

FACT SHEET

Medicines in focus

This is one of a series of fact sheets on the use of medicines and how pharmacists within the healthcare team can contribute to better patient outcomes and quality of care. This fact sheet addresses recommendations of the Expert Panel Review of Elective Surgery and Emergency Access Targets under the National Partnership Agreement on Improving Public Hospital Services in 2011^{1,2}. The emphasis is on the Emergency Access Targets (NEATs) and how pharmacists can assist to meet these targets, improve patient care, reduce medication misadventure, address medicine related issues early and reduce treatment delays.

Timely medication management in Medical Assessment and Planning Units

There were 8.5 million separations for admitted patients in 2009–10—5.1 million in public hospitals and almost 3.5 million in private hospitals.³

The National Emergency Access Targets (NEAT)¹ are designed to improve access for emergency patients without compromising safety and quality of care. Early research from Western Australia lends support to this strategy.⁴

Medical assessment and planning units (MAPUs) are selected hospital areas specifically staffed and equipped to receive medical inpatients for assessment, care and treatment for up to a designated period (usually 36–48 hours). Patients are admitted via the Emergency Department (ED) or by direct referral from their GP. These units streamline care delivery, reduce access block to inpatient beds and thereby assist in improving efficiency and functioning of the ED.⁵ A systematic review (2009) reported recent surveys which confirmed the existence of 48 MAPUs with another 18 planned for commissioning across Australia and New Zealand.⁶

Medicines are the most common treatment used in health care and are associated with a higher incidence of errors and adverse events than other healthcare interventions.⁷ It is estimated that in Australia, 190 000 hospital admissions a year are medication related with the cost of these estimated at \$660 million.⁸

The activities that are essential for safe and effective medication management are:

- medication reconciliation (including an accurate medication history) on admission/ transfer into hospital
- management of medication issues throughout the admission

- medication reconciliation on discharge/ transfer from hospital and provision of that verified information for ongoing care.^{7,9,10}

These activities support the safe, timely and efficient transition of patients through the hospital and on discharge maintaining the continuum of care.¹¹ Pharmacists are well placed to provide these services.

The increased numbers of older patients in the community with chronic complex health conditions means that many are on multiple medicines, sometimes from a variety of prescribers and sources. Many of these patients will present to MAPUs.

Pharmacists can assist in MAPUs to:

- reduce medication misadventure by conducting medication reconciliation (including taking an accurate medication history) and medication order review early (ideally within 4 to 12 hours) on admission
- optimise medication use and management, assess/address medication related issues early, and document known allergies and adverse drug events
- commence planning for discharge / transfer as soon as the patient presents to the unit
- improve efficiency and reduce costs
- help meet performance indicators/ treatment and management targets by expediting the care of patients by compiling accurate and validated information and prompt medication assessment, intervention and management
- facilitate timely supply of medicines
- reduce time spent by medical staff undertaking medication related tasks, such as taking an accurate medication history and educating patients about their medications

Australian experience


In 2008 a NSW Special Commission of Inquiry report recommended “guidelines which involve consultation by and the participation of clinical pharmacists in patient care at the earliest appropriate opportunity.... to enable a clinical pharmacist to take a patient’s medication history, participate in ward rounds, review the patient’s medical chart during their inpatient stay and review medications on discharge.”³⁵

A systematic review into the effectiveness of AMUs in hospitals published in 2009 lists dedicated multidisciplinary support including pharmacists amongst success factors that influence AMU operations.⁶

Pharmacist charting of medication histories was compared with eliciting histories in the ED after medications had been prescribed by doctors at a teaching hospital in Australia. The study found that accuracy increased when the pharmacist prepared the medication charts (for the doctor), reducing the frequency of an unintentional discrepancy.³⁷

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- support other MAPU clinicians
- contribute to the review of patients on unit clinical rounds and with medication management decisions
- liaise with the patient's GP and community pharmacist to clarify medication issues
- assess the patients' ability to manage their medication regimen after discharge^{12,13}

The position statement of the Internal Medicine Society of Australia and New Zealand into standards for MAPUs suggests that there should be allied health including clinical pharmacist cover 7 days a week, particularly covering the period of highest influx of patients.⁵ An Australian clinical pharmacy workload study¹⁴ used time motion data to calculate the number of General Medical patients that could be reasonably managed by one pharmacist. Based on this study - to undertake medication reconciliation, provide input into the medication management plan and review the patient's medicines and impact of any changes to their medicines would require a total of 30 minutes of a pharmacist's time. Allowing for a one hour medical round per day, one clinical pharmacist could provide these services to ten MAPU admissions per shift.

