

women age 25-34 to 231 and 104 respectively for men aged 55-64.

The prevalence of the risk factor is an additional important determinant of the potential benefit of screening for the community. This ranged from the prevention of 25 deaths from coronary heart disease over five years in women aged 25-34 to the prevention of 11 568 deaths in men aged 55-64. Reducing the mean cholesterol concentration of the population by 0.5 mmol/l by reducing the prevalence of high concentrations could reduce the mortality from coronary heart disease by 22%—about twice the reduction obtained with the strategy of screening and treatment.

These results are illustrative not definitive. Rates of coronary heart disease and prevalences of high cholesterol concentrations differ in different groups of people and blanket recommendations based on relative risks alone are inadequate. We did not consider cost effectiveness or other potential benefits or risks of screening and treatment. We believe, however, that

this approach to examining data on high cholesterol concentrations may be of value in highlighting not only points of qualitative uncertainty, such as local prevalences of high cholesterol concentrations and the mortality associated with a given concentration but also, more importantly, points of qualitative uncertainty, such as the long term benefits and risks of treatment that lowers cholesterol concentration and what these are in groups not studied in trials—that is, women and certain age and ethnic groups.

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Immunisation against hepatitis B among NHS staff in West Midlands Regional Health Authority

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Infection with hepatitis B virus is a rare but serious occupational hazard for health workers.¹ Since a vaccine was developed in 1981 demand for immunisation of health workers has increased.² The cost of the vaccine (about £32) and the many staff who might be considered for immunisation have, however, limited the numbers who have received it.² We performed a survey of the programme of immunisation against hepatitis B in the West Midlands region.

Methods and results

In November 1988 we sent a questionnaire to the occupational health department in each district in the West Midlands region asking for details of the immunisation programme. All 22 departments replied.

Four districts had started immunising staff in 1984-5, five in 1986, six in 1987, and five in 1988, and two were about to start. Of the 20 departments immunising staff, only 12 were able to state accurately the number who had been (or were being) immunised; the others gave estimates. The two departments with computerised records were able to state how many staff were at risk, whereas only one of the 18 with manual records could do so. The number of staff immunised in a district ranged from 50 to 1742 (median 351) and was related to the length of time the programme had been running: a mean of 810, 528, 208, and 197 staff had been immunised in the districts that had started their programmes in 1984-5, 1986, 1987, and 1988 respectively. Other staff had probably been immunised by their general practitioner without informing the occupational health department.

Thirteen of the 20 departments stated that the number of staff immunised was limited by financial considerations (two declined to answer this question). In one district immunisation of 700 staff had been deferred because of insufficient funds.

Comment

Despite a regional policy, which was issued in

October 1987, the numbers of health workers immunised against hepatitis B varied considerably among the districts. Although the figures are hard to interpret without knowing the number of staff at risk in each district, it seems unlikely that adequate numbers of staff at risk have been immunised in all districts.

The principal constraints affecting the programme of immunisation seem to be the cost of the vaccine and the resources of occupational health departments. Costs may be reduced by giving a lower dose of vaccine intradermally. Five districts used the intradermal route (one for all three doses of vaccine and four for the second and third doses); the other departments used standard doses intramuscularly. The intradermal route is effective^{3,4} but is the subject of debate,⁵ and the product licence for hepatitis B vaccine is for only the intramuscular route. An alternative way in which districts may save money is by asking staff to get their general practitioners to prescribe the vaccine, so that costs are transferred to family practitioner committees' budgets. This, however, introduces an unnecessary hurdle for staff, which is likely to decrease take up. Family practitioner committees' budgets financed (or were planned to finance) 80% or more of the immunisations in five districts and a mean of 18% in a further eight districts. This is a pragmatic solution for districts striving to keep within budgets but is a false economy for the NHS, which loses discounts of about 25% that are available to districts buying in bulk. These problems are unlikely to be resolved unless district health authorities and family practitioner committees are merged and given a common budget.

The financial constraints on the districts are unlikely to absolve them from their legal responsibilities to protect their workforce against hazards at work under the Health and Safety at Work Act (1974) and the Control of Substances Hazardous to Health Regulations, which are soon to be introduced.

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