Table 1—*Variation in cholesterol lowering management criteria in guidelines submitted by 40 authorities*

Element in recommendations	No of guidelines in which element was included
Specific management regimens according to degree of overall risk	Specified in 23
Repeat cholesterol measurement before treatment	Recommended in 31
Full lipid profile before treatment	Recommended in 28
Upper limit of "acceptable" total cholesterol level	Specified in 32; varied from 5.2 to 6.5 mmol/l (median 5.2)
Total cholesterol level at which dietitian should be consulted	Specified in 15; varied from 6.5 to 8.0 mmol/l (median 7.8)
Total cholesterol level at which referral to lipid clinic should be considered	Specified in 14; varied from 6.5 to 10 mmol/l (median 7.8)
Total cholesterol level at which drugs should be considered	Specified in 28; varied from 6.5 to 10 mmol/l (median 7.8)

policies or guidelines, and only about half of those had done so collaboratively.

In view of the high potential cost of cholesterol management for large numbers of patients there is a need to make priorities based on clear criteria for both testing and treatment.[2] For testing, this requires an explicit definition of each risk factor and of the various combinations comprising "high overall risk." For treatment, it requires explicit criteria based on overall risk status (not merely serum cholesterol concentration), agreed in accordance with current evidence of cost effectiveness. Clear, explicit guidelines, developed collaboratively with those who will be using them, have been shown to facilitate, albeit not to guarantee, more consistent practice.[3] All health authorities, through their directors of public health working with general practitioners, physicians, and lipidologists, should ensure that suitable local policies and guidelines for cholesterol management are agreed, disseminated, and monitored.

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NHS breast screening programme: is the high incidence of interval cancers inevitable?

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In the NHS breast screening programme women are screened every three years; those presenting with breast cancer within three years of a negative test are considered to have an interval cancer. Unexpectedly high rates of interval cancers have been reported from the programme,[1 2] but opinion is divided about what should be done.[3] It is accepted that not all interval cancers could have been detected at the time of screening and that some will be true interval cancers, appearing de novo between screening rounds. We report how the occurrence of true interval cancers varies with time from screening.

Subjects, methods, and results

Interval cancers occurring before 31 March 1994 in women screened from 1 April 1988 to 31 March 1993 at the Manchester and Wigan breast screening services were identified,[1] and a mammogram taken at the time of diagnosis was sought for all these cancers. Screening films were mounted on roller viewers by clerical staff; no attempt was made to replicate the screening situation, but some negative mammograms from women known not to have breast cancer were included (amounting to 10% of the total). The screening films were reviewed by three radiologists from a centre not involved in the initial assessment and consensus was reached on the presence or absence of a significant abnormality, the location of which was then checked by reference to the diagnostic films. An interval cancer was classified as a false negative when the same suspicious abnormality was present on both screening and diagnostic mammograms, as a true interval cancer when an abnormality was present only on the diagnostic mammogram, and as radiologically occult if no abnormality was present on either film. No attempt was made to classify interval cancers when a diagnostic mammogram was unavailable. Only interval cancers occurring in years for which cancer registration was complete were included in the analysis.

Two hundred and sixty interval cancers were identified; 13 were excluded as they were still awaiting radiological evaluation. Of the remaining 247 cases, 130 (53%) had a diagnostic mammogram and could be classified: 26 (39%), 51 (58%), and 53 (58%) of these presented in the first, second, and third year respectively after a negative screen. Four radiologically occult cancers have been excluded from table 1, which shows the frequency of true and false negative interval cancers with time from screening. The proportion of true interval cancers increased significantly with year from screening (χ^2= 12.75; df=2; P<0.002).

Table 1—*Frequency of true and false negative interval cancers in relation to time from screening*

Time from screening (months):	0–12 n = 25	13–24 n = 50	25–36 n = 51
True interval cancers	10 (40%)	35 (70%)	41 (80%)
False negative	15 (60%)	15 (30%)	10 (20%)

