

# Utilization and Cost of General Hospital Care: Canada and the United States, 1948-66

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RAPIDLY RISING per diem costs of general hospital care have been a source of serious concern in the United States in recent years. Increasing rates of utilization of general hospitals have also been a matter of concern. Both together have resulted in a growth in the Nation's annual per capita expenditures for general hospital care by an average of almost 10 percent a year during the period 1962-66.

In this situation, it is useful to look at the experience of other countries. Comparison with Canada is particularly fruitful. Though Canada is much like the United States in its general economic system, organization of its hospitals, and the system of medical practice, it has a markedly different system of financing general hospital care.

In the United States, private health insurance has become the primary means through which the population pays for general hospital care. This type of insurance met 70 percent of all private consumer expenditures for general hospital care in 1966. Much of the hospital care for those receiving public aid is, of course, financed by tax funds, and since July 1966 a very large part of all hospital care for persons aged 65 and over has been paid for through the Federal Government's program of health insurance for the aged (Medicare). Although health insurance and government programs have made hospital care in this country far more widely available than it would be in their absence, nevertheless most of these programs pay only part of the hospital bill or provide care for only a limited number of days.

Canada on the other hand has had since mid-1958 a program of Federal aid to the Provinces for hospital insurance systems that make complete care in general hospitals available to all residents on uniform terms and conditions.

On July 1, 1958, five Provinces began programs or had programs in operation; four additional

Provinces began their programs in 1959. Quebec—the last Province to initiate the program—started operations on January 1, 1961. Since the beginning of 1961 therefore, Canada has had programs in all its Provinces under which, to all intents and purposes, there is universal entitlement to general hospital care. That is, under these programs there are no financial barriers to the individual's obtaining all the hospital care he may need, except where inability to pay or reluctance to incur doctors' bills may be a deterrent.

To obtain Federal aid a Province must have a plan under which complete inpatient care in standard ward accommodations, without limit on duration, is made available in general hospitals to all residents "upon uniform terms and conditions." Seven Provinces finance their share of the cost of their programs through general taxes and make care available to all residents; the other three Provinces finance their share of costs partly through general revenues and partly through premiums or hospitalization taxes, with care available under the programs only to those who have paid the premiums or for whom premiums have been paid. Virtually all of the population is covered in nine Provinces and about 97 percent of the population in the other Province. In effect, hospital utilization under this program is synonymous with the use of general hospitals by the total population.<sup>1</sup>

Hospital insurance in the two countries is also dissimilar in the measures to control hospital operating expenses. In the United States, neither Blue Cross nor insurance companies, which are the major third-party payers for hospital care, exercise appreciable control over hospital costs.

Most Blue Cross plans pay hospitals on the basis of their average per diem cost of operation. These plans obtain from participating hospitals audited statements of operating expense, but there

<sup>1</sup> The Yukon and Northwest Territories, which are not Provinces, began their programs in 1960. Data for these areas are taken into account when discussing Canada as a whole.

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is no substantial effort to scrutinize the costs of each hospital and refuse to pay per diem costs that seem excessive in comparison with those of other hospitals. Other plans pay hospitals on the basis of charges but with very little control over those charges. Insurance companies, to all practical purposes, provide indemnity allowances against hospital charges incurred and make no attempt to control hospital costs or charges.

Under the Medicare program, hospitals are paid the reasonable costs of providing hospital care for the aged, and each hospital is paid its reasonable cost of providing care to the aged patients, based on an audited annual financial statement.

The prevailing methods of third-party payments for hospital care in the United States have led some to suggest that they may encourage inflation of hospital operating expenses, since hospitals are reimbursed for their costs, whatever they may be. Some critics state that, in effect, hospitals are paid on a cost-plus basis without the imposition of any corresponding management discipline. The present situation, it has been said, may not give hospitals incentives to control costs or to seek out economies that might be achieved through cooperating in the operation of common services or through avoiding duplication of facilities and services.

In recognition of the problem, the Social Security Amendments of 1967 authorized the Secretary of Health, Education, and Welfare to experiment with various methods of reimbursement of institutions and payments to physicians providing services under the health programs of the Social Security Act. The intent of this legislation was to create for these programs—health insurance for the aged, medical assistance (Medicaid), and maternal and child health programs—additional incentives to efficiency and economy, while supporting high-quality services.

In Canada, on the other hand, all the Provinces under their programs of hospital insurance finance hospitals on what may be called a "budget review" basis. Each hospital submits a detailed budget before the beginning of a given year. This budget contains data on volume of services (admissions, days of service, etc.) provided in the preceding completed year, an estimate of volume of service to be provided in the current year, and

an estimate of service to be provided in the year being budgeted for. Data on personnel, wage and salary rates, and other expenses in the preceding and current years are set forth, together with an estimate of funds required to provide the estimated volume of service in the year ahead.

