



National Prescribing Service Limited

# Evaluation Report No. 9

2005–06

Progress, achievements and future directions

December 2006

ISSN: 1832-2808

NPS is an independent, non-profit organisation for Quality Use of Medicines,  
funded by the Australian Government Department of Health and Ageing.

ABN 61 082 034 393 | Level 7/418A Elizabeth Street Surry Hills 2010 | PO Box 1147 Strawberry Hills 2012  
Phone: 02 8217 8700 | Fax: 02 9211 7578 | email: [info@nps.org.au](mailto:info@nps.org.au) | web: [www.nps.org.au](http://www.nps.org.au)

## Contents

---

<b>Executive summary: Is NPS influencing change?</b> .....	<b>4</b>
A multi-strategic approach to behaviour change .....	4
Therapeutic targets .....	4
Program evaluation .....	4
Report overview .....	5
Key achievements to June 2006 .....	5
<b>Operating an organisation that achieves corporate goals</b> .....	<b>7</b>
An independent organisation with strong governance .....	7
Well resourced and managed with a track record for achieving contract deliverables .....	7
A valued organisation in a strong position to reach our vision .....	7
Valued partnerships to enhance national co-ordination of QUM activity.....	8
<b>Better prescribing and use of medicines</b> .....	<b>9</b>
Influencing best use of medicines.....	9
A positive change in prescribing of asthma medications.....	9
A positive change in prescribing of proton pump inhibitors (PPIs).....	10
Informing QUM issues for complementary medicines .....	11
Improving economic outcomes .....	13
<b>Improving QUM awareness and competence among consumers</b> .....	<b>14</b>
National resources for the community and community organisations .....	14
Local and targeted strategies for the community.....	16
<b>Improving QUM awareness and competence among health professionals</b> .....	<b>22</b>
Provision of independent medicines information for health professionals .....	22
Opportunities to actively participate in education and quality assurance activities for health professionals .....	25
Encouraging local ownership and responding to local needs via work with Divisions.....	30
Provision of independent information on new drugs and research .....	32
Reinforcing best use of new drugs via seminars .....	33
Extended reach of services to specialist medical practitioners, nurses and hospitals .....	34
Access to decision support material.....	35
Enhancing QUM skills and competence amongst medical students .....	36
Enhancing QUM skills and competence amongst postgraduate students.....	37
Positively influencing GP knowledge and attitudes to appropriate management of heart failure .	38
<b>Creating greater capacity in the QUM workforce</b> .....	<b>39</b>
Greater capacity via NPS Facilitators in divisions of general practice .....	39
Greater capacity via peer educators in the community .....	39
<b>Encouraging and undertaking evaluation and research that supports innovation and learning</b> .....	<b>40</b>
Research and development .....	40
Program evaluation .....	40
<b>References</b> .....	<b>42</b>

## **Contributors**

The following staff from the National Prescribing Service were responsible for the preparation of this document:

- Nicole Cockayne
- Fiona Horn
- Linda Kehoe
- John Mandryk
- Neil Orr
- Emma Slaytor
- Jacqueline Vajda
- Sonia Wutzke.

## **Acknowledgments**

NPS is an independent, non-profit organisation funded by the Australian Government Department of Health and Ageing. NPS provides independent, evidence-based information and services to health professionals and the community on Quality Use of Medicines (QUM). To achieve this we work in partnership with GPs, pharmacists, specialists, other health professionals, Government, pharmaceutical industry, consumer organisations and the community. Valuable guidance with the design and implementation of NPS Program Evaluation is provided by the NPS Evaluation Working Group. Their input is greatly appreciated. Members of this group are:

- Dr Roger Boyd, Director, NPS
- Mr Neil Day, Centre for Program Evaluation, University of Melbourne
- Ms Jan Donovan, Director, NPS
- Dr Tim Driscoll (Chair), Independent Consultant, Occupational Health and Public Health Epidemiology and Research
- Professor Rosalind Hurworth, Centre for Program Evaluation, University of Melbourne
- Ms Judith Mackson, Manager, Education and Quality Assurance Program, NPS
- Ms Rosemary McKenzie, Program Evaluation Unit, University of Melbourne
- Dr Stephen Phillips, General Practitioner
- Associate Professor Jan Ritchie, School of Public Health and Community Medicine, University of NSW
- Associate Professor Glenn Salkeld, School of Public Health, University of Sydney
- Professor Stephanie Short, School of Public Health, Griffith University
- Dr Lynn Weekes, Chief Executive Officer, NPS
- Dr Sonia Wutzke, Manager, Program Evaluation, NPS

## **Suggested citation**

National Prescribing Service. Evaluation Report No. 9 2005–06. Progress, achievements and future directions. December 2006

## **Further information**

Any enquiries about or comments on this publication should be directed to:

Nicole Cockayne

Deputy Manager, Program Evaluation

PO Box 1147 Strawberry Hills NSW 2012

Phone: (02) 8217 8700 (International +61 2 8217 8700)

Fax: (02) 9211 7578 (International +61 2 9211 7578)

Email: [ncockayne@nps.org.au](mailto:ncockayne@nps.org.au)

## **Executive summary: Is NPS influencing change?**

---

The National Prescribing Service Limited (NPS) was launched in March 1998 after being announced in the 1997–98 Federal Budget. NPS is an independent, non-profit organisation funded by the Australian Government Department of Health and Ageing. NPS activities and services aim to give people information, skills and knowledge so they can choose if, when and how to use medicines to attain better health and wellbeing (Weekes et al, 2005). Activities focus on Quality Use of Medicines (QUM), the tenet at the heart of Australia’s National Medicines Policy. QUM is about helping people to:

- wisely select options to manage their health
- choose suitable medicines if a medicine is considered necessary
- use medicines safely and effectively.

QUM applies equally to medicine use by an individual or within a community, and includes prescription, non-prescription and complementary medicines. NPS activities and services are directed at health professionals (primarily GPs, pharmacists, specialists, students, and nurses), and consumers and their carers.

### **A multi-strategic approach to behaviour change**

NPS takes a multi-strategic approach to improving health via seven core service arms. We recognise that a great deal is known about interventions that have been shown to change behaviour when implemented in a sustained fashion at a national or local level (Grol, 2001; Grol & Grimshaw, 2003). NPS draws on this evidence in professional education, community development, social marketing and health promotion to develop and deliver a comprehensive range of interventions including websites, newsletters on topical information, unsolicited direct mail with prescriber feedback combined with specific educational messages, educational visiting (academic detailing), clinical audit with feedback, peer group meetings, hypothetical case scenarios that facilitate problem-based learning (PBL) for individuals or groups, curriculum and training, information on new drugs and research, patient information leaflets, community information sessions, and community capacity building. Opinion leaders and community peers are also used to deliver and endorse key messages where appropriate.

### **Therapeutic targets**

NPS systematically targets therapeutic areas where prescribing problems, uncertainty or controversy have been identified as likely to result in sub-optimal health outcomes and/or increased costs, and where education and information may have a positive impact. In addition to targeting specific areas, general QUM concepts and principles are promoted to clinicians and the general community, including the use of medication reviews, use of generic medicines, cautious adoption of new drugs, and awareness of drug interactions.

### **Program evaluation**

Program evaluation plays a central role in the NPS organisational structure and delivery of activities and services. A team dedicated to undertaking the evaluation was established at the outset of the organisation. Program evaluation provides information that internal and external stakeholders can use to make decisions about: accountability, program design and delivery, strategic direction, and QUM policy more broadly.

## Report overview

This 9th Evaluation Report presents information on the progress and key achievements of NPS to June 2006. It builds on previous evaluation reports ([www.nps.org.au/site.php?content=/resources/content/nps\\_eval\\_reports.html](http://www.nps.org.au/site.php?content=/resources/content/nps_eval_reports.html)) and complements the comprehensive Evaluation Framework for the organisation ([www.nps.org.au/site.php?content=/resources/content/EvaluationFramework\\_home.html](http://www.nps.org.au/site.php?content=/resources/content/EvaluationFramework_home.html)). The Evaluation Framework for NPS is a series of questions under broad areas that reflect the organisation's corporate and program goals. These are:

Operating an organisation that:

- is intellectually and strategically independent, with excellent governance
- is well resourced and managed
- achieves targets, goals and contract deliverables
- is in the best position to carry out our purpose and reach our vision
- has effective and valued partnerships that promote QUM in Australia.

Implementing programs that:

- achieve better health outcomes in target areas
- achieve better prescribing and use of medicines
- improve QUM awareness and competence (i.e. knowledge, beliefs, values, skills and behaviour) among health professionals and consumers
- create greater capacity in the QUM workforce
- support nationally co-ordinated QUM activity
- encourage and undertake evaluation and research that supports innovation and learning.

Detail on the methods and scope of data to inform the evaluation is provided on the NPS website ([www.nps.org.au/resources/evaluation/evaluation\\_framework\\_appendix\\_05.pdf](http://www.nps.org.au/resources/evaluation/evaluation_framework_appendix_05.pdf)).

## Key achievements to June 2006

- 33 therapeutic modules for health professionals have been delivered to date.
- *Australian Prescriber* and *NPS News* continue to be published 6 times each year with each issue distributed to over 60 000 health professionals.
- Eleven issues of *NPS RADAR* have been released to date providing reviews on 40 new drugs. In addition, 19 new drugs seminars were conducted during 2005–06, at various locations around Australia specifically targeting GPs and pharmacists.
- Telephone services have taken nearly 76 000 calls from health professionals and consumers.
- Over 10,700 individual GPs voluntarily participated in NPS core activities in 2005–06, this reflects a steady increase from 2,500 participants in 1998–99.
- 53% of GPs who have ever participated in NPS programs have participated 4 or more times since 1998.
- New, more comprehensive programs for specialist medical practitioners, nurses and hospitals are being developed and implemented.
- A high quality drug interaction data set is in development for use in all clinical prescribing systems via the Internet.
- Ongoing work with divisions of general practice and other stakeholders ensures a nationally coordinated and collaborative approach to delivery of QUM.

- NPS is a valued and trusted source of reliable and independent information on medicines and therapeutics: 89% of GPs and 97% of pharmacists surveyed in 2006 perceive NPS to be of either great or moderate value.
- Evaluation data reveal positive changes in self-reported consumer and health professional attitudes, skills and knowledge consistent with program objectives and key messages.
- Consumer awareness of consumer medicine information (CMI) in 2006 (37%) has increased by 13 percentage points since the benchmark in 2003 (24%). The proportion of consumers who recall receiving a CMI with their last new prescription medicines has increased to 32% in 2006 from 13% in 2003.
- In 2006, 53% of consumers reported asking questions of their doctor the last time they were prescribed a new medicine, an increase from 48% in 1999.
- 27% of consumers reported asking questions of their pharmacist the last time they were prescribed a new medicine, almost doubling from 16% in 1999.
- Nearly two thirds (63%) of GPs surveyed following NPS interventions to improve diagnosis and management of heart failure correctly agreed that all the time echocardiogram is an essential part of investigating and managing a person with potential heart failure, a significant increase from 49% prior to program rollout.
- The proportion of GPs 'very confident' in initiating beta blockers increased significantly from 12% pre to 21% post roll out of our program to improve diagnosis and management of heart failure.
- Similarly, the proportion of GPs who felt 'very confident' in titrating doses of ACE inhibitors increased significantly from 32% pre to 46% post the program.
- The proportion of consumers who report being diagnosed with a cold/flu and who reported they received a prescription for an antibiotic has decreased from 57% in 1999 to 51% in 2006.
- Use of low dose corticosteroids in asthma is changing in keeping with NPS key messages.
- Savings over \$304.4 million have been made to the PBS to June 2005.
- NPS remains committed to best methods for assessing the impact of changes in medicines use on health and to developing new and innovative models for program delivery via our research and development efforts.

## Operating an organisation that achieves corporate goals

---

At a corporate level, it is our goal to operate an organisation that:

- Is intellectually and strategically independent, with excellent governance
- Is well resourced and managed
- Achieves targets, goals and contract deliverables
- Is in the best position to carry out our purpose and reach our vision
- Have effective and valued partnerships that promote QUM in Australia.

### **An independent organisation with strong governance**

NPS operations continue to be overseen by a Board of Directors. We function independent of the influence of Government and the pharmaceutical industry, but despite this just over half (57%) of GPs surveyed in 2006 thought that NPS information and activities were unduly influenced by Government. A further quarter (25%) thought that the NPS was unduly influenced by the pharmaceutical industry (either agreeing 3% or agreeing to some extent, 22%). Fewer pharmacists surveyed in 2006 thought that NPS information and activities were unduly influenced by government, with 6% agreeing and a further 31% agreeing to some extent. Just over a quarter (27%) of pharmacists surveyed thought that NPS was unduly influenced by the pharmaceutical industry (5% agreeing and 22% agreeing to some extent).

### **Well resourced and managed with a track record for achieving contract deliverables**

All four NPS contracts have been successfully re-funded by the Australian Government Department of Health and Ageing, reflecting a commitment to QUM and a belief that NPS will continue to deliver. Currently NPS receives funding of approximately \$30 million annually and at the time of writing this report NPS operated with just over 80 staff.

The majority of GPs (89%) surveyed in 2006 agreed that in the last five years they had noticed a positive change in the amount of time spent discussing medicines issues with patients. Fewer (62%) reported a similar change in communication with pharmacists. Similarly the majority of pharmacists (89%) surveyed in 2006 agreed that in the last five years they had noticed a positive change in the amount of time spent counselling patients about medicines issues. A smaller number (56%) reported a similar change in communication with GPs.

### **A valued organisation in a strong position to reach our vision**

Awareness of NPS amongst consumers has steadily increased from 8% in 2000 to 24% in 2006.

The majority of GPs (89%) and pharmacists (97%) surveyed in 2006 rated NPS to be of either great or moderate value. The value of NPS to GPs has grown significantly over the years. In 2000, only 14% of GPs considered the NPS to be great value, this has more than doubled in six years to 36%.

