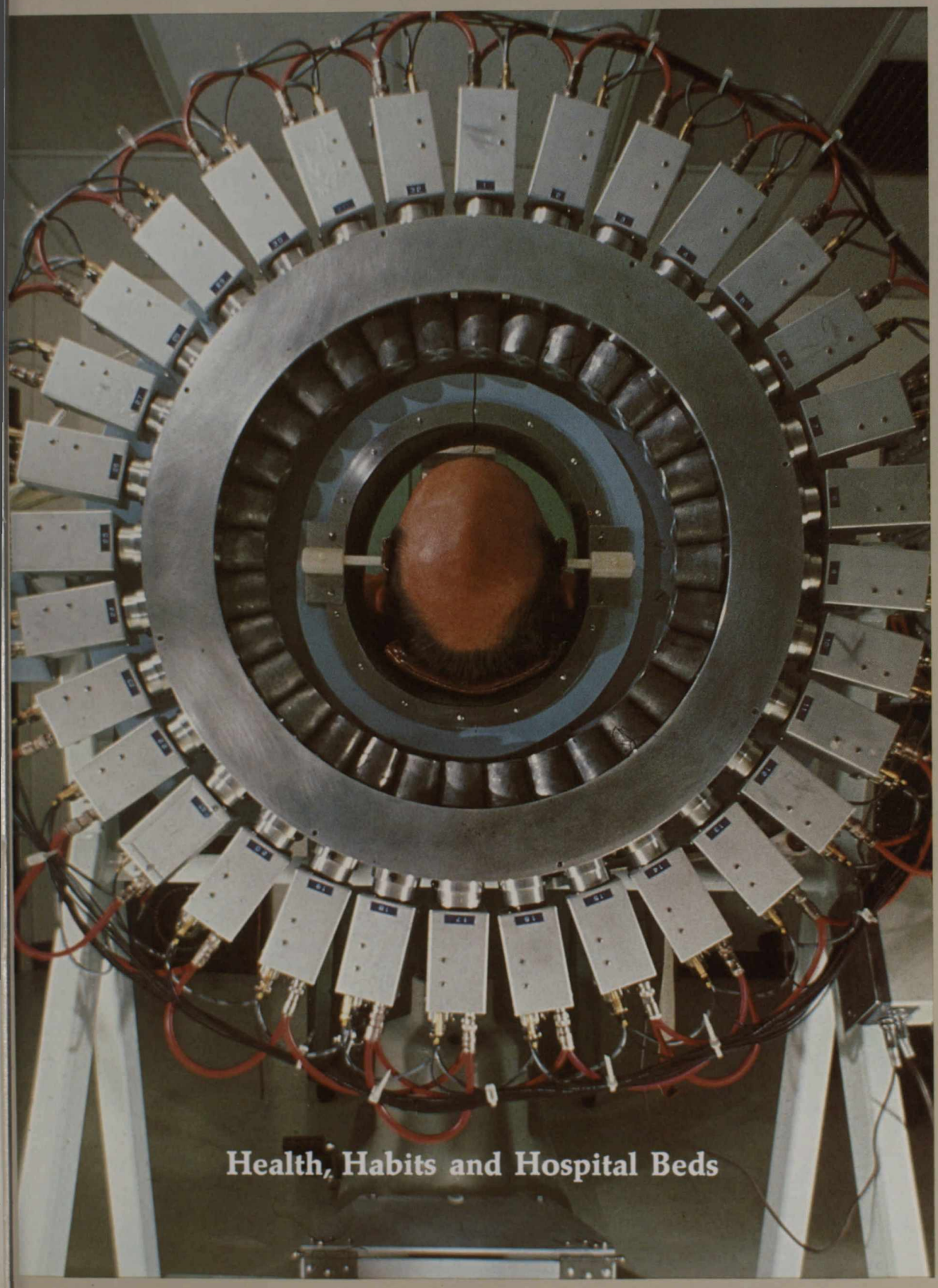
CANADA
TODAY / D'AUJOURD'HUI



Health, Habits and Hospital Beds

VOLUME NINE NUMBER ONE NINETEEN SEVENTY-EIGHT

Today's Canadians are remarkably long-lived. The average Canadian boy born yesterday should live to the year 2048, the average girl to 2055. (She should live longer than any other average girl baby alive, except an average Netherlander, Norwegian or Swede.)

This is true in spite of the fact that Canadians, in general, take poor care of themselves. Over half are overweight, and they have all kinds of vitamin and mineral deficiencies. They smoke, drink and eat too much and drive automobiles recklessly.

What keeps them alive so long? The answer is uniform, high-standard health care: Over 99 per cent of all Canadians are covered by comprehensive government health insurance plans. They are served by highly qualified doctors and have easy access to well equipped hospitals.

Still, they have problems. Many are concerned about steadily increasing costs. Medical costs are lower in Canada than in the United States, though higher than in England; but there is reason to believe that something close to the optimum in effective broad scale patient care has been reached. Some suspect that Canada now has more doctors and hospital beds than it needs.

In this issue of CANADA TODAY/D'AUJOURD'HUI we give some examples of Canada's health and medical achievements and some musings about the cost.

