Avoiding drug errors

Read the label

EDITOR,—The diversity of drug packaging that R E Ferner criticises has existed for many years.¹ What Ferner now identifies is a move towards standardisation through pharmaceutical manufacturers' adoption of the NHS ampoule labelling specification. The work leading to this has been described by Nunn.² The NHS specification seeks to establish a standard for labels, with the information presented in a consistent format and printed in the most legible way. The problem with diversity is that practitioners use features such as colour, shape, etc as a substitute for correct reading and inspection of the label. Use of such substitutes is both fallible and dangerous.

The company whose products are illustrated in Ferner's letter manufactures nearly 100 different ampoules. To differentiate between that number of products by use of colour, shape, etc is obviously impossible. Ferner's hypothetical practitioner with modest presbyopia would obviously find it easier to read the labels illustrated than the text of the letter criticising the labels. The only way to be sure of the contents of an ampoule (or any other product) is to read the label.

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Reporting of errors should be free of recrimination

EDITOR,—We support R E Ferner's sentiments regarding errors of prescribing.¹ There is a profound need for strategies that manage such errors by reviewing systems rather than by apportioning individual blame. Hopefully, the recent papers in *JAMA*, cited by Ferner, will stimulate debate on drug errors and encourage this process.

For several years we have campaigned for multidisciplinary medication quality assurance groups to be established in NHS hospitals.² These groups should aim to create a non-threatening environment in which all staff who prescribe, dispense, and give drugs feel able to report adverse incidents voluntarily, free from fear of recrimination. Reporting may be anonymous if this is thought appropriate, but in our experience staff are commendably forthright in adding their name to completed records, which aids the identification of individual training requirements. Completed reports are reviewed regularly by the quality assurance group and recommendations are made to all staff as to how future risk can be minimised.

Audit criteria set out by the King's Fund include requirements for the monitoring of prescriptions and the management of error and other risk related to dispensing and the administration of drugs. We would like to see the position strengthened such that the existence of a formal system of reporting errors, subject to multidisciplinary review, becomes a condition for the accreditation of NHS hospitals.

These steps will enhance the management of risk

Advice to authors

We prefer short letters that relate to a recently published article and we are unlikely to publish letters longer than 400 words and containing over five references. Letters may be shortened. Your letters should be typed with double spacing and include a word count. All authors need to sign the letter and provide one current appointment and address. We encourage you to declare any conflict of interest. Please enclose a stamped addressed envelope if you require an acknowledgment.

associated with giving drugs locally, but what of the national situation? We have provided a facility for colleagues to report incidents that they regard as important and that contain a valuable lesson for future practice²; uptake has been encouraging. In addition, many reports are published anonymously and debated in the pharmaceutical literature.³ Could a similar system be coordinated nationally by the Committee on Safety of Medicines? A process analogous to the system for reporting adverse drug reactions could be adopted to facilitate the reporting of errors of prescribing that result in appreciable morbidity (or, indeed, the reporting of near misses that narrowly avoided causing harm). As with the yellow card scheme, the compilation of reports on a nationwide database would alert the regulatory bodies to particular problems in the safe use of drugs. This in turn would permit national initiatives aimed at minimising the potential harm to our patients from the treatment with which we intend to do good.

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Adopting new NHS specification helps

EDITOR,—In a letter on misleading drug packaging R E Ferner advocates diversity of packaging if the system of distributing medicines in standard ampoules of standard format is not widely adopted.¹ In Britain, Antigen Pharmaceuticals (UK) alone supplies 27 different small volume parenteral products in glass ampoules in 57 different sizes with a range of 41 different strengths of solution—for example, lignocaine hydrochloride injection BP 0.5%, 1%, and 2% in 2, 5, 10, and 20 ml ampoules. In addition, we supply five different small volume parenteral products in plastic ampoules in 16 different sizes with a range of seven different strengths of solution. We are also in the process of developing a considerable number of such products, which will also have a wide variety of ampoule sizes and strengths of solution.

