same false positive rate are used²⁻⁴ the "consumer" confidence in the risk is likely to be enhanced.

We are prospectively evaluating use of the maternal serum marker free β human chorionic gonadotropin in a screening programme (in conjunction with maternal serum α fetoprotein concentration). Though the study is not complete, preliminary data from screening 6000 pregnancies have shown that of the nine fetuses in this population confirmed cytogenetically to have Down's syndrome, eight were identified by the screening programme—that is, a detection rate of 89%. To achieve this detection rate 330 women whose fetuses did not have the syndrome were identified as having a risk greater than 1 in 300. This is equivalent to a false positive rate of 5.5%. What is even more surprising is that of these 330 women at increased risk, 294 (89%) took up the offer of amniocentesis. This figure remained fairly constant across the bands of risk, with 91.4% uptake for a risk greater than 1 in 100, 90.8% for a risk greater than 1 in 200, and 89% for a risk greater than 1 in 250.

Clearly, rates of uptake of amniocentesis will vary as a result of many factors, of which efficiency of detection and confidence in the screening programme are but two. Clinicians and managers should be clear of the errors in making comparisons and projections from less efficient screening protocols.

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- 1 Fleming C, Goldie DJ. Risk of Down's syndrome and amniocentesis rate. *BMJ* 1992;304:252. (25 January.)
- 2 Wald NJ, Cuckle HS, Densm JW, Nanchahal K, Royston P, Chard T, *et al.* Maternal serum screening for Down's syndrome in early pregnancy. *BMJ* 1988;297:883-7.
- 3 Spencer K. Evaluation of an assay of the free beta subunit of choriongonadotropin and its potential value in screening for Down's syndrome. *Clin Chem* 1991;34:809-14.
- 4 Macri JN, Kasturi RV, Krantz DA, Cook EJ, Moore ND, Young JA, *et al.* Maternal serum Down syndrome screening: free β -protein is a more effective marker than human chorionic gonadotropin. *Am J Obstet Gynecol* 1990;163:1248-53.

High purity factor VIII concentrates and HIV infection

SIR,—E E Mayne¹ rightly criticises John D Cash's article² about high potency factor VIII concentrates. Cash has caused much confusion among financial managers in the NHS, who are establishing contracts for the care of haemophilic patients against a background of direct funding for HIV infection.

The choice of the clotting factor concentrates used for replacement treatment in patients with haemophilia is one of the main considerations in their clinical management. It is of particular concern for patients with HIV infection because of the potential detrimental impact of alloantigenic proteins on the immune system. Although one previous study showed no decisive benefit,³ there is now convincing evidence that high purity concentrates slow immunological deterioration in haemophilic patients infected with HIV.⁴ Twenty asymptomatic HIV positive haemophilic patients were assigned randomly to receive a high purity product or to continue treatment with an intermediate purity product. After 96 weeks the CD4+ lymphocyte count had fallen significantly in those who had continued to receive the intermediate product but had not fallen in those receiving the high purity product; the difference in mean CD4+ counts between the two groups at the end of the study was $0.25 \times 10^9/l$. We have monitored a cohort of 111 HIV positive haemophilic patients for 11 years⁵ and have shown that the differences in the

rate of progression to AIDS are largely explained by differences in the rate of fall of the CD4+ count⁶; the median slope of the CD4+ count for this large group was $-0.08 \times 10^9/l$ a year. Thus a difference in CD4+ count of $0.25 \times 10^9/l$ represents a three year decline in an average haemophilic patient infected with HIV.

The only complication of treatment with high purity factor VIII concentrate so far has been the greater than expected prevalence of inhibitor formation, particularly in children.⁷ New inhibitor formation has not been described in haemophilic patients with HIV infection: in fact, the level of inhibitor often falls in these patients.⁸

Are we justified in withholding high purity factor VIII concentrate from haemophilic patients with HIV infection? The cost of using this concentrate, which is more expensive, should be part of the overall cost of the care and treatment of HIV infection in haemophilic patients. High purity factor VIII is comparable to antiviral treatment for these patients: it is not a cure, but it does seem to delay the progression of HIV disease. In conventional medicine we would test this strategy by a larger controlled trial, but haemophilic patients with HIV infection do not live long enough to wait for the results of another study. The continuing tragedy of AIDS in haemophilic patients is a reminder of the inadequacy of delayed decision making. It will be another tragedy if we cannot afford to implement technological advances that offer optimum management of this devastating disease.

