true values because of a faulty heuristic. For example, a patient may accept an offered test because she reasons that the doctor would not have offered it if he did not think she should accept it. Another patient may argue that if a test is not offered then the doctors must have decided that for her it would not be advisable. If we assume that economic considerations can be disregarded the truth in all cases is that for every woman the decision depends not only on her genetic risk and the risks of the procedure but also on the relative utility she assigns to accidently losing a normal baby and to having a child with Down's syndrome. Methods for measuring people's utilities have been described but are time consuming.[1] Surveys of values measured in a standardised way may alert doctors to the wide range of patients' utilities but are of little use in an individual consultation.

This subject could usefully be discussed by women and their peers in early antenatal classes. The probabilities of various outcomes can be given and the women introduced to the concept of utility, whereby different patients with identical risks might choose different treatments. A reasonably sized group should contain patients with utilities at both ends of the range, or a counsellor could describe patients with utilities not represented without the danger of exerting undue influence on the suggestible. Most patients should then be able to decide whether to undergo amniocentesis without any further individual counselling. We are presently studying whether such an approach does indeed result in improved decisions.

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Who needs pulse oximetry?

SIR,—Following Dr John S M Zorab's leading article (5 March, p 658) we would like to describe a recent case in which we used oximetry for measuring oxygen saturation during the transport of a sick patient.

After the fire in a hotel in Borovets, Bulgaria, in February all the injured from the United Kingdom were flown home two days later. They included one patient who had had a laparotomy, splenectomy, and a tear in the liver sutured and packed. The patient had also sustained a comminuted fracture of a femur, which was in traction. Resuscitation had included 5 units of blood. The most recent haemoglobin value was 116 g/l. There were symptoms of chestiness, probably as a result of smoke inhalation. There was no sign of fat embolism. These injuries, and those of the rest of the casualties, had been sustained in jumping from the third and fourth floors of the hotel.

A pulse oximeter (Novametrix) was attached to a finger in the ambulance outside the hospital in Samokov, 70 km from Sofia, and removed at Gatwick. It was used frequently but not continuously. The altitude at Samokov is around 3000 feet (910 m) and at Sofia (the airport) 2000 feet (610 m), and the cabin altitude during flight was 5000 feet (1520 m). Oxygen saturation while the patient was breathing air rose during the drive down from the hills, from 85% to 89%, proving that supplementary oxygen would be needed during the flight. This was given, the flow being titrated to give an oxygen saturation of 95-97%. When the mask was removed the saturation fell promptly to 85% or less.

This instrument was of great value during this medical repatriation, helping to provide a safer environment for the patient and reassurance for the escorts.

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SIR,—Dr John Zorab's leading article on pulse oximetry (5 March, p 658), by quoting Severinghaus and Naifeh,[1] may leave the reader with the impression that pulse oximeters vary widely in the accuracy of calculated arterial blood oxygen saturation. This paper, however, was evaluating the response of pulse oximeters to a brief period of induced profound hypoxia (arterial oxygen saturation 40-70%).

While there are significant limitations to the accuracy of pulse oximeters,[2] and this remains an area of concern and for future development,[3] our recent study directly comparing the steady state accuracy of pulse oximeters in the clinically useful range (arterial oxygen saturation 80-100%) was more encouraging.[4] With one exception all the oximeters showed little variation in calculated arterial oxygen saturation, but had a general tendency slightly to underestimate the true value. Accuracy in this range is to be expected as manufacturers calibrate pulse oximeters empirically, deriving an algorithm from in vivo studies.

In many, but not all, of the clinical situations in which pulse oximeters may be used a consistent accuracy of 2-3% SD in the 80-100% arterial oxygen saturation range is probably acceptable as long as falling or rising trends are reliably detected. There is some evidence that ear probes may detect such trends more rapidly and accurately than finger probes.[5]

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Does infection with HIV affect the outcome of pregnancy?

SIR,—Dr Frank Johnstone and others examine the outcome of pregnancy in women who either were intravenous drug users or had a seropositive partner (13 February, p 296). The outcome of pregnancy in the HIV seropositive and seronegative groups were compared. Apart from an increased rate of spontaneous abortion in the seropositive group there were no appreciable differences between the two groups; in both there were increased rates of adverse outcome in terms of preterm deliveries and small for gestational age and low birthweight babies. Since the data are considered from the viewpoint of HIV infection it is not possible to assess the influence on pregnancy outcome of intravenous drug abuse, but it can be inferred that this is one of the features of "lifestyle and deprivation" to which the adverse outcomes were attributed.

Although HIV infection is not yet a problem in obstetric practice in Glasgow, intravenous drug abuse is common. Since February 1986 pregnant intravenous drug abusers and partners of drug users in the north of Glasgow have been cared for at a community based antenatal clinic which operates in close liaison with community health services, the social work department, and the local drugs project, as well as other hospital specialties. Since HIV infection is a potential risk of intravenous drug use, which in turn correlates strongly with socioeconomic deprivation, this system provides a comprehensive service dealing with all aspects of deprivation. Initial management of drug abuse is by immediate or very rapid detoxification as an inpatient despite the fact that this is reportedly associated with increased fetal loss.

By 31 January 1988, 28 women with a history of intravenous drug use and 17 partners of men with this history had been delivered. All were HIV seronegative. Of the 28, only two had stopped using drugs before pregnancy; at the time of referral many were using large quantities of drugs with many consequent medical problems. There were no spontaneous abortions and one induced abortion for fetal abnormality; this woman was one of the two who had stopped using drugs before pregnancy. Three babies were delivered at <37 weeks' gestation, three had birthweights <2500 g, and one had a birthweight <5th centile. Among the 17 partners of drug users there was one spontaneous abortion, one baby delivered at <37 weeks' gestation, two with birthweights <2500 g, and one with a birthweight <5th centile. There were no perinatal deaths in either group.

The comprehensive management described here has many benefits, not least being its acceptability to the women it serves. Management of drug abuse in pregnancy by immediate detoxification allows an earlier start to rehabilitation, avoids withdrawal symptoms in the babies, and thus reduces the risk of separation of mother and baby at birth. Although the numbers are small, our results suggest this form of management may not be as hazardous to the fetus as earlier reports would suggest.

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Antisperm antibodies in infertility

SIR,—In Mr David Barlow's leading article the role of direct intraperitoneal insemination[1] in inducing the production of antisperm antibodies was questioned (30 January, p 310).

Direct intraperitoneal insemination has been performed at St Mary's Hospital, Manchester, since January 1987. Ovulation is stimulated by clomiphene citrate at 100 mg/day on days 2-6 of the menstrual cycle and triggered by an injection of human chorionic gonadotrophin (10 000 IU intramuscularly) when the leading follicle is 20 mm in diameter or by the occurrence of an endogenous luteinising hormone surge detected in serum samples collected daily. Washed motile sperm (mean $12{\cdot}1\times10^6$; range $3{\cdot}2$-$22{\cdot}0\times10^6$) in 0·5 ml culture medium is injected into the peritoneal cavity through the vaginal wall 34-36 hours after the ovulatory trigger using a 1 ml syringe and 21 gauge needle.

Blood is collected from the female partner in the follicular phase of the treatment cycle (day 2-5), and 14 days and 28 days after the direct intraperitoneal insemination, and serum is tested for