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We may return unduly long letters to the author for shortening so that we can offer readers as wide a selection as possible. We receive so many letters each week that we have to omit some of them. Letters should be typed with double spacing between lines and must be signed personally by all their authors, who should include their degrees. Letters critical of a paper may be sent to the authors of the paper so that their reply may appear in the same issue.

Correspondents should present their references in the Vancouver style (see examples in these columns). In particular, the names and initials of all authors must be given unless there are more than six, when only the first three should be given, followed by et al; and the first and last page numbers of articles and chapters should be included.

PHLS inquiry into current BCG vaccination policy

SIR,—In its code of practice for the control and prevention of tuberculosis (15 October, p 1118) the Joint Tuberculosis Committee of the British Thoracic Society recommended that BCG vaccination should continue to be offered routinely to schoolchildren aged 10-14. It was emphasised that the policy should be maintained everywhere, including regions that currently have a low prevalence of tuberculosis. In the light of this recommendation the results of a recent inquiry by the epidemiological research laboratory of the Central Public Health Laboratory into current BCG vaccination policies may be of interest.

Inquiry forms were sent to and returned by all 201 district health authorities in England and Wales. The inquiry concerned the current practice of BCG vaccination in schoolchildren and neonates as well as the policy for pre-vaccination tuberculin tests, the grade considered to indicate that vaccination is unnecessary, and the method of vaccination.

Five of the 201 districts contacted have stopped routine vaccination of schoolchildren; two in 1974 and one each in 1977, 1980, and 1983. In all five districts neonatal immigrants and contacts are vaccinated, and in one Heaf testing continues. Ten districts have their policy under review, while the remaining 186 districts continue routine vaccination.

Ninety eight districts gave vaccination to neonatal contacts and/or immigrants, and six to all neonates; one is about to change from vaccination of selected neonates to vaccination of all neonates; and two are about to start neonatal vaccination. A total of 88 districts have no routine vaccination of neonates, and in six the policy is under consideration.

Of the 196 districts currently giving routine vaccination to schoolchildren 184 do so in children aged 11 to 14 (most during the

13th year); eight in children aged 10-11; one in children aged 5-13; two in those aged 5 (one of which vaccinates immigrants only); and one in the newborn, school entrants, and those aged 13. One hundred and fifty two districts use syringe and needle for vaccination, 16 jet gun only, 26 both jet and syringe, and two multipuncture. Three districts have changed from jet to syringe, and two others are considering a change.

Almost all districts (187) use the Heaf test, five use the Tine test, and three use the Mantoux test, while two districts use no prevaccination test. Of the 187 districts using the Heaf test most (148) take grade 2 to indicate no vaccination, 12 take grade 1, and 26 grade 3.

The results show considerable variation in the current BCG vaccination policy in different districts in England and Wales. While in five districts routine vaccination of schoolchildren has ceased and in 88 there is no neonatal vaccination, in others the policy for neonates is being introduced or extended. In districts where routine vaccination of schoolchildren has stopped the current rate of notification of tuberculosis is considered too low for vaccination to be justified. It is argued that notifications in these districts have not risen since the end of vaccination, in one case as much as 10 years ago. However, if young people who are unvaccinated leave their homes to seek work and subsequently develop tuberculosis they will appear as notified cases in the areas to which they have moved rather than in those that they have left.

The geographical distribution of tuberculosis in England and Wales in 1978-9 showed wide variation, in some cases unexpected.¹ For instance, the local authority with the highest rate (excluding Greater London) was Rutland,

a rural area with virtually no immigrant population. This was due to an outbreak of 24 cases in a primary school (before the age of vaccination) caused by a teacher whose sputum was positive. Several outbreaks of tuberculosis in the past five years have shown that tuberculosis is still present and not only among immigrants, alcoholics, and the old. The most recently reported outbreak was caused by a single focal case in a patient aged 31, who infected 41 patients aged from 4 to 37, in nine of whom sputum became positive.²

To allow the proportion of unvaccinated young people to increase while more than 6000 new cases of tuberculosis are notified annually must be to increase the risk of disease, which may well not be diagnosed until others have been infected. The population is highly mobile; Brent (annual notification rate 114.3/100 000) and Oxfordshire (11.7/100 000) are only 40 miles apart.

