

MAINE STATE LEGISLATURE

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Hospital Cost Containment in Maine

Study and Recommendations



**Health Facilities
Cost Review Board**

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**State of Maine
December 1981**

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HOSPITAL COST CONTAINMENT

IN MAINE

A STUDY

and

RECOMMENDATIONS

Health Facilities
Cost Review Board

State of Maine

December 1981

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I. Introduction

In May, 1981 Governor Brennan requested that the Health Facilities Cost Review Board carry out a study consisting of three major tasks.* He asked first that we examine the present system of financing hospital services in Maine. Second, he asked for an evaluation of the current efforts of Maine hospitals to control costs on a voluntary basis. Finally, he asked the Board to examine alternatives to the present system and, specifically, to assess the need for a mandatory hospital rate setting program.

Since early June, the Board has held eight public hearings and numerous other meetings devoted exclusively to the study. The public hearings featured presentations which described several cost containment programs in other states as well as the present voluntary program in Maine. The Board encouraged the participation of individuals and groups broadly representative of Maine citizens and communicated regularly with all members of the Legislature on the progress of the study. A more detailed description of the study process is included as Appendix B.

The request for this study was timely in two ways. First, the present voluntary budget review program authorized under the provisions of the Health Facilities Information Disclosure Act, as enacted in 1978 and amended in 1980, will terminate on July 1, 1982. Second, the rapid rate of increase in hospital expenditures, which in part prompted the passage of the law, has not abated. The following table shows the rates of increases in total operating revenue and

*All references to the "Board" throughout this report will indicate the Health Facilities Cost Review Board.

total expenses for Maine hospitals for the most recent two year period for which data is available.

<u>Measure</u>	<u>1978-79</u>	<u>1979-80</u>
Total operating revenue	13.3%	15.5%
Total expenses	14.2%	15.0%

In addition, rates of increases in Maine are higher than national rates for the same period. The following table presents the rates of increase in expenses per admission for 1978-79 and 1979-80.

	<u>Expense per Adjusted Admission</u>	
	<u>1978-79</u>	<u>1979-80</u>
Maine	13.76%	15.33%
U.S.	11.35%	12.76%

Finally, data for the period between 1972 and 1980 comparing Maine with other rural states (none of which have mandatory cost containment programs) and with three states having mandatory budget or rate review programs (regulated states) indicates that Maine hospital expenditures have, generally, increased more rapidly.

	<u>Maine</u>	<u>Rural*</u>	<u>Regulated States**</u>
% Increase in Expenses per Capita	221.9	189.7	152.6
% Increase in Expense per Admission	207.5	220.5	149.1
% Increase in Full Time Equivalent Employees (FTE)/Day	26.3	16.5	19.6
% Increase in Payroll/FTE	114.3	114.4	84.3

In this report we address each of the questions posed by Governor Brennan. In section 2 we examine the rates of increase in the major components of hospital

*New Hampshire, Vermont, Montana, South Dakota, North Dakota and Wyoming.

**Maryland, Massachusetts and Connecticut.

expenditures and describe some of the causes which may be associated with these rates of increase. This analysis is intended to assess the nature and extent of the problems underlying these increases.

In section 3 we discuss the current financing system for hospital services in Maine and describe its weaknesses as a vehicle for addressing cost containment problems. The present voluntary budget review program has been implemented without altering the current financing system. In section 4 we assess the efforts of the existing program to moderate hospital expenditure increases within the framework of the current payment system.

The principal alternative to the current payment system for hospital services is an approach called "prospective payment." In section 5 we outline the characteristics of several prospective payment programs and describe their performance in restraining expenditure increases.

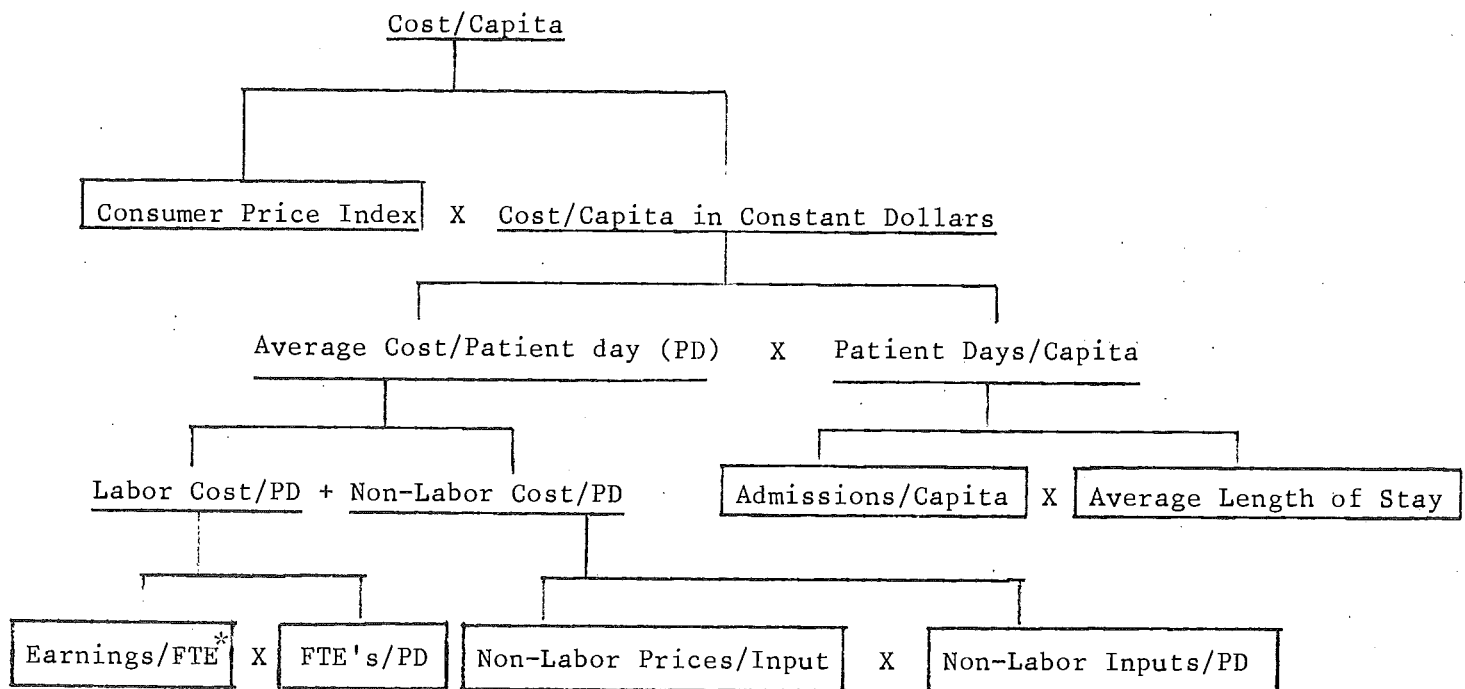
Finally, in section 6, we present recommendations for significant changes in the payment system and for formal coordination among the several hospital cost containment programs.

II. Components and Causes of Hospital Expenditure Increases

A. Components

In the first part of this section we examine the expenditure increases of Maine community hospitals between 1955 and 1979.¹ By identifying some of the components of the expenditure increases, we may be in a better position to determine whether, to what extent and how they may be restrained. In addition, we may be better able to assess the efforts of the present cost containment program and to make recommendations for changes in it.

The increases are analyzed as shown below in order to identify the relative contributions of their major components.²



1. Hospital costs per capita

The average cost per capita of hospital care in Maine increased from \$14.96 in 1955 to \$283.07 in 1979, a total rise of 1,792 percent.³ As shown in Table 1 (the last line of column 1), this increase is equivalent to an average compound annual rate of 13.0 percent.⁴

*Full-time equivalent employee

Among other factors, this increase in the average cost per capita reflects changes in the general level of prices. For the 1955-79 period, the general price level as measured by the Consumer Price Index,⁵ rose a total of 177 percent. As shown in Table 1, column 2 (last line), this increase is equivalent to an annual compound average rate of 4.3 percent.*

Adjusting the average cost per capita for the change in general prices converts current dollar values into constant dollars. The cost per capita in constant dollars increased from \$19.53 in 1955 to \$133.27 in 1979. Expressed in another way, the change in the average cost per capita exceeded the increase in general prices by a total of 682 percent for the entire period. Column 3 (last line) of Table 1 shows that the change in the average cost per capita exceeded the increase in general prices by 8.3 percent annually between 1955 and 1979.

As shown in column 3, the increases in the average cost per capita have consistently and significantly exceeded those of general prices throughout the period. The two periods which show the smallest increases above the price rises in the general economy are 1972-73 and 1978-79. Without suggesting a causal relationship, it is worth noting that the 1972-73 period coincided with a substantial portion of the federal price and wage control program and the 1977-78 period paralleled the time of congressional consideration of President Carter's hospital cost containment legislation. Price and wage controls were lifted in 1974 and the Carter Administration's proposal failed to be enacted in 1979.

The rise in general prices, represented here by the Consumer Price Index, accounts for roughly one-third of the 13.0 percent annual increase in the average cost per capita between 1955 and 1979. Identifying the components or the causes of the increases in the general price level of the economy is beyond the scope of

*Table 1 is on page 11.

this study. Therefore, the analysis in this section will continue by focusing exclusively on the increase in the average cost per capita in constant dollars (1967).

The remaining columns in Table 1 present the annual rates of change in the six components of the cost per capita. Table 2 shows the relative contribution of each of these components to the annual increase in the average cost per capita. Table 3 expresses these relative contributions as percentages of the annual rate of increase.*

2. Average length of stay and non-labor prices

The smallest increases are shown in average length of stay and non-labor prices per input. The average length of stay has ranged from a low of 7.2 days to a high of 8.3 days during the period. The annual increase for the whole period as shown in column 9, Table 1, is 0.2 percent. The changes in the prices of non-labor inputs expressed in constant dollars (Table 1, column 6) have fluctuated, actually decreasing during several years, and they have increased at a rate of only 0.3 percent for the entire period. (1967 dollars)

The changes in these two components have not contributed significantly to the overall increase in the average cost per capita. As shown in Table 2, columns 3 and 6, increases in non-labor prices contribute 0.1 percent and changes in the average length of stay add 0.2 percent to the 8.3 percent increase in the average cost per capita between 1955 and 1979. As shown in Table 3, these contributions amount to a one percent and three percent share, respectively, where the total increase is expressed as 100 percent.

3. Labor prices

Annual earnings per full time equivalent (FTE) hospital employee increased at the rate of 2.4 percent annually during the entire period (Table 1, column 4).** Table 2 shows that this increase contributed 1.4 percent to the 8.3 percent rise in the average cost per capita for the period. As presented in Table 3, this

*Tables 2 and 3 are on page 12.

**In constant dollars.

contribution amounted to 18 percent of the total increase in the average cost per capita. The share of the increase in the average cost per capita attributable to annual earnings per FTE varied from zero between 1970-75 to 34 percent for the 1960-65 period (Table 3, column 2).

Table 4 shows that the rate of increase in the annual earnings per FTE has exceeded those of production workers between 1955-79.* Columns 1 and 2 present the annual earnings for hospital FTE's and production workers. As shown in column 3, the wages of hospital employees increased from roughly 70 percent of production worker wages in 1955 to 95 percent in 1979. Since 1970, however, the wage levels of the two groups have been nearly equivalent. Expressed as percentages, the wages of hospital employees increased about 78 percent while production worker earnings rose about 33 percent between 1955 and 1979. In the absence of an analysis of any changes in the education levels, training, experience and occupations in the two categories of workers, the significance of the more rapid increase of hospital employee earnings cannot be evaluated. It is worth noting, however, that the five year period (1965-70) showing the highest rate of increase in annual earnings per FTE, coincided with the first several years of the Medicare and Medicaid programs and the first application of the minimum wage laws to hospital employees. (Table 2, column 1)

The greater increase in the average earnings of hospital employees, however, may be suggested as a major cause of the rapid rise in the average cost per capita. This suggestion can be evaluated by considering the following question: What would the increase in the average cost per capita in constant dollars have been if hospital employee earnings had increased at the same rate as those of production workers? Table 5 presents an answer to this question.

