

Article

Medication error in mental health: implications for primary care

Ian D Maidment MRPharmS BPharm

Honorary Research Fellow, Centre for Health Service Studies, University of Kent, Canterbury, Kent, UK and Senior Pharmacist, Kent and Medway NHS and Social Care Partnership Trust, St Martin's Hospital, Canterbury, Kent, UK.

Henk Parmentier MD

General Practitioner, Croydon, London, UK

ABSTRACT

Medication errors are associated with significant morbidity and people with mental health problems may be particularly susceptible to medication errors due to various factors. Primary care has a key role in improving medication safety in this vulnerable population. The complexity of services, involving primary and secondary care and social services, and potential training issues may increase error rates, with physical medicines representing a particular risk. Service users may be cognitively impaired and fail to identify an error

placing additional responsibilities on clinicians. The potential role of carers in error prevention and medication safety requires further elaboration. A potential lack of trust between service users and clinicians may impair honest communication about medication issues leading to errors. There is a need for detailed research within this field.

Keywords: medication error, mental health, primary care

Introduction

The adverse consequences of error within healthcare are becoming increasingly apparent and improving patient safety is a key policy within health services across the world.^{1–3} Medication errors, one of the most frequent clinical errors, are estimated to cause 7000 deaths every year in the USA and occur in between 2% and 15% of UK hospital admissions.^{4–6} Medication errors are associated with significant costs and morbidity (1–2% of hospital inpatients are harmed by a medication error).^{3,7,8} Medication is one of the main treatments for people with mental health problems and good quality primary care is increasingly vital in the health care of people with severe mental illness (SMI).^{9–11}

In the USA over half and in the UK between 30% and 50% of people with a mental health problem only receive treatment from primary care services.^{12,13} The continuity of care and the physical health care available within primary care are particularly important.¹⁴

General practitioners (GPs) have been supported to develop a special interest in mental health and community pharmacists (CPs) may have a significant role, particularly if a single pharmacy dispenses all the service user's medication.⁷ However, there may be barriers to supporting people with severe mental health problems within primary care and clinicians may view it as a secondary care role beyond their remit.^{10,11,14} Both GPs and CPs may lack knowledge, skills, confidence and formal training in mental health.^{10,15} Moreover, inner-city GPs, who may see more patients with SMI, have less positive attitudes to the involvement of primary care in the treatment of SMI.¹⁶

Medication errors in primary care are a common problem across most healthcare systems.¹⁷ Medication error in mental health, for example the failure to prescribe a treatment due to a communication error, could have severe consequences in this potentially vulnerable group. However, three recent reviews

have highlighted that medication error within mental health is a vastly under-researched area, confirming a report by the American Psychiatric Association.^{18–21} Most of the current research relates to the inpatient environment, and there is an almost complete lack of data on the risks in the community – where most patients receive treatment. Factors such as impaired cognition, staff training issues and a lack of trust potentially make people with mental health problems uniquely vulnerable to errors and primary care has a key role in improving patient safety.

Service organisational issues

Modern community based mental health services are fragmented, particularly following the establishment of specialist teams for home treatment, assertive outreach and early intervention.²² This has created numerous interfaces which patients frequently cross between primary and secondary care and different parts of the services. Primary care clinicians may not be aware of medication supplied by secondary care colleagues, resulting in unintended drug interactions.²³ Transitional care, when patients cross organisational boundaries, is associated with medication reconciliation errors.²⁴ Communication difficulties, complex medicine regimens, unclear roles and responsibilities, patient factors and the involvement of multiple professionals may increase the risk of medicine reconciliation errors.²⁵

Primary care clinicians should be aware that transition across the primary–secondary care interface may be particularly associated with risk as various organisations (inpatient units, hospital pharmacy, general practice, community pharmacy and community mental health teams) are potentially involved. A study within a mental health trust found that discrepancies in the medication record in the medical notes occurred in 69% of discharges and 43% of admissions, and of these 24% and 18%, respectively were judged to be potentially harmful.²³ Research on medicine reconciliation is a priority, and should focus on potentially high-risk groups, such as mental health patients.^{25,26}

