risk: in several large series the overall mortality was less than 0.5%, and all the deaths were in patients with severe pulmonary hypertension or right ventricular failure.⁹⁻¹¹

The recognition that pulmonary embolism is usually a complication of deep venous thrombosis provides a solution to the problem posed by a non-diagnostic lung scan. In nine out of ten cases the thrombus is located in the legs,¹² and the association with embolism is much stronger when the thrombus involves the proximal leg veins.¹³ Only rarely are other sites (for example, axillary, pelvic, or renal veins) or other sources (for example, fat or tumour emboli) implicated. Three good methods are available for identifying proximal leg vein thromboses: phlebography, Doppler ultrasonography, and impedance plethysmography. Phlebography remains the most reliable method,¹⁴ but Doppler ultrasonography and impedance plethysmography have the advantage of being less invasive and serial studies may be made in uncertain cases.¹⁵ Moreover, impedance plethysmography will detect the presence of 95%, and Doppler ultrasonography the presence of 91%, of phlebographically demonstrable acute thrombi in the popliteal veins or above.^{15 16}

Patients with a non-diagnostic lung scan, which most doctors currently regard as a negative result,⁸ therefore require phlebography, Doppler ultrasonography, or impedance plethysmography. If the result is positive the patient clearly warrants anticoagulant treatment. If the results are negative excluding pulmonary embolism completely is not possible: pulmonary embolism is associated with a negative phlebogram in 30% of cases.¹² The chance of subsequent clinical embolism in these patients is, however, small.^{14 17} Thus it is safe merely to observe such patients, giving them subcutaneous heparin if risk factors for thrombosis are present and to rescan them if the clinical situation changes. If the results of phlebography or non-invasive tests are inconclusive pulmonary angiography must be considered. If this is not

available locally the patient should be given heparin and transferred to a hospital that performs angiography.

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Harm minimisation for drug misusers

When second best may be best first

A quiet revolution is taking place in British responses to drug misuse. Harm minimisation is the new buzz word and refers to the component of care that makes reducing the harm that comes from drug use its main objective. Combating drug use then becomes the means to the end rather than the end itself.

At its centre the debate is about goals: working towards either stable abstinence or the less ambitious goal of reducing the harm from continued drug use in the belief that this is more achievable.¹ Essentially, harm minimisation is the triumph of pragmatism over purism: the acceptance that second best may be best first.

Elsewhere in medical practice harm minimisation is regarded as good secondary preventive health care. If cigarette smokers cannot give up they are advised to go for second best by switching to filter cigarettes or low tar varieties. Diabetic patients are advised on dietary and drug regimens but are also advised about self monitoring and emergency management in the event of loss of glycaemic control. People are regularly advised to drink moderately to avoid the health hazards associated with heavy alcohol consumption.

Even in drug misuse the concept is not new: 20 years ago some of the new drug clinics and day centres provided not

only needles and syringes but also instructions on injecting technique^{2 3} and special on site fixing rooms.⁴ In 1984 the *Prevention Report* made it clear that the goal of reducing drug use must exist alongside the goal of reducing the harm of continued drug use.⁵ Since then various British reports have recognised that some drug use will inevitably exist.^{1 6} They have legitimised efforts to reduce the harm of continued drug use while still endorsing efforts to counter drug use itself. The real issue becomes the balance between these strategies.

HIV has given harm minimisation a new prominence, and attempts to reduce sharing of syringes and unprotected sex have become key elements of this work. Harm minimisation is now being extended beyond HIV infection to overdose and hepatitis—as pioneered in Italy and the Netherlands.⁷⁻⁹ Descriptions of harm minimisation now appear in the Department of Health's new guidelines on managing drug misuse.¹⁰

When it comes to drug misusers the new guidelines from the Department of Health clarify the responsibilities for all doctors and the legitimacy and importance of strategies to minimise harm.¹⁰ Drug misusers have a right to health care regardless of doctors' moral indignation or prejudices. Abstinence (at least in the short term) is not the only

legitimate goal of treatment: intermediate goals (such as stopping injecting) may be more realistic for some drug misusers. It may be a useful early step on the long journey of treatment.¹