*Table 4 is on page 13

Column 1 presents the increases in the average cost per capita for selected periods. Column 2 shows what the increases in the average cost per capita would have been if hospital employee earnings had increased at the same rate as production worker earnings.

Table 5 shows that the higher rate of earnings for hospital employees made a substantial contribution to the overall increases in the average cost per capita only between 1965 and 1970. For this period if hospital employee earnings had increased at the same rate as production worker earnings, the cost per capita would have increased 9.2 percent instead of the actual rate of 11.5. The more rapid wage increases for hospital employees accounted for about 20 percent of the increase in cost per capita in excess of the CPI for this period. For the entire period between 1955 and 1979, however, differences in wage rate increases accounted for about 8 percent of the increase in the cost per capita. Since 1970 the differences shown in the wage rates of the two groups are so small that they have virtually no effect on the increase in the average cost per capita.

Table 5. Comparison of the Effect of Wage Rate Differences on the Increase in the Average Cost Per Capita

	Increase in the Average Cost Per Capita: Maine 1967 Dollars	Increase in the Average Cost Per Capita If Hospital Employee Earnings Increased Like All Produc- tion Worker Earnings:1967 \$
1955-65	6.9	6.1
1965-70	11.5	9.2
1970-75	9.1	9.0
1975-79	7.1	7.0
1955-79	8.3	7.6

4. Hospital admission rate

The next component requiring consideration is the change in hospital admissions per 1000 population. The number of admissions per 1000 population increased from 97 to 157, a rise of about 62 percent between 1955 and 1970. As shown in Table 1, column 8, the admission rate increased at an annual rate of 2.0 percent. This 2.0 percent increase constituted roughly 25 percent of the annual increase in the average cost per capita for the period, as shown in Table 3, column 6.

Changes in the admission rate, then, exerted a strong upward influence on the average cost per capita throughout most of the period. This influence was not completely uniform, however, as shown in Table 3, column 6. For example, during the most recent period between 1975 and 1979, changes in the admission rate show a 9 percent downward pressure on the average cost per capita.

5. Number of employees

The number of full-time equivalent hospital employees per patient day increased a total of 294 percent or an annual rate of 2.8 percent between 1955 and 1979 (Table 1, column 5).⁶ This annual increase contributed 1.7 percent to the 8.3 percent rise in the average cost per capita for the period (Table 2, column 2).⁷ A substantial share of the increase in the average cost per capita, then, can be attributed to increased numbers of employees. As shown in Table 3, column 3, the share due to this increase in labor inputs was an average of 21 percent between 1955 and 1979.

The rapid increase in the number of employees over the period can also be illustrated by comparing the increases in labor inputs per capita to the increases in patient days per capita and hospital beds per capita, as shown below.

	Increase in Full-time Equivalent Hospital Employees Per Capita (%)	Increase in Patient Days Per Capita (%)	Increase in Beds Per Capita (%)
<u>1955-79</u>	4.7	2.2	2.5

The annual increase in labor inputs per capita was approximately double the increase in patient days and beds per capita for the entire period.

As shown below, this increase in the number of FTE's per capita represents a threefold expansion between 1955 and 1979.

	<u>FTE Hospital Employees per Capita: Maine</u>
1955	4.13
1979	12.48

6. Non-Labor inputs

Non-labor inputs per patient day make the largest contribution to the increase in the average cost per capita between 1955 and 1979.⁸ As shown in Table 1, column 7, non-labor inputs increased at more than twice the rate of any other component, 6.5 percent per year. This increase contributed 2.6 percent to the 8.3 percent increase displayed in Table 2, column 4. For the 1955-79 period, then, the increase in non-labor inputs contributed 32 percent of the rise in the average cost per capita (Table 3, column 5). Between 1975 and 1979 the share attributable to non-labor inputs was 41 percent.

TABLE 1 - AVERAGE ANNUAL RATES OF INCREASE IN COST PER CAPITA AND ITS COMPONENTS

	(1) Average Cost per Capita: Maine Current Dollars	(2) Consumer Price Index*	(3) Average Cost per Capita: Maine (1967 Dollars)	(4) Annual Earnings per FTE (1967 Dollars)	(5) FTE's per Patient Day	(6) Non-Labor Price per Input (1967 Dollars)	(7) Non-Labor Input per Patient Day	(8) Admissions per 1,000 Population	(9) Average Length of Stay
1955-60	10.3%	2.5%	7.6	2.5%	2.3%	0.0%	4.1%	4.0%	-1.1%
1960-65	7.9	1.8	6.0	3.4	1.7	0.0	2.7	-1.0	2.9
1965-70	16.3	4.3	11.5	4.2	3.2	-0.3	8.8	4.6	-1.0
1970-71	17.7	5.1	11.9	2.8	7.2	-1.2	15.3	2.9	-2.5
1971-72	8.9	3.6	5.1	0.8	1.6	-0.7	16.6	1.4	-3.9
1972-73	12.7	6.0	6.3	-2.3	3.8	0.3	8.7	1.4	0.0
1973-74	22.9	10.4	11.4	-6.3	3.0	4.0	3.8	10.1	0.0
1974-75	21.0	9.0	11.0	5.4	4.7	3.1	10.6	-1.2	0.0
1975-76	16.3	7.6	8.1	-0.2	5.1	-0.9	9.4	0.6	1.4
1976-77	16.9	5.1	11.2	1.7	6.2	1.8	15.4	-1.2	0.0
1977-78	11.9	5.1	6.5	3.6	0.8	3.3	-1.0	0.0	4.1
1978-79	13.5	10.2	2.9	3.1	0.3	-0.9	1.5	-1.9	2.6
1955-65	9.1	2.1	6.9	2.9	2.0	0.0	3.4	1.4	0.9
1965-70	16.3	4.3	11.5	4.2	3.2	-0.3	8.8	4.6	-1.0
1970-75	16.5	6.8	9.1	0.0	4.1	1.1	10.9	2.8	-1.3
1975-79	14.6	7.0	7.1	2.1	3.0	0.8	6.1	-0.6	1.6
1955-79	13.0	4.3	8.3	2.4	2.8	0.3	6.5	2.0	0.2

*CPI; Boston; Urban Wage Earners and Clerical Workers

TABLE 2 - CONTRIBUTION OF EACH COMPONENT TO TOTAL INCREASE IN COST PER CAPITA

	(1)	(2)	(3)	(4)	(5)	(6)
	Contribution to Increase in Cost per Capita of:					
	Annual Earnings per FTE (Constant \$)	FTE's per Patient Day	Non-Labor Price per Input (Constant \$)	Non-Labor Inputs per Patient Day	Admissions per 1,000	Average Length of Stay
1955-60	1.5%	1.4%	0.0%	1.6%	4.0%	-1.1%
1960-65	2.1	1.0	0.0	1.1	-1.0	2.9
1965-70	2.7	2.0	-0.1	3.2	4.6	-1.0
1970-75	0.0	2.6	0.4	4.1	2.8	-1.3
1975-79	1.1	1.6	0.4	2.8	-0.6	1.6
1955-79	1.4	1.7	0.1	2.6	2.0	0.2

TABLE 3 - CONTRIBUTION TO INCREASE IN COST PER CAPITA AS A PERCENTAGE OF TOTAL

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Average Cost per Capita (Constant \$)	Annual Earnings per FTE (Constant \$)	FTE per Patient Day	Non-Labor Price per Input (Constant \$)	Non-Labor Input per Patient Day	Admissions per 1,000	Average Length of Stay
1955-60	100%	20%	19%	0%	22%	54%	-15%
1960-65	100	34	16	0	18	-16	48
1965-70	100	24	17	-1	28	40	-8
1970-75	100	0	30	5	48	32	-15
1975-79	100	16	23	6	41	-9	23
1955-79	100	18	21	1	32	25	3

Table 4. Earnings and Labor Costs

	Average Annual Earnings per FTE Hospital Employee: Maine 1967 Dollars (1)	Average Annual Earnings Production Workers in Manufacturing Industries: Maine 1967 Dollars (2)	Ratio of Column (1) to Column (2) (3)
1955	2834	4004	70.8
1960	3205	4243	75.6
1965	3785	4681	80.9
1970	4640	4842	95.8
1971	4772	4824	98.9
1972	4812	5046	95.4
1973	4702	5088	92.4
1974	4408	4946	89.1
1975	4648	4877	95.3
1976	4638	4945	93.6
1977	4719	5100	92.5
1978	4889	5325	91.9
1979	5042	5320	94.7

B. Causes

The extraordinary increases in the average cost per capita of hospital services described in the previous section did not occur in a vacuum. They represent the accumulated results of public and private sector policies relating to the organization, delivery and payment for hospital care, changes in the composition and expectations of the population served and general movements of the economy. Without attempting to determine their respective contributions to the overall increase in hospital expenditures, we can review some of the major causes and attempt to relate them to the components of hospital expenditures which we would expect them to affect. This discussion is not intended to provide an exhaustive review of the many causes of hospital expenditure increases.⁹

1. Inflation

As we noted in the first part of this section, general inflation, as reflected by changes in the Consumer Price Index (CPI) can account for roughly one-third of the increase in the average cost per capita of hospital services. After adjusting for changes in the CPI, we found that non-labor prices had increased at a negligible rate (0.2%). Inflation in non-labor prices in excess of the CPI accounted for only one percent of the total increase in the average cost per capita.

In contrast, after adjusting for the changes in the CPI, labor prices increased at an average rate of two percent throughout the period. This increase constituted 18 percent of the increase in the average cost per capita. These increases in labor and non-labor prices are consistent with the higher skill levels which may be required by the advancements in technology which we discuss next as one aspect of changes in "intensity."

2. Intensity

The increase in labor and non-labor resources is the largest contributor (53%) to the increase in the average cost per capita. These increases in "intensity" or "service intensity" include both the number and skill levels of employees and the number of services used per admission or per day. The increase is consistent with the effects of a number of the major forces affecting hospital care over the last 25 years.

First, since the 1950's the Federal Government has made substantial investments in research and in hospital construction programs. The results have been a flood of technological advancements and a significant increase in the number of beds. For example, the number of beds in Maine increased 83 percent between 1955 and 1980, while the population increased about 22 percent.

New technology can improve the quality of hospital services. To the extent that new technology is purchased by hospitals, however, it can also contribute to increased hospital expenditures. The retrospective reimbursement system, adopted as the payment approach by Medicare, Medicaid and many Blue Cross plans, provided the money and the incentives to purchase this new technology.¹⁰ Under this approach hospitals were reimbursed for the allowable costs of the services which they provided. The costs of the new technology and the increased number of employees which might be associated with it were accepted as allowable costs.

In an industry with price competition, the rate of acquisition of new equipment and the growth in the number of employees would be moderated by normal market pressures. Price competition, however, is not a notable feature of the hospital industry. The industry is not wholly without competition. Hospitals sometimes compete for physicians or for a market share of services through the purchase of equipment. This kind of competition may or may not contribute to the most efficient provision of services.

Second, during the last 25 years the case mix of hospitals has changed significantly. For example, we are aging as a society and we may be subject to more episodes requiring hospitalization than earlier generations. It is no longer uncommon for a person to survive several near fatal episodes and each of these will involve a substantial amount of the labor and non-labor resources of a hospital.

