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## Editorial

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### Aging

*Editor: On 1 August 1996, 202 editors of medical journals were asked to propose topics for a 1997 Global Theme. About half that number voted from a list of 94 topics, and aging was a clear leader. This is hardly surprising in view of the steady increase of the population aged 65 or over in many countries, with their attendant healthcare needs. Along with many other medical journals we are acknowledging this theme in the October issue with a specific editorial and by several papers which focus on various conditions related to aging such as Alzheimer's disease and Parkinson's disease.*

The population of the United Kingdom, recorded as 58.2 million in 1993, is projected to increase to a peak of around 61 to 62 million in 2031.<sup>1,2</sup> In 1993, 14.8% of the population were 65 or over, with 3.9% aged 80 or over. By 2031, the percentage aged 65 or over will have risen to 22.9, and by 2051, the percentage aged 80 or over will be 9.2.<sup>1</sup> The burden on health care can be calculated, based on the number of dependent people within the population (dependent people, for this purpose, are children under 16, women aged 60 or over, and men aged 65 or over). A dependency ratio is defined as the combined number of children and pensioners for every 100 people of working age. The ratio was 63 in 1992, but is projected to rise to 82 in 2036.<sup>1</sup>

Neurological disorders which are likely to be influenced by this trend include cerebrovascular disease and dementia. There is continuing debate about the trend of incidence of stroke over the past few decades, with some studies suggesting a decline, others stability, and some an increase. Sequential studies in the Rochester population suggested that by the early 1980s, the apparent decline in incidence of stroke seen in the previous decade had ceased, although it was suggested that a part explanation for this might lie in the increasing use of CT in patient assessment.<sup>3</sup> Further data from this population for the five year period ending in 1989 has been published.<sup>4</sup> The annual age and sex adjusted incidence rate for stroke was 145 per 100 000 population, virtually unchanged from the rate for 1980 to 1984 and 13% higher than the rate for 1975-79. The figures, admittedly, are based on a relatively small population. Stroke mortality has fallen consistently in several surveys and increasing evidence points to this reflecting a decrease in case fatality rates, rather than a decreased occurrence of new strokes. In one recent study from Oregon, stroke incidence between 1967 and 1985 was considered to be stable in patients aged 65 or over, although, over the same period, one month case fatality rates declined from 33% to 18%, with a median survival increasing from 213 to 1092 days.<sup>5</sup> Data from Europe have sometimes contradicted this view of a stable or even increasing stroke incidence coupled with a decline in stroke mortality. A Finnish survey over the

period 1983 to 1992 reported a reduction in both stroke incidence and mortality through that period, although with greater significance for mortality.<sup>6</sup> In both Europe and the United States, the average age of stroke patients is increasing. When calculations of survival are added to projected incidence rate, a trend towards increasing prevalence for stroke in very elderly people becomes apparent.<sup>7</sup> A projection for the population of England and Wales, which assumed a constant pattern of incidence of stroke in the future, produced a net increase in those who are moderately or severely handicapped by their first stroke six months after its onset of only 4% by 2023. The only modest increase in stroke prevalence predicted by this study, despite an aging population, was based on the assumption that survival after the first stroke, in very elderly patients, was considerably lower than in a younger cohort, particularly for those with more substantial disability.<sup>8</sup> For patients between 65 and 85, however, whose stroke incidence may, for the foreseeable future be stable, but who are now likely to survive longer, the implications for health care, both within hospital and within the community, are apparent.

All epidemiological surveys have established that dementia increases with age, roughly doubling with every five years of aging. Based on clinical criteria, the increased incidence in elderly people seems to be due to Alzheimer's disease, with little or no contribution from vascular dementia.<sup>9</sup> Both incidence and prevalence studies have been performed. In a United Kingdom study annual incidence rates for subjects aged 75 to 79, 80 to 84, and 85 to 89 were 2.3%, 4.6%, and 8.5% respectively. If cases with minimal evidence for involvement were included, the respective quinquennial incidence rates rose to 5.1%, 12.5%, and 16.4%.<sup>10</sup> A comparable study from the United States, in the Framingham population,<sup>11</sup> produced incidence figures of 0.7% for the 65 to 69 age group and figures of 2.7%, 5.2%, 8.1%, and 12% for subsequent quinquennia. Moderate or severe cases only were included, utilising NINCDS/ADRDA criteria.<sup>12</sup> Based on 1989 Office of Populations, Censuses and Surveys (OPCS) figures, the total number of patients with dementia in the United Kingdom aged 65 or over will have risen from

583 880 in 1991 to 735 480 in 2021. The impact of this increase, both in terms of medical services and resource costs, will be substantial. A survey based on 1990-91 data has estimated that the cost of providing health and social services care to the population aged 65 or over with Alzheimer's disease in England was £1039 million,<sup>13</sup> or £1500 million if all cases of senile dementia were included. By 2021, that cost, based on 1990-1 prices will have reached nearly £2000 million.

The implications for care are obvious. Although these extrapolations take no account of possible new developments in the treatment of stroke and Alzheimer's disease, recently introduced treatments—for example, tissue plasminogen activator for certain types of stroke, and donepezil for Alzheimer's disease are more likely to prolong the life of the patient, and therefore the prevalence of the disease rather than having a major effect on disability.

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