TRANSACTIONS OF SOCIETY OF ACTUARIES
1952 VOL.4 NO. 10

STATE HOSPITAL INSURANCE IN CANADA

SAMUEL ECKLER

I. INTRODUCTION

ACTUARIES have long been interested in health insurance—both in the actuarial problems connected with estimation of costs and economic administration and in the effect such plans might have on the institution of private and voluntary insurance. State hospital insurance has been operating in two Canadian provinces—British Columbia and Saskatchewan—for a number of years. It is our hope that this study of the provisions and experience of these two provincial plans may shed some light on the controversial health insurance question. Some of the statistical data presented may also prove helpful to actuaries in their work on hospital insurance.

Our chief sources of information were the statutes and regulations covering the plans and the annual reports of the administering agencies.

II. BACKGROUND OF BRITISH COLUMBIA HOSPITAL INSURANCE

British Columbia is Canada's westernmost province and borders on the Pacific Ocean. It has an area of 366,000 square miles and a population which increased from 525,000 in 1921 to 1,165,000 in 1951. Fifty-five percent of this population is concentrated in the metropolitan centres of Vancouver and Victoria; the remainder is widely dispersed over large areas. Manufacturing, forestry and mining, in order of importance, are its leading industries. Its labour force, because of the seasonal nature of these industries, is highly mobile. Many of Canada's older folks have moved to British Columbia to enjoy its salubrious climate and scenic beauty. The population is therefore a little older than that of most of the other provinces.

Nowhere in Canada, with the possible exception of Saskatchewan during the past few years, has there been more activity in state health insurance than in British Columbia. In 1919, the British Columbia government appointed a commission to inquire into state health insurance, mothers' pensions, and the broadening of the provisions of the Workmen's Compensation Act. Hearings were held but no report of this commission was ever made public. In 1932, the Royal Commission on state health insurance and maternity benefits established by the government in 1929 submitted a comprehensive report on the subject. Its chief recommendation

was the introduction of a compulsory health insurance and maternity benefit plan in British Columbia.

After an election in 1933, in which one of the central issues was health insurance, and after public hearings and debate and prolonged negotiations with the medical profession, a state health insurance act was passed in 1936 and received royal assent. Its provisions included: compulsory coverage of all employees earning $1,800 a year or less and their dependents, with voluntary coverage of persons other than employees earning $1,800 or less (indigents were not covered); medical care, hospital care, drug, laboratory services, home nursing care benefits; employee's contribution 2% of wages and employer's 1% of payroll; administration by a commission of five persons. A chairman of the Health Insurance Commission was appointed but the Act was never put into effect.

In 1948, "An Act to provide for the Establishment of Hospital Insurance and Financial Aid to Hospitals," known as the Hospital Insurance Act, was adopted by the British Columbia legislature and became effective January 1, 1949.

III. BACKGROUND OF SASKATCHEWAN HOSPITAL PLAN

Saskatchewan is one of Canada's prairie provinces with an area of 252,000 square miles and a population in 1951 of 832,000. Its predominant industry is agriculture (chiefly wheat). The population is widely dispersed and there are no large metropolitan centres.

In 1944, a C.C.F.[1] government was elected in Saskatchewan: but even prior to the C.C.F. administration there was a long history of municipally operated medical and hospital care. Since 1914 many Saskatchewan municipalities have had contracts with doctors to provide medical care for their residents. A large proportion of all the hospital beds were in hospitals owned and operated by municipalities. Many municipalities were paying hospital bills for all their residents and financing these from taxes.[2]

One of the first acts of the C.C.F. government after the 1944 election was the appointment of a health services survey commission in 1944 with Dr. Henry E. Sigerist as commissioner. Among other things, this commission recommended that a scheme of compulsory health insurance for eight cities should be studied, that free hospitalization for the entire population should be the goal and that free hospitalization and medical treatment for maternity cases might be considered as a first step.

[1] The full name of the party is "Cooperative Commonwealth Federation." It espouses a socialist programme.

[2] M. G. Taylor, *The Saskatchewan Hospital Services Plan* (Saskatchewan Health Services Planning Commission, Regina 1949).