Physical health

The physical health of people with SMI needs to be improved; compared to people with asthma, people with schizophrenia are less likely to have cholesterol, blood pressure and smoking status checks.¹¹ Any significant improvement is likely to need to involve

a major contribution from primary care, in particular from GPs.^{7,11} People with SMI already receive complex regimens including physical medicines, psychotropics and anti-convulsants, increasing the risk and severity of medication errors; further treatments for physical health will increase the potential for errors.^{18,19,27–30}

Primary care may have a role in reducing the risk associated with physical medicines. In mental health organisations, prescribing errors with physical medicines may be twice as frequent as errors with psychotropics and administration errors are more likely to involve physical medicines.^{31–33} An American study identified that physical medicines accounted for 4% of preventable adverse drug events, but approximately a third of medication errors.³² Errors involving physical medicines may have more serious consequences and reports of insulin errors appear relatively common, although drawing any conclusion is limited by the low number of reports.^{30,34}

Training issues

A lack of training and familiarity with certain classes of medicines may increase the risk of errors.^{19,20,35} However, whilst there is some evidence that the use of psychotropics within primary care is associated with an increased risk of error, robust data is currently lacking.^{18,20} The possible increased risk associated with physical medicines when used within mental health organisations may be due to a lack of training and an important role for primary care is supporting the management of such physical medicines.^{19,35}

Front-line mental health staff linking with primary care, including social workers, occupational therapists and support workers, may lack formal training in medicines management. Staff with limited knowledge could fail to act, or offer inappropriate advice; a sore throat due to clozapine induced neutropenia might not be viewed as significant and only symptomatic treatment recommended. The increasing use of non-medical prescribers, such as psychologists, may also increase the risk of medication errors, although currently evidence of this is lacking.²⁰

Cognitive impairment

Patients intercept nearly a quarter of errors, but both medication and mental illness impair cognition and decision-making facilities and people with mental health problems may be less articulate and less likely to question a prescription, a change in medicine, whether monitoring is needed, or identify potential adverse events or a potential error.^{18,36,37} Alternatively,

if the patient does identify an error this view may be ignored due to capacity concerns.³⁸ Impaired cognition and concerns about capacity occur most commonly during an acute phase. Medication is more likely to be commenced and the care of the patient more likely to be transferred across organisational boundaries, particularly the primary–secondary care interface, during the acute phase, increasing the potential for errors. Therefore, patients are less able to prevent errors at precisely the time when errors are more likely to occur.

This potential lack of advocacy may mean that medication is not regularly reviewed; the recent UK all-party parliamentary report on dementia identified the lack of regular reviews of the medication regimens of people with dementia.³⁹ Primary care clinicians need to be aware that someone with mental health problems may not identify a medication error, placing additional responsibilities on clinicians and carers.¹⁸

Role of carers

Carers carry out up to ten activities in relation to medicines and have a key role in identifying potential medication errors.^{40,41} This role places significant strain on carers and the greater the number of activities the worse the social functioning and the mental health of the carer.⁴¹ Carers may also believe that patients with impaired cognition are less likely to critically observe their actions and take less care, a so-called 'Hawthorne effect', increasing the risk of medication errors.⁴² Giving the wrong medicine to the wrong patient may be a particular risk with agency staff working in residential care facilities, who are unfamiliar with the patients.³⁰ Carers may lack access to appropriate professional advice in relation to medication management and frequently report problems with medication management activities related to making judgements as to whether treatment is appropriate and managing side effects.^{40,43} Primary care healthcare professionals can improve safety by providing advice, ensuring that carers have sufficient knowledge about the medication and identifying if carers have any difficulty in understanding the instructions for administering medication.⁴³

