

This series is compiled by Rosemary Burke, Chair, SHPA Committee of Specialty Practice in Medication Safety, and Director of Pharmacy, Concord Hospital, NSW, and edited by Penny Thornton, Federal Councillor, SHPA, and Pharmacy Services Manager, The Childrens Hospital at Westmead, NSW. It brings you up-to-date information about medication safety issues and strategies to prevent medication errors. The section draws on Australian incidents and also US experience, including (with permission) material from ISMP Medication Safety Alert!, a bulletin published by the Institute for Safe Medication Practices, USA (www.ismp.org).

AUSTRALIAN INCIDENTS

Comments are provided by the Committee of Specialty Practice in Medication Safety members in New South Wales.

New dispensing system

The pharmacy department had a new dispensing system. Only the information services department could load a printer onto the system. When the system went live there were a number of printer problems and information services department had to be called each time a different printer was needed to print labels. A test patient had been set up to check that a printer was working. It was discovered that information services department were using a medical record number belonging to a real patient and dispensing items to it because they could remember that patient. All access at that stage was stopped and pharmacy staff were instructed to use a specifically set up test patient for label printing.

[Australian Incident 23, April 2004]

User customisation may cause error

The hospital used a computer system that could be accessed by doctors, nurses and pharmacists to report laboratory test results. The screen could be viewed in a number of ways depending on user preferences, e.g. left to right or right to left. Although everyone had their own password to log in, often the program was left open if the doctor got called away and another staff member would use the computer without relogging in. A patient was to be discharged home on warfarin 5 mg daily. This was an increase from the dose they had had in hospital of 2 mg daily. The pharmacy department checked the international normalised ratio which was in therapeutic range and asked why the dose had been increased. It turned out that the doctor had always read results right to left whereas the previous user had the screen set up in the reverse. The doctor was actually reading the international normalised ratio results from 8 days before.

[Australian Incident 24, April 2004]

Order discontinuation

Mrs X was prescribed cephalexin on discharge. The pharmacy department dispensed this medication. Mrs X had the first dose of the antibiotic in the ward and had a reaction to it. She stayed in hospital a few more days. A few days later a new discharge prescription was dispensed. Mrs X was given the new and the old discharge prescription when she went home. Mrs X recognised that these new capsules looked the same as those she had had in the hospital and rang up to clarify.

Safe practice recommendation: The pharmacy department should have been informed to cancel the previous discharge prescription. Pharmacy could also have questioned why there were two discharge

prescriptions written so closely together. Someone should have counselled the patient on discharge when the problem would have been detected. It is clear that an active clinical pharmacy system could have prevented this incident.

[Australian Incident 25, April 2004]

Patient identification

Mr H's discharge prescription came to the pharmacy department. There was an addressograph label on the prescription. He was to be discharged on warfarin and amiodarone. It so happened that the pharmacist for the ward where Mr H had been treated, actually dispensed his discharge prescription. She knew he had not been on amiodarone on the ward. She rang the doctor to see if an adjustment of the dose of warfarin was warranted. The doctor realised the amiodarone was meant for the patient in the next bed.

Safe practice recommendation: A number of problems occur with incorrectly identified patients on discharge prescriptions. If an addressograph label is used on a prescription it must be initialled to ensure the correct one has been used. If staff are in the habit of using addressograph labels there is a great temptation for medical officers to write prescriptions without patient identification. It is easy then for a well-meaning ward clerk to subsequently attach the incorrect addressograph. This incident also highlights the importance of keeping full computer records of inpatient dispensing or current medication profiles and actively referring to them at the point of discharge dispensing.

[Australian Incident 26, April 2004]

Look-alike drug name

Mr L was prescribed a drug that looked like Hydrea to the member of the nursing staff who was looking after him. The nurse asked the pharmacist to dispense the Hydrea. The pharmacist reviewed the chart (faxed to pharmacy and not very clear) and dispensed Hydrea. Next day another pharmacist was covering the ward and realised after talking to the patient that the patient was on Hydrene which is a mixture of hydrochlorothiazide and triamterene not Hydrea which is hydroxyurea, a cytotoxic agent. Luckily no doses had been administered.

Safe practice recommendation: Print drug names and try to ensure writing is legible. Any suspicion about a prescription requires a double-check and if possible a physical check. Unusual dosing schedules should also raise suspicion.

[Australian Incident 27, April 2004]

Drawing up insulin again

With the withdrawal of disposable insulin Novolets from the Australian market, hospitals that have been using

these devices for inpatients over the past few years may find that nursing staff require re-education on the use of insulin syringes and vials.

A patient was given 60 units of neutral insulin rather than the prescribed 6 units and another near miss was reported at the same site. The wrong size syringe was used as insulin syringes had not been stocked on the ward for some time—3 mL insulin cartridges are now supplied to wards with insulin syringes. It is interesting to note that the manufacturer had previously warned against using 3 mL insulin cartridges for drawing up (the closure is not designed for multiple dosing and vials may shatter under positive pressure) but now has changed that advice (personal communication). There is now a confusing array of devices and the Novopen manufacturer is not prepared to provide them for hospital use.

