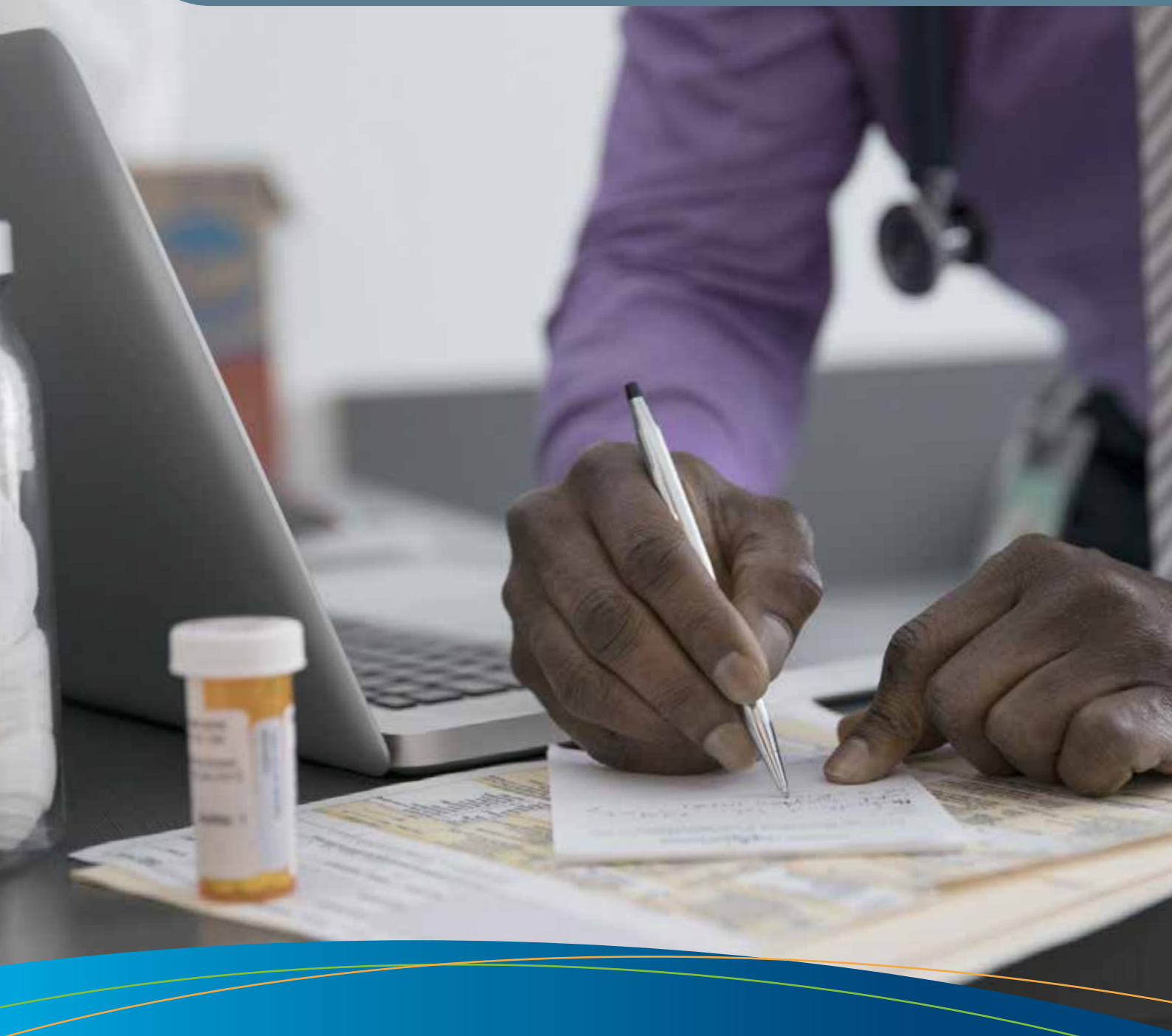
GP SUPERVISOR'S GUIDE



Rational Prescribing

in general practice

GPSA

GENERAL PRACTICE SUPERVISION AUSTRALIA

About this guide

Lancing may be uncommon in modern day medicine, and the healing powers of fire even less widely employed, but medication use is ubiquitous. Taking tablets is the most common health-related action undertaken by Australians. For example, in 2021-22, there were 215 million PBS-subsidised prescriptions, at a cost of nearly $15 billion.1

Modern medicines have unequivocally improved health outcomes for countless conditions. However, there are significant problems related to their use, and patient harm is not uncommon.