These budgets are reviewed by persons intimately familiar with the operation of the particular hospital, as well as other hospitals; comparisons are made with comparable institutions; and a decision is made as to the funds required by the institution to provide the volume and standard of service planned. The Provincial authorities also review all proposed hospital construction projects and all hospital purchases of substantial items of equipment (new X-ray machines, cobalt therapy equipment, etc.) with a view to approving only projects and equipment needed, taking account of the facilities and services offered by other hospitals. These procedures are designed to restrict the operating costs of hospitals to those required for efficient operation.

The differences between Canada and the United States in hospital insurance and hospital care arrangements give pertinency to a comparative review of the trends in hospital utilization and costs. The available data do not permit comparison of identical types of hospitals, but the differences are not important. The data for the United States relate, unless otherwise indicated, to all non-Federal general (and allied special) short-term and long-term<sup>2</sup> hospitals, as shown in the Annual Guide Issues of the magazine *Hospitals*.

The data for Canada relate, unless otherwise indicated, to what the Canadians call "public" general (and allied special) hospitals—that is, hospitals that serve the general public, are not operated for profit, and accept patients regardless of ability to pay. (These hospitals are increasingly being referred to as "budget review" hospitals since under hospital insurance they receive the funds required for operation on the basis of a budget review.) Such hospitals include those operated by voluntary nonprofit organizations and by local and Provincial governments; they exclude Federal hospitals and proprietary hospitals.

<sup>2</sup> Data for short-term and long-term general hospitals must be combined to be comparable with the Canadian statistics, which make no such distinction.

## HOSPITAL UTILIZATION

### Beds

Canada has more general hospital beds in relation to its population than the United States and higher hospital utilization rates.<sup>3</sup> In 1966, Canada had 6.1 beds (rated capacity) in "public" general hospitals per 1,000 civilian population. The United States had 4.3 beds (rated capacity) in non-Federal general hospitals per 1,000 civilian population in 1966. With proprietary and Federal hospitals included, Canada had 6.9 beds (beds set up) in general hospitals per 1,000 total population in 1965. With Federal hospitals included, the United States in 1966 had 4.9 beds (rated capacity) in all general hospitals per 1,000 total population. (Federal general hospitals are considerably more important in the United States than in Canada chiefly because of our large system of hospitals for veterans, which has no counterpart in Canada.) Table 1 shows that in the period

<sup>3</sup> For sources of the data see tables 1 and 4.

1948-66 the number of general hospital beds in relation to population rose considerably faster in Canada than in the United States.

### Admissions

The hospital admission rates are higher in Canada than in the United States. The rate for "public" general hospitals in Canada in 1966 was 152 per 1,000 population, compared with 140 admissions per 1,000 population in non-Federal general hospitals in this country. In both countries admission rates have increased substantially since 1948—from 111 to 152 per 1,000 population in Canada and from 105 to 140 in the United States. Until 1958, the rate of increase was faster in Canada than in the United States; from 1958 to 1964 the increase in both countries was about the same. Since 1964, admission rates in Canada have shown a tendency to decline, while those in the United States have continued to rise. During the whole period 1948-66, admission rates in

TABLE 1.—General hospital care, Canada and the United States, 1948-66

Year	Canada				United States				
	Rates per 1,000 population			Average length of stay (days per admission)	Rates per 1,000 population <sup>2</sup>			Average length of stay (days per admission)	
	Beds <sup>1</sup>	Admissions	Days of care		Beds <sup>1</sup>	Admissions	Days of care		
"Public" general hospitals								Non-Federal general <sup>3</sup> hospitals	
1948	4.7	111	1,318	11.9	3.8	105	1,084	10.3	
1950	4.8	119	1,411	11.9	3.8	112	1,050	9.4	
1952	5.0	128	1,481	11.6	3.9	115	1,054	9.2	
1954	5.3	132	1,533	11.6	3.9	117	1,042	8.9	
1956	5.5	140	1,568	11.2	4.0	123	1,077	8.8	
1958	5.6	142	1,578	11.1	4.0	127	1,103	8.7	
1959	5.7	143	1,624	11.4	3.9	125	1,088	8.7	
1960	5.5	145	1,656	11.4	4.0	130	1,096	8.4	
1961	5.5	149	1,678	11.2	4.0	130	1,106	8.5	
1962	5.8	149	1,704	11.4	4.1	133	1,134	8.5	
1963	5.9	152	1,731	11.4	4.1	136	1,158	8.5	
1964	6.0	153	1,761	11.5	4.2	138	1,174	8.5	
1965	6.0	153	1,777	11.6	4.2	139	1,177	8.5	
1966	6.1	152	1,794	11.8	4.3	140	1,215	8.7	
All general hospitals								All general hospitals	
1958	6.7	151	1,915	12.7	4.6	133	1,267	9.5	
1960	6.4	156	1,866	12.0	4.5	136	1,266	9.3	
1962	6.7	158	1,969	12.5	4.6	140	1,294	9.3	
1964	6.9	162	2,017	12.5	4.7	145	1,327	9.2	
1965	6.9	161	2,029	12.6	4.7	145	1,329	9.1	
1966	(*)	(*)	(*)	(*)	4.9	146	1,386	9.5	

<sup>1</sup> Rated capacity, except for all general hospitals in Canada where data are for beds set up.

