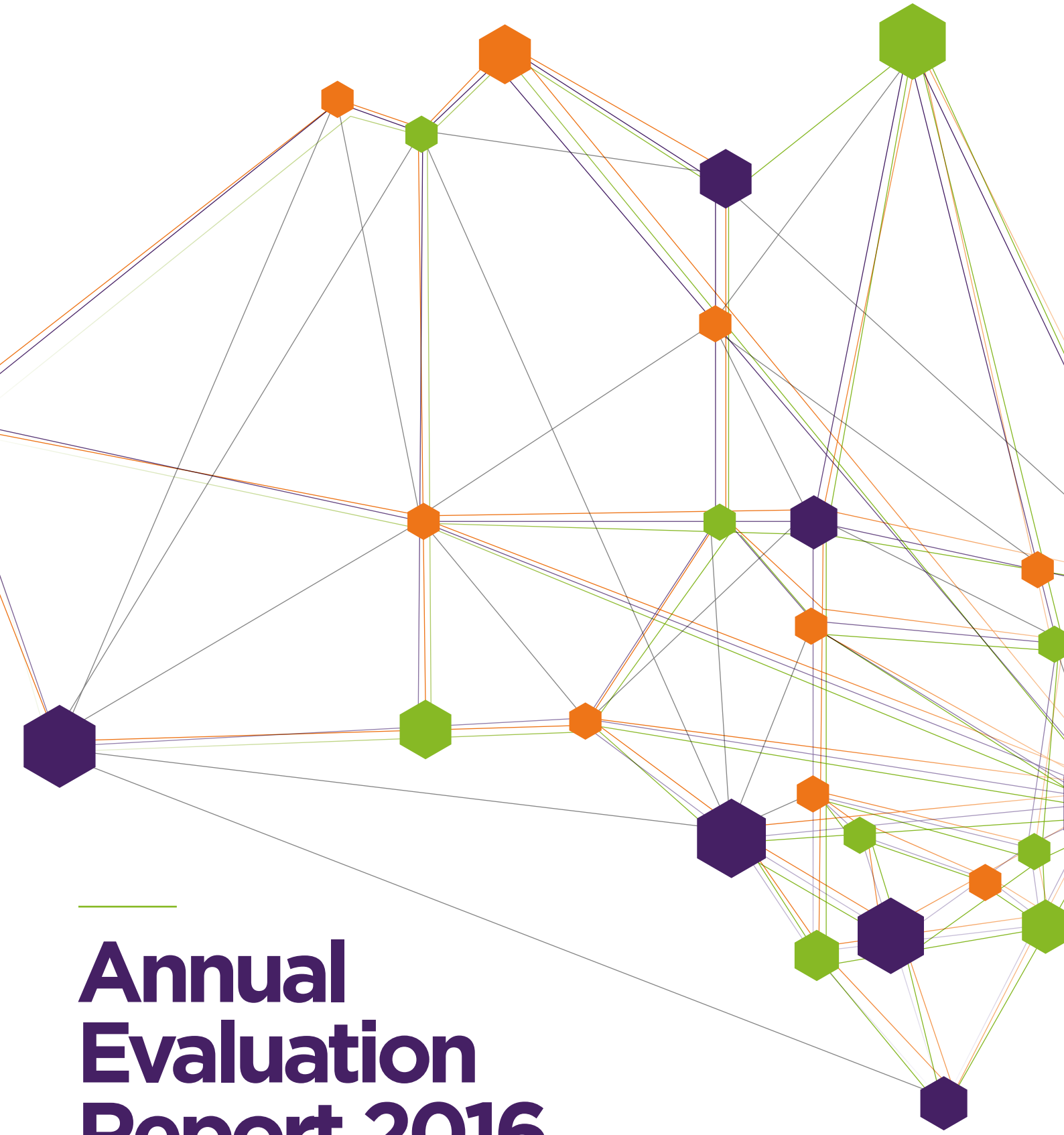
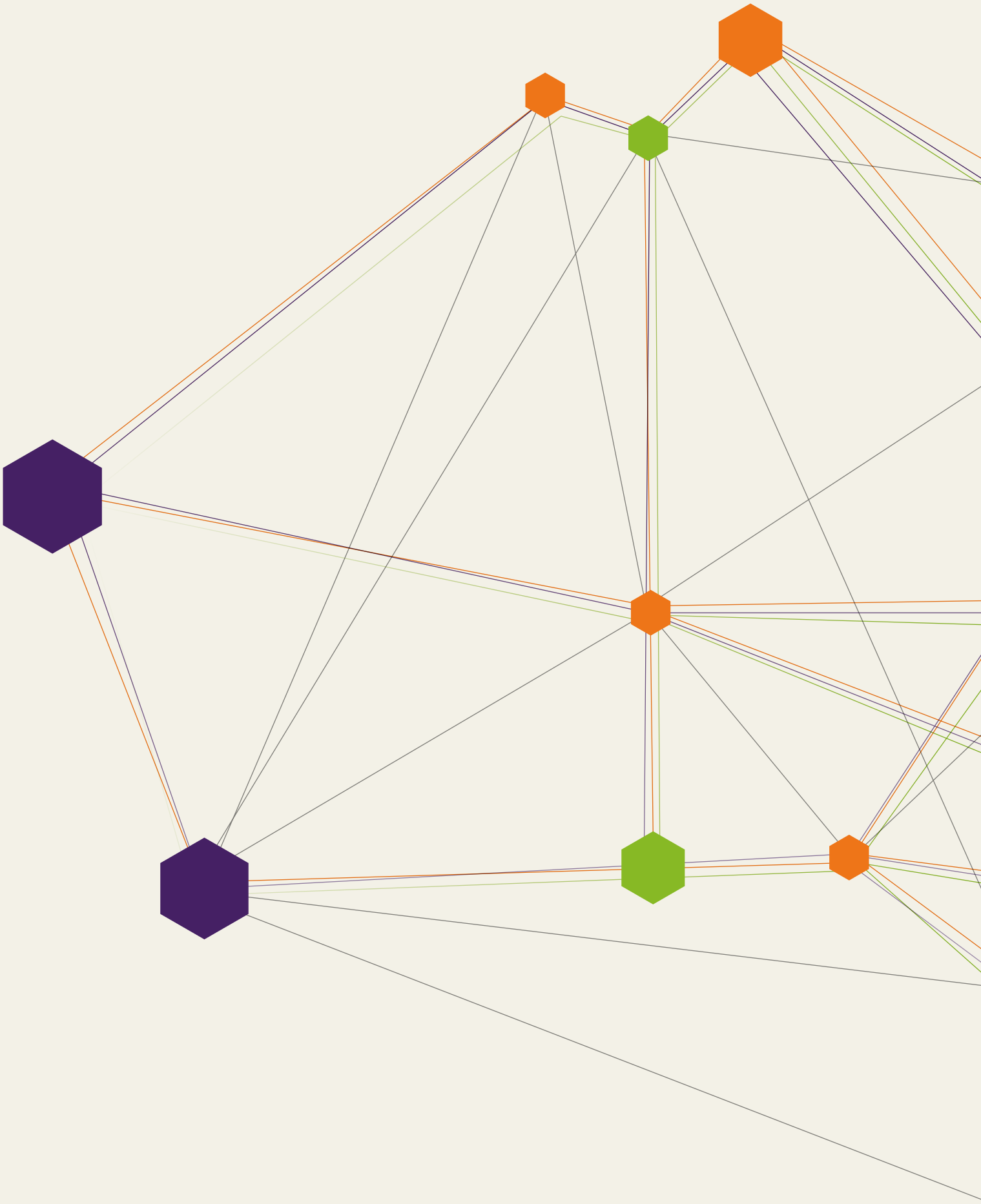
NPS MEDICINEWISE



Annual Evaluation Report 2016



Level 7/418A Elizabeth St
Surry Hills NSW 2010
PO Box 1147
Strawberry Hills NSW 2012

02 8217 8700
02 9211 7578
info@nps.org.au
www.nps.org.au

ABN 61 082 034 393

Suggested citation

NPS MedicineWise. Annual Evaluation Report 2016. Sydney: 2017.

Contact information

Suzanne Blogg

Evaluation Manager

Email: SBlogg@nps.org.au

Telephone: 02 8217 8769

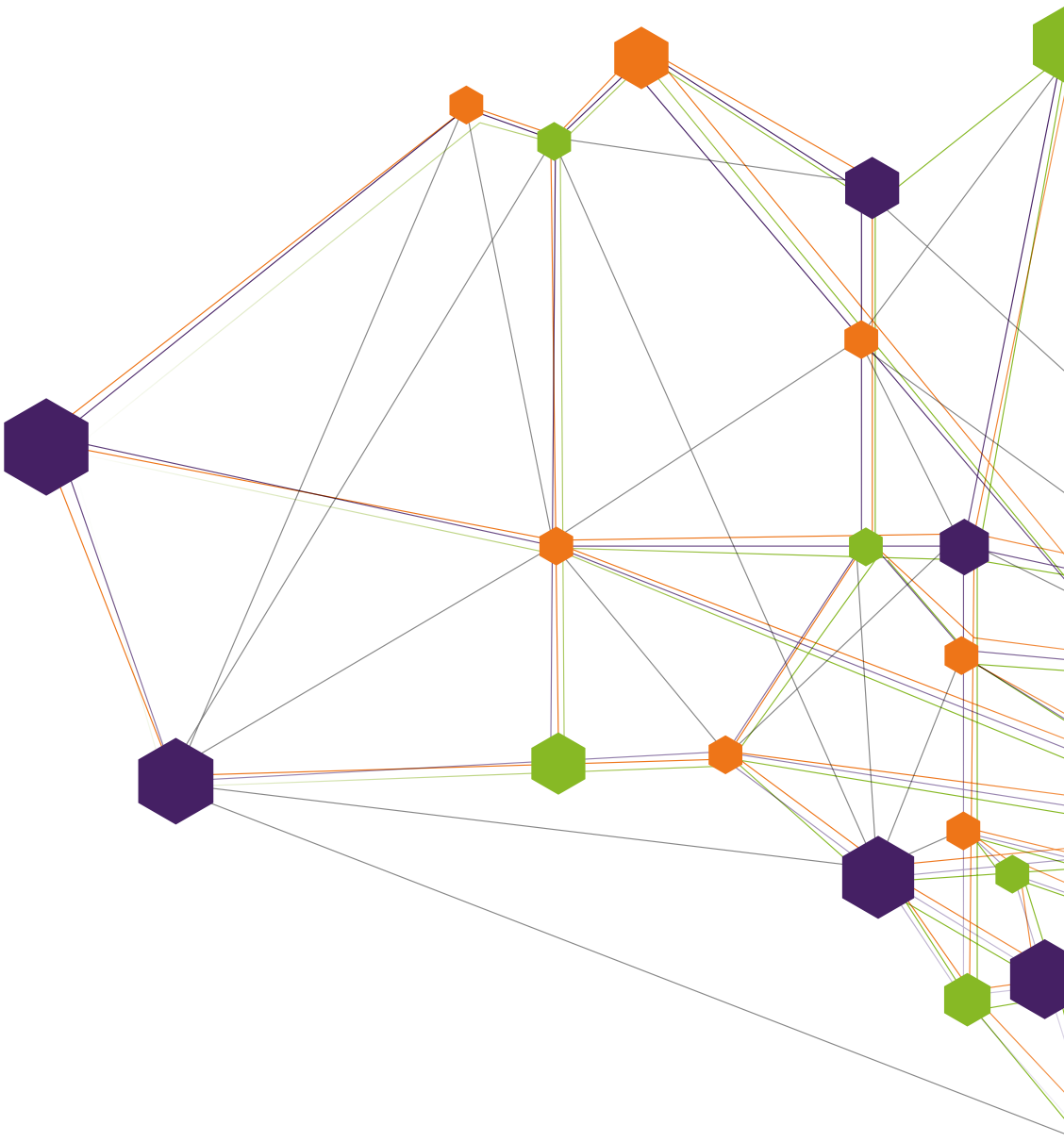
Contents

Mission: To enable the best decisions about medicines, health technologies and other health choices for better health and economic outcomes.

Vision: To lead innovation and improvement in healthcare by building trust, implementing change and demonstrating impact.

Our Values: Courage, customer centricity, collaboration, integrity, accountability.

Goal: To improve healthcare through meaningful interventions that embed evidence into practice and create measurable impact where it makes most difference.



Foreword

NPS MedicineWise continues to develop new areas of interest and strength, educating people to make the best decisions about medicines and medical tests. This 19th Annual Evaluation Report summarises results from the evaluations conducted in 2015/16.

There are many innovative approaches being piloted to assist in the quality use of medicines and improved health services, including ways to improve adherence to medicines and new approaches to healthcare services for people with chronic conditions. We are pleased to have piloted a strategy for pharmacists to assist patients receiving a new medicine for the first time, the New Medicine Support Service.

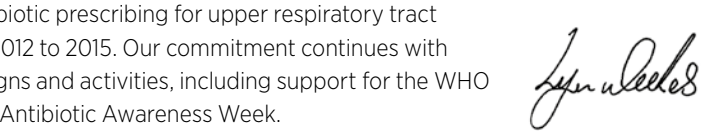
The challenge to prevent antibiotic resistance continues and we are pleased to see that the years of educating health professionals and the community are starting to show results with a 16% reduction in antibiotic prescribing for upper respiratory tract infections from 2012 to 2015. Our commitment continues with ongoing campaigns and activities, including support for the WHO led international Antibiotic Awareness Week.

Choosing Wisely continues to grow as an initiative in Australia, facilitated by NPS MedicineWise, with 67% of medical colleges and societies involved in the first 12 months of the initiative, increasing to 73% by November 2016.