[*Australian Incident 28, April 2004*]

Care with medication histories if tramadol is prescribed

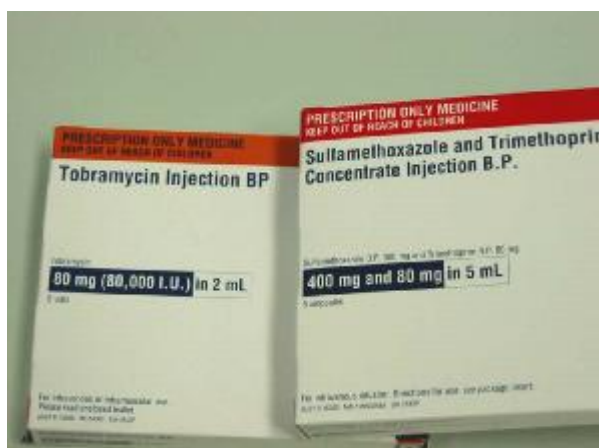
One hospital surveyed tramadol usage in its emergency department for a three-month period in 110 patients. Criteria for prescribing included absence of interacting drugs, no history of seizure or head injury or previous reactions to tramadol. Of the 52 instances where tramadol use could not be supported:

- 3 patients had presented with head injury, alone or with other injuries;
- 3 patients were taking an interacting drug; and
- 46 patients had **no medication history available**.

Although use of tramadol may have been safe in these patients, absence of details of concomitant medication suggests greater care is needed prior to the decision to prescribe. Concurrent surveys of emergency department documentation show poor recording of medication details in a wide range of circumstances, not just when prescribing tramadol.

[*Australian Incident 29, April 2004*]

Colour coding isn't the answer when look-alike branding is used



A 43 year old man with a history of non-Hodgkin's lymphoma was being treated for *Pneumocystis carinii* pneumonia. He was prescribed sulfamethoxazole/trimethoprim 400 mg/80 mg injection, at a dose of 5 amps every 6 hours. When dispensing, the pharmacist selected tobramycin 80 mg injection instead of sulfamethoxazole/trimethoprim 400 mg/80 mg injection. The injections are both DBL brand with similar packaging. The only

difference beside the drug name is the colour of the strip (one is orange and the other red). The injection box was labelled 'sulfamethoxazole/trimethoprim 400 mg/ 80 mg injection', however the 'tobramycin' was still clearly visible underneath. The incorrectly labelled boxes were sent to the ward. The patient was administered four incorrect doses. A policy of double checking all injections with two registered nurses did not prevent the error.

When the error was detected, the patient was given the correct medication, recovered and was discharged. Fortunately, although the error led to increased length of stay, there were no ongoing adverse effects.

Tobramycin has been moved, alert stickers have been put up and a different brand with clearly distinguished labelling purchased.

Editor's comment: It is easy to see how these two items can be confused when stored near one another on a shelf in a clinical area. We are pleased to report that the company concerned has now changed their labelling to add emphasis to the product strength which will go a long way toward distinguishing these products.

[*Australian Incident 30, April 2004*]

US SAFETY BRIEFS

No points for this computer system test

A serious error happened when computer order entry testing was accomplished using a 'live' patient. Amoxicillin was entered, dispensed, and administered to a 16-year-old patient who had amoxicillin allergy listed on her drug profile. A new pharmacy computer system had just been implemented. Information systems personnel were given 'live' access to the pharmacy computer system in order to 'test' dose ranges for various medications on actual patients. A pharmacist preparing for rounds noticed that this patient had an active order for amoxicillin and a documented allergy to that medication. Pharmacy order copies and the patient's original chart were searched, but an order for amoxicillin was not found. A history of the computer entry for amoxicillin revealed that an information systems employee inadvertently entered and submitted the 'test' amoxicillin prescription for this patient, making it an active order. The patient developed toxic epidermal necrolysis and ultimately died. However, it's unclear if the amoxicillin led to this fatal condition. The patient had also received prescriptions for sulfonamide and quinolone, both of which have been associated with toxic epidermal necrolysis. It's advisable to avoid granting full access to actual patient profiles to anyone other than pharmacy staff. Only a test patient profile system should be used for demonstration purposes or for system testing. Even if you think you will remember to correct any erroneous entries made during testing, interruptions or distractions could lead to a catastrophic error. Unfortunately, some vendors may not be inclined to create special 'test' systems. Hospitals should stand firm in denying requests to operate a test system parallel to their 'live' system.

[*ISMP Medication Safety Alert! January 15, 2004*]

Miscommunication of patient laboratory values

Miscommunication of what was thought to be blood glucose values led to the unnecessary administration of insulin to a group of patients. A nurse found a list of patient names with accompanying room numbers. She

mistakenly thought the room numbers were blood glucose values and gave each patient insulin according to a standard insulin sliding scale protocol.