Rational use of medicines is a core competency of both the Royal Australian College of General Practitioners 2022 RACGP curriculum and syllabus for Australian general practice[2] and the Australian College of Rural and Remote Medicine (ACRRM) Primary Curriculum.[3] This reflects the fact that GP training is a critical period in the development of future (and potentially life-long) patterns of clinical practice for GP registrars, including prescribing behaviour. Furthermore, GP registrars have been shown to find prescribing challenging.

Supervisors therefore have a core role in supporting the learning of quality prescribing and rational use of medicines by their registrars.

This GPSA guide aims to support GP supervisors to identify, assess, and facilitate development of skills in rational prescribing. In particular, it covers a range of practical strategies for supervisors to use for teaching and learning rational prescribing in the practice setting. This guide is based on the article Morgan S. Teaching rational prescribing to general practice registrars: A guide for supervisors. *Aust Fam Physician 2017;46(3): 160-64*, and the content and boxes are reproduced with permission from the Royal Australian College of General Practitioners.

Thank you to Dr Simon Morgan and Dr Justin Coleman for their contributions in writing this GP supervisor guide. General Practice Supervisors Australia (GPSA) is supported by funding from the Australian Government under the Australian General Practice Training (AGPT) program. GP Supervision Australia would also like to thank RACGP for supporting the development of this resource.

GPSA produce a number of relevant guides for GP supervisors and practices, visit www.gpsa.org.au to view additional guides.

"What medicines do not heal, the lance will; what the lance does not heal, fire will."

Hippocrates

Contents

Rational prescribing

The term Quality Use of Medicines (QUM) is defined as the use of medicines that is

- **Judicious** - selecting management options wisely.
- **Appropriate** - choosing suitable medicines only if a medicine is considered necessary.
- **Safe** - using medicines safely and effectively to get the best possible results.
- **Efficacious** - choosing medicines that benefit the patient.[4]

The rational prescription of medicines is defined by the World Health Organization (WHO) as 'the situation in which patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for a sufficient length of time, with the lowest cost to them and their community.'[5] In simple terms, this means using the right medicine for the right patient at the right time.

While this sounds like a relatively straightforward concept to understand and apply, the evidence is overwhelming that non-rational prescribing is common in Australian general practice. This includes medications such as antibiotics for respiratory tract infections[6, 7], opiates for chronic non-cancer pain[8,9], benzodiazepines for insomnia and anxiety[10], and anti-hypertensives.[11]

All medication prescribing, particularly when inappropriate, carries a number of risks. Over-prescription of antibiotics and consequent antimicrobial resistance has been described by the World Health Organisation as a *'serious threat to global public health'*.[12] Inappropriate use of pharmaceuticals leads to economic waste, with attendant opportunity costs for other health care interventions.

But most importantly, medication prescribing can, and regularly does, lead to patient harm. It has been estimated that 250,000 hospital admissions annually in Australia are medication related (approximately 2% of the total) and, of those, two-thirds are potentially preventable.[13]