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- 1 Mayne EE. High potency factor VIII concentrates. *BMJ* 1992;304:319. (1 February.)
- 2 Cash JD. High potency factor VIII concentrates: value not proved? *BMJ* 1991;303:633-4. (14 September.)
- 3 Mannucci PM, Gringeri A, de Biasi R, Ciavarella N, Bando F, Morfini M. Immune status of HIV-positive haemophiliacs: a randomised prospective comparison of treatment with a high purity or an intermediate-purity factor VIII concentrate. *Thromb Haemost* 1991;65:824. (Abstract 489.)
- 4 De Biasi R, Rocino A, Miraglia E, Mastrullo L, Quirino AA. The impact of a very high purity factor VIII concentrate on the immune system of human immunodeficiency virus-infected haemophiliacs: a randomized, prospective, two-year comparison with an intermediate purity concentrate. *Blood* 1991;78:1919-22.
- 5 Lee CA, Phillips AN, Elford J, Janossy G, Griffiths P, Kernoff P. Progression of HIV disease in a haemophilic cohort followed for 11 years and the effect of treatment. *BMJ* 1991;303:1093-6. (2 November.)
- 6 Phillips AN, Lee CA, Elford J, Janossy G, Timms A, Boffil M, *et al.* Serial CD4 lymphocyte counts and development of AIDS. *Lancet* 1991;337:389-92.
- 7 Bell BA, Kurczynski EM, Bergmann G. Inhibitors to monoclonal antibody purified factor VIII. *Lancet* 1991;338:638.
- 8 Hay CRM, Verroust Y, Preston FE, Kernoff PBA. Induction of immune tolerance in patients with haemophilia A and inhibitors treated with porcine VIIIc by home therapy. *Blood* 1991;76:882-6.

Could an outbreak of poliomyelitis occur in the UK?

SIR,—A V Spedding and E Gradwell report a case of fatal acute poliomyelitis diagnosed at postmortem examination.¹ Though we agree with the need for examination of the spinal cord in these cases, it is important not to overlook virological investigation to search for both polioviruses and other enteroviruses that may cause poliomyelitis-like syndromes.² The World Health Organisation recommends that two faecal samples collected 48 hours apart, or colonic contents at postmortem examination, should be cultured for virus.³ Neither was done in this case.

S O Cameron and colleagues express concern about the possibility of a wild poliovirus type 3 strain causing an outbreak in the United Kingdom.⁴ It is difficult to assess the risk of such an outbreak in the United Kingdom and it is certainly not possible on the basis of their small, selected

serological study. The most recent survey of antibodies to poliovirus, done on 995 serum samples collected in England and Wales in 1984-6, showed an overall prevalence of antibody to poliovirus type 3 of 83%.⁵ Since then, however, uptake of vaccine has improved, reaching 93% by November last year.⁶ Only one outbreak due to poliovirus type 3 has been reported in a well vaccinated population (in Finland⁷), and this was against a prevalence of antibody to type 3 virus in children of 60% and use of subpotent inactivated poliovaccine rather than live attenuated vaccine, as in the United Kingdom.

In England and Wales the control of poliovirus infection is monitored at two levels. Vaccine coverage is assessed quarterly through the COVER programme.⁸ Information on suspected cases of poliomyelitis is obtained from four sources: notifications, laboratory reports, death certificates, and (since last year) reports to the British Paediatric Surveillance Unit. Twenty one cases of paralytic poliomyelitis were identified from 1985 to 1991, of which 13 were associated with vaccine and five were imported. The source of infection was not identified in three cases, but no wild poliovirus of indigenous origin was isolated during this period. The two deaths attributed to poliovirus infection since 1985 were both deaths of young infants with severe congenital immune deficiency who had received oral poliovaccine.

We agree with the need to consider poliomyelitis in all cases of flaccid paralysis including the Guillain-Barré syndrome. They should be investigated virologically, and cases of suspected poliomyelitis should be reported to the Communicable Disease Surveillance Centre or the Communicable Disease (Scotland) Unit at an early stage.

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- 1 Spedding AV, Gradwell E. Could an outbreak of poliomyelitis occur in the UK? *BMJ* 1992;304:186. (18 January.)
- 2 Sabin AB. Paralytic poliomyelitis: old dogmas and new perspectives. *Rev Infect Dis* 1981;3:543-64.
- 3 World Health Organisation. *Manual for the virological investigation of poliomyelitis*. Geneva: WHO, 1990.
- 4 Cameron SO, Carrington D, Patterson W. Could an outbreak of poliomyelitis occur in the UK? *BMJ* 1992;304:52. (4 January.)
- 5 White PMB, Green J. Prevalence of antibody to poliovirus in England and Wales 1984-86. *BMJ* 1986;293:1153-5.
- 6 White JM, Hobday S, Begg NT. "COVER" (cover of vaccination evaluated rapidly): 20. *Communicable Disease Report* 1992;2:R12.
- 7 Hovi T, Huovilainen A, Kuronen T, Pöyry T, Salama N, Cantell K, *et al.* Outbreak of poliomyelitis in Finland: widespread circulation of antigenically altered poliovirus type 3 in a vaccinated population. *Lancet* 1986;i:1427-32.
- 8 Begg NT, Gill ON, White JM. COVER (cover of vaccination evaluated rapidly): description of the England and Wales scheme. *Public Health* 1989;103:81-9.

Setting a strategy for health

SIR,—In discussing setting a strategy for health Alwyn Smyth rightly emphasises the social model as an alternative to the economic view of rationing.¹

Health economists seek to maximise the health benefit per unit cost, usually on the basis of quality adjusted life years.² In the NHS this would inevitably result in selected low priority services being withdrawn, as has been proposed in Oregon. The social model of resource allocation, whereby everyone is deemed worthy of treatment and resources are limited across the board, has a lot more going for it. This approximates to the current