GPs and pharmacists are very positive in their views on the clinical relevance, evidence-based nature, trustworthiness and influence of NPS on their practice. In particular, when surveyed in 2006, the proportion who agreed or strongly agreed that NPS information and activities are:

- Clinically relevant was 94% GPs and 93% pharmacists
- Evidence-based was 83% GPs and 90% pharmacists
- Trustworthy was 80% GPs and 91% pharmacists
- Appropriate to their needs was 76% GPs and 87% pharmacists
- Reduce uncertainty on medicines issues was 69% GPs and 82% pharmacists
- Influences their prescribing was 69% GPs
- Influences pharmacy practice was 66% pharmacists.

The NPS health professional product/resource with the highest awareness was *Australian Prescriber* with 95% of GPs and 98% of pharmacists aware. Awareness of *NPS RADAR*, *NPS News* and *NPS Prescribing Practice Review* was also encouragingly high, each above 90% for both GPs and pharmacists. GPs and pharmacists were, however, much less aware of the NPS website and Therapeutic Advice & Information Service (TAIS) with awareness of 49% and 39% respectively for GPs and 63% and 43% respectively for pharmacists.

Use of NPS health professional products and resources among both GPs and pharmacists was also encouraging, perhaps with the exception of TAIS. In particular, in 2006 (of those aware):

- 99% GPs and pharmacists frequently or sometimes reported to read *Australian Prescriber*
- 94% GPs and 91% pharmacists frequently or sometimes read *NPS RADAR*
- 96% GPs and 98% pharmacists frequently or sometimes read the *NPS Prescribing Practice Review*
- 96% GPs and 97% pharmacists frequently or sometimes read *NPS News*
- 62% GPs and 82% pharmacists frequently or sometimes used the NPS website
- 39% GPs and 44% pharmacists frequently or sometimes used TAIS.

## **Valued partnerships to enhance national co-ordination of QUM activity**

NPS is member-based and works in partnership with health professionals, government, pharmaceutical industry and consumers. We work closely with our partners and stakeholders, particularly our clients and those in divisions of general practice, consumer, health and community-based organisations, to update and improve our programs and services.

NPS works in collaboration with a number of national community and consumer peak organisations to develop strategic directions on quality use of medicines initiatives across Australia. Partner organisations include: Consumers' Health Forum of Australia, Combined Pensioners' and Superannuants' Association of NSW Inc (CPSA), COTA Partners and COTA Alliance, Federation of Ethnic and Communities' Councils of Australia, Health Consumers of Rural and Remote Australia, National Aboriginal Community Controlled Health Service and National Rural Health Alliance.

NPS has contracts with 115 of the 119 divisions of general practice across Australia to provide local delivery of NPS messages. In the report of the 2004–05 annual survey of divisions of general practice (Primary Health Care Research and Information Service, 2006), over 70% of divisions reported using NPS for planning, research or evaluation support. NPS and universities were deemed the most useful in terms of this support, with 68% endorsing NPS to be of either some or a great deal of use in terms of planning, research or evaluation support.

Throughout 2005–06 we supported the Department of Veterans' Affairs with the Veterans' MATES Project, and also the Department of Health and Ageing and Australian Divisions of General Practice with the Enhanced Divisional QUM (EDQUM) Program.

## Better prescribing and use of medicines

---

### Influencing best use of medicines

Increasingly, consumer behaviour is reflecting best use of medicines. In 2006, 53% of consumers reported asking questions of their doctor the last time they were prescribed a new medicine. This represents a small increase of 5 percentage points since the benchmark survey conducted in 1999. Similarly, 27% of consumers reported asking questions of their pharmacist the last time they were prescribed a new medicine, almost doubling from 16% in 1999.

Of consumers aware that Consumer Medicine Information (CMI) leaflets are available from a doctor or pharmacist in 2006, 40% had asked these health professionals for one at some time, up from 32% in 2005. The proportion of consumers who recall receiving a CMI with their last new prescription medicines has increased to 32% in 2006 from 13% in 2003.

### A positive change in prescribing of asthma medications

NPS's program to improve management of asthma focused on prescribing inhaled corticosteroids as the cornerstone of management. Other key messages were:

- Back titrate to the minimum dose of inhaled corticosteroid
- Combination products should not be prescribed as initial therapy
- Consider adding a long-acting beta<sub>2</sub> agonist to medium-dose inhaled corticosteroids before using high-dose corticosteroids for uncontrolled asthma.

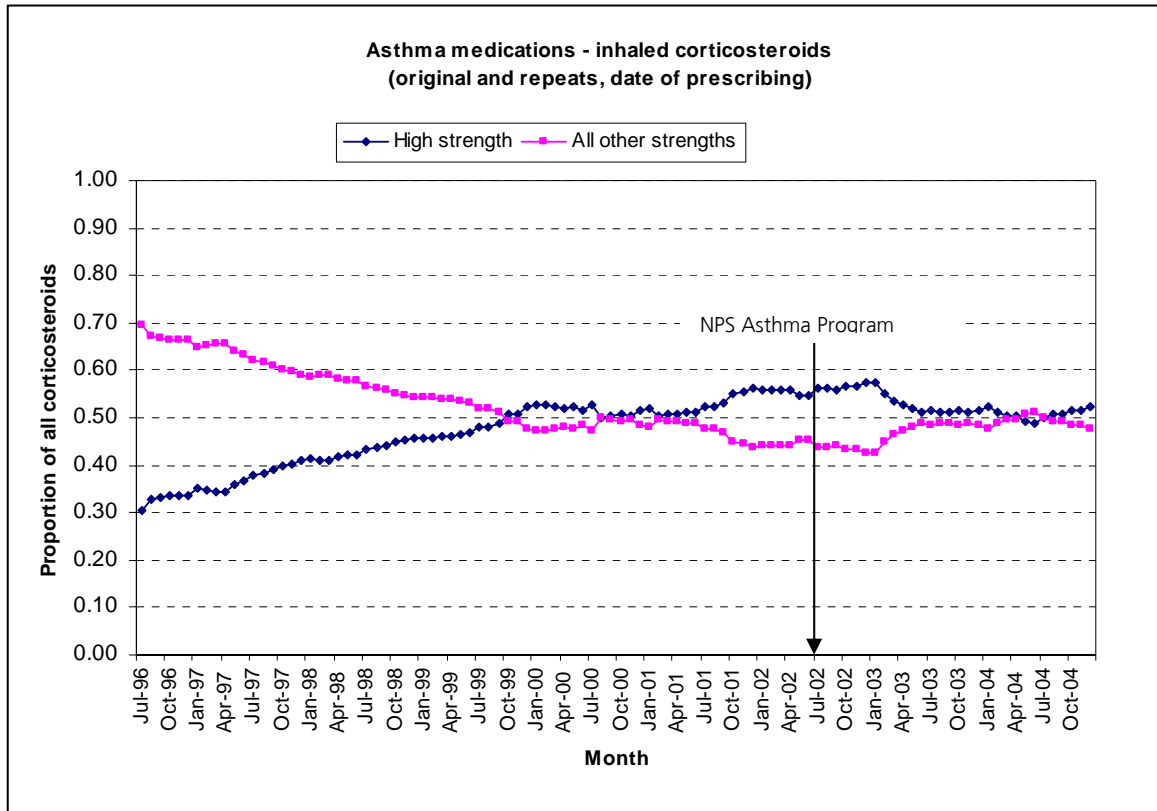
The program used a mix of passive and active interventions. The passive interventions consisted of mail outs of written materials to all GPs (around 20,000) in Australia as well as prescribing feedback. The active interventions were those contacts where the GP (actively) participated in either one-to-one educational visiting, small group case study discussions (including problem-based learning), or clinical audits or case studies. For this program, 6,714 GPs participated in a total of 8,262 activities during the period August 2002 to July 2004.

The statistical methodology used to examine whether NPS interventions influenced the volume and relative prescribing of corticosteroids in Australia is described elsewhere (Mandryk et al, 2006; Horn et al, 2006). Briefly, monthly prescribing data (July 1996 to December 2004) were obtained from the national Pharmaceutical Benefits Scheme (PBS) administrative database maintained by Medicare Australia. Data were aggregated and de-identified by Medicare Australia at the provider level for each month. Only those drugs that incur a government benefit are included in the PBS database. All of the higher strength corticosteroids are above the co-payment threshold and are therefore completely represented in the data. Approximately 65% of all other corticosteroids are above the co-payment threshold.

Original prescriptions (and not repeats), by date of prescribing, were the subject of analysis, since any impact by NPS is expected to be reflected in the prescribing decision of the doctor. Because the NPS programs targeted individual GPs the prescribing data were summarised at the level of the GP (as medians and means across GPs within each month).

Figure 1 demonstrates the decrease of higher strength corticosteroids after August 2002. These results are encouraging and demonstrate a decrease in the use of higher strength corticosteroid medications as a proportion of all corticosteroids at the time of NPS interventions.

**Figure 1: Mean proportion of high and other strength inhaled corticosteroid medications as a proportion of all corticosteroids by GP by month**

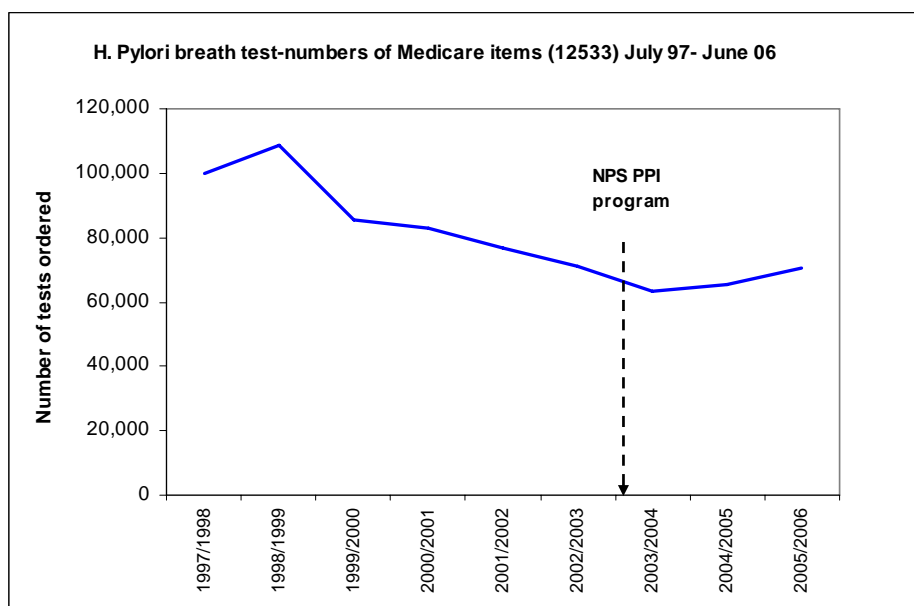


## A positive change in prescribing of proton pump inhibitors (PPIs)

In 2004–05 NPS trialled a pre/post survey methodology to measure changes in GP knowledge and attitudes around specific QUM issues, timed to coincide with the implementation of national programs. The first of these was the *Optimising use of proton pump inhibitors* program with related pre/post surveys. Encouraging results showing that GP knowledge and attitudes towards the quality use of PPIs improved in line with best practice evidence were reported in our previous evaluation report ([http://www.nps.org.au/resources/evaluation/report\\_08.pdf](http://www.nps.org.au/resources/evaluation/report_08.pdf)).

To build on these positive changes in knowledge and attitudes, our focus now is on reviewing any changes in prescribing from GPs in the surveyed divisions. At the time of this report, sufficient prescribing data from post the intervention was not available, this will be analysed in the coming year. Data from Medicare Australia on the number of *Helicobacter pylori* breath tests ordered is, however, available and shows a reversal in a downward trend in the number of tests ordered in Australia (Figure 2). The key message specifically relating to *H. pylori* testing in the NPS PPI program was to consider testing for and treating *H. pylori* in people with uninvestigated dyspepsia or who are using PPIs long term. Prior to the intervention, the number of test ordered was falling by approximately 6,000 per year, after the intervention a reversal was evident of a similar magnitude. Data will continue to be monitored to examine whether this change is sustained.

Figure 2: *Helicobacter pylori* breath tests ordered 1997–2006



## Informing QUM issues for complementary medicines

To inform the design of NPS work on complementary medicines, a series of formative projects have been undertaken in 2005–06 to provide information on:

- the most commonly used/prescribed/recommended/self-initiated complementary medicines
- where consumers and health professionals currently get information on complementary medicines and how would they like to receive this information
- what information consumers and health professionals want regarding complementary medicines
- what are consumer and health professional attitudes to complementary medicines
- whether there are any gaps in consumer and health professional skills in assessing information on complementary medicines
- whether consumers and health professionals communicate adequately with each other about the use of complementary medicines

This work will continue through 2006–07. Progress to date includes:

- **Members planning day** – In February 2006 NPS hosted a day to provide member organisations and other key stakeholders with an update on NPS programs. This forum also provided participants with an opportunity to have input to NPS program design and delivery. One of the four workshops that formed the basis of discussion throughout the day focussed on complementary medicines. Useful feedback was received on: important issues relating to complementary medicines; what similar work is currently being undertaken; potential strategies for influencing issues related to complementary medicines; and suggestions for how NPS can collaborate effectively with relevant organisations to address these issues.
- **Consultation with a range of experts** – In March 2006 NPS convened a meeting of experts involved in complementary medicines in Australia. Participants were from NPS member organisations, government bodies and academia. The purpose of this meeting was to ensure the focus, methodology and research questions of NPS formative evaluation on complementary medicines was best informed by accessing the appropriate people, knowledge, data and projects in the area.