Comment

Almost half of all interval cancers are diagnosed in the third year after screening.[1 2] We found that the frequency of true interval cancers increases with time from screening and in the third year comprises 80% of all classifiable interval cancers. The absence of a diagnostic mammogram in many cases is an unsatisfactory but widespread finding in the NHS breast screening programme, and it is impossible to opine on the distribution of true and false negative interval cancers in these tumours. The proportion of interval cancers which can be classified has increased over time with greater clinical awareness of the importance of obtaining a diagnostic mammogram and increased provision of diagnostic mammography sets. We can, however, draw broad comparisons with other European screening programmes and trials with similar overall interval cancer rates, bearing in mind that these have a

two year screening interval. The proportion of true interval cancers occurring in the first two years after screening in our series was 60%, similar to that reported in the Nijmegen programme (58%) and Stockholm trial (64%) in women aged 50-64.[4,5] Recent changes designed to improve the sensitivity of the screening test are welcome, but we believe that shortening the screening interval is the only way to reduce the number of true interval cancers which will otherwise continue to present in the third year after screening.

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Increased incidence of primary total hip replacement in rural communities

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Previous studies of the incidence of total hip replacement operations have been based on large heterogeneous populations.[1] From crude data based on large geographic areas, an increased incidence has been suggested in rural populations of Scotland. However, the population distribution within these areas might alter the significance of these results.[2] We used the smallest geographical areas for which reliable population data were available to determine the incidence of total hip replacement in urban and rural populations.

Subjects, methods, and results

Using data from operating theatre registers and the Scottish Morbidity Record, we identified 2053 patients who had undergone a primary total hip arthroplasty between 1 September 1991 and 28 February 1993 in the 16 hospitals in the west of Scotland that performed such surgery. Reasons for surgery included all diagnoses except fractured neck of femur. We reviewed 2035 (98%) case notes, verified the type of operation, and identified the patient's postcode of residence. We determined whether each postcode sector was urban or rural according to census data from the registrar general, using the definition that an urban postcode contains at least five people per hectare while a rural postcode contains four or fewer.[3]

We calculated the incidence of primary total hip replacement, standardised for age and sex to the Scottish population, in the urban and rural populations. The incidence of surgery for the urban and rural groups was 66.9 and 85.6 per 100 000 population respectively ($\chi^2 = 40.42$, df = 1, $P<0.001$). The Spearman correlation between the population density of the 26 political districts of the west of Scotland and the incidence of total hip replacement in these areas confirmed an inverse relation ($R = -0.721$, $P<0.001$) (fig 1).

We analysed the demographic characteristics of the patients. Mean age at operation was 67 (SD 11) years in both the rural and urban groups. The male to female ratio was 1:2 for the urban population and the group as a whole. The rural population had a higher proportion of male patients (ratio 1:1.4), and almost twice the number of rural patients were employed at the time of the operation. The distribution of diagnoses was not significantly different between the rural patients (osteoarthritis 89.2%, rheumatoid arthritis 5.1%, congenital hip dysplasia 0.4%, other diagnoses 5.3%) and urban patients (osteoarthritis 85.9%, rheumatoid arthritis 7.9%, congenital hip dysplasia 1.1%, other diagnoses 5.1%).

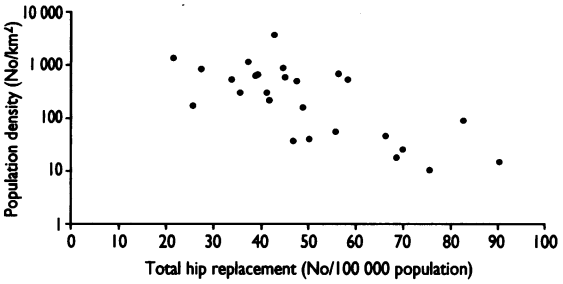

Fig 1—*Population density of political districts in west of Scotland (log scale) by incidence of total hip replacement*

Comment

Using the smallest geographical area available (postcode sector), we confirmed the previously reported increased incidence of total hip replacement in the rural population of the west of Scotland. It is not known if this is due to an increased incidence of conditions meriting total hip replacement, historically lower operation rates, or increased demand due to higher functional requirements and greater perceived disability. These findings may have important resource implications. If the rural incidence of surgery was applied to the urban population then an extra 350 operations would be required in the area studied.

In the absence of dedicated population based studies for the need for total hip replacement, our retrospective analysis of the incidence of operations has provided information for resource allocation and contract purchasing. The variation in incidence between urban and rural populations indicates that care must be taken in using global operation rates at a local level. Regional studies are required to identify local need and other factors affecting the true need for hip replacement surgery in order to correctly plan resource allocation.

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