

Responsibility for funding scientific activities is shared among the federal government, private non-profit organizations, private industry and provincial governments. Basic and applied biomedical research is funded primarily by the Medical Research Council of Canada, a variety of non-profit organizations, such as the Canadian Cancer Society, and several provincial research-funding programs. Most of this research is performed in universities and affiliated teaching hospitals. Applied health research, including the development of health care delivery systems, is funded by Health and Welfare Canada and by other organizations, both provincial and private. The provinces not only provide some funds for the direct costs of activities carried out in universities and hospitals but also, through operating grants, provide for indirect costs including the salaries of principal investigators. Related activities include the training of research scientists, scientific data collection, information dissemination, economic and feasibility studies and testing and standardization.

In federal laboratories, work is concerned with standards and regulations to safeguard the quality and safety of foods, cosmetics, pesticides, drinking water and air, and the safety and effectiveness of drugs, radiation-emitting and medical devices. Surveillance is maintained over chronic and infectious diseases; factors affecting their diagnosis and containment are investigated. In universities, most investigations concern physiological and biochemical bases of health and disease. In hospitals, diseases and disabilities are investigated; treatments (both medical and surgical) are developed and tested. In industry new pharmaceuticals and medical devices are developed. New technologies are developed and tested ranging from hardware, such as medical devices, to strategies for the management of certain medical conditions, such as provision of special care units. Health concerns include: the improvement of lifestyles and self-management of health; reproductive health; occupational health; mental health; and the special health problems of particular population groups, such as the elderly, northern residents, native peoples and the disabled.

Most federal grants supporting health science research in universities and hospitals are channelled through the Medical Research Council. It provides grants-in-aid of operating and equipment requirements for research projects and direct support for investigators and research trainees. It offers incentives for research both in productive fields where major contributions

may be expected and in fields or regions where research is not adequately developed. Support is given for meetings, international scientific activities and exchange of scientists. The budget of the council was \$146 million for 1985-86, up \$3.4 million from the fiscal year 1984-85.

The National Health Research and Development Program provided \$18.7 million for health research and related scientific activities in 1985-86. Among the 439 projects supported were studies on the availability, accessibility and quality of health care and the development of models for more cost-effective delivery of health services; investigations into illness prevention and the promotion of healthy lifestyles and behaviour patterns; assessments of genetic, socio-cultural and environmental health risks; research dealing with the health of native peoples; rehabilitation; and population immune status and communicable disease control. To meet a constant need for qualified human resources in population disciplines, the program assisted 97 students at the masters and doctoral levels and 62 established health research scientists.

3.3 Health human resources and facilities

Canadians are served by a system of hospital and medical care complemented by a broad range of other health services. In 1985, health workers included almost 52,000 physicians, 250,000 registered nurses, 13,000 active licensed dentists and a large pool of other health professionals in such activities as diagnostic, treatment, rehabilitation, public health and health promotion.

Physicians. The number of active civilian physicians in Canada, including interns and residents, increased at a rate far exceeding population growth from 1975 to 1985 (Table 3.25). There was an increase of almost 33% in the number of physicians while the population grew 11.4%. The 33% increase in the number of physicians was largely due to an inflow of graduates of Canadian medical schools averaging more than 1,750 per year during the last 10 years. During the same period, the number of immigrant physicians averaged about 350 per year. The number of physicians whose country of last permanent residence was Canada who were granted permanent residence status in the United States reached a high of 725 in 1977. In the US, fiscal years ending on September 30 of 1984 and 1985, the number was 164 and 169, respectively.

The number of persons per physician was 585 in 1975 and 491 in 1985. In the 10 provinces the