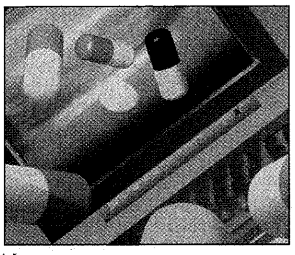
cians are aware of this and may deliberately co-prescribe, particularly for short term treatment. The alert system we designed identified the potential interaction but only fired an alert if the serum potassium was rising or exceeded predefined limits. If serum potassium concentration had not been monitored for a predefined period of days the alert also fired. This allows patients' safety to be ensured without flooding clinicians with potentially irrelevant alerts.


BSIP ESTIOT/SPL

As Ferner says, no system is completely error free, and we are fortunate to have the safety net of a pharmacist check of prescriptions, which has been shown to reduce error.[4-5]

Keith Farrar *chief pharmacist*
Wirral Hospital, Wirral CH49 5PE
Yfc06@dial.pipex.com

Ann Slee *chief pharmacist*
Glan Clywd Hospital, Rhyl LL18 5UJ

Don Hughes *director of pharmacy*
Countess of Chester Hospital, Chester CH2 1UL

Peter Marsh *technical director*
Carol Makin *clinical director*
Wirral Health Informatics Service, Wirral Hospital

Competing interests: None declared.

1 Ferner RE. Computer aided prescribing leaves holes in the safety net. *BMJ* 2004;328:1172-3. (15 May.)
2 Hughes DK, Farrar KT, Slee AL. The trials and tribulations of electronic prescribing. *Hosp Pres Eur* 2001;1:74-6.
3 Farrar K, Caldwell N, Robertson J, Roberts W, Power B, Slee A. Use of structured paediatric-prescribing screens to reduce the risk of medication errors in children. *Br J Healthcare Comput Info Manage* 2003;20:25-7.
4 Leape LL, Cullen DJ, Clapp MD, Burdick E, Demonaco HJ, Erickson JI, Bates DW. Pharmacist participation on physician ward rounds and adverse drug events in the intensive care unit. JAMA 1999;282-267-70.
5 Dean B, Schachter M, Vincent C, Barber N. Prescribing errors in hospital inpatients: their incidence and clinical significance. *Qual Saf Health Care* 2002;11:340-4.

Electronic prescribing is helpful in children too

EDITOR—We concur with Ferner in his review of computer aided prescribing.[1] Our centre's experience of e-prescribing started in 1996 as part of the overhaul of the clinical management system. Voluntary reporting of prescribing errors was the only mechanism before the introduction of the computer system and was certainly an ineffective way of notification. From our own experience, the prescribing error rate went from an average of 10 per year in 1994 to over 100 per year in 1997, indicating previous underreporting. With proper electronic documentation and monthly clinical audits, we have seen the prescribing error rate reduced to 40 last year (a drop of 60%).

As Farrar et al say in their rapid response (previous letter), we believe that the reduced error rate was due partly to improvement in the legibility and completeness of prescriptions, as well as to the increased awareness of the prescriber to automatic logging. Errors in prescribing may be more likely to occur with a change of junior medical staff every three months, as in our centre. This is even more important in the case of paediatric prescribing, when any wrong dosage may result in detrimental consequence.[2] An informal survey has shown that most junior medical staff working with children welcome the computer system and we therefore have no doubt that the introduction of the electronic prescribing system has been a success.

Kenneth Wong *resident*
kkywong@hkucc.hku.hk

Paul Tam *chair professor*
Division of Paediatric Surgery, Department of Surgery, University of Hong Kong Medical Centre, Queen Mary Hospital, Pokfulam Road, Hong Kong SAR, China

Competing interests: None declared.

1 Ferner RE. Computer aided prescribing leaves holes in the safety net. *BMJ* 2004;328:1172-3. (15 May.)
2 Farrar K, Caldwell N, Robertson J, Roberts W, Power B, Slee A. Use of structured paediatric-prescribing screens to reduce the risk of medication errors in children. *Br J Healthcare Comput Info Manage* 2003;20:25-7.

