different specialties, and I am sorry that as yet it has been studied so little. Here is something the defence societies could give us a lead in.

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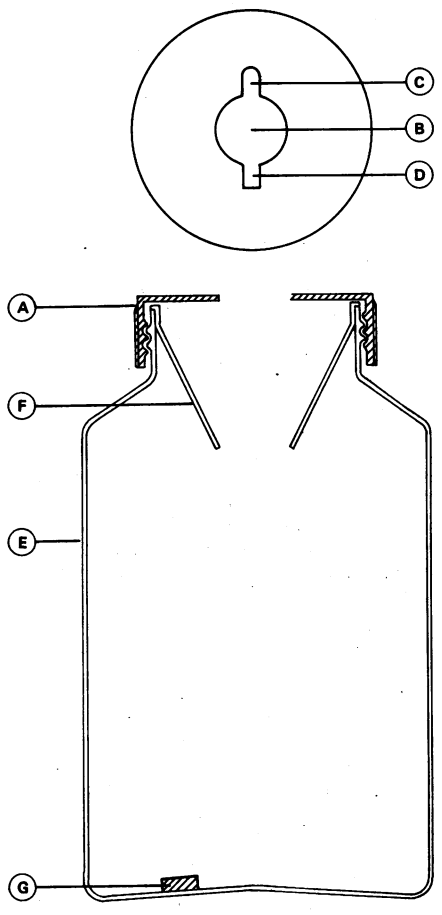
Device to permit recapping of syringes without risk of infection

SIR,—Like Dr R G Bessent and colleagues (1 August, p 307), we have invented a device (Securoject) to avoid recapping needles by hand or performing other dangerous manipulations that might lead to needlestick injuries.

The device consists of a puncture proof container (figure), the lid of which (A) has an orifice (B) with two slits (C, D). Slit C is of such a size that it will firmly hold the part between the needle and the syringe. A simple sideways or downward movement detaches the needle from the syringe. Slit D is designed to hold the square part of Vacutainer type needles; the needle may be unscrewed from the holder and then falls into the puncture resistant container (E) through a funnel (F), which prevents the needles from falling out. An effervescent chloral tablet (G) may be diluted with tap water so that perfect antisepsis is obtained. The whole device is made of polyethylene, and once full of needles it may be crushed and incinerated. It is light and may be placed on the nurses' trolley, the distance between the patient and the final container is minimal, and recapping is avoided. This device would considerably reduce the risk of needlestick injuries to health care workers.



Device to prevent recapping of needles by hand seen from above and in cross section.

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1 McCray E. Occupational risk of the acquired immune deficiency syndrome among health care workers. *N Engl J Med* 1986;314:1127-32.
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SIR,—In his article on control of infection policies in relation to the human immunodeficiency virus (4 July, p 33) Dr D Jeffries perpetuates the dogma that needles are best left unsheathed to avoid resheathing/recapping injuries. Unfortunately, such an approach replaces one dangerous activity with another and fails to succeed in reducing needlestick injuries. The Advisory Committee on Dangerous Pathogens in its revised guidelines of June 1986 recognises that means exist to resheath needles safely and in "Precautions for invasive procedures" (including specimen taking) states, "As approximately 40 per cent of self-inoculation accidents occur while resheathing needles, this must not be done unless there is a safe means available."[1]

We have now had over two years' experience in using a simple, safe, plastic resheathing device—the needle guard, designed to allow safe resheathing of used needles[2]—and wish to report the results of a 31 month study of needlestick accidents in a large private pathology laboratory carrying out over 1000 venepunctures daily. In this prospective analysis venepuncturists (23 staff: 177 100 venepunctures), relying on the guidelines of the Centers for Disease Control[3] for handling used needles, were shown to incur a needlestick accident for every 3175 to 4216 needle handling procedures (venepunctures using an evacuated tube system). Those using the needle guard (47 staff: 361 900 venepunctures), however, were shown to incur a needlestick accident only once in every 24 126 venepunctures performed ($p<0{\cdot}001$, Student's t test). This represents an 82% reduction in the rate of needlestick injury. No recapping injuries were seen in those using the needle guard, but nine recapping injuries (26% of all needlestick injuries) occurred in those not using the guard. Injuries occurring on disposal of naked needles were common among those not using the guard, and "downstream" injuries (away from the bedside) resulted from uncovered needles. Needles safely resheathed were shown no longer to be hazardous.

We must question the effectiveness and rationality of official non-recapping policies and request that proof of efficacy of non-recapping be published so that medical workers can make an informed decision as to how best to protect themselves from the risks associated with used needles.

