



National Prescribing Service Limited

Evaluation Report No. 6

2002-03

Progress, achievements and
future directions

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An independent, Australian organisation for Quality Use of Medicines

National Prescribing Service Limited | ACN 082 034 393 | Level 7 / 418A Elizabeth Street Surry Hills 2010
Phone: 02 8217 8700 | Fax: 02 9211 7578 | Email: info@nps.org.au | www.nps.org.au

Report in brief

This 6th Evaluation Report provides details on the progress of the National Prescribing Service (NPS) since commencement in mid 1998. Focus throughout is on therapeutic topics, interventions and services provided over the 12-month period 1 July 2002 to 30 June 2003. The report is presented in five parts.

Chapter 1

Introduction and background to NPS. Overview of activities and interventions with a focus on achievements in the last 12 months. Details on program evaluation including evaluation activities undertaken to date. More detail on the evaluation data collected in the last 12-months is presented in Appendix 1.

Chapter 2

Services for health professionals. Information on the impact of these services in terms of awareness, reach, attitudes, knowledge and behaviour.

Chapter 3

Services for consumers. Information on the impact of these services in terms of awareness, reach, attitudes, knowledge and behaviour.

Chapter 4

Financial impact of NPS on the Pharmaceutical Benefits Scheme (PBS) over two-year period 1 July 2000 to 30 June 2002.

Chapter 5

Priorities for future evaluation.

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Executive summary

The 6th Evaluation Report provides details on the progress of NPS since commencement in mid 1998. Focus throughout is on therapeutic topics, interventions and services provided over the 12-month period 1 July 2002 to 30 June 2003.

A national program for quality use of medicines

NPS takes a multi-strategic approach to achieve its vision, mission and goals. Strategies for health professionals encompass prescribing education and intervention; curriculum and training; decision support; field support; topical information; and information on new drugs and research. Strategies for consumers include both opportunities arising from the strategies for health professionals, and dedicated interventions to encourage consumer QUM. The vision and mission of the organisation are further progressed by the strategic application of corporate public affairs and marketing.

Informing service development through multi-faceted evaluation

The approach taken to the evaluation of NPS is broad ranging and comprehensive, adapting to the changing content, complexity and scope of programs. Process or formative evaluation is incorporated to ask questions about how the programs are operating and identifying whether they are implemented as planned, including within anticipated timeframes. Impact or summative evaluation around specific objectives and goals is incorporated to establish whether strategies achieve what they intended in terms of changes in awareness, skills and behaviour amongst target groups. A range of existing datasets are used and where no other adequate sources of information exist, for example to gauge changes in awareness, knowledge and attitudes, key informant interviews as well as purpose-designed surveys of stakeholders and target groups are undertaken. Both qualitative and quantitative data are collected as necessary.

Services for health professionals

Positioning NPS through growing awareness and high value placed on the organisation and materials: Awareness of NPS is high among both GPs and pharmacists (95% and 99% respectively aware). Awareness of NPS activities undertaken by local Divisions of General Practice is, however, comparatively low (50% of GPs aware and only 25% of pharmacists). Ten percent of pharmacists incorrectly believe NPS to be a Government organisation compared to a concerning 43% of GPs. Over two thirds of GPs endorse NPS to be of great or moderate value, with an impressive 90% of pharmacists rating the organisation in this favourable light. The quality, usefulness, trustworthiness and completeness of NPS products, services and activities are also well rated by both GPs and pharmacists.

Regular personalised feedback on prescribing: A total of 21 *Prescribing Practice Reviews* (PPRs) have been mailed by the NPS to an average of approximately 20,000 health professionals on each occasion.

Growing popularity of national GP case studies: NPS has offered 26 GP case studies and over 30,000 health professionals have completed these Australia wide. From attracting just 10 participants in the first national GP case study, NPS now averages approximately 1,500 participants each time a national GP case study is offered.

Increasing participation in national GP clinical audits: NPS has offered 11 nationally coordinated GP clinical audits to date. Over 17,000 NPS audit cycles have been completed with an average of around 1,600 participants for each national audit.

Broad delivery of messages as well as repeat participation: Over time more GPs are participating in all NPS core activities (education visits, clinical audits, case studies and divisional case study group discussions). More than 14,000 individual GPs have participated in at least one NPS activity to date (approximately 80% of vocationally registered GPs at a national level), with an average participation in four activities.

GP participation across a range of therapeutic topics: The pioneer therapeutic target was Helicobacter eradication therapy, with the first prescribing interventions being implemented in December 1998. In the four and a half years to June 2003, NPS has provided interventions on 31 topics of which four have been repeated/updated: antibiotics in primary care (4 times); COX-2 selected NSAIDs (once); managing hypertension (once); and new drugs (twice).

Ability to support local delivery of national QUM messages: There has been a steady increase in participation by Divisions of General Practice in NPS activities from 43 divisions in 1999 to 110 in 2003 (i.e. 92% of a possible 120 divisions).

Locally coordinated activities through NPS contracted divisions: Educational visits continue to be the most popular method for local delivery of NPS messages. Just over 21,200 visits have been completed. Division-hosted small group discussion of nationally developed case studies, and small group discussions of clinical audit feedback continue to grow in popularity.

Growing pharmacist participation: Up till now, pharmacists have not been seen as a priority group for NPS attention although this is now changing, such that pharmacist participation in NPS activities has increased from less than 20 in 1999 to close to 800 in 2003, with more than 1,100 pharmacists being ever involved in at least one activity. Five self-audits have been offered to pharmacists as well as seven pharmacist specific case studies.

Independent information for health professionals: *Australian Prescriber* is published every two months and is distributed to about 45,000 health professionals (mainly medical practitioners and pharmacists, but including dentists, other health professionals, and universities – for teaching purposes). *NPS News* is published every two months, with 29 issues having been distributed to date. It is sent to about 59,000 health professionals (31% GPs, 20% pharmacists, and 49% other medical professionals). Feedback from readers indicates that both these publications are providing what is perceived to be a high standard of useful information. They are seen by their target audiences to occupy unique and valuable positions due to their perceived independence, and the unbiased, non-commercial information they convey with brevity and clarity.

In the three years to end June 2003, there has been a steady increase in the use of NPS Therapeutic Advice and Information Service (TAIS) from about 1,800 calls (to December 2000) to about 3,000 calls (in the 12-months to June 2003), with more than 16,000 calls overall. Over 80% of the calls received by TAIS have been from GPs and pharmacists. The majority of these calls involved queries regarding drug interactions (23%), adverse drug reactions (22%) and therapeutic strategies (11%).

Applying QUM in professional practice through formal education and training: The first web-based interactive curriculum for senior medical students contains 12 problem-based modules, and is being taken up by nine of the eleven universities in Australia. A similar but more sophisticated set of modules is also being developed for postgraduate medical students.

Improving decisions at the point of prescribing: NPS pharmaceutical decision support team continues to work closely with other NPS program areas to provide GPs with methods for extracting prescribing data for quality assurance purposes, peer group discussions and clinical audit. Software guides have also been developed that encourage behaviour change in prescribing, promote the use of NPS patient materials, and raise GPs' awareness of the functionality of their software to support QUM.

Influencing general practitioner knowledge and attitudes: In terms of GPs' knowledge of quality use of prescribing, results are encouraging.

- In the 1st national survey, GPs were asked to consider which of a group of drugs had the lowest risk for gastrointestinal bleeding. The majority of GPs (72%) made a correct response i.e. they chose diclofenac or ibuprofen. More GPs in the intervention group (i.e. exposed to the full set of NPS interventions) prescribed diclofenac than GPs from the control group (47% versus 41% respectively).
- The 1st and 2nd national surveys of GPs asked respondents to consider which agents were proven (i.e. evidence based) to reduce mortality when used in patients with uncomplicated hypertension. In 1999, 10% of respondents correctly identified thiazide diuretics and beta-blockers. By 2000, slightly more GPs (12%) identified the correct response.
- The 2nd and 3rd national surveys of GPs asked respondents to record the medicine he/she prescribed for a patient who presented with acute sinusitis. In 2000, 33% correctly recorded amoxicillin. By 2002, the proportion of respondents correctly recording amoxicillin had increased significantly to 59%.

Influencing pharmacist knowledge and attitudes: In terms of pharmacists' knowledge of quality use of prescription and OTC medicines, the results from the 1st national survey of pharmacists are also encouraging.

- The vast majority of respondents (93%) correctly knew that 'all clinical trials to date have shown COX-2 selective NSAIDs are no more effective in terms of symptom relief in osteoarthritis than traditional NSAIDs'.
- Just over four fifths of pharmacists (82%) correctly knew that 'low dose thiazides are effective for the treatment of hypertension'. Significantly more pharmacists who had participated in NPS activitie(s) answered this question correctly (84%) compared to those who had not participated (78%).
- Asked to identify the 'most appropriate first-line therapy to recommend for allergic rhinitis' only one third of respondents (33%) answered correctly (intra-nasal corticosteroid). Significantly more pharmacists who had participated in NPS activitie(s) answered this question correctly (36%) compared to those who had not participated (26%).
- Just under one half of respondents (47%) correctly knew that 'the most appropriate approach for managing a patient with uninvestigated dyspepsia and no other risk factors for serious gastrointestinal disease' was a trial of an H2 antagonist. Significantly more pharmacists who had participated in NPS activitie(s) answered this question correctly (52%) compared to those who had not participated (37%).

Influencing health professional behaviour: NPS Program Evaluation is at early stages of being able to evaluate NPS programs for their impact on health professional behaviour. The results from this comprehensive evaluation will be detailed in the next evaluation report.

Services for consumers

NPS recognises that consumers are active participants in the quality of health care, and works with existing consumer and community networks to provide QUM educational messages closely linked to those provided to health professionals. Similar to the evaluation of its services for health professionals, NPS monitors its services for consumers in terms of their existence, content, delivery and implementation as well as coverage and participation.

Independent information: Patient materials developed to date include: symptomatic management of upper respiratory tract infections (URTIs); withdrawal from sedatives and sleeping tablets; patient self-management of heart failure; a tool to help GPs review patient medication; and a non-prescription pad for managing dyslipidaemia through dietary and lifestyle changes.

During the first twelve-months of operation, staff of Medicines Line received just under 10,000 calls. The most frequent enquiry types were adverse drug reaction (23%), interaction (16%) and mechanism/profile (13%). The therapeutic classes most commonly enquired about were antidepressants (18%), herbs and other complementary medicines (12%) and antihypertensives (7%). The individual drug that most commonly generated enquiries was warfarin (4% of total calls).

National campaign to promote appropriate use of antibiotics for Upper Respiratory Tract Infections (URTIs): Awareness of the *common colds need common sense* campaign amongst consumers is modest but increasing: 7% awareness nationally in 2001 rising to 17% in 2002. Awareness of the campaign is high among health professionals: just under 80% of GPs and close to 95% of pharmacists. The total dollar value of the coverage received in the media resulting from editorial, advertising and community service announcements as part of the 2002 campaign was \$1,629,514, roughly four times greater than the outlay costs. One hundred and twenty four (124) community education grants were provided as part of the 2002 campaign, with close to 6,000 participants. Nearly 100% of individuals who received grants indicated that they would either definitely or probably participate in this program again.

Influencing consumer knowledge and attitudes: An increasing proportion of the community endorses symptomatic management of cold or flu. 89% and 96% of consumers pre the 2002 campaigns endorsed rest and increased fluids respectively as appropriate actions for treating cold and flu. Post campaign these figures increased slightly to 90% and 98% respectively. Similarly, the proportion of consumers who perceive taking antibiotics as appropriate for treating cold and flu fell from 29% pre the 2002 *common colds need common sense* campaign to 25% post campaign. The proportion of consumers who perceive antibiotics as an effective therapy for treating cold and flu also fell. This favourable trend has remained constant over the past three years.

Influencing consumer behaviour: When asked what action(s) they took the last time they suffered from a cold or flu (unprompted / open-ended), the majority of consumers who responded to the NewsPoll omnibus survey post the 2002 *common colds need common sense* campaign indicated that they drank extra fluids (82%), rested more (79%) and took OTC medicines (74%). Importantly, and of remaining concern, of those consumers who had visited a doctor the last time they suffered symptoms of a cold or flu in 2002, close to 57% recalled being prescribed an antibiotic.

The above findings were supported by responses to NPS-commissioned national telephone surveys of consumers, now repeated on three occasions. These surveys demonstrate a slight, but constant decrease in self-reported use of antibiotics to treat cough, cold or flu, down from 11% in 1999 to 10% in 2001. Concurrently, consumers report slight increases in the use of non-prescription medicines (from 68% in 1999 to 69% in 2001) as a treatment method for these conditions.

Sustained savings to the Pharmaceutical Benefits Scheme

The initial funding agreement with the Australian Government required NPS activities to achieve savings to the Pharmaceutical Benefits Scheme (PBS) of \$45.616 million over four years: \$2.851 million in the first year and \$14.255 million in each of the three subsequent years. Three-quarters of the way through the initial funding period, NPS achieved savings of just under \$49 million, clearly satisfying these requirements. The current agreement with the Australian Government

requires that with a four-year funding of \$45.76million, NPS must deliver savings of \$111million to the PBS: \$28.5 million in the first year and \$27.5 million in each subsequent year.

Financial savings for the period 1 July 2000 to 30 June 2002 were calculated for drug groups affected by the following prescribing intervention programs: antibiotics in primary care; peptic ulcer management; management of dyspepsia; COX-2 selective NSAIDs; managing hypertension; and managing dyslipidaemia. NPS activities in this period generated savings in the range of \$55.6million to \$83.9million to the PBS.

Program evaluation a continuing priority

Ongoing evaluation will provide feedback essential to decisions regarding development of services for both health professionals and consumers. Continued refinement of existing evaluation methods and further exploration of new techniques are important for monitoring NPS initiatives and will remain a priority for the organisation.

Chapter 1: Introduction and background

1.1 A national program for quality use of medicines

National Prescribing Service

National Prescribing Service (NPS) commenced operation in mid –1998 as an independent incorporated organisation providing leadership and coordination in the quality use of medicines (QUM). QUM is considered to be judicious selection of management options, appropriate selection of medicines when a medicine is necessary, as well as safe, effective and cost-effective use of medicines.

Vision and mission

The vision of NPS is to be the most trusted source of independent information about medicines for Australians. The mission is to create an awareness, culture and environment that will support quality use of medicines among all stakeholders.

Goal

The goal of NPS is to improve the health of all Australians through QUM in partnership with stakeholders, by:

- Supporting nationally coordinated approaches to QUM
- Providing independent information about medicines to health professionals and consumers
- Delivering messages about medicines to health professionals and consumers using multiple strategies and services to support change in behaviour
- Encouraging and supporting cross-discipline and cross-sector collaborations that promote QUM
- Utilising incentives that support QUM initiatives
- Undertaking ongoing evaluation.

Strategies

NPS takes a multi-strategic approach to achieve its vision, mission and goals. Strategies for health professionals encompass curriculum and training; education and evaluation; decision support and field support; topical information; and information on new drugs and research. Strategies for consumers include both opportunities arising from the strategies for health professionals, and dedicated interventions to encourage consumer QUM. The vision and mission of the organisation are further progressed by the strategic application of corporate public affairs and marketing.

Interventions

In implementing these strategies, NPS recognises 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. 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; unsolicited direct mail with prescriber feedback combined with specific educational messages; educational visiting (academic detailing); clinical audit with feedback; peer group meetings; and hypothetical case scenarios that facilitate problem-based learning (PBL) for individuals or groups. Opinion leaders are also used to deliver and endorse key messages when possible.

Therapeutic targets

NPS systematically targets therapeutic areas where prescribing problems, uncertainty or controversy has 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, cautious adoption of new drugs, and awareness of drug interactions.

1.2 A multi strategic approach to behaviour change

A service organisation

NPS provides a multifaceted approach to improving the health of Australians through QUM services for health professionals (GPs, pharmacists, specialists, students, and other health professionals) and consumers. Services are provided via five core program arms: Education and Quality Assurance; Field Support and Training; Independent Information; Pharmaceutical Decision Support; and Curriculum and Training. In addition, in the previous year NPS added two new program areas: New Drugs and Research; and Community QUM. A Corporate Public Affairs and Marketing team also supports all program areas. An overview of the main activities within each of these program areas is presented below.

Services for health professionals

Education and quality assurance program for health professionals (EQAP)

The aim of the education and quality assurance program is to improve the quality of prescribing and use of medicines by health professionals in target therapeutic areas where there are known problems, or dilemmas, with prescribing, likely to result in sub-optimal health outcomes and possibly increased costs. The aim is achieved by providing general practitioners, pharmacists, specialist medical practitioners, and hospital-based doctors with independent therapeutic information as well as the opportunity to review their own prescribing. The program incorporates adult education, social marketing and behaviour change strategies and operates at national and local levels, providing evidence-based information and using evidence-based strategies where possible.

In the twelve-month period 1 July 2002 to 30 June 2003 three topics were initiated: *Managing asthma in primary care*, *Managing drug and alcohol problems*, and *Osteoporosis*. Interventions for *Antibiotics in primary care* were repeated in April 2002 and 2003, the fifth consecutive year these drugs have been targeted. An issue of *NPS News on New drugs* was distributed in December 2002 as for December 1999 and 2001. The objectives, key messages and strategies for each of the EQAP topics implemented in 2002-03 are presented in Appendix 2.

Field support and training

The aim of field support and training is to ensure effective delivery of local NPS programs via the provision of skills training, professional development and operational support for field workers who provide for local delivery of program messages.

In the previous twelve-months skills workshops have been held on: educational visiting; educational visiting upskilling; group skills; drug utilisation data analysis and feedback; applying QUM in practice; and basic pharmacoepidemiology. Therapeutic briefings as well as a 2-day

conference for facilitators were also hosted. In addition, NPS facilitators employed by Divisions of General Practice have received regular support from NPS staff via division visits and regular teleconference support session. Advice and support on specific therapeutic topics have also been provided via topic specific teleconference sessions.

Curriculum and training

In the consultation process conducted prior to the establishment of NPS the highest priority for all stakeholders was educational support for students and young prescribers. To this end, a curriculum and training program was established. The aim of curriculum and training is to provide a basis for application of QUM in professional practice through formal education and training.

NPS has been working in collaboration with all Australian medical schools to develop a nationally accepted prescribing curriculum for senior medical students. The web-based interactive curriculum comprises a number of modules that are now being used by medical students around Australia. The modules are based on the World Health Organisation's *Guide to Good Prescribing*, and use the *Australian Medicines Handbook* and *Therapeutic Guidelines* as references. This curriculum addresses both cognitive and behavioural issues relevant to prescribing.

In conjunction with the Confederation of Postgraduate Medical Education Councils and the state based Postgraduate Medical Councils a web-enabled, interactive curriculum for postgraduate medical students is in development. Currently the format for this curriculum is a more sophisticated set of modules, with modules also available for bedside teaching which means actual teaching at the bedside with a patient during rounds. Pilot testing of this curriculum is due to start in March 2004.

In conjunction with PHARM, a self-directed learning package for QUM operatives was developed. The learning package was aimed at all those who currently work in QUM to provide an understanding of QUM, the QUM partners and to help develop strategies to implement QUM. It can also be used as a foundation to increase awareness and understanding of QUM to those who may require an understanding of the overall National Medicines Policy, the National Strategy for QUM and QUM principles.

The next stage of the Curriculum and Training Program is addressing QUM in nurse education. The aim of this venture is to develop and implement strategies to influence the inclusion of QUM principles and resources within all levels of nursing education. The Curriculum and Training program is also developing strategies to promote the use of NPS Pharmacy material by pharmacy schools as educational material.

Pharmaceutical decision support

The aim of the pharmaceutical decision support program is to improve the quality of prescribing and use of medicines by health professionals through provision of reliable information and prompts at the point of decision-making. The Decision Support team works closely with EQAP to provide GPs with methods for extracting prescribing data for quality assurance purposes such as practice-based drug use evaluations, peer group discussions and clinical audit. PDS also develops software guides that encourage behaviour change in prescribing, promote the use of NPS patient materials, and raise GPs' awareness of the functionality of their software to support QUM in the electronic prescribing environment.

Decision Support collaborates with prescribing software vendors to assist the incorporation of QUM resources into their products. Software guides are also being developed to raise GPs' awareness of the functionality of their software. The guides produced in the previous year provided GPs with instructions on how to modify their use of software to prevent repeat scripts of antibiotics. The first clinical audit to be converted into electronic format was also completed this year, with the aim of encouraging GPs to use their software as a quality assurance tool.

The Decision Support team also contributed to the deliberations of national working groups exploring ways to improve GPs' use of electronic pharmaceutical decision support. These include MediConnect, General Practice Computing Group, National Electronic Decision Support Task Force and Medicines Coding Council of Australia. A major collaborative project between NPS, the GP Computing Group (GPCG) and the University of Melbourne is currently working on a formal information model of pharmaceutical practice to guide the development of integrated and evidence-based decision support systems. A starting point is the GPCG-funded General Practice Data Model and Core data set, which identified a set of 'core' information elements that are appropriate to the clinical management of a patient by a GP. The project is enhancing the data model in the area of decision support, and developing an information model of decision support around the prescribing process with appropriate inputs, logics and outputs. Independent medicine providers are collaborating by providing drug information and guidelines to incorporate into this model. The information model and reference implementation developed in this project will be open source software, allowing and encouraging software developers to develop a functional prototype linking the clinically based information model with the decision support drug and guideline reference database. This open-source decision support engine will be made available to organisations that develop prescribing, dispensing and drug administration software so they can link to it, thereby facilitating access to best-evidence, decision support resources.

Independent information

The aim of independent information is to improve the quality of prescribing and use of medicines by health professionals by providing accurate, reliable, balanced and timely information about medicines and QUM issues. Major activities include the publication of a newsletter for health professionals, *NPS News*, that is distributed six times per year. Four of these editions are tied to therapeutic topics identified in the education and quality assurance program, while other editions deal with principles of prescribing new drugs or other topical issues.

Other major activities within this program include: publication of the *Australian Prescriber* journal; management of the new drugs and research program; and management of the Therapeutic Advice and Information Service (TAIS), a national telephone-based information service that provides independent information on medication related issues for health professionals.