<sup>2</sup> Rates for non-Federal hospitals, based on Bureau of the Census estimated resident civilian population as of July 1 of each year; for all general hospitals, based on estimated total resident population, including the Armed Forces, as of July 1 of each year.

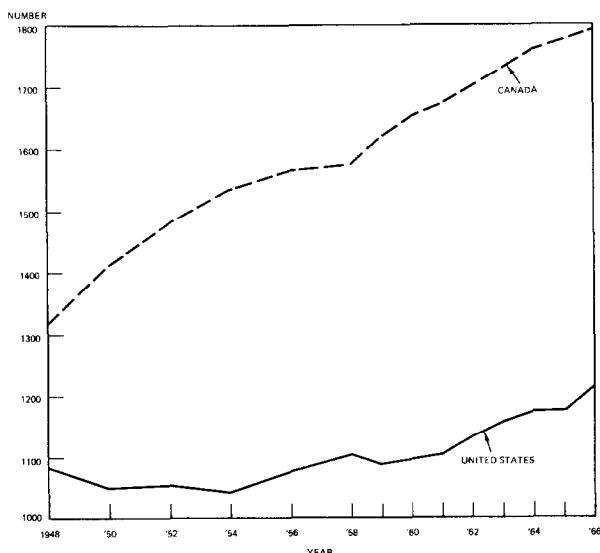
<sup>3</sup> Short-term and long-term hospitals combined.

\* Preliminary estimates.

<sup>5</sup> Not available.

Source: CANADA—data on beds for 1948-65 from *Hospital Statistics*, vol. I, various years, Dominion Bureau of Statistics. Data on admissions and days of care for 1948-62 from *Hospital Care in Canada—Trends and Developments, 1948-62*, Research and Statistics Division, Department of National Health and Welfare; for 1963-66, unpublished data from Research and Statistics Division. UNITED STATES—*Hospitals, Guide Issues*, 1963, 1966, 1967, American Hospital Association.

CHART 1.—Days of general hospital care per 1,000 population, Canada and the United States, 1948-66



creased 37 percent in Canada and 33 percent in the United States.

### Length of Stay

For the entire period under review the average length of stay in general hospitals has been consistently higher in Canada than in the United States. In 1948 it was 11.9 days in Canada, compared with 10.3 days in the United States. In 1966 it was 11.8 days in Canada and 8.7 days in the United States. In Canada the average length of stay declined from 1948 to 1958 and since then has increased. In the United States the length of stay declined through 1960, then leveled off, and increased slightly in 1966.

### Days of Service

Canada's higher admission rate coupled with its longer average length of stay produces a considerably higher number of patient days of general hospital care per 1,000 population than that in the United States—in 1966 almost 1,800 days of care per 1,000 population, compared with 1,215 days. During 1948-66, the number of days of care per 1,000 population in Canada increased from 1,318 to 1,794, or by 36 percent. During the same period the rate per 1,000 population rose 12

percent in the United States, from 1,084 per 1,000 to 1,215 (table 1 and chart 1).

For the United States, the number of days of care per 1,000 population was at approximately the same level in 1959 as it was in 1948. Since 1959 it has increased 11.7 percent. In Canada, the number of days of care per 1,000 population rose rapidly from 1948 to about 1956, then leveled off for 2 years, increased sharply in 1959 and 1960—the first 2 years of the hospital insurance program—and has continued to rise, though at a slightly lower rate. The data seem to indicate an upward jog in the volume of care in Canada with the inception of the national hospital insurance program.

The 3-percent increase in hospital utilization in the United States during 1966 (more than the average annual rise since 1959) may reflect in part increased demand as a result of the Medicare program, which began providing benefits in July 1966. The full effect of Medicare, of course, would not be seen until 1967.<sup>4</sup>

The difference in the use of hospitals in the two countries is not narrowed when the comparison is made in terms of all general hospitals—including proprietary and Federal hospitals in Canada and Federal hospitals in this country. Data for Veterans Administration hospitals for 1965 (the latest year that such figures are shown separately) show that these hospitals provided 100 days of care in general hospitals per 1,000 population—much of it for long-term patients. When Federal hospitals are included, the average length of hospital stay in the United States rises to 9.1 and 9.5 days per 1,000 in 1965 and 1966, respectively; the total number of days of care per 1,000 total population becomes 1,329 and 1,386 for these years. Inclusion of Federal and proprietary hospitals in Canada similarly raises rates of hospital use. In 1965 the average length of stay in all Canadian general hospitals was 12.6 days per 1,000 and the total number of days of care was 2,029 per 1,000 population.