Third, decisions to increase intensity may not always reflect the most efficient approach to providing hospital services. As described earlier, the rapid and sustained expansion of labor and non-labor resources was encouraged by a payment system which assured the hospital of reimbursement. The industry does not exhibit market forces which would act as incentives to efficient growth. Given these two features, it is unlikely that all increases in intensity are justified by corresponding increases in efficiency.

3. Volume

The expansion of beds described earlier has been accompanied by a major increase in the volume of services provided. As noted in the previous section, the growth in admissions contributed about 25 percent of the increase in the average cost per patient day between 1955 and 1979. This increase in admissions is consistent with other changes which occurred during the period.

First, the Medicare and Medicaid programs have improved access to hospital services since their inception in 1966 and the aging of the population has compounded the impact of the increased access due to Medicare. Similarly, access has also expanded with increased participation in Blue Cross plans and the growth in coverage by commercial insurance. In 1950 public and private insurance programs paid roughly 50 percent of all hospital costs. By 1979, their share had increased to more than 90 percent.

Federal and state tax laws have provided a strong incentive for the purchase of medical care insurance as a fringe benefit. To the extent that increased insurance contributes to growth in the demand for hospital services, the tax law subsidy can be considered as a factor in the increased volume of services provided.

Second, medical schools have expanded significantly in the past twenty years. Greater numbers of doctors are available to deal with increases in the demand for hospital services associated with expanded insurance coverage and bed access.

Third, some of the ways people choose to live and the environments in which they live also contribute to the increased volume of hospital services. Behaviors or conditions with clearly associated health risks such as smoking, alcohol or drug abuse, poor nutrition, and obesity bear directly on the overall rise in the demand for hospital services.

4. Summary

The average cost per capita of hospital care in Maine between 1955 and 1979 has increased significantly faster than the general price level of the economy as expressed by the Consumer Price Index. The average annual rate of increase in the cost per capita exceeded the average annual rate of increase in the CPI by an average of 8.3 percentage points in each year during the entire period. (Table 1, columns 1, 2 and 3)

Fifty-three percent (53%) of this 8.3 percent excess over the increase in the CPI is attributable to increases in labor and non-labor inputs per patient day. (Table 3, columns 3 and 5) Another 25 percent is attributable to an increase in the number of hospital admissions per capita. (Table 3, column 6)

Increases in hospital employee earnings contribute on the average an additional 18 percent to the overall increase in the average cost per capita. (Table 3, column 2)

Throughout most of the period, hospital employee earnings have increased faster than both the general price level and the earnings of production workers. The difference between hospital employee wage increases and those of production workers, however, is responsible for a small and diminishing portion of the overall increase in the average cost per capita.

Public and private policies to expand the availability of hospital resources, lower financial barriers to receiving hospital services and improve the quality of these services have been major factors contributing to the rapid rise in hospital expenditures. Other important factors have been the changes in the age composition and the expectations of the population, trends in the general level of prices and individual behavior which has clearly associated health risks.

Some of these factors contributing to the increase in hospital expenditures are structural in nature. We examine one of these, the current financing system, in the next section.

FOOTNOTES

1. The data on Maine hospitals is derived from the American Hospital Association's annual publication "Hospital Statistics." Population data is from the Maine State Planning Office and the Division of Research and Vital Records of the Department of Human Services. The wage data for production workers is from the Division of Manpower Research of the Department of Manpower Affairs. The components which are boxed are those which are not broken down further.
2. The derivation of data displayed in this section is provided in Appendix C of this report.
3. Total hospital expenditures increased from \$13.867 million in 1955 to \$312.857 million in 1979, a total increase of 2156% or an average compound annual rate of 13.9%.
4. Unless otherwise indicated, all rates in this paper will be average compound annual rates.
5. The use of the Consumer Price Index (CPI) in this section is not prescriptive; i.e., there is no implication about what relationship (whether equal to, less or greater than) the increases in hospital costs should bear to increases in the CPI. The CPI is used simply as an indicator of the changes in the general price level of the economy. No CPI is computed exclusively for either Maine or northern New England. Therefore, the Boston CPI has been used throughout this section.
6. "Patient days," have been used throughout this section. Since some costs are incurred to provide outpatient services, dividing any costs by inpatient days necessarily overstates the actual cost of inpatient care. The American Hospital Association has developed another unit, the adjusted inpatient day or the inpatient day equivalent, which is an attempt to reflect both the number of inpatient days and the volume of outpatient services. Dividing costs by adjusted patient days (inpatient day equivalents) has the effect of removing the costs of outpatient services and providing a measure of inpatient services only. This section focuses on rates of changes in total expenditures. Since the rates of change in adjusted patient days are similar to those of patient days (roughly 0.6% difference for the 1972-80 period) and since patient day data is available for the entire period (adjusted patient day data is available only after 1970), we have used patient days throughout.
7. Since 1955, total FTE's have increased about fourfold from 3,824 to 15,087.
8. The term "non-labor inputs" refers to all those resources other than labor which are used in the provision of hospital services. These include supplies, equipment, drugs, buildings and numerous others.

9. Other causes include the shift from internal funds to borrowing as the source of money for equipment and buildings, the increased costs of malpractice, changing public expectations about the quality and availability of hospital services and laws or regulations (e.g., the minimum wage law).
10. A discussion of some of the weaknesses of the retrospective reimbursement system is included in section 3.

III. Current Financing System

Hospitals are usually viewed almost exclusively as basic providers of health services. They are also, however, businesses. The community¹ provides funds to hospitals in payment for services and, in turn, hospitals make payments to their suppliers.² The community includes the following payment sources:

1. Patients

- A. Self pay
- B. Third-parties³
 - 1. Medicare
 - 2. Medicaid
 - 3. Blue Cross (BCBS)
- C. Commercial insurance
- D. Other (including other insurance programs)

II. Other

- A. Contributions (and income from contributions)
- B. Grants
- C. Investment and interest income
- D. Miscellaneous; including such sources as hospital enterprises (e.g., coffee shops) and the sale of items by hospitals (e.g. silver).

1. Sources of revenue

The largest source of revenue for Maine hospitals is payments for services provided to patients. Payments from third-parties account for roughly 75 percent of this patient revenue and most of the remaining 25 percent is derived from the payments from patients with commercial insurance and self-pay patients.

In addition to patient revenue, Maine hospitals receive funds from individuals, foundations and corporations in the form of contributions and earn interest income on these contributions. Although in many cases the sum of contributions and interest may be small relative to the total amount of patient revenue, these funds can nevertheless be significant. For some hospitals, contributions and income earned on them may represent the difference between net income and net loss.

Finally, some Maine hospitals receive funds in the form of grants for patient care, education and research purposes. These grants may be received from individuals, government, foundations or private corporations.

In the long run, a hospital must receive dollar payments from all its revenue sources in an amount at least equal to the dollar payments that it makes to its suppliers. In other words, a hospital must receive total payments that meet its financial requirements.⁴ Receiving payments in this amount is a condition of the hospital's continuing financial viability.

2. Sources of patient revenue

Since it is by far the largest source of total hospital revenue, patient revenue and the payment systems through which it is provided will be the focus of the balance of this section. On the average, revenue from services to patients is 90 percent or more of total revenue for Maine hospitals. The proportion of patient revenue from each payment source, the payment system used by each of these sources and the interaction of these payment systems have a substantial effect on the financial viability of Maine hospitals and any efforts to restrain increases in hospital costs.

Presently, Maine hospitals receive patient revenue through several different payment systems. Patients insured with commercial insurance companies and self-pay patients are expected to pay hospital charges, the prices which a hospital sets for its services.⁵ The Medicare and Medicaid programs pay hospitals on the basis of the costs which hospitals incur in providing care to the beneficiaries of these programs. Each program defines in regulation which costs may be reimbursed as allowable costs. BCBS, the other major source of patient revenue for Maine hospitals, also pays for patient services on the basis of costs. The payment principles for this method are established in a contract between hospitals and BCBS. Under this contract BCBS payments cover some items which are not included by the Medicare and Medicaid payment systems and provide additional amounts to

hospitals for achieving certain goals which BCBS has identified as contributing to restraining cost increases.

The Medicare and Medicaid programs provide roughly fifty percent (50%) and BCBS pays roughly twenty-five percent (25%) of patient revenue. The remaining twenty-five percent (25%) is derived mainly from commercial insurance, self-pay patients and other small non-commercial insurance programs.

3. Retrospective payment systems

The current payment systems which have a cost or cost-plus basis are also referred to as retrospective cost reimbursement. Under a retrospective cost reimbursement approach, a hospital can expect to receive total payments which reflect the allowable costs which it has incurred in providing care. During the payment period, a hospital receives payments at an interim rate. At the end of the period, the hospital's allowable costs of providing care are computed and an adjustment is made to ensure that the total payments received are consistent with the total costs incurred. The methods of determining allowable costs, the rates of payment and the final adjustments are specified in detailed regulations in the case of Medicare and Medicaid and in contract provisions in the case of BCBS.

Retrospective cost reimbursement was developed as a response to two problems. A growing number of patients faced financial hardship in trying to pay for their hospital care and, as a result, many hospitals were experiencing an increase in the amount of money owed to them. The retrospective cost reimbursement systems offered hospitals the assurance that they would receive payment for their costs in providing care and guaranteed patients access to services as well as a way of paying their bills.

When the Medicare and Medicaid programs were initiated in 1966, their payment systems were based on the retrospective cost reimbursement approach. The dramatic increase in access to hospital services associated with the establishment of these two programs was fueled by substantial increases in funds provided

through retrospective cost reimbursement. If measured exclusively against the goal of increased access to hospital care, these cost-based systems can be seen as successful. Due to the way they have been implemented, however, these cost-based systems have been less successful in addressing the goal of improving the financial stability of hospitals. We describe this shortcoming later in this section.

When measured against a wholly different set of goals, the current cost-based payment systems seem even less desirable. For example, retrospective cost reimbursement implied that hospitals should provide whatever care was reasonable and expect to be paid for it. As such, the system contained unmistakable incentives to spend and lacked incentives to control costs. Increased expenditures were rewarded by increased reimbursements while increased efficiency was not rewarded at all. As the costs of hospital care have increased at rates far exceeding the rise in general prices,⁶ retrospective cost reimbursement has been generally accepted as a significant contributing cause of this inflation. If one goal of any payment system should be the encouragement of appropriate and responsible levels of spending for hospital services, the absence of any financial incentive to control costs can be considered as a major defect of retrospective cost reimbursement.

The current retrospective cost reimbursement systems can be faulted not only for their inherent lack of incentives to restrain expenditure increases but also for the way the systems have been implemented. A brief description of each payment system will illustrate this second serious flaw.

4. Medicare and Medicaid

The Medicare program provides payments to hospitals on the basis of the reasonable costs of those services which satisfy two conditions. The services must be covered by the program and they must be related to the patient care of Medicare beneficiaries. The term "reasonable cost" is defined as the costs actually incurred by the hospital, excluding any amount found by Medicare to be unnecessary

to the efficient delivery of needed health services. Two other qualifications are necessary. First, since 1974 the Medicare program has included a limit on the payment for the costs of routine services. Second, Medicare payments are limited to the lesser of the hospital's total charges or its allowable costs in the aggregate.

In Maine, payments under the Medicaid program are based on the costs actually incurred by hospitals. With a few exceptions, related primarily to the different populations served by the two programs, Medicare principles of reimbursement are also used by the Medicaid program.