Most hospitals in Australia with a pharmacy service offer some level of clinical - at the patient bedside - pharmacy service.^{15,16} Australian and international studies of hospital pharmacy services have shown that where clinical pharmacists work as part of health care teams, morbidity, mortality^{17,18}, adverse drug events and medication errors can be reduced.¹⁷⁻²¹

The proposed Australian Safety and Quality Goals for Health Care include medication safety as a priority area. They note evidence for the implementation of a systematic medication reconciliation process and the use of clinical pharmacists to review medications at admission amongst ways to reduce the incidence of medication errors and improve continuity of medication across sectors and settings.²²

Medication reconciliation^{9,10,23} is a formal process of obtaining and verifying a complete and accurate list of each patient's current medicines **matching** the medicines the patient **should** be prescribed to those they are **actually** prescribed. Any discrepancies are discussed with the prescriber and

reasons for changes to therapy are documented. When the care of the patient is transferred (e.g. between wards, hospitals or home), a current and accurate list of medicines, including reasons for change is provided to the people taking over the patient's care.

Although accurate medication histories are vitally important to optimal patient care, obtaining them can be complex and time consuming and the evidence suggests this task is poorly done by staff that are not focused on medication management.^{24,25} Pharmacists have demonstrated that they are skilled in undertaking this task²⁶ and it is valued by doctors.²⁷

Medication reconciliation completed and documented before the medication chart is written by the admitting doctor becomes a verified source of information and reduces errors occurring on the chart.

An elderly patient was admitted to the MAPU at a major metropolitan hospital for an exacerbation of congestive cardiac failure (CCF) thought to be due to diuretics being ceased by her specialist the week before. The patient was therefore recommenced on her original dose of frusemide 40mg in the morning and 20mg at lunchtime. Upon liaison with the community pharmacy and low level care facility (LLC), the MAPU pharmacist discovered that the frusemide had never been ceased as the change had not been communicated by the specialist to either the pharmacy or the LLC facility. Thus, her dose of frusemide at the present admission needed to be increased further to treat her current exacerbation of CCF. This intervention by the MAPU pharmacist helped reduce the patient's length of stay in hospital (had she stayed on her original dose for a couple of days, not responded, then had her dose increased further).²⁸

A possible transition pathway for a patient into the MAPU and points of care where pharmacists can assist with medication management is shown in Figure 1. Pharmacists are able to assist with medication reconciliation and review at all points in the pathway. If the pharmacist sees that patient early in the admission (front-loaded), for instance in the ED or MAPU, medication-related issues and problems can be sorted out faster and transfer or discharge medication planning can be undertaken earlier in the patient's care.

Evaluation of a new 7 days a week, 8am-8pm, pharmacy service in an AAU comprised of medication admission interviews, medication reconciliations, pharmaceutical care plan formulation, participation in the consultant ward round, medication information provision and both inpatient and discharge medication supply found the service enabled 96.2% of patients to be seen in the AAU before being admitted to a general medical ward. The patients were seen on average 3.5 hours after admission into the AAU. A survey of medical and nursing staff regarding the pharmacy service found most medical and nursing staff felt the extended hours pharmacy service had a positive impact on their provision of patient care and the majority considered the service better than standard ward pharmacy services.³⁶

Overseas experience

A 2010 systematic review examining the effects of US pharmacist - provided patient care at the bedside noted that mortality, hospitalisation/ readmission, inpatient length of stay, and ED visits benefit greatly from pharmacist provided services.²⁹