Australian Prescriber

The aim of the *Australian Prescriber* journal is to promote the quality use of medicines by providing, readable, reliable, educational information about drugs and therapeutics. Six issues of the journal are published each year. The journal contains information on a variety of therapeutic topics of interest to its readership. Whenever possible information about new drugs is published in the first issue following the release of a new chemical entity on to the Australian market. Efforts are made to ensure the content of *Australian Prescriber* is compatible with information published by other independent providers such as the Australian Medicines Handbook and Therapeutic Guidelines.

New drugs and research program

The aim of the new drugs and research program is to provide timely and independent information to prescribers and consumers on new and revised listings to the PBS. As a consequence of this aim, it is anticipated this program will help to achieve improved health outcomes for all Australians through appropriate and cost-effective prescribing of medicines.



This program began operation in April 2003. The main publication for the program, *RADAR*, will provide information to health professionals on newly listed or revised drugs. This will include information on: the PBS listing (actual wording of listing); reason for PBS listing (rationale behind the listing); place in therapy; safety issues (particularly contra-indications/precautions, adverse effects, drug interactions of note); dosing issues; and relevant consumer information. *RADAR* will be distributed via: email subscription database; NPS facilitators locally in divisions of general practice; NPS members' communications; professional organisations' communications; NPS telephone services (TAIS and Medicines Line); weblinks; and prescribing and dispensing software.

Therapeutic advice and information service

The therapeutic advice and information service (TAIS) is a national drug and therapeutics phone-in information service primarily targeted at community-based health professionals. A consortium of six expert drug information centres operates the service on behalf of NPS. The six sites are based in Melbourne, Adelaide, Brisbane (2), Perth and Newcastle. Enquiries are lodged, Australia-wide, via a dedicated 1300 telephone line between 9 am and 7 pm (EST) Monday to Friday, or via email or fax 24 hours, seven days a week.

Services for consumers

Community QUM program

The aim of the community QUM program is to promote better health by building awareness, knowledge and skills in the community that will lead to QUM by:

- promoting consumer and community understanding and awareness of choices between the use of medicines and other approaches to health problems
- raising and improving consumer and community awareness about both the benefits and risks of medicines
- providing consumers and the community with the opportunity to develop skills and knowledge to engage in decision making about medicines
- building on established communication channels at all levels to improve communication and cooperation between consumers and health professionals
- increasing consumers' awareness about the key role they play in their medicines management in partnership with their health professionals

The community QUM program is managed and implemented in partnership with the Consumers' Health Forum and other consumer groups and organisations. The program will deliver services at two broad levels. The first has a national perspective and will provide messages to consumers via a National Awareness Campaign. This national level intervention will be aligned to: national awareness raising; network development; policy development and feedback; systems enhancement; training and capacity development; and resource development.

Beneath the national strategy sit strategies responsive to particular communities and behaviours. Activities at this strategic level will focus on understanding local issues, working with existing consumer groups and community organisations, identifying key people within communities to act as leaders, and responding to specific community priorities.

The Community QUM program began operation in February 2003. In collaboration with the Consumers' Health Forum of Australia (CHF) NPS held a consumer consultation workshop in March 2003 at which priority themes and issues were identified for attention over the next two years. Consistent with the issues and themes arising over the past ten years on the subject of consumer QUM, four priorities were identified:

- Access to and interpretation of information about medicines
- Effective communication between consumers and health care providers about medicines
- The safe use of multiple medicines
- Management of common ailments: reducing the over use of antibiotics for upper respiratory tract infections.

Materials and media

The consumer-related aims of NPS are being met through various methods. Firstly, patient/consumer information materials have been developed on a range of topics to assist GPs, pharmacists and consumers discuss and decide the appropriate therapeutic course. These patient education materials are also available to consumers via Medical Director, a computer-based decision-support program designed to assist GPs in their prescribing decisions.

Patient/consumer education materials developed to date include: a symptomatic management pad for URTIs; flyers on withdrawal from sedatives and sleeping tablets, and patient self-management of heart failure; and a tool to help GPs review patient medication.

In addition to printed and PDF (electronic) patient education materials, NPS provides information to the community on specific targeted topics through the media and special campaigns. A small-scale community campaign, for example, was run in June 2000 to raise community awareness that antibiotics do not hasten recovery from coughs and colds, and that overuse may lead to resistant organisms.

Targeted campaigns

NPS' first national consumer campaign, 'Common Colds Need Common Sense', was held during winter 2001 (June – August) and repeated in winter 2002 and 2003. The central goals of the campaigns were to: inform consumers how to manage coughs, colds and influenza without antibiotics; and support NPS Program for Health Professionals aimed at reducing the inappropriate prescribing of antibiotics for URTIs.



Key messages of the campaigns were: common colds need common sense, drink plenty of fluids, take it easy, treat the symptoms; you won't get better more quickly by taking antibiotics; the common cold is a virus and antibiotics don't help; and talk to/ask for advice from your GP or pharmacist. To create local community awareness about the campaigns and the objectives, small grants were also offered in 2001 and 2002 to assist organisations deliver community education programs, including: guest presentations at clubs; media activity; and information booths and displays at shopping centres and public events.

Consumer services at a local level

The CQUM program has been designed to deliver a range of consumer/community interventions at local level. Meantime: while not core business under their current contracts, NPS divisional facilitators regularly host consumer activities to raise awareness about QUM. On occasion, pharmacists and/or GPs also attended these activities, generally as invited speakers.

Medicines Line

NPS Medicines Line commenced operation in September 2002 as Australia's first national telephone-based medicines information service for consumers. Medicines Line is funded by NPS and operated by a consortium formed by Mater Pharmacy Services, South Brisbane and the Pharmaceutical Society of Australia.

Medicines Line is endorsed by Australian Council of Social Services, Australian Healthcare Association, Australian Nursing Federation, Australian Pensioners & Superannuants' Federation, Carers Australia, COTA/National Seniors, Australian Department of Health and Ageing, Health Consumers of Rural and Remote Australia, National Aboriginal Community Controlled Health Organisations, National Heart Foundation of Australia, NSW Therapeutic Assessment Group,

Pharmacy Guild of Australia, Royal College of Nursing, Rural Doctors' Association of Australia, and the Society of Hospital Pharmacists of Australia.

Corporate support

Corporate public affairs and marketing (CPAM)

The aim of the CPAM team is to position NPS as Australia's leading independent source of trusted information on the quality use of medicines by developing and implementing communication strategies to position NPS, raise its corporate profile, and support its core strategic programs.

Program evaluation

The aim of NPS evaluation is to apply rigorous evaluation methods to NPS programs to support the development and accountability requirements of the organisation and ultimately to sustain the provision of a national QUM program. The principal responsibilities of NPS evaluation are to measure:

- the process, scope and reach of NPS activities
- changes in awareness, skills and behaviours towards QUM
- changes in prescribing behaviour; changes in health outcomes
- changes to the Pharmaceutical Benefits Scheme (PBS) resulting from NPS programs.

Specific objectives are to evaluate:

- the type, extent and timing of strategy implementation
- the impact of NPS interventions on the appropriateness of drug utilisation in target areas
- the impact of NPS interventions on the health of the community.

The approach taken in the evaluation of NPS is broad ranging and comprehensive, incorporating process evaluation and impact and outcome evaluation around specific objectives and goals.

Evaluation activities include:

- NPS stakeholder interviews
- telephone and paper-based surveys of general practitioners, pharmacists and consumers
- analyses of activity reports provided by NPS facilitators in Divisions of General Practice
- ongoing assessment of the numbers of health professionals participating in NPS activities including clinical audits, educational visits and case studies.

Progress in NPS evaluation to end June 2003 is detailed in the following section (section 1.3) of this report.

1.3 Evaluation overview

NPS evaluation makes use of a range of existing datasets and where no other adequate sources of data exist undertakes data collection specific to the need. NPS has also established a comprehensive database of participation in NPS activities by individual healthcare practitioners and a summary database of NPS program activity in Divisions of General Practice.

Below are brief points to describe each of the data sources utilised by NPS evaluation to measure: the process, scope and reach of activities; changes in awareness, skills and behaviours towards QUM; changes in prescribing behaviour; changes in health outcomes; and changes to the Pharmaceutical Benefits Scheme (PBS) resulting from NPS programs. Comprehensive information on the main data collected in the previous twelve-months is presented in Appendix 1

Process, scope and reach

Early stakeholder analysis

A stakeholder telephone survey (November 1999 – March 2000) (n=87) was undertaken in order to determine the reach and perceived acceptability of NPS activities, and to obtain input for future directions.

Division operations analyses

Division operations analyses (October 2000), involving interviews with facilitators and other key staff members or affiliates, were undertaken in six divisions to explore how NPS was working 'on the ground'. The aim of this process was to identify the different models being used to deliver the NPS program, their strengths and weaknesses, and factors that facilitate or act as barriers to implementation.

Stakeholder focus groups

Focus groups with 84 key stakeholders nationally were undertaken in mid 2000 as the first step in developing and field-testing quality prescribing indicators for general practice. The stakeholder groups included: GPs, community pharmacists, consumers, and representatives of key national organisations.

Activities database (and 6-month report database)

The Activities database, maintained by NPS, is a record of participation by Divisions of General Practice in NPS activities. Data is sourced from divisional facilitators and submitted at the completion of divisional activities. The 6-month reports summarise all activities over the last 6 months. Primarily, the activities database is used to provide routine summaries of divisional participation in NPS activities for monitoring purposes.

Participation database

The Participation database, maintained by NPS, is a record of individual participation in NPS activities. Data is also sourced from divisional facilitators and submitted via monthly reporting to NPS. The Participation database is primarily used to record participation in activities that are eligible for inclusion in point allocation made under the Royal Australian College of General Practice's professional development programs and the Quality Prescribing Initiative (QPI) of the Commonwealth Government's Practice Incentive Program (PIP). The Participation database is also used to provide data summaries for NPS Board and management that can be completed at an individual participant (de-identified) level or aggregated to a divisional level.

Focus groups with GPs: print publications

In May 2002, focus groups were held with 47 GPs to establish whether the messages NPS are providing are clear, and if the presentation is usable. Specific views were sought on NPS case studies, clinical audits and prescribing practice reviews (PPRs).

Readership survey

Between the months of September to November 2002 NPS explored the role of *Australian Prescriber* and *NPS News* in communicating independent and expert information about quality use of medicines. The evaluation was conducted in three stages. Stage 1 was a survey of the *Australian Prescriber* website. Stage 2, the qualitative research, involved a series of 5 focus groups (total of 44 participants) and 9 in-depth interviews with readers' and non-readers'. Focus groups / interviews were held in metropolitan and regional / rural areas with pharmacists, GPs and other medical specialists. Stage 3, a quantitative mail survey of readership and attitudes, was mailed to 2,000 readers of these publications.

Changes in awareness, skills and behaviours

National surveys of general practitioners

NPS has commissioned national paper-based mail surveys of general practitioners (GPs) in March 2000 (n=1,310), April 2000 (n=941) and April 2002 (n=963). These surveys are designed to collect data on: GP awareness and participation in NPS divisional activities; the value of NPS to GPs; GP perceptions about the trustworthiness and completeness of NPS prescribing and feedback information; GP knowledge of evidence on some prescribing options; information sources used by GPs; and GP perceptions regarding the best options for keeping up to date with advances and changes in the use of medicines.

National survey of pharmacists

This first national paper-based mail survey of pharmacists (n=712) was undertaken by NPS in August 2002. The principal aim of this survey was to provide baseline data on: Pharmacists knowledge and behaviour around the activities of NPS; pharmacist perceptions about the value of NPS and the completeness and trustworthiness of information provided by NPS; pharmacist knowledge of evidence-based prescribing practices; and use of different types of information sources for keeping up to date with changes in medical and pharmacy practice.

National surveys of consumers

NPS has commissioned national telephone surveys of consumers in August 1999 (n=1,614), August 2000 (n=1,603) and August 2001 (n=1,800). The main purpose of these surveys has been to identify:

- sources of information used by consumers about prescription medicine; and
- attitudes towards the use of antibiotics for coughs, colds and flu-like symptoms.

National omnibus / pulse surveys of consumers

NPS included questions in the NewsPoll omnibus survey pre (May 2002) and post (September) the 2002 *Common Colds Need Common Sense* campaign. This was a national, telephone survey of 1,200 randomly selected individuals aged 18 years or over.

Changes in prescribing behaviour

Drug utilisation data from the Health Insurance Commission

NPS currently has seven financial years of data from HIC for the period July 1996 to June 2003. This contains data from both the Pharmaceutical Benefit Scheme (PBS) and the Medicare Benefit Scheme (MBS). PBS data includes all prescriptions dispensed nationally for which the Australian Government pays a subsidy. This data provides the total number of (subsidised) prescriptions dispensed (both original and repeats) with a breakdown by patient entitlement levels. Gross price and net benefit of scripts by item code are included, as is the number of individuals and households with safety net cards. MBS statistics are based on the items (e.g., standard GP consultation) and groups (e.g., professional attendances, pathology services) in the Medicare Benefits Schedule. These statistics are reported by patient gender and age group and by scrambled provider number.

Data from the HIC is used primarily by NPS to track changes in prescribing which may be attributed to NPS activities. This is used for various reporting purposes, and for the evaluation of NPS activities. This data will also be used for economic modelling of NPS programs. It has the capacity to examine differences and effects of NPS programs by geographical (including rural / urban and Divisions of General Practice) areas and some provider characteristics.

Drug utilisation data from the Drug Utilisation Sub-Committee

To overcome the omission of 'under co-payment' data (relating to scripts for which no government subsidy is paid) within the HIC dataset, an ongoing survey of a representative sample of community pharmacies is undertaken annually by the Pharmacy Guild for the Drug Utilisation Sub-Committee (DUSC), a sub-committee of the Pharmaceutical Benefits Advisory Committee (PBAC). The database maintained by DUSC contains data from two sources: HIC, and the Annual Survey of Community Pharmacies. By combining these two sources of data an overall estimate of community prescription drug usage in Australia can be obtained. Drug utilisation data from this database is publicly available and provided free of charge. DUSC data is requested by NPS on an ad-hoc basis.

Computerised GP prescribing data from users of Medical Director via Health Communication Network

The General Practice Research Network (GPRN) is a national network of Australian GPs established in August 2000 by Health Communication Network (HCN), which owns Medical Director (MD), Australia's most utilised patient management software in general practice. GPRN aims to provide de-identified longitudinal patient data both to evaluate the use of electronic patient management systems and to investigate the capabilities of primary source data for pharmacoepidemiology and population health monitoring (Sayer et al., 2003). GPRN data has been provided to NPS on a regular basis since October 2002.

Data from the Bettering the Evaluation and Care of Health (BEACH)

The BEACH dataset (Bettering the Evaluation and Care of Health) is derived from having a random sample of GPs nationwide (approximately 1000 per annum) complete standard information forms describing 100 consecutive patient encounters. The information routinely recorded about encounters includes the patient's stated reason for attending, the diagnoses and problems reported as managed by the practitioner, as well as medicines prescribed. BEACH data is useful where knowledge and consideration of patients' diagnoses and/or presentation are required to enable interpretation of prescribing data. BEACH data is requested by NPS on an ad-hoc basis

Changes in health outcomes

It remains a priority for NPS evaluation to investigate methods for linking changes in prescribing with improved health outcomes. The focus is on linking evidence from previous studies to support expected changes in health outcomes as a result of NPS activities.

Changes in expenditure on the PBS

The initial funding agreement with the Australian Government required NPS activities to achieve savings to the Pharmaceutical Benefits Scheme (PBS) of \$45.616 million over 4 years: \$2.851 million in the first year and \$14.255 million in each of the three subsequent years. Three-quarters of the way through the initial funding period, NPS clearly satisfied these requirements by achieving savings of just under \$49 million. The current agreement with the Australian Government requires that with a four-year funding of \$45.76million, NPS must deliver savings of \$111million to the PBS: \$28.5 million in the first year and \$27.5 million in each subsequent year.

The Australian Department of Health and Ageing (DoHA) commissioned the Australian Institute for Primary Care, La Trobe University to conduct an external evaluation of NPS with the aim of assessing the impact and effectiveness of NPS activities in achieving savings to the PBS through the reduction of inappropriate prescribing (October 2000). This report endorsed the savings estimates provided by NPS as conservative estimates of the actual savings generated.

NPS commissioned Access Economics to undertake an external review of the methodologies used for: i) estimating PBS savings; and ii) projecting future savings (October 2000). This report concluded that NPS estimates are appropriate. NPS also contracted with KPMG Consulting to explore opportunities for the economic evaluation of NPS (January 2001). This report focused on a rigorous demonstration of PBS cost-savings, as well as the cost-benefits of NPS allocation of resources and intervention effort (for example, the costs and benefits associated with a significant focus on local divisional-level activity). Methods for examining the economic consequences of NPS activities, both at a national and local level were explored.

Chapter 2: Services for health professionals

2.1 Key findings

Positioning NPS: Awareness and perceived value and quality

- Impressively, 95% and 99% of GPs and pharmacists respectively are aware of NPS.
- Ten percent of pharmacists incorrectly believe NPS to be a Government organisation compared to a concerning 43% of GPs.
- Only one in two GPs are aware of NPS activities undertaken by their local Division of General Practice. Even less pharmacists are aware (only 25%).
- Awareness amongst GPs of NPS Therapeutic Advice and Information Service (TAIS) has increased slightly in the last two-year period from 21% to 30%, with 37% of those aware also indicating they use this service sometimes, and only 3% frequently. Interestingly, in comparison, 47% of pharmacists were aware of TAIS and of these 5% reported using it frequently with a further 42% reporting they use it sometimes.
- Over two thirds of GPs endorse NPS to be of great or moderate value, with an impressive 90% of pharmacists rating the organisation in this favourable light.
- The quality, usefulness, trustworthiness and completeness of NPS products, services and activities are well rated by both GPs and pharmacists.

Prescribing intervention: Education and quality assurance

During the 4½ years from December 1998 to June 2003:

- 21 Prescribing Practice Reviews (PPRs) have been mailed to an average of 20,000 health professionals on each occasion (80% GPs, 7% OMPs, and 13% OMSs) and have covered 16 major therapeutic topics (including updated repeats of some topics).
- Case studies have generally reached the most GPs (over 30,000 GP contacts over all therapeutic topics).
- There has been a steady increase in GP participation in NPS activities from less than 3,000 GPs in 1999 to more than 9,200 GPs in 2003 (with more than 14,000 GPs being ever involved in at least one activity). Participation by an individual GP can range from one to 41 activities.
- GP participation in case studies has increased from only 10 participants in the first case study to an average of 1,500 at present. 26 case studies have been offered.
- GP participation in clinical audits has been consistent with an average of 1,600 GPs over 11 audits offered nationally.
- GP participation in nationally developed and locally run clinical audits as well as locally developed and locally run clinical audits remains relatively low, with participation ranging from less than 10 to about 100 GPs on each occasion they are offered.
- GP participation in Division-held small group discussions continues to grow in popularity, from only 6 GPs (to June 2000), to over 2,600 GPs (to June 2003).
- GP participation in therapeutic topics has varied, with the highest participation being for antibiotics (over 7,500 GPs), type 2 diabetes (over 6,400 GPs), dyslipidaemia (over 5,400 GPs), and asthma (over 5,000 GPs).
- There has been a steady increase in participation by Divisions of General Practice in NPS activities from 43 divisions in 1999 to 110 in 2003 (i.e. 92% of a possible 120 Divisions).
- As well as choosing to do the core NPS activities as discussed above, 52 Divisions (i.e. 43% of Divisions) have promoted continuing medical education programs using NPS therapeutic topics.
- Up till now, pharmacists have not been seen as a priority group for NPS attention although this is now changing, such that –

- Pharmacist participation in NPS activities has increased from less than 20 in 1999 to close to 800 in 2003 (with more than 1,100 pharmacists being ever involved in at least one activity).

Medical student national prescribing curriculum

- The first web-based interactive curriculum for senior medical students contains 12 problem based modules, and is being taken up by nine of the eleven universities in Australia. A similar but more sophisticated set of modules is also being developed for postgraduate medical students.

Independent information: *Australian Prescriber*

- *Australian Prescriber* is published every two months and is distributed to about 45,000 health professionals (mainly medical practitioners and pharmacists, but including dentists, other health professionals, and universities – for teaching purposes).
- *Australian Prescriber* is providing what is perceived by its target audiences to be a high standard of useful information. *Australian Prescriber* is seen by its audience to occupy a unique and valuable position due to its perceived independence, and the unbiased, non-commercial information it conveys with brevity and clarity to provide the reader-friendliness so valued by busy doctors, pharmacists and dentists.

Independent information: *NPS News*

- *NPS News* is published every two months, with 29 issues having been distributed to date. It is sent to about 59,000 health professionals (31% GPs, 20% pharmacists, and 49% OMPs).
- *NPS News* is providing what is perceived by its target audiences to be a high standard of useful information. *NPS News* is seen by its audience to occupy a unique and valuable position due to its perceived independence, and the unbiased, non-commercial information it conveys with brevity and clarity to provide the reader-friendliness so valued by busy doctors, pharmacists and dentists.

Therapeutic Advice and Information Service

- There has been a steady increase in the use of TAIS from about 1,800 calls (to December 2000) to about 3,000 calls (to June 2003), with more than 16,000 calls overall.

Influencing health professional knowledge

- In terms of GPs' knowledge of quality use of prescribing, results are encouraging. Similarly, pharmacists' knowledge of quality use of prescription and OTC medications is encouraging.

Influencing health professional behaviour

- NPS Program Evaluation is at early stages of being able to evaluate NPS programs for their impact on health professional behaviour. The results from this comprehensive evaluation will be detailed in the next evaluation report.

2.2 Positioning NPS: awareness and perceived value and quality

Background

An important aspect of monitoring NPS programs and interventions at a process level involves examining awareness of NPS and our services. A high level of awareness is desirable, however, awareness of our messages is more important. Similarly, at a process level, it is important to understand how the intervention materials are perceived by both target audiences and those involved in program delivery (including relevance, acceptability and satisfaction as well as the quality of the materials within the program). In the past 12-months, national surveys of GPs and pharmacists have been undertaken to assess these issues. In addition, an evaluation of NPS publications has been completed. Finally, a survey of both participants in and recipients of small grants as part of the Common Colds Need Common Sense campaign was undertaken (see section 3.2).