In 1946, "An Act to provide for Payments for services rendered to Certain Persons by Certain Hospitals and other Institutions," known as the Saskatchewan Hospitalization Act, was passed, which became effective January 1, 1947. In contrast to the British Columbia Act, there is no reference to insurance in the title and description of the bill.

IV. PROVISIONS AND EXPERIENCE OF BRITISH COLUMBIA AND SASKATCHEWAN PLANS

We propose to review the two plans, under the headings of persons covered, benefits, finances and administration.

1. *Persons Covered*

Membership in each plan is made compulsory for almost the entire population by requiring a contribution (called a premium in British Columbia and a tax in Saskatchewan) to be paid by or on behalf of every resident except exempted persons. The number of exempted persons is a small proportion of the population and includes in British Columbia and Saskatchewan patients of tuberculosis and mental hospitals, inmates of penitentiaries and jails, members of the armed forces and of the Royal Canadian Mounted Police and recipients of war veterans' allowances.

In addition, exempted persons in British Columbia include members of plans which provide hospital benefits and are approved by the government, persons who are eligible for at least equivalent benefits from the government of Canada, and members of the Christian Science Church. As of a few months ago, the only plans approved by the government for exemption were those covering the employees of two large companies. These are self-administered plans. As far as the writer knows, no application has been made for approval of an insurance company, Blue Cross, or other private plan; in any event, none has been approved. Approval of an insurance plan would probably require that it provide benefits at least equivalent to those under the state plan. It would be difficult to meet this condition and at the same time compete pricewise with the subsidized state plan.

Table 1 shows the relationship between the covered population as obtained from the annual reports of the plan and the estimated population in each province. The populations were estimated by adjusting the intercensal estimates published by the Dominion Bureau of Statistics[3] on the basis of the 1951 census figures. The uncovered population consists of exempted persons, of whom there are more in British Columbia than in Saskatchewan, and all persons who are delinquent in their contributions.

[3] See 1951 *Canada Year Book*, p. 121.

2. (i) *Description of Benefits*

British Columbia

The British Columbia plan provides public ward accommodation and most special hospital services including operating and case room facilities, surgical materials, anaesthetics, X-rays, physiotherapy, laboratory procedures, drugs and related preparations, etc., to every member who requires acute in-patient care. Only the acute stages of some chronic diseases are covered. A coinsurance plan was introduced on April 1, 1951, to reduce hospital utilization, thereby alleviating hospital overcrowding, and to cut the cost of the plan. Under this plan, a member pays a fee to the hospital, depending on the hospital daily charge, varying from $2.00 to $3.50 per

TABLE 1

Calendar Year	Covered Population	Total Estimated Population	Ratio of Covered to Total Population
British Columbia			
1949	1,001,000	1,114,000	90%
1950	990,000	1,138,000	87%
Saskatchewan			
1947	780,000	833,000	94%
1948	776,000	832,000	93%
1949	766,000	832,000	92%
1950	767,000	832,000	92%

day for the first ten days of his hospital stay, provided that the total fee paid in any one year by a single person or a head of a family and his dependents shall not exceed ten times the daily fee. Out-patient services are provided each member upon the payment to the hospital of a fee of $2.00 for each admission.

Saskatchewan

Whereas the British Columbia plan covers only acute in-patient care and only the acute stages of some chronic diseases, there is no restriction in the Saskatchewan plan for patients with chronic diseases. Although it contains no coinsurance provisions, a form of coinsurance was considered in Saskatchewan. The Saskatchewan Health Survey Committee, composed of representatives of the health professions, the general public and the Health Services Planning Commission, announced on February 23, 1950, that, in view of the rising costs of the plan, it would be necessary "either to increase the personal hospitalization tax or to require the

patient to pay a small fee on being admitted to hospital. This fee might be equal to the cost of one or two days' care. The committee favoured the introduction of this type of token payment at the time of admission rather than an increase in the personal tax."[4]

Except for these two provisions—chronic care and coinsurance—the types of benefits under the Saskatchewan and British Columbia plans are the same. Since the benefits in both plans are service benefits, a true comparison of the benefits would require an appraisal of the quality of the service, hospital accommodation and hospital facilities.