Decision support needs to be evidence based

EDITOR—The deficiencies of existing computerised prescribing decision support systems in the United Kingdom described by Fernado et al and Ferner are mirrored in Australia.[1 2] Focus groups conducted by the Australian national prescribing service highlighted concerns that prescribing decision support prompts may not be evidence based or comprehensive.[3]

Subsequently, four prescribing packages were analysed, using the drug records of 20 elderly patients (N Sharma et al, Australian health and medical research congress, Melbourne, November 2002). There were 5-22 recommended drug-drug interaction prompts per patient. These interactions had been categorised by experts as clinically important (for example, ergotamine and erythromycin), clinically appropriate (for example, celecoxib, angiotensin converting enzyme inhibitor, and diuretic), or of low clinical importance (for example, tramadol and warfarin). The appropriateness of the information for a prescriber in general practice was also examined.

Large variations in the total number of prompts, clinical relevance, and appropriateness of the information were found in the prescribing packages. Between eight and 16 of the 32 recommended clinically significant interactions were not detected. Pharmacokinetic interactions were done well. The packages performed poorly in detecting pharmacodynamic and three way drug interactions, therapeutic duplications, when one drug treats an adverse effect induced by another, and promoting rational drug use.

The National Prescribing Service and General Practice Computing Group believes that the development of safe and effective decision support systems requires a formal information model based on an evidence based clinical model, which incorporates the logic and workflow needed to practice safely and effectively. The methods and models, using asthma as an example, and the general practice data model and core data set,[4] are currently being developed (www.healthinformatics.unimelb.edu.au).

Siaw-Teng Liaw *professor*
Department of Rural Health, University of Melbourne, Graham Street, Shepparton, VIC 3630, Australia
t.liaw@unimelb.edu.au

Stephen Kerr *decision support officer*
National Prescribing Service, Australia, Level 7, 418A Elizabeth Street, Surry Hills, NSW 2010, Australia

Competing interests: None declared.

1 Fernado B, Savelyich BSP, Avery AJ, Sheikh A, Bainbridge M, Horsfield P, et al. Prescribing safety features of general practice computer systems: evaluation using simulated test cases. *BMJ* 2004;328:1171-2. (15 May.)
2 Ferner RE. Computer aided prescribing leaves holes in the safety net. *BMJ* 2004;328:1172-3. (15 May.)
3 Ahearn M, Kerr SJ. General practitioner perceptions of the pharmaceutical decision support tools in the prescribing software. *Med J Austr* 2003; 179:34-37.
4 Commonwealth Department of Australia and the General Practice Computing Group. General practice data model and core data set project final project report. September 2000. www.gpcg.org/publications/jointpubs.html (accessed 18 June 2004).

Amoxicillin for non-severe pneumonia in young children

Stop skimping, start investing in antibiotic treatment

EDITOR—The limitations of the paper on three *v* five days of antibiotic treatment for pneumonia merit additional emphasis.[1] The paper had an inadequate selection of indicators of treatment failure, an insufficiently discriminating treatment comparison (also pointed out by Borja and Rigau (next letter)), insufficient detailing of patients' history, dismissiveness towards caregivers' assessments, deficient survivor data, and difficulties in applying the conclusion of the study to broader populations.

If the conclusion was acted on, predictable deaths might occur, particularly in undiagnosed asthma. Roughly 54 000 people die in Britain each year from complications related to respiratory infections.

Skimping on antibiotics is a contested tactic. False economy is evident when patients are admitted to hospital and intubated for infections that could have been managed less invasively with appropriate antibiotics.

Skimping does not address the need for a new generation of antibiotics. No one seriously doubts that antibiotics are at times prescribed unnecessarily. But the tokenism is inappropriate, and dangerous skimping is likely to give a false comfort, which displaces the need for real action on the antibiotic problem.

Lobbying governments to support research and development in antibiotics and antiviral medicine and for adjunct changes in public policy is essential. A review of protocols for pharmaceutical approvals is also required, if the necessary developments for the future are to be viable.

Sacrificing people in the name of the species, when the real reason is poor economics, is no longer politically credible. We ought to be particularly sensitive, when it is a vulnerable group such as children, who are called on to make the sacrifice.