Given the multiplicity of different products,

sizes, and strengths of solution, there are simply not enough colours, symbols, or shapes for use as distinguishing features; even if there were, such an identification system would be too complex to be of value. Ampoules have always looked similar, and they will probably continue to do so. The only reliable distinguishing features are the words.

As the largest supplier of small volume parenteral products to the NHS (over 40 million ampoules a year), we attach particular importance to the clarity and legibility of our product labelling, as evidenced by the fact that we were one of the first companies to adopt what has now become the NHS specification for ampoule labels. Wider acceptance of this specification would resolve many of the problems associated with the identification of products.

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Pharmacists and computerised prescribing can help

EDITOR,—R E Ferner asks a pertinent question regarding what can be done in hospitals to prevent drug errors and provides some potential answers, including that prescriptions should be checked by pharmacists.¹ This is common in hospitals in the NHS. A survey in mid-1992 found that pharmacists in 96% of NHS hospitals monitored prescriptions on the wards, usually daily on weekdays.² Research in Britain shows that hospital pharmacists detect and prevent many errors in prescribing. Hawkey *et al* showed that quality of care improved in most cases when doctors were asked to reconsider prescriptions that ward pharmacists considered to be incorrect.³ A review of British literature shows that many similar studies support these results.⁴ Evidence also exists that hospital doctors, nurses, and managers value the safety net provided by pharmacies.⁵

Such monitoring cannot guarantee the quality of prescribing, not least because pharmacists may also fail to detect errors and may not be able to review every prescription before the first dose is given. Computerised prescribing, as Ferner suggests, may be a useful approach. If sufficient information is placed on a computerised prescribing system and updated regularly many errors, and even interactions, may be detected and prevented. Nevertheless, computers cannot ensure that all prescriptions are appropriate for all patients since there will always be uncertainties regarding what constitutes optimum prescribing.

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Reporting of critical incidents shows how errors occur

EDITOR,—R E Ferner draws attention to the confusion that can be caused when different drugs are labelled in an identical manner.¹ I would like to draw attention to another problem.

Drugs may be presented in two or more strengths in identically sized and labelled ampoules. In my hospital, through the reporting of critical incidents, two examples of such confusion have recently come to light. In the first incident 30 mg of morphine was confused with 10 mg, and in the second incident 10 mg of diamorphine was given instead of 5 mg. In both cases the junior doctor, on rotation from one hospital to another, expected only one particular strength to be available.

While no excuses can be given for such errors, it is too easy to read what one expects to see. I agree that in the ideal situation checking would help prevent such errors, but this may not always be practical for doctors working on their own. As an anaesthetist in training, I often prescribe and dispense drugs simultaneously. I am aware that a patient's life could be put at risk if I were to inject either the wrong drug or the incorrect dose.

Such errors can be reduced only by better training and awareness. Confidential reporting of critical incidents by all members of staff is essential to build up a better picture of how errors occur.

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Inappropriate prescribing is "treatable"

EDITOR,—I read R E Ferner's editorial on drug errors with mixed feelings.¹ Over a decade ago Gosney and I drew attention to inappropriate prescribing (the prescribing of contraindicated drugs and drugs with adverse interactions) for elderly patients admitted to hospital.² We subsequently extended our surveys to patients seen in accident and emergency departments,³ patients in long term care wards, and patients in residential homes. We suggested that the conventional explanation for the high incidence of adverse drug reactions in elderly people (changes in pharmacokinetics and pharmacodynamics related to age, multiple disease, and poor compliance) might distract from prescribing errors as a cause. Our most recent study showed that just under half of adverse drug reactions and hospital admissions related to drug treatment in elderly people were due to inappropriate prescribing.⁴

I have always seen this as good, rather than bad, news. Inappropriate prescribing seems more likely to be "treatable" than age related changes in the way that drugs are handled and the other commonly invoked causes of therapeutic misadventures in old age.