Awareness

National Prescribing Service

General practitioners

- Nearly all GPs who responded to the 3rd national survey of GPs (95%, n=963) were aware of NPS.
- Thirty five percent of GPs believed that NPS was involved in prescribing issues (including monitoring prescribing habits, providing prescribing related information), 25% noted that NPS was an information / educational source and 12% said NPS provided education and advice to GPs.
- Forty three percent thought that NPS was a government organisation, 39% an independent, non-government organisation, 17% were uncertain and 2% (n=14) that NPS was linked with the pharmaceutical industry.

Pharmacists

- Ninety four percent (n=759) of pharmacists surveyed in the 1st national survey had heard of NPS. Awareness of NPS was greatest amongst younger pharmacists (99.0% pharmacists aged 22-30 aware) and lowest among older pharmacists (93.1% pharmacists aged greater than 60 aware; $t=3.129$; $p=0.002$).
- Most pharmacists correctly associated NPS with the provision of information (38% of respondents), promotion of health (20%) or promotion in general (6%), and training and education (15%). Many also mentioned prescribing guidelines / reviews current treatment (6%), coordination and liaison (5%), independence / non-industry based (5%), improves quality prescribing and use of medicines (3%), and evidence-based (3%).
- Seventy two percent of pharmacists correctly knew NPS to be an independent organisation. Perceptions as to the type of organisation differed significantly by participation status ($\chi^2_1 = 11.336$; $p=0.010$) and age ($F=6.475$; $p<0.0001$). NPS was perceived to be a government organisation by 9.5% of non-participants compared to 16.2% of participants. Older pharmacists (age >61) were least likely to perceive NPS to be a government organisation (5.1%) compared to the younger pharmacists (age range 22-30, 31-40 and 41-50) who saw NPS this way (16.8%, 15.4% and 16.8% respectively).

- Specific descriptions by pharmacists included:

Provide regular and relevant information to pharmacists to encourage quality use of medicines throughout the health care disciplines.

Assists with quality, unbiased information for daily use in pharmacy.

An independent Australian organisation promoting quality use of medicines.

It aims to improve the health of Australians through quality use of prescribed and over the counter medicines by the dissemination of highly professional and well presented studies.

Promotes evidence-based rational prescribing.

Divisional activities

General practitioners

- Nearly a half of GPs (48%) were aware of NPS activities undertaken by their Division of General Practice, with 75% of these indicating that they had participated in these activities. The type of NPS divisional activities GPs were aware of was extensive, with the most commonly reported being clinical audit (17%) and educational visits (14%).
- GP awareness of NPS divisional activities has increased markedly since the first national GP survey conducted in 1999 (19% in survey 1, 42% in survey 2 and 48% in survey 3). This increase is particularly evident in Queensland and Tasmania.

Pharmacists

Pharmacist awareness of divisional activities is considerably less than that of GPs. However, it is important to note that pharmacists are not the primary target of NPS local divisional programs, and therefore the following figures are not surprising.

- One quarter of pharmacists (25%) were aware of NPS activities undertaken by a local Divisions of General Practice these.
- Awareness of divisional activities varied significantly across both State ($\chi^2_6 = 14.125$; $p=0.028$) and ARIA classification ($\chi^2_4 = 29.186$; $p<0.0001$) of principal practice. Pharmacists in Western Australia and Tasmania were most aware of these activities (36.2% and 36.0% respectively) whilst pharmacists in South Australia and New South Wales were least aware (17.2% and 19.0% respectively). Similarly, pharmacists in remote and very remote areas were least aware (14.3% and 0.0% respectively) whilst pharmacists in accessible areas were most aware (66.7%).

Therapeutic Advice and Information Service

General practitioners and pharmacists

- Awareness amongst GPs of NPS Therapeutic Advice and Information Service (TAIS) has increased slightly in the two-year period between April 2000 and 2002. In 2000 only 21% of GPs surveyed were aware of TAIS. In 2002 this figure increased to one third of GPs (30%), with 37% of those aware also indicating they use this service sometimes and only 3% frequently.
- Interestingly, in comparison, 47% of pharmacists who responded to the 1st national survey of pharmacists were aware of TAIS and of these 5% reported to use it frequently with a further 42% reporting they use it sometimes.

Other products and services

Pharmacists

Awareness of specific products, services and activities was high amongst pharmacists.

- 81% aware of NPS News; 85% aware of NPS PPR / Pharmacy Letter
- 79% aware of NPS self-audits for pharmacists
- 73% aware of NPS case studies for pharmacists.

Perceived value of NPS

General practitioners

- Over two thirds of GPs surveyed in 2002 (78%) endorsed NPS as being of great or moderate value to them. NPS was seen by many GPs to be playing an important role in countering pharmaceutical company misinformation and providing independent medication / prescribing advice as well as providing valuable advice and information.
- The perceived value of NPS by GPs has improved significantly over time. Fourteen percent of GPs in survey 2 valued NPS as very good. This increased to 20.1% in survey 3, with many GPs noting NPS to be an essential service with a valuable role to play. The proportion of GPs who placed little or no value on NPS decreased from 32.3% in survey 2 to 22.1% in survey 3 (CMH = 28.2, $p < 0.0001$).
- Specific comments from GPs:

Very important role in countering drug company misinformation

A great resource. I find it very valuable. It tends to confirm what I read in the [professional] journals.

Pharmacists

- Close to 90% of pharmacists rated NPS to be either of great or moderate value. Significantly more participants viewed NPS to be of great value (64.8%) compared to only 46.1% of non-participants ($\chi^2_1 = 37.160$; $p < 0.0001$).
- Activities or materials identified to be of greatest value included: self-audits (identified by 32% of respondents); NPS News (26%); case studies (26%); PPRs (23%); common colds brochure / posters / campaign (17%); and pharmacy letter (11%0).
- Specific comments from pharmacists:

I think NPS has provided a very useful tool for doctors and pharmacists, and I hope NPS will continue to do so.

I think it is excellent. I like the way the information is succinct – because it isn't 10 pages long I always read it. I think the TAIS is a great idea. Thankyou.

NPS have certainly made an impact in the short time they have been in existence. Keep up the good work. Keep the drug companies honest and on their toes.

Keep up the great work – I appreciate the non-biased information.

Excellent and useful service – keep it up please.

All in all – thankyou.

It is paramount that doctors and pharmacists have access to independent drug information.

So far have found it helpful – topical and to the point.

Improving communication and information exchange

General practitioners

The 3rd national survey of GPs explored whether GPs had spoken to a pharmacist in relation to any of their patients in the past week. The majority of GPs (69%) had spoken to a pharmacist in the past week. Of these:

- 21% (121) of GPs had spoken to a pharmacist face to face about a general query
- 51% (291) of GPs had phoned a pharmacist about a general query
- 60% (342) of GPs had a pharmacist phone them about a general query
- 3.5% (20) of GPs had met with a pharmacist face to face about a formal medical review
- 10% (56) of GPs had phoned a pharmacist about a formal medication review and
- 11% (60) of GPs had a pharmacist phone them about a formal medication review

Pharmacists

The majority of pharmacists who responded to the 1st national survey (83%) felt that NPS activities and products had assisted the relevant exchange of information between pharmacists and doctors.

Similarly, just over three quarters of respondents (81%) felt better equipped to answer consumer enquiries as a result of NPS activities. Pharmacists who had participated in an NPS activity were significantly more likely to feel better equipped to answer customer enquiries (87.0%) compared to those who had not participated in these activities (67.8%) ($\chi^2_1 = 36.157$; $p < 0.0001$).

Perceived quality of products, services and activities

GP perceptions

Prescribing and feedback information

The 3rd national survey of GPs asked respondents to consider the prescribing and feedback information they received from NPS. Prescribing information was defined as general information GPs received about the appropriate use of medicines for specific conditions. Feedback information was defined as the information GPs received comparing their prescribing behaviour with other GPs.

- As Figure 2.1 shows, most GPs rated the completeness of NPS prescribing and feedback information as good to very good.
- Figure 2.2 shows that the trustworthiness of NPS prescribing and feedback information ranged from adequate to very good.
- There was no statistical difference between GP age and gender and what GPs perceived as the completeness and trustworthiness of prescribing and feedback information they received from NPS.
- There has been a significant increase between the 2nd and 3rd survey of GPs in the number of GPs who rate both the completeness and trustworthiness of NPS prescribing information as very good (13% to 21% for completeness; CMH = 12.3, $p = 0.0005$ and 15% to 24% for trustworthiness; CMH = 22.0, $p < 0.0001$).
- Similarly, the proportion of GPs rating the completeness of feedback information as very good has significantly increased from 9% in 2000 to 15% in 2002 (CMH = 15.0, $p < 0.0001$). The proportion of GPs rating the trustworthiness of feedback information as very good has doubled from 11% in 2000 to 20% in 2002 (CMH = 36.3, $p < 0.0001$).

Figure 2.1 Perceived completeness of NPS prescribing and feedback information

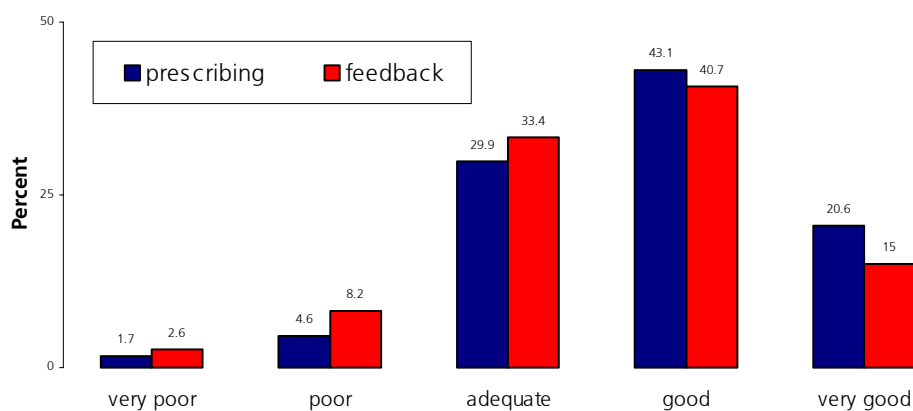
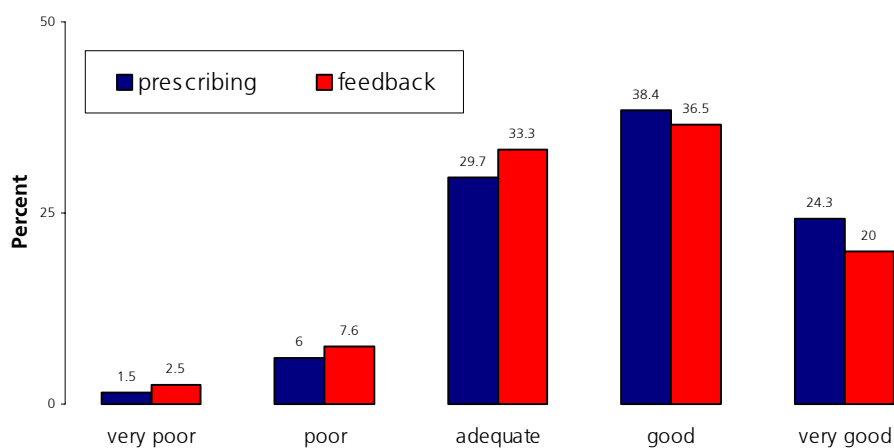


Figure 2.2 Perceived trustworthiness of NPS prescribing and feedback information



Prescribing Practice Review

GP views on Prescribing Practice Reviews (PPRs) were sought via a focus group with 11 GPs held in May 2002 as well as the national mail surveys.

- In the 3rd national mail survey of GPs, 40% of respondents rated the quality of the PPR as good with 39% rating it as adequate.
- Similarly, 41% of respondents rated the usefulness of the PPR as good and 35% as adequate.

Suggestions for improvement expressed by the focus groups included

- Refine the design and length of the PPRs
- Review the style (e.g. some participants felt that the data was a check-up or a school report that lacks positive comment if the picture is good)
- Re-visit the content (e.g. cost comparisons to be included in graphs of various drugs).

Clinical audits

GP views on the clinical audits were sought via 2 focus groups with 17 GPs held in May 2002 as well as the national mail surveys.

- In the 3rd national survey, 33% of GPs rated the quality of NPS clinical audits as adequate, 33% as good and 28% were unsure.
- 33% rated the usefulness of NPS clinical audits as adequate, 30% as good and 28% were unsure.

Significant opinions from the focus groups included

- The process of going through the audit form had the greatest effect
- Data collection phase is the best learning experience
- Changes are sustained for at least 3 months afterwards
- Expert commentary the most valuable part of report
- Practice points are also highly valued.

Case studies

GP views on the case studies were sought via 2 focus groups with 19 GPs held in May 2002 as well as the national mail surveys.

- In the 3rd national mail survey, 36% of GPs rated the quality of NPS case studies as adequate, 32% as good and 29% were unsure.
- 35% of GPs rated the usefulness of NPS case studies as adequate, 29% as good and 29% were unsure.

Significant opinions expressed by the focus groups included

- Case study scenarios are realistic and reasonable with enough intellectual challenges and motivation to identify whether GPs are following evidence based approach and clinical guidelines
- Summary results valuable
- GP and the specialist comments are valuable
- Practice points would be useful

Educational visits

- Of the GPs who rated the quality of educational visits, 48% rated them as good and 41% as adequate.
- Similarly, of the GPs who rated the usefulness of educational visits, 45% rated them as good and 39% as adequate.

Pharmacist perceptions

The quality, usefulness, trustworthiness and completeness of NPS products, services and activities were well received by pharmacists who completed the 1st national pharmacist survey (Table 2.1).

- Overall, NPS divisional activities were rated the least highly, with just over two-thirds of pharmacists rating the quality, usefulness and completeness of these activities as either good or very good.
- The majority of pharmacists felt the information they received to be independent (86%), evidence-based (91%) and appropriate to their needs (94%). They believed NPS activities support the enhancement of QUM (92%) and also help improve over-the-counter (OTC) prescribing (91%).

- Participants in NPS activities were more likely to perceive NPS information to be both evidence-based ($\chi^2_1 = 23.185$; $p < 0.0001$) and appropriate to their needs ($\chi^2_1 = 16.391$; $p < 0.0001$) in comparison to non-participants. Similarly, participants were significantly more likely to believe NPS activities support the enhancement of QUM ($\chi^2_1 = 26.551$; $p < 0.0001$) and help improve OTC prescribing ($\chi^2_1 = 27.875$; $p < 0.0001$).
- Just over two-thirds felt NPS self-audits integrated with the Quality Care Pharmacy Program (QCPP) as well as the Application of Professional Practice S2/S3 Standards. Participants were again significantly more likely to agree that NPS self-audits integrate well with both QCPP and application of S2/S3 Standards in comparison to non-participants ($\chi^2_1 = 66.388$; $p < 0.0001$ and $\chi^2_1 = 88.338$; $p < 0.0001$).

Table 2.1 Pharmacist perceptions of NPS products, services and activities (% rating good or very good)

	Quality (%)	Usefulness (%)	Trustworthiness (%)	Completeness (%)
NPS News	90.3	85.9	92.5	81.4
PPR / Pharmacy Letter	93.0	89.8	94.9	84.4
NPS divisional activities	66.1	69.4	83.8	69.7
Self-audits for Pharmacists	86.1	84.4	91.0	83.6
Case studies for Pharmacists	87.1	87.8	92.6	84.2

2.3 Prescribing interventions

Prescribing interventions for health professionals are targeted around therapeutic topics. The pioneer target was Helicobacter eradication therapy, with the first prescribing interventions being implemented in December 1998. In the four and a half years to June 2003, NPS has provided interventions on 31 topics of which four have been repeated/updated: antibiotics in primary care (4 times); COX-2 selected NSAIDs (once); managing hypertension (once); and new drugs (twice). (Table 2.2).

Activities or services related to interventions are examined below in three parts according to audience or context i.e. (Part 1) medical practitioners (especially GPs), (Part 2) Divisions of General Practice and (Part 3) pharmacists.

Part 1: Interventions for medical practitioners

GPs and other medical practitioners receive prescribing feedback via *Prescribing Practice Review* (PPR). Four core educational activities are also available: educational visiting, clinical audits, case studies, and divisional case study group discussion.

Distribution of Prescribing Practice Review

Where it is considered that prescribing feedback is likely to be beneficial for improving use of medicines, all GPs and relevant specialty groups are mailed confidential feedback on their personal prescribing behaviour for selected therapeutic topics. The *Prescribing Practice Review* (PPR) data are compiled from the HIC pharmacy claims database. Personal data are presented in comparison with other anonymous prescribers located in similar geographical areas. To date, 21 PPRs have been mailed to an average of approximately 20,000 health professionals (Table 2.3) comprised of about 80% GPs, 7% other medical practitioners and 13% other medical specialists.

Table 2.2 Therapeutic topics to end June 2003

Topic	Start date*
Helicobacter eradication therapy	December 1998
NSAIDs	February 1999
Antibiotics in primary care	April 1999
Benzodiazepines	June 1999
COPD	August 1999
Managing hypertension	October 1999
New drugs	December 1999
Medication review	January 2000
COX-2 selective NSAIDs	April 2000
Management of heart failure	April 2000
Antibiotics in primary care	June 2000
Managing depression	August 2000
DMARD	September 2000
Hormone replacement therapy	October 2000
Polypharmacy	December 2000
Management of dyspepsia	February 2001
Antibiotics in primary care	April 2001
Issues in psychogeriatrics	June 2001
Managing type 2 diabetes	August 2001
Allergic rhinitis	September 2001
Management of hypertension – an update	September 2001
COX-2 selective NSAIDs	October 2001
New drugs	December 2001
Managing dyslipidaemia	February 2002
Antibiotics in primary care	April 2002
Managing drug and alcohol problems	June 2002
Managing asthma in primary care	August 2002
Sleeping and confusion in the elderly	October 2002
New drugs	December 2002
Osteoporosis	February 2003
Antibiotics in primary care	April 2003

* Date of first intervention for therapeutic topic.

Table 2.3 Distribution of Prescribing Practice Review

	Topic	Date	GPs *	OMSs *	OMPs *	Total
1	Helicobacter eradication therapy	Dec 1998	15,636	327	-	15,963
2	NSAIDs	Mar 1999	15,633	679	-	16,312
3	Antibiotics no 1, 1999	April 1999	14,564	-	-	14,564
4	Benzodiazepines	July 1999	-	-	-	-
5	COPD	Oct 1999	14,567	224	-	14,791
6	Managing hypertension no 1	Nov 1999	15,814	1,391	-	17,205
7	Medication review	Feb 2000	-	-	-	-
8	Management of heart failure	May 2000	-	-	-	-
9	Antibiotics no 2, 2000	Aug 2000	15,791	-	2,011	17,802
10	Managing depression	Oct 2000	15,862	1,482	2,008	19,352
11	Management of dyspepsia	May 2001	15,873	1,039	1,909	18,821
12	Antibiotics no 3, 2001	July 2001	15,920	-	1,906	17,826
13	Management of hypertension no 2	Oct 2001	15,942	5,529	2,054	23,525
14	Hormone replacement therapy	Oct 2001	15,942	5,529	2,054	23,525
15	Management of type 2 diabetes	Nov 2001	15,942	5,529	2,056	23,527
16	Cox-2 selective NSAIDs no 1	Dec 2001	16,150	7,177	1,912	25,239
17	Managing dyslipidaemia	Feb 2002	16,145	5,569	1,909	23,623
18	Antibiotics no 4, 2002	May 2002	16,122	109	1,904	18,135
19	Asthma	Aug 2002	16,186	6,433	1,922	24,541
20	Smoking cessation	Oct 2002	16,417	6,179	1,904	24,500
21	Antibiotics no 5, 2003	May 2003	16,262	74	1,892	18,228
	Average distribution per mailout		15,820	3,151	1,957	19,860
	Total mailout to date		284768	47270	25441	357479

* GPs = General practitioners; OMSs = Other medical specialists; OMPs = Other medical practitioners.

Participation in core activities

- Over time there has been a consistent increase in the number of GPs participating in NPS core activities (see Table 2.4 and Figures 2.3 and 2.4).
- A total of 14,090 GPs has participated in at least one core NPS activity to date, or just over 80% of the approximately 17,500 vocationally registered GPs at a national level.
- The average number of NPS activities participated in by GPs is five (range 1 to 41).
- To end June 2003, 17,157 clinical audits have been submitted, 30,288 case studies have been completed, 21,243 educational visits have been made, and 4,807 GPs have attended division case study group discussions.

Relationship between core activities and therapeutic topics

As figure 2.5 shows

- The therapeutic topics attracting the greatest participation were antibiotics, type 2 diabetes, dyslipidaemia and asthma.
- Over 7,500, 6,500, 5,400 and 5,000 individual GPs participated in at least one activity for each of these topics respectively.
- Educational visiting was the most popular activity across the four topics, although clinical audits were preferred in the case of antibiotics.
- COPD, drug and alcohol dependence and osteoporosis had the lowest participation rates, however as the last two are more recent topics we would expect participation to increase with repetition.

- Case studies were the most popular activity undertaken by participants in these topics as it was for the topic of heart failure.
- Divisional case study group discussions were the least popular activity for most topics as well as overall, reflecting their relatively recent introduction.

Participation in core activities: details

Clinical audits for GPs

NPS has offered ten nationally coordinated GP clinical audits to date (Figure 2.6).

- There has been consistent and increasing participation in clinical audits over the 4½ years to June 2003.
- Over 17,157 NPS audit cycles have been completed
- An average of over 1,600 GPs have been involved in each audit (range 451 to 1,952).

Note: while participation appears to have declined in the last 12-month period, this is primarily because participation numbers for the period 2001/02 reflect the contribution of five clinical audits (Antibiotics 2001, Antibiotics 2002, Type 2 diabetes, Dyslipidaemia and Hypertension). In comparison participation numbers for the period 2002/03 reflect only three clinical audits (Antibiotics 2002, Antibiotics 2003 and Asthma).

- Antibiotics audits have enjoyed the highest participation, with the exception of the first audit in 1999.
- The two least popular audits were for hypertension and depression (again excluding the 1999 audit on antibiotics).
- The optional fifth step in the GP clinical audit cycle, introduced by the Royal Australian College of GPs (RACGP) in 2002, has been completed by 2,100 of participating GPs: 1,013 of the 1,757 participants in the Lipid modifying drugs clinical audit (58%); 788 of the 1,461 participants in Type 2 diabetes audit (54%); and 299 of the 1,115 participants in the Asthma audit (27%).