Role of trust

Trust has a central role in health care, particularly in diseases characterised by uncertainty and vulnerability, such as mental health disorders.⁴⁴ Trust between service users and healthcare professionals

is vital in supporting patient safety, reducing errors and improving adherence to psychotropic medication.^{45–49} Rates of adherence may be three times lower where there are very low levels of trust, with potentially severe societal consequences in terms of serious untoward incidents, such as suicide and homicide, which regularly attract media attention.^{46,50} Mistrust may lead to incomplete disclosure of information about medication by both clinicians and patients.^{38,51,52} Clinicians may not supply complete information about adverse events, due to fears about the potential impact on adherence.³⁸ Patients who are not warned about a particular adverse event may not know how to manage it, or that urgent treatment is required.^{18,53} Sectioning, when treatment is legally enforced, may impact on patient safety due to erosion of trust.³⁸ Clinicians may be less likely to believe safety concerns expressed by a sectioned patient, potentially resulting in a medication error; however, empirical evidence is currently lacking.³⁸

Conclusion

People with mental health problems may be at greater risk of a medication error however evidence is currently lacking. Primary care has an increasingly key role in improving medication safety. The complexity of mental healthcare services and training issues may increase the risk of errors, with the management of physical medicines an area of particular risk. Patients may be cognitively impaired and fail to identify an error, placing greater safety burdens on clinicians. The role of carers in patient safety also requires consideration. The mistrust prevalent in mental healthcare services may impair information exchange, increasing the risk of errors.

REFERENCES

- 1 Department of Health. *Building a Safer NHS for Patients – implementing an organisation with a memory*. London: The Stationery Office, 2001.
- 2 Department of Health. *An Organisation with a Memory*. London: The Stationery Office, 2000.
- 3 Kohn L, Corrigan J and Donaldson M (eds). *To Err Is Human: building a safer health system*. Washington DC: National Academy Press, 1999.
- 4 Leape LL. Error in medicine. *Journal of the American Medical Association* 1994;272:1851–7.
- 5 Bates DW, Cullen DJ, Laird N *et al*. Incidence of adverse drug events and potential adverse drug events: implications of prevention. *Journal of the American Medical Association* 1995;274:289–94.
- 6 Phillips DP, Christenfeld N and Glynn LM. Increase in US medication-error deaths between 1983 and 1993. *The Lancet* 1998;351:643–4.

