variation between the prescribed and actual administration times. Finally, the study examined techniques of administration and found that 28 of 60 "slow" intravenous injections were given in less than 30 seconds.

As a result of the study and a later medical audit, which confirmed the time that junior doctors spent preparing intravenous drugs, a central intravenous additive service was established. Working in aseptic conditions, pharmacy staff now produce 65 000 intravenous doses annually, in a ready to use form. Most doses are prepared as small volume infusions (50 ml or 100 ml "minibags"), but others are prepared as preloaded syringes. All products are labelled to show the quantity added, the time and date of preparation, and the expiry date. The study showed that it took six minutes to prepare a parenteral dose. Thus 65 000 doses a year represents the time of two fulltime preregistration house officers (at 85% eficiency).

We also introduced an interactive training programme. The preregistration house officers visit three activity stations. At station 1 they reconstitute an intravenous dose and add it to an intravenous fluid under observation; at station 2 they answer a short series of multiple choice questions on giving intravenous drugs; and at station 3 the central intravenous additive service is explained. Feedback on technique and correct answers to the multiple choice questions are given immediately on a one to one basis.

This scheme has been well received, and most of the preregistration house officers thought that it should have been provided earlier in their training. Those who were experienced (the February intake) confessed to having acquired bad habits that were proving difficult to break.

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1 Teahon K, Bateman DN. A survey of intravenous drug administration by preregistration house officers. *BMJ* 1993;**307**:605-6. (4 September.)
2 Clark CM, Bailie GR, Whitaker MT, Goldberg LA. Parenteral drug delivery—value for money? *Pharmaceutical Journal* 1986;**236**:453-5.

Tuberculosis and poverty

EDITOR,—We have carried out a study that reflects D P S Spence and colleagues' finding that poverty remains an important factor in the development of tuberculosis.[1] The association between poverty and tuberculosis in children has been highlighted.[2] Children living in areas designated as being areas of urban deprivation show a fourfold increase in the incidence of tuberculosis due to primary infection irrespective of their ethnic origin.

In older patients reactivation of old disease is the main cause of presentation with the disease. To determine the relation between reactivation of old tuberculosis and poverty in elderly patients we looked at all notifications of tuberculosis in Leeds between 1986 and 1990. Patients aged 65 and over (n=97) were then divided into those resident in the area designated as an urban priority area, as defined by Leeds city council,[3] and other patients. The urban priority area in Leeds accounts for 40% of the city's elderly people, 75% of houses needing repair, 60% of people claiming supplementary benefit, and 50% of the city's manual workers but only 28% of the city's 750 000 population.

The table shows that the incidence of tuberculosis was 113/10^5 among those resident in the urban priority area compared with 53/10^5 among those resident outside this area ($p<0.001$, χ^2 test). Exclusion of patients from the Indian subcontinent did not alter the significance of these results.

This study, carried out in a large city, shows that elderly people living in areas of urban deprivation are at a twofold higher risk of developing tuberculosis. This supports Spence and colleagues' findings. Diagnostic awareness is particularly important in elderly people, in whom mortality is high and early intervention essential.[4]

Notifications for tuberculosis in subjects aged 65 and over resident in Leeds's urban priority area and in rest of Leeds in the five years 1986-90

	Urban priority area	Rest of Leeds	Total
Notifications	57	40	97
Population	50 400	75 600	126 000
Notifications/10^5	113	53	77

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1 Spence DPS, Hotchkiss J, Williams CSD, Davies PDO. Tuberculosis and poverty. *BMJ* 1993;**307**:759-61. (25 September.)
2 Cundall DB, Pearson SB. Inner city tuberculosis and immunisation policy. *Arch Dis Child* 1988;**63**:964-6.
3 Leeds City Council Planning Department. *Report on ethnic minority populations*. Leeds: Leeds City Council, 1986.
4 Teale C, Goldman JM, Pearson SB. The association of age with the presentation and outcome of tuberculosis: a five year survey. *Age Ageing* 1993;**22**:289-93.

