Preventing hospital medication errors: the role of training, audit and clinical governance

Sir,

Hospital medication error is a very important patient safety concern and Dr Roberts's article (vol 71(6), 2010, p. M94) raises its profile. The vast majority of inpatient drug prescribing and letters to GPs at discharge is completed by junior doctors and it is important that they are given specific training in these tasks. Clear legible handwriting (block letters preferably) reduces the risk of confusion between drugs with similar sounding names and makes it easy for nurses to administer them. Doctors should also sign their name and bleep number on the drug chart; this allows nurses to contact the appropriate person and the doctor concerned can be given feedback if a mistake in prescribing has occurred.

In future, electronic prescribing and electronic discharge summaries will have a big impact on reducing medication errors and improving communication between primary and secondary care. A step in this direction is the use of bar-code technology for medication administration in hospital (Poon et al, 2010). This reduces errors in medication administration and order transcription as well as potential adverse drug events.

Polypharmacy in the elderly will pose a big challenge over the coming decades as the elderly population and the burden of co-morbidities increases. At admission the drug history is often incomplete as many patients are unable to remember the name or correct dosages of their regular medications. Moreover many medications are changed while the patient is in hospital. In cases where there is doubt or when important medication changes are made in hospital, hospital medical teams should liaise with primary care colleagues at the earliest opportunity.

Regular audits should be carried out in every hospital to keep a track of trends in hospital medication errors. This is vital in raising local awareness and ensuring that lessons learnt from mistakes are disseminated widely. Audit and clinical governance leads should encourage a no-blame culture in every NHS hospital so that a transparent and credible system can evolve to minimize medication errors in hospital.

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Seldinger chest drains: avoiding dilator injury during insertion

Sir,

The use of small bore, wire-guided Seldinger chest drains has increased (Horsley et al, 2006; Davies et al, 2008; Maskell et al, 2010), because of their relatively minimally invasive nature and perceived ease of use. However, Davies et al (2008) and Maskell et al (2010) have highlighted the limitations and hidden dangers of Seldinger chest drain insertion. The most common complications are early blockage of small calibre drains, inappropriate positioning, and injury of adjacent organs, in particular by the dilators used during insertion.

In the authors' unit, a significant proportion of early postoperative patients need pleural effusion drainage which is performed with Seldinger chest drains under bedside ultrasound guidance. Ultrasound can give a measure of chest wall thickness to guide dilator insertion. With real-time ultrasound guidance to monitor the position of the wire and dilator, injury to adjacent structures during drain insertion can be further reduced. Nevertheless, insertion of an excessive length of dilator can still occur causing serious visceral organ injuries. On the other hand, inadequate dilatation can make subsequent drain insertion very difficult. The guidewire can give the operator a false sense of security in the belief that the wire will prevent the dilator from entering a different track. Many manufacturers of Seldinger drains have calibrated markings on the needle and drain, but not on the dilator, making the distance the dilator has been inserted through the chest wall difficult to judge accurately. The authors use a modified technique to minimize this risk.

First, the distance the needle has been inserted to obtain pleural aspirate is noted by the calibrations on the needle (A on *Figure 1*). The distance the dilator should be inserted is measured against the length of the needle required to aspirate effusion (B). At that point, the dilator is gently crushed by sterile artery forceps (available in standard chest drain kits) leaving a teeth-like indentation marking the distance for insertion through the chest wall until the pleural space is reached (C). Excessive crushing of the dilator should be avoided as this may hinder smooth passage of the guidewire. This simple approach allows the clinician placing the drain to clearly see and be confident that the dilator does not travel beyond the thickness of the chest wall, reducing the risk of visceral injury.

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Figure 1. Seldinger chest drain.