5. Blue Cross Blue Shield of Maine (BCBS)

The BCBS payment system is also based on the Medicare definitions of allowable costs. The BCBS system, however, adds to Medicare's allowable costs several other payment categories. The system provides an additional four percent of BCBS costs in recognition of a hospital's capital requirements and roughly another 1.5 percent as a contribution to the hospital's bad debts. Another feature of the system is the provision of a payment floor for inpatient services. Presently, payments for inpatient services are the lesser of costs or charges but payments may not be less than 84 percent of the charges for covered services.

In addition to these payments in excess of Medicare's allowable costs, the BCBS system includes four other features which may result in further payments. These additional payments are made as rewards when a hospital achieves the objectives tied to each of them. First, hospitals can qualify for an additional one percent by voluntarily limiting the increase in their per day costs to an average of roughly 12 percent per year for a three year period. Second, hospitals can receive one percent of Blue Cross costs by voluntarily reducing the number of licensed beds. Third, maintaining the same ratio of full-time employees per adjusted average patient day as in the previous fiscal year is worth an additional

one-half percent. Finally, if a hospital funds depreciation it may receive an added one-half percent through the BCBS system.

6. Cost shifting

For most Maine hospitals the sum of reasonable costs as defined in the Medicare principles of reimbursement does not equal the hospital's financial requirements. For example, uninsured patients are the primary source of bad debts for hospitals and Medicare does not include the cost of bad debts attributable to non-Medicare beneficiaries as an allowable cost. Similarly, the Medicare payment system does not provide funds for initial capital expenditures or for increases in working capital which may be needed in order to avoid short term borrowing.

Hospitals compensate for shortfalls from one payment source by increasing the payment share from other sources. For example, since the costs of the bad debts of non-Medicare beneficiaries are not provided under the Medicare payment system, these costs would be shifted to the Blue Cross and commercial insurance payment systems. Similarly, to the extent that the Blue Cross system may not provide for hospitals' financial requirements, these costs would be shifted primarily to commercial insurance payers.

Patients with commercial insurance are expected to pay the hospital's charges, i.e. the prices it sets for its services. Commercial insurance policies, however, often do not cover full charges, e.g. these policies usually include deductibles and may not cover all services provided. If patients do not pay the balance caused by these features of commercial insurance policies, the shortfalls are made up through increased charges for all commercially insured and self-pay patients.

The cost shifting caused by the shortfalls from one or more payment sources, then, force hospital charges to rise, independent of any change in the rate of increase in hospital costs. As the proportion of hospitals' patients covered by the

current retrospective cost-based payment systems grows larger, the gap can widen between the rate of increase in charges and in costs.

Presently, Maine hospitals in the aggregate receive roughly 75 percent of their revenue through retrospective cost-based payment systems. Since only 25 percent of revenue is derived from charge paying patients, hospitals must increase prices by four dollars in order to realize one additional dollar of revenue. If the proportion of charge paying patients declines, the burden of the price rises caused by this cost shifting only increases.

The financial viability of a hospital depends on its obtaining its financial requirements. In turn, a hospital's success in realizing its financial requirements depends on having a base of charge payers to compensate for the shortfalls attributable to other payment sources. Ironically, then, although retrospective cost reimbursement was developed in part to improve the financial viability of hospitals, the way it has been implemented can actually threaten that financial viability.

7. Retrospective payment of charges

Other than retrospective cost reimbursement, the other major type of payment system currently used in Maine is a method based on a hospital's charges. Patients with commercial insurance and self-pay patients are expected to pay the charges set by hospitals. Unfortunately, this uncontrolled charge based system contains even fewer incentives to control costs than retrospective cost reimbursement. The continued or expanded use of an uncontrolled charge based payment system will not contribute to the encouragement of appropriate and responsible levels of spending for hospital services.

8. Summary

None of the present payment methods for hospital services contain adequate incentives or other characteristics which can be expected to slow the rate of

expenditure increases. In addition, the way in which retrospective cost reimbursement has been implemented results in a lack of equity among payers and a potential threat to the long term financial viability of hospitals.⁷ Substantial changes in these present payment systems are needed.

In the next section we assess the present voluntary budget review program. This program operates independently of the present payment systems for hospital services. If increases in hospital expenditures are in part associated with structural defects in these systems, the budget review program may be operating with built in limitations. We examine this issue as part of the discussion of the budget review program.

FOOTNOTES

1. As used here, the term "community" has no geographic connotations. It is used simply to indicate the overall source of hospital revenues.
2. As used here, the term "suppliers" is intended to include the following: employees, equipment, contractors, consumable supplies and lenders.
3. The term "third-party payers" refers to programs which contract with both the consumers of hospital care and with hospitals to guarantee payment for hospital services. Blue Cross plans, Medicare and Medicaid are third-party payers.
4. The concept of "full financial requirements" is the subject of continuing debate between payers and providers of hospital services. We have deliberately intended to avoid this controversy by using the non-technical phrase "financial requirements" throughout this section.
5. Medicare, Medicaid and BCBS also pay hospital charges when these charges are lower than the hospital's allowable costs for the services provided.
6. As measured by the consumer price index and other standard indicators.
7. In pointing out this potential threat to the long-term financial viability of hospitals, we are not making any judgment about the present financial viability of Maine hospitals. We have not completed an analysis of their present financial condition. One measure of financial viability, however, is the level of hospitals' operating margin. Data from the first budget review cycle shows that the level of operating margin for 34 hospitals in the aggregate improved somewhat during this period. Operating margin rose from 1 percent to 1.4 percent, an increase representing roughly \$1.8 million. We recognize that the level of operating margin is not necessarily an indication of whether a hospital is meeting its financial requirements.

IV. Voluntary Budget Review Program

1. Present program

The Health Facilities Information Disclosure Act requires each Maine hospital to submit its budget annually for review and comment to either the Health Facilities Cost Review Board or a voluntary budget review organization. The program is mandatory in the sense that all hospitals are required to participate, and voluntary in the sense that no hospital is required to abide by any comments made on its budget. Under this law the Board is authorized to approve, set performance standards for and withdraw approval of any voluntary budget review organization. The law defines a voluntary budget review organization, generally, as a nonprofit organization established to conduct reviews of hospital budgets and it establishes certain requirements for the budget review panel of such an organization.

The concept of a voluntary budget review program, as provided in the law, was strongly supported by Maine hospitals. Hospitals saw the program as an opportunity to demonstrate that self-regulation, within the framework of a review of their budgets by an external private organization, could moderate further increases in hospital expenditures.¹ If successful, it might, therefore, provide a practical alternative to greater public regulation.

The Board approved the Voluntary Budget Review Organization of Maine (VBRO) in April of 1979 and the first budget review cycle began for hospitals with fiscal years beginning on or after July 1, 1979 and before June 30, 1980. Forty-five of the forty-nine Maine hospitals submitted their budgets to the VBRO during the first budget review cycle. In the second cycle 45 out of 47 submitted budgets and in the current third cycle, all forty-six hospitals are submitting their budgets to the VBRO.²

2. Study approach

Maine hospitals do not operate in accordance with a uniform fiscal year and, as we discuss later, the absence of a uniform fiscal year creates problems for a budget review program. Staggered fiscal years also imposed certain limits on our study. The first budget review cycle covered fiscal years beginning between July 1, 1979 and June 30, 1980. Hospitals with fiscal years beginning in the spring of 1980, then, have actual year end data only for this first cycle. In contrast, hospitals with fiscal years beginning in July have already completed the second cycle. As a result of this disparity in fiscal years, our assessment of VBRO influence on actual outcomes must focus exclusively on the single year covered by the first budget review cycle.

Limiting the outcome assessment portion of the study to the first budget cycle raises two further issues. First, the availability of only a single year of data reflecting both budget reviews and actual outcomes restricts our ability to construct, statistically, a set of predicted outcome measures which would suggest how the data might look if the VBRO review had not occurred. Second, both intuition and empirical studies suggest that even in very stringent cost control programs, the introduction of the program may not be followed by immediate changes in hospital operating or financial performance. While mandatory programs can limit the flow of revenue immediately, the cost containment or efficiency promoting objectives require a corresponding reduction in expenditures on the part of the hospital. Unfortunately, hospital managers are not always able to reduce instantly the rate of expenditures. A lag occurs because of the need to make changes in hospital policies, staffing patterns, suppliers and other factors. The result is that the full effect of external controls or reviews on financial and operating statistics may not be apparent in the first year or two of a program. Therefore, it may be difficult in some cases to distinguish easily between an ineffective program and one that is beginning to cause desirable changes in hospital behavior.

To address these two issues, we attempted to isolate the effects of the VBRO by first identifying those areas of performance, types of hospital circumstances and the corresponding forms of VBRO scrutiny where the effects, if any, are most likely to appear. We then examined the budget review process in order to establish the nature of the incentives and the data patterns which would be expected if VBRO were being effective. Finally, we reviewed the trends in hospital performance during the first budget cycle and determined the nature of and the extent to which budgeted performance and actual year-end experience were consistent.

We acknowledge and accept the limitations created by the fact that data from only one complete budget review cycle can be examined. We believe, however, that an analysis of this data is useful and significant and that it supports our ultimate recommendations. Budgeted data is available for the complete second cycle and more than one-half of the third cycle. This data provides a sufficient base for an evaluation of the process. Similarly, the available data from the completed first cycle is sufficient as the basis for conclusions about the influence of the VBRO on hospitals' year end compliance with their budgets. We are satisfied, therefore, that the approach used in this study permits a careful and informative assessment of the VBRO.³

3. Process

(a) Information system

The VBRO has implemented a sound and manageable information system for presenting the prior, current and budget year data of Maine hospitals. The system generates summaries of statistical, financial and operating data from individual hospitals as well as reports featuring a variety of performance measures and target values for hospital peer groups. In contrast to programs in several other states, the VBRO has used the system, not simply as part of the annual budget review process,

but also as the basis for periodic reports to hospitals throughout the year.

This type of system is an essential building block for any hospital cost containment program. Some programs in other states have encountered major problems by attempting to carry out budget reviews or rate-setting without adequate uniform information systems.

The VBRO system seems to have been especially helpful to medium and small size hospitals which may not have sufficient staff to prepare such reports. Because of the required submission of budgets for review, the system has been used by many smaller hospitals to initiate or significantly improve their budget preparation process. A survey of hospitals indicated that many hospitals would welcome additional data from the VBRO.

(b) Review by exception

The VBRO reviews hospital budgets "by exception," i.e., hospital budgets are screened against a set of performance measures and only those failing to satisfy the screens receive a detailed budget review. If the screens select the budgets most likely to be unreasonable, this approach is an efficient way to allocate staff resources.

A review of 34 hospital budgets submitted during both the first and second budget review cycles shows that 50 of 68 received detailed reviews.⁴ The majority of hospitals were reviewed in detail in both years. The detailed review appears to be thoroughly grounded in peer comparisons and conducted in an equitable way.⁵

In order to avoid a detailed review a hospital budget must pass the screens for either revenues or expenses. As a result the system selects for detailed review those hospitals which have higher costs relative to their peers. More than 76 percent of hospital expenses received detailed reviews in both cycles.

The weak compliance incentives which we describe later and the potential for the VBRO to be more influential with smaller hospitals suggests that detailed reviews may yield more economies in smaller hospitals. The data shows, however, that the budgets of smaller hospitals received a smaller share (52%) of detailed reviews than their larger counterparts (84-85%). It is not clear whether the rate of detailed reviews for the smaller hospitals may be too low or the rate for the larger hospitals may be too high.

(c) Weak compliance incentives

Under the present law, the VBRO reviews and comments on the reasonableness of hospital budgets. It has no authority to require compliance with its determinations. Hospitals are neither required to change budgets which are determined to be unreasonable nor to live within budgets which have been found to be reasonable. The payment systems for hospital services operate independently of the budget review system. In other words, payments are neither guaranteed nor jeopardized by any determinations made by the VBRO.