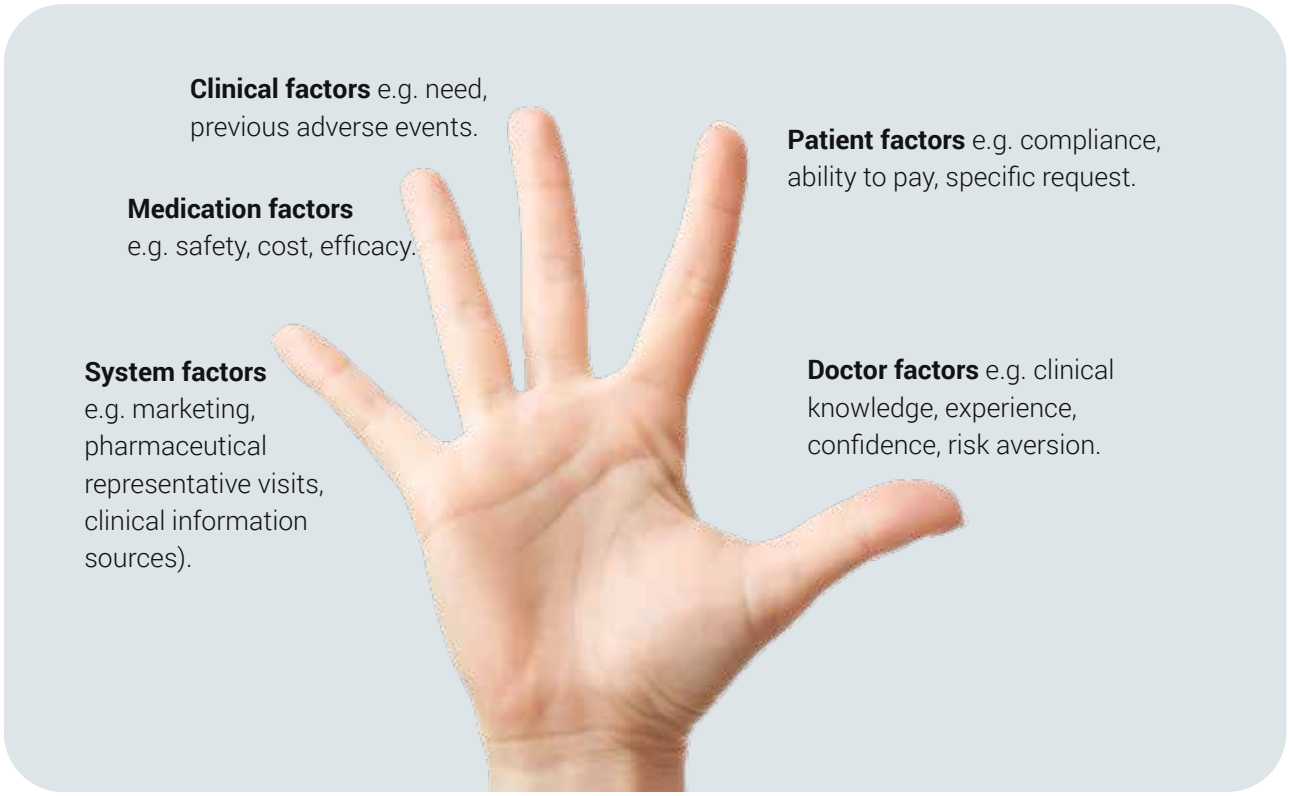
Additionally, adverse events can lead to the so-called 'prescribing cascade', the prescription of further medications in the mistaken belief that a new medical condition has developed.[14] This, in turn, leads to a greater risk of complications and patient harm.

Prescribing in General Practice

Prescribing is an integral aspect of Australian general practice. In 2015, Australian GPs prescribed or recommended medicine at a rate of 103 medications per 100 encounters.[15] The rate for registrars is similar.[16]

A number of influences on the prescribing behaviour of GPs are described in the international literature.[17-21] A qualitative study of GP from 2021 found that decisions to prescribe are complex and influenced by multiple intersecting factors, with determinants operating at individual, practice and societal levels. [22]

Factors that influence prescribing behaviour



Prescribing and general practice training

GP registrars find prescribing very challenging, due to the influences described above as well as a number of other challenges [23, 24] These include:

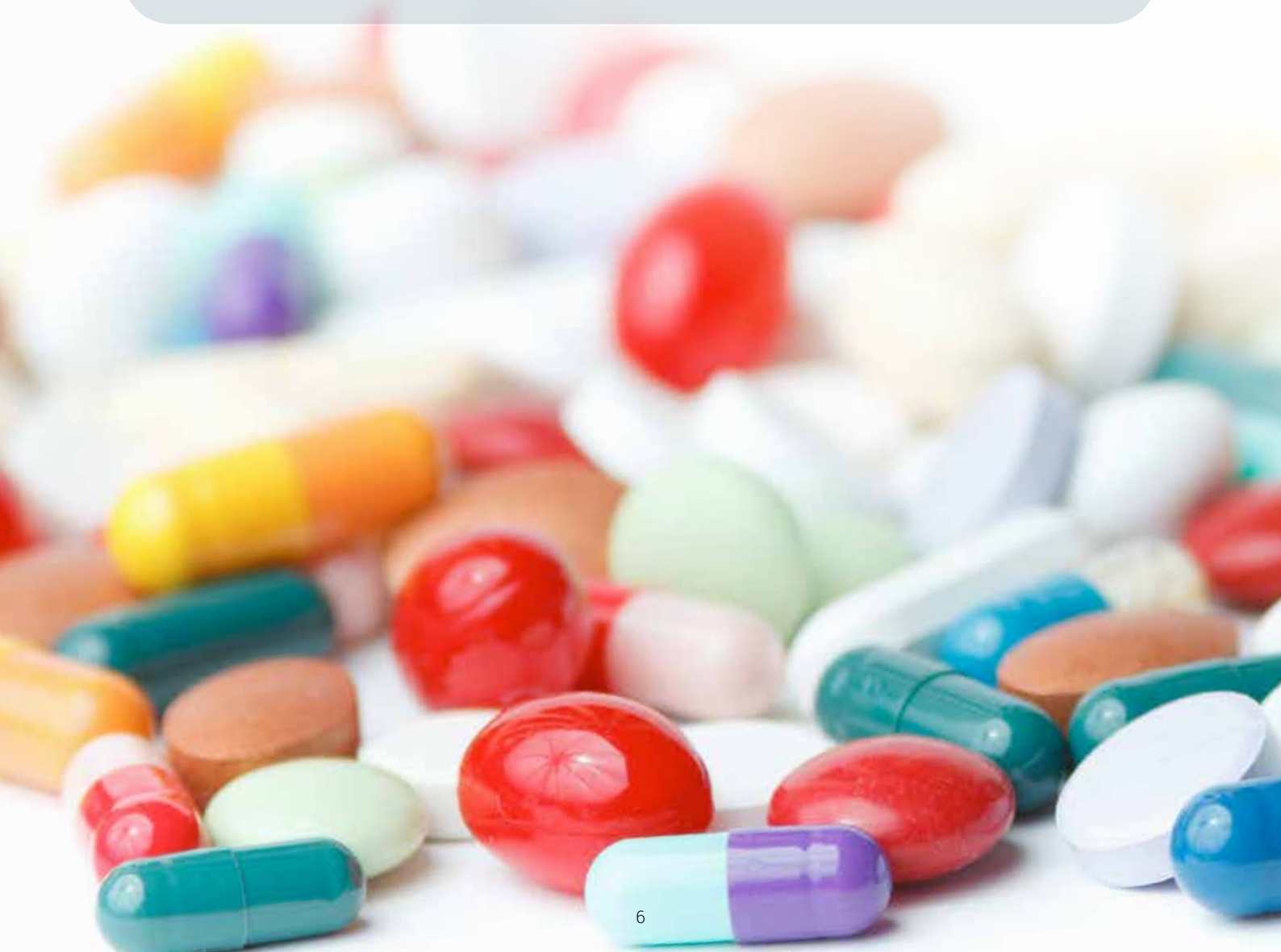
- The transition from hospital prescribing to prescribing in the GP context.
- Understanding the PBS.
- Judging prescribing quality.
- Managing uncertainty.
- Identifying appropriate sources of information at the point of care.

Strategies for teaching rational prescribing in the practice setting

Supervisors can use a variety of approaches to assess and teach registrars skills in rational prescribing (see box 1). General approaches have broader relevance to most areas of general practice training. In addition, a number of specific strategies are more targeted to teaching rational prescribing.

Box 1. Strategies for teaching rational prescribing in the practice setting

General Strategies	Specific Strategies
Reflective practice	Orientation to prescribing in general practice
Patient-centred approach	Prescribing audit and feedback
Managing uncertainty	Topic tutorials
Role modelling	Scenario-based discussion
	Communication skills training
	Use of clinical guidelines



General approaches

Principles

A set of principles have been described to guide training in rational prescribing for both undergraduates and postgraduates.[25] These principles comprise:

- Protected time to reflect on prescribing, with appropriate feedback.
- Supervision that allows discussion of problems and encourages the seeking of advice.
- Feedback on identified prescribing errors in a blame-free learning environment.

These themes - reflection, open discussion and feedback - should be recognisable as fundamental elements of effective supervision, regardless of the specific practice domain.

Reflective practice

Reflection in medical education has been defined as 'a metacognitive process that occurs before, during and after situations with the purpose of developing greater understanding of both the self and the situation so that future encounters with the situation are informed from previous encounters'.[26]

There is evidence that effective reflection is most likely to occur when it is well supported by good supervision.[27] Supervisors can play a role in encouraging registrars to 'slow down' and build reflection into their daily practice when making prescribing decisions.

Patient-centred care and shared decision-making

Patient-centred care is the cornerstone of quality general practice care. It comprises a number of elements - practising from a biopsychosocial perspective, sharing responsibility and decision-making with the patient, and understanding the personal meaning of illness for each individual patient – but in essence means 'identifying the patient's agenda'.[28] Patient-centred care has been demonstrated to improve patient satisfaction and lead to better health outcomes.[29]

More specifically, patient-centred care has also been associated with prescribing fewer medications.[30] Supervisors should therefore use a patient-centred approach to frame practice-based teaching in relation to rational prescribing. This includes encouraging registrars to identify and address the patient's agenda (including patient's ideas, concerns and expectations, or 'ICE'), and to include the patient in decision-making with regards to medication prescribing.[31]

Managing uncertainty

Undifferentiated presentations are very common in general practice, and are a particular challenge for GP registrars. The uncertainty of ambiguous presentations has been described as a barrier to quality prescribing by registrars, at least for antibiotics in respiratory tract infections.[7] GP supervisors play an important role in supporting their registrars to better tolerate the inevitable uncertainty of general practice. This is elaborated more comprehensively in the GPSA "Managing Uncertainty in General Practice" guide.

