Nurses’ key role represents the final safeguard against medication errors, write Therese Leufer and Joanne Cleary Holdforth

MEDICATION management is a key component of nursing care provision and competence in this role is crucial. Medication errors have been shown to be a prevalent and ongoing problem, resulting in varying degrees of preventable harm to patients. Although safety and responsibility in this area is not confined to nursing, we will examine this phenomenon from a nursing perspective in an attempt to identify problem areas and ways forward. Key areas of nursing responsibility such as drug rounds, drug calculations and accountability in terms of reporting errors will be considered alongside possible strategies to address these aspects.

Codes of conduct
Healthcare professionals, including nurses, strive in their day to day practice to effect optimal care for patients and clients and to ensure that they come to no harm. Respective codes of conduct for nursing set out clearly the responsibilities that nurses have in terms of delivering safe, evidence-based care to patients in order to maximise outcomes for all stakeholders.

To this end, An Bord Altranais1 states that “in determining his/her scope of practice the nurse or midwife must make a judgement as to whether he/she is competent to carry out a particular role or function”. Furthermore, “the nurse or midwife must take measures to develop and maintain the competence necessary for professional practice”.

Similarly, The Nursing and Midwifery Council UK,2 in their guidance document on record-keeping, stipulate that nurses “must recognise and work within the limits of their competence” and furthermore “must take part in appropriate learning and practice activities that maintain and develop competence and performance”.

Errors are expensive
Despite the honourable aspirations espoused in these codes, healthcare statistics would suggest that we are a long way from meeting them, particularly in the area of medication management. For example, in the UK, approximately 20% of deaths due to all types of adverse events in hospitals are caused by errors involving medications. This figure represents a significant financial burden which the National Health Service (NHS) estimate at approximately £500 million annually and where each event increases hospital stay by approximately 8.5 days.3-6 Increased hospital stay, morbidity and mortality are just some of the sequelae that can result from medication errors.7

In the Republic of Ireland, it is estimated that approximately 10,000 preventable errors and 2000 preventable deaths occur each year.8 In 2009, a startling 83,847 incidents were reported to the Clinical Indemnity Scheme via Starsweb (national online reporting system).9 Medication errors account for about 10% of these reported incidents, including incorrect doses (1,569 events), missed medication (1006), administration of incorrect medication (818), incorrect directions or labelling (562) and administration of medication to the incorrect patient (176) to mention but a few. However these are only the reported incidents and do not account for the unreported cases.

Osborne et al suggest that figures for unreported cases could be as high as 25%.10 From an Irish perspective, the Houses of the Oireachtas Joint Committee on Health and Children11 found that only 10% of medication errors are actually reported, clearly suggesting that a startling 90% of medication errors go unreported. Under-reporting is a major exacerbating factor to the problem of medication errors and will be discussed later.

Room for improvement
The above statistics clearly demonstrate that errors are occurring at several points in the medication management process and are interprofessional in nature. Wolf defines medication errors as “mistakes associated with drugs and IV solutions that are made during the prescription, transcription, dispensing and administration phases of drug preparation and distribution”.12 This reinforces the fact that errors can happen at any point in the medication management process and can involve a number of personnel.

So what can be done to begin to reduce these worrying trends in medication management? From a nursing perspective, the regulatory body, An Bord Altranais, offers
guidance in this area of practice including the application of the ‘five rights’ as a guiding principle to safe medication management. The use of right patient, right drug, right dose, right route and right time should, in theory, minimise the risk to the patient of medication error.

Problems and potential solutions

The role of the nurse in medication management has developed exponentially over time. Nursing responsibilities in medication management include prescription, calculation, constitution, checking, administration, patient assessment, documentation and patient medication education. However, the fundamentals of the nurse’s role in medication management remain unchanged and nurses are expected to deliver and execute the highest standards of care and safety when it comes to medication management.

Nurses, in the majority of cases, represent the last safety check in the chain of events that is medication management and therefore are, in fact, the final safeguard of patient wellbeing and potentially the difference between achieving the desired outcome and harming the patient.

A significant proportion of nurses’ time is devoted to the role of medication administration. Armitage and Knapman estimate that as much as 40% of clinical nursing time is dedicated to medication management, which translates approximately into 16 hours out of every nurse’s working week. Keohane et al report that medication administration is among the most frequent activity performed by nurses. It is reasonable therefore to suggest that the potential for error in this area is correspondingly high.

Contributing factors to medication error identified in the literature include poor drug labelling, a disorganised drug cabinet, an incomplete prescription order, large patient workload and inadequate staffing levels.

Other factors specific to the individual practitioner that can lead to errors include insufficient pharmacology education and training, inadequate history taking, poor handwriting, use of abbreviations, inappropriate use of decimal points, poor mathematical skills, use of verbal orders, transcription errors, carelessness, forgetfulness, inattention, inadequate documentation, distractions while on drug rounds, and length and type of roster.