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¹ Medical Research Council. Geographical distribution of tuberculosis notification in national survey of England and Wales 1978-9. *Tubercule* 1982;63: 75-88.

² Hill JD, Stevenson DK. Tuberculosis in unvaccinated children, adolescents, and young adults: a city epidemic. *Br Med J* 1983;286:1471-3.

Rubella immunisation: whose baby?

SIR,—Dr Stephen E Blair (14 January, p 145) asks if it would not be more advisable to immunise all children at the age of 1 year against rubella, as suggested by Hinman *et al*,¹

rather than to pursue the present strategy of immunising schoolgirls and susceptible women of childbearing age. To immunise all children at the age of 1 would entail adopting the strategy used in the United States, which is predominantly aimed at interrupting transmission of rubella virus among young children and thus reducing the possibility of exposure of a susceptible pregnant woman. The American strategy is based on the presumption that vaccine induced immunity is life long, though this has been subjected to clinical study for less than 20 years.

In the United States the lack of a fall in the incidence of rubella in those at risk of infection during pregnancy and the absence of a significant drop in the incidence of congenital rubella syndrome in the 1970s² suggested that these measures alone were not sufficient. As a result greater efforts were made from 1979 onwards to immunise women of childbearing age, and this may have contributed to the fall in the incidence of congenital rubella syndrome.³ Moreover, Hinman *et al* state that the first priority of all rubella vaccination programmes should be the immunisation of women of childbearing age.¹

In the United Kingdom, on the other hand, selective immunisation has been continued as the reasons that led to the original choice of this strategy still apply. Of these, one of the most important is the uncertainty about the duration of vaccine induced immunity. The immunisation of prepubertal girls provides better assurance that vaccine induced immunity will persist throughout the childbearing period. Also, the continuing circulation of the wild virus in prepubertal children and in males of all ages boosts the vaccine induced immunity. These potential advantages would be lost with infant immunisation.

An immunisation programme that depends on the interruption of transmission of rubella among young children demands a high uptake of vaccine, probably in excess of 90%. The requirement in the United States of immunisation before school entry makes such a level of uptake possible. This requirement, however, imposes a degree of compulsion which would not be acceptable in Britain. Moreover, if the uptake of vaccine is less than 70% there is reason to believe that an early reduction will be followed by a significant increase in the incidence of congenital rubella syndrome.⁴

Dr Blair implies that the combined measles and rubella vaccine should now be used in infants in Britain. It should be noted, however, that the uptake of measles vaccine in children under the age of 2 in England was only 58% in 1982 even with the help of the immunisation module of the child health computing committee to which Dr Blair refers.

It is of interest that mathematical models of the epidemiology of rubella have recently been used to examine the possible long term impact of adding infant rubella immunisation to our current programme. This study concluded that there is little benefit to be gained unless the acceptance rate among young children was very high.⁵

It is important to bear in mind that a strategy which works well in one country may not necessarily be equally successful in another. Our success in achieving high uptakes of immunisation against diphtheria and poliomyelitis on a voluntary basis indicates that if the public can be convinced that a particular immunisation is of real benefit to children, parents will ensure that they receive it. One of the main thrusts of the present

national rubella campaign is to promote awareness among women and girls of the importance of protecting their future children from the handicaps which congenital rubella can cause.

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¹ Hinman AR, Bart KJ, Orenstein WA, Prebudd SR. Rational strategy for rubella immunisation. *Lancet* 1983;ii:39-41.

² Rubella—United States 1978-1981. *MMWR* 1981; 30:513-5.

³ Joncas JH. Preventing the congenital rubella syndrome by vaccinating women at risk. *Can Med Assoc J* 1983;129:110-2.

⁴ Knox EG. Strategy for rubella vaccination. *Int J Epidemiol* 1980;9:13-23.

⁵ Anderson RM, May RM. Two-stage vaccination programme against rubella. *Lancet* 1983;ii:1416-7.