In the absence of mandatory compliance and a link to payment systems, the VBRO impact on costs can occur through three types of accountability:

1. Accountability to the welfare of the institution; by providing information and a kind of consulting service to managers and trustees which help them isolate inefficiencies and develop solutions.
2. Accountability to peers in other institutions; by applying peer pressure to managers and trustees which may incite them to modify behavior.
3. Accountability to the public; by risking public disclosure of noncompliance by the Health Facilities Cost Review Board.

These three mechanisms are considerably weaker than mandatory compliance through direct financial incentives and penalties. We will discuss the actual influence of these weaker compliance mechanisms later in this section.

Another aspect contributing to compliance is the set of expectations which the VBRO process creates for hospitals. Several examples will illustrate the point.

First, while the budget review method appears thorough and based uniformly on peer group comparisons, the policies on financial requirements (relative to the reimbursement policies of most cost-based third party payers and relative to most other formal review programs) and the allowance of more than all of anticipated inflation in the screening process may not impart to hospital managers a sufficient sense of urgency about cost containment. Although providing a hospital's financial requirements is essential, most of the effective cost containment programs exert pressure on either financial requirements or volumes of services in order to encourage management to eliminate inefficiencies.

Second, the VBRO method contains a strong incentive to increase or at the least maintain the current level of admissions. For example, if admissions rise 10 percent, the system permits expenses to rise 10 percent. The true cost of providing services to the 10 percent extra patients, however, is probably less than the average cost. The average cost includes both a fixed and variable component. Because it permits increases in the average cost, rather than solely the variable cost component, the VBRO method can encourage growth in admissions. Most review systems allow additional expenditures or revenue to cover only the variable expenses associated with the increased volume, not the full average cost permitted under the VBRO method.

This approach of treating all costs as variable costs favors growing hospitals over shrinking hospitals. Shrinking hospitals are required to cut costs in proportion to admissions. This approach ignores those fixed costs which a hospital may not be able to reduce in proportion to the decrease in admissions.

Another aspect of this potential incentive to increase admissions is the emphasis which the VBRO places on changes in unit revenues or expenses, rather than on changes in total revenues or expenses. Under the VBRO approach the reasonableness of a budget depends on the revenues or expenses per unit increasing at a rate which either meets the budget screens or is found to be an acceptable variance by the budget review panel. A modest increase in revenues or expenses per unit, however, could occur while total revenues or expenses were rising at an unacceptably rapid rate.

Third, the VBRO does not attempt to determine the reasonableness of the budget base, i.e., the bench mark against which the program will determine the reasonableness of increases. In the absence of this kind of review, hospitals may be permitted to increase reasonably on a very inefficient base.

Fourth, the pattern of adverse findings on budgets may not communicate a sufficiently strong concern about cost containment to induce behavioral changes. During the first budget cycle the budgets of five out of 45 hospitals were found to be unreasonable. During the second cycle four out of 45 hospitals received adverse findings. Expressed in another way, during the first budget review cycle roughly 97 percent of budgeted dollars were reviewed as reasonable. This pattern seems to be changing in the third cycle. More adverse findings are being made.

The screening process, as described earlier, seems to be identifying potential sources of unreasonableness. The budget review panel, however, has not found many hospital budgets to be unreasonable. It is not clear whether the panel is overlooking them, discounting the reasonableness of the screens or placing considerable weight on the hospital's explanation of the variance.

(d) Peer groups

The VBRO groups hospitals based on size, geographic location, a

service costliness index and average length of stay. The budget review process involves a comparison of an individual hospital's values for a set of performance measures with those of its peer group (based on an average of these factors for all hospitals in the group). Because the screens that trigger detailed budget reviews are set on the basis of percentiles for each peer group, some fraction of hospitals in each group must pass or fail the screens. A small fraction of hospital expenses will fail the screens in the smaller groups. A disproportionate amount of staff effort may be devoted to this small fraction which fails the screens in the smaller groups. Forming peer groups of roughly equal size, as measured by total expenses, can address this potential misallocation of staff resources.

A second question relates to whether the groups are truly homogeneous. Peer groups have been formed based on characteristics which were intended to approximate case mix data. Rigorous comparisons of hospitals, however, may require the use of actual case mix data. Maine has available the data base on which case mix comparisons might be made. This further refinement of the program may be necessary if the budget review program becomes the basis for payments to hospitals.

(e) Staggered fiscal years

Although the VBRO information system produces a variety of useful reports for measuring hospital performance, the lack of a common fiscal year for all hospitals may undermine somewhat the comparability of this data. This problem is of special concern because of the use of peer groups for the budget review process. The members of a peer group may have significantly different fiscal years and, as a result, calculating target values for the group becomes difficult.

4. Performance

In the first part of this section we examined the major elements of the VBRO budget process. In this part we describe the extent to which year end compliance with budgets was achieved by hospitals statewide during the first budget cycle and the level of the VBRO's influence on compliance.

(a) Overall compliance

One of the arguments for a budget review program is that it provides a degree of predictability to both payers and hospitals. If the approved budget is linked to the payment system, payers will know at the beginning of each year, with an allowance for small year end adjustments, what their payments will be. Similarly, hospitals will know roughly what financial resources will be available to them for the period. An important test of the success of a budget review program is whether hospitals comply with their budgets. If hospitals fail to live within their budgets, the benefits of predictability are quickly eroded.

As we described in the first part of this section, the present voluntary system is not linked to any payment system. In addition, the VBRO has no authority to require compliance with approved budgets or to bring about changes in budgets found to be unreasonable. The incentives for a hospital to live within its budget are based on the less formal restraints associated with accountability to the hospital, peer hospitals and the public. The extent to which hospitals statewide live within their budgets, therefore, is in part a direct measure of the effectiveness of these informal incentives.

Overall compliance during the first budget review cycle was not encouraging. Ten hospitals stayed within their budgets while twenty-four exceeded them. Overall, the hospitals budgeted an increase of \$35 million in revenue and actually experienced an increase of \$44 million* This \$9 million represents a 3.1 percent excess of actual revenues over budgeted revenues.

*Operating revenue

Revenue compliance is important for two reasons. First, it represents that aspect of performance which is usually controlled when budget review or rate-setting programs are linked to payment systems; e.g., by controlling revenues, incentives are given to managers to control expenditures. Second, the volatility (or lack of it) of revenues is the focal point of payers' concerns about the predictability of their reimbursement obligations. Based on the first budget cycle data, the budget review process does not seem to be providing any measure of predictability of hospital reimbursement levels.

Using the budgeted levels of operating revenue, expenses per adjusted admission and operating margin as performance measures, we obtained the following results:

1. None of the 34 hospitals were able to stay within budgeted levels for all three measures;
2. 7 hospitals representing 13 percent of all revenue, exceeded all three measures;
3. 10 hospitals, representing 48 percent of all revenue, exceeded the budgeted levels for revenues and expenses;
4. 16 hospitals, representing 63 percent of all revenue exceeded budgeted operating margins;
5. Only 6 hospitals, representing 14 percent of revenue, reached the year end exceeding just one of the measures.

This overall pattern of noncompliance may be due to a variety of factors including: inaccurate predictions of inflation, base year costs or volumes of services provided; errors in estimating labor needs; new costs (not included in the budget) associated with projects receiving Certificates of Need; unanticipated changes in the case mix of patients served by the hospitals; generally unrealistic budget projections; and ineffective management which undermined otherwise sound budgets. Hospitals can control or strongly influence some of these factors while others are clearly beyond the scope of hospital control or direct influence.

In budget review programs which are linked to payment systems, hospitals are at financial risk for failure to comply unless the factors underlying the failure are recognized by the program as justifiable variations from the budget. For example, some programs pay hospitals for the variable costs associated with volume which exceeds budgeted levels.

We examined three factors which might have contributed to the pattern of noncompliance; inaccurate predictions of base year costs, under prediction of inflation and unanticipated increases in volume. In the aggregate, hospitals under-predicted base year costs, an error which would be likely to contribute to non-compliance. The under-prediction was small, however, and was not an important factor in the overall noncompliance. Hospitals as a whole also under-predicted inflation and volume increases. The error in forecasting inflation could contribute to revenues and expenses exceeding budgeted levels. The underestimate of volume, however, should result in values for expenses per adjusted admission which were lower than budget values. Unfortunately, revenues, expenses and expenses per adjusted admission exceeded budgeted levels. Inflation and volume alone, then, cannot account for the overall pattern of noncompliance.

(b) Pattern of compliance; VBRO influence

In any budget review program some hospitals will comply and others will not. At least two critical questions need to be considered relating to compliance. The first concerns the extent of overall compliance and, as we just described, overall compliance was not encouraging. The second question deals with the VBRO influence on compliance, i.e., are there any patterns of compliance that can be related to efforts of the VBRO.

To address this second question, we grouped hospitals by characteristics which relate to VBRO activity. By comparing the patterns of compliance of these

groups with those of other groups less likely to show VBRO influence, we can establish whether patterns of compliance exist which are consistent with VBRO influence. For example, hospitals which received detailed budget reviews might be expected to be more influenced by the VBRO than hospitals which avoided a detailed review. We can compare the compliance patterns of each group in order to test for this influence.

We grouped hospitals by size, level of budget review, the issue of concern expressed at the budget review panel meeting, the type of finding on the budget and a combination of size and level of review. Patterns of compliance were based on the hospital's staying within budgeted levels for total revenue, expenses per adjusted admission and operating margin.

An examination of descriptive data based on these groupings results in the general finding that no pattern of compliance exists at all. Therefore, no pattern exists which is consistent with VBRO influence.

We expected that the budget review process might produce more compliance in smaller hospitals but we found that hospitals did not comply with revenue and expense levels regardless of size. Similarly, we expected that receiving a detailed budget review might be an indicator of compliance but hospitals did not meet their budgeted level of expenses regardless of whether they had received a detailed review. We examined the data for patterns of compliance relating to the issues identified by the budget review panel at the hearing. These included financial need, efficiency, other issues and no issue. We found no pattern of compliance relating to these issues. Finally, the type of finding on a budget did not show any compliance pattern.

The general conclusion from this data is that the budget review process is not exerting any discernible influence on compliance with budgets. This conclusion is consistent with our earlier finding that the present budget review process

has weak compliance incentives. It also suggests that self-restraint based on accountability to the hospital, to peer hospitals and to the public may have serious limits as an incentive to control increases in hospital expenditures.

5. Summary

The VBRO process is based on a sound information system and an approach to budget reviews (review by exception) which encourages an efficient use of staff time. The present law leaves the budget review process without strong compliance incentives. The process is also weak in the expectations it may create for hospitals. For instance, the system contains incentives to increase admissions; emphasis is placed on changes in the revenues or expenses per unit, not on changes in total revenues or expenses; base year budget reviews are not carried out; and the budget review panel has issued only a small number of adverse findings even though a significant number of hospitals received detailed reviews after failing to pass the budget screens. The law requires determinations of payer equity but does not provide the budget review process with a mechanism for dealing with it. Finally, a standard fiscal year would improve the comparability of data, as would a peer grouping method which is based on case mix.

During the first budget review cycle hospitals exceeded budgeted levels of total revenue by 3.1 percent or \$9 million.* Based on three dimensions of compliance (revenue, cost per case and operating margin), none of the hospitals complied in all three areas and 82 percent (representing 86% of revenue) did not comply in two areas.

