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# Non-specialist pharmacists are a valuable asset to medical teams

Hospital pharmacists significantly reduce morbidity and mortality, but a consultant from Denmark believes this impact is maximised by less specialisation. Gareth Malson reports

**C**linical pharmacists are reducing patient morbidity and mortality, and generating substantial cost savings, said Lars Heslet, medical director of intensive care, National University Hospital, Copenhagen, Denmark. Professor Heslet highlighted the “astonishing” results of a paper published in 2003, which concluded that clinical pharmacy interventions had reduced the number of cases of ventilator-associated pneumonia from 40 per 1,000 ventilator days to 12 (*Intensive Care Medicine* 2003;29:691). “The clinical pharmacist has saved lives,” he said.

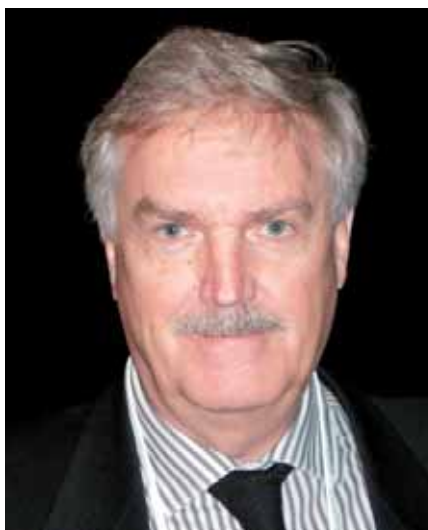
A clinical pharmacist has been a full-time member of the intensive care team at National University Hospital since June 2004. Measures that were consequently introduced to reduce the drugs bill included:

- Changing the standard drug formulary
- Implementing protocols to monitor certain therapies and allow drug treatment to be discontinued earlier
- Optimising the coadministration of multiple intravenous drugs to minimise waste

Before the appointment of the ICU pharmacist, the department’s drug budget was \$127,000 per month. Since the appointment, the budget has reduced to \$110,000 per month. This amounts to a saving of around \$200,000 per year. “Can you really afford not to employ a clinical pharmacist?” he asked conference attendees.

## — Improving clinical outcomes

Hospital pharmacists should aim to become indispensable members of the clinical team, by focusing on what they can do to impact on morbidity and mortality, suggested Professor Heslet. He highlighted US research that investigated the effect that a clinical pharmacist had on the



Lars Heslet: Can you afford not to employ a clinical pharmacist?

prescribing of sedative therapy (*Critical Care Medicine* 2008;36:427–33). In this study, a prospective group of patients on sedative therapy, who were assessed daily by a clinical pharmacist, were compared with an equivalent retrospective group, who were not assessed by a clinical pharmacist.

During the study, the pharmacist assessed all patients daily and made suggestions for reducing sedative therapy in line with approved guidelines. The results showed that without the pharmacist involvement, the average patient was mechanically ventilated for 338 hours, stayed on ICU for 380 hours and stayed in hospital for 537 hours. With pharmacist involvement, these figures fell to 178 hours, 238 hours and 369 hours, respectively. The pharmacist intervention reduced average hospital stay in these patients by approximately eight days.

Reducing the incidence of septic shock involves implementing a “care bundle” — several interventions, all of which must be implemented for the care bundle to be effective. “How can we run such a complicated protocol in an ICU without the help of the clinical pharmacist, when all of these interventions involve drugs?” asked Professor Heslet. The clinical pharmacist in his department now uses a checklist to ensure that all aspects of the care bundle have been suitably prescribed.

However, there are few studies that investigate the impact of clinical pharmacy on patient morbidity and mortality. This is an area that pharmacists should work together with doctors to improve, added Professor Heslet.

## — Wide knowledge base

Pharmacists must maintain a wide knowledge base if they are to be of greatest use to the medical teams. Medical teams are already more specialised than we would want, said Professor Heslet, and if pharmacists specialised in only a small range of drugs, they would be of less use to the medical team. This opinion differs to that widely adopted in the UK, where highly specialised clinical pharmacists are often appointed within intensive care wards. If you have too many specialist opinions, it becomes difficult to “put the pieces together”, he commented.

Responding to a question from the audience about whether pharmacists could replace doctors in a clinical team, Professor Heslet said that he felt that the added value brought by a pharmacist was greater than that of one doctor. ICU has many protocols, and doctors find it difficult to adhere to all of them. Pharmacists have been trained to be precise and decisive, and can bring different skills to a clinical team than that of another doctor, he added.

## — Targeted therapy

Evidence from trials can show whether a drug works, but will not show if a drug will work for a specific patient, said Professor Heslet. In intensive care, drug costs are very high and life-saving therapy often has high numbers needed to treat.