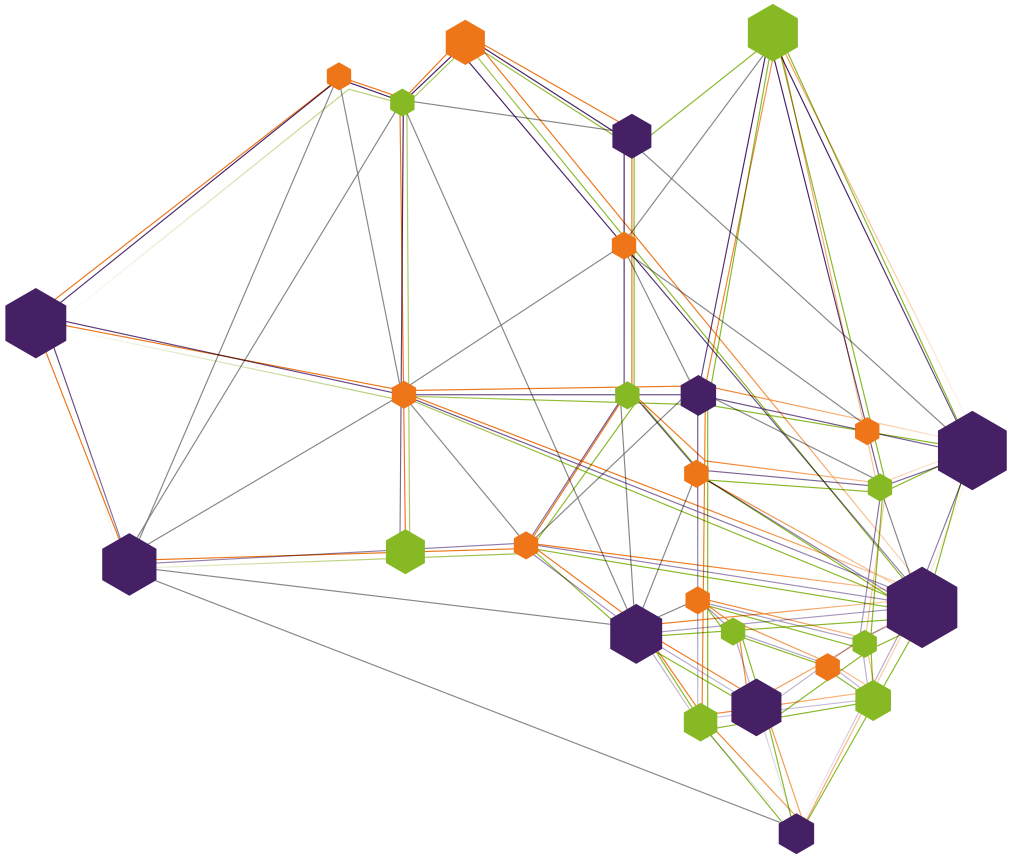
One of our values is customer centricity and we continue to improve our understanding of our audiences with the findings from a National Consumer Survey. In this report we share our findings about consumer adherence to medicines with one in three having high adherence and 19% having low adherence to prescribed medicines. Most consumers (94%) agreed that taking an active role in their healthcare was important. We share some of the findings about consumer views on having medical tests with almost half reporting that they had a medical test in the previous three months.

Our campaign to increase adherence and improve inhaler technique for asthma medications was successful with more than half the GPs agreeing to increase their use of an inhaled corticosteroid as first-line preventer treatment and to increase their practice of discussing asthma control with their patients. Challenges continue to exist which we hope to continue to address.

I recommend the 2016 Evaluation Report to you.



Dr Lynn Weekes
Chief Executive Officer



Executive summary

NPS MedicineWise continues to explore consumer and health professional beliefs, knowledge and attitudes and to evaluate programs and activities to inform improvements and efficiencies in our work. Evaluation work follows the guiding principles of the MedicineWise Evaluation Framework, 2013–17.*

We continue to demonstrate the impact of NPS MedicineWise programs on prescribers of medicines. This year, using a Bayesian hierarchical time series approach, we were able to demonstrate the impact of our antibiotic resistance campaigns with a 16% reduction in antibiotic dispensing for upper respiratory tract infections for concessional patients under the PBS supply for the period July 2012 to July 2015. Our reported savings for the PBS this year due to the impact of seven programs is $75.21 million.

Optimising the use of inhaled medicines in people with asthma by educating health professionals was successful, with 97% of GPs having a positive attitude towards discussing adherence to treatment with patients and taking responsibility for assessing and demonstrating inhaler technique.

Our evaluation of MedicineInsight has found that the MedicineInsight practice report is easy to understand (94%) and useful in helping GPs to improve the care delivered to their patients (89%).

Our work with pharmacists included the successful pilot of the New Medicine Support Service in nine pharmacies in three states to improve patient adherence to medicines. The positive findings from the pilot will inform the implementation of this approach where pharmacists support patients starting a new medicine with an intervention and follow-up meeting, either by telephone or face-to-face.

Our surveys of pharmacists and nurses found a high level of satisfaction with online learning with most reporting a positive impact on their awareness of resources, guidelines, clinical knowledge and patient management.

Choosing Wisely Australia has exceeded expectations in its first year with 67% of medical colleges and societies signing up, and the initiative receiving extensive media coverage. Both GPs and consumers reported becoming more actively involved in decision making and sharing about the need for medical tests, treatment or procedures. Our consumer survey found that 71% of respondents believed that people play a role in reducing the use of unnecessary medical tests.

Our consumer survey explored adherence to medicines with 33% reporting high adherence to medicines overall compared to only 17% of those receiving medicine for depression.

Our reported savings for the MBS this year are $19.3 million due to the reduction in GP referrals for vitamin B12/folate tests. Our cost-benefit analysis of the *Imaging for Acute Low Back Pain* program found that for every $1 spent on the program, $82 was gained in monetary. The impact of radiation exposure reduction on population cancer risk was estimated to be an averted excess lifetime risk of 36 incident cancers.

This year we conducted a meeting to discuss Biosimilars with rheumatologists, GPs and community pharmacists to assist with the design of a program addressing rheumatoid arthritis.

The evaluation of the 2016 National Medicines Symposium (NMS) found that, along with several highlights of excellent presenters, the learning outcomes for the majority of participants were either entirely or partially met. The NMS is a unique cross-disciplinary event held biennially by NPS MedicineWise, which provides an opportunity for experts from across Australia, and the globe, to come together and discuss both local and international issues relating to quality use of medicines and medical tests. Delegates at NMS 2016 included clinicians, policy makers, researchers, academics, students, industry representatives, consumers and government officials, allowing more comprehensive conversations to take place.

We continue to provide up-to-date information for our audiences through our publications and website. Our change over to a digital Australian Prescriber was positive, with 80% of readers either willing to sign up or already signed up for the digital journal.

* See the Technical Supplement for the NPS MedicineWise Evaluation Framework, 2013–1017

Antibiotics: *Handle with Care*

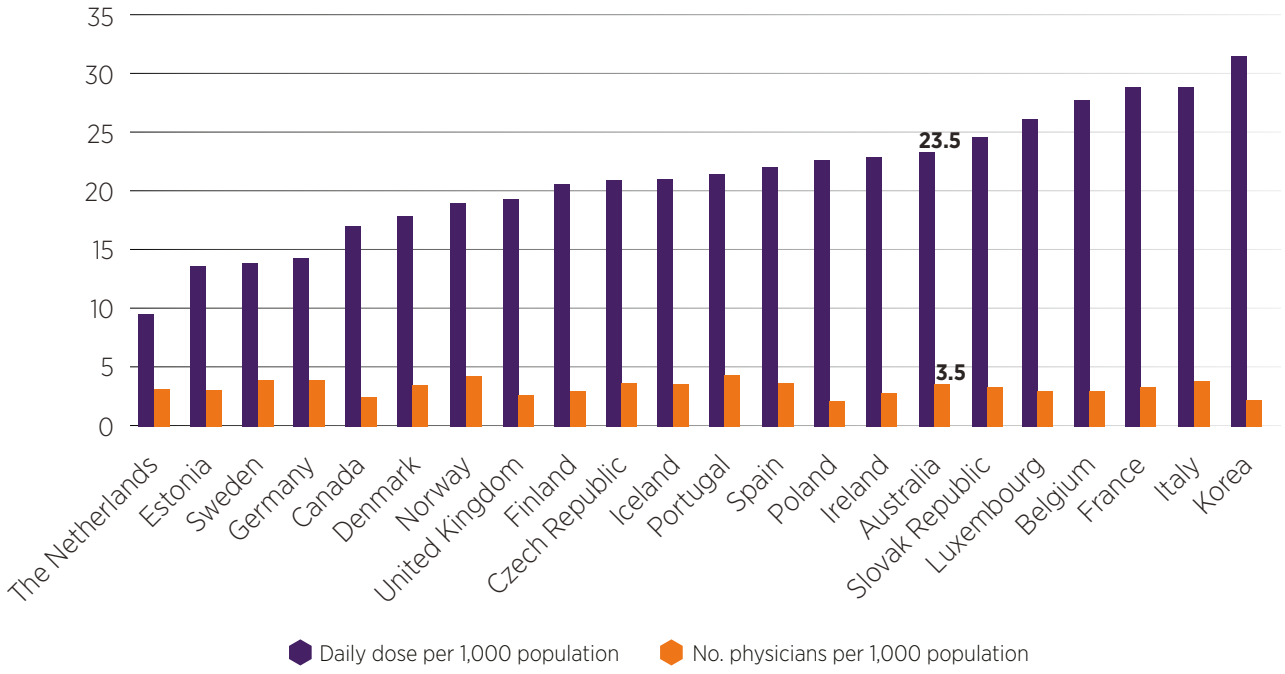
The World Health Organisation (WHO) raises awareness of the growing problem of international antibiotic resistance, a key global health issue, with the annual World Antibiotic Awareness Week (AAW).[1] AAW 2015 was conducted from 16 to 22 November, with the week providing an opportunity to raise awareness about the growing threat of antibiotic resistance by connecting with health professionals, consumers, communities, stakeholder organisations, politicians and the media. The event encourages people around the world to use antibiotics responsibly. NPS MedicineWise delivered Australia's fourth AAW, with a theme of '*Handle with Care*', reflecting the global WHO message.

Australia continues to have a high rate of antibiotic use per population per day compared to some other countries. We have a high standard of healthcare with a reported 81,478 physicians in 2014, 3.5 per 1,000 population and 7.3 doctor consultations per capita. However, our systemic antimicrobial daily dose per 1,000 population in 2014 was 23.5, higher than some countries and increasing from 22.8 in 2013.[2,3]

The Australian National Antimicrobial Resistance Strategy includes the Antimicrobial Use and Resistance in Australia (AURA) project. The AURA Surveillance System is assisting with information to understand antimicrobial resistance and use. AURA released the *First Australian Report on Antimicrobial Use and Resistance in Human Health* in 2016 and reported that antimicrobials are most often dispensed to the very young and older people as well as to all age groups during winter. AURA also reported that the trend for inappropriate systemic antimicrobial prescribing by GPs for upper respiratory tract infections (URTI) had decreased from 32.8% in 2011–12 to 29.0% in 2013–14, a trend that supports the findings by NPS MedicineWise.[4]

Information from the *Australian Atlas of Healthcare Variation* also assists with planning strategies to improve antimicrobial use. The Atlas explores the wide variation in the number of PBS prescriptions dispensed for antimicrobials across local areas, including between states and territories. Although dispensing data from some remote area Aboriginal Medical Services are not captured in the PBS data used, the Northern Territory and Western Australia have a lower number of PBS antimicrobial prescriptions dispensed per 100,000 people and Queensland has the highest compared with other states and territories in 2013–14. The number of antimicrobial prescriptions is 11.5 times higher in the area with the highest rate compared to the area with the lowest rate.

Figure 1: Daily dose of antimicrobial for systemic use per 1,000 population and number of physicians per 1,000 population by OECD country, 2014



Source: OECD

Table 1: Percentage of GPs responsible for 80% of URTI antimicrobials prescribed for concessional patients by state and territory, 2010/11 to 2014/15

State	Financial Year				
	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015
ACT	39.1	37.4	38.5	37.5	37.8
NSW	37.5	37.5	37.4	37.8	38.7
NT	23.0	22.1	23.5	24.8	28.2
QLD	31.5	31.7	32.0	33.6	35.0
SA	38.2	38.9	38.9	39.7	40.0
TAS	37.7	36.9	37.7	38.5	39.5
VIC	38.1	38.5	39.6	40.6	41.9
WA	35.4	34.9	34.9	35.9	37.9

The areas with the highest rates of antimicrobial prescriptions are the areas with the lowest socioeconomic status, which is consistent with poorer health and higher infection rates. The Australian age-standardised rate of antimicrobial prescribing for 2013–14 was 125,119 per 100,000 people.[5]

Table 1 shows that approx. 22% to 42% of Australian GPs are responsible for prescribing 80% of select antibiotics for URTI that were filled by concessional patients in the past five financial years, depending on the state or territory in which they reside. The percentage of GPs is consistently between 30% to 40% across all years and states and territories except for the Northern Territory, where fewer than 30% of GPs are responsible for prescribing 80% of the antimicrobials for URTI for concessional patients. This demonstrates that the problem of antibiotic prescribing for URTI is widespread among GPs although in the Northern Territory it is a smaller group of doctors responsible for the majority of the prescribing. We need to better understand the reasons for this variation in practice and design programs accordingly. There is a continued need for educational programs to support better decision making by both GPs and the community. There is scope for improving the efficacy, and optimising the cost, of NPS programs by concentrating our services on those GPs who are the most frequent prescribers.

Reducing antimicrobial resistance – working with prescribers and consumers

NPS MedicineWise programs and activities addressing the responsible use of antibiotics commenced in 1998 and target both health professionals and consumers, with the aim of preventing antimicrobial resistance by reducing the inappropriate use of antibiotics. Reducing Antibiotic Resistance is a five-year NPS MedicineWise program that started in 2012 and runs until 2017. Activities for health professionals includes: online learning; clinical e-audit; PBS feedback; MedicineInsight practice reports; and other resources. Consumer activities have included: mass media campaigns; Antibiotic Awareness Week; *Winter is Coming* social media campaign; Tropfest *Save the Script* short film competition; consumer content of the Antibiotic Resistance Resource Kit distributed to GPs; and the printed and video content distributed by Tonic TV.

Drug utilisation analysis of antibiotics for upper respiratory tract infections

Drug utilisation analysis estimated that NPS MedicineWise programs produced a 16% reduction in antibiotic dispensing volume for PBS concessional beneficiaries for the period July 2012 to July 2015.