The budget review process did not provide any degree of predictability to levels of revenues and expenses. An attempt to study patterns of compliance (by hospital size, type of budget review, type of VBRO finding, and principal issue) did not reveal any influence of the budget review process on compliance. A major limitation on the effectiveness of the budget review process seems to be the lack of stronger incentives for compliance.

*Operating revenue

FOOTNOTES

1. The statutory authorization for a voluntary budget review program was of interest to Maine hospitals for at least two other significant reasons. First, when the law was enacted in 1978, Congress was considering the Carter Administration's hospital cost containment bill, legislation which was strongly opposed by the hospital industry. It was assumed that any federal law would contain waivers for states with existing cost containment programs. The creation of the voluntary budget review program was expected to justify a waiver for Maine. Second, Maine hospitals also viewed the voluntary budget review program as the administrative mechanism for implementing a new payment system with BCBS.
2. Since the first budget cycle, several hospitals have either closed or merged with other hospitals.
3. The Board contracted with Abt Associates, a consulting firm located in Cambridge, Massachusetts, to carry out an independent analysis of the process and performance of the VBRO. The Board's findings in this section are based in part on this analysis. Copies of the report prepared by Abt for the Board are available upon request.
4. Thirty-four hospitals were selected which had filed year end data with the Board for the complete first budget cycle and budgeted data for the second cycle. These hospitals represented about 88.5 percent of total hospital revenue in the year prior to the first cycle.
5. For purposes of making comparative assessments, the VBRO clusters hospitals in peer groups based on size, geographic location, a service costliness index and average length of stay.

V. Alternatives

The voluntary budget review program, as described in the previous section, is one of a variety of responses by public and private agencies to the rapid increase in hospital expenditures during the past two decades. In this section we outline some of the major characteristics of these programs, describe their evolution in recent years and indicate some of the common features of the more successful programs.

1. Prospective reimbursement

The principal alternative to retrospective cost or charge based reimbursement, as described in section 3, is a prospective reimbursement or prospective payment system.¹ Prospective reimbursement is a method of paying hospitals according to pre-established rates of payment for fixed periods of time regardless of the actual costs incurred by the hospitals.

This approach addresses the central defect of the retrospective cost based payment system, the lack of any financial incentive for hospitals to attempt to control costs. Because the payment amount or rate is set in advance and because hospitals cannot change this amount or rate, prospective reimbursement shifts to the hospital some of the risks for costs incurred during the payment period. The hospital has a financial incentive to control its costs, to plan carefully all of its expenditures and to monitor closely the cost implications of the quantity, quality and scope of its services. If the hospital lives within the agreed upon payment amount or rate, it may generate a surplus. If it does not, the hospital may find itself operating at a loss.

In addition to the financial incentive to control costs, prospective reimbursement has other appealing features. First, for hospitals, the system offers

stability and the preservation of management autonomy. Since the level of payments is agreed upon in advance, the hospital will not face the possibility of a year end adjustment, common to retrospective payment programs, which may cause a denial of a portion of the payments. In this way management is encouraged to make those decisions which may result in a surplus. Second, to the extent that the program includes all payers, a measure of equity is assured. In contrast, under the present retrospective payment methods, self-pay patients and patients with commercial insurance may pay more for the same care than a patient covered by Medicare, Medicaid or Blue Cross. Third, since the amount or rate of payment is determined in advance, predictability and accountability are enhanced for the payer and the public in general.

2. Implementation of prospective reimbursement

Prospective reimbursement programs are administered through budget review (or approval) and rate review (or approval) programs. These programs vary in a number of ways including: the reasons for their establishment, general objectives, organizational structure, scope of authority, and methods or procedures.

As part of this study, we heard presentations describing the programs in Maryland, Rhode Island, Massachusetts and Rochester, New York.² These programs were selected because they represented the full diversity of prospective reimbursement programs.

The creation of the Maryland rate-setting program was initiated by Maryland hospitals because of the precarious financial condition of a number of urban hospitals. It is a mandatory program administered by a nine member, part time, independent commission which has the authority to establish hospital charges for all payers, including Medicare and Medicaid.

The Rhode Island program was established at a time when Rhode Island Blue Cross was facing insolvency. In Rhode Island, Blue Cross provides virtually all the non-governmental insurance coverage. The program is mandatory and it is based on negotiations among hospitals, Blue Cross and the State Budget Office, rather than on determinations by a single public or private agency. A maximum statewide revenue amount is established and individual hospitals then negotiate with Blue Cross and the Budget Office for the allocation of the statewide amount.

The Massachusetts program was initiated in response to rapid increases in the cost of the state Medicaid program. A three member full-time commission administers a mandatory program which approves the charges paid by self-pay patients and patients with commercial insurance and is also authorized to approve the Blue Cross contract with hospitals. A second program administered by the Department of Human Services covers the Medicaid program.

In contrast, the Rochester program was initiated by hospitals in the Rochester area. This program is voluntary but it is binding on the hospitals which have agreed to participate. For hospitals in the area, it is an alternative to the New York State rate-setting program. The participating hospitals agree upon a maximum percentage increase in revenue in the aggregate for the year and then allocate this amount among themselves through a board established by the area hospital group. All payers, including Medicare and Medicaid, participate in the program but, unlike Maryland, payer equity is not a feature of the program.

3. Common themes

In reviewing these four programs directly through presentations and in considering several other programs through case studies, a number of common features or general trends seemed to emerge. First as new programs have been

initiated and earlier programs have evolved over the past decade, there has been a general trend away from privately sponsored voluntary efforts and toward publicly administered mandatory programs. This trend has been in response to a desire for greater stringency and predictability in the programs. Second, the scope of payer coverage has tended to expand from one or two payers to all classes of payers. This movement is in response to the potential for cost shifting described in section 3. Third, in recent years, budget or rate review programs have established increasingly formal connections with Certificate of Need (CN) programs.³ In several states poor coordination between these two programs undermined the efforts of both programs, as CN approved projects failed to be accepted for purposes of budget review or budget review limits were ignored by CN agencies. For similar reasons, budget review programs have become increasingly concerned about utilization restraints and the lack of coordination between utilization review and budget review programs. The response has been the development of a variety of coordination procedures. Fourth, programs have moved away from limits exclusively on unit prices or price increases to limits on total revenue. Similarly, they have evolved from annual budget reviews for individual hospitals toward formula based approaches which involve reviews only by exception. Fifth, as programs have become more sophisticated, they have attempted to improve equity to both providers and payers by recognizing case mix differences among hospitals as part of the review process.

In contrast to these common themes, no single organizational structure seems to be critical to the success of budget or rate review programs. The structure of different programs, whether it is an independent commission, state agency, or public and private combination, seems to be mainly a function of the local circumstances of their creation. The characteristics which seem to be a better

guide to the stringency and equity of the programs are features such as: complete payer coverage; mandatory compliance; broad discretion in defining, with the cooperation of all interested parties, operating procedures and key concepts such as financial requirements; authority to specify reporting and accounting procedures; and significant coordination with other regulatory activities such as the Certificate of Need and utilization review programs.

4. Performance of prospective reimbursement programs

Both mandatory and voluntary programs have demonstrated a capacity to moderate hospital expenditure increases. Mandatory programs, however, have been more successful.⁴ These programs have demonstrated a capacity to exert a downward influence on annual rates of increase in hospital expenditures and to bring about a convergence of these expenditure rates and the annual rates of inflation for all consumer goods and services.

The following table indicates the comparative performance of Maine and several other states with mandatory programs between 1972 and 1980. The regulated states include Massachusetts, Maryland and Connecticut.

	<u>Maine</u>	<u>Regulated States</u>
% Increase in Expenses per/Capita	221.9	152.6
% Increase in Expenses per/Admission	207.5	149.1
% Increase in FTE's/per Day	26.3	19.6
% Increase in Payroll/FTE	114.3	84.3

5. Summary

Prospective reimbursement offers an alternative which addresses the major structural weaknesses of the current payment system for hospital services. A

prospective reimbursement system gives hospitals financial incentives to restrain expenditures. It also preserves management autonomy, rewards better hospital management, and provides a degree of predictability to both hospitals and payers.

Budget or rate review programs vary in the reasons for their establishment, scope of authority, organizational structure, general objectives and methods or procedures. The more successful programs share features such as: complete payer coverage; mandatory compliance; discretion in defining procedures with involvement by all interested parties; the authority to require uniform accounting and reporting; and significant coordination with Certificate of Need and utilization review efforts. Mandatory programs which are linked to prospective reimbursement programs have been more successful than voluntary programs in moderating expenditure increases.

FOOTNOTES

1. Several other types of programs also focus on cost containment but do not directly monitor or regulate hospital prices or costs. These include Certificate of Need programs and utilization review efforts.
2. A description of the study process is included in Appendix B.
3. Certificate of Need programs require health facilities, including hospitals, to receive a review and approval (in Maine by the Department of Human Services) prior to initiating new health services. The purposes of these programs are generally to promote effective health planning, to ensure an orderly development of health facilities and services and to avoid the costs associated with unnecessary duplication of facilities and services.
4. "An Analysis of the Effects of Prospective Reimbursement Programs on Hospital Expenditures," Abt Associates Inc., National Hospital Rate-Setting Study; Health Care Financing Administration Review, January 1981.

VI. Recommendations

During the past 25 years enormous progress has been made in the availability, access to and quality of hospital services in Maine. The data presented earlier in this report, however, shows that this progress has been achieved at a staggering cost.

The challenge for the future will be to preserve the gains and continue the progress within the context of more limited economic resources. We believe that the recommendations that follow contain the outline of a comprehensive program which can begin to meet this challenge.

This kind of program should be developed against the background of a set of general objectives. We used the following objectives as the framework for our recommendations:

1. A hospital payment system should:
 - a. Encourage the most efficient use of resources in providing hospital services;
 - b. Provide predictability in payment amounts for payers, providers and patients;
 - c. Assure accountability to the public;
 - d. Create equity among payers; and
 - e. Preserve the financial viability of Maine's hospital system.
2. Programs of budget review (operating expenses), Certificate of Need (capital expansion), utilization review (volume of services) and appropriateness review (types of services) should be coordinated as a single cost containment program.

These recommendations require legislation and we are preparing a bill for submission to Governor Brennan for his consideration. We believe that the most effective way to implement these recommendations is by extending and amending the Health Facilities Information Disclosure Act. Our recommendations fall into three general categories, as follows.

1. Prospective payment system. We recommend the establishment of a prospective payment system for hospital services.

The present payment systems for hospital services do not contain incentives or other characteristics which can be expected to moderate the rate of hospital expenditure increases. The present voluntary budget review program includes only weak incentives for compliance with the findings of individual hospital budget reviews. Mandatory prospective payment systems in other states have demonstrated a capacity to restrain the rate of increase in hospital expenditures. Hospital expenditures in Maine are increasing at rates which are greater than those in several states with prospective payment programs. For all of these reasons, we believe that a prospective payment program can encourage the most efficient use of resources for the provision of hospital services in Maine.

Participation in this payment system should be mandatory for both hospitals and payers. The system should provide for the financial requirements of hospitals and, in turn, the financial resources of hospitals should be available to offset these requirements. The concepts of financial requirements and resources would be defined in the implementation of the prospective payment system.

(a) Equity

All payers should be required to pay the same amounts for the same services except when different payment amounts can be justified, based on documented quantifiable differences among the payers.

We recognize that the Medicare and Medicaid programs are required by law to pay in accordance with their own payment systems. Congress has enacted legislation which authorizes waivers from these requirements, however, and the Department of Health and Human Services has granted such waivers for participation in prospective payment programs in several other states. As part of the implementation process for the prospective payment system for hospital services, waivers

from Medicare and Medicaid requirements should be sought. We also strongly urge that the State, as the administrator of the Medicaid program, should become a full participant in this prospective reimbursement system.

