A presentation on how e-prescribing can improve patient safety and a mock court case of a consultant pharmacist were highlights at this year's joint UKCPA and Guild of Healthcare Pharmacists conference

E-prescribing system alerts doctors when VTE prophylaxis not offered

By **Gareth Malson**, MRPharmS

A group of hospitals in Boston, Massachusetts, has reduced the incidence of venous thromboembolism (VTE) among its patients through prescriber alerts generated by its electronic prescribing system. Thomas Cooley, assistant director of pharmacy services at the hospital (Brigham and Women's Hospital) presented the group's findings.

The hospital's e-prescribing system's "events engine" (see Box) has been developed to identify patients who are at greater risk of developing a VTE. Risk factors for VTE have been assigned an risk rating (eg, cancer = 3, previous VTE = 3, major surgery = 2, body mass index above 30 = 1). The engine assigns every patient a total VTE risk score by accumulating these ratings.

If a patient's total score is above 4, the patient's doctor is alerted when he or she "logs on" to the system and accesses the patient's prescribing record. The alert advises the doctor to prescribe mechanical or pharmacological VTE prophylaxis (if it has not been prescribed already).

In a study conducted by the trust, implementation of the alert system decreased the incidence of VTE by 41%. However, the study also revealed that only about 33% of alerts resulted in prophylaxis being prescribed.

Mr Cooley explained that, consequently, the alert messages have been modified. Rather than a single screen alert suggesting that prophylaxis be prescribed, the system now displays three consecutive alert screens:

- The first screen is the same as before, however it now includes an intranet hyperlink that allows the prescriber to view the published evidence for prescribing thromboprophylaxis
- If the doctor opts not to prescribe thromboprophylaxis, a second screen appears, which requires the doctor to specify his or her reason for not doing so
- If thromboprophylaxis is still not prescribed, the third screen points out that there is no increased risk of bleeding from using mechanical prophylaxis. Prescribers are again offered the opportunity to order compression stockings, for example, and are required to "opt out" to avoid doing so

Mr Cooley confirmed that a further study is being conducted to determine whether the updated alert system had resulted in a further increase in the use of VTE prophylaxis or a further reduction in the incidence of VTE. Mr Cooley concluded that the key to improving medication safety involved making medication errors easy to track, difficult to make and easy to monitor. He added that pharmacists could be the "bulldogs" for implementing a hospital's patient safety agenda.

Tom Cooley believes pharmacists can be the "bulldogs" of patient safety

The 2009 joint conference of the Guild of Healthcare Pharmacists and the United Kingdom Clinical Pharmacy Association, entitled "Making it happen — leadership in action", was held at the Marriott Hotel, Leicester, on 15–17 May.

Events engine

In 1995, Brigham and Women's Hospital in Boston, Massachusetts, developed a bespoke electronic prescribing system that included software to identify potential adverse drug events. This "events engine" constantly monitors hospital laboratory results alongside all prescribed medicines to identify potential adverse drug reactions. The system incorporates "rules" that generate an alert when they are broken. For example, an alert would be generated if a patient's platelet count has fallen by more than 50% in 10 days while he or she is being treated with heparin.

Every morning, pharmacists are given a list of possible events that have occurred for inpatients on their wards. At that point, the pharmacist becomes responsible for following up these events during the day.

The pharmacists must determine whether an intervention is necessary and contact the appropriate member of medical staff. They must also document every suggested intervention on the prescribing system and record whether or not the medical staff followed their advice.

The system currently incorporates about 75 rules, although these are constantly being reviewed to limit the number of alerts generated for events that do not require intervention. He added that, in 2008, 2,050 alerts resulted in a pharmacist suggesting an intervention, of which around 85% were accepted by medical staff.

MEETING

Mock court case puts two senior pharmacists on trial

Attendees of the conference were invited to act as jurors in a mock court case involving the death of an imaginary patient. The scenario was as follows:

Mrs A, a designer and mother of three children, is admitted to an intensive care unit (ICU) with a rare but serious infection. She has multiple allergies, including one to penicillin, all of which are documented. Due to these allergies, the only suitable treatment option is Blundermycin, an unlicensed antibiotic obtained from a French manufacturer in single-dose (50mg) vials.