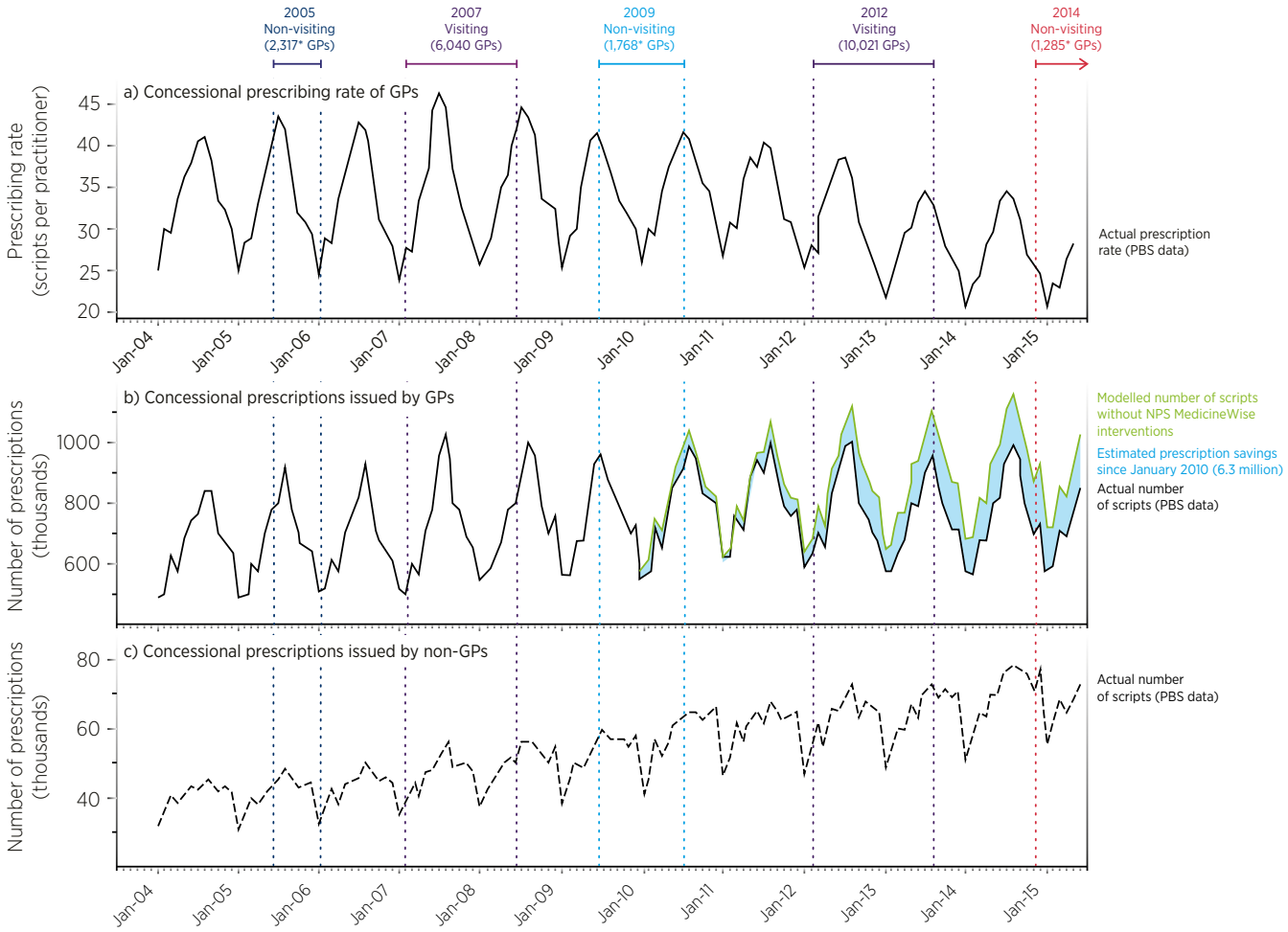
recent analysis of PBS data has shown that NPS MedicineWise programs have had a positive impact in the fight against antibiotic resistance. Drug utilisation analysis estimated that a 16% reduction in dispensing of antibiotics commonly prescribed for URTI in a national cohort of PBS concessional beneficiaries was attributable to NPS MedicineWise programs for the period July 2012 to June 2015. Our analysis was limited to concessional patients to avoid confounding by price changes. Prescription data are well recorded for concessional patients and are therefore the best subset of data to use to look for the effect of programs.

The data in Figure 2 suggests that the impact on GP prescribing, resulting from NPS MedicineWise's antibiotics resistance programs, emerged shortly after the 2009 program. The rate of antibiotic prescribing by GPs began to decline following the 2009 non-visiting program (Figure 2a; solid black line).

A Bayesian hierarchical time series method was used to investigate the impact of NPS MedicineWise programs on GP antibiotic prescribing volume. Observed prescribing volumes of GPs (Figure 2b; solid black line) and non-GPs (Figure 2c; broken black line) were used to forecast an antibiotic prescribing trend that would have occurred in the absence of the programs (Figure 2b; solid blue line). Comparison of the observed and forecasted prescribing volumes indicated significant reductions prescribing volume from August 2012, six months into the most intensive visiting antibiotics resistance program launched in February 2012 (Figure 2b).

Similar changes were not observed for non-GPs, who were not the recipients of NPS MedicineWise programs (Figure 2c; dashed black line).

Figure 2: GP prescribing rate, predicted number of prescriptions without interventions and volume of concessional prescriptions, estimated monthly savings and actual number of scripts by non-GPs for 13 antibiotics commonly used for URTI by GPs



**Feedback sent to all Australian GPs*

Improving GP approaches to asthma control

In May 2014, NPS MedicineWise launched the visiting program *Exploring inhaled medicines use and asthma control.* The overarching goal of the program was to optimise the use of inhaled medicines in people with asthma through the provision of educational activities for health professionals, including: one-to-one and group-based visits; clinical e-audit; PBS feedback; pharmacy practice review; online learning module; and print and online resources.

A total of 13,306 unique health professionals participated in an educational activity for the asthma program, including 9,738 GPs, 1,681 pharmacists and 1,531 nurses.

A survey was conducted to determine the program's impact on GP knowledge, attitudes, confidence and practice. The majority of GPs (97%) expressed a positive attitude toward discussing adherence to treatment with patients and taking responsibility for assessing and demonstrating inhaler technique.

The one-to-one and group-based educational visits were successful at increasing confidence levels in more than one-third of participant GPs with regard to treatment decisions and assessing and demonstrating inhaler technique. See Figure 3 for more details.

Figure 3: Level of change in GP confidence with asthma treatment

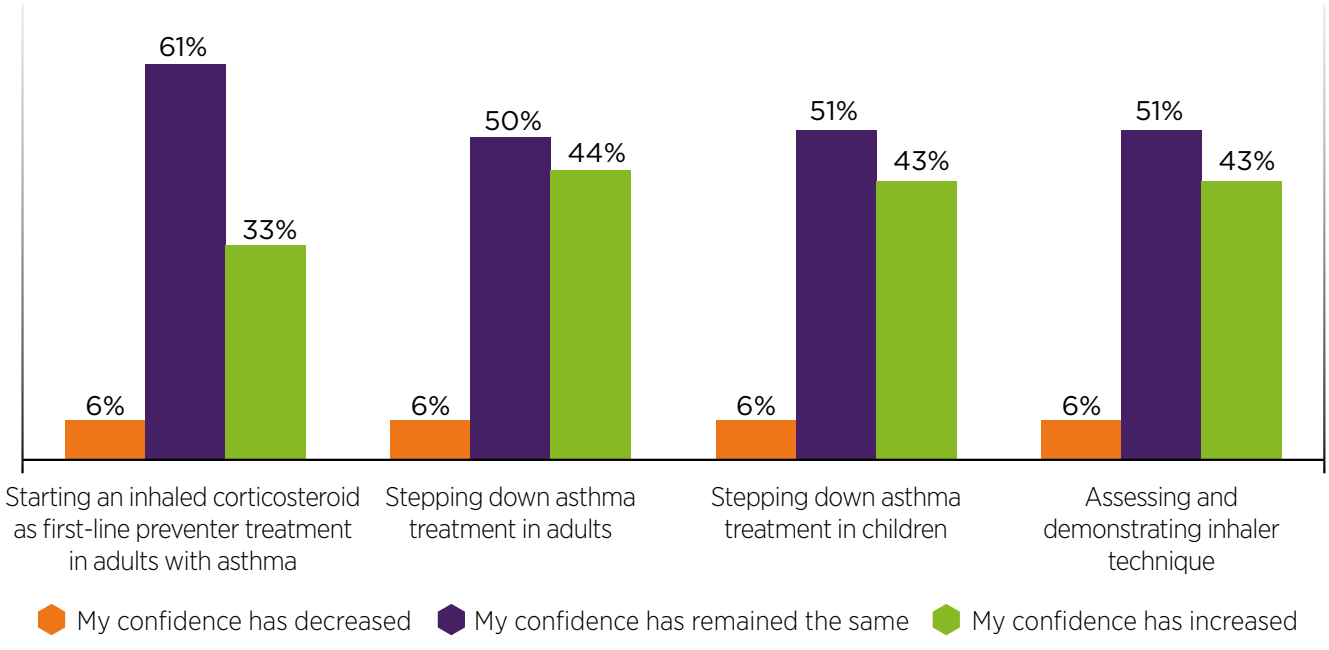
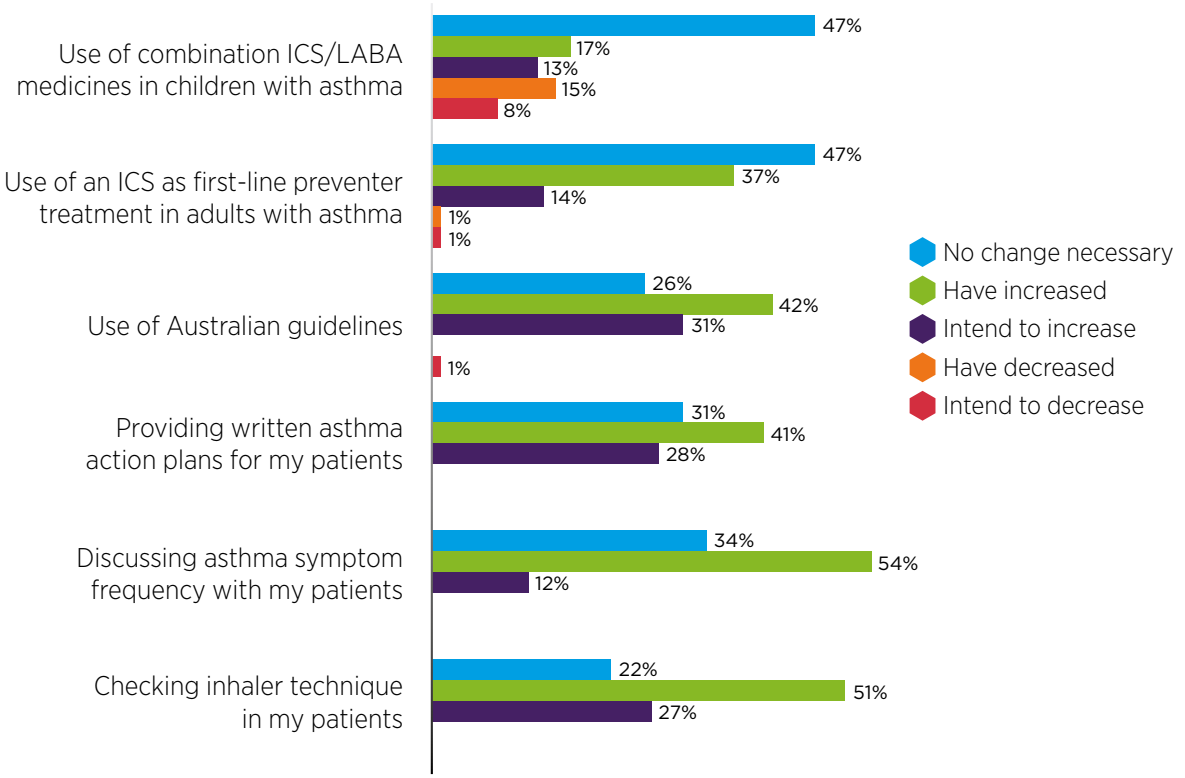


Figure 4: Level of change in GP asthma treatment practice



Participant GPs were asked to assess the level of change in their practice as a result of their participation in the educational visits for the NPS MedicineWise Asthma program (Figure 4). More than half of the participant GPs reported that they had increased their practice of discussing asthma-control with their patients (54%) and checking patient inhaler technique (51%). The educational visit also prompted GPs to increase their provision of written asthma action plans for relevant patients and their use of the Australian guidelines. More than half (51%) of participant GPs had either increased or intended to increase their use of an inhaled corticosteroid (ICS) as first-line preventer treatment in adults with asthma, which was aligned with NPS MedicineWise messaging.

Evaluation of the asthma program also served to highlight some challenges faced by GPs in the clinical setting, which sometimes created a barrier to following best practice treatment guidelines. The findings were presented to the design team and program implementation staff involved in the asthma and upcoming COPD programs. Identifying the challenges faced by GPs was interesting and useful because it identified why a single intervention was not as effective in some areas as hoped. Ongoing interventions are required to assist GPs to overcome challenges.

Analysis of PBS data will be undertaken in the 2017/18 financial year to identify longer term impacts of the 2014 Asthma program with regard to changes in GP prescribing of combination medicines.

Challenges

- Less than half of the GPs reported using the Australian Asthma Handbook 2014 in their practice. Those who did use the Handbook only used it 'sometimes' in their practice, although it was observed that GPs who did use the guidelines were more likely to provide the desired response to the case scenario questions
- GPs felt that they were often faced with conflicting information and pressures from patients. This appeared to create a barrier to reducing the prescribing of combination medicines for young children, and following the desired 'stepping down' approach for patients already on a combination medicine with good symptom control
- Despite participation in an educational visit the proportion of GPs who had 'increased' their use of combination medicines in children after participation was almost equal to those who had made the desired change of 'decreasing' their use of combination products
- Follow-up qualitative research with participant GPs found that there is a prevalent belief that combination medicines help to increase adherence and control asthma symptoms, which provide a benefit that outweighs the perceived low risk profile of combination asthma medicines.

Steps towards improving adherence to medicines with the help of pharmacists

Pharmacist pilot of the New Medicine Support Service

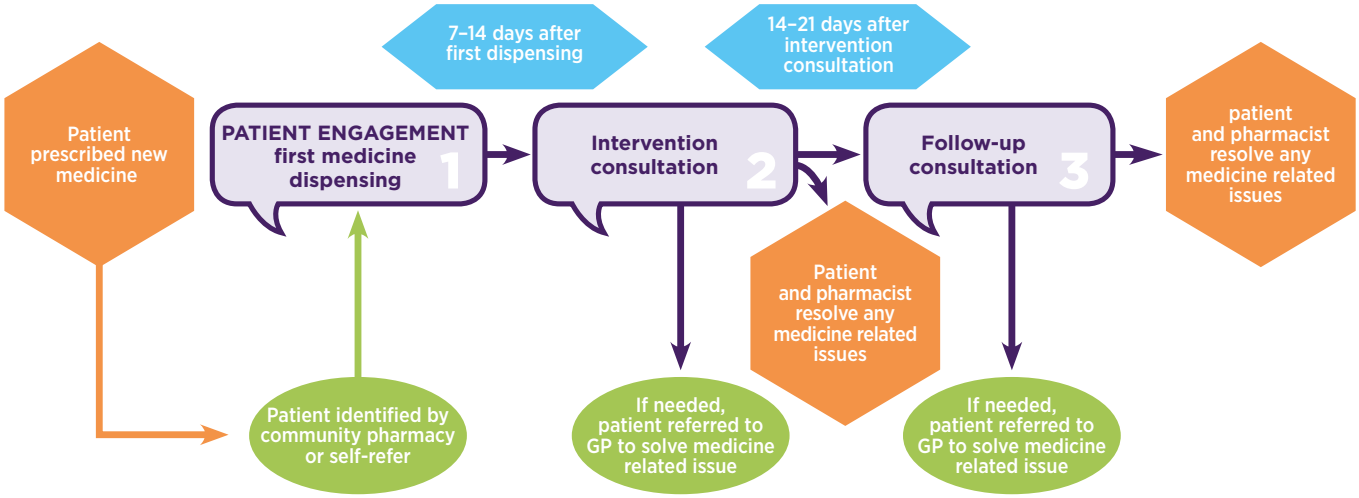
NPS MedicineWise piloted a New Medicine Support Service (NMSS) program across nine pharmacies in NSW (*n*=4), Queensland (*n*=4) and Victoria (*n*=1) from April to June 2016. This service aims to improve medicines adherence by providing pharmacist support to patients newly prescribed a medicine for the following long-term conditions:

- Asthma/COPD
- Conditions requiring antiplatelet/anticoagulant therapy
- Depression
- Dyslipidaemia
- Hypertension
- Type 2 diabetes.