Case studies for health professionals

To date, NPS has offered 26 case studies for health professionals.

- A total of 30,288 of these have been completed.
- After attracting only 10 participants to the first national GP case study, NPS now averages approximately 1,500 participants each time.
- A consistent increase in participation over time is projected once delay in receipt of data is accounted for.

Table 2.4 Participation by GPs in core NPS activities (January 1999 to June 2003)

Topic	Activity ^{1,2}			
	EV	DCS	CA	CS
Antibiotics	2,979	316	6,250	4,365
Asthma	2,519	1,079	1,136	1,397
Benzodiazepines	33	3	-	321
COPD	521	43	-	687
Depression	2,939	210	1,001	1,718
Drug and alcohol dependence	-	4	-	1,086
Dyslipidaemia	2,824	689	1,763	1,475
Dyspepsia	-	6	-	1,260
H. pylori eradication therapy	-	8	-	10
Heart failure	994	101	69	1,658
Hormone replacement therapy	2,183	727	13	1,880
Hypertension	2,534	190	2,836	280
Medication review	7	44	43	1,410
New drugs	-	28	-	3,294
NSAIDs (inc. COX-2s)	-	65	107	1,529
Osteoporosis	-	-	-	1,538
Pain management	37	-	-	936
Polypharmacy	-	26	-	1,248
Psychogeriatrics	-	-	-	1,229
Sleep disorders	-	21	-	1,366
Type II diabetes	3,898	1,343	1,460	1,662

1. EV = Educational visiting; DCS = Division case study group discussions; CA= Clinical audits; CS = Case study
2. - = not applicable

Figure 2.3 Total GP participation in core NPS activities to end June 2003

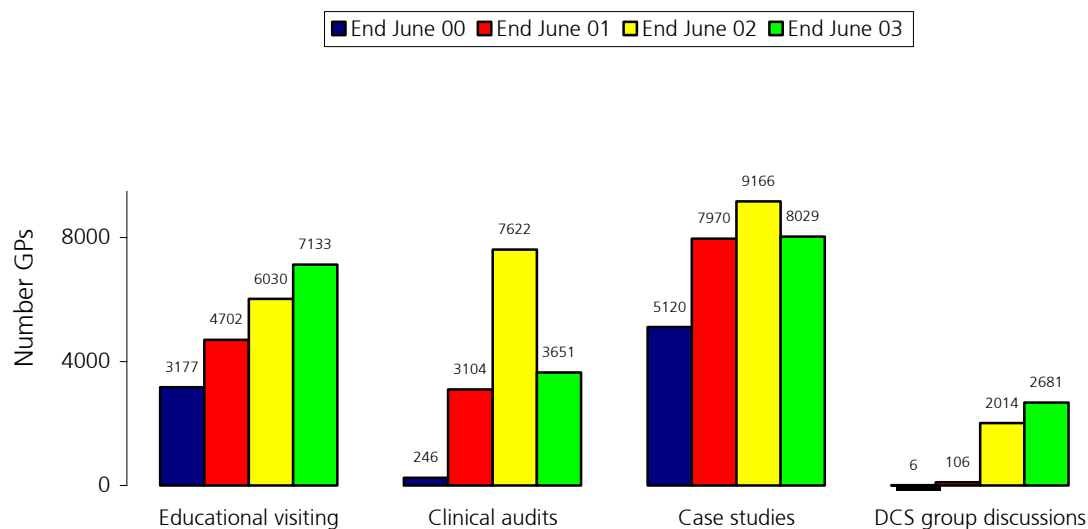


Figure 2.4 Number of individual GPs who have participated in at least one core activity by financial year (to June 2003)

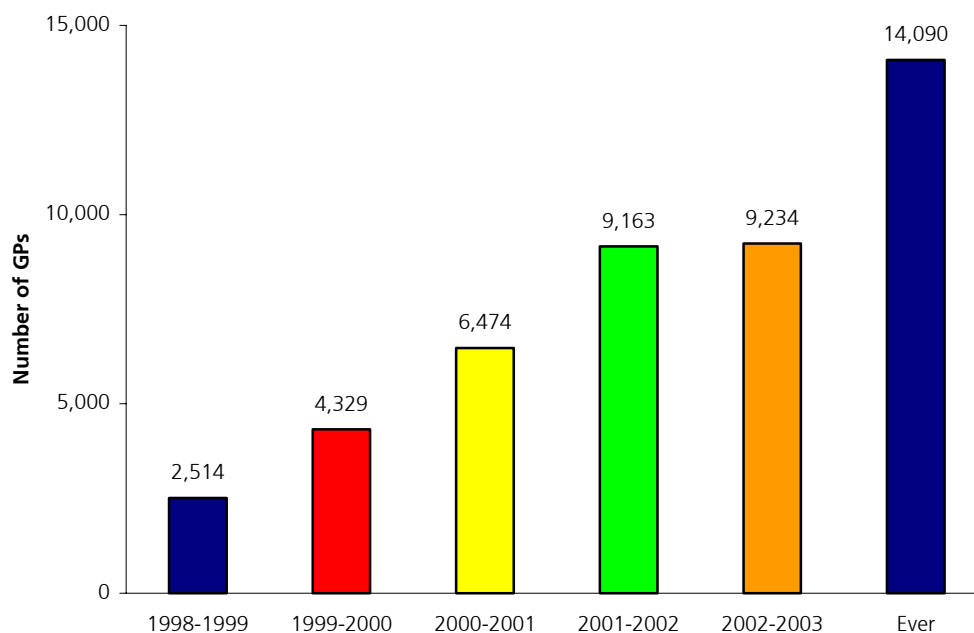


Figure 2.5 Number of individual GPs who have participated in at least one activity by therapeutic topic to June 2003

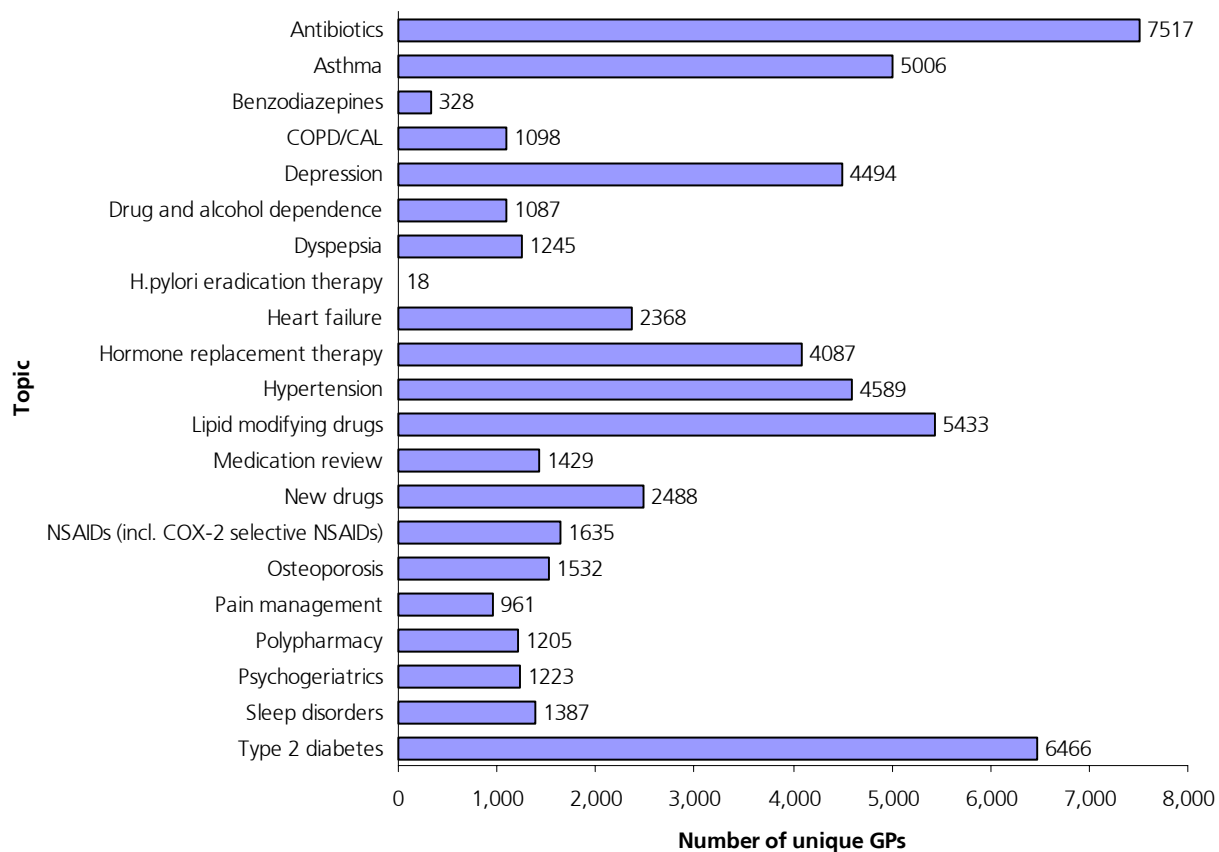
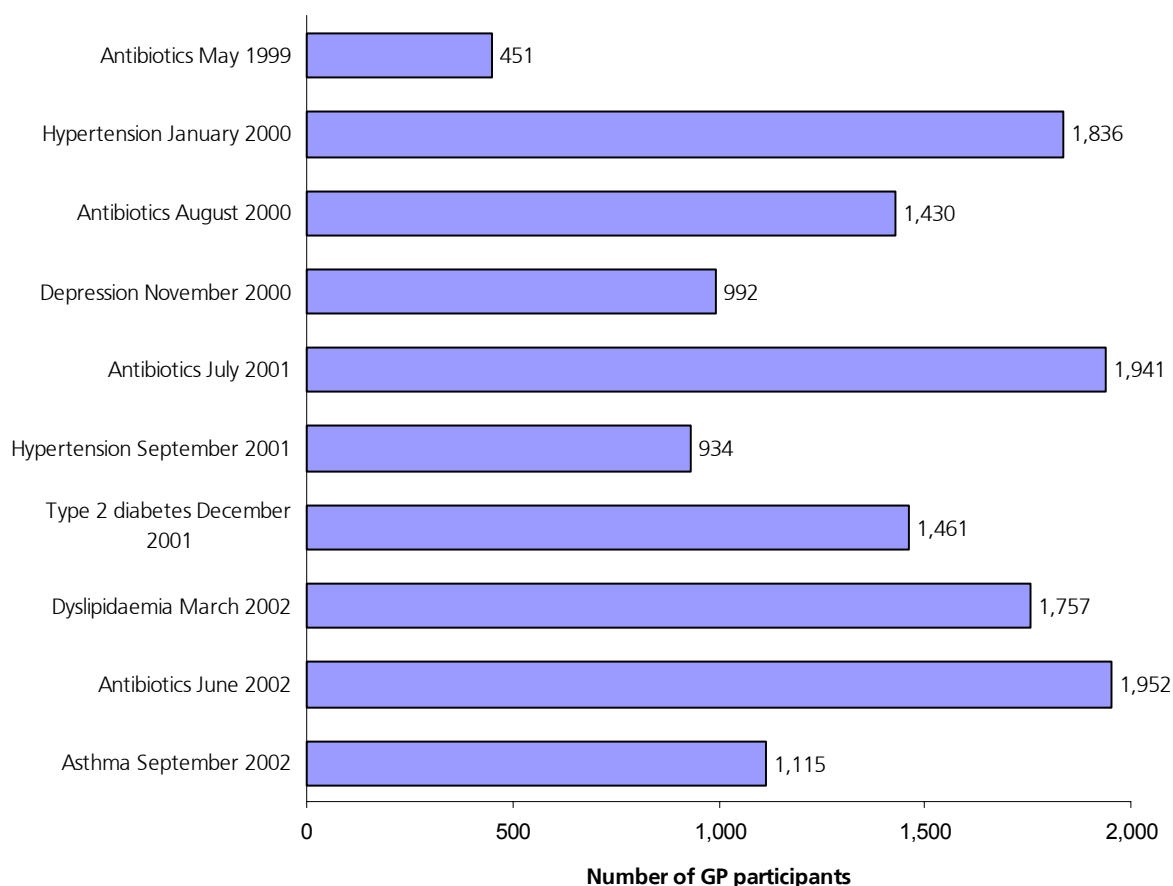


Figure 2.6 Total GP participation in clinical audits to end June 2003

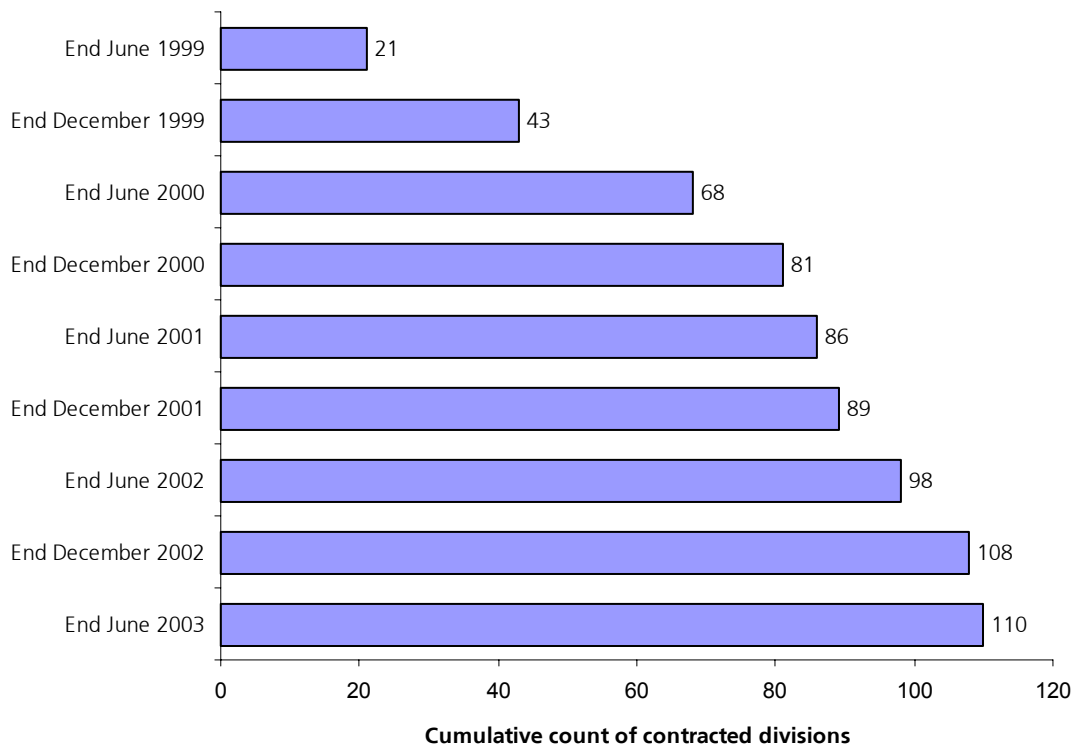


Part 2: Support for local delivery of national QUM messages

NPS supports the delivery of QUM messages through Divisions of General Practice. At the end of June 2003 –

- NPS had contracts with 110 of the 120 Divisions of General Practice throughout Australia (92%) (Figure 2.7).
- Over 130 facilitators and educational visitors are employed by these divisions.
- The facilitators and educational visitors are employed an average of 18 hours per week (range 4 to 38) to deliver NPS key messages at a local level.
- The majority of facilitators have undergraduate university qualifications (74%), with the greatest proportion having pharmacy qualifications (44%) followed by nursing (21%) and medicine (10%).

Figure 2.7 Total divisions contracted to NPS – cumulative six monthly count (to end June 2003)



Locally coordinated activities for general practitioners through NPS contracted divisions

- Just over 21,000 educational visits have been undertaken by NPS facilitators to date.
- Division-held small group discussions of nationally developed case studies continue to grow in popularity (Figure 2.7).
- A total of 4,807 GPs have attended division case study group discussions to date, an increase from six participants in the period to end June 2000, to 106 and 2,014 participants in the following two-year periods respectively.
- Data to end June 2003 indicates that this participation in division-held small group discussions has continued to increase to 2,681 GPs. It is likely that this figure will increase even more with receipt of more data from facilitators.
- GP participation in nationally and locally developed clinical audits run at the local level remains relatively low, with participation ranging from less than 10 to just over 100 GPs on each occasion they are offered.

Divisional participation by GPs across a range of activities and topics

Decisions about which NPS therapeutic topic is covered and the type of activity offered are made at a divisional level. Divisional participation by activity type and therapeutic topic is detailed in Figures 2.7 to 2.11.

- Figure 2.7 highlights the extent of participation in a non-core activity, namely continuing medical education. This activity generally uses NPS therapeutic topics, and has involved at least 52 Divisions to date.
- Figures 2.7 and 2.8 indicate that at the divisional level the most popular activities are educational visits and continuing medical education; that the least popular are clinical audits; and that the relative degree of popularity has remained much the same over the 4½ years to June 2003.
- Figures 2.9 to 2.11 indicate that at the divisional level, the most popular topics in terms of participation numbers are antibiotics and type 2 diabetes; and that the least popular are COPD and asthma (asthma is a more recent topic and we would expect more participation to occur as it is repeated)

Figure 2.7 Division participation by activity type (4 years to end June 2003) – for locally coordinated activities

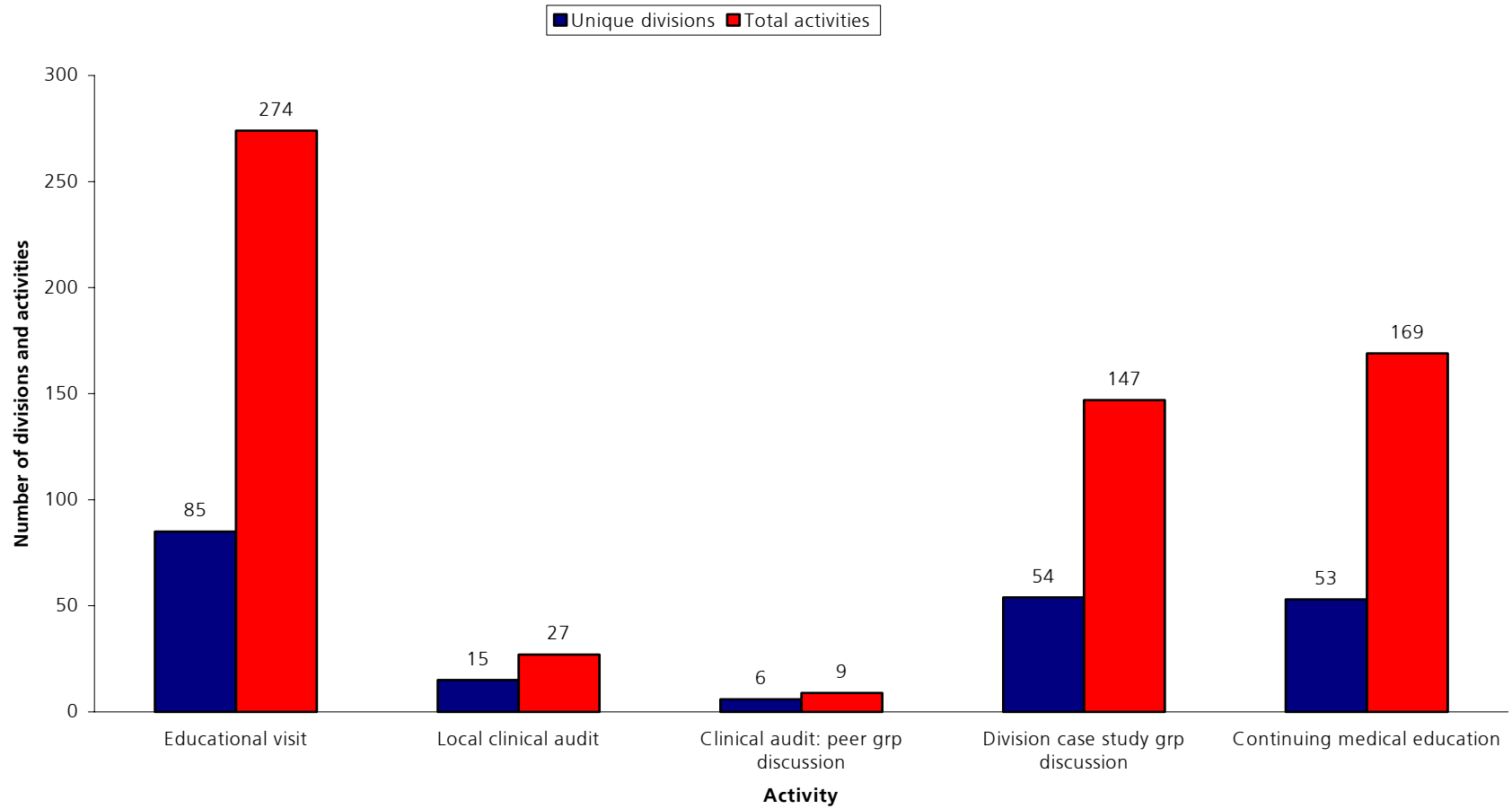


Figure 2.8 Unique division participation by activity type and financial year (4 years to end June 2003) – for locally coordinated activities