<sup>4</sup> Actually, the statistics reported by hospitals to the American Hospital Association are for the year ending not later than October. The 1966 figures could therefore reflect Medicare's operation for only about 3 or 4 months. Unpublished data from the Panel Survey of the American Hospital Association indicate—for the year ended June 30, 1967—a 4.3-percent increase in the number of days of care per 1,000 population in non-Federal short-term hospitals over the number in the preceding year.

## Provincial and Regional Variations

Both countries have significant regional variations in hospital utilization. Canadian admissions in 1966 to "public" general hospitals ranged from 128 per 1,000 population in Quebec to 219 per 1,000 population in Saskatchewan. Days of care per 1,000 population ranged from 1,493 in Newfoundland to 2,295 in Saskatchewan.<sup>5</sup> In the United States, admissions per 1,000 population to non-Federal general hospitals ranged from 130 in the Middle Atlantic States to 159 in the West North Central States; days of care per 1,000 population ranged from 994 in the West South Central States to 1,450 in the New England States.

For both admissions and days of care in relation to the national figures, the regional range is much greater in Canada than in the United States. The differences among the Canadian Provinces shown in table 2 have persisted for many years and apparently are the result of many factors not easily dealt with here. In any case, the existence of universal hospital insurance for many years—in Saskatchewan, for example, which has had its program since 1947, and British Columbia, which started its program in 1949—is only one factor. (Why do people in Alberta need or use so many more days of care than the people of Nova Scotia? Supply of beds and hospital occupancy is not the answer since

<sup>5</sup> Rates in the Yukon and Northwest Territories, both of which are very sparsely populated, are excluded in this discussion. Data for these Territories are, however, included in those for Canada as a whole.

TABLE 2.—Canada: "Public" general hospital care, by province, 1966<sup>1</sup>

Province	Rates per 1,000 population			Average length of stay (days per admission)
	Beds <sup>2</sup>	Admis-sions	Days of care	
Canada.....	6.10	152	1,794	11.8
Newfoundland.....	5.32	132	1,493	11.3
Prince Edward Island.....	6.69	167	1,687	10.1
Nova Scotia.....	5.63	151	1,610	10.7
New Brunswick.....	5.78	169	1,789	10.6
Quebec.....	5.45	128	1,582	12.4
Ontario.....	6.02	147	1,882	12.8
Manitoba.....	6.23	171	1,855	10.8
Saskatchewan.....	7.60	219	2,295	10.5
Alberta.....	7.47	194	2,161	11.1
British Columbia.....	5.63	168	1,704	10.1
Yukon.....	1.73	213	1,845	8.7
Northwest Territories.....	10.28	249	2,235	9.0

<sup>1</sup> Preliminary estimates.

<sup>2</sup> Regional data are for 1965 (1966 data not available).

Source: See table 1.

the hospitals in both these Provinces have about the same rate of occupancy.)

Similarly, in the United States the regional differences in hospital utilization seem to be the result of a variety of factors. Ability to purchase care as reflected in per capita income and the prevalence of hospital insurance are only two among many factors.

## Explanation of Diverse Trends

Hospital utilization patterns in the two countries differ for many reasons. Universal entitlement of Canadian population to hospital care is but one of the factors accounting for the differences. Marked dissimilarities in hospital utilization were evident before 1948, a decade before Canada's hospital program began.

The difference in hospital utilization relates much more to length of stay than to the rate of admission. Canada's considerably greater average length of stay may be explained in part by the fact that it has considerably fewer nursing-home beds in relation to its population than the United States and that much long-term chronic care is provided in Canadian hospitals. (In the United States this type of care is rendered in nursing homes and is thus not reflected in hospital statistics.) In June 1965 the United States had 18,934 licensed nursing homes and related facilities, with a total of 759,000 beds—640,000 in facilities offering nursing care.<sup>6</sup> From these data

<sup>6</sup> U.S. Public Health Service, *Licensed Nursing Homes and Related Facilities*, January 1966.

TABLE 3.—United States: Non-Federal general hospital care,<sup>1</sup> by region, 1966

Region	Rates per 1,000 population <sup>2</sup>			Average length of stay (days per admission)
	Beds	Admis-sions	Days of care	
United States.....	4.3	140	1,215	8.7
New England.....	5.1	142	1,450	10.2
Middle Atlantic.....	4.8	130	1,418	10.9
South Atlantic.....	3.8	135	1,088	8.1
East North Central.....	4.3	141	1,258	9.0
East South Central.....	3.8	144	1,039	7.2
West North Central.....	5.2	159	1,395	8.8
West South Central.....	3.9	146	994	6.8
Mountain.....	4.1	149	1,068	7.2
Pacific.....	4.0	134	1,071	8.0

<sup>1</sup> Short-term and long-term hospitals combined.

