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Pharmacists in general practice

A proposed role in the multidisciplinary team

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Australia continues to explore methods to restructure primary health care services to meet stressors within the health system. The primary health care strategy and its support for larger general practices and multidisciplinary team contributions, raise opportunities for re-engineering general practice services.

One of Australia's major health issues, and a challenge for general practice, is managing adverse drug events (ADEs) in community settings.

The evidence regarding ADEs in primary care is sobering. One review cited adverse drug events in general practice as 'one of the most significant causes of morbidity in the Australian community'.¹ In the general practice patient population, 10.4% had experienced an ADE in the previous 6 months. It is estimated that approximately 140 000 patients are admitted annually to hospital as a result of an ADE in the community.²

It is both law³ and part of The Royal Australian College of General Practitioners *Standards for general practices*⁴ that general practices have clinical risk management systems to enhance the quality and safety of care.

The proportion of general practices having systematic surveillance systems for drug monitoring and ADE prevention is unknown. Most practices have medication alerts within their information technology systems at the point of prescribing. The only Medicare Benefits Schedule (MBS) supported tools to manage potential drug safety are medication reviews within a health assessment, chronic disease management plan, or

the Home Medicines Review initiative.

The literature is generally disappointing on the benefits of medicines reviews.^{5,6} Most medicine review interventions did not significantly impact on major clinical endpoints. This may be due to differences in the patient populations, process or study sites. Current arrangements do not meet evidence based criteria for strategies that are successful in chronic care in general practice.⁷ These include use of multidisciplinary teams, structured care, technology use and health systems redesign.

Health systems in the United Kingdom and Canada are piloting the integration of pharmacists into general practice settings.^{8,9} These projects involve a collaborative model integrating pharmacists into primary health care teams. The pharmacists' main services are individual patient assessments to identify, prevent or resolve drug related problems. Formal outcome analysis of these integrations is awaited.

Discussion regarding a pharmacist role in proposed general practice super clinics has begun from professional pharmacy organisations,^{10,11} however little has come from existing general practices regarding perceived needs and functions.

We propose that a senior pharmacist be introduced to a general practice multidisciplinary team to focus on medication safety. Roles would include:

- patient services – focusing on high risk patients
- management of practice drug surveillance systems
- management of systems to enhance medication safety across related facilities.

All three roles are consistent with recent recommendations of the National Prescribing Service review of medication safety in the community.⁵

Patient services

The 'medicines review' needs to be a targeted process with structured analysis, multidisciplinary approach and follow up rather than the current one-off intervention.¹² The referral process should be substituted by system redesign, proactively

using practice information technology systems to target patient groups and disease states.

Examples would include:

- using Beers, ACOVE 3 criteria or similar criteria.^{13–15} These processes have been used to address inappropriate or suboptimal prescribing in the vulnerable elderly
- focused chronic disease management (eg. heart failure, liver failure and renal failure where drug pharmacokinetics are altered)
- patients with adverse events, where there are compliance difficulties, comorbidity or unexpected clinical outcomes
- where the practice surveillance systems detect potential safety problems.

This process would utilise all the information of the general practice medical record, including drug history, allergies, medical history, pathology results, specialist and hospital communications. It also necessitates collaboration with the multidisciplinary teams of the practice.

Practice based drug safety monitoring systems

The duty of prescribing has the associated responsibility for evaluating therapeutic and adverse effects. In addition to their own prescribing, general practices often assume monitoring of prescribing initiated by other health professionals including specialists and hospitals. Adverse drug events are more common in patients seeing multiple health professionals.¹⁶

To improve practice drug monitoring, a general practice based pharmacist would develop and manage systems to appropriately detect and prevent drug toxicity. Most general practitioners are familiar with 'warfarin care' and associated monitoring of anticoagulation. Similar drug specific programs could be run by the pharmacist to monitor for toxicity or adverse outcomes for patients using:

- drugs with a low therapeutic window (eg. digoxin, carbamazepine, lithium carbonate, phenytoin, primidone, cyclosporine)
- immunosuppressive medications, disease modifying and immune modulating antirheumatic drugs where the adverse event risk is significant¹⁷
- long term narcotic therapy.

Additional programs could include computer assisted surveillance to proactively seek instances of known suboptimal prescribing:

- evidence of 'cascade prescribing' (eg. calcium channel blocker, diuretic, antihypertensive medication)
- disease-drug contraindications (eg. metformin in moderate and severe renal impairment, glitazones and congestive cardiac failure)
- drug-drug interactions (eg. potassium sparing diuretics with angiotensin converting enzyme inhibitors, warfarin and nonsteroidal anti-inflammatory drugs, digoxin and verapamil).