This service was adapted from a successful program widely implemented by the National Health Service in the UK.[6] The pilot project sought to determine how the UK service could be adapted for delivery in Australia and integrated into the workflow of a community pharmacy. The NMSS is delivered in three stages: patient engagement; intervention; and follow-up (Figure 5). At the intervention and follow-up stages a pharmacist conducts a face-to-face or telephone semi-structured interview with the patient to assess adherence to the medicine; identify any problems; establish any support the patient may need; and answer any questions the patient may have about their new medicine. If problems are identified, remedial steps are suggested or the patient is referred to their GP.

This pilot aimed to determine the overall feasibility of the service in Australian community pharmacy, the value of the service and the acceptability of the processes and data collection tools.

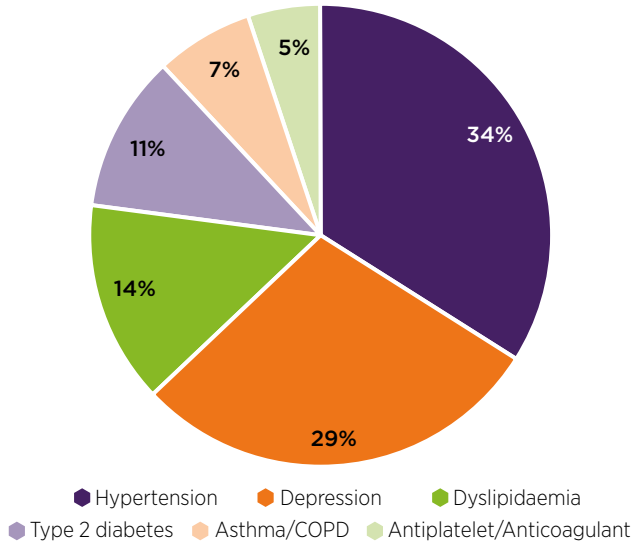
Figure 5: Delivery of the New Medicine Support Service



What was found?

The median number of patients recruited by each participant pharmacy over three months was 10 and ranged from 2 to 55. Of the 234 patients offered the service, a total of 148 (63%) registered to take part in the NMSS. The conditions represented are highlighted in Figure 6.

Figure 6: Percentage of patients by conditions/ indications



As a result of the service, referrals back to GPs occurred for 13% of patients at the intervention stage and 5% of patients at the follow-up stage. For the remainder, reassurance and advice to carry on using their medicines was sufficient. The most common reason for referring a patient was a potential side effect or that the patient had not been using the medicine. Overall the pilot of the NMSS demonstrated that implementation of the NMSS in pharmacies across Australia is feasible and able to be integrated into community pharmacy workflows. Patients responded positively towards the service and reported it to be of value. Future evaluation will measure the ability of the service to improve adherence to newly prescribed medicines.

> **"There was a point in time where I felt really glad to be participating in the service … I was quite anxious about the medication, and by talking to [my pharmacist] and reading through the information that was provided to me, I stopped worrying."**
>
> *Participant*

The patient's perspective of New Medicine Support Service (NMSS)

- Patients generally had a good and established relationship with the pharmacy prior to participating in the NMSS.
- Patients felt comfortable and relaxed in consultations with the pharmacist.
- Discussions with the pharmacist included side effects of the new medicine, when and how to take the medicine and reassurance that what patients were experiencing was normal.
- The service allayed patients' concerns about their new medicine.
- The pharmacist was generally perceived as providing a greater depth of information that was more detailed and tailored to the patient than that provided by the GP.
- The service is perceived to be a 'value add' for pharmacists, allowing them to share and use their high level of knowledge and skills.
- The service made it easier for some patients to take their new medicine and improved the use of the medicine.
- The majority of patients would use the service again and recommend it to others.

The pharmacist's perspective of New Medicine Support Service

- The NMSS formalises and reinforces ongoing new medicine counselling.
- The training provided by NPS MedicineWise prior to implementation was comprehensive and effective at supporting implementation.
- Patients were happy to participate although recruitment was low in some areas.
- The NMSS fits well into existing pharmacy systems and pharmacists were happy with the implementation.
- Positive outcomes were perceived to have been achieved for patients.
- Pharmacists were happy with the resources provided, although changes were suggested for the next phase.

Consumer adherence to medicines

The NPS MedicineWise National Consumer Survey is a cross-sectional study conducted with a nationally-representative sample from the Australian population. The survey was conducted from August to September 2015 and achieved a sample of 2,581 responses. The survey primarily measures key performance indicators of NPS MedicineWise as well as consumer awareness, attitudes and knowledge about program-related topics.

The survey included the topic of medicine adherence. Adherence is an extremely complex and dynamic issue, and can vary significantly between individuals and conditions. Adherent behaviour is simultaneously influenced by several factors, known as the five dimensions of adherence, which include social networks and economic pressures, interactions with healthcare systems and professionals, disease characteristics, chosen therapies and individual patient characteristics and preferences. However, it has been found that organisational variables, including time spent with clinicians and the interpersonal skills of health professionals, have a greater and more consistent impact on adherence than sociodemographic variables such as gender, age or education, across all health conditions.[7] In the case of depression medications, a meta-analysis identified a range of possible reasons from the literature that could explain the observed rates of non-adherence. Possible reasons included forgetfulness, side effects, patient concerns about potential side effects, high costs associated with depression medicines that are not covered by insurance or subsidised by governments, patient concerns about addiction to medications, scepticism regarding the potential benefits of the medicine, and poor communication and lack of follow-up healthcare by the health professional.[8] Some of the key findings on adherence levels and the impact of adherence for consumers are described below.

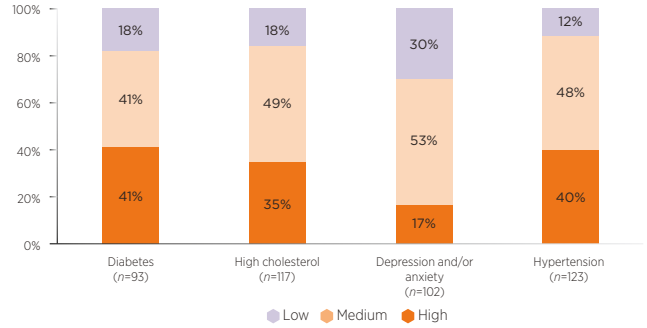
Adherence self-report measure

The survey included a self-report adherence scale to measure adherence to medicines. Using this approach, four questions were asked to determine a respondent's adherence level of either 'high', 'medium' or 'low' to a prescribed medicine. Respondents who did not engage in any of the non-adherent behaviour were categorised as 'highly adherent'; those who engaged in one or two out of the stated four non-adherent behaviours were identified to have medium adherence; and those who engaged in three or four out of the four stated non-adherent behaviours were deemed as having 'low adherence'.

Only 1 out of 3 consumers have high adherence

Based on results, only one-third of respondents prescribed a medicine have 'high' adherence (33%). Almost one half have 'medium' adherence (47%) and 19% have 'low' adherence. Respondents with depression and/or anxiety have a significantly lower adherence compared to those with diabetes, high cholesterol or hypertension. See Figure 7 for more details.

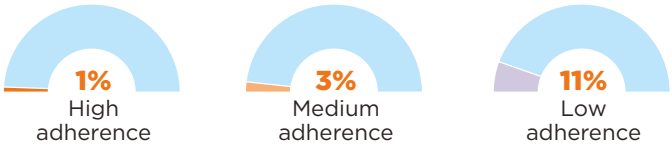
Figure 7: Medicine adherence levels across selected patient types



Low adherence associated with higher levels of hospital admission

Of consumers with low adherence to medicines, 11% have been admitted to a hospital or an emergency department in the last 3 months, compared to only 1% of consumers who are highly adherent and 3% of those with medium adherence.

Figure 8: Percentage of consumers from each adherence level who have been admitted to hospital or emergency department in the last 3 months

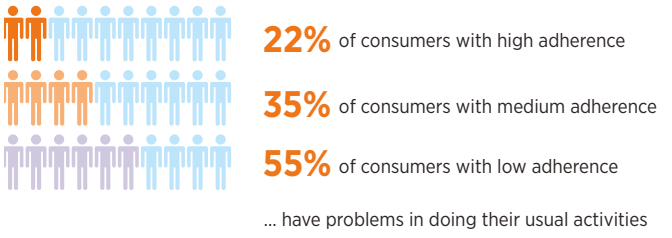


Consumers with high (n=225), medium (n=320) and low (n=131) adherence

Low adherence associated with issues in performing day-to-day activities

The survey results indicated that a higher proportion of respondents with low adherence to medicines had problems in performing their usual activities compared to consumers with high adherence (55% with low respondents vs. 22% among highly adherent). Further research is required to determine the characteristics of patients who have problems with day-to-day activities and how this impacts on their adherence to medication. See Figure 9.

Figure 9: Number of consumers from each adherence level who have problems in performing usual activities



Consumers with high (n=225), medium (n=320) and low (n=131) adherence

The results of the survey will help NPS MedicineWise deliver more effective programs for consumers and adds to our knowledge about non-adherence to prescribed medicines for particular conditions.

MedicineInsight – using data to support practice

What is MedicineInsight?

MedicineInsight is a national general practice data program developed and managed by NPS MedicineWise. It is the first large-scale general practice data program in Australia that extracts longitudinal de-identified patient health records from the software that general practices already use to manage patient records and write prescriptions. The program enables powerful and flexible insights that can be used for practice quality improvement, population health analysis, health policy and research.

MedicineInsight currently includes data from over 550 general practices in Australia and over 3.8 million 'active' patients.

MedicineInsight data can be used to support a wide range of activities to improve the delivery of healthcare and population health across Australia.

MedicineInsight aims to:

- support quality improvement in participating general practices
- inform future policy and primary care research
- achieve better healthcare for Australians
- support a sustainable PBS.

Since 2013, MedicineInsight has been delivering routine practice reports for GPs showing trends in clinical practice and prescribing to support effective educational interventions and quality improvement programs that assist GPs in delivering the best care to their patients. This information, in aggregated formats, has also been produced for policy makers to ensure Australia's health and medicines policy is driven by accurate and timely information from general practice.

Using MedicineInsight for quality improvement

Feedback on MedicineInsight Practice Reports

In the 2015/16 financial year, over 2000 health professionals from 318 general practices participated in MedicineInsight visits which included a tailored practice report and facilitated meeting. Topics have included type 2 diabetes, stroke prevention, antibiotics and managing depression. Additionally, all practices have access to an online report repository, allowing them to download their tailored updated practice reports as required. Over 500 confidential practice reports are provided monthly to participating practices via an online portal and through the NPS MedicineWise team of 61 Clinical Service Specialists (CSS). Reports are tailored for each practice and compare procedures and prescriptions between '*Your Practice 12 months ago*', '*Your Practice now*', and in comparison to all other MedicineInsight practices.

Figure 10 highlights an example of a report on tailoring treatment of diabetes patients illustrating positive changes in monitoring and prescribing behaviour in one practice over a year.

Figure 10: Extract from a de-identified practice report on the management of type 2 diabetes over a year

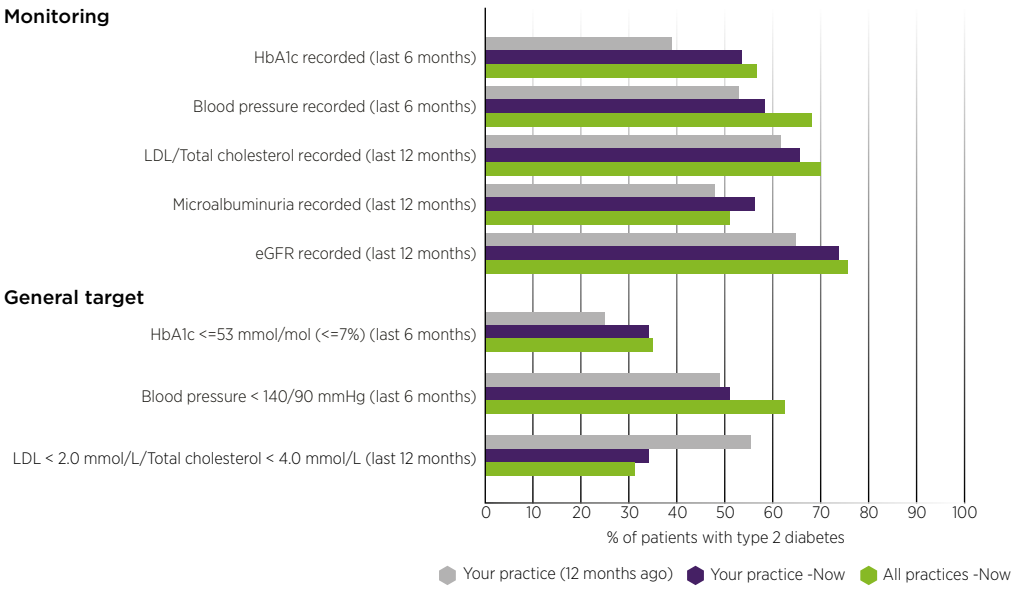


Table 2 provides feedback received on MedicineInsight practice reports from practice staff (GPs, GP registrars, practice managers, practice nurses and nurse practitioners) during 2015/16. The practice reports are perceived to be easy to understand and useful for patient care.

