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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 must be signed personally by all their authors. We cannot acknowledge their receipt unless a stamped addressed envelope or an international reply coupon is enclosed.

Screening for open neural-tube defects in England and Wales

SIR,—Since the report of the UK Collaborative Alpha-Fetoprotein (AFP) Study¹ was published in 1977 there has been much discussion regarding the introduction of routine antenatal screening for open neural-tube defects by maternal serum AFP measurement, and a number of screening programmes have been described.²⁻⁴ To determine the extent of screening in England and Wales we undertook a national survey.

Early in 1978 a questionnaire was sent to the area medical officer of each of the 98 area health authorities in England and Wales. Each was asked whether screening was being carried out in his area, and if so how many pregnancies had been screened during 1977 and who financed the service. Information was also sought on the number of ultrasound machines which could be used for the further investigation of patients with positive serum AFP tests.

An area was regarded as undertaking screening if one or more of its districts provided a service. The table shows that 31 areas undertook screening in 1977. In these areas 70 066 (33%) pregnancies which resulted in the birth of one or more registrable infants were screened; in England and Wales as a whole 72 941 (13%) were reported as having maternal serum AFP tests. The latter figure includes tests done on selected women from

50 areas not undertaking screening, and when such an area did not specify the *actual* number tested this was assumed to be 10. In both percentages the numerators relate to women tested but the denominators exclude those whose pregnancy ended in an abortion, and this will overestimate the true percentages, probably by less than 1%. In 24 of the 31 areas (77%) undertaking screening this was financed by the National Health Service, and in the other seven from a combination of sources, mainly the Department of Health and Social Security and the University Grants Committee. Ninety-one areas (93%) had at least one ultrasound machine available for screening, and 57 had at least two; in all there were 212 machines available. Early in 1979 a second questionnaire was sent to areas not undertaking screening in 1977 to see if a service had subsequently been started. Fourteen more areas had done so, bringing the total to 45 (nearly half).

With the introduction of AFP screening there is a need to monitor its results. This could be done if area health authorities noted the number of pregnancies screened (to ascertain the take-up) and reviewed the records of all pregnancies where open fetal neural-tube defects were found (to determine the proportion of affected pregnancies detected antenatally). Information on the

proportion of unaffected pregnancies terminated as a result of screening could be collected routinely by modifying Form HSA3 used for the statutory notification of a termination of pregnancy. When an abortion was performed on the grounds that "there was a substantial risk that if the child had been born it would have suffered from such physical or mental abnormalities as to be seriously handicapped" the following information could be sought: (a) whether a fetal neural-tube defect had been suspected, and if so how the diagnosis had been made; (b) whether a serum AFP screening test had been done; (c) whether the fetus was abnormal, and if so what the abnormality was; and (d) whether the fetus had been examined pathologically. The results of such monitoring would be of great assistance to those responsible for the delivery of screening programmes.

We thank all the area medical officers in England and Wales and their colleagues for their help in answering our questions; and we thank the medical statistics division of the Office of Population Censuses and Surveys for providing a tabulation of the provisional number of pregnancies resulting in the birth of registrable infants in each area for 1977.

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¹ UK Collaborative Study in Relation to neural-tube Defects, *Lancet*, 1977, **1**, 1323.

² Ferguson-Smith, M A, *et al*, *Lancet*, 1978, **1**, 1330.

³ Brock, D J H, *et al*, *British Journal of Obstetrics and Gynaecology*, 1978, **85**, 575.

⁴ Wald, N J, *et al*, *British Journal of Obstetrics and Gynaecology*, 1979, **86**, 91.