- **Literature review** – Has been completed and covers four broad areas: consumer and health professional attitudes to complementary medicines, current consumer and health professionals practice and preference for prescribing/using complementary medicines, current consumer and health professionals practice and preference for obtaining information on complementary medicines, and information needs of consumers and health professionals regarding complementary medicines.
- **Qualitative research as part of the NPS Community QUM chronic conditions formative evaluation** – This work was commissioned to address whether consumers included complementary/ herbal/natural/alternative products in their definition of medicines and hence associated issues with medicine management. Generally, the finding from this research was that almost everyone did not recognise or understand the term ‘complementary’, and many did not consider them to be a ‘medicine’.
- **Thematic review of calls on complementary medicines to both TAIS (Therapeutic Advice and Information Service) and Medicines Line** – This review was commissioned for these telephone information services funded by NPS for health professionals and consumers respectively. The thematic review of 1,018 calls to TAIS for the period January 2004 to June 2005 involved reviewing de-identified individual queries with on: qualifications of callers, duration of time for TAIS to address calls, the complementary medicine(s) addressed in calls, specific or recurring queries raised for individual complementary medicines or products, adverse reaction issues raised by the caller on complementary medicines, and resources utilised by TAIS consultants to address the queries on complementary medicines. The similar review of calls to Medicines Line involved a thematic review of calls for the period January 2004 to June 2005 regarding complementary medicines. For this project 1,332 de-identified individual queries were reviewed with respect to: the characteristics of the callers, the complementary medicine(s) and associated prescription medicines addressed in calls to Medicines Line, specific or recurring queries raised for individual complementary medicines or products, and adverse reaction issues raised by the caller on complementary medicines. Overall, the callers enquired about a vast range of complementary medicines and products, highlighting the difficulty in the provision and access to information to address all issues for all involved.
- **Identification of complementary and alternative medicines in general practice** – To inform NPS of the complementary medicines that are used in high volume, 18 months of data (October 2004 to March 2006) were reviewed from the Bettering the Evaluation and Care of Health (BEACH) Project, which has identified use of complementary and alternative medicines (CAMs) among general practice patients in Australia: glucosamine (12% of OTC medications); saline bath/solution/gargle (10%); sodium/potassium/citric/glucose (10%); fish oil (4%); and vitamin C (4%).
- **Supplementary Analysis** – As part of the BEACH project, two **SAND studies (Supplementary Analysis of Nominated Data)** were commissioned over July to Sept 2006. The sample size is 200 GPs, 30 encounters each (total 6,000 encounters). We are expecting a report on this study in December 2006, which will identify amongst general practice patients: types of OTC medicines used; types recorded in medical record; use of medicines list; and types of medicines recorded in medicines list (prescription, non-prescription, herbal and other natural medicines, vitamins and minerals).
- **Review of international medical sales (IMS) data** – This review indicated that the most frequently used CAMs are: glucosamine and combinations, vitamin B and combinations, calcium, vitamin C and combinations, iron, fish oil, echinacea and combinations, valerian, ginkgo, vitamin E, and St John’s wort.
- **National survey of GPs 2006** – As part of this survey GP views on complementary medicines were sought. GPs were divided on how often, when taking a medication history or reviewing a patient’s medication, they asked about complementary medicines. A small number (4%) reported that they never did so, while 12% did so all the time and a fifth (18%) did so half

of the time. In contrast, the majority of GPs (79%) agreed that it was important to ask patients if they were taking complementary medicines while a further 20% agreed that it was to some extent important.

- **National survey of pharmacists 2006** –Similar views were sought from pharmacists. When asked to self-report the proportion of patients asked about complementary medicines when taking a medication history or reviewing medications, 3% never asked and 29% asked all patients. In terms of importance of asking patients if they are taking complementary medicines, 82% responded that it was important and 18% responded to some extent.

## Improving economic outcomes

The methodology used by NPS for estimating savings to the PBS includes a mix of actual versus forecasted PBS spending as well as time-series and regression modelling per program, linking utilisation and expenditure with implementation and GP participation in NPS activities.

The initial funding agreement with the Government required that the core QUM program achieve savings to the PBS of \$45.6 million over 4 years: \$2.9 million in the first year and \$14.3 million in each of the 3 subsequent years. At the end of the 4 year contract period, NPS achieved savings of just over \$63.4, clearly satisfying the contract requirements.

The second agreement with the Government (July 2001 to June 2005) required that with 4-year funding of \$45.9 million, NPS must deliver savings of \$111 million to the PBS: \$28.5 million in the first year and \$27.5 million in each subsequent year. In the period July 2004 to June 2005, at a minimum, NPS activities generated savings of \$68.7 million to the PBS. These savings could, however, be as high as \$151.0 million. During this four-year period in total NPS can attribute savings of \$241.0 million to the PBS associated with our activities (Table 1).

Table 1 summarises the savings generated, contracted and brought forward for each year since the inception of NPS to the last month of our second contract. Savings over \$304.4 million have been made to the PBS to June 2005. Claiming conservative estimates of savings generated, the actual savings in excess of contracted savings available to be brought forward as of July 2005 are \$147.8 million.

**Table 1: Savings generated, contracted and brought forward (\$A), 1997 to 2005**

	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05
<b>Savings brought forward at 1 July</b>	0	929,000	5,825,966	17,500,443	17,797,536	30,388,017	68,216,966	106,568,143
<b>Savings generated</b>	3,780,000	19,151,966	25,929,477	14,552,093	41,090,481	65,328,949	65,851,177	68,732,103
<b>Less savings contracted</b>	-2,851,000	-14,255,000	-14,255,000	-14,255,000	-28,500,000	-27,500,000	-27,500,000	-27,500,000
<b>Available savings at June 30</b>	929,000	5,825,966	17,500,443	17,797,536	30,388,017	68,216,966	106,568,143	147,800,246

## Improving QUM awareness and competence among consumers

---

Provision of independent medicines information to consumers remains a priority for NPS. The NPS Community QUM program has dedicated resources to build awareness, knowledge and skills in the community that will lead to better use of medicines and ultimately improved health. The NPS Community QUM program provides information and services nationally and to targeted population-based groups: older people, people with chronic conditions, multicultural communities, and Aboriginal and Torres Strait Islander communities.

### National resources for the community and community organisations

**Patient information leaflets** continue to be distributed on a range of topics to help GPs, pharmacists and consumers discuss and decide on the appropriate therapeutic course. These include detail on symptomatic management for respiratory infections, patient self-management of heart failure, a tool to help GPs to review use of proton pump inhibitors and a tool to help GPs to review patient medication use.

The **Medimate** brochure, available in English and as a bilingual resource (Chinese, Greek, Italian and Vietnamese) continues to be widely promoted. *Medimate* is an interactive, consumer-friendly resource to help consumers find medicines information from reliable and accurate sources and help them manage their medicines in partnership with health professionals.

A **Get to Know Your Medicines Kit** is available free to community organisations to help them plan and organise an event to support people manage their medicines.

The **Medicines List** resource is also available and widely promoted. This resource enables consumers to carry a list of medicines wherever they go.

**MedicinesTalk** is a quarterly newsletter written by consumers for consumers giving reliable, accurate information and useful hints on managing medicines. It aims to inform consumer groups about QUM policy and programs, and to encourage groups to become involved in QUM activities. NPS provides the support and infrastructure for the publication while most of the writing and editorial work is undertaken by consumers. Currently 2,482 copies of MedicinesTalk are distributed quarterly to consumer and community groups.

NPS makes available a large number (over 1,100) of **Consumer Medicine Information (CMI)** sheets via our website, over 800 are being accessed each month. The use of this resource, as measured by the number of visits to the CMI search page, is higher in 2006 (3,013 monthly average) than in 2005 (2,744 monthly average), an increase of around 10%. In July 2006, the top 20 searches were for panadol, paracetamol, lumiracoxib, lipitor, panamax, cough, atorvastatin, efexor, benadryl, ibuprofen, nurofen, herron, ventolin, glucovance, aspirin, prednisolone, panadeine, disprin, vitamin, and sudafed. Consumer awareness of CMI in 2006 (37%) has increased by 13 percentage points since the benchmark in 2003 (24%).

NPS continues to fund **Medicines Line**, a telephone information service for the community. Over 1,500 people call Medicines Line each month, primarily to ask questions about side effects, drug interactions, therapeutic choices, medicine use in pregnancy or when breast-feeding. Calls to the service have increased following its promotion in the Community QUM program, with over 40,000

calls received to date (Figure 3). Of consumers surveyed in 2006, 16% were aware of Medicines Line, a slight increase from the previous year (13%).

Nearly all callers to Medicines Line, when surveyed in late 2005, had confidence and trust in the information provided, were likely to use the service in the future, and would recommend the service to others. Specifically, in terms of satisfaction with the information received:

- 83% of callers felt the pharmacist understood the reasons for the call 'very well'
- 80% of callers felt the pharmacist explained the answer 'very well'
- 86% of callers felt they understood the answer they were given 'very well'
- 76% of callers rated the information they were given as 'very useful'
- As a result of the call, 66% said their concerns about the issue had decreased 'a lot' or 'a little'.

In terms of satisfaction with the service overall:

- 93% of callers had 'a lot' of confidence and trust in the information provided
- 92% were 'very likely' or 'likely' to use Medicines Line in future
- 97% of callers were 'very likely' or 'likely' to recommend Medicines Line to others
- 40% said there were no improvements needed for Medicines Line
- 13% of callers wanted more staff to answer calls.

Data from the 2006 national survey of GPs indicate that 39% of GPs were aware of Medicines Line. Of those aware, only a few frequently referred consumers to the service (2%). A further thirty percent (29%) sometimes referred consumers. Of GPs surveyed, 18% rated Medicines Line as 'very useful' (a rating of 1 on a 5 point scale), while just under half (45%) rated it in the next usefulness category (a rating of 2 on a 5 point scale).

Data from the 2006 national survey of pharmacists showed that 47% of pharmacists were aware of Medicines Line. Of those aware, only a small number frequently referred patients/consumers to the service (6%). A further one third (33%) indicated they sometimes referred customers/patients to the service. Encouragingly 75% surveyed pharmacists rated the information service in the top two usefulness categories.

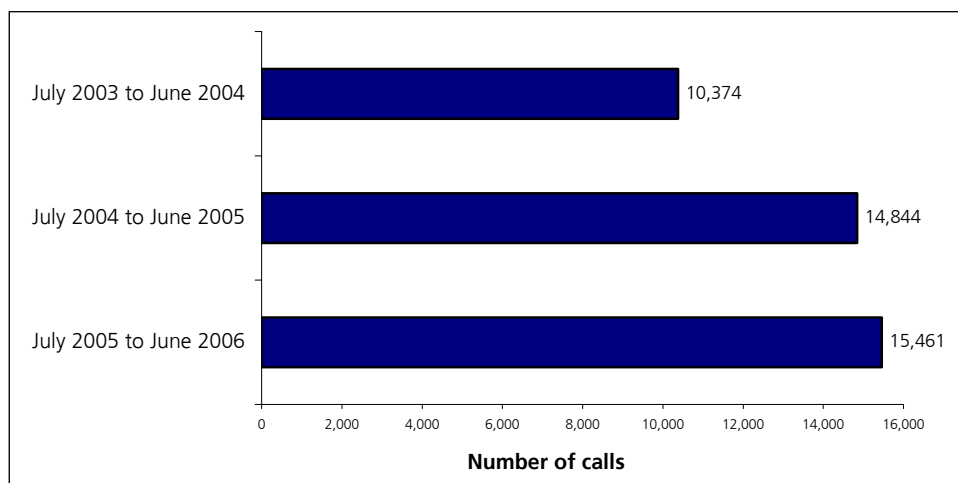
In June 2006 NPS commissioned a review of our telephone information services to provide an evidence base to guide ongoing operation and development. INCA Consulting, an independent, external research-based consulting organisation, was recruited to undertake this evaluation, which involved semi-structured in-depth interviews with members of the NPS Phone Line Services Working Group, providers of the information service, NPS personnel and a range of other key stakeholders and peak organisations.

The external review of Medicines Line found this service to be highly regarded by those consulted, identified as offering an important additional means for consumers to seek medicines information. Specific benefits included:

- It provides the ability to obtain independent, free information about medicines from a trustworthy source.
- It allows consumers to obtain a second opinion and to validate the information given to them by a health professional.
- It provides ready access to medicines information without the need to make and wait for an appointment with a GP.
- It is anonymous and provides a private and confidential means of seeking information.
- It does not feature the (real or perceived) power imbalance that exists between consumer and health professional.

- The service is highly accessible from any geographic location.
- The information provided is personalised and specific, not based on broad or generic information products.
- It allows information to be sought in some 'emergency' situations.
- It provides a unique opportunity to seek information about drug interactions and complex poly-pharmacy issues.
- It provides a 'destination' for health professionals and providers of other kinds of information to refer people seeking medicines information.

**Figure 3: Calls to Medicines Line\***



\* Total calls to Medicines Line to date = 40,679

## Local and targeted strategies for the community

### Influencing change amongst seniors

Commencing January 2004 the NPS, in collaboration with COTA National Seniors Partnership (CNSP, now COTA organisations), implemented the first stage of the Seniors QUM Program.

Complementary to the broader NPS Community QUM Program, the overall aim of the NPS Seniors QUM Program, implemented in this first instance over two years, was to empower seniors with the knowledge, skills and attitudes to be active partners in their medication management. Specific objectives were to:

- generate and improve awareness of the need for information about medicines
- promote quality services and resources that are available for the senior consumer on medicines
- develop skills and strategies to obtain accurate and reliable information on medicines and to use this information to assist in effective communication with their health professional
- develop community opinion leaders and to undertake community education and community development activities for seniors.

A model of nationally coordinated peer education was selected as the primary strategy to reach seniors. This approach recognised that seniors have valuable life experiences that place them in an ideal position to communicate important messages to other seniors.

Over the first two years of the program, 39 training workshops were run with 214 peer educators. Feedback overall on the training was positive, in particular, the opportunity to develop and test session plans. A total of 1,381 QUM sessions for seniors were facilitated by peer educators attracting

attendance of approximately 31,550 seniors from around Australia. A total of 13,272 seniors (41% of all participants) provided feedback on the sessions with overall positive feedback: 83% agreed they learned something new; 77% agreed the information was relevant to them; and 67% agreed the session gave them ideas for change.

One to two months following the sessions, 93% of the 110 seniors interviewed remembered the sessions and of these 87% reported the session was helpful in some way for example: clarifying what should be included as a medicine (e.g. "The main thing for me was to know that vitamins and herbs are medicines and should be mentioned to the doctor if I was to be taking other medicines"); reminding participants to think more actively about health and medicines and ask more questions (e.g. "The session reminded me to think about why I take medications and if they're useful"), and providing advice on useful medicines information resources (e.g., "Had a friend the previous day ask me about a medication ... was able to direct her to the Medicines Help Line which I think is excellent innovation").