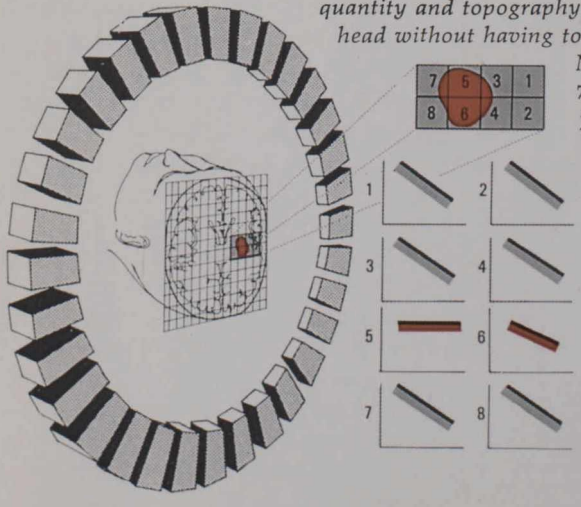
Health Coverage from Sea to Shining Sea

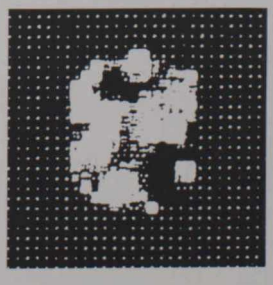
Four Canadian provinces—Newfoundland, Saskatchewan, Alberta and British Columbia—provided government-funded hospital insurance during the late 1940s and early 1950s. The federal government became involved in 1958 through the Hospital Insurance and Diagnostic Services Act. Some ten years later, the national coverage was extended, with the Medical Care Act, to cover physicians' fees. Under both acts, the federal government sets standards and covers about half of the cost, but because health care is constitutionally a provincial responsibility, each province controls the details of its own programs. Provinces must provide basic services, without dollar-limit or exclusions, to all eligible residents on uniform terms and conditions. Benefits are portable: Residents keep their coverage when they are temporarily out of their home province or in the process of moving to a new one.

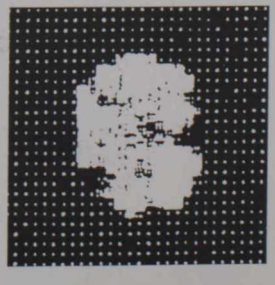
Hospital services are fairly uniform, but outpatient services vary. Virtually every province provides all services to outpatients that are available to inpatients, and some include extras, such as the cost of ambulances and prescription drugs.

The Medical Care Program, medicare, is more complex. It covers all medically required services

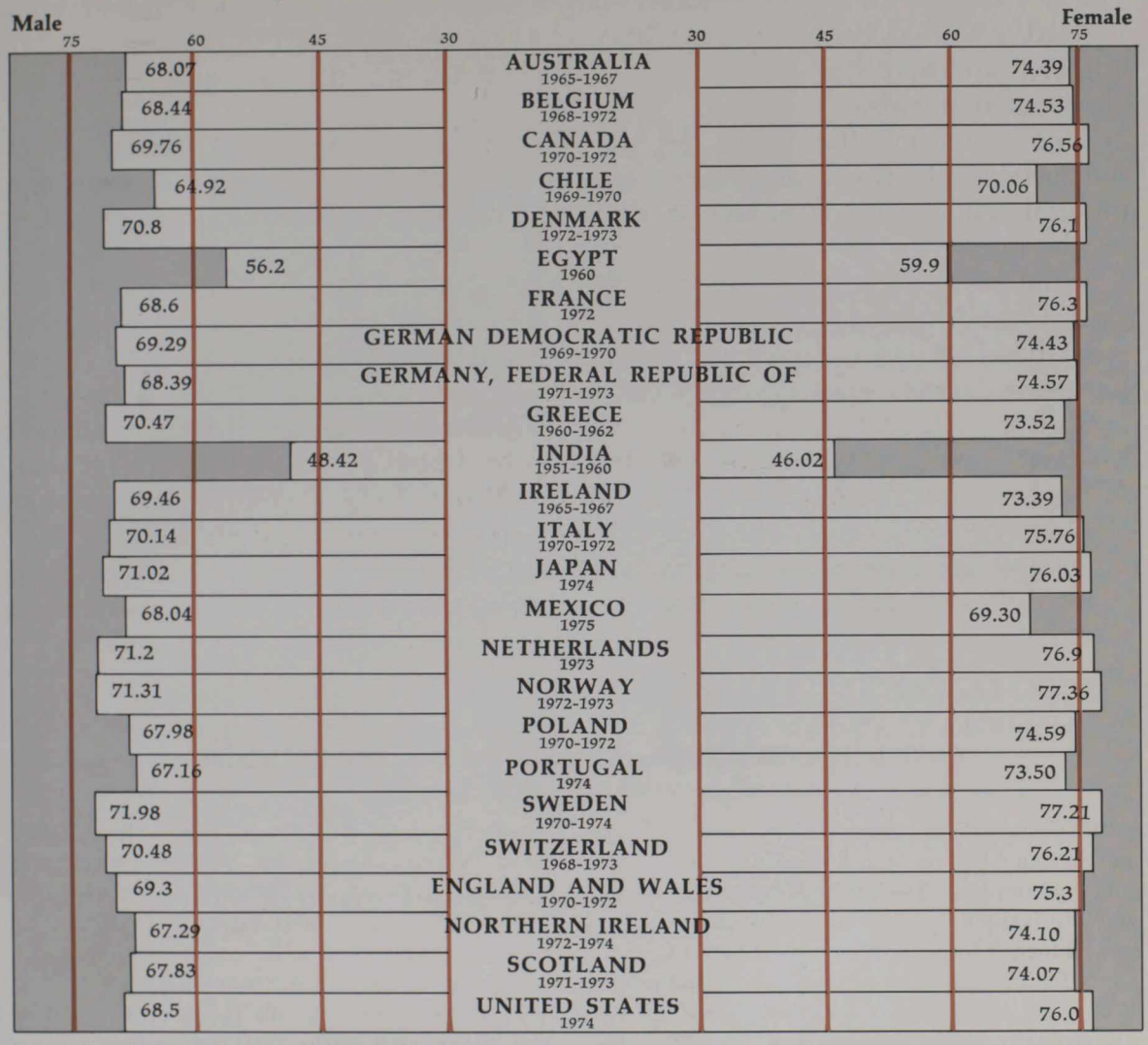
The Montreal Neurological Institute's Circular Position Emission Tomographer (cover) can measure the quantity and topography of the flow of blood in any cross-section of a person's head without having to be rotated. Developed in cooperation with Brookhaven National Laboratory in the US, it uses inhaled Krypton-77 to locate cerebrovascular disease, arteriovenous malformations and brain tumors. The diagram (left) shows the region examined. The images (below) show blood flow before (left) and after microvascular surgery between a scalp artery and an intracranial artery.