- 7 Department of Health. *Guidelines for the Appointment of General Practitioners with Special Interests in the Delivery of Clinical Services: mental health*. London: The Stationery Office, 2003. www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4006376 (accessed 3 June 2009).
- 8 Franklin B, Schachter M, Vincent C *et al*. The incidence of prescribing errors in hospital in-patients. *Drug Safety* 2005;28:891–900.
- 9 Department of Health. *The National Service Framework for Mental Health – five years on*. London: The Stationery Office, 2004.
- 10 Lester H. Current issues in providing primary medical care to people with serious mental illness. *International Journal of Psychiatry in Medicine* 2006;36:1–12.
- 11 Roberts L, Rolfe A, Wilson S *et al*. Physical health care of patients with schizophrenia in primary care: a comparative study. *Family Practice* 2007;24:34–40.
- 12 Jenkins R, McCulloch A, Friedli L *et al*. Developing a national mental health policy. London: *Maudsley Monograph*, 2002.
- 13 Norquist GC and Regier DA. The epidemiology of psychiatric disorders and the de facto mental health care system. *Annual Review of Medicine* 1996;47:473–9.
- 14 Lester HE, Tritter JQ and Sorohan H. Patients' and health professionals' views on primary care for people with serious mental illness: focus group study. *BMJ* 2005;330:1122.
- 15 Phokeo V, Sproule B and Raman-Wilms L. Community pharmacists' attitudes toward and professional interactions with users of psychiatric medication. *Psychiatric Services* 2004;55:1434–6.
- 16 Brown JSL, Weich S, Downes-Grainger ED *et al*. Attitudes of inner-city GPs to shared care for psychiatric patients in the community. *British Journal of General Practice* 1999;49:643–4.
- 17 Rosser W, Dovey S, Bordman R *et al*. Medical errors in primary care. *Canadian Family Physician* 2005; 51:386–7.
- 18 Maidment ID, Paton C and Lelliott P. A review of medication errors in mental health care. *Quality and Safety in Health Care* 2006;15:409–13.
- 19 Maidment ID, Haw C, Stubbs J *et al*. Medication errors in older people with mental health problems: a review. *International Journal of Geriatric Psychiatry* 2008;23:564–73.
- 20 Grasso BC, Bates DW and Shore MF. *Medication Errors in Psychiatric Care: incidence and reduction strategies*. 2007. www.medscape.com/viewprogram/7319_pnt (accessed 2 April 2009).
- 21 American Psychiatric Association. *Patient Safety and Psychiatry*. 2003. www.psych.org/psych_pract/pract_mgmt/apa_patientsafety_toc21003.pdf (accessed 25 March 2009).
- 22 Department of Health. *The NHS Plan: a plan for investment a plan for reform*. London: Department of Health, 2000. www.dh.gov.uk/assetRoot/04/05/57/83/04055783.pdf (accessed 24 May 2006).
- 23 Morcos S, Francis SA and Duggan C. Where are the weakest links? *Psychiatric Bulletin* 2002;26:371–4.
- 24 Department of Health. *Building a Safer NHS for Patients: improving medication safety*. London: The Stationery Office, 2004.
- 25 National Institute for Clinical Excellence. *Technical Patient Safety Solutions for Medicines Reconciliation on Admission of Adults to Hospital*. 2007. Alert reference: NICE/NPSA/2007/PSG001.
- 26 National Institute for Clinical Excellence. *Draft Scope on the Clinical and Cost-effectiveness of Systems Based and IT Based Interventions in Medicines Reconciliation*. 2007. guidance.nice.org.uk/page.aspx?o=429351 (accessed 16 May 2007).
- 27 Blass DM, Black BS, Phillips H *et al*. Medication use in nursing home residents with advanced dementia. *International Journal of Geriatric Psychiatry* 2008;23:490–6.
- 28 Tomasi R, de Girolamo G, Santone G *et al*. The prescription of psychotropic drugs in psychiatric residential facilities: a national survey in Italy. *Acta Psychiatrica Scandinavica* 2006;113:212–13.
- 29 Kreyenbuhl JA, Valenstein M, McCarthy JF *et al*. Long-term antipsychotic polypharmacy in the VA health system: patient characteristics and treatment patterns. *Psychiatric Services* 2007;58:489–95.
- 30 Maidment ID and Thorn A. A medication error reporting scheme: an analysis of the first 12 months. *Psychiatric Bulletin* 2005;25:298–301.
- 31 Haw CM and Stubbs J. Prescribing errors at a psychiatric hospital. *Pharmacy in Practice* 2003;13:64–6.
- 32 Rothschild JM, Mann K, Keohane CA *et al*. Medication safety in a psychiatric hospital. *General Hospital Psychiatry* 2007;29:156–62.
- 33 Haw CM, Stubbs J and Dickens G. Medication administration errors in older psychiatric inpatients. *International Journal of Quality in Health Care* 2007; 19:210–16.
- 34 Maidment ID, Fox C, Elswood M *et al*. *An Analysis of Medication Related Incidents (Errors or Potential Errors) in Older People Reported from Mental Health Trusts in a Sample from the NPSA Reporting and Learning System (RLS)*. Presented at 19th IAGG World Congress of Gerontology and Geriatrics, IAAG 2009.
- 35 National Patient Safety Agency. *Safety in Doses: learning from national reporting 2007*. NPSA, 2009. Available at: www.nrls.npsa.nhs.uk/resources/?entryid45=61625 (accessed 29/12/09).
- 36 Warner B and Gerrett D. Identification of medication errors through community pharmacies. *International Journal of Pharmacy Practice* 2005;13:1–6.
- 37 Barber ND, Alldred DP, Raynor DK *et al*. Care homes' use of medicines study: prevalence and potential harm of medication errors in care homes for older people. *Quality and Safety in Health Care* 2009; 18:341–6.
- 38 Seale C, Chaplin R, Lelliott P *et al*. Sharing decisions in consultations involving anti-psychotic medication: a qualitative study of psychiatrists' experiences. *Social Science and Medicine* 2006;62:2861–73.
- 39 All-Party Parliamentary Group on Dementia. *Always a Last Resort: inquiry into the prescription of antipsychotic drugs to people with dementia living in care homes*. 2008.