The capacity to do this to some extent is available through practice clinical software or clinical auditing tool (CAT).¹⁸ Depending on practice types and surveillance results, the pharmacist would also develop practice policies and systems to enhance quality prescribing.

Medication safety in related health systems

Reviews consistently highlight high ADE rates soon after hospital discharge, particularly in the elderly.¹⁶ Ensuring all appropriate patients receive medication reconciliation on discharge would be an important role to facilitate medication safety.

The opportunity also arises to utilise the general practice pharmacist to contribute to medication safety across Australia. Only in a general practice, with access to all information, can a formal root cause analysis for ADEs be possible. Systematic data collection on ADEs will enable the development of prescribing standards, aggregating of data on a national basis, and may assist in formal postmarketing surveillance of drugs.

Conclusion

The proposed role for a pharmacist within a general practice is to provide multiple risk management strategies to improve medication safety. This strategy focuses on interventions to high risk patient groups and disease states, to use practice information technology systems to manage quality medication systems and services. Used in this manner, pharmacists can assist general practices fulfil safety obligations.

Specifically, this role contains no dispensing or prescribing duties. It requires planning, focus and rational debate to facilitate the integration of a pharmacist into the general practice team. Delineating an appropriate role is a start. Further research would be required to evaluate potential benefits and assess whether this logical progression is sustainable or effective.

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References

1. Miller G, Britt H, Valenti L. Adverse drug events in general practice patients in Australia. *Med J Aust* 2006;184:321–4.
2. Australian Council for Safety and Quality in Healthcare. Second national report on patient safety – improving medication safety. Canberra, 2002.
3. Health Quality and Complaints Commission Act 2006 No. 25, 2006, section 20. Duty of provider.
4. The Royal Australian College of General Practitioners. Standards for general practices, 3rd edn. Available at www.racgp.org.au/standards.
5. Easton K, Morgan T, Williamson M. Medication safety in the community: a review of the literature. Sydney: National Prescribing Service, June 2009.
6. Holland R, Desborough J, Goodyer L, Hall S, Wright D, Loke Y. Does pharmacist-led medication review help to reduce hospital admissions and deaths in older people? A systematic review and meta-analysis. *Br J Clin Pharmacol* 2008;65:303–16.
7. Wagner E, Austin B, Von Korff M. Organizing care for patients with chronic illness. *Millbank Q* 1996;74:511–44.
8. Dolovich L, Pottie K, Kaczorowski J, et al. Integrating family medicine and pharmacy to advance primary care therapeutics. *Clin Pharmacol Ther* 2008;83:913.
9. Bradley F, Elvey R, Ashcroft DM, et al. The challenge of integrating community pharmacists into the primary health care team: a case study of local pharmaceutical services (LPS) pilots and interprofessional collaboration. *J Interprof Care* 2008;22:387–98.
10. The Society of Hospital Pharmacists of Australia position statement. Pharmacists as part of the multidisciplinary team in GP Super Clinics. Available at www.shpa.org.au/lib/pdf/positionstatement/gp_super_clinics_may08.pdf.
11. Pharmaceutical Society of Australia. PSA position statement on pharmacist involvement in GP super clinics, 2008. Available at www.psa.org.au/site.php?id=4211.
12. Campbell Research & Consulting Pty Ltd. Home Medicines Review Program qualitative research project final report. Canberra: Department of Health & Ageing – Medication Management & Research Section, 2008.
13. Beers MH. Explicit criteria for determining potentially inappropriate medication use by the elderly. *Arch Intern Med* 1997;157:1531–6.
14. Fick DM, Cooper JW, Wade WE, Waller JL, Maclean JR, Beers MH. Updating the Beers Criteria for potentially inappropriate medication use in older adults: results of a US consensus panel of experts. *Arch Intern Med* 2003;163:2716–24.
15. Wenger NS, Shekelle PG. Assessing care of vulnerable elders: ACOVE project overview. The ACOVE Investigators. *Ann Intern Med* 2001;135:642–6.
16. Australian Commission on Safety and Quality in Health Care (October 2008). Windows into safety and quality in health care. Sydney: ACSQHC, 2008.
17. Hsu DC, Katelaris CH. Long-term management of patients taking immunosuppressive drugs. *Aust Prescr* 2009;32:68–71.
18. Clinical Audit Tool (CAT). Pen Computer Systems Pty Ltd. Available at www.clinicalaudit.com.au.

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