(ii) *Benefit Experience*

Wherever possible, there is included the experience of the Ontario Blue Cross Plan, which is the largest voluntary hospital insurance agency in Canada. It had about 1,560,000 members in September 1951, *i.e.*, about one-third of the entire Ontario population. Most of its participants are employees whose premiums are collected by payroll deduction. The most popular contract provides for 51 days of hospital care in any contract year plus a dividend of an additional ten days of care for each year of participation in the plan until a maximum of 201 days is reached, except for tuberculosis, mental, nervous and chronic diseases, where the maximum is 51 days; no maternity benefit is payable until after ten months of enrolment of both the husband and the wife, and after that period it is equal to 50% of the hospital charges for maternity; X-ray benefits are limited to $25 for any one admission; biological sera and other modern medications such as penicillin are limited to a maximum of $25 for each admission; radium therapy, physical therapy, electrotherapy, shock treatments, blood and blood plasma are not covered; there is no provision for the services of an anaesthetist, pathologist or radiologist.[5]

Any comparisons between the Ontario Blue Cross experience and that of the British Columbia and Saskatchewan plans should be qualified by the differences in class of membership (the state plans include the aged and infirm, whereas the Blue Cross covers very few of these) and the differences in benefits.

A number of yardsticks may be used to interpret the benefit experience. We consider those of Tables 2 to 4 most significant.

The over-all hospital utilization rate increased in Saskatchewan by 33% between 1947 and 1950. The reasons for this rise are probably the

[4] News Release, February 23, 1950.

[5] As of October 1951.

TABLE 2

NUMBER OF DAYS OF HOSPITAL CARE PER INSURED PERSON

Year	British Columbia	Saskatchewan	Ontario Blue Cross
1947	.....	1.678	.878
1948	.....	1.920	.978
1949	1.50	2.095	1.103
1950	1.57	2.235	1.129
1951	1.55	2.209	.....

TABLE 3

AVERAGE PATIENT DAYS OF CARE PER INSURED PERSON BY AGE GROUP

Age Group	British Columbia 1949	Saskatchewan 1950
0 to under 1	1.37	2.92
1 to 4	1.28	1.13
5 to 14	.85	.88
15 to 24	1.34	1.62
25 to 44	1.66	1.95
45 to 64	1.67	2.80
65 to 69	2.61	4.77
70 and over	4.08	8.16

TABLE 4

HOSPITALIZATION BY LENGTH OF STAY

Days of Stay	Percentage of Total Patient Days	
	British Columbia 1950	Saskatchewan 1950
1 to 10	42%	34%
11 to 19	19	21
20 to 29	11	12
30 to 59	15	15
60 or more	13	18

increasing familiarity of the beneficiaries with the benefits of the plan, the increase in the number of beds from 4.9 per 1,000 population in 1947 to 6.4 in 1950, and the method of reimbursement to hospitals. The number of beds increased again in 1951 to 6.6 per 1,000 population, but the utilization rate for the first time showed a small decline in 1951. Although the plan might be maturing and the utilization rate reaching a natural plateau, it is more likely that the new method of reimbursement to hospitals that started January 1, 1951[6] should be credited with the decline. The utilization rate has remained fairly constant in British Columbia: coinsurance which was in operation for nine months of 1951, and the change in the method of reimbursement to hospitals effective January 1, 1951, seem to have succeeded in reducing it slightly during 1951. The utilization rate under the Blue Cross plan is much lower than under either the Saskatchewan or British Columbia plans, chiefly because it provides less expensive benefits and insures a group of people that are, on the average, considerably healthier and younger than those in the British Columbia and Saskatchewan plans. The Saskatchewan rate is so much higher than the British Columbia rate because it gives more complete coverage to chronic cases.

The effect of providing more complete chronic coverage in Saskatchewan than in British Columbia is evident from Table 3. The utilization rates are higher in Saskatchewan than in British Columbia in all age groups, but in the age group 70 and over where chronic diseases are probably more prevalent than at other ages the Sasketchewan rate is double the British Columbia rate. The chronic coverage also explains the greater frequency of long stays in Saskatchewan than in British Columbia as shown in Table 4.

3. *Finances*

General.—Both provincial plans are financed by government subsidy and contributions from beneficiaries. The beneficiaries' contributions were determined by a combination of taxation and insurance principles. A modified insurance principle was followed by relating the contributions partially to benefits—for example, the family rate is greater than the individual rate. On the other hand, the taxation principle of ability to pay was followed by setting the maximum contribution within the means of most people.