He gave the example of activated protein C, which a Cochrane review concluded should only be used in line with a protocol. At present, 16 patients need to be treated with activated protein C in order to save one life, said Professor Heslet. However, by using pre-emptive criteria and biochemical markers to determine which patients are most likely to respond, you can reduce this number to five. “A clinical pharmacist can do this,” he said, “and the cost saving will be substantial.”

The European Association of Hospital Pharmacists 13th annual congress, entitled “Hospital pharmacists: added value for health”, was held in Maastricht, The Netherlands, on 27–29 February. Gareth Malson is staff editor of *Hospital Pharmacist*.

# Hospital pharmacists must consider many factors to determine the cost of biosimilars

The cost saving of buying biosimilar drugs compared with original brands will not be as great as the standard saving for generic drugs, said Thomas Bols, director of government affairs, Amgen International. Speaking at a symposium sponsored by Amgen, Mr Bols said the discount on the original brand price for generics is usually around 80 per cent, however for a biosimilar, it will be in the region of 10–30 per cent.

Mr Bols explained that this was partly due to a considerable difference in research and development (R&D) costs. For generics, R&D typically takes less than three years to complete and costs up to €2m. For a biosimilar, it costs around €100m and takes around seven years to complete.

Several other costs need to be considered when you are assessing the actual cost of a drug, said Mr Bols. One example is a potential “dose penalty” that arises when a biosimilar has a lower bioavailability than the original brand, meaning that a larger dose of the biosimilar is needed for the same therapeutic effect. It is possible for a biosimilar to offer a dose saving, however so far, only dose penalties have been witnessed for biosimilars, he said.

Mr Bols added that other costs to consider include:

- Additional monitoring required due to switching therapy
- Additional pharmacovigilance costs
- Loss of discount — if a biosimilar was not licensed for the same list of indications as the original, then more than one product would need to be obtained, resulting in reduced bulk purchasing
- Potential for increased nursing costs, if the biosimilar was more difficult to administer

The overall cost needs to be considered, not just the drug cost, said Mr Bols. He warned those present that if the company manufacturing the biosimilar was a relatively small company, they could go out of business, which would result in the drug having to be changed again. There are uncertainties regarding the long-term supply and long-term safety of biosimilar drugs, he said. “All of these uncertainties come without providing any therapeutic benefit to the patient.”



Thomas Bols: The cost saving generated from using biosimilars will not be as large as expected

However, his comments were met with scepticism by symposium participants. A hospital pharmacist from Israel, commented that in the current healthcare climate, he would be expected to facilitate any possible cost saving, regardless of its size.

## Dutch hospitals to gain access to patients' community records

The first stage of a “virtual” national electronic health record will go live in the Netherlands later this year, said Johan Bruin, cluster manager, knowledge and advice, NICTIZ (National IT Institute for Healthcare in the Netherlands). The first stage is the implementation of an electronic medication record that will be accessible by all authorised healthcare professionals.

The system is described as virtual because it will not involve a central database. Instead, the user will be able to access all of the electronic information for a specific patient that is stored locally in GP surgeries, community pharmacies and hospitals, via a central hub.

The launch of an electronic medication record is intended to provide an up-to-date list of a patient's medicines, at any time, to any affiliated healthcare professional in the Netherlands. The system will be developed during the next few years, to include drug indications, allergies, changed or ceased drug

treatment, and a facility for issuing repeat prescriptions.

Records of who uses the system and what information is accessed will be kept, to prevent abuse of the system and breaches of confidentiality. In addition, the patient will have the option to request that information held by one healthcare professional is not shared with others.

The system differs from that being developed in the UK by NHS Connecting for Health, where healthcare professionals will have access to a central database, which will contain electronic summaries of care records for all patients.

### EAHP congress reports

Reports of previous annual congresses of the European Association of Hospital Pharmacists can be accessed via *PJ Online* ([www.pjonline.com/hplinks](http://www.pjonline.com/hplinks)).

## Failed therapy liability shift?

Pharmacists could be held accountable if a patient's disease worsens as a result of having his or her drug treatment switched to a biosimilar, said John Lisman, public and regulatory attorney at NautaDutilh, a business law firm with expertise in healthcare.

Liability for drug treatment lies with the manufacturer until it can be attributed to somebody else, said Mr Lisman. If a hospital changes the brand of a biopharmaceutical that it uses to a biosimilar, and this causes a patient to lose disease control, the professional liability could lie with the pharmacist, he said. However, in response to a question, he confirmed that if a pharmaceutical product was used for an indication specified in its summary of product characteristics, a pharmacist could not be liable for any problem that occurs.

Mr Lisman suggested that pharmacists should remain aware of when a biosimilar is licensed for one indication as a result of extrapolation of data for another indication.