<sup>2</sup> Based on Bureau of the Census estimated civilian population as of July 1, 1966.

Source: See table 1.

it appears that the total number of beds in nursing homes and related facilities in that year was approximately 80 percent of the total number of all general hospital beds.

The situation is in marked contrast with that of Canada, where there were 1,146 so-called related institutions in 1966, with a capacity of 57,976 beds.<sup>7</sup> The number of beds in these institutions represented about 41 percent of the total number in all general hospitals.

Since 1960 the average length of hospital stay in Canada has risen a little more than the average in the United States—a reflection, possibly, of the differences in hospital insurance in the two countries. In Canada, patients may stay in hospitals as long as they need care. In this country, where hospital insurance is not as extensive and has limits on duration of benefits, some patients may ask to be discharged because they can no longer afford the cost of hospital stay.

Other factors such as climate, geographical location, and supply of physicians may also be relevant. Canada is more rural than the United States, and some of the rural population lives at considerable distance from hospitals. In winter, in some parts of rural Canada, roads are frequently closed because of snow and travel is difficult and hazardous. The number of physicians in relationship to the population is less than the number in the United States. As a result, physicians make very few home calls, and encourage their patients to come into the hospitals and to stay until they can be safely discharged. They may take into account weather and travel conditions and the difficulties that may arise if the patient must return to the hospital after a relapse. In addition, these differences reflect differences in the opinions or habits of Canadian and United States doctors with respect to the use of general hospitals.

In Canada as in the United States, there are those who point to the relatively low hospital utilization of those served by the various group-practice prepayment plans and conclude that there is much unnecessary hospitalization in both countries.

<sup>7</sup> Dominion Bureau of Statistics, *List of Canadian Hospitals and Related Institutions and Facilities, 1966*. Related institutions include infirmaries, nursing homes, rest homes, and homes for the aged, the blind, and the senile.

The Steelworkers Group Health Plan at Sault Ste. Marie, Ontario, reports for the year ended September 1964 that its hospital days of service were 680 per 1,000 population covered, compared with 1,400 for the general population in that area and 1,850 per 1,000 population for all of Ontario.<sup>8</sup>

In the United States, the reports on hospital utilization under the Federal employees health benefits program show that the group-practice plans had a hospital utilization rate less than half of that under the Blue Cross-Blue Shield plan and under the Aetna plan.<sup>9</sup>

## HOSPITAL COSTS

### Cost Per Patient Day

In 1966 the gross operating expenses of all Canadian "public" general hospitals amounted to \$1,281 million—\$35.74 per patient day. In the United States the total operating expenses of all non-Federal general hospitals (short-term and long-term combined) amounted to \$10,073 million, or \$45.46 per patient day.

Many factors enter into this difference in per diem expense—lower wage and salary rates and cost of living in Canada, for example. No direct comparison of quality or level of care provided in hospitals of the two countries is attempted here. It is germane, however, that the average size of general hospitals in Canada (118 beds in "public" hospitals in 1965) is considerably smaller than the average size of general hospitals in the United States (155 beds in short-term nonprofit hospitals in 1966).<sup>10</sup> The U.S. average would be a little larger if one included nonprofit long-term general hospitals as well, but data for these hospitals are not available.

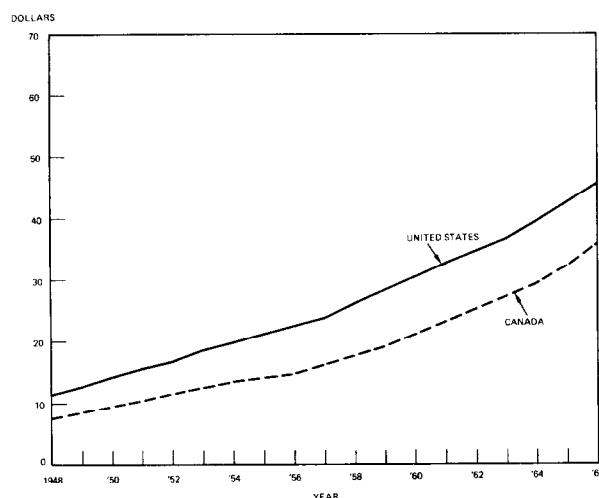
In both countries, per diem expense increases

<sup>8</sup> See *Group Health and Welfare News*, January 1967, page 4.

<sup>9</sup> See George St. J. Perrott, "The Federal Employees Health Benefits Program: Fifth Term Coverage and Utilization," *Group Health and Welfare News*, May 1967, and "Utilization of Hospital Services Under the Federal Employees Health Benefits Program," *American Journal of Public Health*, January 1966.