More than half (54%) of these respondents also felt the information sessions had helped them to gain more confidence in asking the doctor and/or pharmacist questions about medicines they were taking. A further 23% reported making, often multiple, changes in the way they manage their medicines including: general changes in attitudes and behaviour around medicines use (e.g. "We are much more aware about how I take my medicines and also what I am taking and ask questions about them all"), improvements in adherence; improvements in information seeking about medicines and use of services available, improved communication with health professionals (e.g., "Keep doctor informed if I change brand of medication"), reduction in medication use (e.g. "As a direct result of the presentation made an appointment with his GP to review his medication and consequently has been taken off one of them!"), and increased focus on lifestyle options rather than medicine.

### **Influencing change in multicultural communities**

A resource designed for teachers of English as a second language has been jointly produced by NPS and the Adult Migrant Education Service in Victoria. This resource, available free to interested organisations, aims to help people in multicultural communities get better results from the medicines they take, avoid side effects where possible, and enjoy better health.

Throughout 2005–06 significant progress has been made in planning for the Ethnic Schools project titled 'Young People as a Gateway - After Hours Ethnic Schools Program'. Pilot testing for this program is due to commence in Term 1 2007 in Queensland. The program will use culturally appropriate health education strategies delivered as part of the established learning curriculum in after hours ethnic schools (AHES). These schools are run by community organisations to maintain linguistic and cultural heritage for children from prep to years 11 and 12. Approximately 1,000 school authorities operate these schools throughout Australia and over 100,000 students participate nationally.

The coursework for this pilot study was developed by professional experts in languages other than English curriculum development and involved consultation with AHES individuals and community leaders from the ethnic communities. The intervention has three steps: Step 1, the development of the coursework; Step 2, the implementation of the coursework; and Step 3, the sharing of QUM knowledge from students to family members.

Implementation will take place over a seven-week period where instructors will use the coursework as the basis of their lessons. The important role of ethnic schools to parents and the community is recognised in the literature. By respectfully engaging with traditional family interactions, it is anticipated the program will place the information within a two-way family learning context, which has been shown to be an effective way of increasing awareness of health issues in multicultural

populations. Key messages will be reinforced by homework activities which will require participation of older family members as well as informal discussions between family members.

### **Influencing change in Aboriginal and Torres Strait Islander communities**

Throughout 2005–06 significant progress has been made in developing a course to train Aboriginal Health Worker trainers to provide training to primary health care workers (PHCWs) who work in Aboriginal Community Controlled Health Services (ACCHSs). The course is being developed via a partnership between the National Aboriginal Community Controlled Health Service, NPS and the Aboriginal Health Council of South Australia. The course consists of a train the trainer package for trainers as well four Modules for PHCWs: general QUM; asthma; hypertension; and diabetes and. Consumer Resources Information will also be developed to complement the training materials.

A detailed literature review has also been undertaken to identify areas of QUM need and opportunities to influence change amongst Aboriginal and Torres Strait Islander communities. This review involved a comprehensive search for relevant literature in: Ovid MEDLINE (1966 – May, Week 3 2006), Ovid MEDLINE In-Process and Other Non-Indexed Citations (May, Week 3 2006), EMBASE Drugs and Pharmacology (1991 to 2nd Quarter 2006), CINAHL – Cumulative Index to Nursing and Allied Health Literature (1982 to May, Week 4 2006), Australian Medical Index (AMI), ATSIhealth (ATSI Health Bibliography) and the Cochrane database. Reports and other publications not indexed in the medical databases were also included where relevant.

This review identified several relevant issues for NPS program planning as well as areas requiring further research for clarification. The review highlighted that medicine issues are part of a much larger and complex set of issues, including the social, political and environmental context of ATSI existence. The specific QUM issues identified of particular interest to NPS included:

- Lack of consumer understanding of medicines and a lack of shared understanding of traditional medicines and prescription medicines
- Safe storage of medicines
- Adherence
- Communication barriers, in particular, the lack of opportunity for discussion regarding using medicines between consumers and health professionals
- Limited access to QUM services, in particular, Home Medicines Review especially in rural and remote areas
- Inability to access medicines due to cost, physical availability, inappropriate prescribing, health beliefs, lack of health following and review systems.

### **Influencing change amongst the community with a chronic condition**

In early 2006 NPS commissioned qualitative research to assist its understanding of the QUM related knowledge, understanding, practices and skills of consumers with chronic conditions. This formative evaluation involved 8 group discussions and 19 in-depth interviews conducted with people living with either type 2 diabetes or chronic pain and were held in Sydney, Brisbane, Dubbo and regional South Australia with a mix of consumers, carers and 'experts'. The information collected in this work will help to inform the direction of NPS planned work to improve medicine management among people with chronic conditions.

In brief, this work found that there is a wide range in knowledge of conditions and medicines with a gap overall between consumers' current knowledge and that required for appropriate medicine management. Issues identified that impact on consumers' ability to manage their medicines safely and effectively include: remembering to take medicines, managing and anticipating side effects; managing and anticipating interaction effects, choosing medicines and treatments, managing costs, and accessing time-poor GPs.

The consumers who participated in the evaluation varied greatly with respect to the amount of information they desire. Some chose to avoid information if possible, while others want as much information as they can find. Across all consumers, the primary medicines information sources were GPs and/or pharmacists.

There are a number of information gaps and needs for consumers with chronic conditions. These relate to basic facts (e.g. medicines facts, condition facts), skills (e.g. information seeking and processing), presentation of information (e.g. the need for simple, non-technical and consistent information) and information from a broader perspective (e.g. treatment from a holistic perspective and new developments in medicines and treatments).

### **Influencing knowledge, attitudes and behaviours regarding appropriate use of antibiotics**

Targeted strategies for the community, via the NPS common colds community campaign, commenced in 2000 and have been repeated annually since then during the winter months. Community strategies are closely integrated, using the same tagline, key messages and visual images and are delivered in numerous settings including general practice, community pharmacy, child-care centres and community groups. Strategies include written information via newsletters and brochures, mass media activity using billboards, television, radio and magazines and small grants to promote local community education.

The common colds need common sense campaign implemented in 2006 built on previous work. It was designed to remind the community that antibiotics are not appropriate treatment for a common cold and so reduce the demand for antibiotic prescriptions. The consumer activities were implemented in a parallel program for health professionals.

In 2006, 7,921 childcare services and 447 libraries were sent common colds need common sense campaign resources. Childcare services were also offered further resources to help them run educational sessions for childcare workers about managing common colds. A total of 458 childcare services requested resources to support delivery of educational sessions. Of these, 68 services reported implementing the sessions and 575 childcare workers reported attending a session. Additionally, based on a random sample of childcare services, that did not implement educational sessions, it is estimated that at least a further 1,540 childcare workers saw the common colds need common sense campaign key messages. Feedback from 76 of the 447 libraries mailed resources showed that 411 parent/carers and children had also seen the campaign's key messages.

In 2006, the campaign focused nationally as well as female parents of children from 2 to 5 years. An educational book for young children and their parents called *Harvey Catches a Cold and Visits the Doctor* was developed for the 2006 program. This book presents the key messages of the Common Colds Campaign. Other resources used in the 2006 campaign were: a children's sticker featuring Harvey the wombat, a brochure for parents and carers of children called *Common Colds in Children Need Common Sense* and an educational session kit for childcare services to help run sessions for childcare workers about how to treat common colds in child care settings. These resources were in addition to the brochure produced in previous years, *Antibiotics Won't Help a Common Cold. Common Sense Will.*

Awareness of the Common colds need common sense campaign among consumers is modest, but has increased from 9% awareness nationally pre-campaign in 2002 to 21% post campaign in 2006. The highest level reached was 22% in 2004. Importantly, awareness of the campaign among the target group of female parents of children aged 2 to 5 years was 43% and increased to 45% in 2006, more than double that of the general community. Awareness of the campaign remains high

among health professionals. In 2006, 72% of GPs and 67% of pharmacists were aware of the campaign.

The proportion of Australian adults who believe that antibiotics are appropriate for treating cold and flu was 26% following the campaign in 2006, and has remained fairly stable over time. However, only 15% of female parents of children aged 2 to 5 years believe that antibiotics are appropriate in managing cold/flu symptoms, which is a small improvement on 17% reported in 2005. Self-reported actions taken for managing cold/flu symptoms suggest that there has also been a slight improvement in symptomatic management of cold and flu amongst Australian adults (Table 2).

The proportion of symptomatic consumers reporting that they were prescribed an antibiotic within the 3 months before the survey has remained fairly stable since 1999 (Table 3). The proportion of consumers who report being diagnosed with a cold/flu and who report they received a prescription for an antibiotic decreased from 57% in 1999 and 65% in 2004, to 51% in 2006. Among female parents of children aged 2 to 5 years, only 33% of those diagnosed with cold or flu received an antibiotic compared with 43% in 1999 (Table 4).

**Table 2: Actions taken by Australian population having cold/flu within the last 3 months (i.e. mid May to mid Aug 06)**

Action taken	Post 2002 (%) (n=551)	Post 2003 (%) (n=493)	Post 2004 (%) (n=529)	Post 2005 (%) (n=574)	Post 2006 (%) (n=516)
Get some extra rest	78	80	76	77	79
Consciously make sure you drank lots of fluids ("maintain fluid intake" in 2006)	83	86	80	84	85
Take cold or flu tablets/cough mixture/throat lozenges	72	76	73	73	77
Use any herbal medicines or natural therapies	21	23	25	26	30
Take vitamin C	43	40	42	40	40
Ask someone in a pharmacy or chemist for advice	23	26	25	22	25
Visit the doctor about symptoms	27	31	21	28	26
Diagnosed with cold/flu (% of visits to doctor)	61	58	68	51	60

**Table 3: Proportion of symptomatic Australian population receiving a prescription for antibiotics within the last 3 months**

	Post 2002	Post 2003	Post 2004	Post 2005	Post 2006
Prescribed antibiotic (% of all symptomatic people)	16	18	12	15	15
Prescribed antibiotic (% of visits to doctor)	59	58	58	55	52
Prescribed antibiotic (% of diagnosed with cold/flu)	57	51	65	49	51

**Table 4: Proportion of symptomatic female parents of children aged 2 to 5 years receiving a prescription for antibiotics for self in last 3 months**

	2005	2006
Prescribed an antibiotic (% of all symptomatic people)	15	15
Prescribed antibiotic (% of visits to doctor)	57	55
Prescribed antibiotic (% of diagnosed with cold/flu)	43	33

As part of our ongoing evaluation we will be tracking consumer expectations for antibiotics. Benchmark data obtained from the 2006 National Omnibus survey of the Australian population and from female parents of children aged 2 to 5 years indicate that just under a third of consumers presenting to their GP with cold and flu symptoms do so with the hope of getting an antibiotic prescription.

In terms of the Australian population (18 years +):

- 27% of this group who visited a GP with cold/flu symptoms were hoping to get a prescription for antibiotics.
- 8% of Australian adults specifically requested a prescription, regardless of whether or not they had thought about it before talking to the GP.
- 81% of people who hoped to get a prescription (without asking) received one.
- 76% of people who asked for a prescription received one irrespective of the diagnosis
- 40% of those who received a diagnosis of cold/flu and received an antibiotic were hoping for a prescription.
- 30% of people who went to a GP with cold/flu symptoms received a prescription for antibiotics without any expectation or request.

In terms of female parents:

- 29% of female parents of children aged 2 to 5 years were hoping for an antibiotic prescription when they visited their GP the last time they had cold/flu symptoms, but did not necessarily ask.
- 6% asked their GP for a prescription for antibiotics.
- 82% of those who asked for a prescription received one irrespective of the diagnosis.
- 100% of those who were hoping for an antibiotic prescription before visiting their GP received one.
- 68% of those with a diagnosis of cold/flu who received a prescription for an antibiotic had hoped to receive one.

## Improving QUM awareness and competence among health professionals

---

### Provision of independent medicines information for health professionals

The **Education and Quality Assurance Program** for health professionals continues to cover an average of 6 therapeutic modules for health professionals each year (33 have been delivered to date) (Table 5). These modules are delivered using a wide range of interventions (written information, mailed feedback on personal prescribing, clinical audit, educational visiting, peer group discussions and responses to written case studies) and the remainder have involved print publications only (*NPS News* and *NPS Prescribing Practice Review (PPR)* with educational material). The target audience for these topics is primarily GPs and pharmacists, although relevant medical specialists and other health professionals also receive written information. In addition, pharmacists receive *NPS News*, *PPR* and opportunities to participate in pharmacy audits of over-the-counter medicine sales or dispensing practice.

Print publications are disseminated to all GPs and pharmacists on a regular basis. Recently, GP registrars were also added to the distribution list for review of prescribing behaviour. ***NPS News*** is published every 2 months and 46 issues have been distributed to June 2006. It is sent to around 59,000 health professionals (31% GPs, 20% pharmacists and 49% other health professionals) and has an editorial committee to ensure its quality.

***NPS Prescribing Practice Review (PPR)***, which sometimes has feedback on personal prescribing for GPs, has been sent to GPs, other medical specialists, GP trainees/registrar and pharmacists on 32 occasions, and covers a range of topics, most recently proton pump inhibitors, chronic obstructive pulmonary disease, depression and ischaemic heart disease.

***Australian Prescriber*** is published 6 times each year with each issue distributed to over 50,000 health professionals and students nationally. An additional 8,000 copies are distributed internationally. *Australian Prescriber* is also available online free-of-charge. The website is popular, averaging around 127,000 page visits per month over the last year. Many overseas readers access *Australian Prescriber* electronically, with around 40% of visitors to the website from countries other than Australia each month over the last year. The journal has an editorial executive committee to ensure its independence and quality.

A survey of visitors to the *Australian Prescriber* website conducted in 2006 demonstrates that the website remains an important resource in communicating independent, reliable, readily accessible information about drugs and therapeutics to health professionals. In particular:

- 95% of respondents agreed that information was up-to-date, evidence-based and appropriate to their needs.
- 95% also agreed the website was a useful resource for independent information about drugs and therapeutics.
- 90% indicate commentary provided on new drugs was useful.
- 90% respondents indicated their attitudes had been influenced by information contained in *Australian Prescriber*.
- 94% respondents indicated *Australian Prescriber* helped them to make therapeutic choices.
- 90% of prescribers indicated their prescribing had been influenced by information contained in *Australian Prescriber*.