Deregulating emergency contraception

Counselling and education may suffer

EDITOR,—James Owen Drife suggests that deregulation of emergency contraception is justified on the grounds that about half of unwanted pregnancies result from contraceptive failure.[1] He also says that 70% of these unwanted pregnancies are predictable because the woman realises that she is at risk and in such cases emergency hormonal contraception offers a 98% chance of preventing pregnancy. He ignores the importance of counselling, including emotional support and clear information given sympathetically; this is indispensable in cases of rape or incest and always necessary in cases of contraceptive failure. Such counselling is currently available from doctors or nurse specialists in family planning, and deregulation would be a sensible option only if counselling was available from similarly trained pharmacists.

The "Yuzpe" hormonal method of emergency contraception relates to the number of hours since the first episode of unprotected intercourse and depends on an honest coital history, which is unlikely to be given "over the counter." A pregnancy test may not always exclude a pregnancy, and women may not always remember previous thromboembolic episodes or focal migraines, which constitute absolute contraindications. There is also a need to discuss contraception in case of repeated exposure in the current cycle as well as long term contraception. Advice would also have to be given regarding vomiting within two hours of tablet taking and regarding non-compliance, leading to inadequate dosage. More importantly, the risk of ectopic pregnancy (up to 10%)[2] and of failure of the method (1-4%)[2] necessitates discussion about an induced abortion and the minimal risk of teratogenesis,[2] making a follow up visit indispensable. These considerations may make use of an intrauterine device for emergency contraception more appropriate as its failure rate is much lower and it may be used up to 120 hours after the probable calculated date of ovulation.

Finally, Drife says that surveys of women with unwanted pregnancies have shown that 70% knew about emergency contraception but only 3% tried to use it. I suggest that a free 24 hour telephone helpline staffed by sympathetic trained professionals as well as improved contraceptive education and family planning services would be a better option than deregulation.

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1 Drife JO. Deregulating emergency contraception. *BMJ* 1993;**307**:695-6. (18 September.)
2 Guillebaud J. *Contraception: your questions answered*. Edinburgh: Churchill Livingstone, 1986:265-8.

Service should reflect greater demand after the weekend

EDITOR,—In his editorial James Owen Drife calls for improvements in family planning services whether or not emergency contraception is deregulated.[1] He also mentions that unprotected intercourse often happens at weekends; as far as we know there are no published data on this.

In our semirural general practice the number of requests for emergency contraception continues to rise each year (18 requests in 1989, rising to 55 in 1992). The trend mirrors what is happening elsewhere: Brook Advisory Centres saw a threefold increase in prescriptions for emergency contraception between 1985 and 1992 (Brook Advisory Centres, personal communication, 1993).

We looked at the day of the week on which 155 patients requesting emergency contraception were seen during 1989-92. Ninety one were seen on a Monday or Tuesday (58 on a Monday and 33 on a Tuesday). If Sunday is excluded as there is no surgery the expected number of requests for emergency contraception each day would be 25·8. The actual number of 91 on Monday and Tuesday combined is significantly higher than expected (95% confidence interval 79·0 to 103·0, $p<0.0001$). Clearly, as for other problems, practices must be prepared to allocate more time for emergency work on Mondays and, to a lesser extent, Tuesdays than is needed on other weekdays. A "walk in" facility to allow patients to see a practice nurse is desirable.

Most women were seen within three days of unprotected intercourse. Only one was seen beyond this: she was a 16 year old who was offered an intrauterine device but declined it and did not become pregnant.

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1 Drife JO. Deregulating emergency contraception. *BMJ* 1993; **307**:695-6. (18 September.)

Genitourinary clinics offer out of hours service

EDITOR,—I agree with James Owen Drife about deregulating emergency contraception,[1] but he does not mention the valuable service that departments of genitourinary medicine (sexual health clinics) can offer to a woman who realises that she is at risk of an unplanned pregnancy. Nowadays most such departments offer a comprehensive service, which include contraceptive advice. In some genitourinary medicine clinics the current practice is to prescribe emergency contraception to women at risk of an unplanned pregnancy. Genitourinary physicians now work in clinics during late evenings and also on Saturdays in some