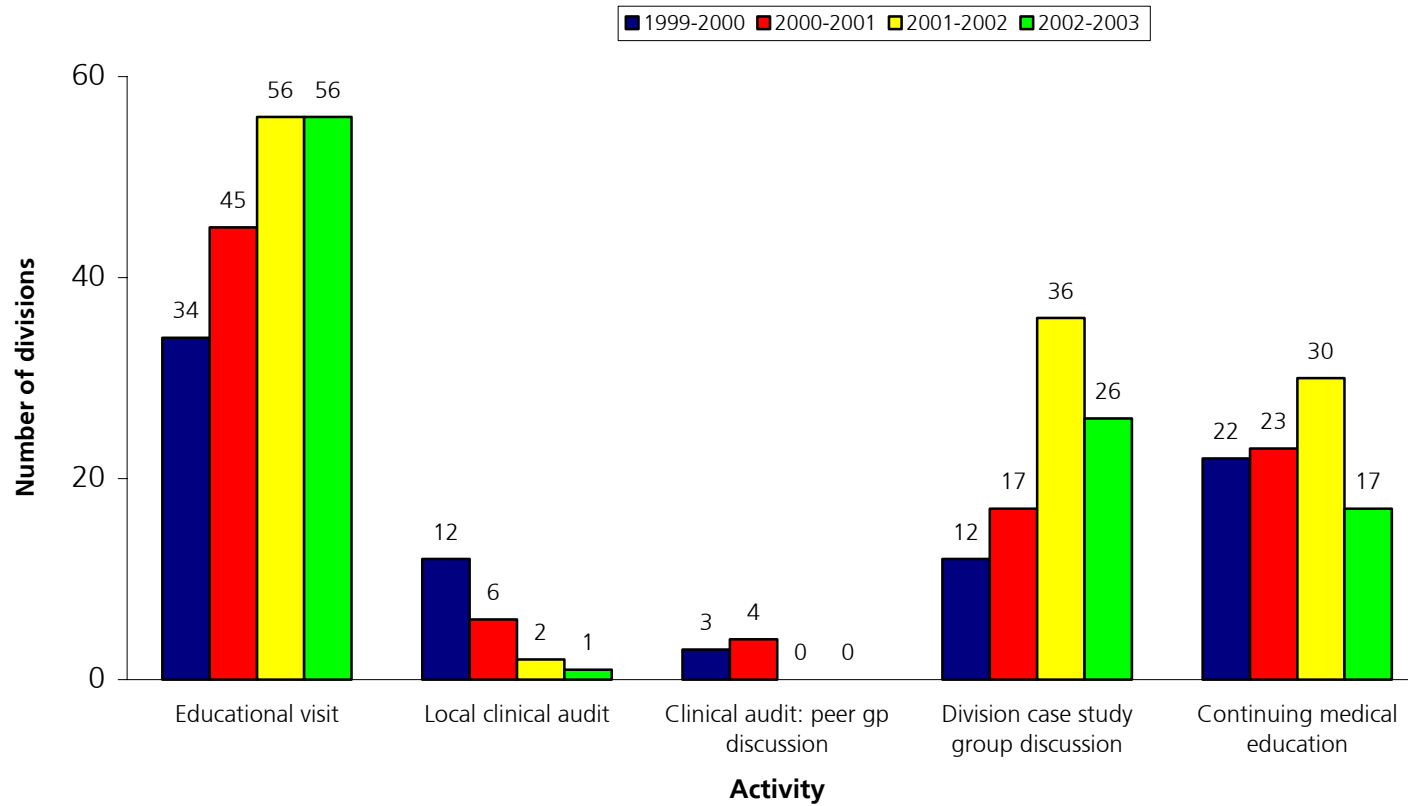


Figure 2.9 Division participation by therapeutic topic (4 years to end June 2003) – for locally coordinated activities

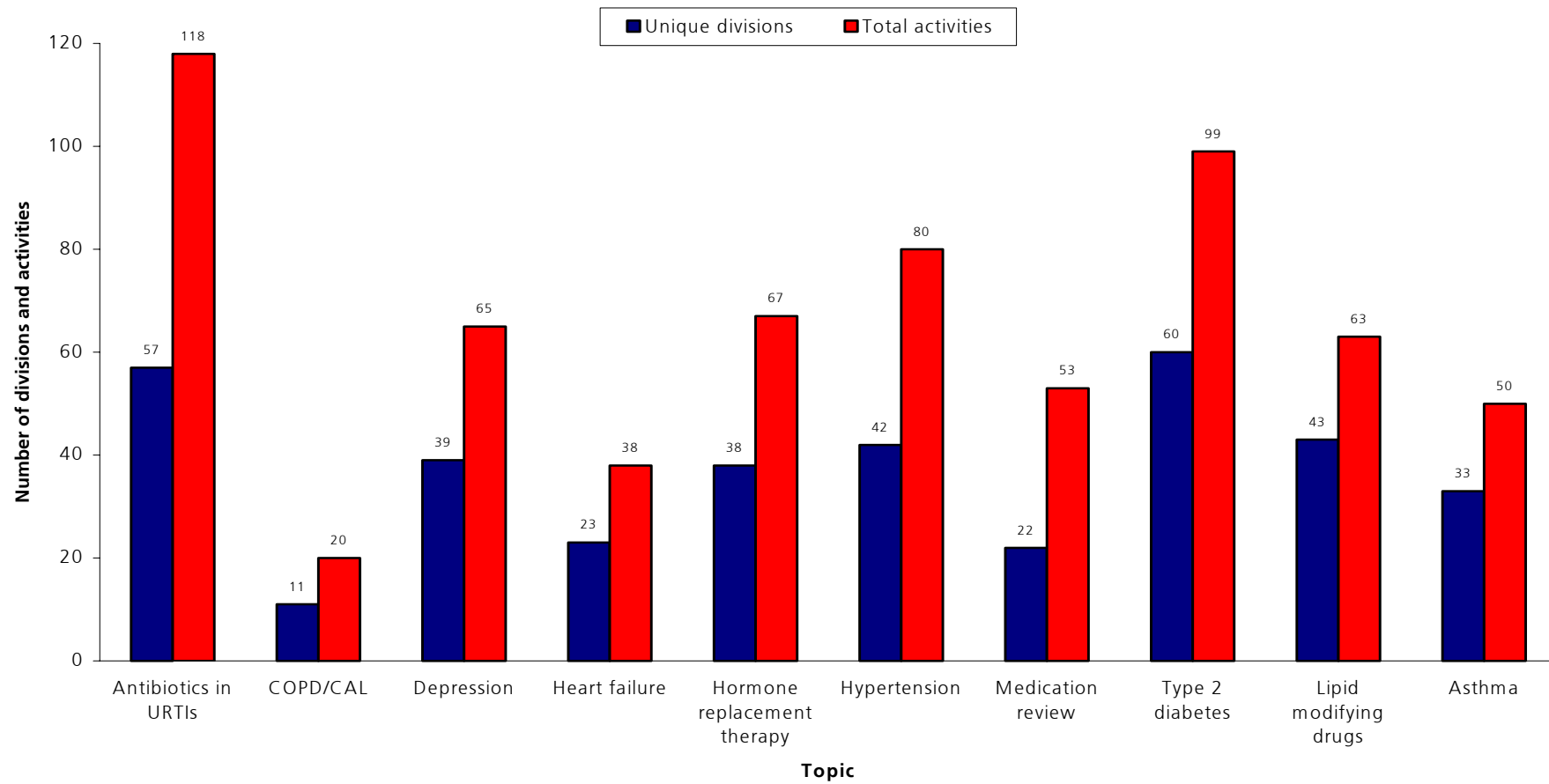


Figure 2.10 Unique division participation by therapeutic topic and financial year (4 years to end June 2003) for locally coordinated activities

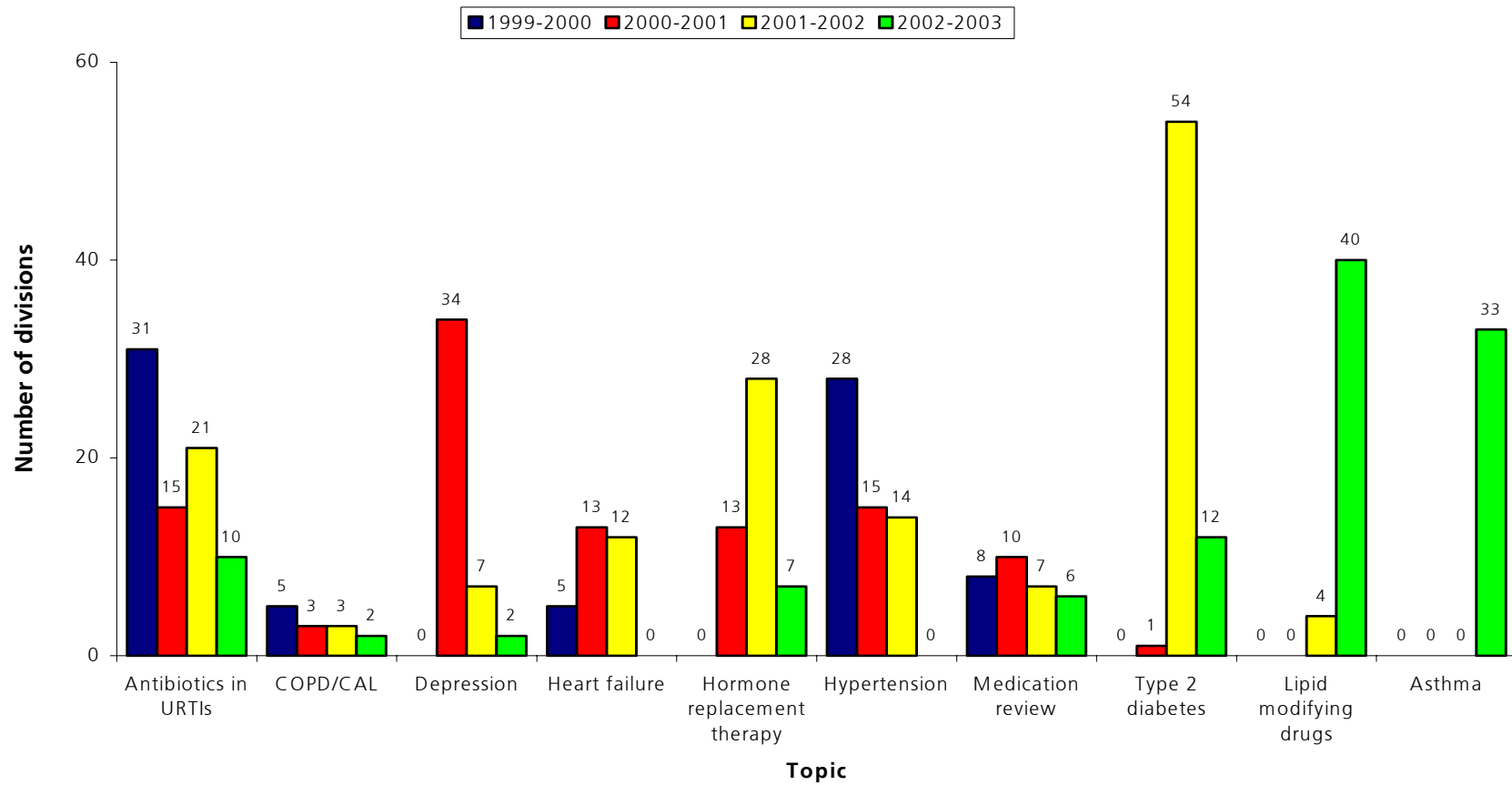
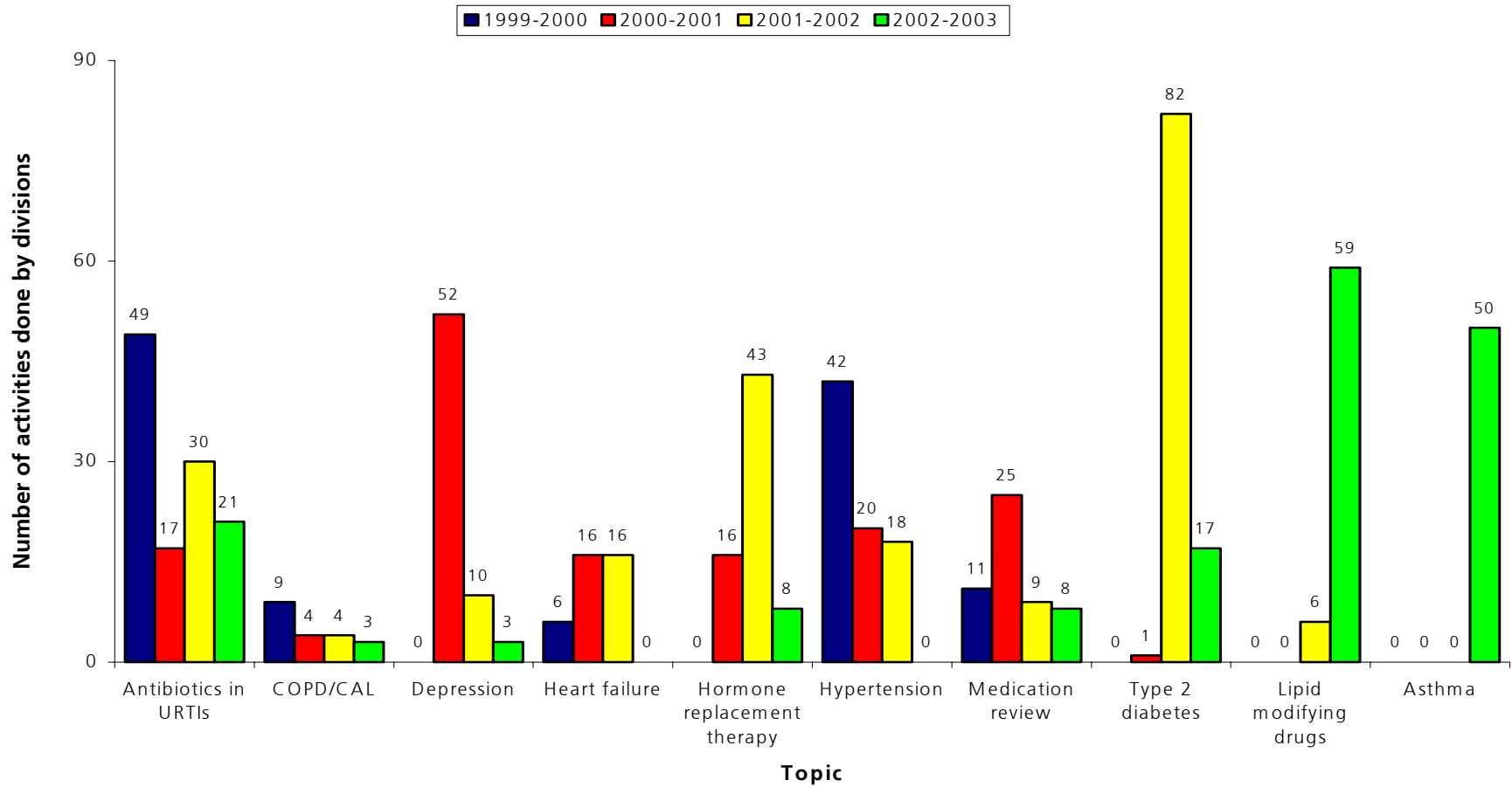


Figure 2.11 Total division participation by therapeutic topic and financial year (4 years to end June 2003) for locally coordinated activities



Part 3: Pharmacist interventions

To end June 2003, pharmacists have been offered five self-audits and seven case studies.

- Participation continues to increase steadily. (Tables 2.5 and 2.6 and Figure 2.12 and 2.13).
- A total of 1,186 pharmacists have participated in at least one activity to date, close to 10% of the approximately 12,500 community pharmacists at a national level (Figure 2.14).

Table 2.5 Total pharmacist participation in self-audits to end June 2003

Topic	Total participation
NSAIDs	144
Allergic rhinitis	264
Antibiotics	255
Drug and alcohol dependence	116
Osteoporosis	328

Table 2.6 Total pharmacist participation in case studies to end June 2003

Topic	Total participation
Hypertension	15
Antibiotics	58
Dyspepsia	61
NSAIDs	171
Lipid modifying drugs	101
Asthma	190
Osteoporosis	286

Figure 2.12 Total pharmacist participation in pharmacist activities to end June 2003

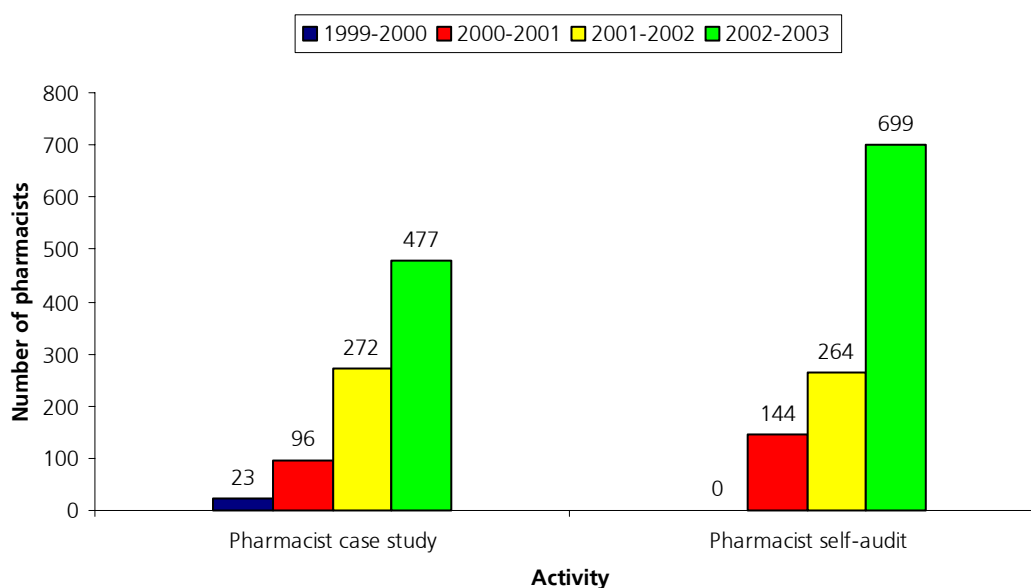


Figure 2.13 Pharmacist participation in pharmacist case studies and self-audits by topic (4 years to end June 2003)

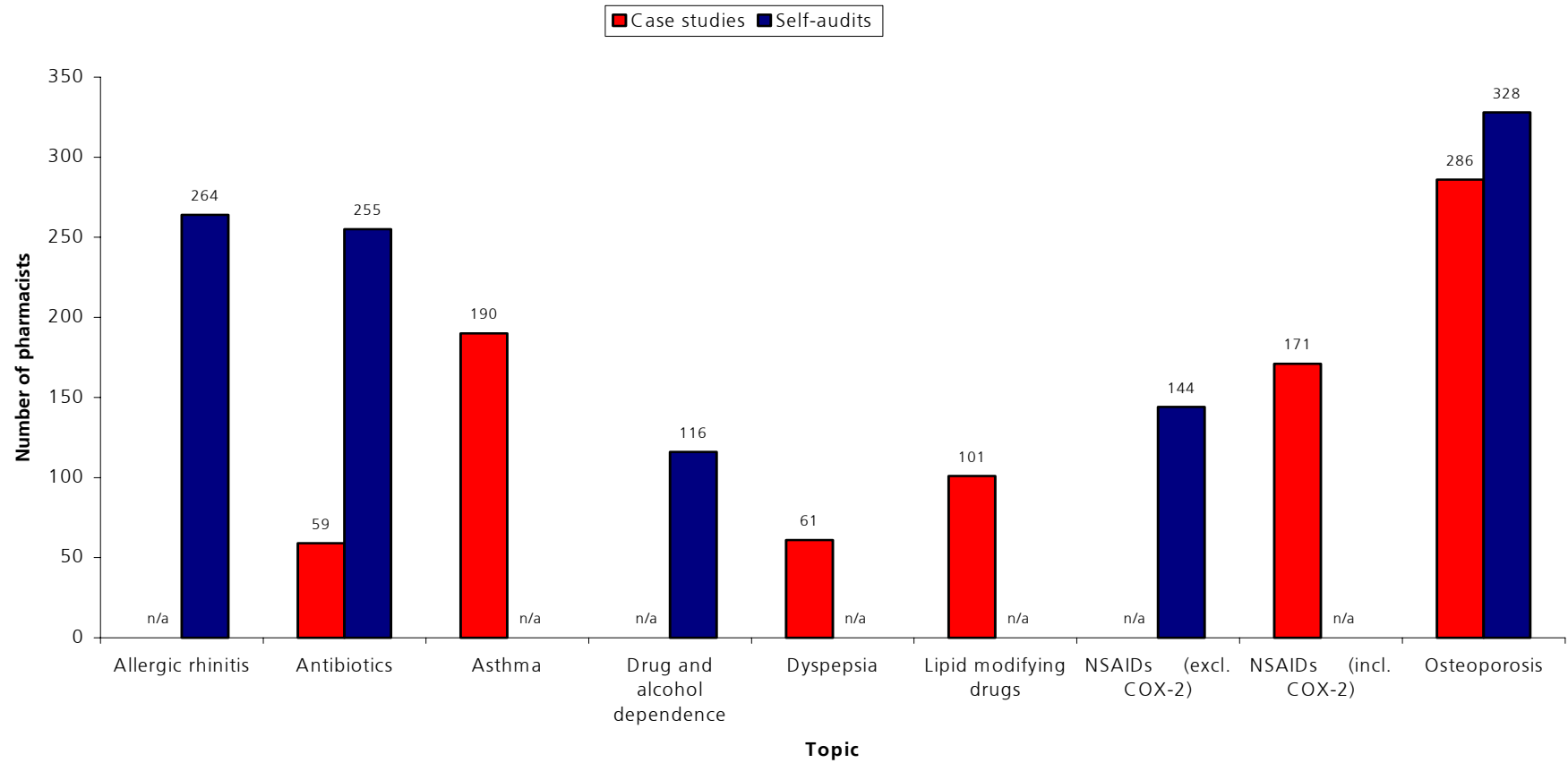
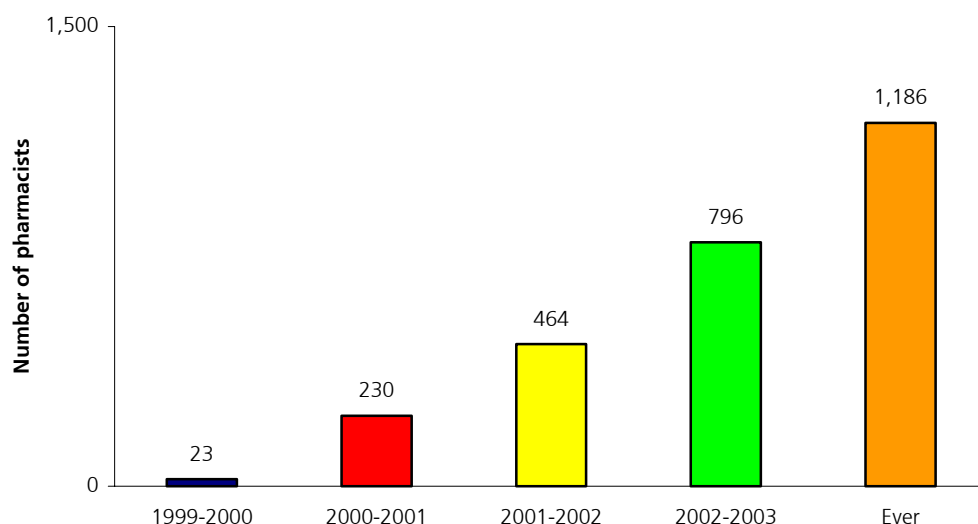


Figure 2.14 Number of individual pharmacists who have participated in at least one activity by financial year (to June 2003)



2.4 Medical student national prescribing curriculum

Reach

The structure of the web-enabled, interactive curriculum for medical students is complete and available to all Australian medical schools.