<sup>10</sup> Figures for Canada derived from data in *Hospital Statistics: Hospital Beds, 1965*, vol. I, page 37; data for the United States from *Hospitals*, Guide Issue, August 1, 1967, page 453.

**CHART 2.—Per diem cost in general hospitals, Canada and the United States, 1948-66**



with size of hospital up to a certain point (300-400 beds); beyond that point there is little if any further rise. Per diem expense increases with size because larger hospitals have a wider range of services and facilities than small ones have. The difference between Canada and the United States in per diem expense therefore reflects in part the fact that the United States has relatively more large hospitals and fewer small ones.

In both Canada and the United States, per diem hospital expense has been increasing rapidly. Per diem hospital expense in Canada's "public" general hospitals was \$7.73 in 1948; for non-Federal general hospitals in the United States it was \$11.58. The percentage increase between 1948 and 1966 was 362 in Canada and 293 in the United States.

From 1948 to 1959, per diem costs in the two countries rose at virtually identical rates (table 4 and chart 2). Since 1959, the first full calendar year of Federal aid to Provincial programs of hospital insurance, per diem hospital costs in Canada have risen by a larger percentage (though not in dollar amounts) than those in the United States.

Canada's more rapid increase in hospital per diem expense may reflect the possibility that, at the beginning of the period, hospitals in that country provided a level of care inferior to that in the United States and that, during the period in question, Canadian hospitals have been improved and upgraded so that they provide a level

of care more nearly equal to that in the United States. Different trends in price levels in the two countries may also be a factor, as well as the relative number of paid hospital personnel.

From 1948 through 1965 the annual rates of increase in the number of personnel per 100 patients (adults and children) were generally higher in Canada than in the United States. For 1958-66 the number of equivalent full-time personnel (full-time personnel plus full-time equivalents of part-time personnel) per 100 average patient census has been as follows:

Year	Canada, "public," general hospitals	United States, non-Federal general hospitals
1958	185	201
1959	192	209
1960	208	212
1961	209	220
1962	212	223
1963	218	227
1964	229	229
1965	236	234
1966	(1)	248

<sup>1</sup> Not available.

### Per Capita Expenditures for Hospital Care

For the whole period under review per capita expenditures for the operation of general hospitals have risen significantly more in Canada than in the United States. In 1948 the per capita operating expenses of "public" general hospitals amounted in Canada to \$10.19; in the United States the operating expenses of all non-Federal general hospitals amounted to \$12.50 per capita. By 1959, hospital operating expenses per capita were approximately the same—about \$30.00—in both countries. By 1966 these expenses had risen to \$55.23 per capita in the United States but to \$64.00 in Canada. Canada's greater increase reflects in part the faster rise in hospital expense per diem but mainly the much greater growth in days of care per 1,000 population in that country.

### Proportion of GNP Spent for Hospital Care

For the period from 1948 to 1966, Canada has been spending a larger percentage of its gross national product (GNP) for general hospital care than the United States has spent, and the propor-

TABLE 4.—Cost of general hospital care, Canada and the United States, 1948–66

Year	Canada, "public" general hospitals					United States, non-Federal general hospitals <sup>4</sup>				
	Cost per patient day <sup>1</sup>			Total cost		Cost per patient day <sup>1</sup>			Total cost	
	Amount	Index, 1948=100	Annual percentage increase	Per capita <sup>2</sup>	As percent of gross national product <sup>3</sup>	Amount	Index, 1948=100	Annual percentage increase	Per capita <sup>5</sup>	As percent of gross national product <sup>6</sup>
1948.....	\$7.73	100.0		\$10.19	0.7	\$11.58	100.0		\$12.50	0.7
1949.....	8.57	110.9	10.9	11.37	.9	12.67	109.4	9.4	13.11	.8
1950.....	9.16	118.5	6.9	12.61	1.0	14.19	122.5	12.0	14.84	.8
1951.....	10.21	132.1	11.5	14.46	1.0	15.53	134.1	9.4	16.04	.7
1952.....	11.62	150.3	13.8	16.21	1.0	16.81	145.2	8.2	17.66	.8
1953.....	12.48	161.5	7.4	18.25	1.1	18.48	159.6	9.9	19.38	.8
1954.....	13.39	173.2	7.3	20.05	1.2	19.98	172.5	8.1	20.73	.9
1955.....	14.06	181.9	5.0	21.33	1.2	21.05	181.8	5.4	22.25	.9
1956.....	14.84	192.0	5.5	23.21	1.2	22.34	192.9	6.1	23.96	1.0
1957.....	16.13	208.7	8.7	25.04	1.3	23.94	206.7	7.2	26.10	1.0
1958.....	17.84	230.8	10.6	26.72	1.4	26.01	224.6	8.6	28.55	1.1
1959.....	19.10	247.1	7.1	30.69	1.5	28.19	243.4	8.4	30.58	1.1
1960.....	21.06	272.4	10.3	34.66	1.7	30.16	260.4	7.0	33.06	1.2
1961.....	23.01	297.7	9.3	38.14	1.9	32.77	283.0	8.7	36.23	1.3
1962.....	25.03	323.8	8.8	42.13	1.9	34.47	297.7	5.2	39.09	1.3
1963.....	27.06	350.1	8.1	46.47	2.0	36.60	316.1	6.2	42.36	1.3
1964.....	29.23	378.1	8.0	51.04	2.1	39.39	340.2	7.6	46.24	1.4
1965.....	32.09	415.1	9.8	56.67	2.1	42.28	365.1	7.3	49.78	1.4
1966.....	7 35.74	7 462.4	7 11.4	7 64.00	7 2.2	45.46	392.6	7.5	55.23	1.5