In the US, research has found that pharmacy staffing, clinical pharmacy services which include pharmacist-provided admission drug histories, in-service education, adverse drug reaction management, drug use evaluation and drug protocol management were associated with reduced mortality rates.¹⁷

A study reported in 2002 into clinical pharmacy services, hospital pharmacy staffing and medication errors in US hospitals list pharmacist-provided drug admission histories and increased staffing levels of clinical pharmacists amongst factors associated with decreased medication errors.²⁰

A study to identify discrepancies between medication histories taken by ED providers: physicians

nurses and medical students and clinical pharmacists in a tertiary care teaching facility found medication histories taken by clinical pharmacists were more complete than those by the other health professionals.²⁴

A study of 49 National Health Service organisations in the UK found an association between the number of pharmacists employed (more pharmacists on staff and involved in clinical activities) and lower mortality rates.¹⁸

Table 1 Selected recommendations from the Expert Panel Review of Emergency Access Targets¹ and how pharmacists can help

| NEAT No. | Details of relevant NEAT recommendations (summarised) | How pharmacists can help | Meeting NEAT: what to consider |
|----------|--|---|--|
| 1 | <p>That significant effort be made to develop and implement strategies to promote clinical engagement, best practice and shared learning within and between jurisdictions, and that this matter be progressed through the Standing Council on Health</p> | <p>Pharmacists practicing in the clinical setting within hospitals are already working within health care teams reviewing medication charts; liaising with doctors, nurses and community healthcare service providers about medication related issues; promoting evidence based practice; engaging in patient counselling and education.^{10,18,25-28}</p> | <p>Chief Executive Officers</p> <ul style="list-style-type: none"> » Are pharmacists included in the healthcare team in your MAPU? » Does discharge planning commence in the ED or MAPU? » Are safety and quality indicators related to medication management collected in your MAPU? Does your organisation support the ACSQHC's proposed Australian Safety and Quality Goals for Healthcare²²? |
| 3 | <p>That hospitals and Local Hospital Networks collect a suite of indicators to measure the impact of the implementation of the National Emergency Access Target (Recommendations 4 to 9) on the safety and quality of patient care.*</p> <p>A subset of these indicators will be reported by the National Health Performance Authority under the Australian Health Ministers' Conference agreed Performance and Accountability Framework.</p> <p>This subset includes:</p> <ul style="list-style-type: none"> » hospital standardised mortality ratio; » in-hospital mortality rates for selected diagnostic categories; » unplanned hospital re-admission rates for selected diagnostic categories; » healthcare associated Staphylococcus aureus bacteraemia; » healthcare associated Clostridium difficile infection; and » measures of the patient experience with health services. <p>The Panel notes the indicators that are reported in the National Partnership Agreement on Improving Public Hospital Services for emergency access and recognises the benefits of their continued reporting to assess the safety and quality of patient care, namely:</p> <ul style="list-style-type: none"> » The percentage of ED patients, who either physically leave the ED for admission to hospital, are referred for treatment or are discharged, whose total time in the ED is less than four hours, where clinically appropriate to do so. » The number, source and percentage of ED attendances which are unplanned re-attendances within 48 hours of previous attendances. <p>The Panel recommends measures of access block for emergency department patients, be collected and reported. The recognised National Health Performance Authority / Standing Council on Health process will need to apply to the development and acceptance of these indicators.</p> | <p>The Australian Commission on Safety and Quality in Healthcare (ACSQHC) <i>National Safety and Quality Health Service Standards</i>⁶, provides standards for medication safety which includes amongst others: taking accurate medication histories, documenting previous adverse medicines reactions and updating these, reviewing medication orders and medication reconciliation.</p> <p>Large research studies from the US have shown that a greater number of pharmacists on staff in hospitals and pharmacists at the bedside providing clinical pharmacy services (particularly admission drug histories), are associated with reduced morbidity, mortality and decreased medication error rates.^{8,11} A similar association between pharmacist numbers and lower mortality rates was also found in a study of 49 NHS organisations in the UK.⁹</p> <p>Pharmacists can assist with patient medication assessment, which can help prevent readmission. Research from Australia has shown that clinical pharmacist review to optimise the use of medicines contributed to reduced length of stay, reduced potential for hospital readmission and associated savings in the cost of care.¹²</p> <p>Pharmacists play an active role in antimicrobial stewardship²⁹. They provide guidance to clinicians regarding availability, guidelines and optimum use of antibiotics within hospitals. They counsel patients on safe and effective use of prescribed antibiotic medications as well as document allergies and adverse drug reactions to medicines.^{29,16}</p> | <p>Directors of medicine and emergency services, nursing and pharmacy</p> <ul style="list-style-type: none"> » Do you have a pharmacist included in the healthcare team in the MAPU who is available to promote quality use of medicines and facilitate timely supply? » How many admissions to your ED/ MAPU are medicines related? » Is medication reconciliation completed in the ED/ MAPU for all patients who are admitted into hospital or discharged home? How early in the admission is this process completed? » What proportion of patients in the MAPU and ED take five or more medicines? » Are patients at risk of medication misadventure identified using the checklist on the <i>National Medication Management Plan</i>³⁴? » Are patients that would benefit from a Home Medication Review identified using the checklist on the <i>National Medication Management Plan</i>³⁴? Are the GPs of these patients alerted to this issue? » Are medicines reviewed in line with falls prevention strategies? » Are antimicrobial agents prescribed in accordance with stewardship guidance? » Is funding available for a MAPU pharmacist to cover 2 shifts each day (e.g. 8am-10pm) in your current business model? » Is funding for a MAPU pharmacist part of your future funding submission? |