Cost estimates based on anticipated hospital utilization and per diem cost were made before the commencement of both plans. In Saskatchewan, a utilization rate of 1.5 days per person per annum and a per diem cost of

[6]See page 440.

$3.67 were assumed.[7] A government subsidy was expected but not nearly as large as that experienced. In 1950 the utilization rate in Saskatchewan was 50% greater than the initial estimate and the per diem cost was $6.30.

A. *Income*

The premiums payable by or on behalf of the beneficiaries have been as follows:[8]

British Columbia

Period	Annual Premiums	
	Single	Head of a Family
January 1, 1949 to Dec. 31, 1949.	$15.00	$24.00 (1 dependent) $30.00 (2 or more dependents)
January 1, 1950 to June 30, 1951.	21.00	33.00
July 1, 1951—	30.00	42.00

Every resident except the exempted persons referred to[9] is either a single person, a head of a family or a dependent of a head of a family. A head of a family is defined as a person who is reponsible for the support of one or more dependents, while a single person is one who is neither a dependent nor a head of a famiiy. Dependents of the head of a family include spouse, unmarried children or wards under 19, unmarried children under 21 who are students, unmarried children over 18 who are incapacitated, and parents, parents-in-law, grandparents and grandparents-in-law who are unable to pay premiums.

The Province pays the required premiums for any single person or head of a family who is in receipt of an old age pension, mother's allowance or any form of social assistance to which the Province contributes financially.

Saskatchewan

1947–1948 $5 per person, with a maximum of $30 for a family consisting of father, mother, and dependent children under 21.

1949 $5 for a dependent child under 21 and $10 for every other person, with a maximum of $30 for a family consisting of father, mother, dependent children under 21, and incapacitated children over 21.

[7] See M. G. Taylor, *op. cit.*, pp. 139–146.

[8] Up to December 31, 1951.

[9] See page 432.

1950— $5 for a dependent child under 18 and $10 for every other person, with a maximum of $30 for a family consisting of father, mother, dependent children under 18, dependent children between 18 and 21 who are at school, and incapacitated children over 18.

"The Provincial Government pays the tax for beneficiaries of provincial welfare programmes including persons receiving old age pensions, blind pensions, mothers' allowances, child welfare cases, and indigents without legal residence in organized municipalities. Municipal authorities are required to pay the tax for persons dependent on local public assistance."[10]

The total contributions actually paid by beneficiaries were 59.4% of the total disbursements in British Columbia for the two year period ending December 31, 1950, and 47.5% in Saskatchewan for the four year period ending December 31, 1950. The remaining income of the plans comes from municipal grants and provincial subsidy in British Columbia and from provincial subsidy in Saskatchewan.

B. *Disursements*

The disbursements under each plan are the reimbursements to hospitals for services rendered the beneficiaries of the plan and the costs of administration.

The method of reimbursing hospitals has been one of the most vexatious problems of both plans. The benefit is a service benefit and therefore the hospital and the doctor are the key to economic hospital utilization. A sound reimbursement method would be one that preserves as much hospital autonomy as possible and does not result in excessive utilization and hospital costs.

British Columbia

During 1949 and 1950 the reimbursements to hospitals were based on inclusive average patient day costs as determined from estimates of cost and occupancy submitted by each hospital and reviewed by the Commissioner. The per diem rates were periodically revised in relation to actual cost and occupancy. These per diem rates did not vary by length of stay.

The inclusive per diem method is objectionable because under it the financial incentives are so arranged that it is in the best interests of the hospital to have higher than optimum levels of occupancy and as long a stay as possible for each patient. This may lead to unnecessary overcrowd-

[10] *Annual Report*, for 1947, Saskatchewan Hospital Services Plan, page 9.

ing and greater hospital utilization than is desirable and to the erection of unnecessary hospital facilities.