<sup>1</sup> Excludes patient days of newborn infants.<sup>2</sup> Based on *Intercensal Population Estimates*, Dominion Bureau of Statistics.<sup>3</sup> Gross national product from *National Accounts of Income and Expenditure*, Dominion Bureau of Statistics.<sup>4</sup> Short-term and long-term hospitals combined.<sup>5</sup> Based on Bureau of the Census estimated civilian population as of July 1 of each year.<sup>6</sup> Gross national product from *Statistical Abstract*, annual issues, Bureau of the Census.<sup>7</sup> Preliminary estimates.

Source: CANADA—cost per patient day for 1948–52 derived by the Office of Research and Statistics, Social Security Administration, on basis of average

daily number of patients reported in *Hospital Statistics*, vol. I, 1963 (Dominion Bureau of Statistics) and gross operating expenditures from unpublished data from Research and Statistics Division, Department of National Health and Welfare; for 1953–60, unpublished data from Research and Statistics Division; cost per capita for 1948–60, unpublished data from Research and Statistics Division; cost per patient day and cost per capita for 1961–64 from*Annual Report of the Minister of National Health and Welfare on the Operation of Agreements with the Provinces Under the Hospital Insurance and Diagnostic Services Act*, 1966; for 1965–66, unpublished data from Research and Statistics Division, UNITED STATES—Hospitals, Guide Issues, 1960–67, American Hospital Association.

tion has been rising considerably faster in Canada than in the United States.

In the United States, .07 percent of the GNP was spent for general hospital care (non-Federal

TABLE 5.—United States: Cost of care in short-term and long-term non-Federal general hospitals, 1948–66

Year	Short-term		Long-term	
	Cost per patient day <sup>1</sup>	Cost per capita <sup>2</sup>	Cost per patient day <sup>1</sup>	Cost per capita <sup>2</sup>
1948.....	\$13.08	\$11.83	\$3.84	\$0.67
1949.....	14.34	12.43	4.07	.68
1950.....	15.61	14.06	5.34	.78
1951.....	16.77	15.26	6.29	.77
1952.....	18.34	16.75	6.66	.92
1953.....	19.94	18.31	8.17	1.07
1954.....	21.76	19.54	8.53	1.19
1955.....	23.12	21.07	8.09	1.18
1956.....	24.13	22.54	10.26	1.42
1957.....	26.03	24.61	10.30	1.49
1958.....	28.28	27.03	10.71	1.52
1959.....	30.19	29.05	12.49	1.53
1960.....	32.26	31.53	12.90	1.53
1961.....	35.02	34.49	14.43	1.74
1962.....	36.82	37.22	15.16	1.87
1963.....	38.94	40.35	16.62	2.01
1964.....	41.59	44.09	18.90	2.15
1965.....	44.51	47.67	19.86	2.12
1966.....	47.88	53.03	20.52	2.20

<sup>1</sup> Excludes patient days of newborn infants.<sup>2</sup> Based on Bureau of the Census estimated civilian population as of July 1 of each year.Source: *Hospitals*, Guide Issue, 1960–67, American Hospital Association.

hospitals) in 1948; in Canada for the same year the proportion was 0.9 percent ("public" general hospitals). By 1959 the proportion of the GNP spent for hospital care had increased to 1.5 percent in Canada and 1.1 percent in the United States. In 1966 the analogous proportions were 2.2 percent in Canada and 1.5 percent in the United States.

### Provincial and Regional Variation in Costs

Data on per diem expense for the Canadian Provinces show a range from \$27 in Prince Edward Island to \$44 in Quebec (table 6). Per capita expenditures were highest in Quebec followed by those in Ontario and Saskatchewan. They were lowest in Prince Edward Island and Newfoundland.