- All 12 problem based web-interactive modules are available online via <http://nps.unisa.edu.au> by medical schools.
- Visitor access is also available.
- Currently, nine of the eleven universities in Australia use the curriculum in some form.
- A total of 1,600 users have been registered with the site, with a total of 460,000 hits to date (Figures 2.15 and 2.16).

Awareness, attitudes, knowledge and behaviour

Two years since the medical student curriculum was first offered, NPS is currently undertaking a survey of medical schools to examine the delivery of the curriculum to understand its use and sustainability. Simultaneously we are surveying medical students to understand general use and satisfaction. Results from these surveys will be presented in the next evaluation report.

Figure 2.15 Number of users of national prescribing curriculum by university

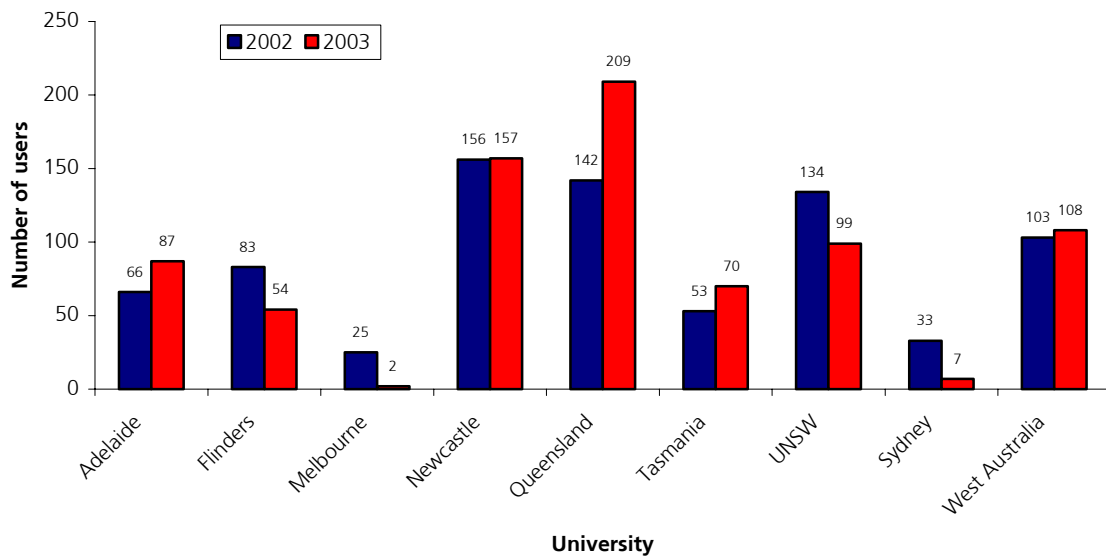
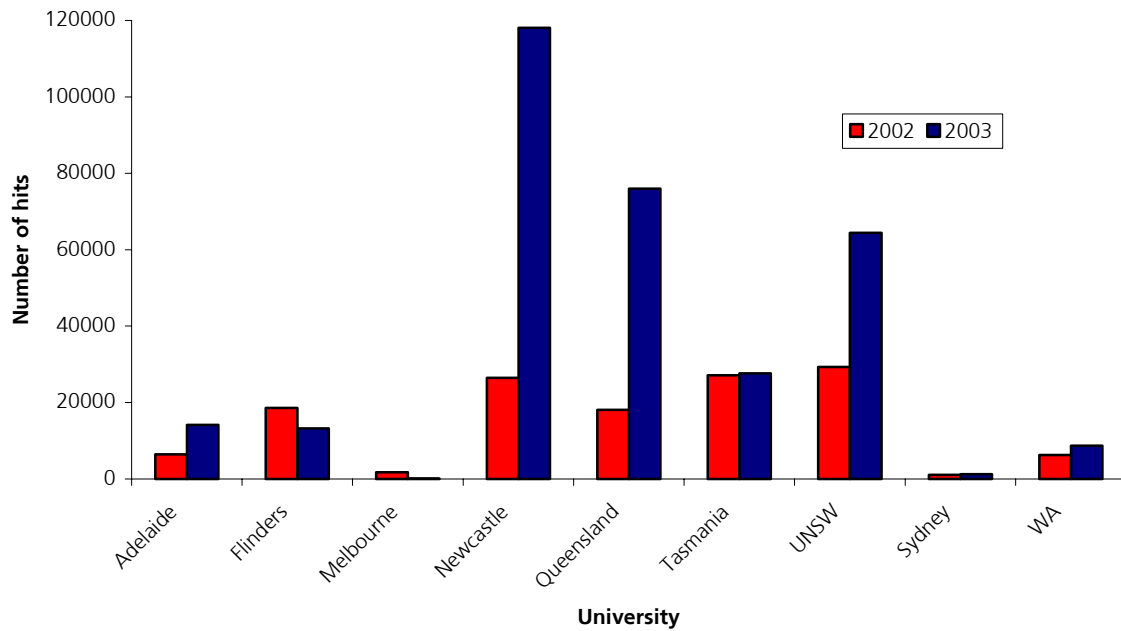


Figure 2.16 Number of hits by university



2.5 Independent information: *Australian Prescriber*

Awareness and reach

Australian Prescriber (AP) continues to provide independent and evidence-based information on drugs and therapeutics. AP is published every two months and is distributed to approximately 45,000 Australian health professionals. Its readers are mainly medical practitioners and pharmacists but it is also used by dentists and other health professionals, and by several universities for teaching undergraduates.

Of the GPs, specialists, pharmacists and dentists who responded to a national readership survey -

- An impressive 97% claimed to receive their own paper copy
- Readers said they glanced at or read 5.6 of the six issues each year, on average, and spend 18.8 minutes reading each issue.

Perceived value and quality

Of the respondents to the national readership survey

- 87% agreed that *Australian Prescriber* provides guidance for appropriate prescribing,
- A further 60% agreed that their prescribing/ recommendation has been influenced by issues raised in *Australian Prescriber*.
- Some respondents also made helpful comments about the appearance and style of the journal e.g. 16% indicated that they don't like the look of the cover; 12% agreed that the absence of illustrations and colour made them less likely to read it; and 23% suggested that the journal is sometimes too academic/not 'real world' in its treatment approach.

Information about the value and quality of *Australian Prescriber* was also obtained from participants in focus groups, and from in-depth interviews. These confirmed that health professionals have a mainly favourable impression of the publication, considering it to be -

- clear/brief, easy to read, with a good layout; independent/has no advertising/is credible; and relevant/topical/the content is good

Readers are also happy with the current frequency of AP, with 88% requesting that it remain as it is and 10% that it increase. The segments or topics most likely to be read are

- Case studies/drug interactions/cautions (38%)
- New drugs (36%)
- Information on drug classes/groupings and comparisons (24%).

The dominating strengths of *Australian Prescriber*'s image, top-of-mind (unprompted) are:

- brief/concise/quick to read; independent/unbiased; up-to-date/current/topical; and new drug information/drug interaction.

Online access

Most readers (74%) are unaware that *Australian Prescriber* is also available on the Internet, free of charge. However, given a choice of format, 93% express a preference for paper. Among those who do use the web edition, and who completed an online survey -

- 62% claimed they were always able to find the information they were seeking.
- A further 73% considered the web site to be a useful resource for the provision of independent information about drugs and therapeutics.
- 87% considered the web site provided useful information to assist them when making decisions about medicines.

2.6 Independent information: *NPS News*

Awareness and reach

NPS News is mailed every two months to approximately 18,000 GPs, 12,000 Pharmacists and 29,000 Other Medical Practitioners (OMPs) Australia wide. To date, 29 issues of *NPS News* have been distributed.

Of the GPs, specialists, pharmacists and dentists who responded to the national readership survey, most (94%) claimed to receive their own copy. In addition -

- Readers read an average of 5.5 of the six issues each year.
- Only 2% (GPs) do not glance at or read any issues of *NPS News*.

Participants in focus groups and in-depth interviews reported quite high readership, and a mainly favourable impression among health professionals. The main positives included:

- Relevant/good topics/useful; and brief/concise/easy to read

Perceived value and quality

The national readership survey showed that

- 84 % of readers like the current frequency of publication of *NPS News* (11 % favour an increase and 5% a decrease)
- Despite its brevity, readers spend about as long reading each issue as they do reading *Australian Prescriber*: 16.2 minutes on average for *NPS News* versus 18.8 for *Australian Prescriber*.
- 74% of respondents agreed that *NPS News* helps them to make therapeutic choices.
- A further 66% agree that their prescribing/recommendation have been influenced by the issues raised in *NPS News*.
- Only 9% of readers report *NPS News* is too dry and didactic - needs a lighter tone; and only 11% that *NPS News* is somewhat theoretical - not sufficiently 'real world' or practical in its approach.
- In addition: the 3rd national survey of GPs showed that
- 45% of the responding GPs rated the quality of *NPS News* as adequate while 38% rating it good.
- A further 41% rated the usefulness of *NPS News* as adequate and 39% as good.

Focus-group discussions showed that the strongest top-of-mind impressions of *NPS News* in order of popularity are

- brief/concise/quick to read (40%)
- relevant/practical (28%) and, in the case of GPs, aimed at GP level;
- up-to-date/topical/current/brings me up-to-date with trends (24%)
- independent/unbiased/objective (15%).

Online access

Only 14% of respondents to the national survey were aware that *NPS News* is available on the Internet free of charge. Knowing this makes little difference, however, since 73% prefer to receive it in paper format, 11% would prefer electronic delivery (via email), and 14% would find it useful to receive both.

2.7 Therapeutic advice and information service

Awareness

Results from the 2nd and 3rd national surveys of GPs indicate that awareness amongst GPs of NPS Therapeutic Advice and Information Service (TAIS) has increased in the two-year period between April 2000 and April 2002 from 21% to 30%. By comparison, 47% of pharmacists who responded to the 1st national survey of pharmacists were aware of TAIS.

Usage

Of the GPs aware of TAIS in the 3rd national survey of GPs

- 3% indicated that they use the service frequently.
- 37% reported using it sometimes.
- 60% reported never using this service.

Of the pharmacists aware of TAIS

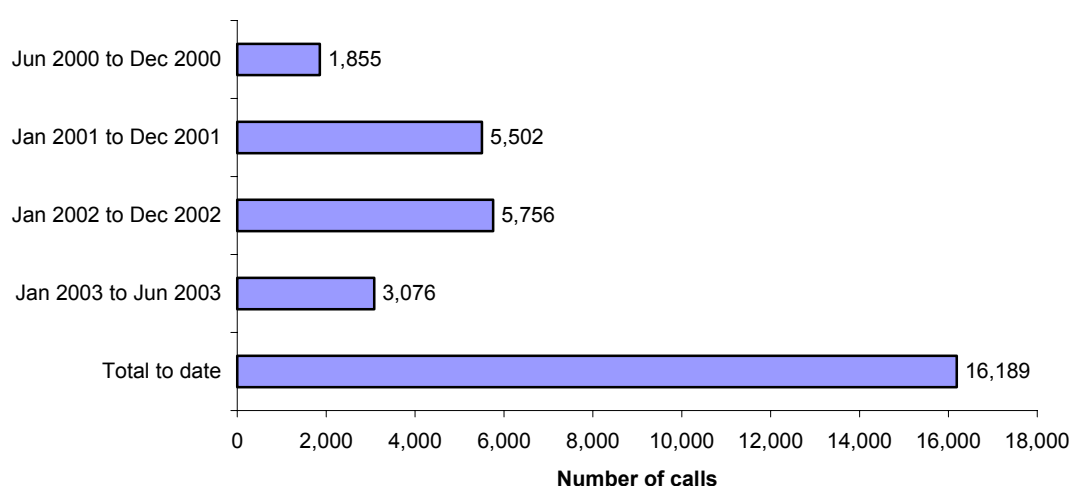
- 5% indicated that they used the service frequently.
- 42% indicated that they used it sometimes.
- 53% indicated they never used this service.

Enquiries handled

As figure 2.17 shows, in the three-years to end June 2003 –

- TAIS has received over 16,000 calls
- Over 80% of the calls have been from GPs and pharmacists.
- The majority of these calls involved queries regarding drug interactions (23%), adverse drug reactions (22%) and therapeutic strategies (11%).

Figure 2.17 Number of enquiries received by TAIS (to end June 2003)



Perceived value and quality

An evaluation of TAIS is planned for mid 2004 with a view to understanding the use of the service and satisfaction with it. Results will be presented in the next evaluation report.

2.8 Influencing health professional knowledge

General practitioners

In terms of GPs' knowledge of quality use of prescribing, the results from the three national surveys of GPs in 1999, 2000 and 2002 are encouraging.

Non-steroidal Anti-inflammatory Drugs (NSAIDs)

In the 1st national survey, GPs were asked to consider which of a group of drugs had the lowest risk for gastrointestinal bleeding. The drugs from which they could choose were diclofenac, piroxicam, ibuprofen, sulindac or 'other NSAID'. GPs were asked to choose only one product (the correct response was either diclofenac or ibuprofen).

- The majority of GPs (72.1%, 945) made a correct response i.e. they chose diclofenac or ibuprofen
- 11.4% (149) chose 'other NSAID'.
- Of the GPs who chose 'Other NSAID' 63.8% (95) reported the new drug Celebrex as having the lowest risk for gastrointestinal bleeding.
- 45.1% (583) reported that diclofenac was the last NSAID for which they wrote a prescription.
- More GPs in the intervention group prescribed diclofenac than GPs from the control group (47.3% versus 41.4% respectively).

Hypertension

The 1st national survey of GPs asked respondents to consider which agents were proven (ie evidence based) to reduce mortality when used in patients with uncomplicated hypertension. The GPs had a choice of five agents: ACE inhibitors, thiazide diuretics, calcium channel blockers, beta-blockers and nitrates. The correct responses were thiazide diuretics and beta-blockers used concurrently. Interestingly –

- 10.4% (136) identified thiazide diuretics and beta-blockers (the correct response).
- 57.5% (753) identified thiazide diuretics alone
- 78.0% (1022) identified beta blockers alone.
- A majority incorrectly identified ACE inhibitors as proven agents

This question was repeated in the 2nd survey of GPs. This time around –

- Slightly more GPs (12% 108) identified thiazide diuretics and beta-blockers (the correct response)
- Slightly fewer GPs (47% 439) identified thiazide diuretics alone
- Slightly fewer GPs (69% 641) identified beta blockers alone
- A majority of GPs continued incorrectly to identify ACE inhibitors as proven agents.

Chronic obstructive pulmonary disease (COPD)

In the 1st national survey GPs were asked about the management options they considered to be proven (i.e. evidence based) to improve chronic symptoms in patients with COPD. GPs had a choice of seven management options. The correct responses were smoking cessation, regular corticosteroid inhaler use, intermittent oral corticosteroid, beta agonists, and anticholinergic agents.

- Only 1.9% of (25) GPs in the sample answered this question correctly by selecting all options listed above
- The majority of GPs knew that smoking cessation (93.4%) and anticholinergic agents (78.2%) were proven management options

- Only a small proportion knew that regular corticosteroid inhaler use (45.5%), intermittent oral corticosteroids (27.1%) and beta agonists (44.6%) were also proven management options.

Antibiotics in primary care

The 2nd national survey of GPs asked respondents to record the medicine he/she prescribed for a patient who presented with acute sinusitis.

- The majority (33%, 297) recorded amoxicillin
- 18.5% (165) recorded amoxicillin/clavulanic acid
- 13% (116) recorded roxithromycin.
- Respondents were also asked to record what antibiotic they would prescribe as their first choice for a patient presenting for the first time with acute sinusitis (assuming that the patient had no allergies or intolerance).
- amoxicillin (44%) was the antibiotic most GPs would prescribe followed by
- amoxicillin/clavulanic acid (19%)
- roxithromycin (15%).

In the 3rd national survey of GPs

- 59% of respondents correctly indicated that they would use amoxicillin as first line therapy for sinusitis followed by
- amoxicillin / clavulanic acid (19 %)
- roxithromycin (10%).

GP characteristics as factors in antibiotic prescribing

While there was no statistical association between type of antibiotic prescribed for a patient presenting for the first time with acute sinusitis, and the gender and RRMA of the prescriber, there was a statistically significant difference between the age of the GP and the type of antibiotic ($\chi^2_2 = 25.18$, $p=.014$):

- More GPs aged ≥ 66 years would prescribe roxithromycin (20%) compared to GPs aged ≤ 40 years (12%) and GPs aged between 41-65 (8%).
- GPs aged ≤ 40 and between 41-65 years would prescribe amoxicillin (60% and 60% respectively) more frequently than GPs aged ≥ 66 years (47%).

Hormone replacement therapy (HRT)

Results from the 3rd national survey of GPs show that only 36% of GPs correctly knew that Hormone Replacement Therapy had been shown in a randomised controlled trial (RCT) to increase the early risk of cardiac events in women with pre-existing cardiac disease.

GP characteristics as factors in HRT prescribing

While there was no significant difference between age of GP and knowledge of whether HRT increased the early risk of cardiac events in women with pre-existing cardiac disease, there was a significant difference between the gender of the GP and this knowledge ($\chi^2_2 = 48.85$, $p=0.000$), with 51% of female GPs recording the correct response compared to only 28% of male GPs.

COX-2 selective NSAIDs

Results from the 3rd national survey of GPs show that nearly all GPs (93%) were aware that COX-2 selective NSAIDs are no more effective for symptom relief in osteoarthritis than traditional NSAIDs.

GP characteristics as factors in COX-2 selective NSAID prescribing

While gender made no difference to prescriber awareness about the effectiveness of these medicines, there was a slightly significant difference based on their age:

- 99% of GPs aged 41-65 years were aware that COX-2 selective NSAIDs are no more effective for symptom relief in osteoarthritis than traditional NSAIDs compared to
- 93% of GPs aged ≤ 40 years
- 85% of GPs aged ≥ 66 years ($\chi^2_2 = 13.33$, $p=0.010$).

Pharmacists

In terms of pharmacists' knowledge of quality use of prescription and OTC medicines, the results from the 1st national survey of pharmacists are encouraging.

COX-2 selective NSAIDs

The vast majority of respondents (93%) correctly knew that 'all clinical trials to date have shown COX-2 selective NSAIDs are no more effective in terms of symptom relief in osteoarthritis than traditional NSAIDs'.

Pharmacist characteristics as factors in COX-2 selective NSAID prescribing

Ability to answer the above question correctly varied significantly by the age group of the pharmacist ($\chi^2_4 = 20.721$; $p=0.008$). Pharmacists least likely to answer this question correctly were in both the youngest and oldest age ranges (88% for the range 22 to 30 years; and 84% for those greater than 61 years).

Hypertension

Just over four fifths of respondents (82%) correctly knew that 'low dose thiazides are effective for the treatment of hypertension'. Significantly more participants answered this question correctly (84%) compared to non-participants (78%) ($\chi^2_1 = 7.636$; $p=0.022$).

Type 2 diabetes

Only 20% of respondents correctly identified all three factors (renal impairment, doses > 2 g/day and hepatic or cardiac impairment) that 'increase the risk of lactic acidosis, a rare but serious adverse effect of metformin' without also indicating either of the other two incorrect responses (obesity and concomitant digoxin therapy). Ability to identify all three correct responses without endorsing either of the two incorrect responses was not effected by any of the potential explanatory variables investigated.

Allergic rhinitis

Asked to identify the 'most appropriate first-line therapy to recommend for allergic rhinitis':

- Only one third of respondents (33%) answered correctly (intra-nasal corticosteroid)
- Close to one half of respondents (40.8%) incorrectly recommended non-sedating oral antihistamine
- A further 26% incorrectly recommended intra-nasal corticosteroid and oral antihistamine (used concurrently).
- Encouragingly, only a few pharmacists (1.0%) recommended a sedating oral antihistamine.
- Significantly more participants answered this question correctly (36.3%) compared to non-participants (26%) ($\chi^2_1 = 16.183$; $p<0.0001$).

Dyspepsia

Just under one half of respondents (47%) correctly knew that 'the most appropriate approach for managing a patient with uninvestigated dyspepsia and no other risk factors for serious gastrointestinal disease' was a trial of an H2 antagonist. Significantly more participants answered this questions correctly (52%) compared to non-participants (37%) ($\chi^2_1 = 15.371$; $p=0.002$).

2.9 Influencing health professional behaviour

NPS Program Evaluation is in the early stages of developing an evaluation of NPS programs for their impact on health professional behaviour. The results from this comprehensive evaluation will be detailed in the next evaluation report.

Chapter 3: Services for consumers

3.1 Key findings

Appropriate use of antibiotics for Upper Respiratory Tract Infections (URTIs)

- Awareness of the *common colds need common sense* campaign amongst consumers is modest but increasing: 7% awareness nationally in 2001 rising to 17% in 2002.
- Awareness of the *common colds need common sense* campaign is high among health professionals, just under 80% of GPs and close to 95% of pharmacists.
- The total dollar value of the coverage received in the media resulting from editorial, advertising and community service announcements as part of the 2002 campaign was \$1,629,514, roughly four times greater than the outlay costs.
- An increasing proportion of the community endorse symptomatic management of cold or flu symptoms over antibiotics (is this relevant to the small grants program or some other thing?)

124 small grants were provided as part of the 2002 campaign. Highlights:

- Close to 6,000 participants
- Nearly 100% of individuals who received grants indicated that they would either definitely or probably participate in this program again.

Medicines Line

During the first twelve-months of operation, staff of Medicines Line received just under 10,000 calls.

3.2 Appropriate use of antibiotics for URTIs

***Common colds need common sense* campaign**

NPS *common colds need common sense* consumer national awareness campaign was again implemented in the winter months June to August 2002. It is also the first targeted consumer campaign undertaken by NPS.

