diagnoses, though within a sibship there is a tendency for the affected children to have similar diseases.

A method for estimating the risk for sibs of affected children, as compared with the general population, has been developed, taking into account the problems associated with varying probabilities of ascertainment and changes in family size which arise in a continuing survey. This is an extension of Weinberg's sib method for estimating genetic segregation ratios.

The results suggest that, in addition to the known familial element in two or three rather rare diagnostic groups, there is an approximately twofold increase in risk for subsequent children if one child in a family is known to have malignant disease. In absolute terms this represents a risk of about 1 in 300 of developing malignant disease by age 15, as compared with the overall population risk of about 1 in 700.

A Study of Breast Cancer on the Isle of Wight. E. D. ACHESON, S. ALLISON, W. R. EDWARDS, and R. WRIGHT (*Department of Community Medicine, University of Southampton*)

This is a preliminary report of a survey in which family histories of breast disease are being collected from all mothers delivered of babies at St. Mary's Hospital, Newport, Isle of Wight, together with specimens of breast milk and blood from mothers with positive family histories, and controls.

Of the 478 mothers delivered up to the end of August, 450 have been interviewed (94%). Information is requested about breast disease in the patient's mother, sisters, maternal and paternal grandmothers and aunts, and in the husband's female relatives.

For patients giving a positive history samples of breast milk and blood are collected, frozen, and stored. Similar samples are collected for two controls matched to each case for age and parity. The specimens will be examined blind for virus antigen and tumour specific antibody.

If the age-specific incidence of breast cancer is known and certain assumptions are made about the average age of mothers having babies and of their mothers and grandmothers, it is possible to estimate the proportion of mothers who should report an affected relative. Assuming a cumulative life risk of breast cancer of 5%, it was estimated that about six mothers who had had breast cancer and approximately 25 maternal and 25 paternal grandmothers would be ascertained. In the event, this estimate was remarkably accurate as regards the patient's mother (5 cases) but there was a substantial deficiency in relation to grandmothers (14 cases). This shortfall may be due to patients' incomplete knowledge about their grandmothers' illnesses.

A preliminary investigation of the accuracy of reports of breast cancer was carried out. Of the 21 instances in which it was known that the patient was treated for the reported illness, a record was found for 17 and the diagnosis of carcinoma was confirmed in 16. In the remaining case the occurrence of a mastectomy was confirmed but no histology given. It seems likely that a positive history of breast cancer is accurate and that the

terms 'breast cancer' and 'breast removed' may prove for practical purposes to be synonymous.

Medical Care for Stroke Patients in a Defined Community. JEAN WEDDELL (*Department of Social Medicine and Clinical Epidemiology, St. Thomas's Hospital Medical School*)

A study was made of 380 patients who received medical care for a stroke over a 12-month period from 1 June 1971, from a defined population of nearly 280,000. The patients were seen as soon as possible after the stroke and again three weeks and three months later. A record was made of each place of care and the length of time spent in each. The patient's ability to carry out the activities of daily living, to perform simple household duties, to travel outside the home, and changes in their occupational status were recorded. It was found that the Index of the Activities of Daily Living was a good indicator of a patient's survival as most of those who were dependent at the first visit died. Most of the deaths had occurred by the third week, leaving a survivor population of 198. By three months 36 patients were still in hospital; 85 patients had gone home. The general practitioner cared for 50% of patients immediately after the stroke, either at home or in community hospitals. The Index of the Activities of Daily Living was a poor indicator of the patient's ability to lead an active life. Of those classed as independent by this index only a small proportion could still carry out simple household activities, travel by public transport, drive a car, or pursue the same occupations. Better measures of independence need to be developed and methods to increase this independence need to be evaluated.

Locomotor Disability—A Study of Need in an Urban Community. MALCOLM THOMPSON, MARY ANDERSON, and PHILIP H. N. WOOD (*Royal Victoria Hospital, Newcastle upon Tyne, and ARC Epidemiology Research Unit, Manchester*)

The Social Services Department in Newcastle upon Tyne recently made a detailed survey of a sample of chronically sick and disabled persons living within the city. Arthritis and related rheumatic conditions were reported by 163 individuals, 39% of the total sample, and in 120 (28%) these disorders were the major cause of disability. A special study is being made to assess the medical care needs of these persons with disorders of the bones and organs of movement, and this preliminary report is based on the first 78 individuals seen, 23 of whom were male and 55 female.

They were predominantly elderly (mean age 69) and many lived alone. One in 6 were single and 1 in 2 widowed (though only 1 in 4 of males were widowed). Almost one-third were unable to attract attention in an emergency. Stairs within or at the entrance to the home caused difficulty for about half the respondents. The principal limiting disability was located in the knees in half, and elsewhere in the legs in a further quarter. In almost three-quarters the main pathology was osteoarthritis. Other, non-locomotor, disabilities were present

in addition in two-thirds, and multiple pathology was not uncommon. The outlook for three-fifths was deterioration, though improvement could be expected in 8%.

