useful information—for example, if the treatment effect is large—in most circumstances moderate biases (which are common in observational studies) will render the results unreliable. Furthermore, many trials that do involve randomisation are flawed by inadequate attention to allocation concealment,[7] or inappropriate analysis (such as "on treatment" rather than "intention to treat" analysis, and overemphasis of the results in particular subgroups).[6] Moreover, the results of many randomised trials are simply not published, which leads to substantial bias in any overall evaluation of the treatment in question.[8] The potential consequences for patients are obvious: effective treatments may remain unrecognised, while ineffective or even hazardous treatments may continue to be used widely.

An important development in recent decades has been an appreciation that many treatments have only moderate effects, but that if they are widely applicable, such effects can be clinically very important.[6 9] Examples include thrombolysis for treating acute myocardial infarction, angiotensin converting enzyme-inhibitors and beta blockers for heart failure, and tamoxifen for breast cancer. To detect moderate effects on therapeutic safety and efficacy, not only must the assessment be unbiased, but the play of chance must be minimised by ensuring that sufficiently large numbers of patients are studied. Regrettably, many large trials are made prohibitively (and unnecessarily) expensive by trial guidelines that take little account of either the treatment or the clinical setting under investigation.[9] Paradoxically, therefore, such guidelines may result in poorer evidence about moderate, yet potentially worthwhile, treatment effects.

Appropriately designed randomised trials are the culmination of centuries of development and they can provide uniquely reliable evidence about the effects of treatments. Safe and effective prescribing is dependent on the availability of reliable evidence, without which doctors sometimes have little choice but to expose patients to treatments of unproved worth. Such uncontrolled experimentation is not in anyone's interests.

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Ultrasound guided central venous access

Is useful for beginners, in children, and when blind cannulation fails

Central venous catheters are used for haemodynamic monitoring, giving vasopressors and cytotoxic drugs, sampling blood, and giving fluids and parenteral nutrition.[1] The main access sites are the internal jugular and subclavian veins. Placing central venous lines entails risks. Rates of major and minor mechanical complication can be as high as 10%. They depend on the experience of the operator, the access site chosen, the condition of the patient, the presence of atypical vascular anatomy, the coagulation status of the patient, and previous catheterisations. Complications include puncturing an artery, nerve injury, pneumothorax, and incorrect positioning of the catheter. Failure to cannulate the vessel may occur in over 19% of patients.[1] The standard technique for placing central venous catheters is by using anatomical landmarks.[1] Since 1984 many authors have recommended ultrasound guidance to optimise the success rate of cannulations and minimise complications.[2]

Two devices are mainly used. Based on conventional two dimensional ultrasound imaging, portable lightweight battery operated real time devices have been developed that are especially designed for viewing the internal jugular vein and the carotid artery. The scanner incorporates a needle guide that allows the tip of the needle to be advanced into the vein as the operator watches a clear display.[3] This costs about €10 000 ($9800; £6300). Audio based Doppler blood flow detectors are also available. Earlier, veins were identified by using handheld pencil probes, which cost about €1000.[2] Technical improvements have allowed the placement of the Doppler probe inside the cannulating needle, thus enabling the operator to locate the internal jugular vein by an audible signal and also to avoid the carotid artery, which has distinctly different signals.[4] The cost per cannulation is €75.

What is the impact of ultrasound guided central venous catherisation on everyday practice, in particular on improving the success rate and reducing complications? Numerous reports have been published, but only a few contribute to evidence based knowledge. In 1996 Randolph et al identified only eight prospective randomised trials eligible for his meta-analysis (six trials reporting on cannulation through the internal jugular vein, one through the subclavian vein, and one through both veins).[5] The meta-analysis shows that, compared with the technique that uses anatomical landmarks, ultrasound guidance increases the chances of successful catheterisation, reduces complications during placement, and decreases the need for multiple attempts. In spite of these apparently favourable outcomes for ultrasound guided cannulation the results must be interpreted with caution. One major threat to the validity of these studies is that all trials were unblinded and investi-

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gators may have been biased in assessing outcomes in patients undergoing ultrasound guidance. Randolph et al point out a limitation of interpreting these studies—variable definition of failed catheterisation across the studies and possibly in the same study. Most remarkably, in three of these eight trials the investigators did not even define the primary end point of their study. When unblinded studies give no a priori definition of failed placement, it is possible that more attempts could have been allowed with the ultrasound method. Bias of doctors is even more likely in unblinded studies when patients were quasi-randomised, particularly in view of the preference of most operators to use the ultrasound guided technique.[6]

Another concern is the number of patients investigated in the trials that compare techniques using anatomical landmarks with ultrasound guided cannulations. In a power analysis based on published data Lefrant et al hoped to detect a 10% reduction in complications, which were estimated to have an incidence of 15%.[7] Therefore a study including 276 patients was calculated to provide an 80% probability of rejecting the null hypothesis. Therefore one should assume that the sample size of reliable studies should substantially exceed 100 patients. Central venous catheterisation is a daily practice for specialists in anaesthaesia and intensive care, so why is the sample size of most randomised trials less than 80—which means less than 40 patients per group. Focusing on randomised studies including more than 100 patients does not show a significant difference in carotid punctures and the overall success rate of cannulations.[7–9] Ultrasound guidance improved the number of attempts per cannulation and successful first attempts for catheterisation of the internal jugular vein but not the subclavian approach.[3 7–10] Well designed trials have given firm evidence for the application of real time two dimensional ultrasonography in children with respect to overall success, speed, and incidence of carotid puncture.[11]

Observational and randomised studies give suggestive evidence for the benefits of ultrasound guided catheterisation for selected patients at high risk of complications and when difficult central venous access is anticipated.[12 4] Additionally, inexperienced doctors might benefit from ultrasound guidance.[4 10] To minimise complications of central venous access, the operators should limit the number of stabs with both the seeker needle and the definitive needle and have a plan for failure—either to choose another landmark or to use ultrasound support.[1 12]

Every anaesthetist and intensive care doctor should be able to place central venous catheters without an ultrasound device but with a dedicated knowledge of all methods of how to maximise the success and minimise the incidence of complications. Ultrasound assistance is a potential useful back up technique after failed attempts of blind cannulation and for patients in whom catheterisation is likely to be difficult and complications could be serious.

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Influences of the media on suicide

Researchers, policy makers, and media personnel need to collaborate on guidelines

Reporting and portrayal of suicidal behaviour in the media may have potentially negative influences and facilitate suicidal acts by people exposed to such stimuli. Recent systematic reviews by others and ourselves (unpublished) have found overwhelming evidence for such effects.[1] Evidence for the influence of media on suicidal behaviour has been shown for newspaper and television reports of actual suicides, film and television portrayals of suicides, and suicide in literature, especially suicide manuals. The potential for "suicide sites" on the internet influencing suicidal behaviour remains to be proved, but anecdotal evidence of negative influences is accumulating.[2 3]

The impact of the media on suicidal behaviour seems to be most likely when a method of suicide is specified—especially when presented in detail—when the story is reported or portrayed dramatically and prominently—for example with photographs of the deceased or large headlines—and when suicides of celebrities are reported.[4–6] Younger people seem to be most vulnerable to the influence of the media, although limited evidence also shows an impact on elderly people. Another factor is similarity between the media stimulus or model and the observer in terms of age, sex, and nationality. An important aspect of the presentation of suicide in the media is that it usually

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