Sometimes, a so-called 'test of treatment' is used as a strategy in diagnosis of undifferentiated illness (for example trialling asthma puffers for nocturnal cough).[32] While a test of treatment may be helpful, it is not without potential pitfalls. One useful tip is for the supervisor to explicitly discuss the situations where a test of treatment might be considered.

Role modelling

Role modelling has a strong influence on GP registrar behaviour, and has even been described as 'the primary teaching strategy of clinical education'.[33] Supervisors need to be acutely aware of the influence of their own prescribing practice and ideally model best practice in prescribing, including use of appropriate guidelines (e.g., Therapeutic Guidelines or Australian Medicines Handbook).

Complementing the general strategies described above, a number of specific strategies are ideally suited to teaching rational prescribing.

Specific approaches and teaching strategies

Orientation to prescribing in general practice

The transition from prescribing in the hospital environment to the general practice setting is a challenging one for new GP registrars. Not only do registrars have significantly more prescribing independence, they also need to adjust to and operate within the (often bewildering) rules, regulations and restrictions of the PBS. Orientation to prescribing in the GP setting for new first-term registrars is a common topic in external workshop sessions, but the supervisor should reinforce this learning and contextualise it to their local setting. Suggested topics are listed in box 2.

Box 2. Suggested topics for orientation to prescribing in general practice

- The PBS and RPBS, and how they both work
- How to write a prescription using the practice software
- Costs, restricted benefits, authority scripts, private scripts, Regulation 24, safety net
- Prescribing S8s and drugs of addiction, including relevant state guidelines
- Doctor's bag medications and orders
- Adverse drug reaction (ADR) reporting
- PBS for Aboriginal and Torres Strait Islander patients
- Computer software – allergies, medication lists etc.

The PBS has a number of helpful prescribing resources for this purpose, including:

- The PBS eLearning program - Prescribing in private practice
- PBS - Prescribing Medicines – Information for PBS Prescribers
- PBS General FAQs

Audit and feedback

Audit and feedback has been shown to lead to improvements in most aspects of professional practice, including prescribing behaviour.[34] There has been a recommendation made that '*GP registrars should be provided with explicit feedback about the process and outcomes of prescribing decisions, including the use of audits, in order to improve their ability to judge their own prescribing*'.[23] An audit of registrar prescribing behaviour focuses the teaching on actual prescribing practice.

"GP registrars should be provided with explicit feedback about the process and outcomes of prescribing decisions, including the use of audits, in order to improve their ability to judge their own prescribing"

Four-stage model of prescribing

Prescribing is often thought of simply as the act of writing a prescription, but in fact is a highly complex and potentially high-risk intervention that requires satisfactory competence. In a 2012 Australian Prescriber article (well worth a read), the prescribing process was described as having four stages. These are:

- Information gathering.
- Clinical decision-making.
- Communication.
- Monitoring and review.[35]

This four-stage model provides a very useful framework for audit and feedback of registrar prescribing practice.

Informal audit and feedback

Informal audit and feedback can readily be performed using problem case analysis and direct observation, but is particularly suited to random case analysis (RCA). RCA is a powerful supervision tool for learning needs analysis, teaching, and feedback (see the GPSA Random Case Analysis Guide).[36] In RCA, the registrar's clinical notes are randomly selected and the case analysed in detail. The particular strength of RCA is in identifying 'unconscious incompetence', or the 'unknown unknowns', of the registrar. Supervisors can explore the registrar's clinical reasoning behind prescribing decisions in the context of the actual clinical case e.g.,"Why did you decide on that particular medication?" Additionally, supervisors can pose hypothetical scenarios e.g., "What if the patient was allergic to that medication?", "What if the patient had impaired renal function?" to further challenge the registrar.

Box 3 outlines a framework for analysis (using the four-stage prescribing model above) and box 4 lists some suggested questions for each stage.

Box 3. Framework for Audit and Feedback of Prescribing Practice

- Select a patient record (directed or random)
- Registrar to review the patient record and tell the story – "What?"
- Supervisor to explore the four stages of prescribing (see box 4)
  - Information gathering
  - Clinical decision-making
  - Communication
  - Monitoring and review
- Supervisor to explore clinical reasoning with "Why?" questions
- Supervisor to extend the registrar with hypothetical "What if?" questions
- Supervisor to give feedback and identify learning needs

Box 4. Suggested Questions for Audit and Feedback of Prescribing Practice

Information gathering

- Tell me more about the presentation.
- Were there risk factors for non-adherence?
- What other clinical information might have assisted you in managing the case?