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ABC of AIDS: Treatment of infections and antiviral agents

SIR,—We agree with Dr I V D Weller (18 July, p 200) that in patients with the acquired immune deficiency syndrome (AIDS) who have cerebral toxoplasmosis the combination of pyrimethamine with a sulphonamide is the treatment of choice, but we would also emphasise the therapeutic value of co-trimoxazole. Though this drug has proved to be effective against *Toxoplasma gondii* both in vitro and in vivo,[1] it is not often considered to be a suitable alternative treatment. In patients who develop intolerance to pyrimethamine plus sulphonamide side effects are generally due to sulphonamide, which is also present in co-trimoxazole.

Nevertheless, co-trimoxazole offers certain advantages, so that in some conditions it could be proposed as a first line treatment of toxoplasmosis of the central nervous system. When haematological toxicity of pyrimethamine becomes dangerous, as happens quite often in patients with AIDS, particularly during concurrent zidovudine treatment, co-trimoxazole is a safer choice. Moreover, intravenous preparations of pyrimethamine are available only in a fixed combination with a long acting sulphonamide. In unconscious patients the use of intravenous co-trimoxazole is certainly more rational than the administration of the fixed combinations.

We have so far treated with co-trimoxazole (at the dosage recommended for *Pneumocystis carinii* pneumonia) five patients with AIDS suffering from cerebral toxoplasmosis in whom the use of pyrimethamine plus sulphonamide was problematic. Computed tomography showed that the lesions had completely resolved in all the patients after three weeks of treatment. There were no signs of toxicity. As other alternative regimens (such as pyrimethamine plus clindamycin and pyrimethamine plus spiramycin) have been shown to be ineffective[2] we think that treatment with co-trimoxazole should be tried in patients with AIDS who cannot tolerate the administration of pyrimethamine plus sulphonamide.

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SIR,—While clinical trials may show the benefit of certain drugs in treating the acquired immune deficiency syndrome (AIDS), as discussed by Dr Ian V D Weller (18 July, p 200), the resource implications to the health service must be addressed.

The launch and availability of zidovudine for treating patients with AIDS was widely publicised in May this year. Few health regions in England, however, have been given additional funding specifically for this drug. In the North East Thames region the whole allocation was given to one health district with the greatest number of patients with AIDS. Other health districts in the region have been asked to allocate funding for zidovudine from their existing budgets. The

Tower Hamlets health district is one of the most deprived in Britain, with many medical and social problems, and it has already overspent considerably in this financial year. It is therefore difficult for this district to allocate funding for zidovudine from its very limited resources. Current studies on the treatment of asymptomatic patients infected with the human immunodeficiency virus have even greater financial implications. We are fast reaching the point where patients are denied effective treatment because of limited financial resources, as has been shown by the hepatitis B vaccine.[1]

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SIR,—The treatment of choice for toxoplasmosis in patients with the acquired immune deficiency syndrome (AIDS) is a combination of sulphadiazine and pyrimethamine,[1] as mentioned by Dr Ian V D Weller (18 July, p 200). It should be emphasised, however, that folinic acid supplements are given concurrently during treatment of toxoplasmosis in any patients. This is particularly important for AIDS victims, who show defective folate metabolism associated with poor diet, malabsorption, and possibly persistent macrophage activation.[2]

Pyrimethamine treatment is associated with dose related bone marrow suppression, and so blood cell and platelet counts should be monitored during treatment. Folinic acid supplements reduce the severity of these side effects. Response rates to sulphonamide and pyrimethamine treatment are high, and clinical improvement is rapid, often within one day of administration.[3] Doses may be increased to 8 g sulphadiazine and 50 mg pyrimethamine daily if the initial response is poor.[4] Drug reactions during treatment may prompt the withdrawal of sulphonamides, although alternative treatment is contentious.

Spiramycin has been used extensively for the management of toxoplasmosis in pregnancy, but there is little experience of its use in patients with AIDS, and penetration into the cerebrospinal fluid is poor. A high incidence of treatment failure has been seen with pyrimethamine monotherapy.[3] The combination of clindamycin and pyrimethamine has been used in North America for the management of toxoplasmosis in patients with AIDS with documented sulphonamide reactions. Cerebrospinal fluid concentrations of clindamycin after oral treatment are erratic, and, although cerebral toxoplasmosis has been treated successfully, failure of treatment has also been reported.[5] The more familiar combination of sulphonamide plus trimethoprim is significantly less active than that of sulphonamide with pyrimethamine in the treatment of toxoplasma infection, and patients with AIDS have failed to respond to cotrimoxazole.[6]