- 93% agreed that finding their way around the website is easy.
- 84% equally rated the search facility as producing relevant results.

NPS also funds a telephone advice line for health professionals, the **Therapeutic Advice and Information Service** (TAIS). There has been a steady increase in the use of TAIS from about 4,700 calls in 2000–01 financial year to around 6,500 in 2005–06, with more than 35,000 calls total (Figure 4). Most calls are from community pharmacists (48%) and GPs (31%). The calls are most frequently about drug interactions (22%), adverse drug reactions (20%), or therapeutic strategy (21%). Drugs or issues affecting the nervous system (including mental health problems) are consistently the major source of enquiries (18%) with cardiovascular, anti-infective and herbal/complementary medicines also frequent topics.

Data from the 2006 national survey of GPs indicate that 39% of GPs are aware of TAIS. New South Wales and South Australia had the highest awareness (47% and 46% respectively) while West Australia (34%) and Queensland (29%) had the lowest ( $\chi^2_5 = 13.33$ ,  $p = 0.021$ ). In those GPs who were aware of TAIS ( $n=292$ ) less than half (42%) had used it. Usefulness of TAIS was rated by 114 GPs who had used the service. Forty percent rated it as very useful while another third rated it in the next usefulness category.

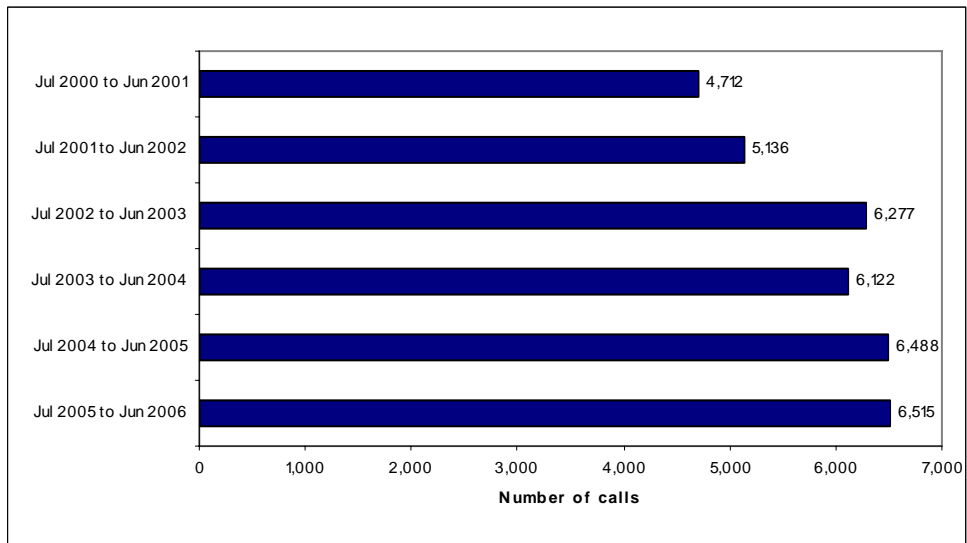
Data from the 2006 national survey of pharmacists indicate that 43% of pharmacists are aware of TAIS. Victoria and Western Australia had the highest awareness (48% and 46% respectively) while Queensland (37%) and Tasmania (35%) had the lowest.

In those pharmacists who were aware of TAIS ( $n = 272$ ) less than half (44%) had used it. Usefulness of TAIS was rated by 116 pharmacists who had used the service. Fifty percent rated it as very useful while just over a quarter (27%) rated it in the next usefulness category.

An external review of TAIS found that, similar to Medicines Line, in the absence of any other national medicines information and advice telephone services, TAIS was seen to offer community-based health professionals a unique and important service. The specific benefits included:

- An independent source of information and advice, free from commercial and political bias.
- Allowing health professionals to source external, expert advice while a patient is present.
- Providing ready and efficient access to trustworthy medicines information in a way that saves time for health professionals.
- Providing a means of confirming practice and therapeutic strategy.
- Providing a means of keeping up with, or accessing, evidence that changes rapidly.
- Providing advice on drug interactions for patients on multiple medications.
- Providing an anonymous service.
- Providing a proactive service designed to improve practice, rather than a reporting mechanism for when something goes wrong (i.e. ADRAC).
- Providing access to expertise generated within a cutting edge clinical environment, as well as access to texts, journals and databases.

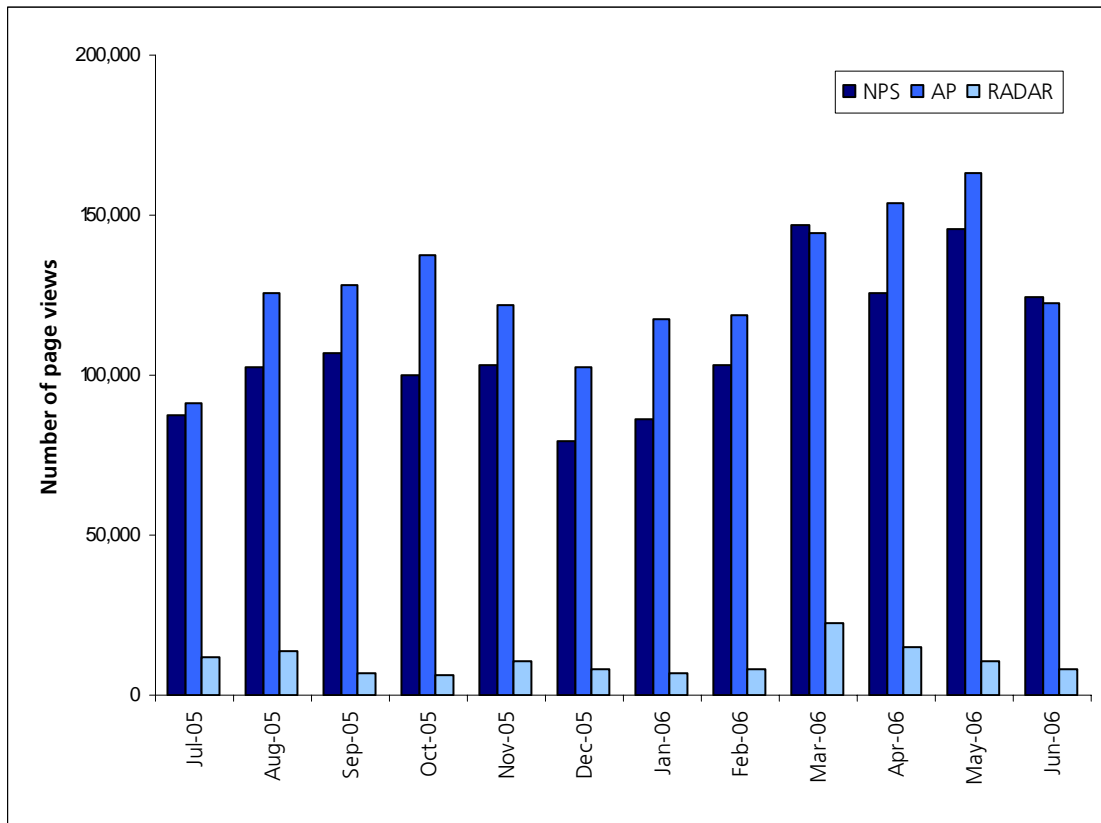
**Figure 4: Calls to TAIS**



The use of **web-based information** has also become a significant means of communication by NPS via three major web portals, the main NPS homepage, the NPS RADAR site and the *Australian Prescriber* homepage. A measure of the relative popularity of each site is provided by the number of times the web pages are visited (or viewed each month) (Figure 5). For all three sites there is substantial monthly variation, with an increase in activity overall in the past 6 months.

Australian health professionals and consumers are the primary intended audience for the NPS websites. However, there is some increase in interest in the sites from overseas Internet users. Data for the last financial year indicates that the NPS and NPS RADAR sites experience similar degrees of interest/visiting by Australians (at around 70%), while *Australian Prescriber* has less overall (at around 60%), that is, during the last year *Australian Prescriber* has had more interest expressed by overseas internet users than the NPS or NPS RADAR sites.

**Figure 5: Number of page views per month for NPS, Australian Prescriber (AP) and NPS RADAR sites**



## **Opportunities to actively participate in education and quality assurance activities for health professionals**

In addition to receiving print publications, health professionals, in particular GPs and pharmacists, are regularly given an opportunity to participate in education and quality assurance activities. The number of individual GPs who have voluntarily participated in NPS core activities has steadily increased from less than 2,500 in 1998–99 to around 10,700 in 2005–06 (Figure 6). Around 19,400 GPs have participated in at least one NPS activity at any time during the 8 years although many have had multiple occasions of participation.

Currently, about 50% of GPs in Australia actively participate each year in NPS activities in addition to receiving print publications. Furthermore, 53% of the 19,400 GPs who have ever participated in NPS programs have participated 4 or more times since 1998. Participation by individual GPs over the past 8 years ranges from one activity to 67 activities. Figure 7 and Table 5 provide additional detail.

Case studies have involved over 47,700 GP participant contacts over all therapeutic topics, by more than 8,100 individual GPs. Since 1998, 43 case studies for GPs have been offered. The median number of GPs participating in case studies is around 1,200.

There have been over 47,000 educational visits since 1998, providing one-to-one contacts for 14,000 individual GPs and covering 14 topics in 20 programs.

Clinical audits have also been popular, involving 9,000 GPs in 13 topics since 1998. Managing antibiotics in primary care has been the most popular topic (with around 6,000 GPs), followed by hypertension (around 3,800 GPs) and managing type 2 diabetes (around 2,600 GPs).

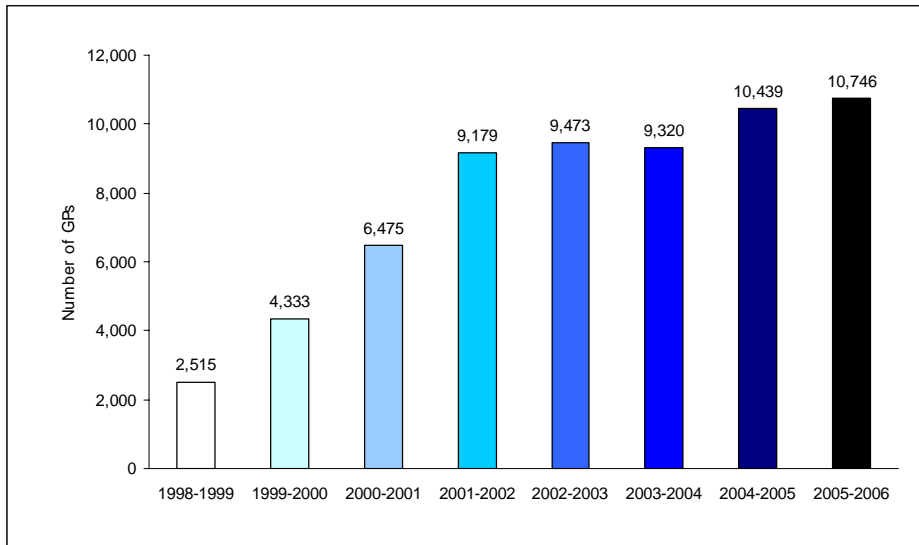
GP participation in divisional small group case study discussions (peer groups) continues to grow in popularity with over 7,000 GPs involved in 25 topics since 2001.

GP participation in the different topics offered by NPS has varied. The highest participation up to the end of June 2006 was, for type 2 diabetes (over 10,400 GPs), antibiotics (with over 9,300 GPs), depression (over 8,300 GPs) and hypertension (over 8,200 GPs).

To the end of June 2006, pharmacists have been offered 10 pharmacy practice audits and 9 case studies over 14 topics. Participation in core activities (case studies and pharmacy practice audits) by pharmacists is lower than for GPs, but continues to increase. Around 3,500 pharmacists have participated since 1999 and over 1,200 participated in the last financial year (compared with only 23 in 1999–2000) (Figures 8 and 9). Pre-registration pharmacists are a specific target of NPS prescribing interventions. Participation by this group has also increased steadily to around 1,700 by the end of the last financial year (Figure 9).

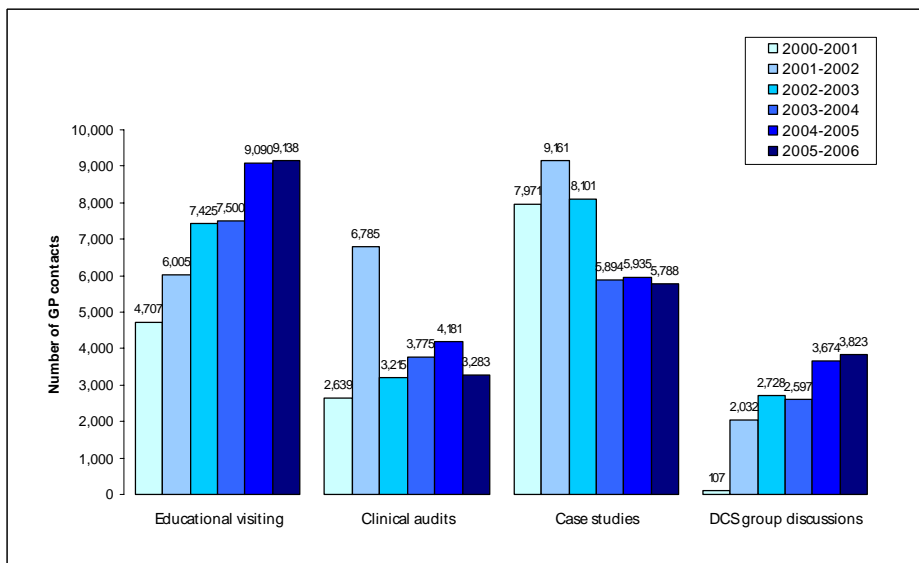
NPS facilitators in divisions of general practice report an increased incidence of mixed GP and pharmacist educational events. Divisional small group case study discussions now have mixed GP and pharmacist participants in about 31% of all peer group meetings (having risen from about 26% in the first 2 years of NPS operation). The overall proportion of pharmacist involvement in these meetings is now about 20% (having risen from about 11% in the first 2 years of NPS operation). In the mixed groups, the proportion of pharmacists is now about 43% (having risen from about 26%).