Practice staff continue to value the discussion and interaction amongst colleagues that ensues through the MedicineInsight visit. This allows them to discuss their data and patient care in a supportive, non-threatening atmosphere. Practice staff have acknowledged the ability of the CSSs to effectively facilitate practice meetings, appreciated the engaging manner with which the CSSs presented the data to them, their high level of knowledge and ability to answer questions and aid with opportunities for improvement. Additionally, practice staff valued the ability to compare their practice with that of peers and see their own data in relation to a clinical topic, which adds to the report's relevance and ability. This also allows them to reflect on their practice and identify areas that they wish to improve.

Table 2: Feedback on MedicineInsight practice reports

	Agree / Strongly agree % (N)	Neutral % (N)	Disagree / Strongly disagree % (N)
Easy to understand	**94 (176)**	3 (6)	3 (6)
Too long	9 (16)	25 (47)	**66 (123)**
Takes time to understand	35 (65)	22 (41)	**43 (80)**
Useful in helping me understand my patient care	**89 (166)**	9 (16)	3 (5)

"It was good to receive feedback on our practice's data and helpful to discuss improvements, in the end to improve patient outcomes. It was very positive and having the plans outlined and roles defined, goals become achievable."

GP

"Facilitator was interested in opinions of GPs and prepared to discuss our attitudes towards topic and tailor her feedback to suit the practice plus to do research to answer our questions raised in the meeting re how data was collected."

GP

"We were able to identify our deficient areas. We all agreed to improve these. Were able to get everyone's opinion about why certain things aren't working and how to rectify them."

GP registrar

"Very impressed with presenter's knowledge of both topic and explanation of data. She was able to answer all questions and kept everyone on track. She was definitely required to assist with action planning."

Practice nurse

Using MedicineInsight to inform National Medicines Policy, health policy, service planning & post market monitoring

several MedicineInsight reports were undertaken to inform post market surveillance reviews and medicines policy over the 2015/16 financial year for the Department of Health. In addition, an aggregated data report was produced for the Department of Health describing chronic disease management in primary healthcare for selected conditions.

MedicineInsight data was analysed to inform post-market review and medicines policy on the use of medicines for **chronic obstructive pulmonary disease (COPD)** including: patient profile, patterns of drug utilisation, indications for therapy, co-prescribing, sequencing of therapy, associated care and adverse events related to long-acting muscarinic antagonists (LAMA). Data was drawn for 365 clinically relevant practices for 3,081 GPs for 1,862,177 patients to 30 June 2015 inclusive.

Results of the MedicineInsight post-market report for medicines for COPD were as follows.

- Of all MedicineInsight patients, 2.5% were diagnosed with COPD, 1.7% had a COPD diagnosis without mention of asthma (COPD only, *n*=31,699), 11.4% had an asthma diagnosis without mention of COPD (asthma only, *n*=212,241) and 0.8% had both COPD plus asthma diagnoses (*n*=15,569). One third of patients with a diagnosis of COPD also had an asthma diagnosis.
- The age-specific prevalence of patients diagnosed with COPD increased with patient age. The prevalence rate of COPD in MedicineInsight active patients 55 years and over was 7.2%.
- There was a significantly higher prevalence of COPD in males compared to females, those living in inner regional areas and outer/remote areas and patients residing in more socio-economic disadvantaged areas.
- Patients who were ex-smokers and current smokers were more likely to have a diagnosis of COPD compared to non-smokers.
- The most common class of the medicines of interest were the fixed dose combination of long acting beta agonists and inhaled corticosteroids (ICS/LABA) (72%), followed by long-acting muscarinic antagonists (LAMA) (22%). The most commonly prescribed medicines were salmeterol\fluticasone (43%), eformoterol\budesonide (29%) and tiotropium (20%).
- The most commonly prescribed medicine classes for patients with COPD were LAMA (45%) and LABA\ICS (45%). The most commonly prescribed medicines for patients with COPD were tiotropium (40%) and salmeterol\fluticasone (29%).
- Overall most prescribing for patients with COPD appeared to conform to guidelines.

A review of **antidepressant medicines** was also conducted with over 230,000 active MedicineInsight patients prescribed over half a million original prescriptions for antidepressant medicines in 2015.

- The most common classes of antidepressants prescribed overall were the SSRI (46%), followed by SNRI (25%) and tricyclic antidepressants (18%), and for patients with depression, the SSRI (49%), SNRI (30%) and NaSSA (9.4%).
- The most commonly prescribed medicines overall, and for patients with depression were escitalopram, sertraline, and venlafaxine.
- The data suggests that GPs are largely following guidelines for antidepressant therapy in the general population. However for patients aged 13–17, only 63% of those with a first prescription for an antidepressant in 2015 did not received fluoxetine and requires further investigation.
- The annual rate of antidepressant prescribing per 1,000 GP encounters increased by 8% between 2011 and 2015.
- Of the 180,578 patients who were ordered a non-tricyclic antidepressant script in 2015, the majority had a recorded diagnosis of depression (74%) and another 15% of patients had another mental health diagnosis recorded. No relevant indication for antidepressant use could be found for 6% of patients.
- The age-specific prevalence of patients prescribed antidepressants in 2015 increased with patient age.

A review of **biological medicines** recorded in MedicineInsight was conducted to describe patterns of drug utilisation and the patient cohort profile. For this report, data was drawn for 365 clinically relevant practices for 1,420 GPs for 1,757,313 patients, from 1 July 2014 to 30 June 2015 inclusive.

- In 2014/15, 125 patients had at least one record of a prescription for a biological medicine of interest, and across all years 573 patients had one or more of these medicines recorded.
- 96% of patients were ordered only one biological of interest and 3% were ordered 2 of these medicines.
- The most commonly recorded biological medicines were Adalimumab and Etanercept.
- Of all prescription records for biological medicines, 28% were recorded in the software but not prescribed and 46% were marked as private prescriptions.
- Patients with a record of a biological medicine of interest were more likely to be female (65.0%) compared to males and more likely to be female than the active MedicineInsight population (56.0%).
- Patients prescribed biological medicines were more likely to reside in major cities compared to regional and remote centres; and more likely to reside in higher socioeconomic areas.

MedicineInsight data was used to provide aggregated data tables for the Department of Health describing **chronic disease management of selected conditions in general practice** from 1 July 2012 to 30 June 2015. The focus was primarily on patients in MedicineInsight with a Chronic Disease Medicare Benefits Schedule (MBS) care plan and/or a Mental Health MBS Care Plan.

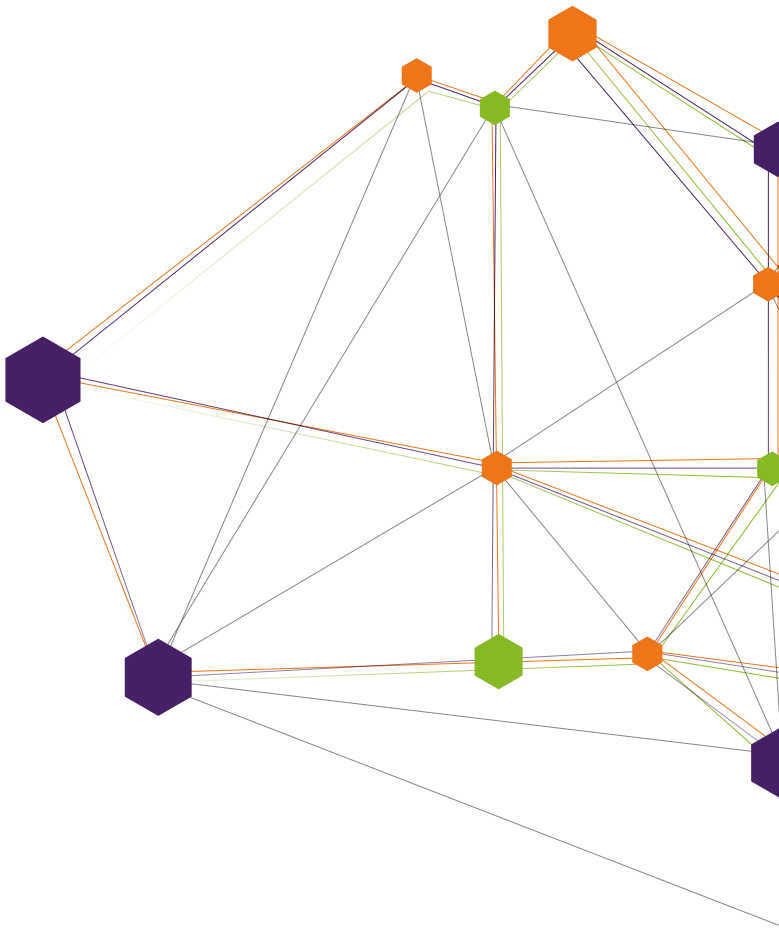
- The selected conditions included were: asthma, chronic obstructive pulmonary disorder, cardiovascular disease, diabetes type 1 or 2, chronic renal disease, arthritis, cancer (malignant), dementia, chronic liver disease and back pain, depression, bipolar disorder, anxiety and schizophrenia.
- The cohort of active patients and the cohort of patients with a Chronic Disease and/or Mental Health MBS Care Plan were described in terms of socio-demographics (age group, sex, smoking status, Aboriginal and Torres Strait Islander status, geographic location, rurality and socioeconomic status), risk factor recording (blood pressure, HbA1C, cholesterol, body mass index), elevated risk (e.g. elevated blood pressure), and GP consultation rates.
- The ratio of Chronic Disease and Mental Health MBS Care Plans to patients with a chronic disease or mental health diagnosis recorded were also provided.

Using MedicineInsight to inform health research

A MedicineInsight report describing the pathways of care before a lung cancer diagnosis in general practice (1 April 2013 to 31 March 2016) was provided to the Cancer Institute of NSW to inform the development of their programs in primary care. This report demonstrated the capability of MedicineInsight in answering research questions related to cancer diagnostic pathways in primary care, by providing an insight into the distribution of lung cancer related symptoms, chest investigations and referrals to specialists in the year prior to a lung cancer diagnosis. The report provided estimates of diagnostic intervals (between symptom presentation and lung cancer diagnosis) as well as other relevant intervals in the delivery of care in the year before a lung cancer diagnosis.

Several projects have been approved utilising MedicineInsight data to inform research and to test the usefulness of the data, in accordance with data governance and ethics approvals. The topics and research organisations involved are as follows:

- Risk Management Plan Evaluation, University of South Australia
  - *"MedicineInsight data can be used by researchers and companies for risk management plan evaluation, thus contributing to improved patient safety"* **Research Team**
- Chronic kidney disease prevalence and management in People with type 2 diabetes, University of Melbourne
- Evaluation of vaccination coverage data for population sub-groups, The University of New South Wales, School of Public Health and Community Medicine
- The prevalence of chronic musculoskeletal/pain conditions in Australian general practice and their association with vitamin D testing, deficiency and prescribing, University of Adelaide
- Preventing obesity in childhood and adolescence: weight and height screening in Australian general practice, University of Adelaide.



Achieving results

Pharmaceutical Benefits Scheme (PBS) savings

NPS MedicineWise has been contracted by the Commonwealth Department of Health (DoH) to deliver savings to the Pharmaceutical Benefits Scheme (PBS). The savings requirement for the total contract period, 2015/16 to 2017/18, is $210 million, including $70 million in the 2015/16 financial year.

NPS MedicineWise identifies therapeutic areas where there is strong evidence of practice gaps, inappropriate medicines prescribing or suboptimal use of medical tests, and designs multifaceted national educational programs to address these issues. Areas are targeted where education and information can have a positive impact on prescribing, consistent with quality use of medicines principles. On the basis of the therapeutic gap, programs are designed with appropriate levels of intensity and may include face-to-face educational visits with GPs and practice staff using academic detailing techniques.

The financial impact, in terms of cost savings to the PBS, of the NPS MedicineWise programs evaluated in this period was determined using time series analysis. Based on actual PBS prescribing volumes, statistical models were developed to estimate the volume of PBS prescribing over time, for the relevant medicine/s, in the presence and absence of the NPS MedicineWise program under investigation. Cost savings were calculated if an NPS MedicineWise program was shown to have a statistically significant impact on reducing prescription volume.

A Bayesian hierarchical time series approach was also used in the analysis of a series of NPS MedicineWise programs on antibiotic resistance. This innovative approach allowed us to detect, for the first time, the impact resulting from NPS MedicineWise's sustained efforts in fighting antibiotic resistance.

NPS MedicineWise programs across seven therapeutic areas returned significant cost savings to the PBS expenditure. Whilst savings for the 2014/15 financial year remained the focus, we also included savings for prior financial years, where no previous claims have been made. The savings reported in 2016 totalled **$75.21 million**.

TO CALCULATE THE FINANCIAL IMPACT OF OUR PROGRAMS WE EVALUATED THESE PRESCRIBING INTERVENTION PROGRAMS:

- Antibiotic resistance (visiting and non-visiting programs)
- Management options to maximise sleep (visiting program)
- Opioid use in chronic pain – use a planned approach (visiting program)
- Cardiovascular risk – guiding lipid management (visiting program)
- Balancing the benefits and harms of antipsychotic therapy (visiting program)
- Depression – challenges in primary care (non-visiting program)
- Exploring inhaled medicines use and asthma control (visiting program)

Diagnostics – Medical Benefits Scheme (MBS) savings

The assessment of the financial impact of the NPS MedicineWise Quality Use of Diagnostics (QUD) program on the Medicare Benefits Scheme (MBS) was based on the *Back to Basics for Fatigue: a Diagnostic Approach* (2014) program. The program discouraged the routine referral for medical tests for people with fatigue aged 25–64 years who present with no indicators of underlying disease and was run from October 2014 to August 2015. The program engaged 7,118 unique GPs in an interactive intervention that included one to one educational visits, small group case-based meetings, conference workshops, case studies and an online learning course. This was supported by information products for health professionals and consumers and media campaigns. Reductions in inappropriate referrals for vitamin B12 and/or folate pathology testing was one of the goals of the program.

Time series analysis was used to assess the financial impact of the NPS MedicineWise fatigue program. Provider level reimbursement data for August 2011 to December 2015 was obtained from the Commonwealth Department of Human Services (DHS).This data allowed for services referred by GPs to be distinguished from services referred by other health professionals (non-GP). This separation is valuable in evaluating the impact of NPS MedicineWise interventions which targeted only GPs. The non-GP data was used as a control series to predict what would have occurred in the GP time series had the NPS MedicineWise intervention not occurred. This prediction was calculated from the time series values of the GP group in the pre-intervention period, along with the time series values of the control group (non-GP) in the post intervention period. The impact of the intervention program was derived by the subtraction of the predicted data from the observed data in the post intervention period. The analysis used was Bayesian Hierarchical Time Series Modelling.