Australian comment: Implement standardised procedures to communicate both verbal and written patient information, including read-back of verbal test results and designating a standard place, such as a medication administration record, to record laboratory values.

[ISMP Medication Safety Alert! January 29, 2004]

Don't grab the wrong 'mab'

Reports have been received in the US relating to the mix-up of infliximab and rituximab. Australian sites need to be diligent as the use of monoclonal antibodies increases and the range of 'mab' products expands.

[ISMP Medication Safety Alert! February 12, 2004]

Folic acid and folinic acid

Some prescribers may order the chemoprotectant drug, leucovorin calcium, as folinic acid. Clinicians have sometimes dispensed and administered folic acid by mistake, leaving the patient unprotected from chemotherapy-related toxicity.

Australian comment: Refer to leucovorin calcium using its full name. Never use folinic acid or just leucovorin, which could be confused with the anticancer drug Leukeran (chlorambucil).

[ISMP Medication Safety Alert! February 12, 2004]

Thalidomide and flutamide

A verbal order for flutamide was misheard as thalidomide. Errors are more likely with these sound-alike products because both may be used to treat prostate cancer. The restricted distribution program for thalidomide helped prevent this error from reaching the patient.

Australian comment: Never accept verbal orders for chemotherapy; read-back of the order alone may not prevent a misunderstanding.

[ISMP Medication Safety Alert! February 12, 2004]

Look-alike sound-alike products

From our own experience 'look-alike' 'sound-alike' products continue to plague pharmacists, nurses and prescribers. A recent IV chart was sent down from the Neonatal Intensive Care Unit for 'Prostin 160 mcg in 5% dextrose 50 mL'. A pharmacist new to hospital pharmacy collected Prostin F2 alpha (dinoprost) 5 mg/mL, 1 mL ready for dispensing. Luckily a more experienced pharmacist was aware of a protocol for neonates to maintain patency of the ductus arteriosus using Prostin VR (alprostadil) 500 microgram/mL, 1mL. The product was checked and the correct item dispensed. Dinoprost is a smooth muscle contractant used for therapeutic termination of pregnancy, which commonly causes vomiting and diarrhoea. Obvious prescribing issues, such as an incomplete order, the use of brand name instead of generic and the use of 'mcg' instead of the recommended 'micrograms', were compounded by inexperienced staff and the use of the name 'Prostin' for multiple products with different active ingredients.

[ISMP Medication Safety Alert! February 26, 2004]

Concentrated morphine solutions

Lessons learned from the US relating to overdoses of morphine when different strength solutions are confused

(e.g. 1 mg/mL and 10 mg/mL). Recommendations include:

- Avoid stocking more than one strength of morphine solutions in patient units, particularly in emergency departments. The higher concentrations are usually used for chronic pain.
- Segregate the concentrated solutions when storing.
- Never prescribe or dispense liquid medications without the dose specified in metric units (e.g. mg) not volume (e.g. mL).

[ISMP Medication Safety Alert! February 26, 2004]

Intimidation is a safety concern

More than 2000 health care workers in US hospitals were surveyed in an attempt to describe the nature and incidence of intimidating behaviour. It should be no surprise over 80% of respondents had experienced condescending language, impatience with questions or reluctance to answer questions. About half had experienced strong verbal abuse or threatening body language. These behaviours were not confined to prescribers and were not gender specific. Although females tended more often than males to enlist the help of another colleague to talk to an intimidating person.

'Just give what I ordered'—half the respondents admitted that intimidation had altered the way they handled requests for clarifications of orders including medication orders and this was more so for pharmacists. Pharmacists (64%) reported that they had during the past year assumed a medication order was correct rather than interact with a particular prescriber. The rate for nurses was 34%. This may reflect the greater contact pharmacists have with a broader range of prescribers.

Interestingly, senior nurses and pharmacists (2-5 years experience) encountered more intimidating behaviour than junior staff, possibly because they felt more confident in questioning orders. A majority of respondents acknowledged that there were processes in their hospitals to reduce intimidation but felt that they were not satisfactory.

Australian comment: We could find no reports of similar surveys in Australian hospitals. It would be interesting to see if the greater timidity of pharmacists versus nurses was also the case here. It is important to foster a culture where checking and questioning are rewarded, particularly during training but also as practitioners become more experienced. This coexists with encouraging a 'reporting culture'. Provided the messenger is thanked rather than shot.

[ISMP Medication Safety Alert! March 11, 2004]

Abbreviate not

Reports continue of confusion over abbreviations of 'thousands' and 'millions' in medication orders. These include use of MU (million units), K (thousands), or scientific notation. Work is being done in the US to come up with safe standard abbreviations for both.

Australian comment: The safest approach remains writing the words in full. In addition, where a medication could be expressed either as mg or units, the former may be preferred, requiring less use of zeros and less use of 'IU' which can be difficult to interpret. Pharmacy can help by maintaining safe drug descriptions in their computer databases and subsequently on dispensing and shelf labels.

[ISMP Medication Safety Alert! March 11, 2004]