**Figure 6: Number of unique GPs who have participated in NPS Core QUM Program activities by financial year to 30 June 2006\***



\* Total unique GP participation to date = 19,449

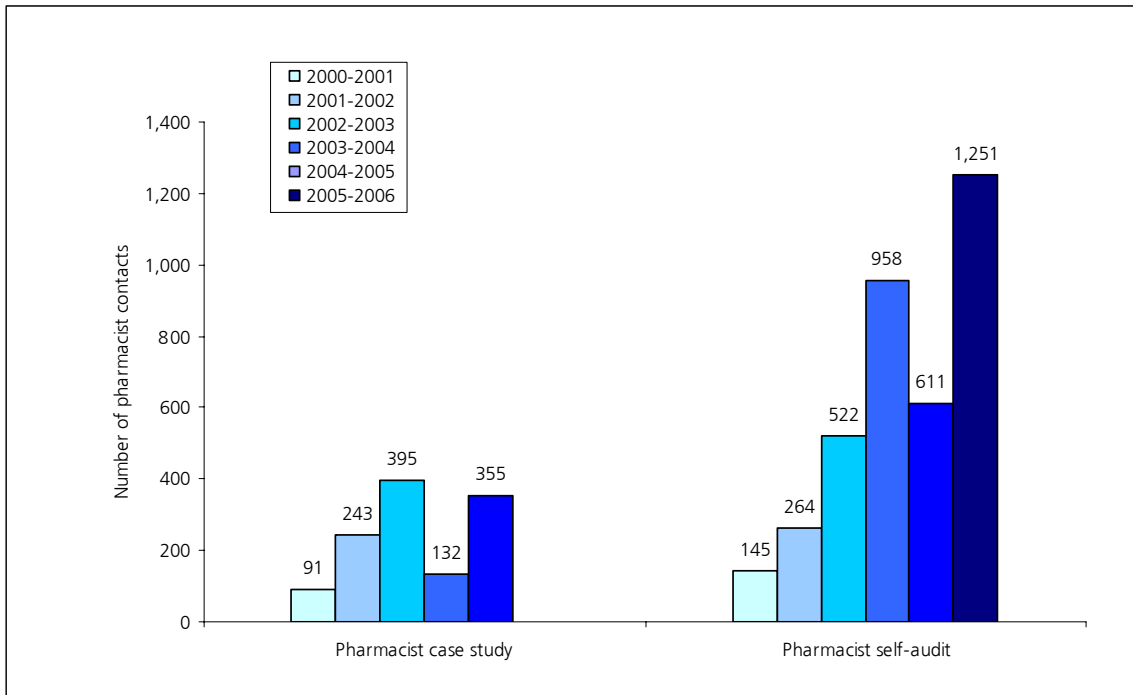
**Figure 7: Total number of GPs who have participated in core NPS activities by financial year to end June 2006**



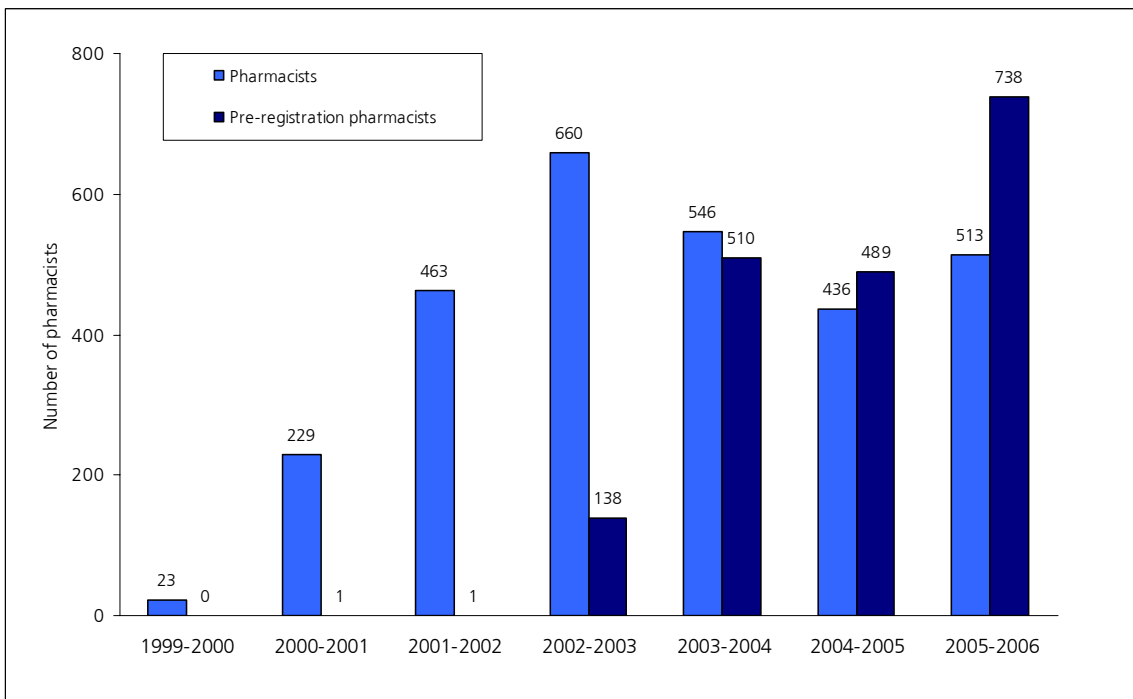
**Table5: Participation by GPs in programs by type of activity (to 30 June 2006)**

Program Topic	Activity			
	Educational visit	Division case study group discussion	Clinical audit	Case study
Antibiotics	3,906	650	9,769	5,619
Anti-thrombotics	5,065	1,939		1,175
Asthma	4,249	1,445	1,149	1,422
Benzodiazepines	33	29		325
COPD/CAL	576	68		1,626
Depression	5,907	1,068	2,122	3,713
Drug and alcohol dependence		10		1,086
Drugs in the elderly		34		956
Dyspepsia		6		1,264
Generics				959
Helicobacter pylori eradication therapy		8		12
Heart failure	2,774	1,035	69	2,757
Hormone replacement therapy	2,180	813	13	3,116
Hypertension	5,031	1,341	5,093	1,600
Ischaemic heart disease			1,201	1,234
Lipid modifying drugs	3,097	681	1,779	1,483
Managing type 2 diabetes	7,601	3,269	3,110	2,958
Medication review	17	45	43	1,410
Migraine		6		1,399
New drugs		74		3,830
NSAIDs (incl. COX-2 selective NSAIDs)		63	106	1,532
Osteoporosis		28		1,577
Pain management	4,346	1,316	836	1,321
Polypharmacy		42		1,248
Proton Pump Inhibitors	2,467	927	1,366	1,724
Psychogeriatrics		38		1,240
Sleep disorders		33		1,385

**Figure 8: Participation by pharmacists in NPS core activities (case studies and pharmacy audits) by financial year to end June 2006**



**Figure 9: Participation by unique pharmacists in NPS core activities by financial year to 30 June 2006 \***



\* Total unique pharmacist participation to date = 1,780, pre-registration pharmacists = 1,696

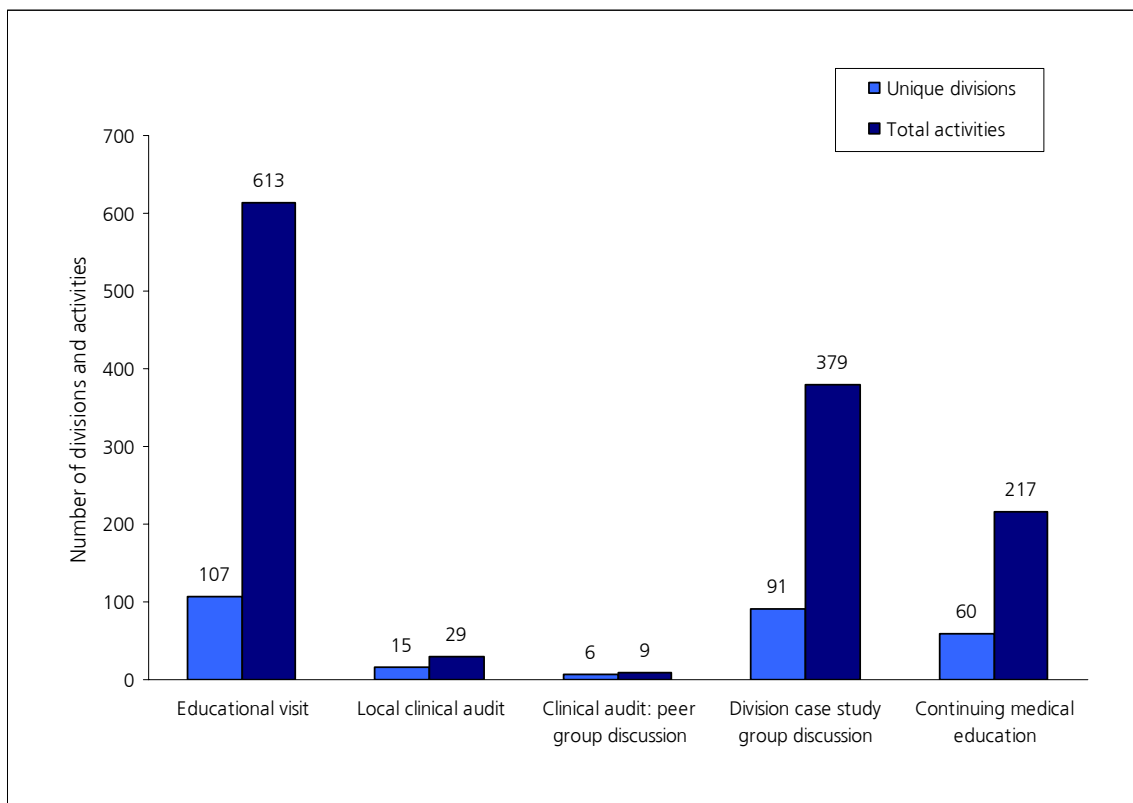
## Encouraging local ownership and responding to local needs via work with Divisions

Divisions of general practice remain a key partner for local delivery of national QUM messages for health professionals, 97% of these now have a contract with NPS, which will ensure local relevance and ownership of program delivery among GPs. NPS provides each division with funds for local program delivery, a necessary approach to ensure local relevance and ownership. In 2005–06 NPS provided divisions of general practice across Australia with \$8.2 million to provide local delivery of national QUM messages. Facilitators (usually pharmacists or nurses) are then employed by the Divisions to carry out the local implementation.

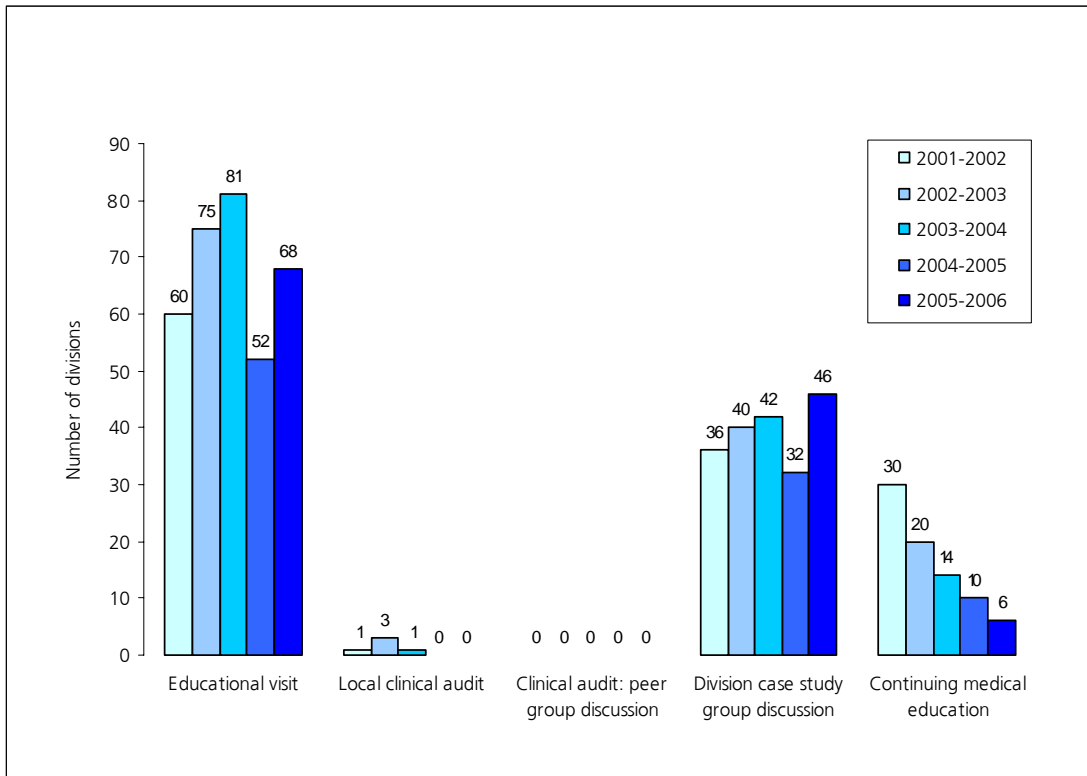
There has been a steady increase in participation by divisions of general practice in NPS activities from 43 divisions in 1999 to 115 in 2006 (97% of 118 divisions). Figures 10, 11 and 12 provide additional detail.

As well as choosing to deliver the core NPS activities, 61 divisions have run continuing medical education programs in the form of didactic lectures on NPS topics and others continue to provide consumer sessions.