The campaign is one component of NPS antibiotic program, which also includes components for GP/health professionals. The aim of the antibiotic program is to reduce the inappropriate use of antibiotics for viral respiratory tract infections and ultimately reduce antibiotic resistance. Specific goals are improving GP antibiotic selection for URTIs when a decision to prescribe antibiotics is made; encouraging GPs to educate their patients about appropriate use of antibiotics; and raising awareness among consumers about the appropriate management of URTIs. *Common colds need common sense campaign* is the only consumer campaign in Australia, and the only national campaign worldwide, with this goal.

Strategic framework of the campaign

The objectives of the campaign were to:

- inform consumers about symptomatic management of coughs and colds
- inform consumers that antibiotics do not help viral illnesses such as coughs, colds and flu
- encourage consumers to manage URTIs using symptomatic management i.e. without using antibiotics for viral based URTIs
- encourage GPs and pharmacists to give consumers information to support best practice.

Key messages for the 2002 campaign were:

- Antibiotics won't help a common cold. Common sense will.
- Common colds need common sense; drink plenty of fluids, take it easy, treat the symptoms.
- You won't get better more quickly by taking antibiotics for a common cold.
- The common cold is a virus and antibiotics don't help – so instead of using antibiotics for a common cold, use common sense.
- For further information or if symptoms persist/worsen visit your pharmacist or GP.

Key audiences: The campaign was directed at parents and carers of children, and people in the workforce.

Key strategies: The campaign was implemented by way of targeted media and advertising, information dissemination, and community education.

Campaign overall

Awareness of the campaign is growing:

- According to the national survey of consumers undertaken on behalf of NPS by Newspoll, community awareness of the campaign was 17% post campaign in 2002, an increase from 7% in 2001 and 9% pre the 2002 campaign.
- Over two thirds (77%) of GPs surveyed in 2002 recalled the campaign.
- An impressive 95% of pharmacists surveyed in the same year were also aware.

Targeted media and advertising

Reach

Most 'editorial' media coverage of the campaign occurred during the two weeks directly following the launch. Coverage was greatest in national publications. Victoria, NSW and Queensland received five times as much print coverage as the other states. Most paid advertising took place during June and July. The majority of community announcements were made during July and August.

Dollar value

The dollar value of the media coverage resulting from editorial, advertising and community service announcements was \$1 629 514, roughly four times greater than the outlay costs.

Information dissemination

A large volume and mix of materials was disseminated during the campaign period to a variety of mediating stakeholders i.e. those who could on-distribute the information to our primary target populations. The volume of campaign materials distributed is detailed in Table 3.1.

Table 3.1 Volume of materials distributed as part of the 2002 common colds need common sense campaign

Product	Disseminated by	Number
Symptomatic management pad	<ul style="list-style-type: none"> ▪ General practitioners 	30 000
Brochure	<ul style="list-style-type: none"> ▪ Medicare centres 	49 9200
	<ul style="list-style-type: none"> ▪ Child care centres 	84 602
	<ul style="list-style-type: none"> ▪ Community health services 	4 482
	<ul style="list-style-type: none"> ▪ General practice 	15 3320
	<ul style="list-style-type: none"> ▪ Pharmacies 	63 187
	<ul style="list-style-type: none"> ▪ Divisions of General Practice 	3 290
	<ul style="list-style-type: none"> ▪ Other (inc hospital and community organisations) 	9 227
Badges	<ul style="list-style-type: none"> ▪ Pharmacies 	1 160
	<ul style="list-style-type: none"> ▪ Childcare centres 	3 075
	<ul style="list-style-type: none"> ▪ Other 	909
Posters	<ul style="list-style-type: none"> ▪ Child care centres 	2 154
	<ul style="list-style-type: none"> ▪ General practice 	354
	<ul style="list-style-type: none"> ▪ Pharmacies 	830
	<ul style="list-style-type: none"> ▪ Other 	335
Website	<ul style="list-style-type: none"> ▪ Unique number of visitors to site 	400 to 800 weekly

Community education

Participation

- A total of 124 small grants for community education were provided as part of the 2002 campaign. This was an increase of 51 (70.0%) from the 73 provided as part of the 2001 campaign. The main types of organisation that applied for and successfully participated in the grant scheme included: divisions of general practice; pharmacies; area community health centres; senior citizen organizations; hospitals; child care centres / organizations; multicultural organisations; and schools.
- The number of people attending the community presentations varied with an average of 30 participants per presentation (range 2 to 153). A total of 5,654 participants were reported in the evaluation forms. Campaign brochures were provided at nearly all presentations (94.3%). This was similar to the 2001 figure (97.0%). Other handouts were provided to participants in approximately half of the presentations (52.6%).

Perceived value and quality

- 99% of individuals who received community education grants as part of the 2002 campaign indicated they would either definitely or probably participate again. Overall, feedback from participants in the 2002 community activities was also positive (Table 3.2)
- Nearly all participants (96.6% and 92.3% respectively) indicated that they either 'strongly agreed' or 'agreed' with the statements that 'the information in the talk was useful' and that they 'enjoyed attending the talk'.

- Similarly, nearly all participants (97.3%) indicated that they could 'understand the information'.
- The standard of the presenters as well as the quality of the talks was also rated highly by the majority attending the talks.
- Close to 90% of participants indicated that they 'learnt something new'.

Table 3.2 Perceived usefulness of the 2002 community education program

	% Agree or strongly agree
Information useful	96.6
Information understandable	97.3
Learnt something new	89.0
Presenter of a high standard	94.8
Talk of high quality	93.7
Enjoyed attending the talk	92.3

Consumer attitudes to key messages

Data from the NewsPoll Omnibus survey conducted pre and post the 2002 campaign indicate that the majority of consumers spontaneously report alternative ways to treat a cold/flu rather than going to the doctor/pharmacist (Table 3.3).

- Nearly half of the consumers surveyed spontaneously indicated that rest / time off work were the best ways to treat a cold or flu
- Just under 40% suggested plenty of fluids / hot drinks / water / juices as the best option.
- Just under one-fifth of consumers pre the campaign (15%) believed the best way to treat a cold or flu is to visit a doctor. This increased slightly to just over one-fifth post the campaign (22%).

Encouragingly, an increasing proportion of the community endorse symptomatic management of cold and flu symptoms as appropriate behaviours for treating cold and flu (Table 3.4). Similarly, the proportion of consumers who perceived taking antibiotics to be appropriate for treating cold and flu reduced post the 2002 *common colds need common sense* campaign.

Table 3.3 Consumer beliefs regarding the best way to treat a cold or flu (free recall)

	Pre 2002 campaign (%)	Post 2002 campaign (%)
Get rest / take time off work	54.8	48.2
Keep warm / dry / indoors	19.5	16.3
Have plenty of fluids / hot drinks / water / juices	36.2	38.2
Visit doctor / pharmacist	14.9	22.4
Pharmaceutical medication / remedies	44.5	39.7
Take vitamins / multi vitamins	9.6	10.2
Herbal / natural	5.8	4.5
Sweat it out / let it run its course	10.9	8.3

Table 3.4 Consumer beliefs regarding the appropriateness of behaviours for treating cold or flu (prompted recognition)

Symptomatic management	% Appropriate (pre 2002 campaign)	% Appropriate (post 2002 campaign)
Get some rest	89.4	89.7
Drink lots of fluids	96.4	97.8
Take antibiotics	28.7	24.9

Changes in behaviour

When asked what action(s) they took the last time they suffered from a cold or flu (unprompted / open-ended), the majority of consumers who responded to the NewsPoll omnibus survey post the 2002 campaign indicated that they drank extra fluids (82.4%), rested more (79.1%) and took OTC medicines (73.8%) (Table 3.5).

A further 25.1% reported that they visited a doctor about their symptoms. Of these, just under one half had their problem diagnosed as the flu (41.8%) and just under one-fifth as a cold (19.1%). A further 39.7% recalled their problem as being diagnosed as something other than cold or flu.

Importantly, and of remaining concern, close to 57% of the consumers who visited a doctor the last time they suffered symptoms of a cold or flu recalled being prescribed an antibiotic. This is slightly less than the proportion reported in previous years.

Table 3.5 Reported action taken last time suffered from cold or flu

Actions taken	Wave 2 (%)
Get some extra rest	79.1
Consciously make sure you drank lots of fluids	82.4
Take cold or flu tablets / cough mixture / throat lozenges	73.8
Use any herbal medicines or natural therapies	21.8
Take vitamin C to help you get better	41.0
Visit the doctor about your symptoms	25.1
Ask someone in a pharmacy or chemist for advice	22.6

3.3 Medicines Line

NPS *Medicines Line* commenced operation on 4 September 2002 as Australia's first national telephone-based medicines information service for consumers. *Medicines Line* is funded by NPS and operated by a consortium formed by Mater Pharmacy Services, South Brisbane and the Pharmaceutical Society of Australia.



Medicines Line has received endorsement from the Australian Council of Social Services, Australian Healthcare Association, Australian Nursing Federation, Australian Pensioners & Superannuants' Federation, Carers' Australia, Council of the Ageing, Department of Health & Ageing, Health Consumers of Rural & Remote Australia, National Aboriginal Community Controlled Health Organisation, National Heart Foundation of Australia, NSW Therapeutic Assessment Group, Pharmacy Guild of Australia, Royal College of Nursing, Rural Doctors' Association of Australia and Society of Hospital Pharmacists of Australia

Reach

During the first twelve months of operation, staff of *Medicines Line* received 9,625 calls by telephone or voicemail of which 8,849 calls were successfully responded to:

- 5,646 callers (58.7% of total calls) were triaged successfully through the call centre queuing system and were handled immediately by pharmacists
- 3,428 voicemail messages were left on the callback voicemail line (35.6% of total calls), of which 2,652 (76.3%) were successfully contacted with their question(s) answered; and
- 551 callers (5.7% of total calls) left requests for and received Consumer Medicine Information (CMI).

Duration

The mean total call duration was 12 minutes 45 seconds. This benchmarks well with other consumer medicines information services internationally.

Source of awareness about Medicines Line

The main sources of caller awareness of *Medicines Line's* number were

- Government Information Services (23.2%)
- NPS promotion (17.8%)
- Media (16.7%)
- Support groups (11.1%)
- Awareness was strongest in Queensland measured by the number of callers from that State (50%).

Characteristics of callers

- Callers were more likely to be female, with a gender ratio of approximately three females to one male.
- Caller age peaked in the 45 to 64 years age group, followed closely by the 25 to 44 years age.
- In three-quarters of cases, the caller enquired for themselves, while the remaining quarter called regarding *others*, such as family, friends or clients.

Types of enquiry

- The most frequent enquiry types were adverse drug reaction (23.0%), interaction (15.6%) and mechanism/profile (13.3%).
- The therapeutic classes most commonly enquired about were antidepressants (17.7%), herbs and other complementary medicines (12.3%) and antihypertensives (6.7%).
- The individual drug that most commonly generated enquiries was warfarin (3.7% of total calls).

Chapter 4: Financial impact on the PBS

Savings agreement

The initial funding agreement with the Australian Government required NPS activities to achieve savings to the Pharmaceutical Benefits Scheme (PBS) of \$45.616 million over 4 years: \$2.851 million in the first year and \$14.255 million in each of the three subsequent years. Three-quarters of the way through the initial funding period, NPS achieved savings of just under \$49 million, clearly satisfying these requirements.

The current agreement with the Australian Government requires that with a four-year funding of \$45.76million, NPS must deliver savings of \$111million to the PBS: \$28.5 million in the first year and \$27.5 million in each subsequent year.

Savings methodology

Savings in the initial funding agreement were calculated as the difference in the rate of growth of PBS prescription costs between an intervention group and a control group. The intervention group had access to *NPS News*, prescriber feedback (*Prescribing Practice Reviews, PPRs*), clinical audits, case studies, and in some cases also practice visits via an NPS facilitator employed by a local Division of General Practice. The control group of 1068 GPs from five Divisions of General Practice received *NPS News* but no other interventions or NPS programs.

External review of the initial savings estimates suggested the need to develop and refine more rigorous methods for estimating financial savings to the PBS arising from NPS activities. To this end, NPS has contracted the Department of General Practice, Adelaide University for expert advice and analysis. A methodology paper has been submitted to the Department of Health and Ageing (DHA) for comment. This methodology paper has also been reviewed externally by econometricians at the Health Economics Unit, Monash University. This review found the methodology paper to be 'a very impressive outline of a piece of innovative and ambitious work that should provide NPS with the best available evidence on the impact of its work on financial savings to the PBS ... the methodology proposed appears on the whole to be reasonable and feasible'.

The final methodology paper, which incorporated feedback received from the Australian Government and the external review, was submitted to, and accepted by DoHA in October 2002.

The rationale behind the claim

Calculation of the savings to the PBS attributable to NPS in the current two-year claim period involved a series of incremental and logical steps. These included:

1. Recognising that NPS is now an established organisation that provides a multifaceted approach to improving the health of Australians through QUM services.
2. Recognising that there is a strong evidence base for the behaviour change strategies employed by NPS.
3. Acknowledging that data from the quasi-experimental design employed by NPS in the first three years of operation estimated that \$49 million worth of savings to the PBS could be attributed to NPS (almost \$18 million in excess of the contractual agreement).

4. Acknowledging that external review of the savings methodology employed by NPS in the initial funding period found the approach taken to be appropriate, but improvements could be explored that would result in a more rigorous methodology.
5. Recognising that NPS contracted the Department of General Practice, Adelaide University for expert advice and analysis in revising the initial savings methodology.
6. Being aware that the revised savings methodology does not rely on one single technique or database combination. The analytical techniques will be matched to the appropriate database to derive the most rigorous estimate of financial impact for each specific NPS strategy.
7. Recognising that external review of the revised savings methodology found it to be 'a very impressive outline of a piece of innovative and ambitious work that should provide NPS with the best available evidence on the impact of its work on financial savings to the PBS'.
8. Acknowledging that the revised methodology for estimating savings attributable to NPS was approved in December 2002 by DoHA as a suitable basis for future reporting of PBS savings.
9. Being aware that rational decisions were made by NPS to calculate savings for the period 2000/01 and 2001/02 for program areas only where: 1. the interventions were considered significant enough to have had an impact on prescribing; 2. participation in activities was significant enough to achieve appropriate reach of messages; and 3. consistent with QUM principles, the desired outcome for each of these areas was reduced prescribing and therefore savings in PBS expenditure.
10. Recognising that the methodology employed in the current claim involved: 1. Providing a first estimate of savings based on a comparison of projected PBS cost versus actual PBS expenditure at ATC Level 1; and 2. Where better data were available providing a second estimate of savings, using more rigorous methodology, to support our claim. As a result, we have presented a range of estimates for savings, but identified one claim as attributable to NPS activity.
11. Acknowledging other supporting evidence / data for the claim.
12. Being aware that NPS will continue to work on refining the savings methodology to improve the accuracy of our savings estimates.

Scope of 2000/01 and 2001/02 savings

Financial savings for the period covering 1 July 2000 to 30 June 2002 were calculated for drug groups which were affected by the following prescribing intervention programs: Antibiotics in primary care (start date of programs April 1999, June 2000, April 2001 and April 2002); Peptic ulcer management (December 1998) and Management of dyspepsia (February 2001); COX-2 selective NSAIDs (October 2001); Managing hypertension (October 1999 and September 2001); and Managing dyslipidaemia (February 2002).

The savings claim focused on these areas for two main reasons. Firstly, for these areas NPS interventions were considered significant enough to have had an impact on prescribing. And secondly, consistent with QUM principles, the desired outcome for each of these areas was reduced prescribing and therefore savings in PBS expenditure.

A complex methodology

Consistent with the methodology paper approved by DoHA in December 2002, estimating the financial impact of NPS for 2000/01 and 2001/02 did not rely on one single technique or database combination. The analytical techniques were matched to the appropriate database to derive the most rigorous estimate of financial impact for each specific NPS strategy.

In the current savings claim two analytical techniques were used. The first technique provided an initial estimate of savings. This technique compared projected PBS cost versus actual PBS expenditure based on data provided by the Pricing Section, Pharmaceutical Benefits Branch, DoHA. Projected PBS costs were estimated in June 2000 and then revised in 2001. A decision as to which projection to use was based on logical argument. For example, projections made in June 2000 were used for program areas already active at this time as any revision in the projections would have taken into account the effect NPS was already having. Similarly, revised projections made in June 2001 were used where significant changes in listing, pricing or indication on the PBS needed to be taken into account.

Estimates of both projected costs and actual expenditure were determined for the four Anatomical Therapeutic Chemical (ATC) Level 1 categories that include drugs influenced by the prescribing intervention programs of interest. It is possible that shortcomings in the PBS projections, in particular that these projections are undertaken at a gross drug group level, may result in an overestimate of savings. As such, where more appropriate data were available, we employed a second technique that we are confident adds more evidence to our claim.

The second analytical technique used time series analyses per program linking utilisation and expenditure with the implementation. The time series was based on HIC NPS data. This method takes scripts per capita for concessional patients, defines the point at which NPS intervention started, fits a model that best explains the pre-intervention activity using a seasonal dummy, then projects expected savings according to the model. The scripts per capita are then multiplied by expenditure per capita and population to estimate total expenditure. The expenditure projected via the time series is then compared to the actual expenditure.

We are confident that time series analysis provides a more rigorous methodology that develops a more accurate picture of savings resulting from NPS programs. The risk, however, is that this method may not be able to document in sufficient detail the actual savings generated by NPS programs and indeed may in fact *underestimate* the true savings.

The savings claim

Table 4.1 summarises the results of NPS activities over the period July 2000 to June 2002 in terms of PBS savings generated. NPS activities in this period generated savings in the range of \$55.6million to \$83.9million to the PBS.

Table 4.1 Summary of savings attributable to NPS activity for July 2000 to June 2002

PBS Saving generated per topic	Savings claimed		Possible extent of savings	
	2000/01	2001/02	2000/01	2001/02
Antibiotics in primary care	5,920,475	3,001,812	9,532,565	12,243,624
Peptic ulcer management and Management of dyspepsia	8,631,618	—	8,631,618	—
COX-2 selective NSAIDs	—	4,050,976	—	19,433,257
Managing hypertension and Managing dyslipidaemia	—	34,037,693	—	34,037,693
Total PBS Savings generated per year	14,552,093	41,090,481	18,164,183	65,714,574
Total PBS Savings generated for two-year period	55,642,574		83,878,757	

Chapter 5: Priorities for evaluation

Objectives for 2003/04

The objectives for NPS evaluation over the next twelve-months are:

- To evaluate the type, extent and timing of strategy implementation
- To evaluate the impact of NPS interventions on the appropriateness of drug utilisation in target areas
- To evaluate the impact of NPS interventions on the health of the community.

Established activities

Evaluation will remain an important component of all NPS programs, monitoring the impact of its initiatives and informing program development. The approach taken to this evaluation will continue to be broad ranging and comprehensive, incorporating process evaluation as well as impact and outcome evaluation around specific objectives and goals. The evaluation program will continue to conduct comprehensive formative and summative evaluations using existing data sources where they are available and where necessary undertaking specific data collection through GP, pharmacist and consumer surveys. The main responsibilities of the Evaluation Program will continue to be to measure:

- The process, scope and reach of NPS activities
- Changes in awareness, skills and behaviour towards QUM resulting from NPS programs
- Changes in behaviour amongst prescribers and consumers resulting from NPS programs
- Changes in health outcomes resulting from NPS programs
- Changes to the Pharmaceutical Benefits Scheme (PBS) resulting from NPS programs.

Monitoring programs and interventions at a process level

The Evaluation Program will continue to monitor NPS interventions in terms of:

- Their existence, content, delivery and implementation (including costs)
- Distribution or uptake (including reach or program coverage and participation)
- How they were perceived by both target audiences and those involved in delivery (including relevance, acceptability and satisfaction as well as the quality of the materials within the program).
- Deliverables will include:
 - Maintenance of activities and participation databases
 - Maintaining ongoing record of participation in NPS activities by therapeutic topic, activity type and participant type
 - Production of relevant and useful reports for distribution to the Board, staff, divisions of general practice and facilitators that outline reach of programs

Evaluating the impact of interventions

The impact of NPS interventions will be measured by examining whether there are improvements resulting from these activities in:

- The extent to which prescribing reflects evidence-based 'best practice'
- The use of incentives to encourage 'best practice' prescribing
- The ongoing education and maintenance of skills relating to therapeutics
- Access to and use of 'point-of-use' decision support materials
- Consumer use, understanding and expectations of relevant medicines
- Communication and cooperation between prescribers, other health professionals (particularly pharmacists) and consumers.

Deliverables will include:

- Maintaining full electronic versions of the PBS schedule for each quarter from 1996 onwards, a year-by-year summary of PBS listings and a summary of changes per PBS code
- Ongoing receipt, analysis and reporting on drug utilization data (HIC, DUSC and GPRN)
- Detailed drug utilisation analysis for all therapeutic topics undertaken to date.

Measuring outcomes

The Evaluation Program will examine the extent to which NPS interventions optimise:

- Health outcomes for the community
- The level of coordination of QUM activities and messages
- The cost of prescribed medicines to the PBS.

Deliverables will include:

- Increased effort to identify methods for linking changes in prescribing with improved health outcomes
- Calculating the financial impact of NPS activities on the PBS.

Informing program development and policy

The Evaluation Program will provide information essential to decisions regarding program development. This information will also be useful to the future decisions of a wide range of stakeholders, policy makers and researchers. It will be important for the Board and executive to ensure this data is available to policy makers in other areas when relevant. Deliverables will include:

- Detailed documentation of evaluation methods (including savings analysis)
- Production of two evaluation reports including recommendations to the Board from the Evaluation Working Group
- Evaluation data to be included on NPS web site
- Publication of evaluation data in peer-reviewed journals

Attribution of PBS savings

The Evaluation Program will continue intensive work on drug utilisation and economic modelling methods to ensure that attribution of PBS savings to NPS programs is clearly identified.

Deliverables will include:

- Refining methods for establishing the financial impact of NPS initiatives on the PBS.

Lobbying for pharmaceutical utilisation data needs

The Evaluation Program will continue to identify pharmaceutical utilisation data needs both for NPS and other national projects and/or policies. These needs include: access to under co-payment data; linking drug utilisation to indication; and measures of health outcomes related to drug utilisation. This is a key advocacy area for NPS and it should be informed by expert advice through the Evaluation Program. Strategic alliances with the Drug Utilisation Sub-Committee of Pharmaceutical Advisory Committee and the Health Insurance Committee will be needed to this end.