Communication

- How did you communicate your management to the patient?

Monitoring and review

- What are your plans for follow-up and monitoring?
- What if the patient does not respond to the prescribed medication?

Learning can be further enhanced when this process is reversed, and the registrar has an opportunity to critique the GP supervisors own prescribing behaviour in a collaborative two-way learning manner.

Clinical decision-making

- What was your diagnosis?
- What was assessment of the severity and management of the disease?
- Why did you decide to prescribe that particular drug?
- What are the risks of prescribing/not prescribing?
- What alternatives could you have used, and what are their advantages and disadvantages?
- What if the patient was
  - A child?
  - Elderly?
  - Very unwell?
- Where could you seek evidence-based guidance on management of this condition?

Formal audit and feedback

Formal clinical audits involving data collection and feedback reports have also been demonstrated to positively influence prescribing practice. Completion of a clinical audit is both an excellent learning experience for the registrar and useful for the practice.

Topic tutorials

Another useful teaching approach is to undertake specific topic tutorials on rational prescribing. Potential topics include:

- Prescribing concepts, e.g.,
  - Influences on GP prescribing behaviour
  - Potential adverse effects and harms of prescribing e.g., side effects, overtreatment
  - Risk factors for non-adherence
  - Polypharmacy and deprescribing. (see teaching plan on this topic).[37]
- Prescribing specific medications, especially those that are high risk, and/or challenging for GP registrars to prescribe, e.g.,
  - Antibiotics
  - Anticoagulants
  - Opiates
  - Benzodiazepines
  - Complementary medicines
- Prescribing in specific conditions, e.g.,
  - Chronic pain
  - Respiratory tract infections
  - Diabetes
- Prescribing for specific patient groups, e.g.,
  - Pregnant women
  - The elderly

Useful resources include

- Prescribing Medicines in Pregnancy Database
- Cochrane reviews for specific conditions and medications
- Consultant Pharmacy Services (Deprescribing Resources)
- Complementary medicines
- RACGP (Handbook of Non-Drug Interventions

Scenarios

Additionally, supervisors can target teaching towards a number of common prescribing scenarios.
These include:

- Taking a medication history from a new patient to practice.
- Opportunistic review of the medication list of an existing patient.
- The so-called 'simple script' request.
- Starting a new drug for a chronic disease.

Again, the four-stage prescribing model is a useful framework for approaching these scenarios.

Communication skills training

Pharmaceutical representative (drug rep) visits and drug samples are known to influence the prescribing behaviour of GPs, including registrars.[38,39] Of note, it has been found that many doctors deny that they are influenced by pharmaceutical company marketing, or claim that it influences others but not themselves![40]
For registrars who see drug representatives, there is evidence that training on the influence of pharmaceutical marketing can improve prescribing practice.[41] In GP practices which allow reps to visit, registrars should be explicitly advised that they do not need to see reps as part of their placement.

Consequently, the supervisor has an important role to provide communication skills training for their registrar on interactions with drug reps. A good way of doing this is through role play.

Similar to the situation with drug reps, communication and conflict resolution skills can also be taught around dealing with patient expectations (or pressure) for inappropriate prescriptions.[42]

Clinical guidelines and Resources

Registrars should be orientated to, and strongly encouraged to use, evidence-based reference material, such as Australian Medicines Handbook, Therapeutic Guidelines and Health Pathways.

Additionally, the Choosing Wisely Australia program is an initiative to improve the quality of healthcare by considering tests, treatments, and procedures which lack evidence of efficacy or lead to harm.

As part of this initiative, the Royal Australian College of General Practitioners (RACGP) has developed two lists of five recommendations over the past two years, four of which specifically relate to prescribing (antibiotics, benzodiazepines, PPIs and antihypertensives/statins).