These issues clearly emphasise the multifaceted nature of the problem. However, it is crucial not to be discouraged by the extent of the challenge. A comprehensive, collaborative, interprofessional solution will ultimately be required if the problem of medication errors is to be definitively addressed. However, in advance of this, nursing must look to itself and scrutinise its own contribution to the problem and identify how best to tackle key areas of concern.

Drug rounds

A major area for concern is that of drug rounds, which constitute a major component of clinical nursing practice. The drug round takes place in what can be considered hazardous conditions, where busy, noisy, distracting, disruptive activities abound. Such activities originate from a wide variety of sources, all of which pose the potential threat to distract the nurse from what is a role of great consequence.

The administration of medications which are in fact chemical substances that will potentially affect the physiological, emotional, psychological or mental condition of the patient requires the full and undivided attention and concentration of the nurse responsible for the role at any given time. Measures that can minimise the impact of the aforementioned hazards on the nurse’s focus must be sought and implemented.

Kreckler et al recommend clear identification of the nurse undertaking the medication round. For example an item of clothing or even a ‘do not disturb’ sign on the drug trolley would denote that the nurse undertaking the drug round is not to be interrupted or disturbed. The nurse undertaking the drug round must also enforce this approach, avoiding unnecessary conversation with patients or colleagues and refusing to be taken away from the drug round to attend to other nursing responsibilities.

Pape et al concur with this type of approach and advocate that members of the healthcare team be educated regarding the importance of not distracting nurses engaging in medication rounds. Visitors and patients should be similarly informed.

Pape even endorses the application of airline safety practices to medication administration, requiring nurses to treat this role with the gravity that it merits by adhering stringently and solely to the task at hand, utilising a strict medication safety checklist with visual reminders for accuracy to enhance the safe execution of this role.

Numeracy skills

Another significant challenge for nursing in relation to medication errors reported in the literature is that of numeracy skills. The use of calculators to assist nurses with the task of drug calculations appears to offer little in the way of reassurance. Bliss-Holtz reports how even when nurses used calculators they were still unable to achieve a score of 90% or above in drug computations, yielding a 10% error rate.

Interestingly, Kapborg compared the written drug calculation skills of qualified and student nurses and found that there was no significant difference between the two groups. This would imply that experience is no guarantee of competence in this particular area.

Possible explanations for this anomaly reported in the literature include lack of opportunity to practice drug calculations, advances in technology, medication dispensing and roles of pharmacists all resulting in a declining need for complex calculations on a regular basis in practice.

Lack of competence in this key component of safe drug administration poses a very real concern for the profession, not to mention the public at large.

There are a number of approaches that can be considered to deal with this problem. Jukes and Gilchrist advocate more education and research in this area if nurses are to be prepared adequately.

Regular drug calculation testing, drug information days where updates on medication management aspects and developments are shared, maths revision programmes or online maths tutorials including the use of calculation workbooks would all serve to improve the numeracy skills and therefore levels of competence in this crucial area of patient care.

Isolating the cause

When medication errors occur, the focus should not be solely on the individual who made the mistake; rather the spotlight should be turned on how and why the established safeguards failed.

An organisational culture that espouses punitive measures and ostracises the individual involved in a medication error does...
not address the core of the problem and in many respects it actually perpetuates the problem. Such cultures inhibit individuals from reporting errors or indeed ‘near misses’, information which would be most useful in identifying root causes and implementing measures to address them. In this way, subsequent similar medication errors can be avoided.

Reporting malpractice or misconduct is known as ‘whistle-blowing’ and has traditionally been perceived as very risky for the individual practitioner both from a personal and professional perspective. In the past nurses who have whistle-blown have suffered various fates, the worst case scenario being loss of employment or at the very least have been ignored by senior members of staff. However, nurses are in fact ethically obliged to report any error or omission in practice that jeopardises patient safety.

Nurses with genuine concerns regarding any aspect of practice or patient safety must be encouraged and supported to speak out. This can only be achieved if the punitive culture that tends to be prevalent is replaced by one which promotes openness, transparency and protects staff who are willing to voice a concern.

Maintaining standards

The role of the nurse in medication management has evolved significantly in recent years and indeed is likely to continue to develop in response to healthcare needs. However, the core responsibility of the nurse’s role in medication management has not changed and nurses are expected to deliver and execute the highest standards of care and safety.

There are numerous factors that exist in everyday nursing practice, all of which have the potential to contribute to medication errors. It is imperative that nurses carefully examine their practice and actively contribute to reducing the startling statistics outlined in this article.

This can be achieved by identifying and adopting safety measures and where necessary facilitating a culture that will enhance patient safety, support nursing personnel and value the voices and concerns of those who speak out. Only then can nurses play their part in the ultimate interprofessional solution that is so badly needed if medication errors are to be kept to an absolute minimum.

**References**

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