Expectations of Life at Age One for Selected Countries



Source: United Nations *Demographic Yearbook 1975*

of medical practitioners and certain surgical-dental procedures performed in hospital. In April 1977 the federal government began to contribute to extended-care services, such as the costs of intermediate nursing-home, adult-residential, home and ambulatory health care services. Most provinces provide benefits beyond those covered by the basic federal program. (For details see the chart on page seven.)

In the first phases of the program, the federal government's financial contribution was based on a formula which gave high-spending provinces somewhat less than half their health costs, and low-spending ones slightly more. Under this system the cost of poor planning by one province was to a great degree shared by all, giving provinces little incentive to improve. Each year the costs went up. In fiscal 1975/76 the federal share rose 20.3 per cent, and in 1976/77 it went up another 14.4 per cent. To some degree this reflected flaws in the system. In most provinces, home-care patients and those in nursing homes had to pay some of the cost, while those in hospitals did not, and doctors were inclined to hospitalize as many as possible.

After extended federal-provincial negotiations, new arrangements were made last year. The federal government lowered its taxes to enable the provinces to raise theirs by an equal amount. It will also adjust its cash payments over a five-year period so that each province will receive an equal per capita grant. These grants will be increased as the GNP grows. The federal government also agreed to make additional per capita contributions toward the new extended-care programs. A province's own level of health expenditure no longer determines the federal contribution, and provinces with above average medical costs must raise taxes or their health premiums.

Each province chooses its own financing methods. Most use general revenues. Ontario and Alberta charge participants monthly premiums covering both hospital costs and medicare. Quebec supports medicare through a provincial income surtax and a payroll tax paid by employers.

Hospitable Hospitals

Canada has 1,235 general and specialized hospitals, a few very large, most rather small. It has 6.7 beds for every 1,000 persons, which is more than either the United States or Great Britain. It may be more than Canada needs.

If everyone were patient and each person had a medical crisis on schedule, it would be possible for all Canadians to be hospitalized, at least overnight, in the course of a single year. In fact a great many are: 165 persons per 1,000 are admitted as a whole.

The average daily cost per bed has gone from $40 in 1967 to $112 in 1975, and authorities have suggested that the nation and the nation's health would be better served if some hospital patients were placed in nursing homes, at about $45 a day, or treated by visiting nurses at home, at about $20 a day. A recent survey in metropolitan Toronto showed that about 10 per cent of the patients under treatment and about 30 per cent of the chronically ill or convalescent could be transferred without harm to less expensive facilities.

In 1975 Ontario began a major hospital-cost containment program to close marginal hospitals and reduce beds. Quebec cut the budgets of teaching hospitals, and Alberta put a 7 per cent annual growth limit on its health budget. The prospect is, however, that the number of beds will continue to grow since the average age of the population is going up. The 2 million Canadians now over 65 (8.6 per cent of the population) use about a third of the beds. By 1996 there will be an estimated 3.2 million persons in this age group.

A trauma resuscitation team at the University of Toronto's Sunnybrook Medical Centre.

How Many Doctors are Enough?

In 1976 Canada had 40,130 active physicians, about 173 for every 100,000 people. Some people think that is too many.

It had 127 per 100,000 in 1964 when the Royal Commission on Health Services recommended that six or seven new teaching facilities be built. If current trends continue, Canada will have 210 physicians for every 100,000 people by 1986. There is debate on how many would be ideal. (In 1933 the US Commission on the Costs of Medical Care recommended 135 per 100,000 for "adequate medical care.") Experience in western developed nations shows no absolute correlation between the doctor-patient ratio and such things as life expectancy. West Germany, for example, which has a ratio of 194 per 100,000 has a lower life expectancy for both men and women than Canada.

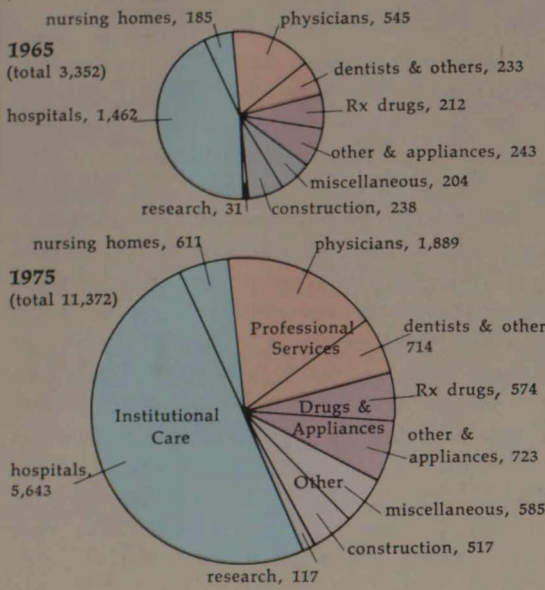
At Brocher, Manitoba, 750 miles northwest of Winnipeg, nurse Christine Johnson uses a skidoo to make house calls.