References

1. Commonwealth of Australia, Department of Health and Aged Care. PBS Expenditure and Prescriptions Report 1 July 2021 to 30 June 2022. Available from https://www.pbs.gov.au/statistics/expenditure-prescriptions/2021-2022/PBS-Expenditure-and-Prescriptions-Report-1-July-2021-to-30-June-2022.PDF [Accessed 23 Feb 2023].
2. RACGP. 2022 RACGP curriculum and syllabus for Australian general practice. Available from https://www.racgp.org.au/education/education-providers/curriculum/curriculum-and-syllabus/home [Accessed 21 Feb 2023].
3. Australian College of Rural and Remote Medicine (ACRRM). Primary curriculum. Available from https://www.acrrm.org.au/resources/training/curriculum [Accessed 21 Feb 2023].
4. Commonwealth of Australia, Department of Health and Aged Care. National Medicines Policy 2022. Available from https://www.health.gov.au/resources/publications/national-medicines-policy [Accessed 21 Feb 2023].
5. De Vries TP, Henning RH, Hogerzeil HV, Fresle DA. Guide to good prescribing: A practical manual. Geneva: World Health Organization; 1994. Available from https://apps.who.int/iris/handle/10665/59001 [Accessed 23 Feb 2023].
6. Britt H, Harrison C, Miller G. The real story, GP prescribing of antibiotics for respiratory tract infections—From BEACH. Byte from BEACH No 2: 2012.
7. Dallas A, Magin P, Morgan S, Tapley A, Henderson K, Ball J, et al. Antibiotic prescribing for respiratory infections: a cross-sectional analysis of the ReCEnT study exploring the habits of early-career doctors in primary care. Fam Pract. 2015 Feb;32(1):49-55. doi: 10.1093/fampra/cmu069
8. Harrison CM, Charles J, Henderson J, Britt H. Opioid prescribing in Australian general practice. Med J Aust 2012 Apr;196(6):380–381. doi: 10.5694/mja12.10168
9. Holliday S, Morgan S, Tapley A, Dunlop A, Henderson K, van Driel M, et al. The pattern of opioid management by Australian general practice trainees. Pain Med. 2015 Sept;16(9):1720-1731.
10. Holliday S, Morgan S, Tapley A, Henderson KM, Dunlop AJ, van Driel ML, et al. The pattern of anxiolytic and hypnotic management by Australian general practice trainees. Drug Alcohol Rev 2017 Mar;36(2):261-269. doi: 10.1111/dar.12404
11. Eastman P. Antihypertensive prescribing. A survey of general practice supervisors and registrars. Aust Fam Physician 2008 Nov;37(11):969-971.
12. World Health Organisation. Antimicrobial resistance. Available from https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance [Accessed Feb 23 2023].
13. Lim R, Kalisch Ellett LM, Semple S, Roughead EE. The extent of medication-related hospital admissions in Australia: A review from 1988 to 2021. Drug Saf. 2022 Mar;45(3):249-257. doi: 10.1007/s40264-021-01144-1
14. Kalish LM, Caughey GE, Roughead EE, Gilbert AL. The prescribing cascade. Aust Prescr. 2011 Dec;34:162–166. doi: 10.18773/austprescr.2011.084
15. Britt H, Miller GC, Henderson J, Bayram C, Harrison C, Valenti L, et al. General practice activity in Australia 2014–15. General Practice Series no. 38. Sydney: Sydney University Press, 2015. Available from https://core.ac.uk/download/pdf/41241127.pdf [Accessed 23 Feb 2023].
16. Morgan S, Henderson K, Tapley A, Scott J, van Driel ML, Spike NA, et al. Pathology test-ordering behaviour of Australian general practice trainees: a cross-sectional analysis. Int J Qual Health Care. 2015 Dec;27:528-535. doi: 10.1093/intqhc/mzv086
17. Robertson J, Treloar CJ, Sprogis A, Henry DA. The influence of specialists on prescribing by general practitioners. A qualitative study. Aust Fam Physician 2003 Jul;32(7): 573-576.
18. Jacoby A, Smith M, Eccles M. A qualitative study to explore influences on general practitioners' decisions to prescribe new drugs. Br J Gen Pract. 2003 Feb;53(487):120-125.
19. Muijrers PE, Grol RP, Sijbrandi J, Janknegt R, Knottnerus JA. Differences in prescribing between GPs: impact of the cooperation with pharmacists and impact of visits from pharmaceutical industry representatives. Fam Pract. 2005 Dec;22(6):624-630. doi: 10.1093/fampra/cmi074

