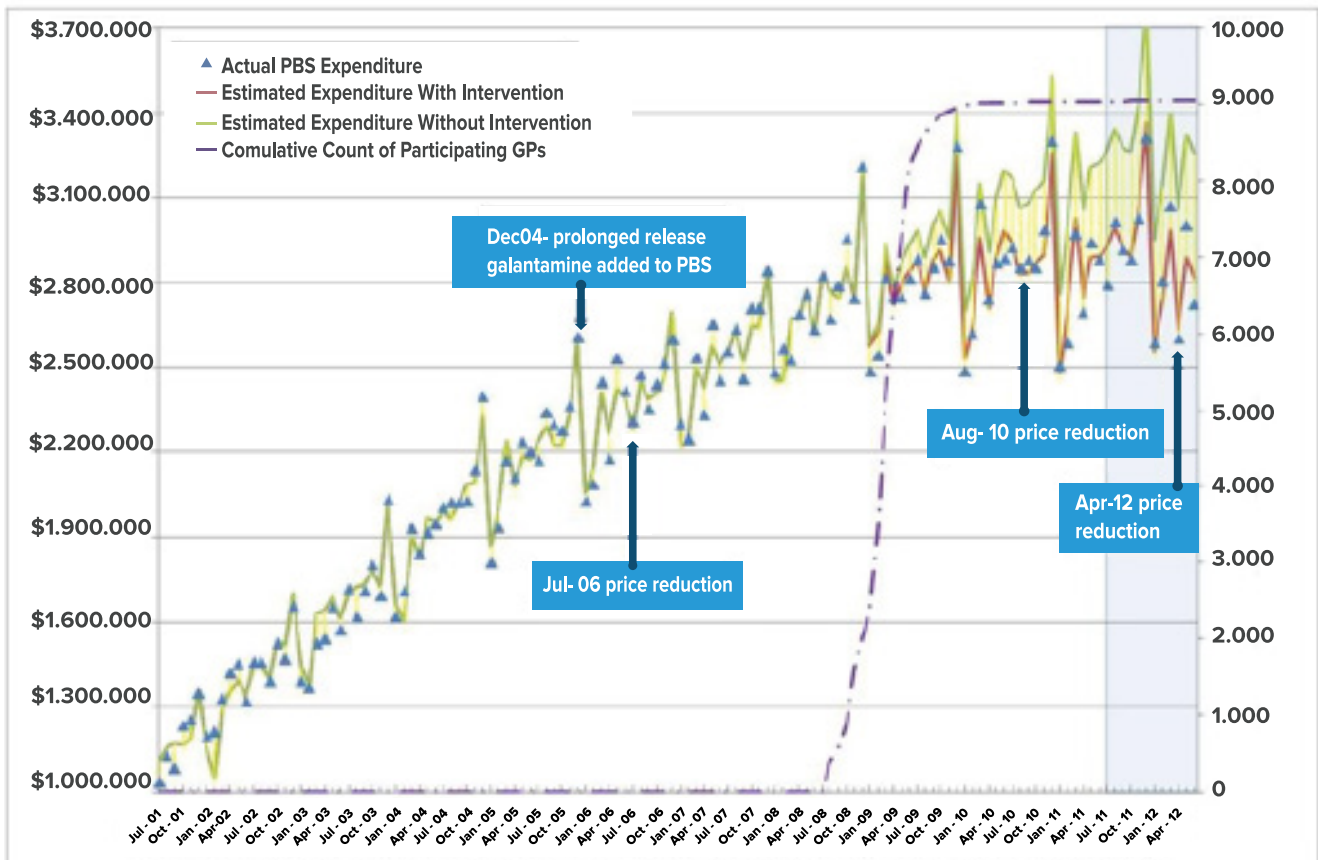
Pictogram 1: Dementia Program



Graph 3 explains how we measure our impact on prescribing; we used the entire national administration database for the PBS for cholinesterase inhibitors and memantine and applied a time series analysis technique to link it with participation in the program. The purple line represents the participation in our program in that period of time; the blue triangles represent actual expenditure on those medicines; the red line represents the estimated expenditure with existence of the NPS intervention; the green line the estimated expenditure without the intervention; and the yellow space represents the savings achieved through the actual program and demonstrated reductions in prescribing rates in the pharmaceutical scheme.

Other programs address Type II diabetes, achieving significant improvement in the use of metformin, reduced hospitalizations from CV events and amputations, while also demonstrating reductions in the use of glitazones, which has resulted in PBS savings. Regarding stroke prevention there has been an increase in the use of aspirin and reduction in clopidogrel, again achieving PBS savings and reduction of hospitalization for primary stroke. There are other examples of successful programs addressing depression, gastroesophageal reflux disease, vitamin D testing and low back pain imaging.

Graph 3: Prescribing evaluation: cholinesterase inhibitors & memantine



THE BOTTOM LINE OF QUALITY USE OF DRUGS

We think NPS can make a case for investing in national programs to improve medicine and medical test use. Our programs add value to registration and subsidization processes. They are accepted, valued and supported by health professionals and consumers. They have demonstrated changes in attitudes and knowledge as well as changes in practices, in particular in prescribing. And the accumulated savings that we achieved on medicines and medical tests for the Australian Government may rise to AUS\$730 million. We also have been able to demonstrate more recently how we contribute to generate better health outcomes.

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