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Practical Neurology,
2003, 3, 254–256

Sweden is one of the largest countries in Europe but has one of the smallest populations – nine million people. Because Sweden did not participate in the Second World War, the economy was better than in most other countries during the 1950s and 1960s. The Social Democratic Party ruled the country for decades and created a welfare system financed by high income taxes. Many families could afford a Volvo or Saab car, a summer cottage and 4 weeks holiday a year. For those less fortunate, the social safety net guaranteed board and lodging, and health care if required. But much has changed since then. Married women used to be housewives, but now the employment rate for women is the highest in Europe at 85%. Sweden used to be ethnically homogenous, today almost 11% of the population were born in another country. Rips in the social safety net have become obvious. Board and lodging is no longer guaranteed, and although health care is still maintained at the highest international standards, waiting times at emergency units and for elective treatment can be unacceptably long.

Nevertheless, the Canadian Council on Social Development, in a review of 25 indicators of social development, gave Sweden 20 'gold medals' compared with four to Canada and two to the United States (Jackson 2002). These 'gold medals' were for a low poverty rate, smaller proportion of low paid jobs and long working hours, low earnings gap, high unionization rate, high proportion of public health care, high life expectancy (75.9 years for men, 81.3 for women) and high literacy. Yet many Swedes are concerned about the loss to foreign interests of some of our national industrial cornerstones such as Volvo, Saab and Pharmacia. But they enjoy the suc-

cess of the IKEA furniture stores and Swedish popular music. Recently the *Guardian* newspaper in the UK labelled our capital as one of the trendiest weekend getaways. In September 2003 Swedes will vote whether to abandon the 'Krona' and join the 'Euro', thereby finally perhaps giving up a long tradition of isolationism.

HEALTH CARE

Health care and social welfare employ 15–16% of the working population at a total annual cost of 30 billion Euros (\$35 million) in the year 2000. During the 1990s, public spending in this area increased from 11.8% to 13.5% of the gross domestic product (Swedish Board of Health and Social Welfare). However, while the expenditure on social welfare increased, the proportion used for health care has been reduced. The number of employees in health care fell by 7%, in contrast to an increase of those working in the social sector by 20%. The number of hospital beds has fallen considerably and the number of visits in primary health care increased: indeed, 22% of total health care expenditure is now used for primary care. The expenditure on pharmaceutical drugs doubled during the 1990s. A considerable part of the social sector costs are related to nursing elderly people. These costs can be expected to increase over the coming decades because the proportion of the population 70 years or older will increase from 13% to 20% by 2050.

Health care in Sweden is organized by 21 county councils, each led by a political assembly elected by the people. The financing of health care is almost entirely based on taxation. Most private doctors, as well as those employed by the county councils, are affiliated to the general insurance, so patients only pay a limited fee for

a visit or for hospitalization. A visit to a specialist costs about □25. Health care expenses are capped at about □150 a year. There is a similar system for drug costs. But for cosmetic surgery and Viagra the individual has to cover the full costs, which has caused some debate.

NEUROLOGY IN SWEDEN

The first department of neurology was started in 1887 when Per Johan Wising was installed as the foundation professor of neurology at the Karolinska Institute 5 years after Charcot in Paris. A review of the patient files reveals that a dominant diagnosis amongst admitted patients at that time was neuro-lues (syphilis). One of Wising's followers, Eric Kugelberg, identified the motor unit. Neurosurgery was introduced in Sweden by Herbert Olivecrona who trained with Harvey Cushing. Olivecrona, who retired in 1960, was still coming to meetings in the department until about 1980. He even drove his green Jaguar all the way to the main door of the neurology building at the Karolinska. Other drivers kept a respectful distance when the well-known car approached! His successor, Lars Leksell, developed stereotactic neurosurgery and created the gamma-knife for stereotactic radiosurgery of the brain.

Neurology is one of the basic medical specialties in Sweden. The number of neurologists is lower than in most other European countries. In 2000, the proportion was one neurologist per 32 000 inhabitants compared with 1/10 000 in Denmark, 1/22 000 in Finland and 1/16 000 in Austria. The European average was 1/20 000. One-third of the neurologists will retire within the next 10 years as they reach the age of 65. It is of particular concern that the training of new neurologists may not compensate for these losses. Specialist training in neurology lasts at least 5 years with full-time service within neurology and related specialties such as internal medicine, psychiatry, neurosurgery and clinical neurophysiology. Courses are arranged for cerebrovascular disorders, movement disorders, epilepsy, demyelinating diseases and neuromuscular diseases. There is some individual flexibility in the selection of services and courses. A non-compulsory specialist examination is arranged by the Swedish Association of Neurologists. The Association also arranges annual scientific meetings with rotating local organisers. Additional regular meetings for neurologists and others are the Nordic Meetings for Cerebrovascular Diseases and the Karolinska Stroke Update meetings, both every other year.

University hospitals and most regional hospitals have a neurology department with at least one ward for in-patients. Many other hospitals have consultant neurologists working within departments of general medicine. Most neurology wards have primary responsibility for emergency neurology. For example, the County of Stockholm has seven hospitals each with an emergency unit, to cover the needs of 1.8 million inhabitants. Two are academic hospitals with neurology wards and in total about 100 beds. In 2000, almost 15 000 patients were admitted for neurological problems, 80% via an emergency unit. Stroke is the main emergency problem within neurology accounting for 44% of all admissions, followed by brain and/or spinal cord trauma (30%), epilepsy (6%) and headache (6%). But only 25%

of these emergencies were admitted to one of the two neurology wards, others were taken to medicine or geriatric units. For stroke, 22% of the patients were admitted to a neurology ward, while the proportions were higher for epilepsy (34%), movement disorders (48%), brain tumours (69%), headache 42% and peripheral motor disorders (45%). Clearly many neurological emergencies are managed on non-neurology wards in Stockholm.

A NEW ERA FOR THE CARE OF STROKE

Neurologists are involved in stroke care either as directly responsible for a stroke unit or as consultants within a medicine department. Neurologists in Sweden, as in other countries, have been active in the development of thrombolysis for acute stroke. Today neurologists work together with their colleagues within internal medicine and geriatrics to improve the management of stroke patients. The recent approval of intravenous thrombolysis within 3 h of acute ischaemic stroke onset has started a series of activities to educate staff, to increase the priority of stroke patients in the ambulance services and to shorten the delay between arrival at the emergency department and start of treatment. About 50 Swedish hospitals are now preparing to work together within the Safe Implementation of Thrombolysis in Stroke (SITS) international network, and about 25 are already connected to the SITS database for registration of treatment outcome. Many centres are also involved in randomised controlled trials of acute stroke, such as the European Cooperative Acute Stroke Study III (ECASS III) of intravenous thrombolysis in patients with symptoms which have lasted between 3 and 4 h, and the International Stroke Trial 3 (IST-3), for patients within 6 h of symptom onset who do not meet criteria for routine thrombolytic treatment.

These and many other new challenges will make neurology more difficult, and more exciting. Practical Neurology may help us make it less difficult but even more exciting.

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