Some authorities suspect that an increase in the ratio of physicians to population leads almost invariably to increases in general health costs. Ontario Health Minister Frank Miller has divided the total cost of insured health care in the province by the number of doctors and concluded that each doctor generates $200,000 to $250,000 in annual expenditures. Doctors decide whether a patient should go to the hospital, how long he should stay and what diagnostic tests should be used.

It is noteworthy that as the supply of physicians in Canada has increased, their individual incomes have continued to grow, and they remain the highest-paid professionals. Their incomes have not, however, grown as rapidly in recent years as the incomes of lawyers, engineers, architects and dentists.

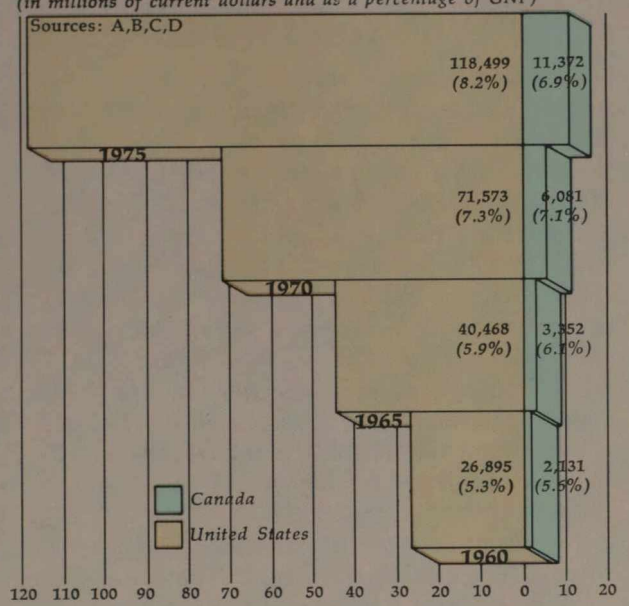
Health Expenditures by Category

(in millions of current dollars) Sources: A,B

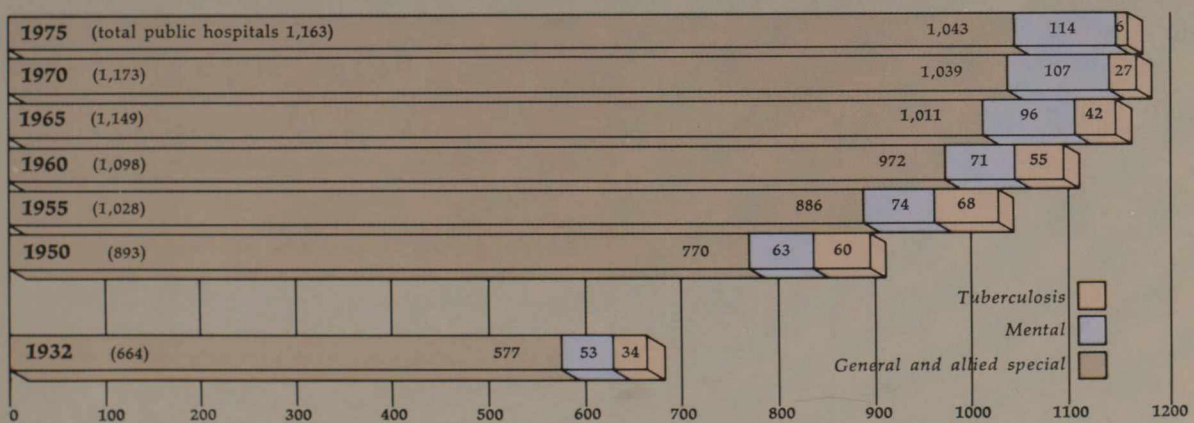


Health Expenditures

(in millions of current dollars and as a percentage of GNP)