During the pre-intervention period the trends for GP referrals for vitamin B12 and/or folate testing was closely correlated to the referral trend of other health professionals. However, the NPS MedicineWise *Back to Basics for Fatigue* program coincided with changes to the MBS items for vitamin B12 and folate testing in November 2014. This change impacted the referral patterns of GP and non-GP health professionals and disrupted the ability to correlate GP and non-GP referral patterns which impacted on the control group design. To overcome this, an adjusted number of services was created based on a hypothetical scenario in which the conditions brought about by the MBS item changes existed for the entire time series. This adjusted number was developed by retrospectively mapping the referral behaviour observed post November 2014, on to the pre November 2014 time series.

After adjusting for the change in MBS item numbers, a mean reduction of 743,000 services, with a relative decrease in GP referrals for vitamin B12/folate tests of 22.1% was attributable to the NPS MedicineWise *Back to Basics for Fatigue: a Diagnostic Approach* (2014) program. The saving to the MBS corresponding to this reduction was **$19.3 million**.

Diagnostics – savings gained from the Imaging for *Acute Low Back Pain* program

For over a decade, evidence-based guidelines have advised against imaging in routine assessment of patients with acute low back pain in the absence of "red flag" indicators of potentially serious underlying conditions. There is no evidence that imaging without a red flag reason improves patient outcomes or alters clinical decision making.[9] Despite this, a 2010 Australian study indicated that more than a quarter of patients presenting to GPs with a new episode of low back pain were referred for a diagnostic imaging test.[10] The high use of diagnostic imaging for low back pain outside of guideline recommendations results in unnecessary cost to the Australian health system and for patients, and avoidable exposure to radiation.

The *Imaging for Acute Low Back Pain* program was launched in 2013 and built on previous work in this area. The program aimed to decrease the volume of unnecessary computer tomography (CT) scans for acute low back pain, and reduce potential cancer risk associated with radiation from unnecessary CT scans.

The *Imaging for Acute Low Back Pain* program involved sending a personalised MBS data feedback report to 19,997 practicing Australian GPs for the purposes of self-reflection. Each GP was also provided with links to a symptomatic management pad and the online back pain choices decision support tool.

A two-stage economic evaluation was conducted to identify, in monetary terms, the costs and benefits of the program. Stage one involved an impact evaluation to identify the effect of the program on CT scan utilisation and to estimate cancer risk associated with unnecessary radiation. Stage two involved cost-benefit and cost-effectiveness analysis.

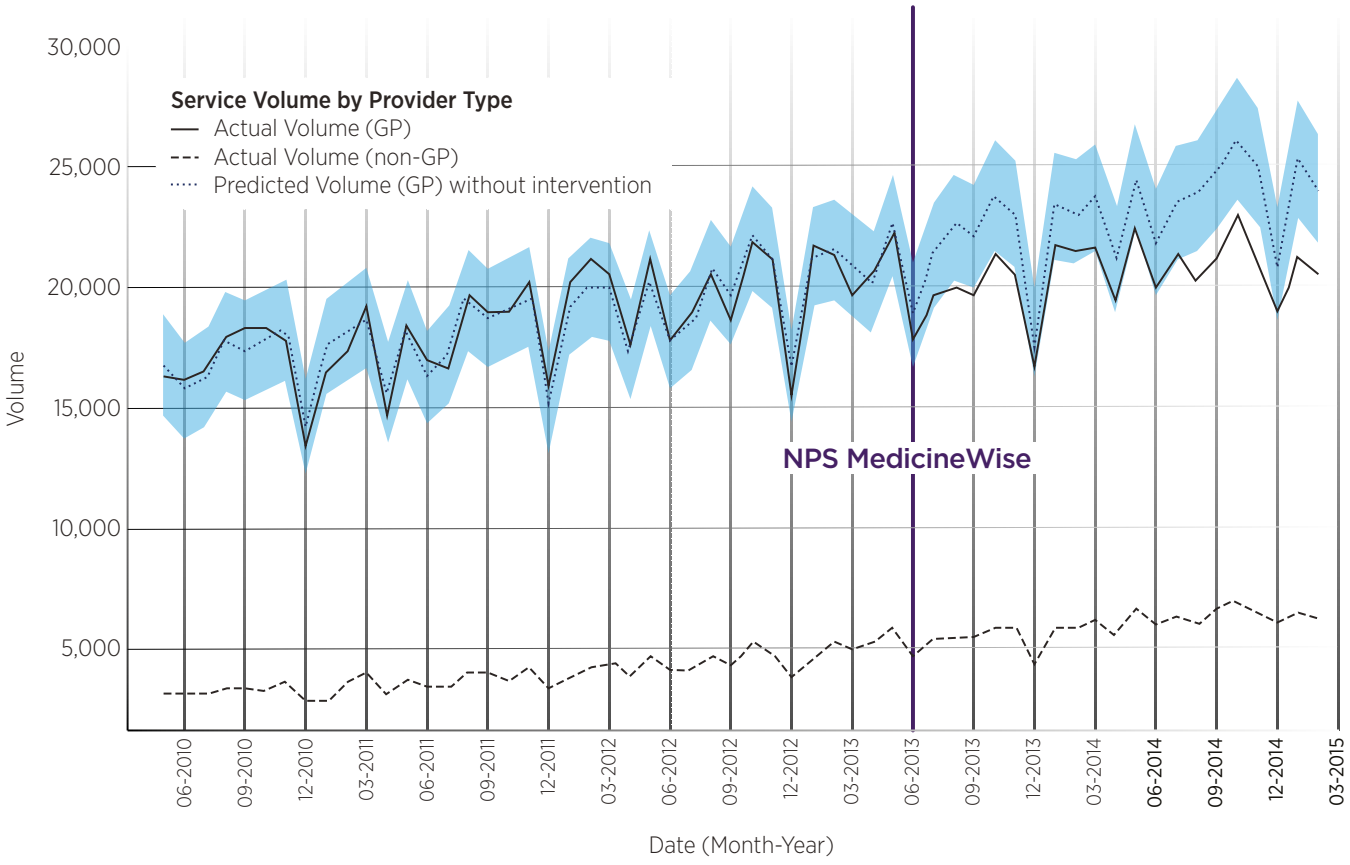
Time series analysis indicated that there was an estimated mean CT scan referral reduction, attributable to the NPS MedicineWise program, of 50,186 scans for the period July 2013 to February 2015. This translates to $11,600,898 of MBS savings. The impact of the CT scan reduction on population cancer risk was estimated to be an averted excess lifetime risk of 36 incident cancers.

The results from the stage one impact evaluation and program costs data were used to conduct the stage two cost-benefit and cost-effectiveness analysis. Impact on CT scan referral was discounted at an annual rate of 5%, calculated monthly after the first year. All program costs were adjusted to 2015 currency using Australia CPI published by the Australian Bureau of Statistics. The net benefit of the program was **$11,434,285** – the difference between the savings resulting from averted CT scans and the costs of the NPS MedicineWise 2013 IALBP program. The benefit to cost ratio was 82.01, indicating that for every dollar spent on the program, $82 was gained in monetary benefit.

To determine the cost impact of reduced CT scans and excess lifetime incident cancers averted, an incremental cost effectiveness ratio (ICER) was calculated for the *Imaging for Acute Low Back Pain* program with the alternative of no program. For every $2.82 spent on the program, one CT scan was averted. This cost is offset by the savings to the MBS from the averted CT scan of $231 on average. The sensitivity analysis showed the results were most dependent on the program's estimated impact on CT scans, and there was a high level of confidence in dominance of the program.

Unnecessary use of CT scans can have significant adverse effects on the healthcare system and consumers in terms of monetary costs and serious detrimental health outcomes. This economic evaluation found that the NPS MedicineWise *Imaging for Acute Low Back Pain* program provided significant savings to the healthcare system and averted health risks to the population.

Figure 11: Time series analysis of monthly count of CT scan referrals (MBS item number 56223) showing a reduction in CT scan referrals attributable to the 2013 NPS MedicineWise *Imaging for acute low back pain* program



Reaching out – Australian Prescriber goes digital

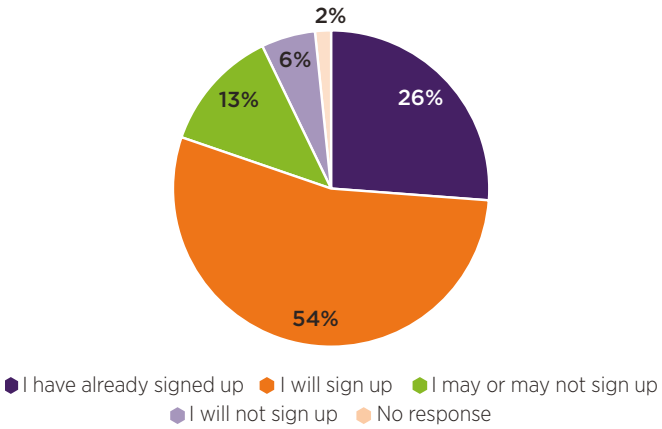
Australian Prescriber is an independent, evidence-based medical journal published by NPS MedicineWise. The journal began as a print publication in 1975 and an online version was added in 1996. In 2016, NPS MedicineWise transitioned Australian Prescriber to a purely digital publication with its last print issue distributed in June 2016.

A self-completion paper-based survey was conducted with questionnaires inserted in the June 2016 print issue of the Australian Prescriber to gain feedback on the thoughts of readers about the shift as well as their likelihood to sign up to digital Australian Prescriber. The survey was also used to obtain information that may help maximise readership and loyalty of Australian Prescriber going forward. At the end of a 6-week data collection period, a total of 2,661 completed surveys were collected.

The majority of readers are willing to sign up

The majority (80%) of readers indicated that they were willing to sign up or have already signed up for the digital journal. Figure 12 provides further information.

Figure 12: Likelihood to subscribe to digital Australian Prescriber

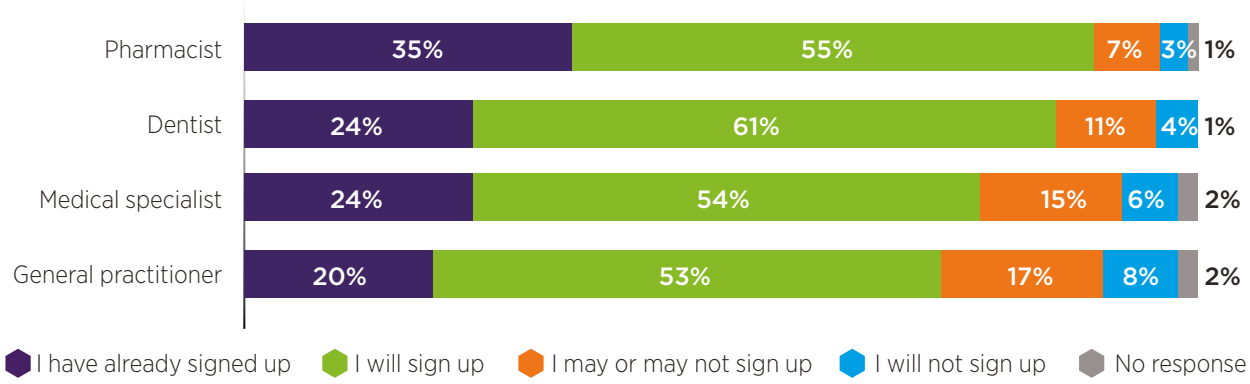


N=2,661 Print Subscribers

By profession, significantly more pharmacists intend to sign up or have already signed up compared to specialists and GPs (pharmacists 90% vs. specialists 78% vs. GPs 73%). See Figure 13 for more details.

By age group, significantly fewer readers among the 65+ year age group intend to sign up or have signed up to digital compared to the younger aged groups (65+ years 73%, 55–64 years 78%, 45–54 years 88%, 35–44 years 85%, 25–34 years 87%).

Figure 13: Likelihood to subscribe to digital Australian Prescriber by profession



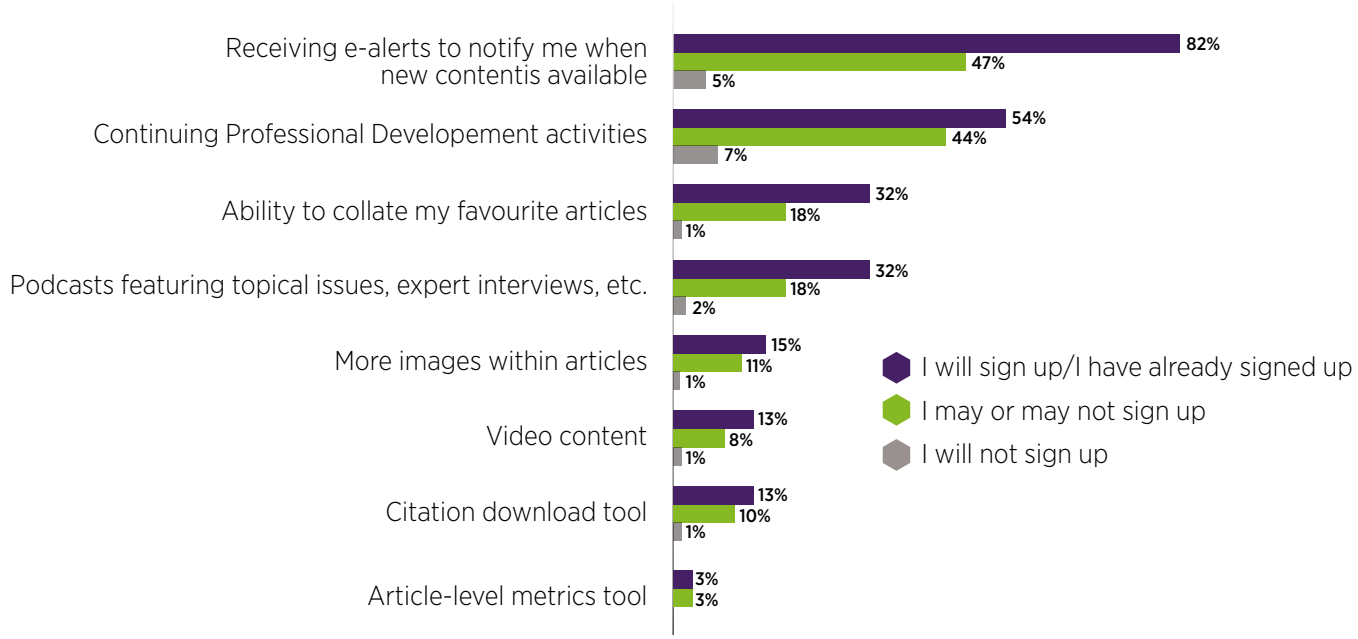
n=2,661 Print Subscribers

Features that readers would like to see in digital Australian Prescriber

Readers who '"will sign up/have already signed up" as well as those who "may or may not sign up" to digital Australian Prescriber wanted to receive e-alerts first and foremost, followed by CPD activities. There was also a significant amount of interest in having the ability to collate their favourite articles and having podcasts and expert interviews (Figure 14).