The first needle exchange scheme in the United Kingdom opened in 1987, and there are now more than 130 such schemes in England.¹¹ There are also extensive over the counter sales of needles in high street pharmacies.¹² Maintenance programmes using oral methadone, popular in other countries, may represent harm reduction in another guise. A prompt response to withdrawal crises—for example, when the normal illicit supply is interrupted or while the user is on remand or in custody^{13,14}—may be particularly important in avoiding the transition from smoking to injecting a drug.¹⁵

Where does harm minimisation lead? Providing advice on safer injecting (and in some cases needles and syringes) fails to address the fundamental need for behavioural change. Alternative strategies are already being used, such as booklets giving advice on safer drug use^{16,17} and the innovative comic for drug users, *Smack in the Eye*, which weaves health promotion into an alternative cartoon format.¹⁸ But orthodox medicine must also take up the challenge and explore these new territories. Why don't we already offer injecting drug users testing and vaccination for hepatitis B infection?^{19,20} Perhaps a case can be made for distributing ampoules of the opiate antagonist naloxone. Its potential for abuse is nil, the risks are probably minimal, and considerable benefit may accrue if drug users could give emergency doses of antagonist to fellow injectors who inadvertently overdose.

Finally, we need to know more about how risk behaviour is changing. If a prescribing programme is intended to reduce the frequency of injecting or a needle exchange scheme is intended to reduce the frequency of sharing then measures of these behaviours are needed to monitor progress over time.

Harm minimisation must now move to a stage where the critical researcher is not outlawed as a heretic but welcomed as a scientist.

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NCEPOD: Revisiting perioperative mortality

Same lessons; same problems with compliance

The first *Report of the Confidential Enquiry Into Perioperative Deaths*¹ received a mixed reception. Some doctors hailed it as an outstanding example of self audit while others were critical, calling it politically naive and suggesting that its lack of scientific method would have prevented its publication by a refereed journal. But the climate for audit has changed since then: in 1987 the white paper *Working for Patients* had not been published and many doctors considered audit to be poor quality research of dubious value. Despite its critics the report remains the most ambitious audit undertaken in the United Kingdom, and the term "CEPOD" is now firmly established in the vocabulary of surgeons and anaesthetists.

The report's successor, the *Report of the National Confidential Enquiry Into Perioperative Deaths 1990*, doubles the dose rather than changing the treatment. Its methodology is similar, and the text states, "There are no new lessons." The report comprises 400 pages of tables, comments, and illustrative cases, leaving readers with a distinct feeling of déjà vu.

The same problems of deficient data from case notes and Hospital Activity Analysis, inadequate provision of emergency services, low necropsy rates, poor supervision of junior staff (particularly senior house officers in anaesthetics), and surgeons operating outside their specialty are highlighted

in both studies. The new inquiry, however, examines additional topics such as the quality of locum cover, the isolation of doctors occupying staff grade posts, split site working, and deficiencies of operating department assistants and nurses.

On the negative side, the new inquiry is affected by under-reporting: one fifth of requests for information were met with silence and a further fifth yielded incomplete data. Whether this represents simple apathy, active resistance, or an attempt to conceal is unknown. Detailed analyses of compliance show a variation from 64% to 82% in the return of completed surgical questionnaires from regions contributing more than 100 forms. Interestingly, the adjacent North East Thames and North West Thames regions are the worst and best respectively, with the independent sector occupying the middle ground at 74%. Northern Ireland is worthy of particular mention, returning 45 (88%) of its forms. The authors do not make any recommendations about how they intend to improve compliance in future or give any advice regarding an appropriate response from the sponsoring bodies. Interestingly, a "list of participants is not included." No reason is given, and readers are left to ponder whether this might be to prevent identification of the 313 non-participating consultants.