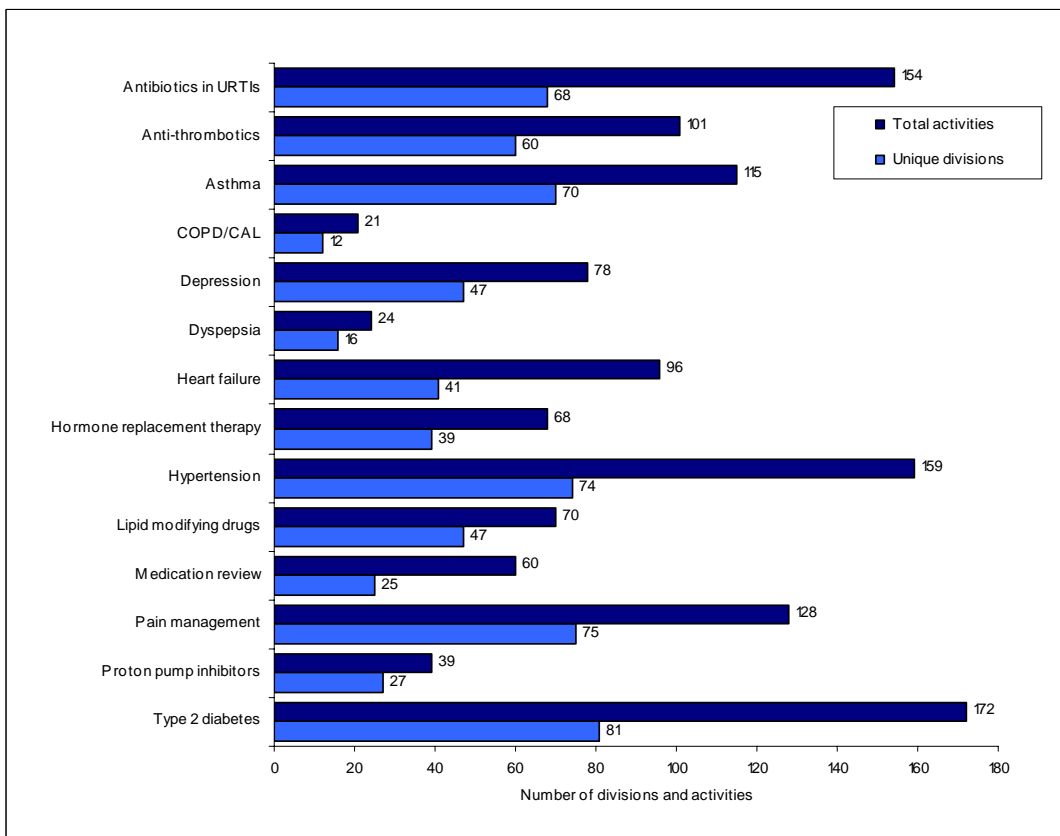
**Figure 10: Division participation in locally coordinated activities (January 1999 to June 2006)**



**Figure 11: Participation by unique divisions in locally coordinated activities by financial year to end June 2006**



**Figure 12: Participation by divisions across major topics for locally coordinated activities to end June 2006**



## Provision of independent information on new drugs and research

**NPS RADAR**, published as part of the New Drugs program, provides information to health professionals on newly listed or revised drugs. This includes information on the PBS listing (wording of listing), reason for PBS listing (rationale behind listing), place in therapy, safety issues (particularly contraindications/precautions, adverse effects and drug interactions), dosing issues and relevant consumer information (Table 6). *NPS RADAR* is distributed via email subscription database, in hard copy to all GPs, pharmacists and selected specialists, NPS facilitators in divisions of general practice, NPS telephone services, weblinks and prescribing software. Eleven issues of *NPS RADAR* have been released to date providing reviews on 40 new drugs.

Awareness raising and growing the readership database of *NPS RADAR* continues to be a priority for the New Drugs program. At the end of June 2006 there were 24,303 registrants receiving *NPS RADAR* electronically. This comprised 21% GPs, 14% specialists and 35% pharmacists. Additionally, in response to PBS listings in February 2006, an impromptu *NPS RADAR* was distributed by e-mail to 17,966 recipients.

*NPS RADAR* was also distributed in hard copy in August 2005, December 2005 and April 2006, to 62,542 health professionals on average across Australia (30% GPs, 23% pharmacists and 47% specialists). Each issue of *NPS RADAR* will be provided in this format to these groups. *NPS RADAR* has also been incorporated into the four main prescribing software packages: Medical Director, Locum, Genie and Medical Spectrum Plexus. *NPS RADAR* can be accessed either through a browser at the physician's leisure or as part of the prescribing process via automated links.

A readership survey of *NPS RADAR* was conducted in 2005. The greatest readership by occupation was pharmacists, 99% had read at least one issue and 86% had read two. Over 92% of GPs responded that they had read at least one issue and 68% had read at least two. The feedback from respondents strongly suggests that *NPS RADAR* is a highly valued and credible source of information amongst its readers. Although there is modest scope for improvement, *NPS RADAR* is fulfilling its aim and clearly meeting the needs of its readership. The majority of readers (97%) believe that *NPS RADAR* provides timely medicines reviews and that the content of *NPS RADAR* is independent of government (86%), the pharmaceutical industry (97%) and is evidence based (98%). Furthermore, 94% of the readership agreed or strongly agreed that *NPS RADAR* helps them make therapeutic choices.

Over 90% of respondents rated the quality and usefulness of *NPS RADAR* as 'good' or 'very good' and over 95% rated *NPS RADAR* as being of 'moderate' or 'great value'. Pharmacists were more likely to rate these aspects highly than readers in other occupations, as were females compared with males. Most of the *NPS RADAR* readership (99%) agreed or strongly agreed that *NPS RADAR* was well written in plain English and almost 97% felt that the layout made it easy to read. A small number of readers felt that the publication was too academic (6%). However, 96% of readers thought that it was pitched at the right level and also appropriate to their needs. Less than 18% of readers believed that *NPS RADAR* was too detailed and could be more concise; this perception was most often held by GPs.

Based on self-report, *NPS RADAR* appears to have had an impact on attitudes and prescribing. Attitude change was most often reported by pharmacists (90%), followed by GPs (88%), others (87%) and other medical specialists (82%). Almost 89% of GPs and 75% of other medical specialists indicated that their prescribing had also been influenced, particularly among younger and less-experienced readers.

**Table 6: NPS RADAR documents developed in 2005–06**

<b>April 2006 NPS RADAR release</b>
Latanoprost with timolol combination eye drops
Metformin extended release
Calcium and risedronate combination pack for osteoporosis
New indications for ezetimibe and ezetimibe with simvastatin
Fenofibrate review updated with FIELD study evidence
<b>March 2006 NPS RADAR release</b>
Eplerenone (Inspra)
Ezetimibe with simvastatin (Vytorin)
Fenofibrate (Lipidil)
<b>December 2005 NPS RADAR release</b>
Atorvastatin (Lipitor)
Anastrozole (Arimidex)
Buprenorphin transdermal patches (Norspan)
<b>August 2005 NPS RADAR release</b>
Elevated cardiovascular risk with NSAIDs?
Angiotensin II receptor antagonists – unrestricted PBS listing
Ciclesonide (Alvesco)
Methylphenidate (Ritalin)

## **Reinforcing best use of new drugs via seminars**

NPS continued to host regular new drugs seminars to raise awareness of the principles of prescribing new drugs, promote *NPS RADAR* and provide participants (primarily GPs and pharmacists) with current information on selected new drugs. Overall, 19 new drugs seminars were conducted in 2005–06 at various locations around Australia. Overall 1,000 health professionals attended the seminars. They comprised: 472 GPs (47%); 497 pharmacists (50%); 7 nurses (1%); and 24 other health professionals (2%).

The majority of delegates agreed that the seminar was relevant to their practice (99%), the content was presented at an appropriate level (98%) and the speakers were of high quality (98%). The majority of delegates felt more confident in their ability to critically evaluate new drugs, as a result of the seminar. Specifically:

- 88% agreed they now knew where to retrieve evidence about new drugs
- 86% agreed they knew how to select which new drugs would be best for their patients
- 88% agreed they now understood the rationale for newer roles for older drugs
- 87% agreed they now feel more confident discussing requests for new drugs with their patients
- 92% felt they better understood evidence-based-medicine terminology.

Participants were given an opportunity to list the key points they understood from the seminars, most of those listed were closely aligned with the objectives of the seminars. The main themes arising from the evaluation included: more careful consideration of the evidence and applying EBM principles; improved understanding about the place of new drugs and combined agents when initiating therapy and commitment to change current prescribing; the need to monitor side effects and efficacy more carefully; counselling/educating patients about their medicines and lifestyle options; and keeping up-to-date by accessing evidence-based information.

## **Extended reach of services to specialist medical practitioners, nurses and hospitals**

In 2005–06 materials were developed and delivered to **general practice nurses**. NPS is encouraging divisions of general practice to include general practice nurses in delivery of NPS programs where relevant and appropriate. NPS Facilitators may provide educational visits, small group based discussions, or interactive workshops. Resources for the 'Reducing risk in type 2 diabetes' program became available in August 2006 and will be available shortly for the 'COPD: interventions for better outcomes' program. At least 53 divisions have delivered NPS programs to practice nurses to date.

Formative work to inform the design of a program for aged care was also completed in early 2006. This involved a project to help better understand the barriers and enablers within the aged care sector that affect the quality use of medicines and the implementation of drug use evaluations (DUEs) in residential aged care facilities (RACFs). The project involved a review of published literature and 20 telephone in-depth interviews with individuals working in the aged care sector.

In brief, this formative work identified drivers of QUM in RACFs as:

- opportunities for GPs, registered nurses (RNs), directors of nursing and accredited pharmacists to meet together to discuss medicines
- recognition of QUM achievements by peers in the RACF industry
- action initiated by GPs (e.g. Residential Medication Management Reviews carried out by pharmacists)
- remuneration of professionals participating in QUM
- education of GPs in ways to use medicines in a safer more effective way
- GP awareness of Medicare item numbers and how to use them.

A number of barriers were also identified, which included:

- the reluctance of GP's to change
- a desire for the status quo and a peaceful resident
- inadequate education in QUM principles for GPs, supply pharmacists, RNs
- a lack of awareness of current QUM thinking
- poor relationships between professionals
- high staff turnover or high percentage of agency nurse staff
- a lack of computerisation of medication charts and clinical decision support information
- the use of jargon/abbreviations
- overwhelming documentation/reading material.

The information obtained from this project will be used by NPS to develop appropriate programs to address QUM areas of need within RACFs.

NPS completed funding in late 2005 of **CAPTION (Community-acquired pneumonia: Towards improving outcomes nationally)**, a national, multicentre project aimed at improving patient care through implementation of community-acquired pneumonia (CAP) management recommendations of the *Therapeutic Guidelines: Antibiotic* in hospital emergency departments (EDs). The Guidelines incorporate use of a disease severity assessment tool, the pneumonia severity index (PSI), and empiric antibiotic recommendations based on disease severity. Hospitals were recruited on a voluntary basis to collect data on CAP management and implement interventions. Multifaceted interventions, including posters, PSI stickers, small group discussions, identification card reminders and academic detailing were used. Impact of the interventions was measured through a) documented use of the PSI and b) concordant antibiotic prescribing.

Twenty-five hospitals participated in the first intervention phase. A baseline audit indicated that concordance with the Guidelines was low, with PSI documented in only 6% of presentations and concordant antibiotic prescribing occurring in 19% (n = 494). Re-audit after the first education/intervention phase (n = 482) demonstrated a significant increase in documented use of the PSI and concordant antibiotic prescribing compared to baseline, 25% vs 6% (p < 0.0001) and 31% vs 19% (p < 0.0001), respectively. The program has been successful in engaging hospital emergency departments in this type of project and knowledge will hopefully be transferred to future projects of this type.

Currently, NPS is undertaking a quality improvement initiative targeting acute postoperative pain management. The **acute postoperative pain (APOP) project** involves a focus on pain assessment and safe and effective prescribing of analgesics, including analgesics prescribed on discharge. It is planned to conduct a baseline audit evaluating current practice in up to 64 hospitals across Australia; this will be followed by an educational intervention and a further audit in 2007. The project engages the expertise of state Therapeutic Advisory Groups/Drug Use Evaluation groups, and advice from the Australian and New Zealand College of Anaesthetists.

The APOP project will be based on an iterative cycle, which involves data collection, audit/feedback, intervention and evaluation. A finite set of quality indicators will be employed to measure current practice before and after the educational intervention. It is expected that 50 patients from each hospital will be included in the baseline audit, and 50 included in the post-intervention audit. Patient and GP evaluations will also be conducted as part of the project. A state coordinator will manage the project in each state. NPS has developed e-audit software which allows data to be entered directly into an NPS database for evaluation. The e-audit software also allows hospitals to send the data to NPS either as an attachment to an email or on disk.

A suite of interventions will be developed including academic detailing, PowerPoint feedback presentations to facilitate local education and feedback sessions, point-of-prescribing prompts and promotional material (e.g. wall posters). To help guide the educational intervention tools, the clinical trials coordinator of the Australian and New Zealand College of Anaesthetists is assisting the NPS by conducting a survey of key anaesthetists, acute pain nurses and clinical pharmacists to ascertain their opinions about prescribing of simple analgesic medications. Results of the baseline data collection and the patient/GP evaluations will be used as part of the education and feedback sessions. The project is due for completion in 2007.

## **Access to decision support material**

The **pharmaceutical decision support (PDS) team** develop electronic audits for GPs. Evaluation of a pilot diabetes audit in early 2006 with five GPs was encouraging. All were enthusiastic in their feedback and all agreed that they would participate in an electronic audit in the future. They provided valuable suggestions for improvements and enhancements which have been integrated in subsequent re-design/development. Development is in progress for an ischaemic heart

disease electronic audit. Pre-testing has been carried out with four GP who once again were enthusiastic about the concept and format. Pilot testing began in October 2006 with planned national rollout in early 2007.

PDS are also developing a high quality drug interaction data set for use in all clinical systems via the Internet (as a Web service). To inform this process, in the national GP survey, GP who used computer prescribing were asked whether they had the drug-to-drug interaction alerts in their software turned on, the majority (95%) did so. GPs were generally satisfied (92%) with the way drug-drug interaction alerts were displayed. Most (89%) were satisfied with the content of alerts. Despite this apparent satisfaction, GPs also provided valuable feedback on some of the problems associated with the alerts which will be used to inform the development of a drug interaction data set. Data has also been provided to PDS on the level of internet use by GPs with most GPs (86%) saying they were always connected to the internet via broadband or network. This information is vital for ensuring access to the web-based drug interaction system.