Readers who indicated that they will not sign up did not select a lot of features, although 7% expressed interest in CPD activities and 5% were interested in e-alerts.

Figure 14: Features readers would like to see in digital Australian Prescriber



Base: n=2132 readers who will sign up/have already signed up, n=340 readers who may or may not sign up and n=149 readers who will not sign up

Enabling knowledge sharing and debate

National Medicines Symposium 2016

The National Medicines Symposium (NMS) is a cross-disciplinary event held biennially by NPS MedicineWise. The NMS aims to provide a unique opportunity for experts from all areas of the health sector, across Australia, and the globe, to come together, to discuss, and share knowledge of both local, and international issues relating to the quality use of medicines and medical tests. The National Medicines Symposium 2016 (NMS 2016), took discussion to the next level with the latest information on quality use of broader health technologies and health innovation. Delegates at NMS 2016 included clinicians, policy makers, researchers, academics, students, industry representatives, consumers, and government employees.

Highlights

Respondents were asked to provide feedback on which session they felt was the most valuable, and from these comments, three sessions were identified

1. 'New Technology and Changing Perspectives: Genetic Testing for Greater Good' presented by Professor Bruce Carleton, discussed how effective national surveillance systems are improving the safe use of medicines in Canada, and the search for genomic solutions to the lack of predictability of many adverse drug reactions. Professor Bruce Carleton received the highest rate of positive feedback from respondents. The reasons provided for this favourable reception included that the topic was interesting and Professor Carleton was an engaging speaker.
2. 'Global Megatrends: Forever Young' presented by Dr Stefan Hajkowicz, also had a high rate of positive feedback. Dr Stefan Hajkowicz identified ways in which an ageing population, and changes in retirement patterns in addition to trends in chronic illness and innovative healthcare, can change the world.
3. 'Managing the Challenges and Opportunities of Breakthrough Therapies', presented by Dr Prudence Scott, was also identified as a highlight of the NMS, due to the topical and innovative nature of the issue discussed.

Key outcome evaluation findings

The four learning outcomes for the NMS were 'entirely met', and 'partially met' by most participants (Figure 15). Overall, all respondents reported satisfaction with both days of the NMS (Figure 16), with the majority of respondents reporting that their expectations were either all met or exceeded (80.8%, n=59).

Figure 16: How satisfied were you with the activities of NMS 2016?

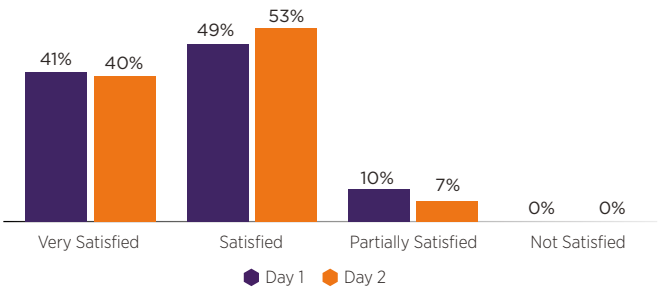
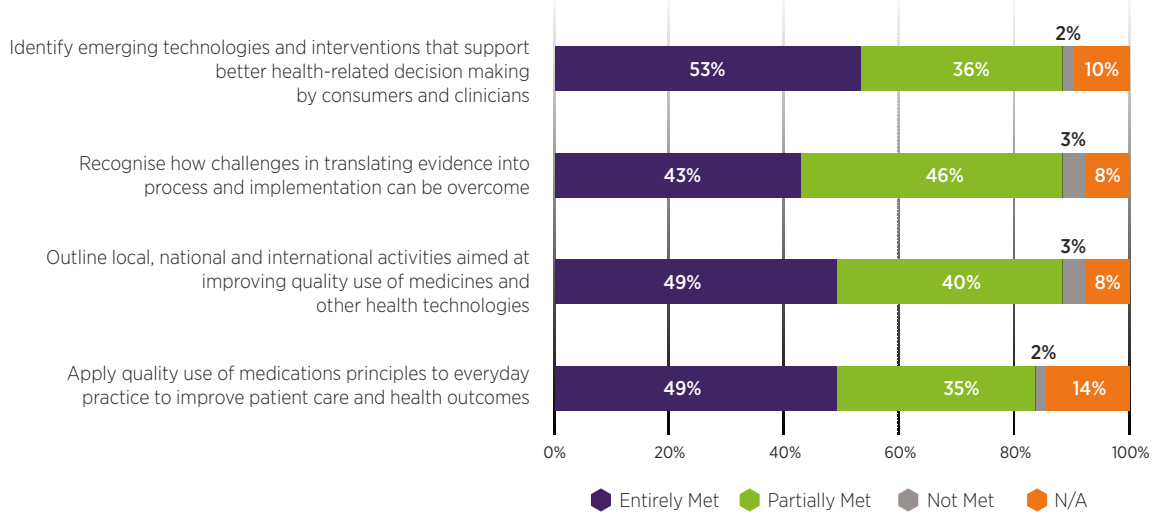


Figure 15: Percentage of respondents by the extent the learning outcomes were met by NMS 2016



Online learning modules

NPS MedicineWise offers a range of online learning courses available to both students and health professionals. In 2015–16 we offered 53 online courses, 10 case studies and 32 National Prescribing Curriculum Modules with 133,000 registered online learners.

National Prescribing Curriculum

From July 2015 to June 2016 there were a total of 7,577 enrolments in NPS MedicineWise National Prescribing Curriculum (NPC) learning modules, with 100% of medical schools and 94% of pharmacy schools using the NPC. The number of enrolments have increased in 2015–16 compared to previous years as demonstrated in Table 3.

Table 3: Number of NPC enrolments

YEAR	No. enrolments
2008–2009	3211
2009–2010	4714
2010–2011	3845
2011–2012	4414
2012–2013	4696
2013–2014	4335
2014–2015	4524
2015–2016	7577
Total	37316

Nurses and pharmacists are satisfied with NPS MedicineWise online learning

An evaluation to better understand the needs of nurses and pharmacists, and their perceptions of NPS MedicineWise as an online learning provider, was conducted in 2015–16.

Based on interview findings, NPS MedicineWise is "regarded as an authority, providing credible, independent, unbiased information to health professionals," and the online learning products were seen to be similarly independent, evidence based, comprehensive in terms of breadth and content depth, of high quality and professional.

Respondents to the online survey agreed, rating NPS MedicineWise online learning highly across a number of online learning provider attributes. This question was rated on a scale from 1 representing "very poor" to 10 representing "excellent", with a midpoint rating of 5 indicating "moderate." On all measures, pharmacists rated NPS MedicineWise slightly higher than nurses did. Mean scores for pharmacists ranged from 8.2 to 9.1, while mean scores for nurses ranged from 7.8 to 8.2 for the same list of attributes.

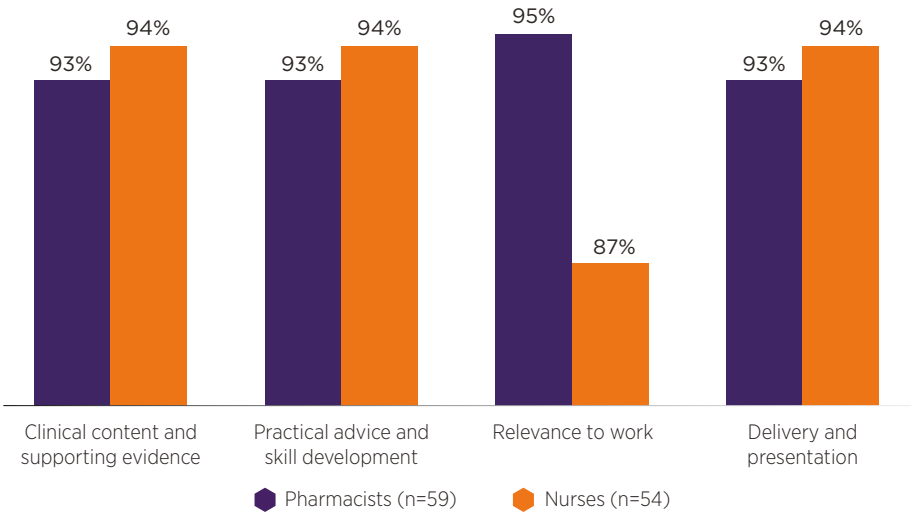
The highest rated attribute among pharmacists was NPS MedicineWise online learning's focus on evidence-based medicine, with an average rating of 9.1. This is a positive outcome, as when respondents were asked about their considerations when choosing an online learning provider, "focus on evidence based medicine" was the second most important consideration, only rated less important than "free access," which NPS MedicineWise online learning also provides.

Among nurses, the highest rating attribute for NPS MedicineWise online learning was as a 'clinical expert' with a score of 8.3. This is a positive outcome, as nurses rated "clinical expertise" as the second most important attribute when choosing a provider of online learning, after "free access."

Satisfaction with the NPS MedicineWise online learning experience

Both pharmacist and nurse respondents to this survey indicated a high level of satisfaction with their first completed course and its impact on awareness, knowledge and patient management. Respondents with a higher level of experience with NPS MedicineWise online learning are more likely to recommend us to a colleague. Most pharmacists and of nurses reported being either "satisfied" or "very satisfied" with their NPS MedicineWise online learning experience, including: clinical content and supporting evidence; practical advice; skill development; delivery; and presentation (Figure 17). This positive assessment of course satisfaction and impact was reinforced by those interviewed who indicated that NPS MedicineWise online learning courses were well regarded and provide an appropriate depth of content.

Figure 17: Percentage of pharmacists and nurses "very satisfied" or "satisfied" with NPS MedicineWise online courses by course aspect



Impact on knowledge and practice

Both pharmacists and nurses reported that the completed online course had an impact on their awareness of resources and guidelines, clinical knowledge, and patient management.

- 89% of pharmacists and 85% of nurses reported moderate or high impact of the course on their awareness of resources and/or guidelines.
- 88% of pharmacists and 84% of nurses reported moderate or high impact of the course on their clinical knowledge.
- 83% of pharmacists and 74% of nurses reported moderate or high impact of the course on patient management.

Raising awareness of new therapeutics and issues – exploring biosimilars

the Biologic and Biosimilar Medicines 2020 Forum took place in Sydney on 23 June 2016 with the Australian National Medicines Policy providing a framework for discussions. The main themes that emerged from the Forum included the need to: improve the evidence base to improve patient confidence; optimise data capture; improve pharmacovigilance and naming conventions; and to build stakeholder confidence and shared decision-making through high quality information.11 One of the key priorities identified is the need to have patients at the centre of decision making processes, by improving their knowledge and via shared decision making processes. Another major concern is for biosimilar interchangeability.[12] The Government's Biosimilar Awareness Initiative should assist with addressing concerns of both health professionals and consumers.

NPS MedicineWise is preparing information about biosimilars for health professionals and consumers. Content for an article on biosimilars for health professionals for Health News and Evidence and for the NPS website for consumers is currently being reviewed by the Department of Health.

As part of our program design work with the Australian Rheumatology Association, NPS MedicineWise has been exploring the role of biosimilars in caring for those with rheumatoid arthritis. Rheumatologists, general practitioners and community pharmacists attended a meeting at NPS MedicineWise to assist with the design of a program addressing rheumatoid arthritis and shared their profession experience and views of biosimilars and the impact they expect biosimilar to have on care. Through this work, NPS MedicineWise has begun to build a map of the behavioural and system drivers that may influence the use of biosimilars in Australia. Some of the findings from discussions are shared below.

- General practitioners may have low awareness of biological medicines in general, particularly as they pertain to monitoring ongoing patient management. As a consequence, knowledge translation activities relating to biologicals and biosimilars, with a primary focus on how these relate to standard general practice care, will be beneficial (e.g. ongoing monitoring for bone density between patients on bisphosphonate versus denosumab).
- Pharmacists (particularly in the instance of a-flagging) may have multiple influences including financial (e.g. manufacturer incentives), knowledge and skill drivers as they relate to device differences, and knowledge gaps (e.g. paucity of evidence to support multiple switching).
- Rheumatologists have high knowledge and awareness of products and evidence, but have limited control and feedback mechanisms to understand what, if any, switch/s have occurred to their patient's medicines. This is important for ongoing management and support for patient adherence.
- Consumers may consider new biosimilar switching in the pharmacy setting similar to generics. However, considerations for multiple switches (i.e. between the biosimilar and originator) are yet to be fully understood. Additionally, device literacy (where there are differences between administration devices) may affect adherence.

It is clear that barriers to be addressed regarding biosimilars relate to a number of areas including knowledge translation, regulation and protocols, patient education, communication systems and ongoing research. NPS MedicineWise will endeavour to address these gaps as they relate to rheumatoid arthritis in our upcoming program.

Choosing Wisely – a successful first year

Choosing Wisely Australia® is an initiative led by Australian medical colleges and professional societies, and facilitated by NPS MedicineWise. One of the main aims of the initiative is to encourage clinicians and consumers to start a conversation about appropriateness of care.

The first year of Choosing Wisely Australia ran from the launch in April 2015 to April 2016.

Process evaluation was conducted to assess levels of reach and engagement among target audiences. Impact evaluation was conducted to assess the awareness, attitudes and practice of health professionals and consumers with regard to tests, treatments and procedures.

Choosing Wisely reach

Support for the Choosing Wisely Australia initiative exceeded expectations, with 67% of medical colleges and societies signing up in the first 12 months. By November 2016, 73% of medical colleges, societies and associations had joined the Choosing Wisely Australia initiative. The proportion of medical colleges and societies that engaged in implementation activities, such as workshops, promotions and resources, also exceeded expectations.

In the first 12 months of the initiative, the Choosing Wisely Australia website recorded a total of 59,666 sessions and 210,944 page views. By November 2016, over 100,000 website sessions were recorded. Choosing Wisely Australia social media channels such as Facebook and Twitter reached 351,600 and engaged with 12,360 users in the first ten months. By November 2016, the Choosing Wisely Australia initiative had 4,000 social media followers across Facebook, Twitter, LinkedIn and Google+.

Media coverage was an important factor in the initial year, where Choosing Wisely Australia was mentioned in over 3,000 media reports. The cumulative potential audience of this coverage was estimated at over 18 million Australians.

When surveyed, 90% of GPs and 95% of specialists felt they had a responsibility to reduce the inappropriate use of tests, treatments and procedures.

Choosing Wisely impact on GP and specialist attitudes and practice

There was a significant increase in GP (+36%, $p \leq 0.001$), and specialist (+10%, $p \leq 0.01$) awareness of Choosing Wisely Australia after the inaugural launch of the initiative.

When surveyed, 90% of GPs and 95% of specialists felt they had a responsibility to reduce the inappropriate use of tests, treatments and procedures.