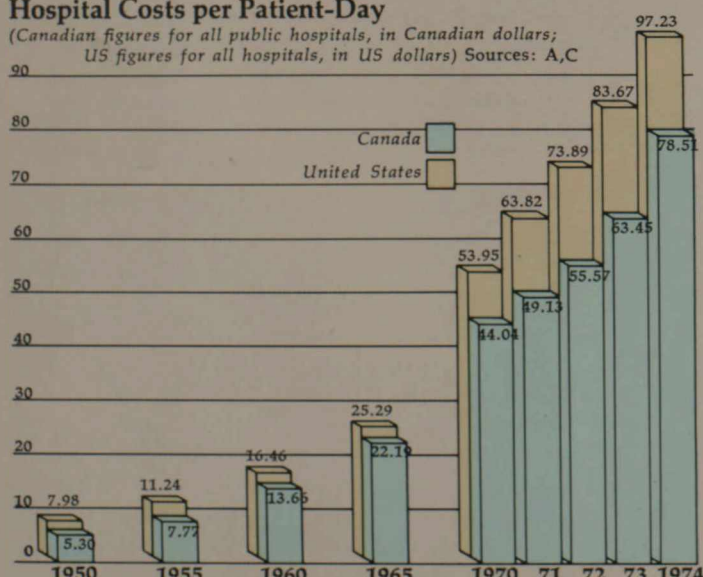


Growth in Canada's Public Hospital System Source: A



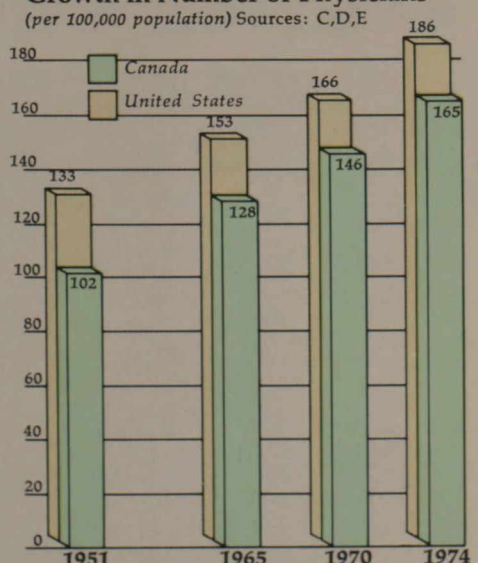
Hospital Costs per Patient-Day

(Canadian figures for all public hospitals, in Canadian dollars; US figures for all hospitals, in US dollars) Sources: A,C



Growth in Number of Physicians

(per 100,000 population) Sources: C,D,E



Sources: **A.** Statistics Canada; **B.** Health Expenditures and Statistics Division, Health Programs Branch, Department of National Health and Welfare; **C.** *Statistical Abstracts of the United States, 1976*; **D.** *Historical Statistics of the United States, Colonial Times to 1970*; **E.** Health and Welfare Canada (published and unpublished data).

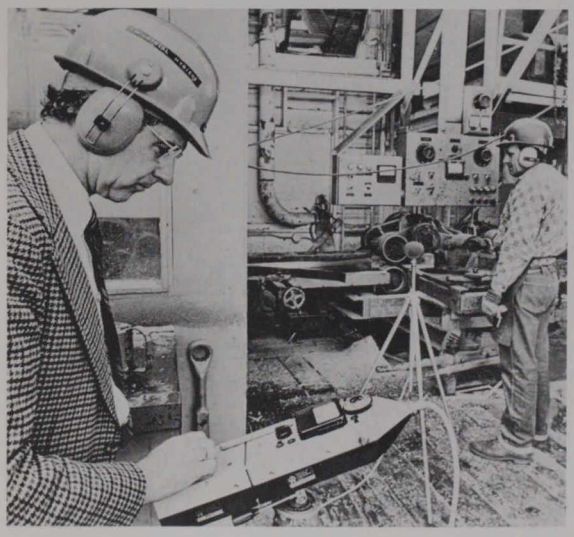
Will You Live Longer If You Move to Canada?

Maybe yes, maybe no. Generally speaking you will live as long in one place as in the other. Statistics which rank countries in terms of health achievements are misleading; the range is slight, and there are no average people anywhere.

Statistically, the average Canadian lives a bit longer than the average American, but that does not mean that, for example, a middle-class insurance executive in Montreal lives longer than a middle-class insurance executive in Hartford, Connecticut. There are probably only two areas of significant difference between health care in the two countries: the breadth of coverage and the direct cost to individuals.

Just about everyone in Canada has easy access to comprehensive health care. There are full facilities in remote rural areas, and any out-of-pocket cost to the patient is minimal. Doctors treating low-income patients receive the same fees as those treating the most wealthy.

The United States has about ten times as many people as Canada and greater concentrations of low-income people living in cities and others living in both urban and remote rural areas that do not have effective medical care available. Americans spend more of their personal incomes on health care than Canadians (10.4 per cent to 8.6 per cent), but the US combination of government support and private insurance provides a narrower coverage in which individuals can suffer great financial misfortunes. (Some 50,000 Americans go bankrupt each year as a result of heavy medical expenses.)



Top left: W. M. Crawford, an industrial hygienist for British Columbia's Workers' Compensation Board, measures noise at a mill. The planer enclosure behind him has reduced levels by 60 per cent.

Bottom left: In March 1977, the government announced that experiments conducted in the toxicology research division of Canada's health department had established a link between saccharin and cancer. As of 1 February 1978, saccharin and foods and beverages containing saccharin could no longer be purchased in Canadian grocery stores. However saccharin alone or in combination with cyclamate remains available in pharmacies as a non-prescription drug.

Right: Darlene and Kari, who have cerebral palsy, use Blissymbols to communicate. Charles K. Bliss developed the symbols as a pictographic international language. (△ represents safety; 人 and 人 represent man and woman.) Blissymbols were first introduced as a language for non-speaking children at the Ontario Crippled Children's Centre in 1971.