(b) General governance structure

The system should be administered through a two level governance structure. A public body should establish annually a statewide maximum revenue authorization for the hospital payment system. Given the experience and involvement of the Health Facilities Cost Review Board with these issues, we recommend that the Board should be continued and charged with the responsibilities described under this recommendation.

The revenue authorization should be calculated to include, but not necessarily be limited to, the following: inflation; projects approved under the Certificate of Need program; changes in volume, intensity, and the age composition of the population and costs associated with regulatory changes. The Board would implement the maximum authorization in such a way as to provide exceptions for appropriate unforeseen circumstances. The Voluntary Budget Review Organization of Maine or a similar body should be authorized to allocate the total revenue authorization among Maine hospitals through a mandatory budget approval program.

(c) Health Facilities Cost Review Board

Under this governance structure, the Board would be authorized to carry out several other responsibilities. It would:

1. Make determinations on appeals from the budget review decisions;
2. Make determinations on any discounts to payers;
3. Continue to perform the oversight role for the Voluntary Budget Review Organization currently carried out under the present law. Specifically, it should be authorized to approve and withdraw approval of the VBRO. In the event of a withdrawal of approval, the Board should be authorized to continue the mandatory budget review program; and

4. Adopt the rules necessary for the implementation of the prospective payment system.

(d) VBRO

The VBRO should be modified to provide for the following:

1. It should be authorized to issue binding determinations on the reasonableness of budgets. These will be the basis of payments to hospitals.
2. All budget review hearings and budget determinations and all information relating to budget reviews should be public, consistent with the Freedom of Access Law and the Administrative Procedures Act.
3. The VBRO should select each public member of its budget review panel from a list of three names for each vacancy submitted by the Board.
4. The VBRO should be required to carry out studies relating to its budget review responsibilities upon request from the Board.

(e) Change in fiscal years

A standardization of hospital fiscal years should be adopted as part of the implementation of the system.

2. Coordination of budget review and Certificate of Need. We recommend that coordination between the budget review and Certificate of Need programs should be mandatory.

The lack of coordination between budget review and Certificate of Need programs in several other states has undermined the objectives of both efforts and has been disruptive for hospitals and payers. In some cases payments for approved projects to hospitals have been reduced or denied in the budget review process and in other cases overall payment limits of the budget review program have been exceeded because projects were granted Certificates of Need without consideration of their impact on the annual aggregate payments to hospitals. Both of these results are undesirable and they can be substantially eliminated through mandatory coordination of the two programs.

3. Coordination of budget review and utilization review. We recommend the establishment of a utilization review program which is coordinated statewide with the budget review efforts.

The utilization review program administered by the Pine Tree Organization for Professional Standards Review was terminated on October 1, 1981, and no program has yet been developed to replace it. Maine is in a unique position to establish a utilization review program which is closely coordinated with the budget review process.

As indicated in section 1, increases in the volume of services provided by Maine hospitals make a substantial contribution to the overall increase in the average cost per capita of hospital services. Public policy has encouraged an increased volume of services by increasing the amount of hospital resources available and easing access to those resources. Public policy will have to address the issue of what kinds of care are appropriate. A first step in this effort is to establish formally the coordination of utilization review and budget review programs.

Coordination between these two programs can assist the budget review effort in its assessment of what will be considered an acceptable increase in the volume of services. Budget review efforts in other states have found that a lack of coordination between utilization review and budget review efforts can erode the effectiveness of the budget review program. The Board should provide the necessary coordination between the budget review and the utilization review programs.

4. Health maintenance measures.

Public and private agencies, hospitals and payers can make important institutional responses to some of the factors influencing hospital expenditure

increases. Hospital cost containment, however, can also be addressed by individuals. As we indicated in section 2, disregard of the health risks clearly associated with behaviors such as smoking, alcohol abuse, and others contribute to the increasing volume of services provided by Maine hospitals. Many of these services might be eliminated if individuals made choices to avoid or reduce some of these activities. A better understanding is needed of the health benefits and health care expenditure savings that can result from health maintenance practices. It is a topic which should be explored further.

5. Conclusion.

The recommendations presented here call for significant structural changes in payment systems for hospital services and for formal coordination of the major cost containment programs. We believe that these recommendations can contribute to the building of a health care system which provides for accountability and predictability in the allocation and use of limited health care resources and for a public determination of the appropriate rate of change of these resources within Maine.

APPENDIX A

Letter from Governor Brennan



STATE OF MAINE
OFFICE OF THE GOVERNOR
AUGUSTA, MAINE
04888

JOSEPH E. BRENNAN
GOVERNOR

May 20, 1981

Mr. David P. Cluchey
Birch Knolls
Cape Elizabeth, Maine 04107

Dear David:

As you know, I am deeply concerned about the continuing significant growth in hospital expenditures. These increases present an added burden to Maine citizens at a time of substantial and unrelieved inflationary pressures from other parts of the economy.

Under the provisions of the Health Facilities Information Disclosure Act, the Board is authorized to monitor the voluntary budget review program, carry out studies to health care cost containment and compile reports based on these studies. The voluntary program is in its third and final year under its present legislative authorization. I believe it is time for a thorough evaluation of the effects of this program and for a careful examination of any available alternatives.

For these reasons I am requesting that the Board immediately initiate a study of the present system of financing hospital services in Maine. I believe that this study should evaluate the present efforts of Maine hospitals to control costs on a voluntary basis and should assess the need for the establishment of a mandatory hospital rate setting program.

The results of the study should be available for consideration during the Second Regular Session of the Legislature. I am asking, therefore, that the Board complete the study and present one with a report and any necessary recommendations by December 1 of this year. These recommendations should describe the structure of any new program or changes in the current system which the Board considers necessary.

This study could have substantial and long lasting effects on the delivery and the financing of hospital services in Maine. For this reason, I would urge you to seek out the views of business, labor, health care providers and other Maine citizens as part of your review process.


I would also encourage you to communicate regularly with the appropriate legislative committees on the progress of the study. The results of the study will be reviewed during the Second Regular Session of the current Legislature. The Legislature should be prepared to deal with any issues which may emerge from the study.

Finally, I am directing Commissioner Petit to make available appropriate resources of the Department of Human Services to assist the Board in its work.

Restraining the growth of hospital expenditures is a troubling and complex problem that is the concern of consumers and providers of care alike. Your work on this study could make a significant contribution to our efforts to address this problem in Maine.

Thank you for your continued cooperation.

Sincerely,


JOSEPH E. BRENNAN
Governor

JEB/gr

APPENDIX B

Description of the Study Process

On May 20 Governor Brennan requested that the Board carry out a study consisting of three major tasks. He asked first that we examine the present system of financing hospital services in Maine. Second, he asked for an evaluation of the current efforts of Maine hospitals to control costs on a voluntary basis. Finally, he asked the Board to examine any available alternatives to the present system and specifically, to assess the need for a mandatory hospital rate setting program. In his letter of May 20, Governor Brennan asked the Board to prepare a report of the results of its study, including any recommendations, and he specified that these recommendations should describe the structure of any new program or changes in the present program which the Board considered necessary.

The Board initiated this study in early June and has held two or three meetings each month since then. This series of meetings has included eight public hearings and several other less formal meetings. The public hearings featured presentations by invited guests as well as discussion periods for further examination of the issues raised in the presentations. The other meetings were devoted to the planning of the later phases of the study, the review of the information which had been presented and the deliberations on the full range of issues identified during the study.

In his letter requesting the study, Governor Brennan urged the Board to seek out the views of persons broadly representative of Maine citizens and to communicate regularly with the Legislature on the progress of the study. In accordance with these suggestions, the Board provided invitations for each of its public hearings to all members of the Legislature, all hospitals and their Boards of Trustees, the major payers of hospital costs, professional associations in the health care field, representatives of business and labor groups and numerous groups and individuals associated with the issues examined in the study.¹

Although the public hearings featured formal presentations from invited speakers, the Board encouraged everyone attending the hearings to participate in the discussion and question periods which accompanied each presentation. In addition, the Board prepared verbatim transcripts of these meetings and made copies available upon request.

To examine the present system of financing hospital services in Maine, the Board received presentations from Dr. William Cleverley,² several representatives of Maine hospitals, Blue Cross and Blue Shield of Maine and the Department of Human Services.

Dr. Cleverley identified some of the general causes of hospital expenditure increases, described the economic environment within which hospitals operate, outlined the major financial requirements of hospitals and suggested a set of criteria for evaluating hospital payment systems. His presentation provided a general framework for the discussion which followed on the financing of hospital services in Maine.

Representatives of three Maine hospitals which were significantly different in size, services and geographic areas served discussed hospital financing in general and some of the problems which were unique to their institutions. Donald McDowell, Executive Vice-President and Treasurer of Maine Medical Center, reviewed some of the major achievements in health care during the last twenty years and pointed out that hospital expenditure increases were in large part the price of these achievements. In addition, Mr. McDowell provided the Board with a description of the budget process at Maine's largest hospital. Warren Kessler, Executive Director of Kennebec Valley Medical Center (KVMC) identified some of the major causes of hospital expenditure increases and illustrated several of these with concrete examples from his KVMC experience. John McCormack, Executive Director of Cary Memorial Hospital, identified a number of problems unique to smaller hospitals

and reminded the Board of the large proportion of hospitals with 50 or less beds in Maine.

To familiarize itself with the several payment systems for hospital services in Maine, the Board heard presentations from Blue Cross/Blue Shield of Maine, representatives of the Maine Hospital Association, and the Department of Human Services.

The Board held two public hearings to discuss the contract between Blue Cross and Blue Shield and Maine hospitals. At the first hearing, Francis Faherty and George Hanson, senior vice-presidents of Blue Cross/Blue Shield of Maine (BCBS) described the payment system which is the basis of the present contract between BCBS and Maine hospitals. Donald McDowell and Eugene Joyner from Maine Medical Center identified some of the strengths and weaknesses of the present BCBS payment system and reviewed the impact of the interaction of several different payment systems for hospital services.

The second hearing was devoted to a discussion of the negotiations on a new contract between BCBS and Maine hospitals. Edward Andrews, M.D., President of the Maine Medical Center described some of the changes in the BCBS payment system which Maine hospitals had identified as desirable. Francis Faherty of BCBS outlined the position taken by BCBS on changes in the present contract.

The Department of Human Services administers the Medicaid program in Maine. Frank McGinty, Deputy Commissioner for Health and Medical Services made a presentation which included a general description of the Medicaid program and the recent federal changes affecting it and an outline of what might be done to make the program more effective.

The Board invited representatives of the Federal Department of Health and Human Services to make a presentation describing the Medicare principles of reim-

bursement. Due to other commitments, Medicare's representative was unable to make a presentation as planned. BCBS administers the major portion of the Medicare program in Maine. The Board was grateful to Philip Harmon, Director of Audit and Reimbursement at BCBS, for agreeing to appear on very short notice to respond to questions about the Medicare payment system.

To evaluate the efforts of Maine hospitals to restrain increases in costs on a voluntary basis, the Board heard presentations by both the Voluntary Budget Review Organization of Maine (VBRO) and the Maine Hospital Association, gathered information directly from individual hospitals and completed an independent analysis of the effects of the present budget review program.

The Board devoted one public hearing exclusively to presentations by representatives of the VBRO. A member of the VBRO board, a budget review panel member, and the VBRO staff provided the Board with information on the background of the VBRO, its budget review procedures, its performance thus far and possible changes in the budget review process. In addition, a hospital chief executive officer and a chief fiscal officer offered their views on the effects of the VBRO.

