exclusively to plasma exchange, but the unexpected improvements were dramatic in each instance and coincided with the introduction of this new treatment. These encouraging responses warrant careful evaluation in severely ill patients, and the place of a controlled clinical trial of plasma exchange should be seriously considered.

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Anyone for tetanus?

I agree with Drs A M Dixon and J A Bibby (3 September, p 598) that low rates of tetanus immunisation can be improved and that one approach is to target women attending for cervical smear tests. This has been my policy for the past two years and is generally accepted and, indeed, welcomed by the patients. Not all women will attend for these tests, however, despite various approaches,[1,2] and I think that expecting patients to attend the surgery for tetanus immunisation alone or to attend to complete immunisation courses without explanation, encouragement, and reminders is unrealistic.

General practitioners are ideally placed to organise a broad opportunistic approach offering instant immunisation to those eligible (identified by scrutinising the medical records, including health questionnaires completed by new patients on registering) during a wide range of contacts with patients. These include parents when bringing children for primary and other vaccinations, patients attending contraceptive, postnatal, and well person clinics, those requiring travel immunisation and influenza vaccination, and those attending for routine consultations and consultations with the practice nurse. More than 70-80% of the practice population would be seen within one year,[3] ensuring a significant impact. Invitations could be attached to repeat prescriptions and there should be a willingness to immunise those who are comparatively immobile and housebound during routine visiting. Even when the opportunity is missed during an initial contact with a patient because of distractions or pressure of work or when the procedure is inappropriate because of illness the records should be flagged to remind the doctor or nurse to be prepared when the next opportunity arises—for example, a return consultation to discuss results or monitor progress.

The preliminary findings of a current audit of the effect of such an opportunistic policy on the immunisation state of the adults in my practice shows an encouraging improvement in the section audited so far—from 24% to 70% in those aged more than 65—and is also identifying those in this other high risk group[4,5] who remain unprotected and require additional targeting. Few patients declined the offer, only 3% of those audited to date.

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Drs A M Dixon's and J A Bibby's report of tetanus immunisation state (3 September, p 598) suggests a low level of protection against tetanus in the general population. Professor J G R Howie (3 September, p 570) advocates a pragmatic regimen of boosters for adults on their decade birthdays and a full primary course for all adults without a definite history of primary vaccination. There are, however, discrepancies in the advice and recommendations from various sources about the most appropriate frequency for tetanus booster injections.

The Joint Committee on Vaccination and Immunisation publishes authoritative recommendations reflecting recently available advice and current expert medical opinion. Its updated guidelines of March 1988 state that for adults and children over 10 years "a reinforcing dose five years after the primary course and again ten years later maintains a satisfactory level of protection" and for reinforcing doses in children "diphtheria/tetanus vaccine is recommended immediately prior to school entry. . . . A further reinforcing dose of tetanus vaccine alone is recommended for those aged 15-19 years or before leaving school."[1] There is thus no recommendation for any routine tetanus injection beyond the primary course and two boosters.

Clearly there are inconsistencies between the committee's guidelines and Professor Howie's views. To add to the confusion Simonsen *et al*,[2] quoted by Professor Howie, suggest tetanus boosters every 20 years and the statement of fees and allowances for general medical practitioners allows general practitioners to claim a fee for boosters given every five years. As Professor Howie points out, there are real risks of hyperimmunisation and primary health care teams are already overburdened with screening and preventive tasks.

The public and health care staff concerned with immunisation require clear and consistent advice from the medical profession. We had hoped that this would be the case after the publication of the new guidelines of the Joint Committee on Vaccination and Immunisation.

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Needling doubts about where to vaccinate

May I add support to Dr M Keith Thompson's plea (24 September, p 779) to avoid the upper arm as a site for vaccinations and, in fact, for any injections. Unfortunately, in the recently widely circulated booklet on immunisation from the Joint Committee on Vaccination and Immunisation[1] the use of the upper outer arm (deltoid) region for intradermal and subcutaneous injections is still recommended despite mentioning "the increased risk of keloid scar formation at the tip of the shoulder."

It is important to emphasise that the whole outer aspect of the upper arm is renowned for forming hypertrophic and keloid scars and therefore should be avoided as a site for all injections. Treatment for this, at present, is unsatisfactory.

Another reason for carefully choosing the site for injections is that atrophy of fat after necrosis may occur, resulting in a lumpy area with a possible depressed contour deformity that may be difficult to correct without further scarring.

Therefore, hidden sites—for example, the buttock—should be strongly recommended for all types of subcutaneous and intradermal injections.

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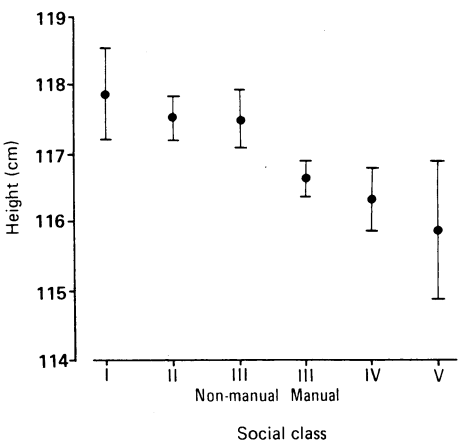
1 Department of Health and Social Security, Welsh Office, Scottish Home and Health Department. *Immunisation against infectious disease*. London: HMSO, 1988.

Social class and height

Minerva refers (24 September, p 802) to a paper from this department showing the continued existence of social class differences in height in men born from 1916 to 1960 and suggests that the abolition of these differences should be an important health target. We report here on recent evidence from a study of British children, born from December 1979 to February 1983 and aged 5 to 7½ years at examination, which suggests that social class differences in height are still developing in the 1980s.

A total of 5006 children aged 5-7½ years attending primary schools in nine British towns (six in England, two in Scotland, one in Wales) were invited to participate in a study of blood pressure and body build which took place from May 1987 to February 1988.[1] Height (in stockinged feet) was measured to the nearest millimetre using the supported stretch technique[2] with a Holtain portable electronic stadiometer. A questionnaire provided details of longest held parental occupation, which was coded according to the Registrar General's six social classes using the 1980 Office of Population Censuses and Surveys manual. The analyses presented here relate to social class of the father or male guardian when present or otherwise the mother or female guardian and include data on the 3693 respondents (73·8% of total) in whom information on both height and social class were obtained.

The relation between height and social class was similar in boys and girls, and results are therefore presented for both sexes combined. The figure shows the age standardised heights for each social class. A consistent trend is seen with an overall



Height and social class in British children aged 5-7½ years. Figures plotted are age standardised means and 95% confidence intervals