After four daily doses of 50mg, the patient has been stabilised but only two more doses of the drug remain in the hospital. Consequently, the consultant pharmacist for the ward requests a further supply. The following day (day 5), the manufacturer reports a six-week delay in supply, so another supplier is sought. On day 6, a Polish manufacturer is found that can supply multidose vials of the drug (500mg) the following day.

On day 7, the dose of antibiotic cannot be given as scheduled because the new supply has not arrived. Consequently, the consultant pharmacist goes to pharmacy stores to determine the whereabouts of the drug, and it arrives while he is there. Since the dose is now several hours late, the pharmacist asks the stores staff to book the drug out to the ICU and delivers it to the ward.

At 6pm that day, the drug is given to the patient. Shortly after, she goes into respiratory arrest and is pronounced dead at 6.30pm.

An inquest confirms that 500mg of the antibiotic was administered to the patient. The administering nurse admits her error but points out that the packaging had no English translation.

The coroners' report confirms that the cause of death was a reaction to one of the Polish formulation's excipients. He also declares that standard operating procedures within the pharmacy were not followed — namely that requiring a risk assessment to be performed on all unlicensed medicines. Poor systems and supervision within the pharmacy are also highlighted by the report, and both the chief pharmacist and consultant pharmacist are declared to have neglected their duty of care.

Hitting the headlines

Several pharmacists not assigned to a group of jurors were asked to think up some newspaper headlines that might be used to report the case. The fruits of their labour include:

- "Expert" pharmacist kills mother of three
- Polish wonder drug blunder
- Foreign drug overdose kills designer mum
- Patient polish-ed off
- Designer dies from drug overdose disaster

After the court case was acted out, the audience was split into three groups of 12 jurors. Each group deliberated on whether:

- The chief pharmacist was guilty of corporate manslaughter (criminal charge)
- The consultant pharmacist was guilty of gross negligence (criminal charge)
- Either pharmacist should be reprimanded or struck off by the pharmacy regulator

None of the groups found the chief pharmacist guilty of corporate manslaughter, but two recommended a reprimand by the regulator. Two groups found the consultant pharmacist guilty of gross negligence and recommended he be struck off.

Readers are invited to comment on this scenario on *PJ Online* (www.pjonline.com/news/blundermycin).

NICE wants more pharmacists involved with appraisals

The National Institute for Health and Clinical Excellence wants more pharmacists to get involved with its medicines appraisals process. The rallying call came from Sarah Garner, associate director for research and development at NICE, who believes pharmacists could be doing more to inform the institute's work.

"Pharmacists are the experts in medicines. Many of the decisions that NICE makes are about medicines," said Dr Garner. "We need the specialist knowledge pharmacists have about medicines use in practice to inform our decisions." She explained that much of NICE's work involves determining whether a medicine's clinical trials data remain applicable when the medicine is used in widespread clinical practice. "That's where you come in," Dr Garner told the audience, "to help us translate the efficacy data from clinical trials to what's happening on the ground."

She explained that every guideline or technology appraisal produced by NICE has its own section on the website (www.nice.org.uk) where all key documents, registered stakeholders and publication schedules are listed. "Routinely, the Royal Pharmaceutical Society and the UKCPA are invited to participate," confirmed Dr Garner, "but quite often we don't have that engagement. I recognise that is often due to time . . . but I would like to see more representation from pharmacists."

She told *Clinical Pharmacist* that, for guidance, pharmacists can contribute through registered stakeholders or nominate other stakeholders. For technology appraisals, they can also offer personal views for consideration by the appraisal committee. The "Get involved" section of the NICE website offers the opportunity to sign up for newsletters, suggest topics for NICE to review or join guideline development groups, she added.

☐ A tough job Bill Dawson, member of the Royal Pharmaceutical Society's science committee, highlighted the difficulties faced by NICE in conducting appraisals of new medicines. He believes the limited number of human and animal exposures to a medicine during clinical trials cannot always provide sufficient safety data. "The regulator issues [marketing authorisation] on the basis of less than 8,000 mammalian exposures," he pointed out. "A serious adverse event that occurs in, perhaps, one in 5,000 patients may not be seen during trials. But, it will cause the drug to be withdrawn within the first few years of use."

He added: "NICE is pushed too hard to make an economic evaluation on the basis of 8,000 mammalian exposures. You need a population of a considerable number of thousands before you can see if it's going to be commercially viable."

Professor Dawson also highlighted the importance of postmarketing surveillance. He suggested that pharmacists could help communicate to the public the risks of rushing new medicines onto the market .