Among the regions in the United States, per diem hospital expense ranged from \$39 in the East South Central States to \$56 in the Pacific States (table 7). Per capita hospital expense

TABLE 6.—Canada: Cost of “public” general hospital care, by province, 1966<sup>1</sup>

Province	Total cost (in thousands)	Per patient day <sup>2</sup>	Per capita
Canada.....	\$1,281,045	\$35.74	\$84.00
Newfoundland.....	24,078	32.71	48.84
Prince Edward Island.....	4,892	26.61	44.88
Nova Scotia.....	41,449	34.04	54.83
New Brunswick.....	35,741	32.39	57.93
Quebec.....	401,817	43.94	69.51
Ontario.....	457,037	34.88	65.66
Manitoba.....	55,888	31.29	58.04
Saskatchewan.....	62,678	28.60	65.63
Alberta.....	94,399	29.86	64.52
British Columbia.....	101,432	31.76	54.13
Yukon.....	174	52.68	12.43
Northwest Territories.....	487	33.76	16.79

<sup>1</sup> Preliminary estimates.

<sup>2</sup> Excludes patient days of newborn infants.

Source: Unpublished data from Research and Statistics Division, Department of National Health and Welfare.

ranged from a high of \$71.49 (New England) to a low of \$40.07 (East South Central).

## SUMMARY AND CONCLUSIONS

Canada has a higher general hospital admission rate, a longer average length of stay, and more days of hospital care per 1,000 population than the United States. This was the situation even before Canada's national hospital insurance program was initiated. Hospital utilization as measured in days per 1,000 population has steadily increased from 1948 to 1966. The rate of increase, except for a slight leveling off in 1956-58 and a slight acceleration in 1958-60, has in general been constant during the entire period.

CHART 3.—Per capita cost of general hospital care, Canada and the United States, 1948-66

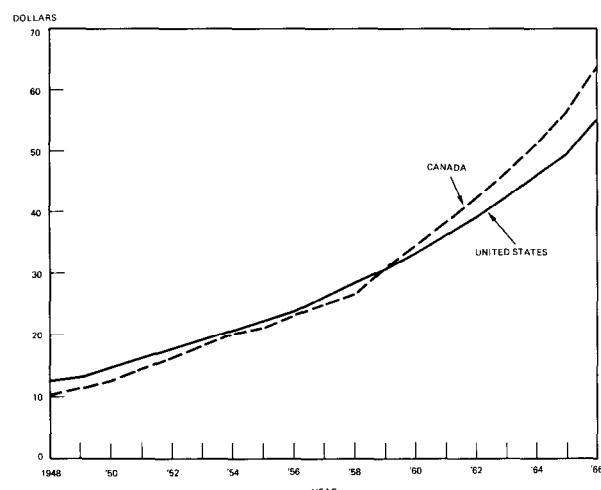


Table 7.—United States: Cost of non-Federal general hospital care,<sup>1</sup> by region, 1966

Region	Total cost (in thousands)	Per patient day <sup>2</sup>	Per capita <sup>3</sup>
United States.....	\$10,703,091	\$45.46	\$55.23
New England.....	796,590	49.63	71.49
Middle Atlantic.....	2,429,082	46.86	66.38
South Atlantic.....	1,271,014	40.97	44.66
East North Central.....	2,200,779	45.00	57.00
East South Central.....	511,615	38.89	40.07
West North Central.....	887,491	39.88	56.14
West South Central.....	790,913	43.34	42.78
Mountain.....	373,158	44.43	49.02
Pacific.....	1,442,449	55.64	59.37

<sup>1</sup> Short-term and long-term hospitals combined.

<sup>2</sup> Excludes patient days of newborn infants.

<sup>3</sup> Based on Bureau of the Census estimated civilian population as of July 1, 1966.

Source: *Hospitals*, Guide Issue, 1967, American Hospital Association.

In the United States, days of care per 1,000 population declined slightly from 1948 to 1954 and have since been rising.

Per diem hospital costs in Canada and in the United States rose at about the same rate from 1948 to 1959. Since then costs have risen faster in Canada. Though per diem hospital costs are lower in Canada than in the United States, per capita expenditures for hospital care are higher in Canada and have been increasing at a faster rate. Canada spends much more of its gross national product for general hospital care than the United States does.

Canada's national hospital insurance program may have made it possible for the population to receive more hospital care than it would otherwise have obtained. The program has certainly encouraged an expansion of expenditures for hospital care beyond what would have taken place in the absence of a program. It is difficult from the trends of hospital costs and expenditures to draw any conclusions as to the relative success of the “budget review” process in Canada in controlling hospital costs. It may be that in both countries in-patient hospital care is being used at rates higher than necessary.

The data presented here cannot be regarded as conclusive. Much study is needed, for example, as to why and in what respects the hospital utilization rates of insured populations vary so widely and to what extent these variations are meaningfully related to the quality of health care received by the population. Studies of the factors responsible for the variation in the per diem hospital costs of individual hospitals and of hospitals in different regions are also greatly needed.