Table 1. Selected recommendations from the Expert Panel Review of Emergency Access Targets¹ and how pharmacists can help

| NEAT No. | Details of relevant NEAT recommendations (summarised) | How pharmacists can help | Meeting NEAT: what to consider |
|----------|---|--|---|
| 4 | That the four hour National Access Target for Emergency Departments be retained but renamed the 'National Emergency Access Target' ('NEAT') to change the focus from being entirely on the emergency department to emphasise the whole-of-hospital changes that are required to improve emergency patients' access to care. | ED Pharmacists can assist in the timely transition of patients through the ED by conducting medication reconciliations and review early in the attendance of patients in the ED. This facilitates timely supply of medications to the ED and the identification of medication related issues early in the process. ^{16,26,28} | Local Hospital Networks, Medicare Locals <ul style="list-style-type: none"> » Does your organisation have liaison pharmacists? » Are pharmacists included in your planning of seamless transition between community and hospital care? » Does your organisation subscribe to the APACs <i>Guiding Principles to Achieve Continuity in Medication Management</i>¹¹ and the ACSQHC proposed Australian Safety and Quality Goals for Healthcare²²? |
| 5 | 90 per cent of patients leaving the emergency department within four hours of presentation | Patients with multiple co morbidities, the elderly, those taking complex medication regimes, patients identified as being most at risk of medication misadventure and from culturally diverse backgrounds ³⁰ may benefit from being prioritised for a review by the ED pharmacist. This facilitates patient assessment and the discharge of patients from the ED back home or to community health services. | |
| 6 | That staged implementation across all triage categories by calendar year commence in 2012. | 'Front-loading' clinical pharmacy services to the ED facilitates the assessment of patients that require admission. | |
| 7 | For NEAT, the clock starts at the first recorded contact, which will be with either nursing triage or clerical staff. | | |

An electronic version and complete list of references is available at <http://www.shpa.org.au> (Updated March 2012)

* A set of indicators from which hospitals could choose is provided in the Supplementary Annexure to the Expert Panel Report

The Society of Hospital Pharmacists of Australia (SHPA) is the professional body which represents over 4,000 pharmacists, pharmacy students, pharmacy technicians and associates practising in all parts of the Australian health system.

SHPA vision

Excellence in Medicines Management.

SHPA purpose

Deliver value through people, systems and processes and processes for the best patient outcomes