SIR,—Dr Stephen E Blair makes the interesting suggestion that "rubella centres" should be set up in child health clinics, general practitioners' surgeries, or shopping centres to deal with inquiries generated by the current campaign. To develop facilities of this kind on a national scale would, at first sight, appear to be a major undertaking that would entail a great deal of extra expense and professional effort; and it seems doubtful if this would, in fact, be cost effective in view of the current availability of the expertise of most family practitioners and other health professionals. It may be helpful, however, to put this suggestion in the context of the current rubella campaign.

The recently set up National Rubella Council consists of representatives of 11 voluntary organisations, the Health Education Council, and the health departments in England, Wales, and Northern Ireland. It has already begun to organise regionally based campaigns with special emphasis on the local involvement of all those who are interested in the elimination of congenital rubella syndrome. The voluntary organisations concerned are setting up campaigns with the help and advice of regional health authorities. This means that the health and educational authorities, together with the general public—as represented by voluntary organisations; women's organisations; youth, church, and ethnic groups—are coming together locally to organise campaigns suitable for and geared to the special requirements of each district.

The council welcomes advice and suggestions for new approaches to improving the uptake of rubella immunisation. These can be discussed and perhaps initiated as the campaign takes shape nationwide. All who are interested should contact me at the address below so that they can be invited to regional and local meetings where the issues and problems they want to raise can be discussed with those concerned.

The National Rubella Council is aware that to make the campaign successful the public must understand the dangers of rubella in women of childbearing age and how they can be prevented. Its aim is to build a rapport between all those involved, so that immunisation against rubella will become a universally accepted and, indeed, a routine part of a woman's health care.

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British criteria for brain death: views of career grade doctors in Scotland

SIR,—In October 1976 the conference of medical royal colleges and their faculties in the United Kingdom issued an authoritative statement on the criteria for diagnosis of brain death.¹ These criteria were challenged by a *Panorama* programme in October 1980. The programme showed that some doctors did not consider that the criteria were adequate, and this was confirmed in a second BBC programme in February 1981, where views for and against these criteria were presented by two groups of doctors. Unfortunately, the programme gave no indication of how common were the opposing views among doctors. In the course of a survey of the views of career grade doctors in Scotland on transplant surgery I have had a chance to assess their views on the British criteria.

In February 1981 Scotland had 4896 doctors working in career grade posts (doctors in Tayside were not included as they had taken part in a pilot study). An alphabetical list was prepared by specialty, and every fifth doctor was selected to take part in the study; the number in the final sample was 927 (19% of the study population). A questionnaire on various aspects of transplant surgery was sent to each doctor, and one of the questions was: "Are you satisfied that the criteria for diagnosis of brain death published by the Standing UK Conference of Medical Royal Colleges and their Faculties are of such rigour, that on their fulfilment there is secure knowledge that there is no possible chance of the patient recovering?" A copy of the statement on the diagnosis of brain death conference was enclosed with each questionnaire.

A total of 628 (68%) doctors completed the questionnaire. A total of 544 (87%) respondents indicated that they were satisfied with the British criteria, 43 (7%) were not satisfied, and 41 (7%) gave "inapplicable" replies.

Some 54 doctors volunteered additional comments. The importance of repetition of tests for brain death featured in nine of these. Four doctors did not see how any criteria could offer complete certainty. A further four respondents recommended the inclusion of electroencephalography in the tests, and five were concerned that doctors who carried out the tests might not have sufficient experience. A similar number suggested various amendments—for example, to clarify the tests where corneal reflexes were absent due to diseases of the cornea or where sensitivity of the cornea was diminished or lost. Seventeen comments related to television coverage of this subject and included reference to the disturbing effect on lay people of seeing doctors argue in public about this important matter. Four doctors considered that *Panorama* had done little good for either doctors or the public.

The questionnaires were sent out at a time when controversy over the criteria was at its height, and it could be argued that the views might change "in the cold light of day." But because of the continuing interest in this matter, it would be difficult to forecast a quiet time.

The impression given in the two television programmes was that there might be many doctors who thought the British criteria inadequate, but the results of this survey show that only a few are dissatisfied with the criteria. That such a minority should exist is surely no bad thing, in that it will act as a