Fetal hazards of altering hypotensive regimens in pregnancy

SIR,—Oxprenolol may be superior to methyl dopa in the management of hypertension in pregnancy (Dr E D M Gallery and others (16 June, p 1591)). The following case history suggests that changes of hypotensive

Number of pregnancies screened for open neural-tube defects in England and Wales in 1977

	No of areas	No of pregnancies resulting in the birth of one or more registrable infants	No (%) of pregnancies screened
Areas undertaking serum AFP screening ..	31	215 108	70 066 (33)
All areas in England and Wales ..	98	568 534	72 941* (13)

*Includes women who had serum AFP tests in the 50 areas in which these tests were performed only on selected women, mainly those who had previously had an infant with a neural-tube defect.

medication during pregnancy may be hazardous to the fetus, particularly if it is already in jeopardy.

A 32-year-old hypertensive gestational diabetic with a poor obstetric history and taking 250 mg methyl dopa four times daily was admitted to hospital at 30 weeks' gestation because of hypertension (blood pressure 150/100 mm Hg). A cardiotacograph trace on admission was normal. Four days later baseline variability was decreased and a deceleration was noted after a contraction. A repeat trace the next day was normal. Eight days after admission a trace showed depressed baseline variability. At this time the medication was changed to oxprenolol because of worsening hypertension. Two days later a trace showed a baseline of 100 to 110 beats per minute with poor baseline variability. Amniocentesis was performed at 32 weeks for lecithin to sphingomyelin ratio with a view to delivery, after which the fetal heart rate remained unchanged. Despite this, the fetus died several hours later.

The fetus was in difficulties before the change of medication, but the beta-blocking effects of oxprenolol may have produced the depressed baseline fetal heart rate and reduced the fetal ability to deal with hypoxia, precipitating its demise.

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Whooping-cough vaccination

SIR,—There is probably broad agreement with Dr Alastair G Ironside (2 June, p 1488) that "erythromycin prophylaxis is the best practical approach to the protection of the vulnerable infant *when whooping cough affects a family*" (my italics). The Royal College of General Practitioners may well be able to assure us of this with its current trial, which Dr Clifford R Kay mentions (31 March, p 892).

This will not, however, answer Dr David Turner's concern (31 March, p 892) about getting parents to give an antibiotic four times a day to a well child for two weeks. As he says, "it is difficult enough to get them to complete a five-day course for an ill child"—not to mention a course of only three doses of pertussis vaccine. Moreover, there would be the problem of diagnosing the initial pertussis infection accurately in the older sibling, especially if partially vaccinated. And a serious danger in a more widespread use of antibiotic would be the development of drug resistance.

Surely what we should do is to prevent whooping cough from affecting a family. Indeed, it is on the value of herd immunity that I am inclined to part company with Dr Ironside, who concludes that "whooping-cough vaccination confers individual protection but not herd immunity," and who suggests that the disease continued to spread unchecked in the community despite vaccination of three-quarters of the population before 1974.

If we vaccinate only infants, it will take 10-15 years to produce herd immunity against whooping cough in the relevant child population. Good pertussis vaccine has never reached anywhere near 75% of this population in Britain. Much of the 1960s vaccine was in-

effective,¹ owing to lack of factor 3 and adjuvant. Only from 1968 to 1974 did good vaccine reach 75% of each year's infants, so that three-quarters of the children aged 1-7 years became immune; and this progressive decrease in the proportion of susceptibles steadily reduced the size of outbreaks. From 1974, however, as Dr Michael Church has shown (20 January, p 195), the mass media have ensured a succession of falls in the vaccination rate—to less than 40%—producing a marked increase in susceptibles and the biggest outbreak of whooping cough for many years.

In Britain, then, herd immunity against whooping cough has never been given an adequate chance to develop. But, as with rubella vaccine (14 July, p 129), some of us are inclined to expect immediate results from what was designed as a long-term measure. In countries with less parental choice, it may be possible to immunise over 90% and virtually eliminate whooping cough.² The option is open for British parents to reach a similar goal. Let us beware, though: popular opinion here is now being moulded less by the experts than by the mass media.

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¹ Public Health Laboratory Service, *British Medical Journal*, 1969, **4**, 329.