To assist in the evaluation of the VBRO, the Board retained the services of Abt Associates, a consulting firm located in Cambridge, Massachusetts. Abt Associates has been the principal contractor carrying out the National Hospital Rate-Setting study for the Department of Health and Human Services. This continuing study, launched in 1978, has included individual case studies of the major voluntary and mandatory hospital cost containment programs nationwide. These case studies have traced the origin and development of these programs and have attempted to identify some of their strengths and weaknesses.

Abt has assisted the Board in carrying out three tasks. First, the budget review methods of the VBRO have been examined in order to assess such features as

the incentives for efficiency, the potential for cost containment and the degree of inter-hospital equity inherent in the methods used to review budgets. Second, the actual effect of the VBRO on individual hospital budgets has been analyzed by determining the pattern of variation between budgeted amounts and actual performance for the VBRO members during the first complete budget review cycle. Third, the performance of VBRO hospitals has been compared to hospitals in a number of other states representing the full range of cost containment efforts, including states without programs.

In addition to these efforts to identify the VBRO's contribution to short-term cost containment, the Board has attempted to measure those VBRO effects which may have a less direct but longer term impact on costs. With the assistance of the Social Science Research Institute of the University of Maine at Orono, the board has collected information about the VBRO's effects on the individual hospital's budgeting process, staffing patterns and other areas of hospital management.

The third part of Governor Brennan's request to the Board called for an evaluation of the other cost containment programs. The Board has addressed this task through a series of presentations on programs in other states and through a review of the completed portions of the National Hospital Rate-Setting Study.

The Board scheduled presentations on programs which reflected the full range of characteristics common to cost containment efforts. The programs described included one of the earliest and most well established as well as one of the newest; both voluntary and mandatory efforts; programs which originated for significantly different reasons; programs known for the high degree of cooperation between hospitals and the regulating body as well as those using more of an adversary approach; and programs based on a traditional public utility model and those which featured self-imposed spending ceilings.

Specifically, the Board held full public hearings on the programs in Maryland, Rhode Island, and Massachusetts. In addition, the Board heard a shorter presentation on the program in Rochester, New York. For the Maryland, Rhode Island, and Massachusetts sessions, the Board heard presentations from a representative of the principal agency responsible for the administration of the program and from a representative of the hospitals included in the program. In addition, in the case of Maryland, the Board heard a presentation from an individual who had studied the program as part of the National Hospital Rate-Setting Study. In the cases of Rhode Island and Massachusetts, the Board heard from representatives of the Blue Cross plan affected by the program. The Rochester program was described by its principal designer and its features were compared to the approaches in several other states.

The monographs in the National Hospital Rate-Setting Study were a helpful source of information in both programs which we heard about directly as well as those which were not included in our public hearing schedule. Although programs have been established for very different reasons in various states, some strong common themes run through the development and evolution of many of these programs. Their successful innovations as well as their mistakes have been useful guides as we have reviewed the efforts in Maine.

Programs which monitor or directly regulate hospital prices or costs are not the only kind of hospital cost containment efforts which the Board examined. Certificate of Need programs and utilization review efforts are also directed at restraining the rates of increase in hospital expenditures.

In Maine the Certificate of Need program is administered by the Department of Human Services with the advice of the Maine Health Systems Agency. Gordon Browne, Director of the Bureau of Health Planning and Development within the Department,

described the C/N process, the present scope of the program and the major changes in the federal C/N law.

Peter Leadley, M.D., Executive Director of the Pine Tree Organization for Professional Standards Review (PSRO), made a presentation which included a description of the origin and development of the PSRO in Maine and an outline of how the PSRO carried out its responsibilities. The PSRO in Maine was supported by Federal Government funds. With the withdrawal of that support, the PSRO terminated its activities as of October 1, 1981.

In addition to these specific presentations, the Board also discussed these programs at the public hearings on the payment programs in other states. Among other topics addressed in these discussions, the Board examined the issue of coordination among all cost containment programs.

The series of public hearings ended in October. The Board then held another series of meetings to discuss the presentations made at the hearings, to review and evaluate the analysis of the VBRO and to reach final conclusions and recommendations on the study. As it did for the public hearings, the Board encouraged the attendance and participation of all interested parties in this second set of meetings. The Board completed its work on December 21.

FOOTNOTES

1. These included the following: Maine Hospital Association, Maine Osteopathic Association, Maine Medical Association, Maine Nurses Association, Blue Cross Blue Shield of Maine, Union Mutual Life Insurance, Pine Tree Organization for Professional Standards Review, Maine Health Information Center, Medical Care Development Inc., New England College of Osteopathy, University of Maine School of Nursing and Human Services Development Institute, Maine Health Systems Agency, Human Services Council, Maine Health Care Association, Maine Chamber of Commerce, Associated Industries of Maine, Maine Merchants Association, Maine AFL-CIO, Maine State Employees Association, and Maine Teachers Association.
2. Dr. Cleverley is a professor in the graduate program in Hospital and Health Services Administration and in the Department of Accounting at the Ohio State University. He is also the director of the Hospital Financial Analysis Service and the author or editor of a number of books and other publications.

APPENDIX C

Additional Data

The data in Tables 1 and 2 of Section 2
was derived from the data in the following tables.

TABLE 1 - DECOMPOSITION OF AVERAGE COST PER CAPITA

	(1) Average Cost per Capita-Maine <u>Current Dollars</u>	(2) Consumer Price Index* (1967=100)	(3) Average Cost per Capita-Maine <u>1967 Dollars</u>	(4) Average Cost per Patient Day (1967 Dollars)	(5) Patient Days per Capita	(6) Admissions per 1,000 Population	(7) Average Length of Stay (Days)
1955	14.96	76.6	19.53	26.57	.735	97	7.6
1960	24.46	86.5	28.28	33.13	.853	118	7.2
1965	35.85	94.5	37.93	40.78	.930	112	8.3
1970	76.35	116.7	65.42	59.33	1.103	140	7.9
1971	89.84	122.7	73.22	66.22	1.106	144	7.7
1972	97.82	127.1	76.96	71.28	1.080	146	7.4
1973	110.21	134.7	81.82	74.51	1.098	148	7.4
1974	135.48	148.7	91.11	75.60	1.205	163	7.4
1975	163.96	162.1	101.15	84.75	1.193	161	7.4
1976	190.72	174.5	109.30	90.17	1.212	162	7.5
1977	222.95	183.4	121.56	101.58	1.197	160	7.5
1978	249.51	192.7	129.48	105.11	1.232	160	7.7
1979	283.07	212.4	133.27	107.09	1.244	157	7.9

*CPI; Boston; Urban Wage Earners and Clerical Workers

TABLE 2 - DECOMPOSITION OF AVERAGE COST PER PATIENT DAY

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<u>Average Cost per Patient Day (1967 Dollars)</u>	<u>Average Labor Cost per Patient Day (1967 Dollars)</u>	<u>Annual Earnings per FTE (1967 Dollars)</u>	<u>FTE's per Patient Day (Days)</u>	<u>Average Non-Labor Cost per Patient Day (1967 Dollars)</u>	<u>Non-Labor Price per Input (1967 Dollars)</u>	<u>Non-Labor Inputs per Patient Day</u>
1955	26.57	15.91	2834	2.04	10.67	.999	10.68
1960	33.13	20.09	3205	2.29	13.05	.999	13.06
1965	40.78	25.89	3785	2.47	14.89	.999	14.90
1970	59.33	37.01	4640	2.91	22.32	.984	22.68
1971	66.22	40.80	4772	3.12	25.43	.972	26.16
1972	71.28	41.86	4812	3.17	29.43	.965	30.50
1973	74.51	42.41	4702	3.29	32.09	.968	33.15
1974	75.60	40.93	4408	3.39	34.65	1.007	34.41
1975	84.75	45.27	4648	3.55	39.51	1.038	38.06
1976	90.17	47.31	4638	3.73	42.85	1.029	41.64
1977	101.58	51.21	4719	3.96	50.36	1.048	48.05
1978	105.11	53.60	4889	3.99	51.52	1.083	47.57
1979	107.09	55.31	5042	4.00	51.78	1.073	48.26

The data in this Appendix and in Section 2 were derived as follows:

A. Appendix: Table 1

Columns

1. Average cost per capita: $\text{Total expenses} \div \text{total population}$.
2. CPI: U. S. Department of Labor, Boston; Urban wage earners and clerical workers.
3. Average cost per capita (1967 dollars): $\text{Average cost per capita} \div (\text{CPI} \div 100)$.
4. Average cost per patient day (1967 dollars): $\text{Average cost per capita (1967 dollars)} \div \text{patient days per capita}$.
5. Patient days per capita: $\text{Total patient days} \div \text{total population}$.
6. Admissions per 1000 population: $\text{Total admissions} \div (\text{total population} \div 1000)$.
7. Average length of stay: $\text{Total patient days} \div \text{total admissions}$.

B. Appendix: Table 2

1. Average cost per patient day (1967 dollars): $\text{Average cost per capita (1967 dollars)} \div \text{Patient days per capita}$.
2. Average labor cost per patient day (1967 dollars): (1) $\text{Total payroll expenses} \div \text{Total patient days}$; (2) $\text{Payroll expenses per patient day} \div (\text{CPI} \div 100)$.
3. Annual earnings per FTE (1967 dollars): (1) $\text{Total payroll expenses} \div \text{Total FTE's}$; (2) $\text{Payroll per FTE} \div (\text{CPI} \div 100)$.
4. FTE's per patient day: $\text{Total FTE's} \div (\text{Total patient days} \div 365)$.
5. Average non-labor cost per patient day (1967 dollars): (1) $\text{Total non-labor expenses} \div \text{Total patient days}$; (2) $\text{Non-labor expense per patient day} \div (\text{CPI} \div 100)$.
6. Non-labor price per input (1967 dollars): (1) $\text{AHA input price index} \div .520 = \text{AHA index adjusted to 1967 base*}$; (2) $\text{AHA index adjusted to 1967} \div \text{CPI}$.
7. Non-labor inputs per patient day: $\text{Non-labor cost per patient day (1967 dollars)} \div \text{Non-labor price per input (1967 dollars)}$.

C. Table 2 of Section 2

1. Annual earnings per FTE (1967 dollars): $\text{Annual earnings per FTE percent change (1967 dollars)} \times \text{Labor expenses as percent of total expenses}$.
2. FTE's per patient day: $\text{FTE's per patient day percent change} \times \text{labor expenses as percent of total expenses}$.
3. Non-labor price per input (1967 dollars): $\text{Non-labor price per input percent change} \times \text{Non-labor expenses as percent of total expenses}$.
4. Non-labor inputs per patient day: $\text{Non-labor inputs per patient day percent change} \times \text{non-labor expenses as percent of total expenses}$.
5. Admissions per 1000 population: Average compound annual rate of change of column 6, Table 2 of Appendix C.

*.520 is the value for 1967 in the AHA index.

6. Average length of stay: Average compound annual rate of change of column 7, Table 2 of Appendix C.

D. Table 3 of Section 2

The contribution of each of the components was computed on the basis of the sum of the rates of change presented for each period in Table 2 of Section 2. We recognize that several of the rates of change shown in Section 2 are not additive and that using their sum ignores the interaction effect of multiplying them. This effect, however, is small and results in only a slight change in the computed percent contributions.

E. Table 5 of Section 2

Column 1 of this table is taken from Table 1 of Section 2 (column 4). Column 2 is derived as follows:

- (1) Percent of labor expenses X percent change of labor earnings (1967 dollars).
- (2) Percent of labor expenses X percent change of production worker earnings (1967 dollars).
- (3) Subtract the difference between (1) and (2) from the percent change in the average cost per capita (1967 dollars) as given in column 1.