A revised evaluation plan

A priority for the Evaluation Program will be a revision of the current evaluation plan, last revised in 2000. This plan considered all NPS programs and the various stakeholders with an interest in their outputs and outcomes. Since that time NPS has greatly expanded in content, complexity and scope. Original programs have matured and new programs have been initiated in the organisation. It is therefore timely for the Evaluation Working Group to review the evaluation plan, taking into account:

- Changes in organisational objectives
- Changes in all program activities, and the objectives of each program
- Learnings about methodology and measurement
- Current stakeholder needs.
- This process would allow for articulation of both broad and specific objectives and related indicators that will guide the evaluation framework. Deliverables will include:
- Production of a revised evaluation plan that will guide NPS to at least 2010
- External review of revised evaluation plan

Core indicators for monitoring organisational performance

A priority for the Evaluation Program will be developing a set of core indicators that will be used as an overall evaluation framework to guide the organisation. Deliverables will include:

- Development of a set of core indicators
- Creating a database to store data for the key indicators with ability for constant updating
- Key indicator data to be distributed internally

Investigating capacity

Another area of importance for the Evaluation Program will be developing methods for measuring the capacity to implement NPS initiatives within Divisions of General Practice throughout Australia. The intensity of NPS program implementation and the differing methods of program implementation within divisions will be compared to drug utilisation data.

Appendices

Appendix 1: Evaluation data for current report (detail)

Third national survey of General Practitioners (April 2002)

The third National Survey of General Practitioners (GPs) was conducted in conjunction with the Department of General Practice, University of Adelaide in April 2002. This third survey, mailed to a random sample of 2 017 GPs and taken from the database of eligible GPs maintained by the Health Information Section of the HIC, was designed to further collect data on: GP awareness and participation in NPS divisional activities; the value of NPS to GPs; GP perceptions about the trustworthiness and completeness of NPS prescribing and feedback information; GP knowledge of evidence on some prescribing options; information sources used by GPs; and GP perceptions regarding the best options for keeping up to date with advances and changes in the use of medicines. Importantly the questions asked in this third survey were similar to those in previous surveys in 1999 and 2000, to allow for comparative analyses over time.

For the purpose of this study, a GP was defined as a non-specialist vocationally registered medical practitioner, who in the last 12 months had at least half the schedule fee value of their Medicare billing from non-referred attendance items. The sample of GPs was stratified by state and into three Rural, Remote and Metropolitan Areas (RRMA). The seven RRMA classifications were collapsed into 3 groups – RRMA A, Capital city (RRMA 1), RRMA B, Other metropolitan (RRMA 2), and RRMA C, Rural and remote (RRMAs 3-7).

To conform to privacy legislation all mail outs to GPs were undertaken by the HIC. Postcards were initially sent informing GPs that they had been randomly selected to participate in the study. One week later the survey and project letter together with an HIC letter explaining how the GPs were chosen to participate in the study and a University of Adelaide reply paid envelope were sent to all GPs in the study sample. Three weeks later a second survey, first reminder letter, HIC letter together with a University of Adelaide reply paid envelope were sent to GPs who had not responded to the first mail out. Finally, a further three weeks later the third and final mail out was completed by the HIC. A second reminder letter, HIC letter and a University of Adelaide reply paid envelope was resent to GPs who had not returned their surveys.

Survey responses were coded at the Department of General Practice, the University of Adelaide. Data Punch Computer Centre conducted the processing and verification of the data entry. The quality assurance program for the data entry included the development of operator keying instructions, data validation rules, and all surveys being entered twice to ensure data integrity. Quantitative data for the third National GP survey was analysed in the Statistical Program for Social Sciences (SPSS, version 10.0.5 1999). Descriptive statistics were calculated for all variables. Summary statistics (mean and standard deviation) were produced for continuous variables. Analyses of associations between categorical responses were conducted using chi-square tests. Comparative analyses were performed in SAS (version 8, 1999).

Of the 2 017 surveys mailed:

- There was no response from 928 GPs
- The address the survey was posted to was inaccurate for 74 GPs
- 6 GPs were overseas
- 13 were not general practitioners
- 19 GPs had retired or were on extended leave
- 19 GPs refused to complete the survey

A total of 963 questionnaires (51% of eligible mailed sample) were received and included in the analysis. The mean age of GPs who responded to the survey was 49 (\pm 11.2) years and 66% (n=632) were male. The number of years worked in general practice ranged from one to 57 years with the mean number of years working in general practice being 19 years (SD, 11.15). The number of patients seen in a normal week ranged from a minimum of two patients to a maximum of 375 patients. The mean number of patients seen in a normal week was 129 patients (SD, 64.07). Fifty seven percent (557) of GPs were born in Australia with 74% (707) undertaking their undergraduate medical training in Australia. Fifty two percent (499) of GPs had undertaken the Family Medicine Program/RACGP (or overseas equivalent) training and 60% (568) had a postgraduate medical qualification. Thirty eight percent (358) of GPs worked in a principal practice with 3-5 other GPs, 18% (170) worked with 6-8 other GPs, 18% (170) worked in a solo practice, 16.5% (157) worked with two other GPs, and 10% (94) worked in a practice with more than eight GPs.

The majority of study participants were located in NSW (34%, 321) followed by Victoria (25%, 242), Queensland (17%, 158), South Australia (10%, 95), Western Australia (9%, 87) and Tasmania (5%, 49). Sixty seven percent of GPs (645) were located in capital cities, 8% (81) in other metropolitan areas and 24% (230) in rural and remote areas.

In brief: the results from the third national survey of GPs as well as the comparative analysis between the two previous surveys demonstrate that many GPs consider NPS to be a valuable, essential, highly professional service that provides unbiased advice.

First national survey of pharmacists (August 2002)

This first national survey of pharmacists was undertaken by NPS in August 2002. The principal aim of this survey was to provide baseline data on: pharmacist knowledge and behaviour around the activities of NPS; pharmacist perceptions about the value of NPS and the completeness and trustworthiness of information provided by NPS; pharmacist knowledge of evidence-based prescribing practices; and pharmacist use of different types of information sources for keeping up to date with changes in medical and pharmacy practice.

The sample of 1,426 Pharmacists was randomly selected from NPS database of registered pharmacists constructed from Pharmacy Boards' records in 2001. The sample was stratified by participation status, where participants (n=712, 49.9% of total sample) were pharmacists who had participated in at least one NPS activity for pharmacists; and pharmacists (n=714, 50.1% of total sample) who had participated in no activities. The place of principal practice was coded according to the five ARIA Classifications (Accessibility Remote Index of Australia). The survey included both quantitative and qualitative data collection.

The initial step in the survey procedure involved sending postcards informing pharmacists that they were randomly selected to participate in the study. One week following this notice, the survey, project letter and a reply paid envelope were distributed. Up to two reminder letters together with additional copies of the survey and reply paid envelopes were mailed three and six weeks following the initial mail out.

Quantitative data were analysed in the Statistical Program for Social Sciences (SPSS, version 10.0.5). Descriptive statistics were calculated for all variables. Summary statistics (mean and standard deviation) were produced for continuous variables. Analyses of associations between categorical responses were conducted using chi-square tests. Between-group and within-group differences for normally distributed continuous data were compared using two sample and

paired sample t tests respectively. Where these inter-group variations were compared across more than two groups, analysis of variance methods were used. Wilcoxon's rank sum tests / Mann-Whitney U tests for median rates of non-normally distributed continuous data were used to examine between-group variations across two groups.

Qualitative responses were transcribed verbatim, independently reviewed by two researchers, and then analysed using a structured analysis process in which key phrases and concepts were identified, the data categorised, and recurring themes and issues recorded. The emphasis in analysing these sections of the survey was qualitative rather than quantitative; however, where appropriate, quantitative estimates of some responses were provided to indicate overall salience. Hence, terms such as 'almost all' to report near universal agreement, 'most' to indicate a majority, 'some' to indicate a notable minority, and 'few' to indicate less than 10 respondents are used. Key phrases that reflect the major themes are reported where possible. Confidentiality and anonymity were preserved by avoiding direct attribution of any comments.

Of the 1 426 surveys mailed, a total of 806 (59% of eligible mailed sample) surveys were returned. Of these, 759 (55% of eligible mailed sample) were included in the analysis. A total of 113 Pharmacists were unable to participate in the survey. Reasons included:

- 62 declined to participate in the survey without reason
- 40 were retired / no longer a practicing pharmacist
- Nine were on leave / overseas
- Two were deceased

Just over half of the respondents were female (54.0%) with a mean age of 44.5 years (\pm 12.5 years, range 22 to 87 years) for the total sample. The average time since graduating from their primary pharmacy degree ranged from zero to 66 years (mean 22.7, \pm 12.6 years). Nearly all of the respondents indicated that they currently were on the latest register of pharmacists in an Australian State or Territory (96.5%) and most had undertaken their undergraduate pharmacy training in Australia (89.8%). Just over two-thirds of the respondents were participants (67.5%), that is, they had participated in previous NPS activity.

The largest proportion of respondents worked in community pharmacy (71.0%), with an average of 35.7 hours worked per week (\pm 15.8 hours, range two to 80 hours). A further 12.5% of respondents worked in hospital pharmacy, with an average 29.9 hours worked per week (\pm 13.6 hours, range 2 to 55). Close to two thirds (64.9%) of those who worked in community pharmacy indicated that their pharmacy was accredited under the Pharmacy Guild of Australia's Quality Care Pharmacy Program (QCPP) and a further 24.0% indicated they were enrolled, but yet to complete this accreditation.

The greatest proportion of respondents practiced in New South Wales (30.4%, 228), Queensland (24.5%, 184) and Victoria (23.1%, 173). A total of 81.3% of respondents practiced in highly accessible areas, 12.5% accessible, 4.6% moderately accessible, 1.1% remote and 0.5% very remote.

In summary: the first national survey of pharmacists suggests that NPS Pharmacy Program should continue in the same direction as to date. The survey revealed that the majority of pharmacists are aware of NPS and its current campaigns, with a high proportion also aware of NPS divisional activities. The Pharmacy Program is perceived to provide valuable, high quality, independent, evidence-based material and prescribing information appropriate to the needs of community pharmacists and which supports QUM, helps improve OTC prescribing, and integrates with other NPS programs. As a result of NPS activities and products, pharmacists feel better equipped to answer consumer enquiries.

National surveys of consumers

NPS commissioned Campbell Research & Consulting to conduct a series of telephone-based surveys of randomly selected Australian consumers. These surveys were conducted in August 1999, 2000 and 2001 as part of the Campbell National Health Monitor™. The main purpose of these surveys was to identify the sources of information used by consumers about prescription medicine; and attitudes towards the use of antibiotics for coughs, colds and flu-like symptoms.

In summary: the series of national consumer surveys conducted over three years suggest that most Australians (73%) find it easy to obtain information about prescription medicines. Medical practitioners are their main source for information (endorsed by 71% of the community), followed by pharmacists (11%), medical packaging (3%), and books and magazines (3%). The Internet is *not currently* a significant source of information about prescription medicine. Only one half of all Australians (48%) reported asking questions of their doctor the last time they were prescribed a *new* medication and less than two in ten (15%) reported asking questions of their pharmacist on these occasions. Importantly, both GPs (82%) and pharmacists (77%) are considered to provide trustworthy information about prescription medicine. Information provided by GPs or pharmacists was also considered to be complete by the majority of Australians (75%). In comparison, only a minority of Australians considered information on the Internet to be trustworthy (14%) or complete (17%).

As part of monitoring the impact of NPS *Common Colds Need Common Sense* campaign, NPS also contracted NewsPoll to conduct a national survey among 1200 Australians aged 18 years and over. Respondents were selected by means of a stratified random sample process which included a quota for each capital city and non-capital city area; a quota for each telephone area code within each of these areas; a random selection of household telephone numbers drawn from current telephone listings for each area code; and a random selection of individuals from each household by a 'last birthday' screening question.

Interviewing was conducted by telephone. To ensure that the sample included people who spend a lot of time out of the house and away from the phone, a system of callbacks and appointments was incorporated. To reflect the population distribution, results were post-weighted to Australian Bureau of Statistics (ABS) data on age, age left school, sex and area. Wave 1 was conducted pre campaign over the weekend 24-26 May 2002 and wave 2 was conducted post campaign over the weekend 23-25 August 2002.

In summary: the NewsPoll Omnibus surveys have demonstrated an increasing proportion of the community endorses symptomatic management of cold or flu over the use of antibiotics. Similarly, the majority of consumers indicated that when they last suffered from a cold or flu the action(s) taken were consistent with key campaign messages including, drinking extra fluids (82%), resting more (79%) and taking OTC medicines (74%). Importantly, and of remaining concern, of those consumers who had visited a doctor the last time they suffered symptoms of a cold or flu in 2002, close to 57% recalled being prescribed an antibiotic.

Focus groups with GPs

In May 2002, focus groups were held with GPs to establish whether NPS messages NPS are clear and if their presentation is usable. Views were sought specifically on NPS case studies, clinical audits and prescribing practice reviews (PPRs).

NPS Case studies

Two focus groups were held with a total of 19 GPs to discuss NPS case studies. The overall aims of these focus groups were to find out what GPs see as the key points NPS is trying to make; what format would be best for the results; and whether the case studies are useful and relevant. Participants were also asked a number of specific questions such as: How do you find the case scenarios? Do you think that the questions are relevant? What material do you refer to when completing the case study? How carefully do you read the results? Do you find the results useful? Do they address the issues you are interested in? How applicable are they to your practice? Any suggestions on how you would improve their presentation? As you read through the results, would it be helpful to be reminded of the relevant key messages? Do you usually read the expert commentary? Would you like the commentary to contain more or less information? Are the specialist physicians and GPs who provide the expert commentary appropriate? Is the style of presentation (layout, order of information) useful? What other information would be useful? To sum up: Are NPS Case Studies useful and relevant?

In summary: the focus groups on NPS case studies suggest that GPs like receiving the case studies with *NPS News* and they find the scenarios realistic and reasonable. They are perceived to be 'GP friendly' with sufficient intellectual challenge. The case studies provide motivation for several of the GPs to identify whether they are following evidence based approaches and clinical guidelines. Particular mention was made of the value of both the GP and specialist commentary on the results. Suggestions for improvement of the case study included: increase line spacing; provide more space to write answers; use multiple choice questions where possible; and provide instructions on how much detail is required for responses. In terms of the report that provides feedback on the results, many of the GPs suggested that the descriptive approach currently taken is not useful. Rather, they would prefer summary results only with the main points highlighted. Also, many commented that the feedback time frame was too slow.

NPS Clinical audits

Two focus groups were held with a total of 17 GPs to discuss NPS clinical audits. Questions included: How do you choose which audits to do? When you get an audit pack is it simple/difficult to find out what you need to do to complete the audit? What impact, if any, does participation have on your prescribing? When do you feel the majority of change occurs? Do you read the audit results? Would you ever call a patient in to review their treatment after receiving the audit results? Can you interpret the results? What aspects are most meaningful to you? Do they address the issues you are interested in? Are any sections difficult to interpret? Are you interested in the detail of how the results were arrived? Can you establish from the report whether your results meet the standards of best practice? How applicable are the results to your practice? Would you like the expert commentary to contain more or less information? What else should we include in the audit process? If you were to do one an NPS audit again, would you do step 5 and re-audit? To sum up: Are NPS Clinical Audits useful and relevant?

In summary: the focus groups on NPS clinical audits suggest that GPs believe the process of going through the audit form, the data collection phase, had the greatest influence on them in terms of learning and change. Many of the GPs felt the clinical audit helped them to reflect on their prescribing and often encouraged them to undertake thorough medication and lifestyle reviews with their patients. Several GPs highlighted difficulties with finding enough patients to complete the activity. Some also felt that audit forms should have more allowances for patients who are in grey areas and not just a simple yes or no. In terms of the personalised feedback of audit data, of concern, many of the GPs indicated that they don't read them at all whilst others said they simply read the practice points and / or expert commentary. Many of the GPs requested less detail, with simpler statistics and asked that the results be presented in a more pictorial / graphical format. Many also commented that the feedback time frame was too slow.

Prescribing Practice Reviews (PPRs)

One focus group was held with a total of 11 GPs to discuss PPRs. The aim of the discussion was to examine whether the PPRs provide the tools to change practice. Participants were specifically asked: Do you read the PPRs? Who do you think provides this information? Do you find the PPR easy to read and understand? Do you understand the presentation of the data as a rate i.e. per thousand? What do you think the 'median rate' means? Do the graphs provide you with tools to change practice? Are you interested in feedback on costs? Is it helpful to have points for review included with the data? Do you understand the data limitations? Does the content assist with your interpretation of the prescribing feedback? To sum up: Are PPRs useful and relevant?

In summary: the focus groups on PPRs suggest that GPs really like the key messages on the front page. Many suggested, however, that the covering letter was not needed and therefore not read. Many also suggested that 6 pages was too long and that the information contained in the PPR could be condensed. Many also highlighted concerns that they don't fully understand the data or its limitations

Readership survey (September 2002)

During the months of September to November 2003, NPS explored the role of *Australian Prescriber* and *NPS News* in communicating independent and expert information about quality use of medicines. The evaluation was conducted in three stages. Wendy Bloom & Associates conducted stages 2 and 3 on behalf of NPS.

Stage 1 consisted of a survey of the *Australian Prescriber* website which was posted on the site over a 2-month period September and August 2002 to coincide with Vol 25 No 4. There were 9,273 hits; 809 visitors completed the survey, of whom 454 had visited the site on previous occasions. Reasons for visiting the site included: to browse the current issue (27%); to find information for a specific condition or therapy (25%); to browse the site (17%); and to find information about a new drug (16%).

Stage 2 consisted of qualitative research involving a series of focus groups and in-depth interviews with readers' and non-readers' held in metropolitan and regional / rural areas with pharmacists, GPs and other medical specialists.

Stage 3 consisted of a quantitative mail survey of readership and attitudes.

The broad objectives of the evaluation were to establish: target audience attitudes to these publications, with emphasis on their perceived strengths and weaknesses, overall, and in relation to regular features; how the target audiences use these publications with emphasis on their current status and positioning as influences on prescribing within the broader context of medical media and information delivery: and reactions to a possible combination of *Australian Prescriber* and *NPS News*.

In brief, the readership survey demonstrated that *Australian Prescriber* and *NPS News* are perceived to provide a high standard of useful information by their target audiences. No mean feat, according to Wendy Bloom, in a marketplace where the target audiences have different occupations and are inundated with competitive publications.

Appendix 2: Education and quality assurance program: Key messages and strategies for 2002/03

Managing drug and alcohol problems (June 2002) *

Key messages:

General

There is a greater range of management options for managing drug and alcohol problems in primary care

Early detection and early intervention are important, especially with smoking and alcohol problems

Alcohol problems

Non-drug interventions are the basis of managing alcohol problems

Acamprosate or naltrexone show a modest effect on the frequency of drinking and the likelihood of maintaining abstinence

Smoking cessation

Match smoking cessation intervention to the patient's stage of change

Raising the subject of smoking and discussing it for as little as 3-5 minutes effectively promotes cessation

Drug therapy should always be combined with behavioural and psychosocial support

Use nicotine replacement therapy as first-line drug therapy unless contra-indicated

Strategies:

Prescribing Practice Review (PPR) no feedback to all GPs

NPS News

Case study for health professionals

* Start date of first intervention for therapeutic topic.

Pharmacotherapeutic management of asthma (August 2002) *

Key messages:

Prescribing inhaled corticosteroids remains the cornerstone of managing asthma in all groups
Back-titrate to the minimum dose of inhaled corticosteroids that maintains control for each patient
Medium doses of inhaled corticosteroids are as effective as high doses in maintaining control
Combination products should not be prescribed as initial therapy
Consider adding a long-acting beta2-agonist to medium-dose inhaled corticosteroids before using high-dose inhaled corticosteroids for uncontrolled asthma

Strategies:

Prescribing Practice Review (PPR) with feedback to all GPs
Prescribing Practice Review (PPR) with key messages to all pharmacists and other medical specialists
NPS News
Clinical audit for GPs
Educational visits
Case study for GPs
Case study for Pharmacists
Divisional case study group discussion

* Start date of first intervention for therapeutic topic.

Sleeping and confusion in the elderly (October 2002) *

Key messages:

Non-drug measures are first-line for therapy
Educate consumers on normal sleep patterns
Review potential harms of long-term hypnotic use
Attempt benzodiazepine withdrawal as simple interventions can reduce use
Little evidence of superior efficacy of newer atypical antipsychotics in behavioural disturbances in dementia

Strategies:

NPS News
Case study for health professionals

* Start date of first intervention for therapeutic topic.

New drugs (December 2002) *

Key messages:

Assess comparative efficacy, safety, suitability and cost of new drugs and new uses
Information sources are available for new drugs / new indications
Critically appraise published material for relevant outcomes and clinical significance
How to incorporate new evidence on hormone replacement therapy into practice

Strategies:

NPS News
Case study for health professionals

* Start date of first intervention for therapeutic topic.

Osteoporosis – recognising the risks (February 2003) *

Key messages:

Identify and address modifiable risk factors for osteoporotic fractures
Preventive strategies early in life are as relevant as therapy later in life
The greatest benefit of drug therapy in reducing fractures occurs in those with history of fracture

Strategies:

NPS News
Case study for health professionals
Pharmacy letter
Case study for Pharmacists
Self-audit for pharmacists

* Start date of first intervention for therapeutic topic.

Antibiotics in primary care (April 2003) *

Key messages:

Explain the duration of antibiotic therapy to your patients
Include the duration of the course on the prescription whenever practical
Make a conscious decision whether or not to generate a repeat prescription for antibiotics
Continue to use antibiotics judiciously in each patient to maintain the downward trend in prescribing rates

Strategies:

Prescribing Practice Review (PPR) with feedback to all GPs
Prescribing Practice Review (PPR) with key messages to all pharmacists and other medical specialists
NPS News
Clinical audit for GPs
Educational visits
Case study for health professionals
Divisional case study group discussion
Symptomatic management pad: Acute URIs and acute bronchitis

* Start date of first intervention for therapeutic topic.