The majority of GPs and specialists recognised that unnecessary or inappropriate use of tests, treatments and procedures is an issue in Australia and believed they had a responsibility to reduce this inappropriate use.

Post launch, significantly more GPs indicated that they would 'always' discourage patients from having unnecessary tests, treatments or procedures. Health professionals do face challenges in their practice that might result in requesting an unnecessary test, treatment or procedure. For GPs, the biggest challenge was in meeting perceived patient expectations, and for specialists it was the difficulties experienced in accessing information, including test results, from doctors in other settings.

Consumer attitudes and practice to medical tests

The majority of consumers (94%) surveyed in the 2015 National Consumer Survey, agreed that taking an active role in their own healthcare was important. As part of their healthcare in 2015, 45% (n=1,169) of consumer respondents reported having had a medical test.

For most consumer respondents the catalyst for having a medical test was because their GP (62%), specialist (17%) or other health professional (4%) had recommended they have it. Only 16% of consumer respondents indicated having asked their doctor for the test, and 1% had been prompted to have the test by a family member or friend.

In order to assess consumer understanding of the risks of unnecessary tests, respondents were asked to indicate their level of agreement or disagreement with a number of statements about medical tests (Figure 18).

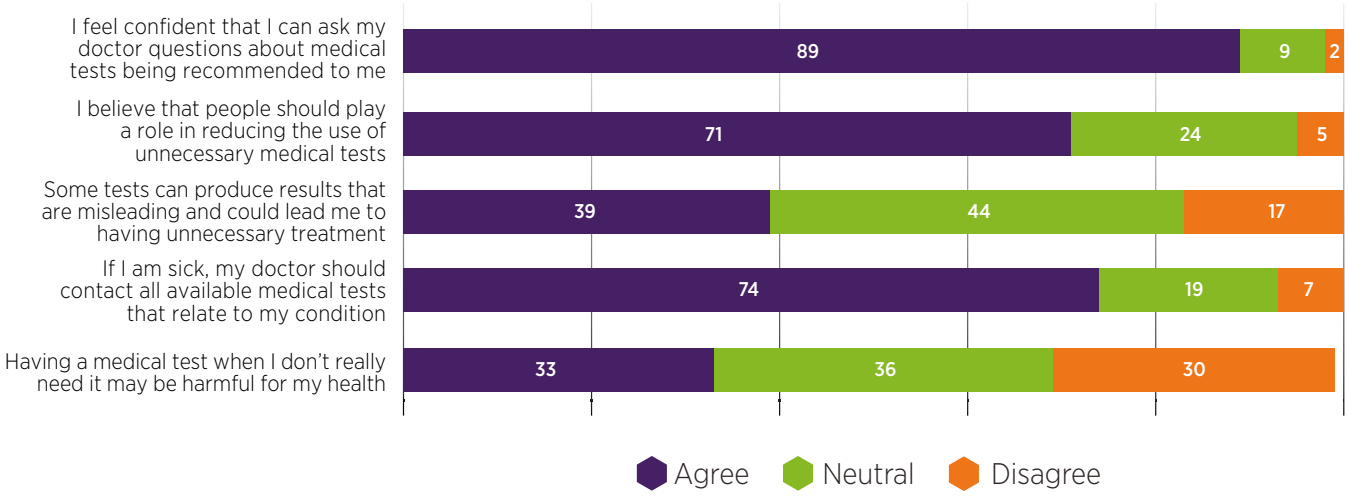
The findings suggest that, while consumers typically agree with the concept of reducing unnecessary tests (71%), this is not aligned with their personal preference for more tests when experiencing an illness or condition. In fact, 3 out of 4 consumer respondents (74%) 'agreed' or 'strongly agreed' that if they were sick their doctor should conduct all available medical tests that relate to their condition. This was an increase of 7% on the 2014 National Consumer Survey findings.

Education is still needed to reinforce messages about the risks and benefits of medical tests for consumers, with findings showing:

- more than 50% of consumer respondents were unsure or disagreed that some tests can produce misleading results and lead to unnecessary treatment;
- only 1/3 of consumer respondents agreed that 'having a medical test when they don't really need it may be harmful to their health'.

Positively, 9 out of 10 respondents (89%) felt confident that they could ask their doctor questions about any medical tests that are recommended for them (Figure 18).

Figure 18: Percentage of consumers by attitudes towards medical tests



References

1 Australia's First National Antimicrobial Resistance Strategy 2015–2019, Commonwealth of Australia, 2015. ISBN: 978-1-76007-191–2.

2 OECD. Available at http://data.oecd.org.

3 European Centre for Disease Prevention and Control. Antimicrobial consumption rates by country: Consumption of antimicrobials of antibacterials for systemic use (ATC group J01) in the community (primary care sector) in Europe, reporting year 2013. (Accessed 1 September 2015 at: http://ecdc.europa.eu/en/healthtopics/antimicrobial_resistance/esac-net-database/Pages/Antimicrobial-consumption-rates-by-country.aspx).

4 First Australian Report on Antimicrobial Use and Resistance in Human Health. Australian Commission on Safety and Quality in Healthcare. June 16, 2016. https://www.safetyandquality.gov.au/wp-content/uploads/2016/06/AURA-2016-First-Australian-Report-on-Antimicrobial-use-and-resistance-in-human-health.pdf

5 Australian Atlas of Healthcare Variation. Australian Commission on Safety and Quality in Healthcare, 2015. https://www.safetyandquality.gov.au/atlas/chapter-1-antimicrobial-dispensing-2/

6 New Medicine Service Guidance. NHS Employers, December 2013. http://www.nhsemployers.org/-/media/Employers/Publications/NMS%20Guidance.pdf

7 Adherence to Long-Term Therapies: Evidence for Action, 2003. World Health Organization WHO: Switzerland.

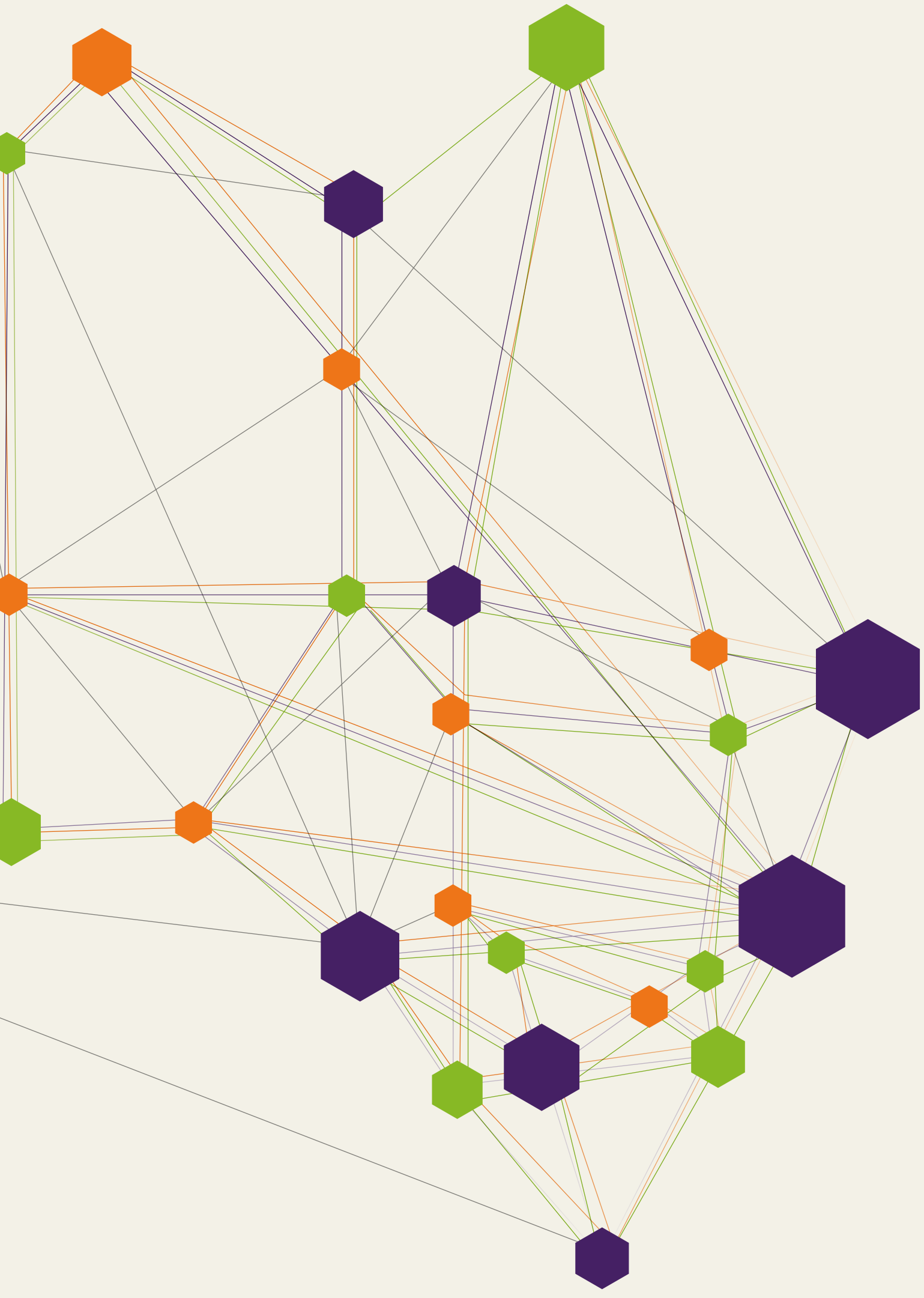
8 Sansone R.A., and L.A. Sansone, *Antidepressant adherence: are patients taking their medications?* Innov Clin Neurosci, 2012. 9(5–6): pp. 41–6.

9 National Health and Medical Research Council. *Evidence-based management of acute musculoskeletal pain*. 2002

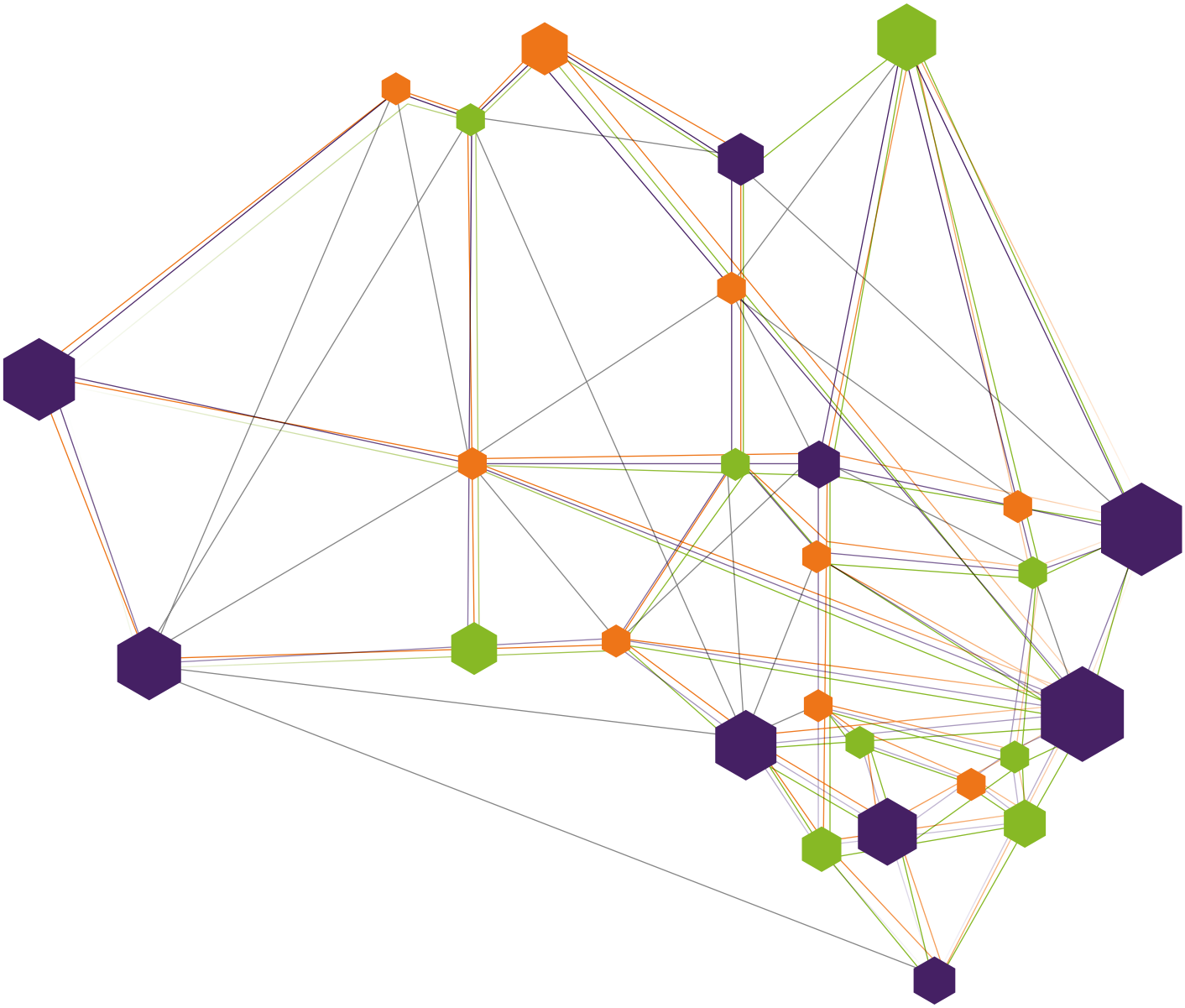
10 Williams C.M., Maher C.G., Hancock M.J., McAuley J.H., McLachlan A.J., Britt H., Fahridin S., Harrison C. et al., *Low back pain and best practice care: A survey of general practice physicians*. Arch Intern Med, 2010. 170(3): p. 271–7.

11 Biologic and Biosimilar Medicines 2020: Making the Most of the Opportunities. Organising Committee, 2016.

12 Grozdanova A., Netkovska K.A., Sterjev K.A., Naumovska Z., Sarevski R., Dimovski A., and Suturkova L. *Biosimilar medical products - licensing, pharmacovigilance and interchangeability*. Pril (Makedon Akad Nauk Umet Odd Med Nauki), 2016. 37(1): pp. 27–36.



NPS MEDICINEWISE



www.nps.org.au

Independent, not-for-profit and evidence-based, NPS MedicineWise enables better decisions about medicines, medical tests and other health technologies. We receive funding from the Australian Government Department of Health.
ABN 61 082 034 393

Level 7/418A Elizabeth Street Surry Hills NSW 2010
PO Box 1147 Strawberry Hills NSW 2012
02 8217 8700 02 9211 7578 info@nps.org.au