Effective January 1, 1951, a fixed (or firm) budget method was adopted. Each hospital, toward the end of each year, submits its budget to the Hospital Insurance Service for the coming calendar year. This budget includes adjustments for semiprivate and private differentials, other revenue items (out-patient, charges for nonapproved drugs) and allowances for free service and bad debts. All these budgets are aggregated by the Hospital Insurance Service and reduced so that the total provincial subsidy to the Hospital Insurance Service accords with the budget approved by the Legislature. In order to interfere as little as possible with hospital administration, the individual hospital budget is to be altered on an over-all rather than a line-by-line basis. One more and final budget revision is made by the Hospital Insurance Service at the end of the year on account of the following items: (i) any changes in the original expenditure forecasts—such as reasonable wage increases—that are approved by the Hospital Insurance Service; (ii) the original approved budget covers accepted expenditures for a specified number of patient days; final adjustments in the budget for deviations from this estimate are made only with respect to costs that vary directly with patient days; (iii) adjustments in bad debts and coinsurance payments approved by the Hospital Insurance Service.

Saskatchewan

The first method of payment adopted by the Saskatchewan plan was the Agnew units of credit system. Under this system, each hospital was credited with a number of "points" for each type of service provided and the hospital was paid at a uniform (for all hospitals) mill rate per patient day for each point credited to it.

It was found that this method of payment could not be related to actual hospital costs sufficiently closely to avoid substantial surpluses by some hospitals and deficits by others; thus the method broke down and was abandoned after one year. It has been stated that "the 'point system' provided a means of grading and standardization of hospitals and furnished a financial incentive which resulted in the improvement of the facilities of most of the smaller institutions in Saskatchewan within a short space of time."[11]

The second method of payment used in 1948, 1949 and 1950 was that of inclusive per diem rates. The rates varied with individual hospitals and with length of stay of a patient (according to bed capacity of hospital).

[11] *Annual Report*, for 1950, page 12.

This method was rejected for the same reasons that led to its rejection under the British Columbia plan.

The third method of payment, adopted January 1, 1951, provided for "lump sum payments by the Plan on a semi-monthly basis to all public general hospitals in the Province, such payments representing, in respect of Saskatchewan Hospital Services Plan beneficiaries, slightly more than the total of relatively fixed expenses such as heat, power plant costs and salaries, which tend not to change with occupancy. In addition, provision was made for payment on the basis of accounts submitted in respect to individual patients at per diem rates estimated to represent slightly less than the amount of such variable expenses as food, laundry and drugs, which fluctuate in relation to occupancy."[12]

The advantages of this method of payment are: (i) it facilitates matching monthly hospital revenue against expenditures; (ii) it reverses the

TABLE 5

PER DIEM HOSPITAL PAYMENTS

Year	British Columbia	Saskatchewan	Ontario Blue Cross
1947	.....	$ 4.69	$ 4.43
1948	.....	5.60	5.33
1949	.....	6.15	6.13
1950	$ 10.42	6.30	6.57

tendency to overcrowding evident under the inclusive per diem rate scheme, since, insofar as the per diem rate is less than the variable expense per patient day, realized occupancy in excess of the estimate will contribute to financial loss to the hospital.

Table 5 shows the average amount per patient day paid by the British Columbia, Saskatchewan and Ontario Blue Cross plans. It is clear that the money value of the daily benefit provided under the British Columbia plan is much higher than under the Saskatchewan or Ontario Blue Cross plans.

C. *Financial Operations*

For the two years 1949 and 1950, 37% of the cost of the British Columbia plan (see Table 6) has been financed by the province and 4% by the municipalities.

Under the Saskatchewan plan (see Table 7) the total hospital costs rose from $6,963,000 in 1947 to $11,111,000 in 1950, or by 60%. Less than half of this increase was due to higher hospital costs and over half was due

[12] G. W. Myers, in *Canadian Hospital*, April 1951.