It was considered that special treatment in the past, if available, would have been unlikely to have made much difference to more than half the respondents, but one-fifth could have benefitted from surgery. In contrast, present specialist needs were thought to be considerable, although the biggest call was for out-patient rather than in-patient treatment. The need for other remedial assistance and for aids, appliances, and adaptations was even more marked, and the resource implications of these assessments are challenging.

The biggest practical problems in life around the house were in cutting toenails, doing housework, having a bath or all over wash, getting out of the house, and coping with stairs, and for the three former of these at least a fifth of the respondents were dependent on other people. In sampling the respondents' attitudes, it was striking that although 70% claimed that nothing had been done to help them, the majority had not asked their family doctor for help, even though more than half considered that something could have been done.

Psychological and Social Impact of Progressive Neurological Disease with special reference to the Domiciliary Medical, Nursing, and Social Services.
BARBARA C. STEVENS (*General Practice Research Unit, Institute of Psychiatry, London*)

This survey examines the psychological and social effects of severe physical disability, taking into consideration the medical prognosis, the social role expectations of the patient, the personality of the patient, and the burden of care experienced by his relatives. There were 650 patients who were registered as being disabled as a result of a neurological condition in a London Borough; 174 were suffering from progressive diseases such as multiple sclerosis, myasthenia gravis or dermatomyositis, 44 more were paraplegic or quadriplegic, 274 hemiplegic, 55 had had polio, and 102 cerebral palsy or other paralyzing conditions. Fifty-six patients have been given the following assessment battery: an interview to assess social problems, Nichol's evaluation of general and motor impairment, the Katz Index of Dependence in Activities of Daily Living, and Goldberg's 30-item General Health Questionnaire to detect anxiety and depression.

Results based on patients with multiple sclerosis and muscular dystrophy suggest that although the physical needs of these patients are generally met by the present medical, nursing, and social services, their psychological needs are not. In a sample of the severely disabled approximately one-third were chronically depressed or anxious.

Factor VIII Replacement in the Treatment of Haemophilia A—A Simple Illustration of a Need-Supply-Demand Spiral. MARY SPENCELY and J. D. CASH (*Department of Social Medicine, University of Edinburgh*)

The treatment of haemophiliacs is used as an example of the general principle that changes in supply can lead to changes in the attitudes of those prescribing and those receiving. This in turn leads to demands for further supplies.

In haemophilia A there is a deficiency of factor VIII which can be obtained from whole blood. Newer methods of production have permitted changes in treatment patterns with more outpatient therapy. Clinicians can now encourage earlier reporting of bleeds and can offer, on an experimental basis, prophylactic treatment.

The provision of factor VIII, expressed as pints of whole blood processed, in the South East Region of Scotland has risen from the pre-1964 plateau of 1½–2 thousand, through a second plateau of 2½–3 thousand, and since 1970 there have been dramatic annual increases to an estimated 12,000 for 1973.

Analysis of two years' experience of the treatment of haemophiliacs in the region has been carried out. In terms of numbers treated, 26 of 41 severe haemophiliacs were treated in 1970, 29 in 1971. They reported 143 and 164 episodes respectively. Though there has been no change in the average number of episodes per case, the distribution has changed. Two individuals contributed 40% of the total episodes in 1970 and only 32% in 1971 after they had been placed on prophylaxis. Of the remainder, in 1970 only four reported more than six episodes and one of these died. In 1971 there were six. There were 145 treatments in 1970, 207 in 1971. This increase was for outpatient treatments, i.e., for milder or 'earlier' bleeds. The average donation equivalents per episode rose from 17 to 22.

Thus, increased availability of factor VIII has permitted earlier treatment by clinicians and more reporting of episodes by the haemophiliacs themselves. The next step in the spiral is widespread prophylaxis. The limiting factor must be, as it generally is, limitation of supplies.

Rheumatoid Factor, So-called—What does it portend for the Population? ELIZABETH M. BADLEY, JOHN BALL, and PHILIP H. N. WOOD (*ARC Epidemiology Research Unit, Manchester*)

Rheumatoid factor (RF) is an anti-antibody found in the serum and was first noted in patients suffering from rheumatoid arthritis (RA), where its presence is of some significance clinically, tending to be associated with more severe disease and a less favourable prognosis. However, the biological importance of this phenomenon in the population is uncertain, although links with lung diseases and ischaemic heart disease (IHD) have been postulated, as has RF as a risk-factor for RA. A collaboration with the MRC Epidemiology Unit, Cardiff, provided an ideal opportunity to study the broader significance, and so RF was measured by the sensitised sheep-cell agglutination test (SCAT) in surveys of a Rhondda Fach population sample carried out on two occasions 10 years apart.

Serum is titrated in doubling dilution, one-quarter, one-eighth, one-sixteenth, etc., with a preparation of sensitised sheep cells, and the results are usually expressed as reciprocal titres or by tube numbers. Analysis is not