Medical Care Insurance

Provinces with extra benefits	Services covered (all or in part) in addition to federal cost-sharing programs	Premium per month	Authorized charges to the patient
Newfoundland	Dental for children under 11.	None	None
Nova Scotia	Optometric analysis; dental for children born after 1 January 1967; Pharmacare for persons 65 and over.	None	None
New Brunswick	Prescription drugs for persons 65 and over and those with cystic fibrosis.	None	None
Quebec	Optometry, oral surgery in a university establishment. Drugs and related professional services for recipients of various forms of social aid and certain persons 60 and over. Dental for children under 12. Prostheses, orthopaedic appliances and other specified appliances.	None	$7/day in extended-care hospitals or units. (Children under 18 are exempt.) Low income individuals may be totally or partially exempt.
Ontario	Optometry, chiropractic, podiatry, osteopathy. Out-of-hospital physiotherapy and ambulance service. Home Care Program Services; home renal dialysis and home hyperalimentation equipment, supplies and medication. Drug Benefit Plan for persons 65 and over, disabled persons and persons with limited incomes.	Single, $16.00; family, $32.00.	None
Manitoba	Certain optometric and chiropractic services, prosthetic devices and certain limb and spinal orthotic devices and services. Contact lens following congenital cataract surgery. Artificial eyes. Prescription drugs. Ante-natal Rh immune globulin.	None	None
Saskatchewan	Optometry, chiropractic, dentist-referred care of cleft palate and orthodontic oral surgery. With certain exceptions, subsidized hearing aids; prosthetic and orthotic devices; wheelchairs, walkers, commodes and other aids to daily living; dental for children; prescription drugs.	None	None
Alberta	Services by dental surgeons, optometry, chiropractic and podiatric services and appliances. Optional provision of Alberta Blue Cross Plan membership at reduced rates to residents who are not members of a group. For persons 65 and over, much of the cost of eyeglasses, dentures and dental care and all of the cost of hearing aids and medical and surgical equipment, supplies and appliances.	Single, $7.05; family, $14.10.	$5 for the first day (excluding persons 65 and over, newborns, inter-hospital transfers, cancer clinic referrals, polio patients and social assistance recipients). $5/day after 120 days in auxiliary hospitals.
British Columbia	Optometry, chiropractic, naturopathy, physiotherapy, podiatry, orthoptic treatment and services of Red Cross nurses, special nurses and V.O.N.; orthodontic services for hare lip and/or cleft palate. Prescription drugs for persons 65 and over and a universal Pharmacare plan to prevent financial hardship due to prescription drug expenses.	Single, $7.50; two persons, $15.00; family, $18.75.	$4/day in general hospitals (excluding newborns). $4/day, adults, and $1/day, children under 19, in extended-care hospitals. $2/emergency or minor surgical out-patient treatment, $2 for day-care surgical services. $1 for out-patient cancer therapy; psychiatric day or night care and out-patient services; out-patient physiotherapy, diabetic day care and day care rehabilitation services; each dietetic counselling session; renal dialysis. $6.50/day for extended in-patient care.
Yukon Territory	None	Single, $4.75; couple, $9.25; family, $11.00 (except age 65 and over). Coverage depends on residency not premium payment.	None

Your Lifestyle Profile

To encourage people to take better care of themselves, the Department of National Health and Welfare includes health information with monthly old-age security and family allowance checks. About 11 million copies of the Lifestyle Profile reached some 17 million Canadians.
Circle or check the coloured signs that apply to you (+ indicates more than; — indicates less than).

Exercise

Amount of physical effort expended during the workday: mostly

Heavy physical, walking, housework — *Desk work*

Participation in physical activities—(skiing, golf, swimming, etc.) (lawn mowing, gardening, etc.)?

Daily — *Weekly* — *Seldom*

Participation in a vigorous exercise program?

3 times weekly — *Weekly* — *Seldom*

Average miles walked or jogged per day?

1+ — *—1* — *None*

Flights of stairs climbed per day?

10+ — *—10*

Nutrition

Are you overweight?

No — *5 to 19 lbs.* — *20+ lbs.*

Do you eat a wide variety of foods—something from each of the following five food groups: (1) meat, fish, poultry, dried legumes, eggs or nuts; (2) milk or milk products; (3) bread or cereals; (4) fruits; (5) vegetables?

Each day — *3 times weekly*

Alcohol

Average no. of bottles (12 oz.) of beer per week?

0 to 7 — *8 to 15* — *16+*

Average no. hard liquor (1½ oz.) drinks per week?

0 to 7 — *8 to 15* — *16+*

Average no. of glasses (5 oz.) of wine or cider per week?

0 to 7 — *8 to 15* — *16+*

Total no. of drinks per week, including beer, liquor, and wine?

0 to 7 — *8 to 15* — *16+*

Drugs

Do you take drugs illegally?

No — *Yes*

Do you consume alcoholic beverages together with certain drugs (tranquilizers, barbiturates, antihistamines or illegal drugs)?

No — *Yes*

Do you use pain-killers improperly or excessively?

No — *Yes*

Tobacco

Cigarettes smoked per day?

None — *—10* — *10+*

Cigars smoked per day?

None — *—5* — *5+*

Pipe tobacco pouches per week?

None — *—2* — *2+*

Personal Health

Do you experience periods of depression?

Seldom — *Occasionally* — *Frequently*

Does anxiety interfere with your daily activities?

No — *Occasionally* — *Frequently*

Do you get enough satisfying sleep?

Yes — *No*

Are you aware of the causes and dangers of VD?

Yes — *No*

Breast self-examination? (If not applicable, do not score.)

Monthly — *Occasionally*

Road and Water Safety

Mileage per year as driver or passenger?

—10,000 — *10,000+*

Do you often exceed the speed limit?

No — *by 10 mph+* — *by 20 mph+*

Do you wear a seatbelt?

Always — *Occasionally* — *Never*

Do you drive a motorcycle, moped or snowmobile?

No — *Yes*

If yes to the above, do you always wear a regulation safety helmet?

Yes — *No*

Do you ever drive under the influence of alcohol?

Never — *Occasionally*

Do you ever drive when your ability may be affected by drugs?

Never — *Occasionally*

Are you aware of water safety rules?

Yes — *No*

If you participate in water sports or boating, do you wear a life jacket? (If not applicable, do not score.)

Yes — *No*

General

Average time watching TV per day (in hours)?