- www.alzheimers.org.uk/downloads/ALZ_Society_APPG.pdf (accessed 27 April 2009).
- 40 Smith F, Francis SA, Gray N *et al.* A multi-centre survey among informal carers who manage medication for older care recipients: problems experienced and development of services. *Health and Social Care in the Community* 2003;11:138–45.
- 41 Francis SA, Smith F, Gray N *et al.* The roles of informal carers in the management of medication for older-care recipients. *International Journal of Pharmacy Practice* 2002;3:1–10.
- 42 Nirodi P and Mitchell AJ. The quality of psychotropic drug prescribing in patients in psychiatric units for the elderly. *Aging and Mental Health* 2002; 6:191–6.
- 43 Goldstein R and Rivers P. The medication role of informal carers. *Health and Social Care in the Community* 1996;4:150–8.
- 44 Hall MA, Dugan E, Zheng B *et al.* Trust in physicians and medical institutions: what is it, can it be measured and does it matter. *The Milbank Quarterly* 2001;79:613–39.
- 45 Entwistle VA and Quick O. Trust in the context of patient safety problems. *Journal of Health Organization and Management* 2006;20:397–416.
- 46 Altice FL, Mostashari F and Friedland GH. Trust and the acceptance of and adherence to antiretroviral therapy. *Journal of Acquired Immune Deficiency Syndrome* 2001;28:47–58.
- 47 Lee YY and Lin JL. The effects of trust in physician on self-efficacy, adherence and diabetes outcomes. *Social Science and Medicine* 2009;68:1060–8.
- 48 Malpass A, Shaw A, Sharp D *et al.* 'Medication career' or 'Moral career'? The two sides of managing antidepressants: a meta-ethnography of patients' experience of antidepressants. *Social Science and Medicine* 2009;68:154–68.
- 49 Nunes V, Neilson J, O'Flynn N *et al.* *Clinical Guidelines and Evidence Review for Medicines Adherence: involving patients in decisions about prescribed medicines and supporting adherence*. London: National Collaborating Centre for Primary Care and Royal College of General Practitioners, 2009. www.nice.org.uk/nicemedia/pdf/CG76FullGuideline.pdf (accessed 26 March 2009).
- 50 Safran DG, Taira DA, Rogers WH *et al.* Linking primary care performance to outcomes of care. *The Journal of Family Practice* 1998;47:213–20.
- 51 Lee YY and Lin JL. Linking patients' trust in physicians to health outcomes. *British Journal of Hospital Medicine* 2008;69:42–6.
- 52 Brown P, Calnan M, Scrivener A *et al.* Trust in mental health services: a neglected concept. *Journal of Mental Health* 18:449–58.
- 53 EMERGE (Erice Medication Errors Research Group). Medication errors: problems and recommendations from a consensus meeting. *British Journal of Clinical Pharmacology* 2009;67:592–8.

CONFLICTS OF INTEREST

None.

ADDRESS FOR CORRESPONDENCE

Ian Maidment, St Martin's Hospital, Littlebourne Road, Canterbury, Kent CT1 1AZ, UK. Tel: +44 (0)1227 812203; fax: +44 (0)1227 812389; email: ian.maidment@nhs.net

Accepted December 2009