A reliable alternative to treatment with sulphonamide plus pyrimethamine for toxoplasmosis in patients with AIDS has not been defined. Sulphonamide desensitisation has, however, been achieved in such patients and may be considered when drug reactions cause serious problems.[7]

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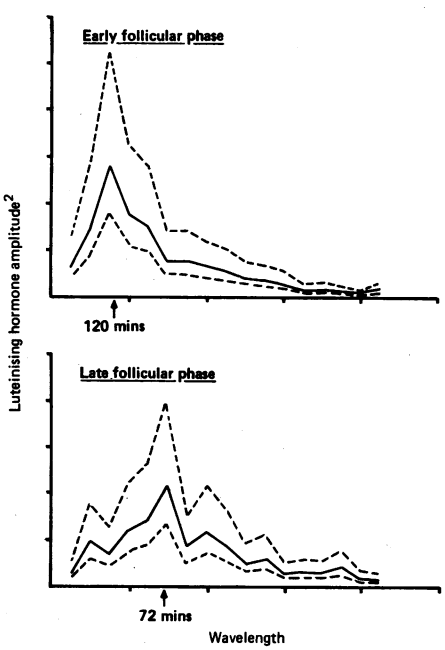
Is changing hypothalamic activity important for control of ovulation?

SIR,—The lack of change in luteinising hormone pulse frequency during folliculogenesis reported by Dr R N Clayton and colleagues (4 July, p 7) contrasts with observations of an increasing frequency in previous longitudinal studies that used similar iterative methods of pulse detection.[1,2] When such methods are used it is difficult to distinguish pulses of small amplitude from assay variation. While this may explain some of the discrepancies, it is noteworthy that the new program described by Dr Clayton and coworkers was expected to generate 2·5 peaks by chance during the series in which they detected only some 7·5 pulses.

Spectral analysis treats this problem in a different way, attempting to identify harmonic patterns in serial data.[3] The method is highly sensitive, and spectra from individual series of data must be interpreted with considerable caution, as Dr Clayton and colleagues point out. When comparisons of spectra between individual series suggest no significant differences,[4] however, normalised results may be pooled to identify consistent features between subjects.

We have applied these methods to the results of a study similar to that of Dr Clayton and colleagues (A P Murdoch *et al*, findings presented at 24th British congress of obstetrics and gynaecology, Cardiff 1986). Five healthy women were investigated in the early (day 2-4) and late (day 10-12) follicular phases of two ovulatory cycles. Blood samples were taken at 10 minute intervals for six hours. No differences could be shown within the subjects at the same stage of the cycle, but there were significant differences between early and late follicular phases in all subjects ($p<0·05$). Pooled spectral estimates showed a dominant pulse frequency during the early follicular phase of about two hours, whereas that during the late follicular phase was faster at about one hour (figure). These observations are in keeping with the results of the earlier studies.[1,2]



Pooled spectra from five normal women.

In support of their suggestion that changing hypothalamic activity is not important for control of ovulation, Dr Clayton and coworkers suggest that folliculogenesis and ovulation may be induced by constant pulses of exogenous luteinising hormone releasing hormone. This pharmacological observation does not, however, preclude the possibility that physiological regulation may entail a more complicated pattern of hypothalamic activity. In view of our results, we think it unwise to underestimate the role of hypothalamic factors in the control of ovulation.

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"Patients with terminal cancer" who have neither terminal illness nor cancer

SIR,—Dr W D Rees and colleagues (1 August, p 318) report on four patients who were wrongly referred for terminal care with a misdiagnosis of cancer. They highlight incorrect or misinterpreted histopathological data as the cause in three cases. My own records suggest, however, that the other illustrated cause—namely, incomplete laboratory confirmation—could occur far more often than their paper implies.

During the past five years I have recorded my necropsy findings in all cases of "clinical" carcinomatosis in which no pathological diagnosis of malignancy had been established during life. Of 41 such patients, 14 were found to have non-malignant diseases, which included chest infections (five including two tuberculosis), ischaemic heart disease (three), cirrhosis (three), pulmonary emboli (two), and sarcoidosis (one).

The commonest clinical error seems to be a tendency to consider the clinical presentation of either jaundice (eight) or femoral neck fractures (three) as a manifestation of disseminated malignancy. In addition, as described by Dr Rees and coworkers (case 4), five patients had abnormal isotope liver scans, which retrospectively reflected changes in vascular perfusion rather than space occupying lesions. Whether a more accurate diagnosis during life would have altered the fatal