20. Mason A. New medicines in primary care: a review of influences on general practitioner prescribing. J Clin Pharm Ther. 2008 Feb;33(1):1–10. doi: 10.1111/j.1365-2710.2008.00875.x.
21. Tobin L, de Almedia Neto AC, Wutzke S, Patterson C, Mackson J, Weekes L, et al. Influences on the prescribing of new drugs. Aust Fam Physician. 2008 Jan;37(1-2):78-80.
22. Carter M, Chapman S, Watson MC. Multiplicity and complexity: a qualitative exploration of influences on prescribing in UK general practice. BMJ Open. 2021 Jan;11(1):e041460. doi: 10.1136/bmjopen-2020-041460
23. Ajjawi R, Thistlethwaite JE, Aslani P, Cooling NB. What are the perceived learning needs of Australian general practice registrars for quality prescribing? BMC Med Educ. 2010 Dec;10:92. doi.org/10.1186/1472-6920-10-92
24. Dallas A, van Driel M, van de Mortel T, Magin P. Antibiotic prescribing for the future: exploring the attitudes of trainees in general practice. Br J Gen Pract. 2014 Sep;64(626):e561-567. doi: 10.3399/bjgp14X681373
25. Likic R, Maxwell SR. Prevention of medication errors: teaching and training. Br J Clin Pharmacol. 2009 Jun;67(6):656-661. doi: 10.1111/j.1365-2125.2009.03423.x
26. Sandars J. The use of reflection in medical education: AMEE Guide No. 44. Med Teach. 2009 Aug;31(8):685-695. doi: 10.1080/01421590903050374
27. Mann K, Jordan J, Macleod A. Reflection and reflective practice in health professions education: a systematic review. Adv Health Sci Educ Theory Pract. 2009 Oct;14(4):595-621. doi: 10.1007/s10459-007-9090-2
28. Mead N, Bower P. Patient-centredness: a conceptual framework and review of the empirical literature. Soc Sci Med. 2000 Oct;51(7):1087-1110. doi: 10.1016/s0277-9536(00)00098-8
29. Stewart M. Effective physician-patient communication and health outcomes: a review. Can Med Assoc J. 1995 May;152(9):1423–1433
30. Matthys J, Elwyn G, Van Nuland M, Van Maele M, De Sutter A, De Meyere M, et al. Patients' ideas, concerns, and expectations (ICE) in general practice: impact on prescribing. Br J Gen Pract. 2009 Jan;58(558):29-36. doi: 10.3399/bjgp09X394833
31. Lundkvist J, Akerlind I, Borqquist L, Molstad S. The more time spent on listening, the less time spent on prescribing antibiotics in general practice. Fam Pract. 2002 Dec;19(6):638-640. doi: 10.1093/fampra/19.6.638
32. Heneghan C, Glasziou P, Thompson M, Rose P, Balla J, Lasserson D, et al. Diagnostic strategies used in primary care. BMJ. 2009 Apr;338:b946. doi: 10.1136/bmj.b946
33. Irby DM. Clinical teaching and the clinical teacher. J Med Educ. 1986 Sep;61(9 Pt 2):35-45. doi: 10.1097/00001888-198609000-00005
34. Ivers N, Jamtvedt G, Flottorp S, Young JM, Odgaard-Jensen J, French SD, et al. Audit and feedback: effects on professional practice and healthcare outcomes. Cochrane Database Syst Rev. 2012 Jun;13(6):CD000259. doi: 10.1002/14651858.CD000259.pub3
35. Lum E, Michell C, Coombes I. The competent prescriber: 12 core competencies for safe prescribing. Aust Prescr. 2013 Feb;36:13-16. doi: 10.18773/austprescr.2013.007
36. Morgan S, Ingham G. Random case analysis. A new framework for Australian general practice training. Aust Fam Physician. 2013 Jan-Feb;42(1-2):69-73.
37. Scott IA, Anderson K, Freeman CR, Stowasser DA. First do no harm: a real need to deprescribe in older patients. Med J Aust. 2014 Oct;201(7):390-392. doi: 10.5694/mja14.00146
38. Wazana A. Physicians and the pharmaceutical industry: is a gift ever just a gift? JAMA. 2000 Jan;283(3):373–80. doi: 10.1001/jama.283.3.373
39. Zipkin DA, Steinman MA. Interactions between pharmaceutical representatives and doctors in training. A thematic review. J Gen Intern Med. 2005 Aug;20(8):777–786. doi: 10.1111/j.1525-1497.2005.0134.x.
40. Morgan MA, Dana J, Loewenstein G, Zinberg S, Schulkin J. Interactions of doctors with the pharmaceutical industry. J Med Ethics. 2006 Oct;32(10):559–563. doi: 10.1136/jme.2005.014480.
41. Hopper JA, Speece MW, Musial JL. Effects of an educational intervention on residents' knowledge and attitudes toward interactions with pharmaceutical representatives. J Gen Intern Med. 1997 Oct;12(10):639-642. doi: 10.1046/j.1525-1497.1997.07126.x
42. Knight A. Patient-centred prescribing. Aust Prescr. 2013 Dec;36:199-201. doi: 10.18773/austprescr.2013.078

GPSA

GENERAL PRACTICE SUPERVISION AUSTRALIA

gpsa.org.au

facebook.com/GPSupervisors

twitter.com/GPSupervisors