TABLE 6

BRITISH COLUMBIA HOSPITAL INSURANCE SERVICE
REVENUE AND EXPENDITURES BY CALENDAR YEARS

	1949		1950		1949+1950	
	$(,000)	%	$(,000)	%	$(,000)	%
Revenue						
Provincial premiums (social assistance cases)	676	3.9	1,011	5.6	1,687	4.8
Provincial statutory grants	1,341	7.8	1,400	7.7	2,741	7.7
Balancing deficit	4,890	28.4	3,685	20.3	8,575	24.2
Total provincial contributions	6,907	40.1	6,096	33.6	13,003	36.7
Municipal grants	712	4.1	656	3.6	1,368	3.9
Premiums	9,627	55.8	11,410	62.8	21,037	59.4
Total revenue	17,246	100.0	18,162	100.0	35,408	100.0
Expenditures						
Operating expenses	1,094	6.3	1,527	8.4	2,621	7.4
Organization expenses	548	3.2	257	1.4	805	2.3
Total administrative expenses	1,642	9.5	1,784	9.8	3,426	9.7
Payments to hospitals	15,604	90.5	16,378	90.2	31,982	90.3
Total expenditures	17,246	100.0	18,162	100.0	35,408	100.0

TABLE 7

SASKATCHEWAN HOSPITAL SERVICES PLAN
REVENUE AND EXPENDITURES BY CALENDAR YEARS

	1947		1948		1949		1950		1947–50 INCLUSIVE	
	$(,000)	%	$(,000)	%	$(,000)	%	$(,000)	%	$(,000)	%
Revenue										
Hospital premiums paid by province	131	1.9	159	1.8	277	2.7	275	2.5	842	2.2
Other provincial contributions	3,772	49.9	5,416	58.8	4,876	45.5	5,630	48.3	19,694	50.3
Total provincial contributions	3,903	51.8	5,575	60.6	5,153	48.2	5,905	50.8	20,536	52.5
Hospital premiums (excluding those paid by provinces) and miscellaneous revenues	3,658	48.2	3,630	39.4	5,559	51.8	5,741	49.2	18,588	47.5
Total revenue	7,561	100.0	9,205	100.0	10,712	100.0	11,646	100.0	39,124	100.0
Expenditure										
Hospitalization expense	6,963	92.1	8,633	93.8	10,190	95.1	11,111*	95.4	36,897	94.3
Administration expense	598	7.9	572	6.2	522	4.9	535	4.6	2,227	5.7
Total expenditure	7,561	100.0	9,205	100.0	10,712	100.0	11,646	100.0	39,124	100.0

* This is not the final figure for 1950. An additional expenditure of undetermined amount may be incurred in respect of possible retroactive hospital rate increases.

to higher hospital utilization by insured persons. The costs of administration have been going down gradually in relation to the total revenue from 7.9% in 1947 to 4.6% in 1950. The total provincial contribution including the general subsidy and the premiums paid by the province has been 52% of the total income of the fund for the years 1947 to 1950. About 4.3% of the total premiums received by the plan were paid by the province.

The cost of the plan in 1950 was $18.35 per insured person in British Columbia and $15.18 in Saskatchewan. In spite of a hospital utilization rate in Saskatchewan about 42% greater than in British Columbia, the British Columbia plan cost 21% more per insured person than the Saskatchewan one. The reason for this variation in cost in spite of the lower utilization in British Columbia than in Saskatchewan is the 65% greater per diem hospital payment in British Columbia than in Saskatchewan.

4. *Administration*

The British Columbia plan is administered by a division of the Department of Health and Welfare, directed by the Hospital Insurance Commissioner and called the Hospital Insurance Service. A provincial hospital advisory council, representing hospital, medical, nursing, pharmaceutical, municipal, employer and employee groups was established to advise the Minister on hospital matters. The original Act provided that premiums were to be collected directly from the persons required to pay them either annually or by instalments. In addition to direct payments, the present Act authorizes the Commissioner to arrange for the collection of premiums by an employer making monthly deductions therefor from the pay of his employees. Although participation in the plan is compulsory, it has been difficult to obtain complete participation because of the frequent changes in employers and addresses of employees and of the difficulty of low income persons paying the premiums.

The Saskatchewan plan is administered by a division of the Department of Public Health called the Saskatchewan Hospital Services Plan. In most cases the premiums are collected by municipalities which receive as commission a percentage of the premiums collected.

The cost of administering the British Columbia plan during 1950 (the second year of its operation) was 8.4% of total expenditure for operating and 1.4% for organization. In Saskatchewan, the expenses were 4.6% in 1950 and 6.2% in 1948 (the second year of operation of the plan). The cost of administering the Ontario Blue Cross plan was 8.6% of income in 1950. During 1950, the administrative cost per insured

person was about $1.54 in the British Columbia plan, $.70 in the Saskatchewan plan and $.92 in the Blue Cross plan.