² Zakharova, M. S., et al, *Journal of Hygiene, Epidemiology, Microbiology and Immunology*, 1977, **21**, 128.

Measles and vaccine protection

SIR,—During the year 1978 there was an epidemic of measles in many parts of the country. In the Mole Valley District Council area 651 cases of measles were notified by general practitioners and others during the year. It was decided to investigate how many of these children had had measles vaccination prior to contracting the disease.

Questionnaires were sent to all parents of children affected and to the few adult cases, and a stamped addressed envelope was included for reply. These requested information on the following points: (a) whether vaccination had taken place; (b) whether the illness was mild or severe; (c) any complications; (d) what these were.

Of the 651 questionnaires sent out, 495 replies were received. Eleven were returned marked "not known at this address," etc. The results are given in the table.

Measles in vaccinated and unvaccinated groups

No vaccine			Vaccine protected		
Mild	Severe	Total	Mild	Severe	Total
189	159	348 (70.3%)	92	55	147 (29.7%)
			Complications		
0	34 (9.8%)		0	18 (12.2%)	
Chest	11			7	
Ear	9			4	
Eye	12			4	
Thrush	1			3	
Diabetes mellitus	1			0	

Although these figures give no indication of the attack rate of measles it is interesting to note that 29.7% of measles cases in the survey had received prior protection by vaccination. Of these 147 cases, 55 had a relatively severe illness and 18 had complications. In fact,

the complication rate of 12.2% is higher in this group than the rate of 9.8% in the unprotected. As the numbers of complications were small it was not thought worthwhile to use significance tests. These figures do, however, indicate that the protection given by measles vaccination in this district is not as high as one would have expected from previous studies¹⁻⁵—that is, around 90%—a figure also suggested by the recent short report on a trial in Cameroon (14 July, p 99).

The vaccine is very unstable above the recommended storage temperature and transport delays, industrial action, etc, may be responsible locally for the very unsatisfactory situation. Investigations have shown that some general practitioners have been receiving vaccine through the post and it is possible that the efficacy of the vaccine was poor at the time of administration. Further study has been given to the problem. It is obviously imperative that the manufacturer's instructions are strictly observed.

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¹ Medical Research Council, *British Medical Journal*, 1965, **1**, 817.

² Medical Research Council, *British Medical Journal*, 1966, **1**, 441.

³ Medical Research Council, *British Medical Journal*, 1968, **2**, 449.

⁴ Medical Research Council, *Practitioner*, 1971, **206**, 458.

⁵ Medical Research Council, *Lancet*, 1977, **2**, 571.

Induction of labour using prostaglandin E₂ pessaries

SIR,—While induction of labour by the prostaglandin method, as advocated by Mr J H Shepherd and others (14 July, p 108), shows no little promise for the future by virtue of its relative ease and simplicity, I should like to draw attention to two suggested limitations.

The first concerns the demerits of what amounts to a "forced induction" when the cervix is unripe. Deliberate ripening of the cervix is indeed occasionally indicated but such indication only rarely arises when the problem is suspected postmaturity. It is generally agreed that when a pregnancy has reached T + 10 maturity, the cervix will with very few exceptions have become ripe; these exceptions have been assessed as amounting to 5%. The unripeness of the cervix may therefore be a valuable warning sign that the maturity may have been overestimated and points to the need for reappraisal of the menstrual history, the antenatal records, and the liquor:fetus ratio; as a result, induction may be advantageously waived—the facile induction is not without penalty. The second limitation of the method is the high cost of prostaglandin.

Balanced against these limitations, however, are the undoubted benefits of prostaglandin induction.

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SIR,—The blanket use of prostaglandin E₂ pessaries, as reported by Mr J H Shepherd and his colleagues (14 July, p 108), does concern me. While they did draw attention to the need for fetal monitoring in such patients, I wonder how satisfactorily this can be achieved, especially in relatively high-risk cases, under such circumstances and whether