0 to 1 — *1 to 4* — *4+*

Are you familiar with first-aid procedures?

Yes — *No*

Do you ever smoke in bed?

No — *Occasionally* — *Yes*

Do you always make use of clothing and equipment provided for your safety at work? (If not applicable, do not score.)

Yes — *Occasionally* — *No*

Scoring: 1 point per ●; 3 per ▼; 5 per ⬢ 34-45 Excellent. 46-55 Good. 56-65 Risky. 66- Hazardous.

A Long Life Is Not Necessarily a Healthy One

Canada's former health minister, Marc Lalonde, has pointed out that it is no longer possible for countries with well developed medical care systems to extend life spans simply by spending more on hospitals and patients. Between 1931 and 1961, when tuberculosis, polio, diphtheria, scarlet fever and typhoid were brought under control, the average Canadian's life expectancy increased by nearly eight years. Since 1961, however, it has increased only for children under one year and for women over 65. In 1974, some 59,000 Canadians died from heart disease; 34,000 from cancer; 16,000 from strokes; 13,000 from accidents; and 11,000 from respiratory disease.

A team led by Z. I. Sabry, MD, director of Nutrition Canada, spent the first four years of this decade examining the diet and health of 19,000 Canadians. It concluded that Canadians are ill-nourished, though not under-nourished, a condition they share with citizens of the United States and other highly industrialized countries. Their survey found that:

* More than half of all Canadians are overweight.
* One out of six has high cholesterol.
* One out of 16 has an enlarged thyroid. (Most of these live in the Prairie Provinces.)
* As many as three out of four Indian children have iron deficiencies.
* Iron deficiencies, which might be expected among women of child-bearing age, are found among all age groups in both sexes.
* Vitamin C deficiency is prevalent among the Inuit (Eskimos).
* Moderate thiamin deficiency is common among adults, and many also have a deficiency of vitamin C.
* One of every 10 pregnant women has a vitamin A deficiency.
* The majority of Canadians, who do not drink enough milk, have some vitamin D and calcium deficiencies.

The survey also found many fat people who ate no more than thin people. Some ate as little as 1,600 calories a day but exercised so little that they gained as much as 52 pounds in a year.

A Problem of Ethics

Lise Fortier, MD, past president of the Society of Obstetricians and Gynecologists of Canada, has been a leading advocate of birth control in Quebec. She is also an associate professor of gynecology at the University of Montreal and senior assistant in the department of obstetrics and gynecology at Montreal's Notre Dame Hospital. In an interview with Ben Rose in the 27 December 1976 issue of *Maclean's Magazine*, she discussed, among other things, some pitfalls of modern medical technology.

"People survive who before would live only a few days or a few months. They grow up and they become able to reproduce themselves and they can give those defects to their own children. An example of this is pyloric stenosis. In a child with this defect, the muscle that closes the opening of the stomach is hypertrophic [excessively large] so that the stomach is completely closed. When the child drinks, the stomach doesn't empty. The child starts vomiting and dies very soon. We found that it is very easy to treat—you just cut the muscle, that's all. . . . But what we didn't know until recently is that it is an inherited trait so that this will be increasing by 12% every generation. You can foresee a time when almost every baby will be born with pyloric stenosis. Naturally, in a country like ours, we can say, 'That's nothing, we can look after this, it's such a small operation,' but I don't think this could apply to the whole world. . . . The worst scandal in my opinion is how we treat neurological defects like spina bifida. These children are born paralyzed and they are incontinent, but if you operated on them and you put a kind of a valve in their brain instead of dying they keep on living. Some of them are almost completely cured. But most of them will end up being able of mind, but completely paralyzed in their lower limbs, and incontinent. . . . Why are we doing this? Why not let these children die instead of saving them for this kind of life? . . . I agree that people deserve a chance to live, but living for living is not everything. You must consider the quality of life that we will give them. Children have the right to live in a normal way, in a happy way and a healthy way, not as handicapped as this."

PHOTO: MONTREAL NEUROLOGICAL INSTITUTE

The Complete Remembrance of Things Past

The Montreal Neurological Institute has had three directors: Dr. Penfield (right), Dr. William Feindel (centre) and Dr. Theodore Rasmussen.

Everything you ever did, everything you ever saw, everything you ever heard is locked in your brain for as long as you live. It can be totally recalled. If your skull were opened and a cell touched with an electrode, you might relive the past—as a child watching a train roar into a station, as a 17-year-old under a soft spring moon or as a middle-aged guest at a dinner party.

Wilder Penfield, MD, the founder of the Montreal Neurological Institute, discovered this phenomenon while cutting brain cells to cure a patient of epilepsy. Dr. Penfield was born in Spokane, Washington, in 1891. He went east to school, was a Rhodes scholar and became in time a Canadian citizen, one of the great neurological pioneers, a novelist and a strikingly independent thinker. He died on 5 April 1976, a few days after he was interviewed by Casey Baldwin for *Maclean's Magazine* (19 April 1976). In the excerpts printed below he tells, among other things, how he discovered the hiding place of memory:

"Well, I was operating in a little side room over in the Royal Victoria Hospital, and I had a woman that I was very much puzzled about, a woman who had epilepsy. I knew the attacks of epilepsy were coming from some kind of electrical discharge in her temporal lobe, and so I tried to produce one of her usual attacks, and she said suddenly: 'I feel just the way I did when my daughter was born.' I knew she was sincere—she wouldn't try to pull my leg—but I didn't understand. I didn't even make a note of it. But that was the first time. The next time was about three years later: there was a girl who, in her epileptic attacks, used to have a regular little dream. So I stimulated, and it became perfectly obvious that this wasn't a dream—this was a memory. Her brothers were involved in it, and they authenticated it. And eventually we found that by electrical stimulation you can set off the epileptic phenomenon that is at the basis of each seizure."