We developed a computer system to help prevent inappropriate prescribing.⁵ We thought it unlikely that better education would prevent doctors from making errors. A busy doctor making rapid prescribing decisions will find it difficult to mobilise the two large bodies of information necessary to prescribe safely for older people: the often long list of diagnoses and the drugs that the patient may already be taking, and the massive, ever expanding body of pharmacological and pharmaceutical

information. There is an important difference between "passive" knowledge (information buried somewhere in one's cerebral cortex) and "active" knowledge (information that is used at the time of a therapeutic decision). Computer assisted prescribing would provide on line information without undermining the doctor's judgment.

Insufficient research into the effect of computer assisted prescribing in iatrogenic disease may reflect a failure to appreciate the tenuous relation between knowledge (especially passive knowledge) and appropriate therapeutic action. This may be because the educational agenda in therapeutics is set by people whose interests are highly specialised and who may not recognise the very "homely" reasons for poor prescribing, of which simple forgetfulness is the most important.

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Preventing local complications of depot neuroleptics

EDITOR,—Justin Hay's short report on complications at the site of injection of depot neuroleptics raises an important issue affecting those patients who require maintenance treatment with such formulations.¹ His conclusion that patients who have developed such complications should avoid certain formulations, including zuclopenthixol concentrate, is not borne out by our experience, both in clinical trials and from spontaneous reports of adverse reactions to the company. Certain aspects of Hay's study may go some way towards explaining this discrepancy.

Firstly, skill in giving depot injections may have varied widely among the health professionals involved in the study, and, additionally, no attempt seems to have been made to ensure standardisation of the injection technique (such as use of a Z track injection technique² and rotation of injection sites). The 19 acute problems described as clinically important leakage from the injection site may therefore reflect poor injection technique. Similarly, the 52 acute problems described as pain, bleeding, or haematoma are unlikely to represent a concentration effect; rather, they probably represent the trauma that can be associated with any deep intramuscular injection. Again, this varies with technique. Another aspect of technique requiring consideration is the higher viscosity of the more concentrated formulation and thus the greater potential for increased pressure and trauma at the time of injection.

Secondly, the patients receiving the concentrate formulations received more injections than the other patients, which may explain the increased frequency of local complications in this group.

Thirdly, it is recognised that the administration of large injection volumes may be associated with the development of local reactions,^{3,4} and accepted practice is to attempt to reduce the volume of depot in someone prone to such reactions. This can be done by reducing the dose, with increased risk of relapse, or by increasing the concentration. Thus patients in the groups receiving concentrate may have been selected over time to receive such

formulations because of their tendency to local reactions.

Compliance is best achieved by selecting a treatment that is well tolerated and convenient. In so doing, a clinical balance must be struck between the benefits of keeping the injection volume as low as possible (including psychological advantages to the patient and the avoidance of split site injections) and any potential risks of increased concentrations to local tolerability.

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Suicide after discharge from psychiatric hospitals in Scotland

EDITOR,—John R Geddes and Ed Juszcak provide information on trends in suicide after discharge from psychiatric hospitals in Scotland.¹ They comment that studies in other countries indicate that the peak incidence of suicide and undetermined deaths occurs in the 28 days after discharge. Our data on deaths recorded as E950-959 (suicide and self inflicted injury) confirm that this is also the case in Scotland (figure). Our findings also indicate that, while the peak number of deaths occurs in the first four weeks after discharge, the risk of death from suicide continues for some time. This supports the need for good planning for patients' discharge and for community support in the months after discharge.

Geddes and Juszcak argue that the changes may be related to decreases in the number of psychiatric beds, and they call for the retention of inpatient facilities. If death rates in females in the 28 days after discharge had returned to the same level that existed in 1968-72 then 12 deaths would have been prevented in 1988-92. This represents only 1.18% of all suicides and undetermined deaths in females in Scotland in the five years and 0.32% of these deaths in both sexes. We have reported previously that only 9.5% of males and 18.4% of females who died by suicide in 1991-2 in Scotland had been psychiatric inpatients in the 12 months before their death.² This, together with the finding that most people dying by suicide have not had recent contact with their general practitioners,³ brings

Deaths by suicide in 1991-2 after discharge from psychiatric hospitals in Scotland