## **Enhancing QUM skills and competence amongst medical students**

The NPS Curriculum and Training Program collaborates with all Australian medical schools and the Australian Society of Clinical and Experimental Pharmacologists and Toxicologists to develop nationally accepted **prescribing curriculum modules for senior medical students**. The modules are based on the World Health Organization's *Guide to Good Prescribing* and use the *Australian Medicines Handbook* and *Therapeutic Guidelines* as references.

The web-based interactive modules address both cognitive and behavioural issues relevant to prescribing and are now being used routinely by eligible medical students in 12 medical schools around Australia. It is anticipated that the four newly established medical schools will also have students using the modules in the near future.

Between July 2005 and June 2006, the modules were accessed by 1,624 of the 1,904 medical students with password access. This is a 17% increase in use of the modules on the previous year and is the highest level of access since it began in 2001. For most students and interns, the online modules provide a first opportunity to write a prescription based on defining a patient's problem, specifying the therapeutic objective, choosing the optimal drug therapy and advising how best to use it.

The modules also provide students with an opportunity to select the most appropriate drug for their patients, prescribe and add drugs to their personal formulary. Since the availability of the modules online, approximately 3,500 students have entered around 70,000 drugs to their personal formulary.

In addition to the rapidly increasing number of medical students accessing the prescribing curriculum modules online, the proportion of these students whose awareness of reliable sources of information has also increased. Of the 1,624 medical students who accessed the modules between July 2005 and June 2006, 1,16 students (75%) accessed the *Australian Medicines Handbook* at least once. Additionally, 1,152 medical students accessed the *Therapeutic Guidelines* by linking from the modules and 1,039 accessed resources such as the WHO *Guide to Good Prescribing* (Figure 13).

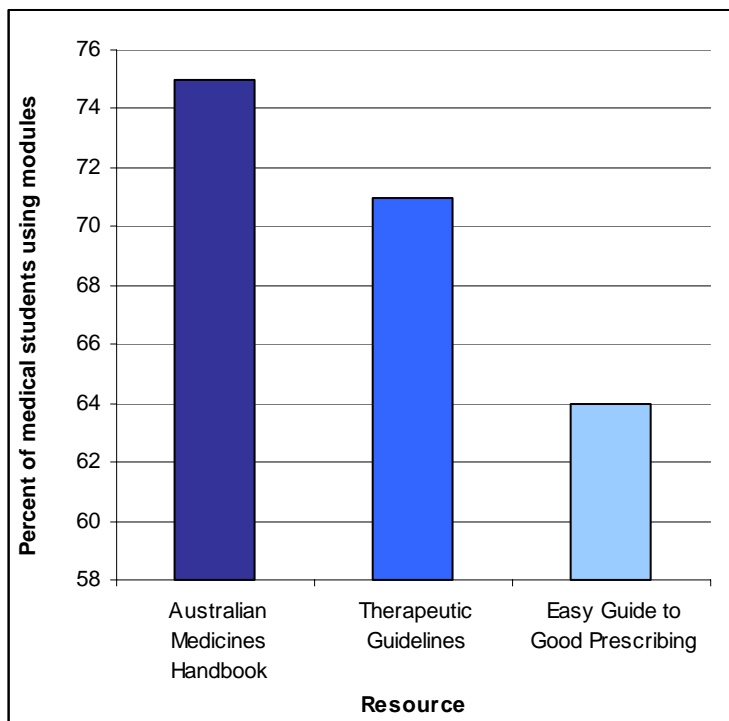
A **CD-ROM version of the prescribing curriculum** for medical students was developed as a separate project at the request of the World Health Organization because of the broad value of the product internationally.

Throughout 2005, the **Fiji School of Medicine** trialled the suitability of the medical student modules with 64 trainee interns. It was thought that the medical school modules designed for

Australian medical students would be more appropriate than that designed for Australian interns. Feedback from these interns included:

- Most interns (90%) completed at least two modules, 57% completed more than half of the available modules and 16% completed all 12 modules. Around 80% of interns used the modules for self-directed learning, 2% used the modules for tutorials, 17% used a combination the former two and 2% said they used the modules differently.
- Interns felt that the modules' interactive format was a useful feature and that the practical examples help build on their knowledge base for application in the real world. With the incorporation of more relevant resources that are consistent with local guidelines and the drugs available locally, wider implementation of the National Prescribing Curriculum in similar countries appears feasible. Overall, the modules were a useful vehicle for promoting and teaching QUM principles. Around 80% of interns supported integrating the modules into the medical degree program.

**Figure 13: Proportion of medical students accessing independent sources of information**



## **Enhancing QUM skills and competence amongst postgraduate students**

In conjunction with the Confederation of Postgraduate Medical Education Councils and State-based Postgraduate Medical Education Councils, a web-enabled, interactive curriculum for postgraduate medical students has been developed. The format for the curriculum is a more sophisticated set of online modules on prescribing, drug detailing and drug promotion. In addition, the curriculum incorporates modules suitable for bedside teaching.

Pilot testing of the online modules was undertaken in 2004–05 and it has been further developed and extended to postgraduate pharmacy students and nurse practitioners with whom the modules are currently undergoing further testing based on this feedback.

## **Positively influencing GP knowledge and attitudes to appropriate management of heart failure**

GP knowledge and attitudes were reviewed prior to commencement of the heart failure program using a short self-administered questionnaire. A random sample of 2000 GPs was asked to answer a small number of multiple-choice questions. Topics in this questionnaire addressed the key messages and objectives of the program. These also covered attitudes and intent regarding referral for echocardiography, use of echocardiographic findings in clinical decision making, and the appropriate use of ACE inhibitors. The same survey was repeated after the end of the program to determine any changes in knowledge and attitudes that may have occurred as a result of the program.

- The proportion of respondents who felt that an echocardiogram is an essential part of investigating and managing a person with potential heart failure all the time increased significantly from 49% in the pre survey to 63% ( $\chi^2_1 = 18.45$ ,  $p < 0.000$ ).
- The proportion of respondents who were 'very confident' in initiating appropriate beta blockers increased significantly from 12% pre survey to 21% ( $\chi^2_1 = 16.34$ ,  $p < 0.000$ ).
- The proportion of GPs who responded that they felt 'very confident' in titrating doses of ACE inhibitors increased significantly from 32% pre survey to 46% ( $\chi^2_1 = 21.31$ ,  $p < 0.000$ ).
- The proportion of respondents who identified all three correct statements about using spironolactone increased significantly from 49% pre survey to 60% ( $\chi^2_1 = 14.85$ ,  $p = 0.002$ ).
- The proportion of respondents who identified the correct statements about the use of beta-blockers increased significantly from 36% pre survey to 42% ( $\chi^2_1 = 13.59$ ,  $p = 0.001$ ).
- The proportion of respondents who identified all four correct statements regarding the type of information an echocardiogram can provide increased significantly from 29% pre survey to 36% ( $\chi^2_1 = 9.85$ ,  $p = 0.043$ ).

## Creating greater capacity in the QUM workforce

---

### Greater capacity via NPS Facilitators in divisions of general practice

Local ownership and delivery of NPS messages to health professionals via NPS Facilitators employed within divisions of general practice remains a pinnacle of program delivery. At the end of 2005–06, 115 divisions of general practice and over 140 facilitators were working with NPS to deliver QUM messages to their local area. NPS provides substantial training, skills development, day-to-day program support and quality assurance for these facilitators. In addition to ad-hoc contact, training and support throughout the year included:

- monthly teleconferences with 76% attendance on average
- Facilitators Forum hosted by NPS in August 2005 (attended by 82% of facilitators) and June 2006 (attended by 72% of facilitators)
- 52 Facilitators attended Depression Program therapeutic briefings and a further 64 attended Diabetes Program therapeutic briefings
- three educational visiting workshops and two advanced educational visiting workshops were conducted with 50 participants in total
- three small group skills workshops were conducted with 29 participants in total.

### Greater capacity via peer educators in the community

In 2005–06, 321 peer educators were trained through COTA partners and CPSA to deliver NPS messages to seniors. After training, most peer educators reported agreement (ratings of 'agree' or 'strongly agree') with statements describing new skills and knowledge about QUM, including, ability to identify reliable sources of information about medicines (endorsed by 99% of peer educators), understanding how to work with seniors so they get access to the best information about medicines (97%) and ability to explain the benefits for seniors of being active partners in their medicines use (97%). Most trainees reported readiness to move on to being an active volunteer peer educator and to facilitate QUM sessions.

All trainees were asked before their training 'If you were prescribed a new medicine today, how confident are you that you could get all the reliable information about the medicine that you needed?'. At pre-training, ratings of confidence were generally high, with an average of 8.1 on a 10-point rating scale and 71% (133) of respondents gave a rating of 8 or more. After training, the average of confidence ratings increased significantly to 9.2 ( $p < 0.001$ ; mean difference =  $-1.157$ ; CI for difference =  $-1.503$  to  $-0.811$ ) and 93% (177) of respondents gave a rating of 8 or more. Peer educators consistently reported that they had developed skills through involvement in the Seniors QUM Program, specifically: knowledge of QUM, knowledge of resources available to support QUM, the ability to empower people to take ownership of the QUM knowledge and to begin developing strategies to use the information to improve their health and health care, and encouraging interaction during QUM sessions.

# Encouraging and undertaking evaluation and research that supports innovation and learning

---

## Research and development

The NPS Research and Development (R&D) Program focuses on enhancing our understanding of strategies that support QUM. It aims to identify barriers to change and gaps in current evidence, and define innovative methods of delivering NPS services.

In 2005–06, the R&D Program team conducted a qualitative study with GPs, endocrinologists and psychiatrists to determine the influences on the prescribing of new drugs. The results showed that a complex array of factors influence the awareness and the prescribing of new drugs. These factors include relationships with colleagues, experts, patients and pharmaceutical company representatives; the characteristics of the new drug (e.g. safety and effectiveness), and patient factors such as patient need, ability to pay and requests. The three clinical groups varied in terms of the reported influence of the pharmaceutical industry, patient requests, advantage of new drug over existing therapy, medical literature and scientific conferences. The results will be used to improve NPS strategies to promote best use of medicines by specialists and general practitioners.

In 2006, R&D began a program to develop research partnerships aimed to build evidence on promoting good prescribing and the best use of medicine and ultimately improve the health of all Australians. These partnerships will also develop research capacity both inside and outside NPS. Following a national competitive process, the first two research partnerships have been established with Australian universities and NPS is funding a post-doctoral fellow in each.

Professors Sue Tett, Wayne Hall, Claire Jackson and Desley Hegney head the team at the Faculty of Health Sciences at the University of Queensland, which will partner with NPS in research into 'Understanding and improving prescribing practice'. Drs Jane Robertson, David Newby and Sallie Pearson from the University of Newcastle and University of NSW will work with NPS on 'Improving the uptake of evidence-based medicine information and decision support'.

A study to identify the most important features of prescribing software systems to enhance patient safety, health outcomes, clinical care, clinician workflow and are useful to patients and to test currently available general practice systems against these features is underway.

Research priorities for the upcoming year have also been established and include studies to assess the impact of interventions to improve quality use of medicines in aged care and to improve our understanding of medicine use among consumers.

## Program evaluation

Program evaluation continues to play a central role in the NPS organisational structure and delivery of activities and services. Program evaluation provides information that internal and external stakeholders can use to make decisions about: accountability; program design and delivery; strategic direction; and QUM policy more broadly.

In the current year a comprehensive evaluation framework was finalised to complement program delivery for the four years 1 July 2004 to 30 June 2009. The framework was agreed to after extensive consultation with evaluation experts and stakeholders, both internal and external. It is built around specific, measurable indicators that are aligned with: the goals of NPS activities and services for both health professionals and consumers, NPS at an organisational level and the wider QUM

arena. The framework takes into account changes in the corporate and program goals for the organisation and, in particular, the desire to embed an evaluation culture into the organisation. The framework also attempts to address all organisational activities and the objectives within each area of work. In developing the framework we have also included what we have learnt about methodology and measurement since NPS commenced (Beilby et al, 2006) and also current stakeholder needs.

Functions of the evaluation are:

- to undertake clarifying evaluation at the time of program development to ensure evaluation issues can be addressed and that questions about the effect and value of programs can be answered
- to undertake formative evaluation during the development or improvement of a program to provide information to review the processes and worth of a program while the program activities are forming or happening
- to undertake process evaluation by monitoring implementation, scope and reach of activities and interventions (including awareness, usage and perceived value and quality)
- to provide timely and relevant feedback to individual NPS programs and Board during development, implementation and review to assist decision making regarding program improvement and strategic implications for future NPS activity (including enablers and barriers to implementation)
- to undertake summative evaluation to provide information on the effectiveness and consequences of NPS activities (including changes in attitudes, skills and knowledge, changes in behaviour and changes in health and economic outcomes)
- to provide timely and relevant feedback to external stakeholders to assist decision making regarding strategic implications for QUM
- to aggregate, analyse and interpret evaluation information across the NPS program to support accountability requirements and to determine sustainability of the program.

## References

---

Beilby J, Wutzke SE, Bowman J, Mackson JM, Weekes LM. Evaluation of a national quality use of medicines service in Australia: an evolving model. *Journal of Evaluation in Clinical Practice* 2006;12(2): 202–17.

Grol R. Improving the quality of medical care: building bridges among professional pride, payer profit and patient satisfaction. *Journal of the American Medical Association* 2001;286:2578–84

Grol R, Grimshaw J. From evidence to best evidence to best practice: effective implementation of change in patient care. *Lancet* 2003;362:1225–30.

Horn FE, Mandryk JA, Mackson JM, Wutzke SE, Weekes LM, Hyndman RJ. Measurement of changes in antihypertensive drug utilisation following primary care educational interventions. *Pharmacoepidemiology and Drug Safety* 2006 (in press).

Mandryk JA, Mackson JM, Horn FE, Wutzke SE, Badcock CA, Hyndman RJ, Weekes LM. Measuring change in prescription drug utilization in Australia. *Pharmacoepidemiology and Drug Safety*. 2006;15(7):477–84.

Weekes LM, Mackson JM, Fitzgerald M, Phillips SR. National Prescribing Service: creating an implementation arm for national medicines policy. *British Journal of Clinical Pharmacology* 2005;59:112–6.