V. SOME CONCLUSIONS

1. Although neither plan is self-supporting, a greater proportion of the cost of the British Columbia plan than of the Saskatchewan one is financed by direct contributions from beneficiaries. The Saskatchewan plan offers more complete coverage than the British Columbia one in terms of persons covered, length of stay in hospitals and conditions for which hospital care benefit is provided. The British Columbia plan costs more per insured person because of the considerably greater dollar value of a day's hospital care.

2. The hospital utilization rate of the British Columbia plan increased from 1.50 days per insured person in 1949 to 1.57 in 1950 and then dropped to 1.55 in 1951. The restrictions on chronic coverage and the introduction in 1951 of coinsurance and the fixed budget method of reimbursing hospitals appear to have controlled the utilization rate in British Columbia.

In Saskatchewan, the utilization rate rose steadily from 1.68 in 1947 to 2.24 in 1950 and then declined for the first time in 1951 to 2.21. The new fixed budget method of reimbursing hospitals which was started in 1951, and the maturing of the plan, were probably responsible for this decline.

3. Both provinces have a history of public interest in state health insurance. One may speculate that hospital care rather than another form of medical care insurance was selected for a number of reasons, chief among which were probably the precarious financial position of the hospitals, the fact that hospital care costs form a large proportion of the catastrophic medical care costs of the individual, that many hospitals in these provinces were publicly owned and controlled, and that hospital insurance is one area of health insurance that interferes very little with the private practice of medicine.[13]

4. The beneficiaries under each plan receive service benefits or benefits-

[13] The College of Physicians and Surgeons of British Columbia, in its brief to the Hospital Insurance Inquiry Board investigating the British Columbia Hospital Insurance Service, endorsed the plan as follows:

"There is agreement among doctors that insurance of all citizens against the possibility of a large hospital bill is in the best interests of the community. Since the inauguration of hospital insurance in British Columbia, we have witnessed numerous examples of the gratitude of patients who had received expensive hospital care. The bills for this hospital care would formerly have threatened their economic security." (*Report of the Hospital Insurance Inquiry Board,* 1951–1952, p. 18.)

in-kind, provided by the hospitals, which are reimbursed by the plan for the services rendered. A method of reimbursement must be arranged aiming at minimum costs and minimum interference with the details of hospital administration. Both plans have undergone a costly experience in experimenting with various methods of reimbursement and have evolved at the present time somewhat similar methods.

5. Voluntary hospital insurance has virtually disappeared from British Columbia and Saskatchewan since the institution of the state plans.[14] The British Columbia Blue Cross plan which, as of January 1, 1947, had 101,000 subscribers[15] retired from business upon the introduction of the state plan. This was inevitable. It is difficult to see how private voluntary insurance financed entirely by premiums could continue beside a subsidized state plan.

6. Both plans require compulsory membership and contributions by most residents. Although compulsory membership is undesirable from many points of view, it is a characteristic of most state plans (for example, unemployment insurance, old age insurance, Workmen's Compensation), and may be the only practical way—if the principle of state hospital insurance is accepted—of obtaining an average risk and of administering a plan at a reasonable cost. However, with a compulsory membership, it may be important to set the premium at such a level that no one pays more than the value of his benefits[16] and to make provision for the remission of premiums of low income and indigent persons.

7. To the best of the writer's knowledge, no actuary was consulted by either plan prior to its introduction. Other experts in hospital administration and insurance did provide advice on costs and administration. However, an actuary was retained by a legislative committee appointed in 1951 to investigate the British Columbia plan. Estimating costs of a state medical care plan is a difficult matter. Probably an actuary more than anyone else realizes how difficult it is. His chief responsibility in such a plan would include making conservative cost estimates and arranging the provisions of the plan in such a way that the costs experienced remain as closely as possible within the range of the estimates made.

[14] There are some contracts covering the cost of hospital care in excess of that provided by the plans.

[15] L. S. Reed, *Blue Cross and Medical Service Plans* (Federal Security Agency, U.S. Government, 1947), p. 320.

[16] This principle is followed in determining employee contributions to contributory group insurance programmes. In the British Columbia plan, the premium for a single person exceeds the value of his prospective benefits.