[ON THE ABILITY OF CHILDREN, AND THE DISABILITY OF ADULTS, TO LEARN FOREIGN LANGUAGES]

"We needed a maid and a friend told me about this woman called Fräulein Bergman. She came and she couldn't speak a word of English, thank heavens: our four children, ages one to 10, quickly became fluent in German. Mrs. Penfield and I learned it the hard way, and we always spoke it badly. The evidence is clear that there is a mechanism within the brain that makes learning of language easy. But a change takes place about the age of eight, about the time teachers start to teach a second language, so they are defeated before they begin. The brain of the young child sets up two frames (or three, if they are hearing French, German and English) within the brain, and when they are hearing French they are building into the French frame. And it stays there, it's never lost. . . . If you can just give the child a chance to start to make a frame for another language, you have altered his whole mechanism within the brain."

[ON THE DISTINCTION BETWEEN THE MIND AND THE BRAIN]

"All we are waiting for now is a physicist who will discover and describe for us the electrical energy that we know is in the brain, that runs the computer and sends billions of messages going back and forth in the computer all the time; tell us how it works. When the brain wakes up, the mind wakes up and immediately takes charge of certain areas. Therefore there must be a form of energy not yet discovered by the physicist, and I predict that when we get that, then we'll understand how the mind receives its energy. Because it has energy. It has initiative. It can do things with the brain. It can open the files of memory, which are in the brain, just as they are in any computer. The computer is helpless, perfectly helpless, until an outside, conscious mind comes to it and programs it; then it becomes a functional thing."

Ten years ago, over 60 per cent of the doctors in Quebec and half of those in the rest of Canada were specialists. After the enactment of medicare, medical students began to show a greater interest in general practice. Today 70 to 80 per cent of the graduates are becoming family or general practitioners.

McMaster's Degree

McMaster University's medical school has no exams, no marks and no admission tests. Candidates need only have a B average in at least three years of any university-level program. It is not, however, an easy place to get into. Applicants must also send a detailed autobiographical letter, and those who pass are then interviewed for an hour simultaneously by a physician, a community layman, a medical student and an administrator. Half of the school's three hundred students are women.

The school's goal is to develop a new kind of physician who can work independently to solve health problems, recognize social issues and relate them to the patients. The graduates are intended to be primary care physicians — the first ones patients see — expert in family practice, internal medicine, obstetrics and gynecology. They must also be able to integrate social and psychological factors in diagnosis and treatment. In training groups, three to five students consider a case with complex medical and social problems, and each researches one aspect. They meet and discuss their findings twice a week.

Insulin

In the summer of 1921, Frederick Banting and Charles Best, under the direction of J. J. R. Macleod, MD, worked on a six-week deadline in a borrowed lab at the University of Toronto searching for a substance to control diabetes. They were certain that some natural substance prevented most people from getting the disease. Banting sold his car to buy experimental dogs, and the two scientists ate and slept on the premises. They believed the hypothetical secretion was in the pancreas, since some thirty-two years earlier another researcher, Oscar Minkowski, of Strasbourg, France, had discovered that dogs died of diabetes when their pancreases were removed. By the end of the summer Banting and Best had extracted insulin. Within six months it had been purified and used to save the life of a 14-year-old boy. In 1923 Macleod and Banting were awarded the Nobel Prize for Medicine.

Experimenting with this dog, Marjorie, Frederick Banting (right) and Charles Best demonstrated that insulin could control diabetes.

PHOTO: HEALTH AND WELFARE CANADA

La Dolce Vita

When Vilhjalmur Stefansson, the Arctic explorer, was in his seventies, he switched to an Eskimo diet — two pounds of lean red meat and a half-pound of suet every day. He wrote in 1958, "I found my enjoyment of fat was unaltered. I achieved an improvement in health, and I effortlessly took off ten pounds my doctor asked me to remove. My supposedly age-stiffened joints grew as limber as they were ten years ago and I am now past 77. My wife thinks the chief improvement is in my disposition."

The Inuit or Eskimos who have adopted the white man's diet have fared less well. Otto Schaefer, MD, head of the Arctic Medical Research Unit in Edmonton, wrote in 1971 that the women "chew candy instead of animal skins, and what used to be an invaluable source of minerals in their diets, the chewing of raw meat and bones, has become impossible due to rapidly rotting teeth: Instead of their diet being protein, at least half of the calories today are from carbohydrates, factory processed foods, bought at a store. Eskimos are becoming the victims of civilization diseases such as obesity, gall bladder disease and acne vulgaris. Eskimo teenagers with acne . . . are a sad new phenomenon."

Perhaps the most striking change in the health patterns of the Inuit has been the rise in diabetes. Thirty years ago some authorities thought that the Inuit were immune to diabetes. In 1956 Thora McIlroy Mills began a systematic survey and located three adult diabetics in the Nome area and five in Greenland. All had been living for years in areas where white man's food was plentiful. In time Ms. Mills found two cases, one at Coppermine and another at Bathurst Inlet, where the victims, both women, had not been living on European foods. Since then, as the prevalence of candy, soft drinks and other sweetened foods has been extended, the number of cases in the western Arctic has doubled, and the number in Greenland and Alaska has trebled.

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